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September 2010

Montana Department of Natural Resources and Conservation

Forested State Trust Lands

Habitat Conservation Plan

Final EIS

Environmental Impact Statement

Volume III
Appendices D through G

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Montana Department of Natural Resources and Conservation

U.S. Department of the Interior Fish and Wildlife Service

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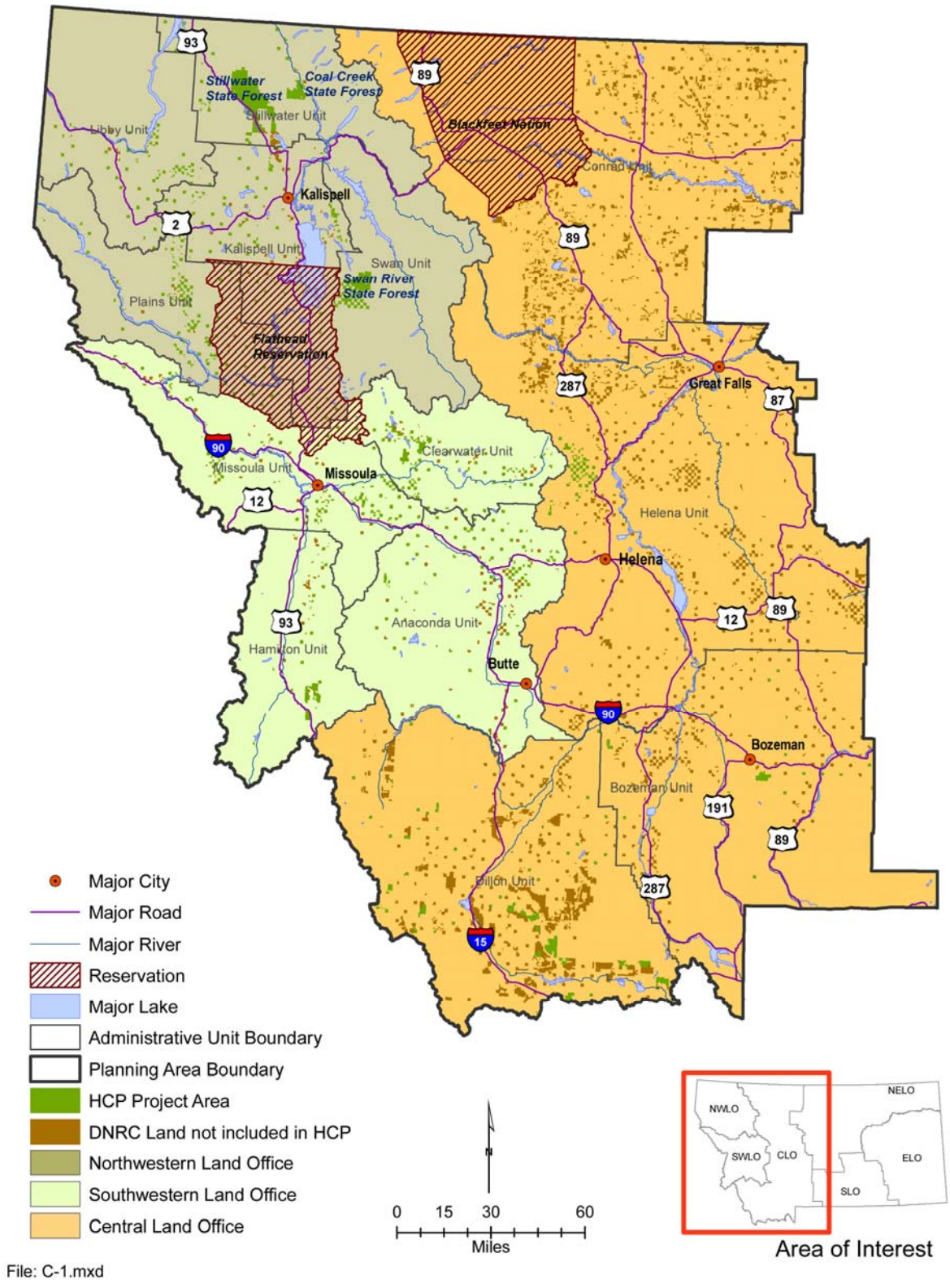

FIGURE D-2. LOCATION OF DNRC LAND OFFICES AND ADMINISTRATIVE UNITS

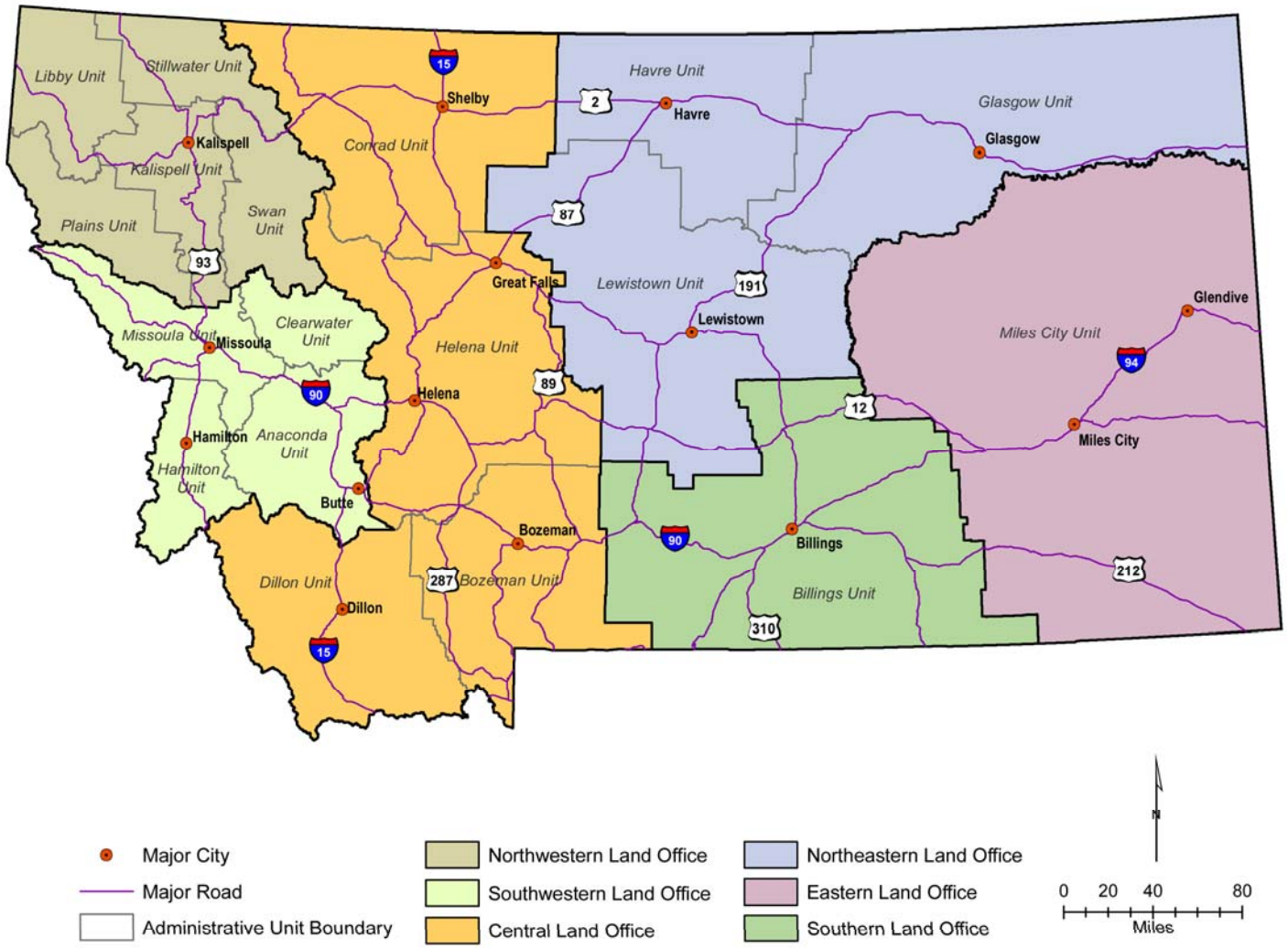

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FIGURE D-3. LAND OWNERSHIP IN THE PLANNING AREA

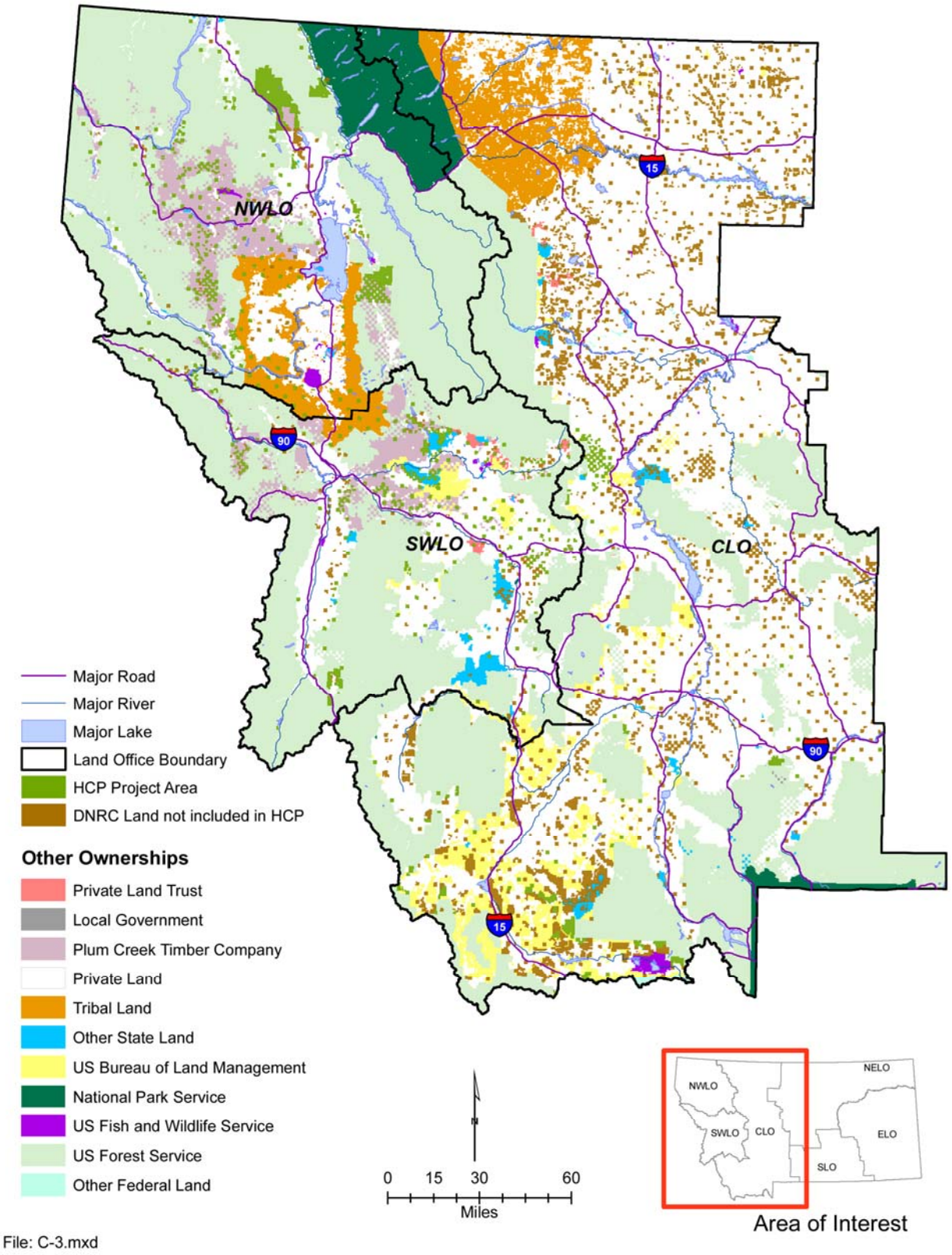
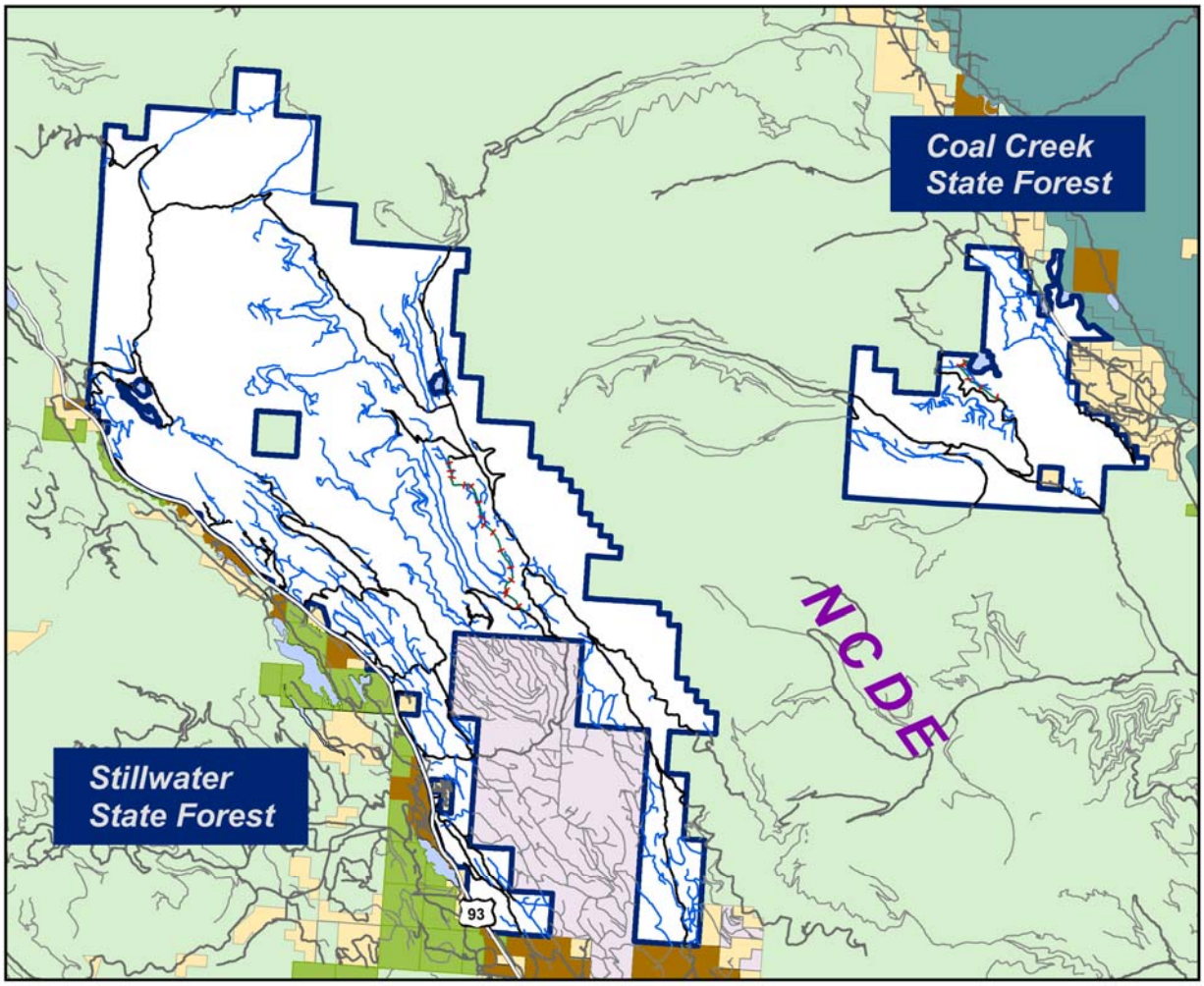


FIGURE D-4A. EXISTING ROADS IN THE STILLWATER BLOCK



Restricted Roads (Non-Stillwater Block)
Open Roads (Non-Stillwater Block)
Major Lake
Stillwater Block
HCP Project Area (Non-Stillwater Block)
DNRC Land not included in HCP
Private Land
Plum Creek Timber Company
US Forest Service
National Park Service

STILLWATER BLOCK DNRC EXISTING ROADS		ACTIVITY CATEGORY		
		Motorized Public Access	Commercial Forest Management Activity	DNRC Low Intensity Forest Management Activity
Symbol	Road Class – No.	Restriction Type	Restriction Type	Restriction Type
	Open – 170 (Hwy./County)	Open Year-Round	Open Year-Round	Open Year-Round
	Open – 190 (Forest Road)	Open Year-Round	Open Year-Round	Open Year-Round
	Restricted – 130	Restricted Seasonally	Restricted Seasonally	Open Year-Round
	Restricted – 120, 121	Closed Year-Round	Open Year-Round	Open Year-Round
SEASONAL RESTRICTIONS				
Symbol	Seasonal Restrictions (Pertaining to "Restricted Seasonally" Restriction Type)			
	Spring Restrictions (April 1-June 30)			

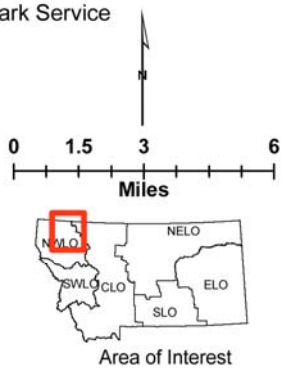


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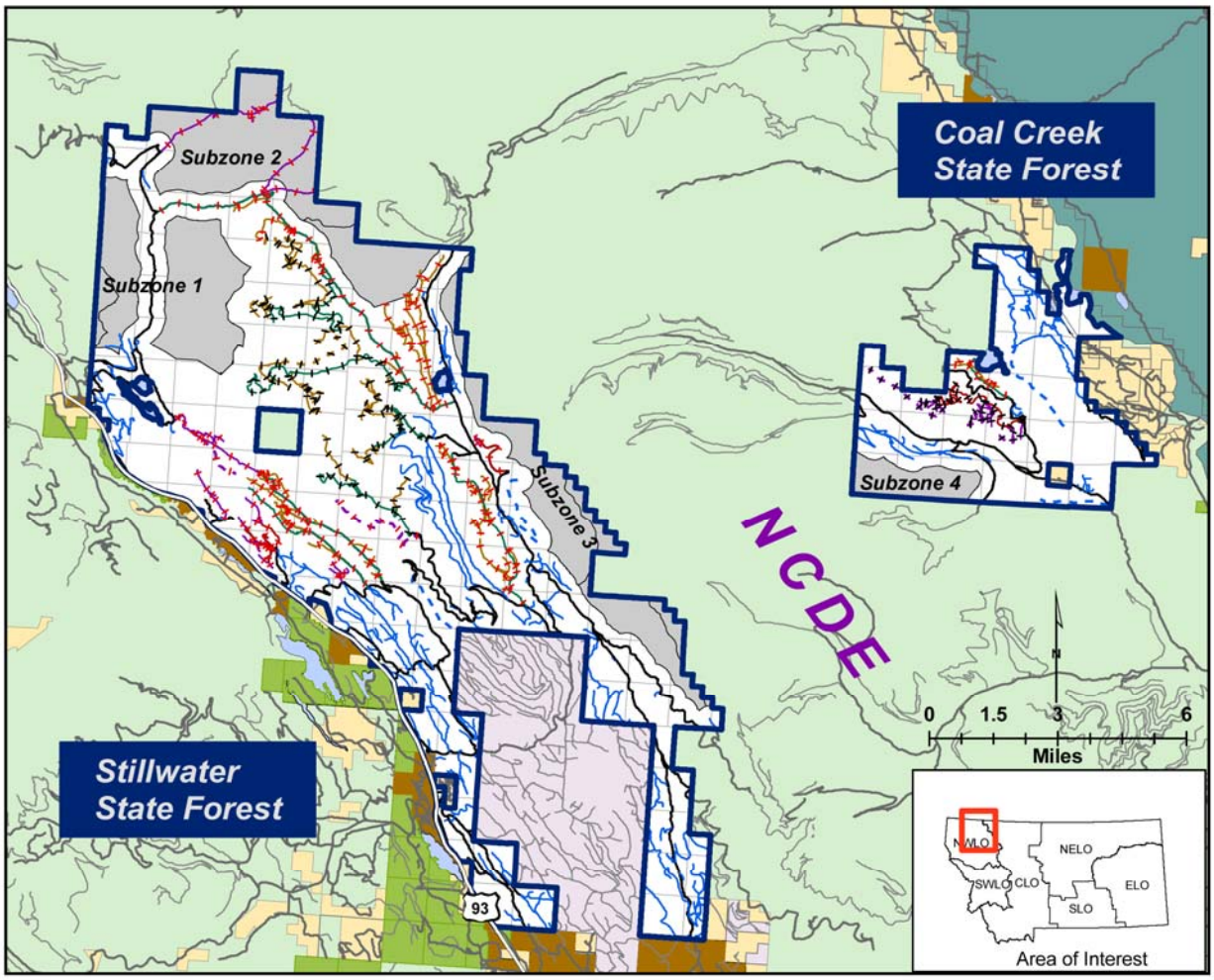
FIGURE D-4B. TRANSPORTATION PLAN FOR THE STILLWATER BLOCK UNDER THE PROPOSED HCP



Restricted Roads (Non-Stillwater Block)
Open Roads (Non-Stillwater Block)
Major Lake
Stillwater Block
Class A Lands
Class B Lands
HCP Project Area (Non-Stillwater Block)
DNRC Land not included in HCP
Private Land
Plum Creek Timber Company
US Forest Service
National Park Service

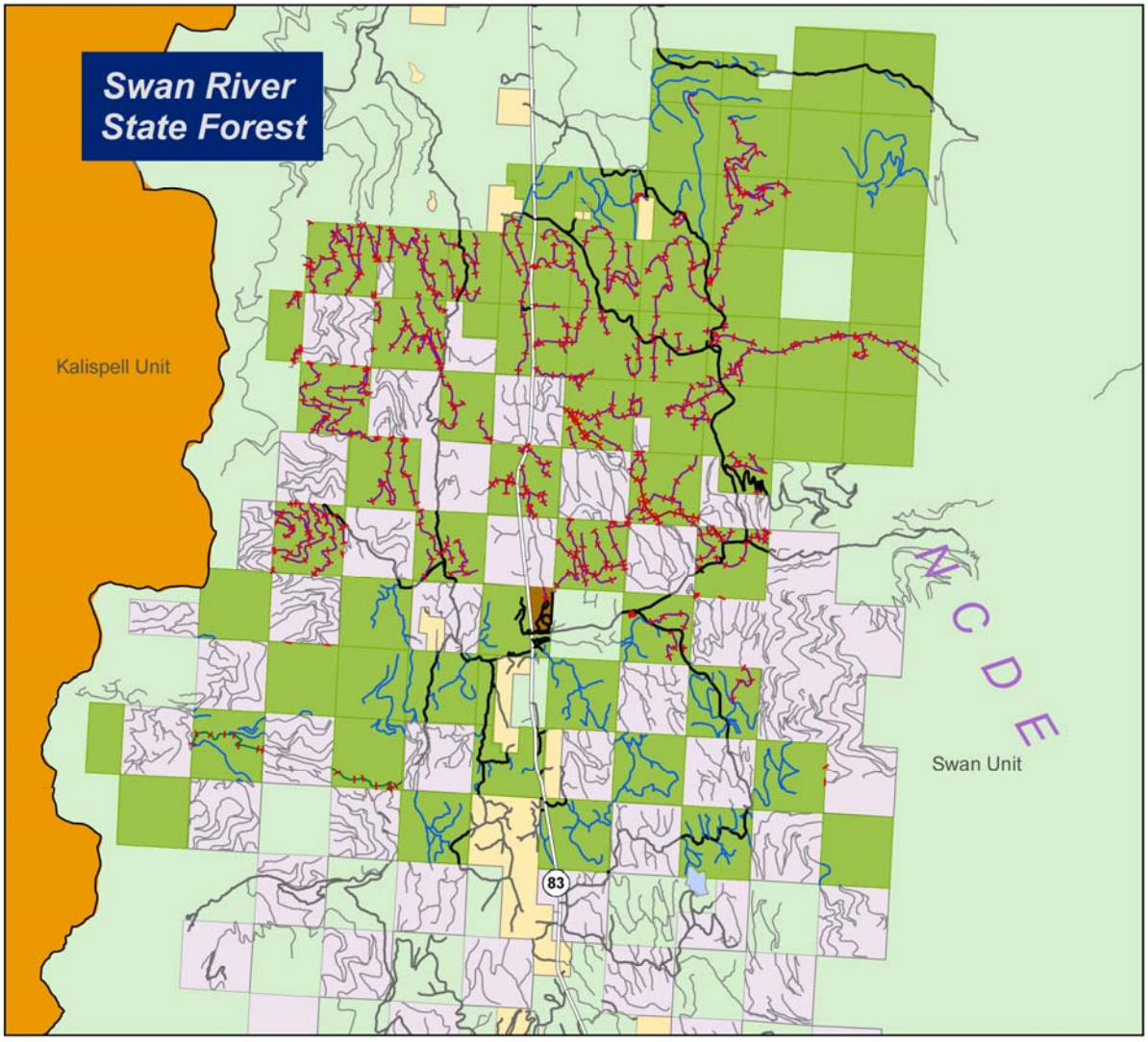
File: B-4B.mxd

STILLWATER BLOCK DNRC EXISTING ROADS		ACTIVITY CATEGORY		
		Motorized Public Access	Commercial Forest Management Activity	DNRC Low Intensity Forest Management Activity
Symbol	Road Class – No.	Restriction Type	Restriction Type	Restriction Type
	Open – 170 (Hwy./County)	Open Year-Round	Open Year-Round	Open Year-Round
	Open – 190 (Forest Road)	Open Year-Round	Open Year-Round	Open Year-Round
	Restricted – 130	Restricted Seasonally	Restricted Seasonally	Open Year-Round
	Restricted – 131	Restricted Seasonally	Restricted Seasonally	Restricted Seasonally
	Restricted – 120, 121	Closed Year-Round	Open Year-Round	Open Year-Round
	Restricted – 127, 128	Closed Year-Round	Restricted Seasonally	Open Year-Round
	Restricted – 125,126	Closed Year-Round	Restricted Seasonally	Restricted Seasonally

STILLWATER BLOCK DNRC PROPOSED ROADS		ACTIVITY CATEGORY		
		Motorized Public Access	Commercial Forest Management Activity	DNRC Low Intensity Forest Management Activity
Symbol	Road Class – No.	Restriction Type	Restriction Type	Restriction Type
	Proposed – 021	Closed Year-Round	Open Year-Round	Open Year-Round
	Proposed – 027	Closed Year-Round	Restricted Seasonally	Open Year-Round
	Proposed – 025	Closed Year-Round	Restricted Seasonally	Restricted Seasonally

SEASONAL RESTRICTIONS	
Symbol	Seasonal Restrictions (Pertaining to "Restricted Seasonally" Restriction Type)
	Spring Restrictions (April 1-June 30)
	Spring and Fall Restrictions (April 1- June 30 AND September 16-November 30)

FIGURE D-5A. EXISTING ROADS IN THE SWAN RIVER STATE FOREST



Restricted Roads (Non-Swan River State Forest)
Open Roads (Non-Swan River State Forest)
Administrative Unit Boundary
HCP Project Area
DNRC Land not included in HCP
Private Land
Plum Creek Timber Co.
US Forest Service
Tribal Lands

SWAN RIVER STATE FOREST DNRC EXISTING ROADS		ACTIVITY CATEGORY		
		Motorized Public Access	Commercial Forest Management Activity	DNRC Low Intensity Forest Management Activity
Symbol	Road Class – No.	Restriction Type	Restriction Type	Restriction Type
	Open – 170 (Hwy./County)	Open Year-Round	Open Year-Round	Open Year-Round
	Open – 190 (Forest Road)	Open Year-Round	Open Year-Round	Open Year-Round
	Restricted – 130	Restricted Seasonally	Restricted Seasonally	Open Year-Round
	Restricted – 131	Restricted Seasonally	Restricted Seasonally	Restricted Seasonally
	Restricted – 120, 121	Closed Year-Round	Open Year-Round	Open Year-Round
	Restricted – 125,126	Closed Year-Round	Restricted Seasonally	Restricted Seasonally
SEASONAL RESTRICTIONS				
Symbol	Seasonal Restrictions (Pertaining to "Restricted Seasonally" Restriction Type)			
	Spring Restrictions (April 1-June 15)			

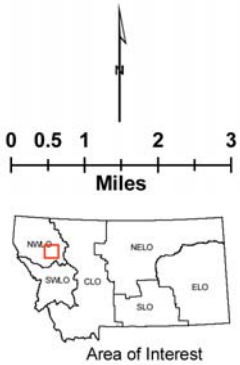


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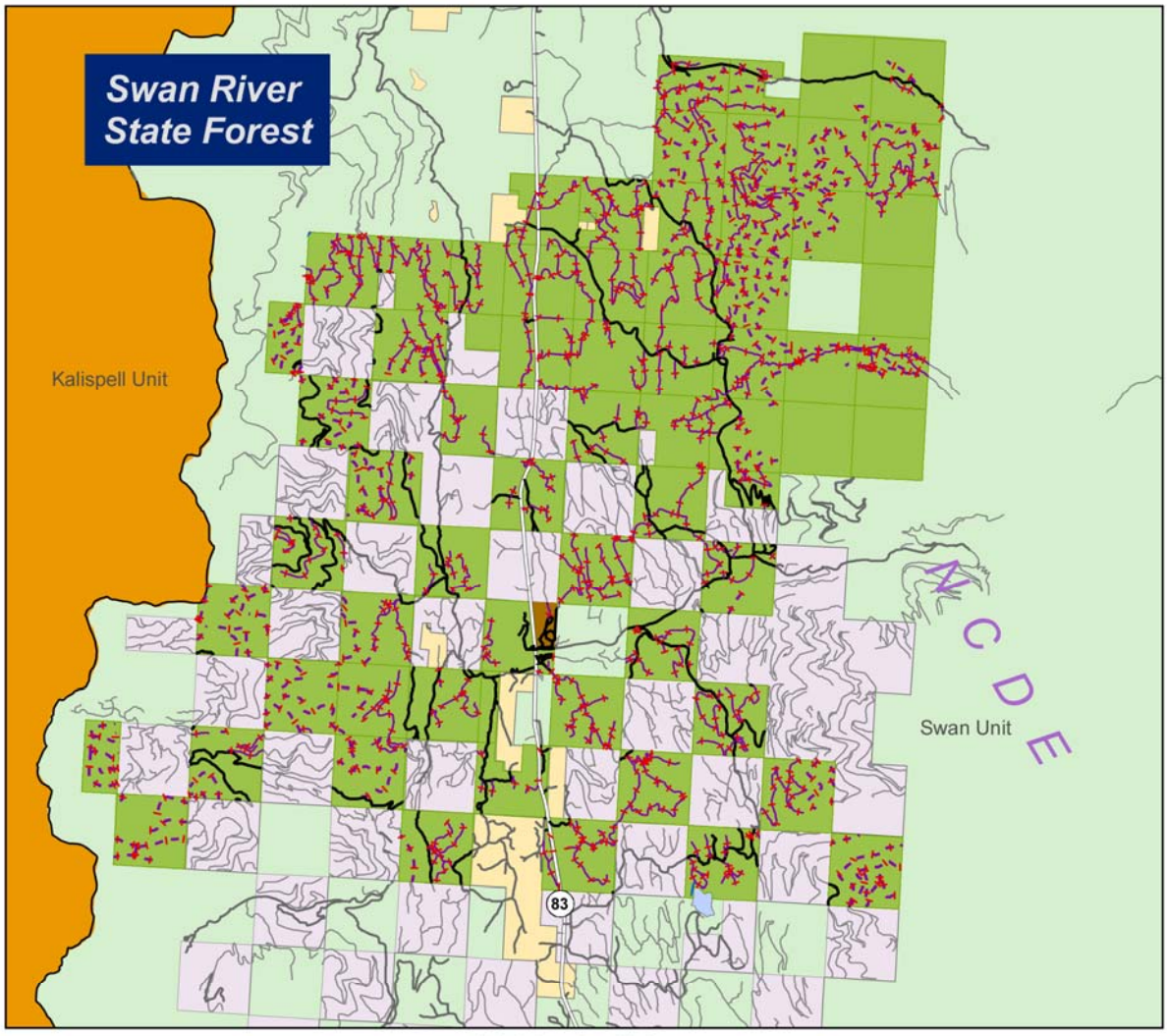
FIGURE D-5B. TRANSPORTATION PLAN FOR THE SWAN RIVER STATE FOREST UNDER THE PROPOSED HCP



Restricted Roads (Non-Swan River State Forest)
Open Roads (Non-Swan River State Forest)
Administrative Unit Boundary
HCP Project Area
DNRC Land not included in HCP
Private Land
Plum Creek Timber Co.
US Forest Service
Tribal Lands

SWAN RIVER STATE FOREST DNRC EXISTING ROADS		ACTIVITY CATEGORY		
		Motorized Public Access	Commercial Forest Management Activity	DNRC Low Intensity Forest Management Activity
Symbol	Road Class – No.	Restriction Type	Restriction Type	Restriction Type
	Open – 170 (Hwy./County)	Open Year-Round	Open Year-Round	Open Year-Round
	Open – 190 (Forest Road)	Open Year-Round	Open Year-Round	Open Year-Round
	Restricted – 120, 121	Closed Year-Round	Open Year-Round	Open Year-Round
	Restricted – 125,126	Closed Year-Round	Restricted Seasonally	Restricted Seasonally
SWAN RIVER STATE FOREST DNRC PROPOSED ROADS		**ACTIVITY CATEGORY**		
		Motorized Public Access	Commercial Forest Management Activity	DNRC Low Intensity Forest Management Activity
Symbol	Road Class – No.	Restriction Type	Restriction Type	Restriction Type
	Proposed – 025	Closed Year-Round	Restricted Seasonally	Restricted Seasonally
SEASONAL RESTRICTIONS				
Symbol	Seasonal Restrictions (Pertaining to "Restricted Seasonally" Restriction Type)			
	Spring Restrictions (April 1-June 15)			

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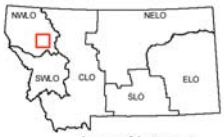
0 0.5 1 2 3

Miles



Area of Interest

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FIGURE D-6A. MAJOR LAKES AND RIVERS IN THE NORTHWESTERN LAND OFFICE

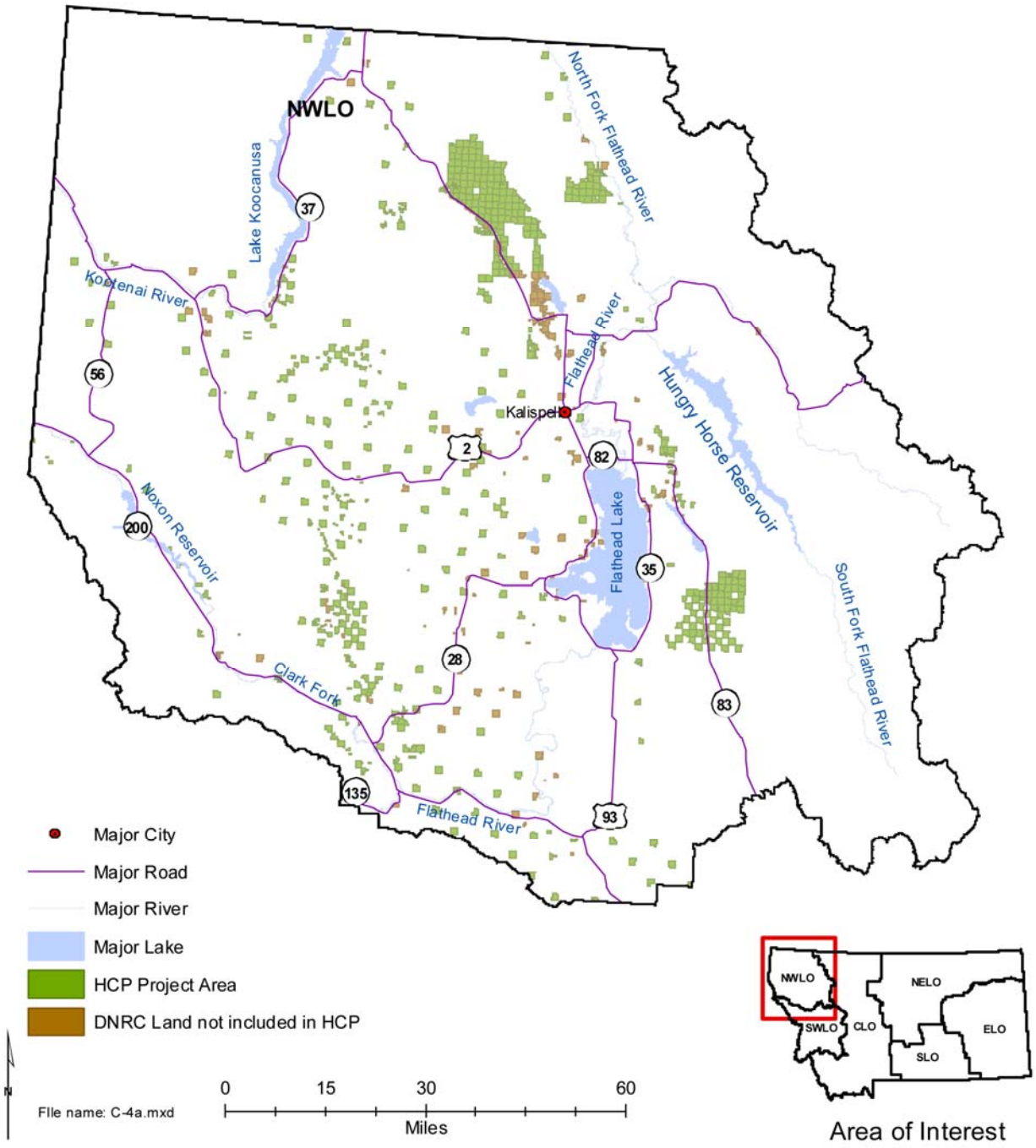


FIGURE D-6B. MAJOR LAKES AND RIVERS IN THE SOUTHWESTERN LAND OFFICE

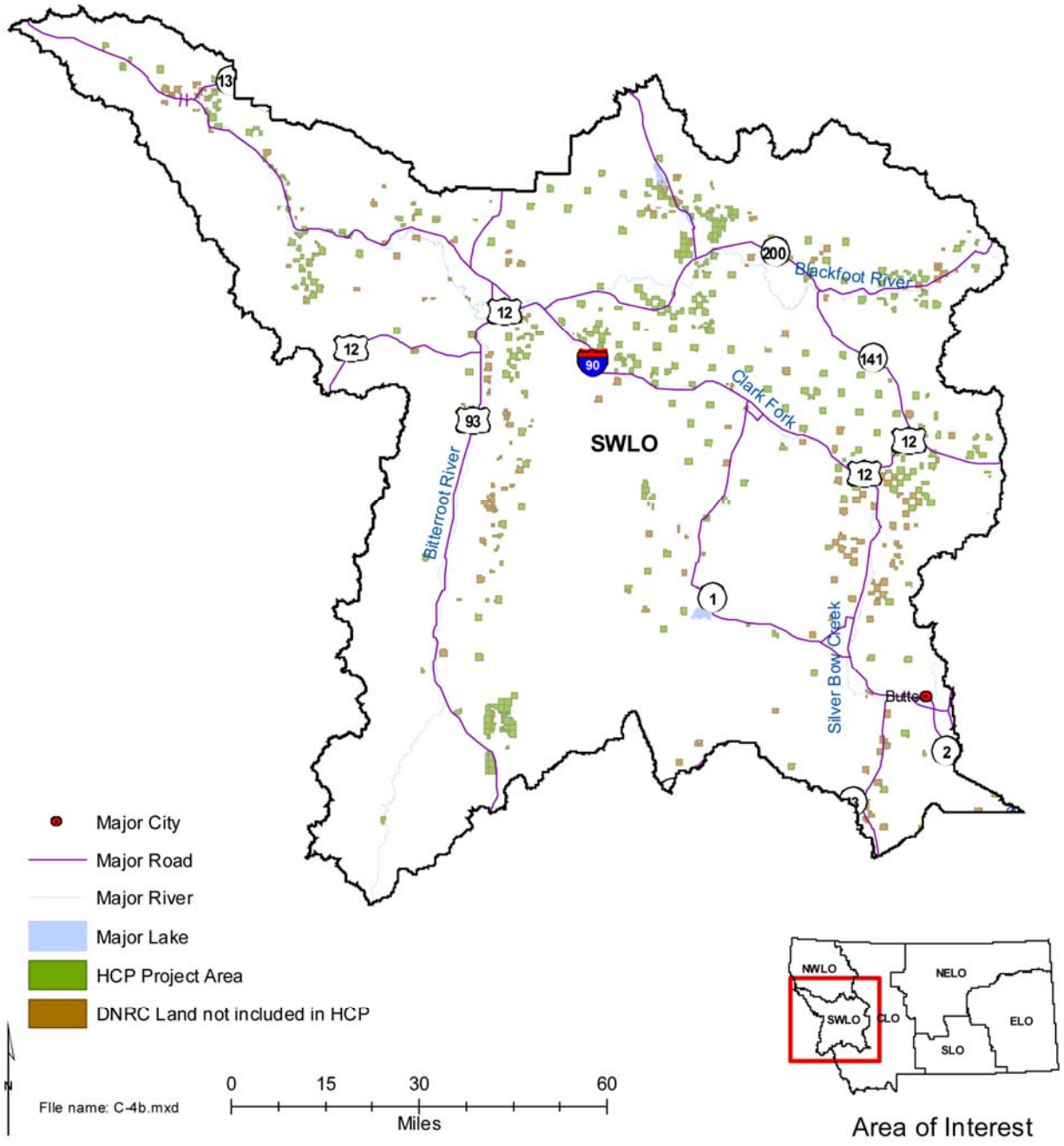


FIGURE D-6C. MAJOR LAKES AND RIVERS IN THE CENTRAL LAND OFFICE

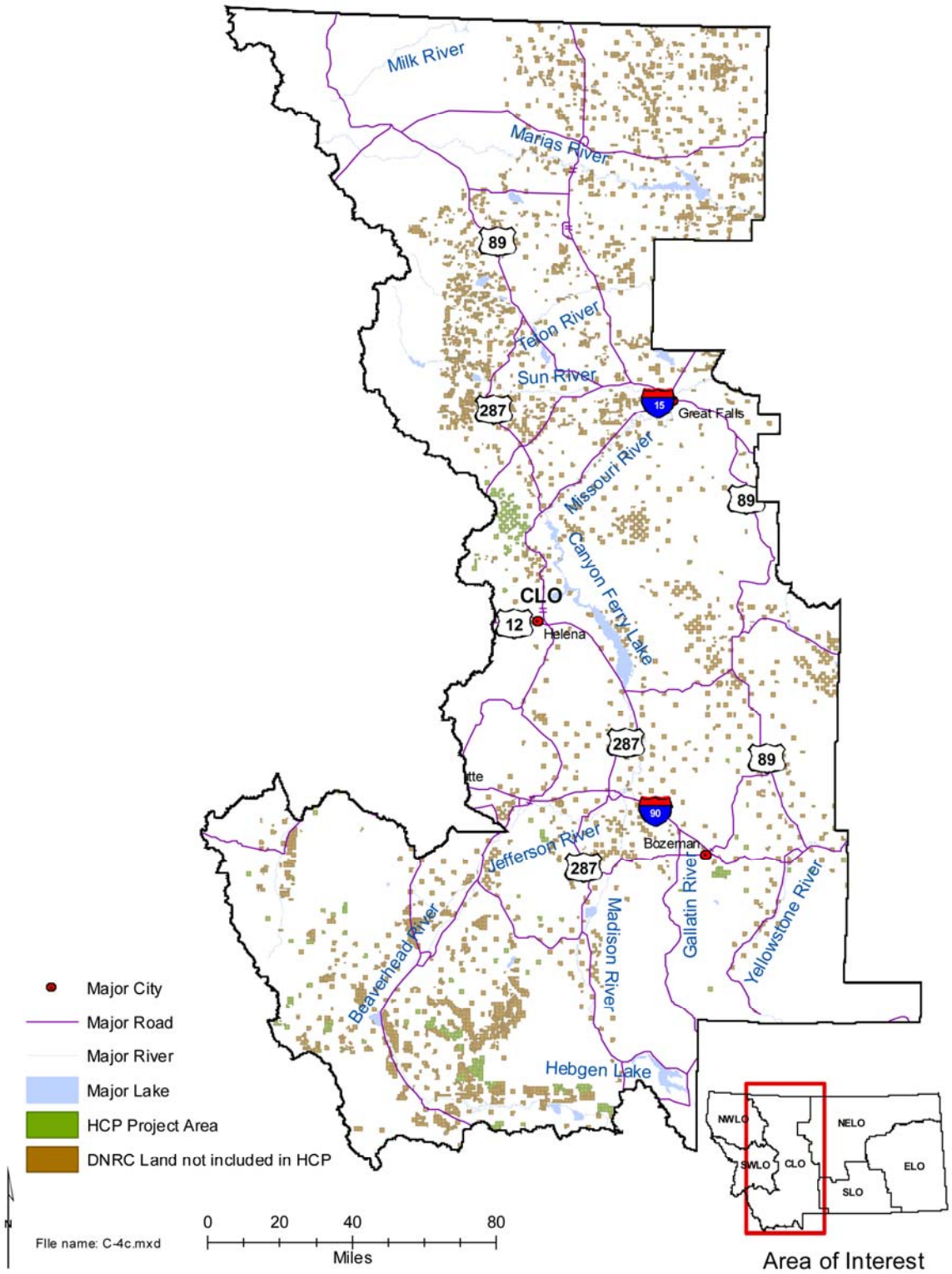


FIGURE D-7. LOCATIONS OF THE AQUATIC ANALYSIS UNITS IN THE PLANNING AREA

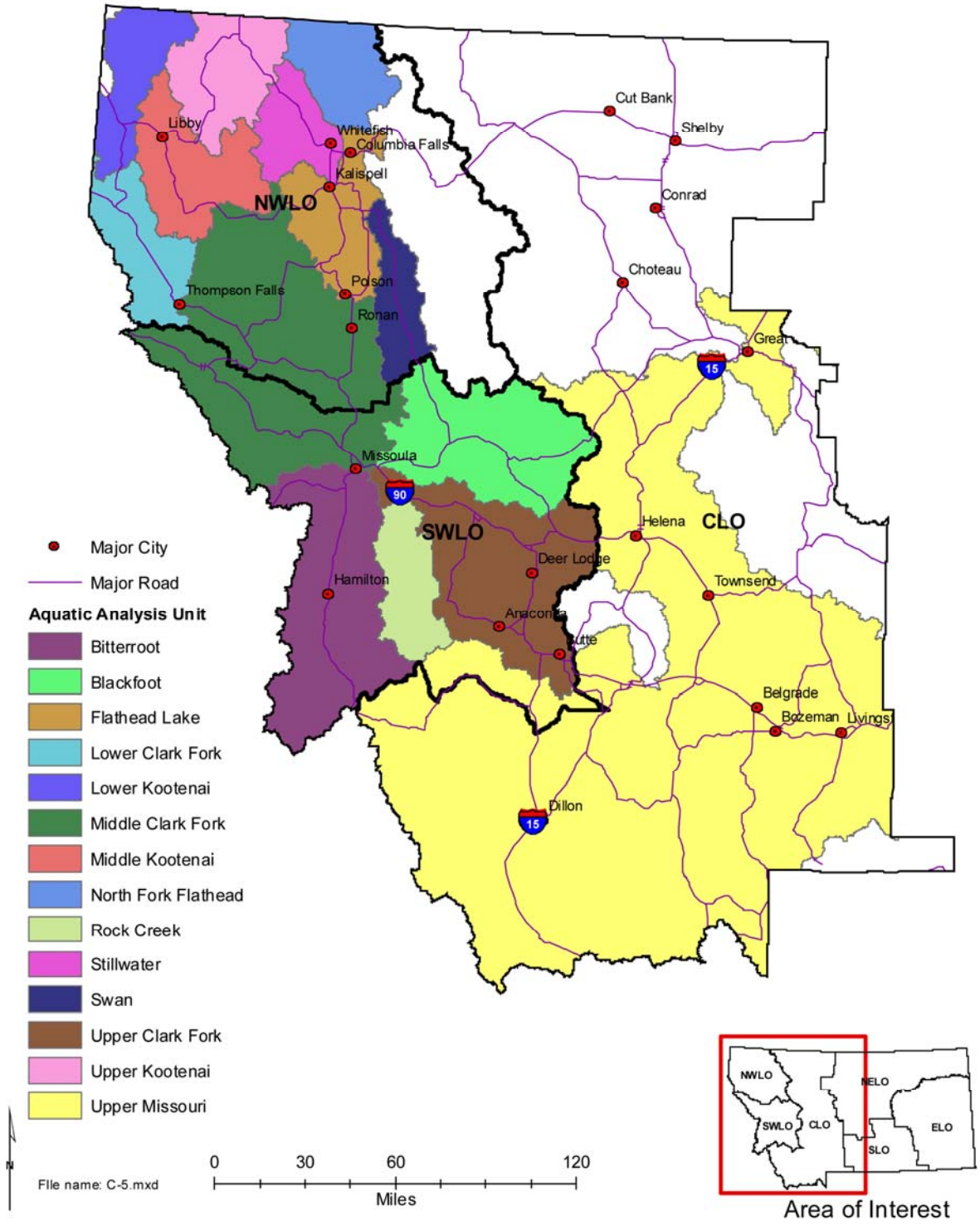


FIGURE D-8A. LOCATIONS OF GRAZING LICENSE PARCELS WITH AND WITHOUT HCP FISH-BEARING STREAMS WITHIN THE NORTHWESTERN LAND OFFICE

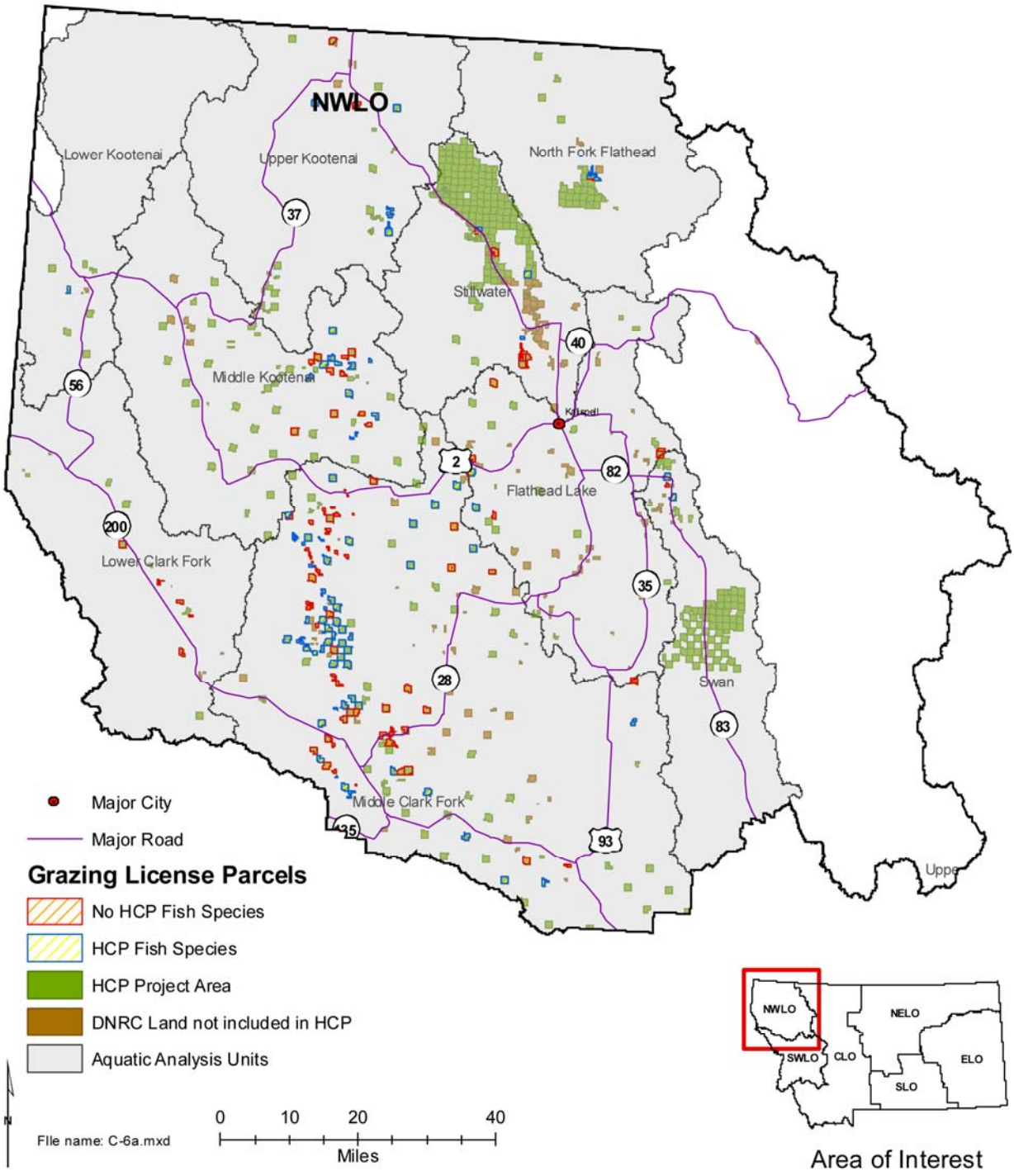


FIGURE D-8B. LOCATIONS OF GRAZING LICENSE PARCELS WITH AND WITHOUT HCP FISH-BEARING STREAMS WITHIN THE SOUTHWESTERN LAND OFFICE

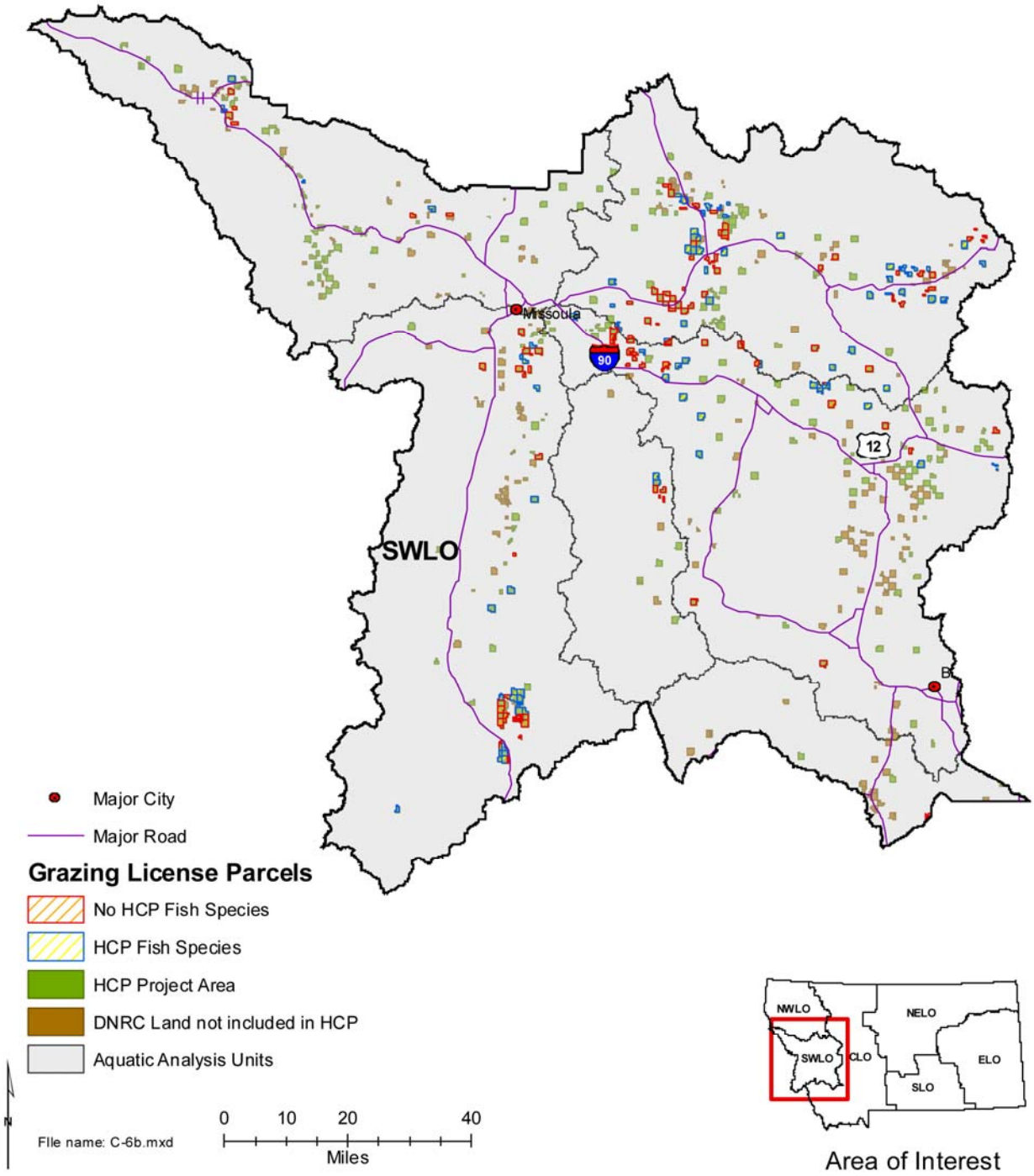
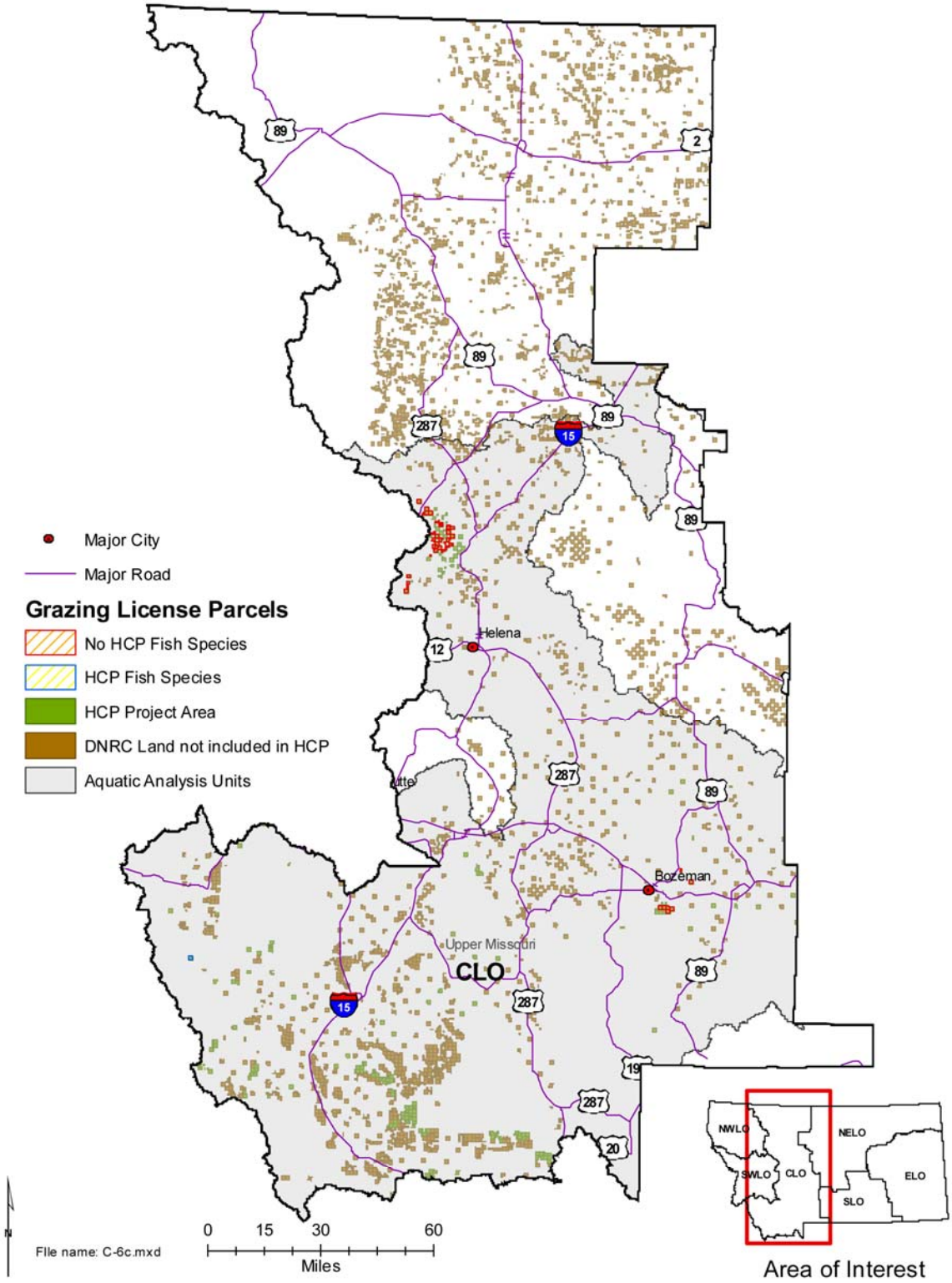


FIGURE D-8C. LOCATION OF GRAZING LICENSE PARCELS WITH AND WITHOUT HCP FISH-BEARING STREAMS WITHIN THE CENTRAL LAND OFFICE



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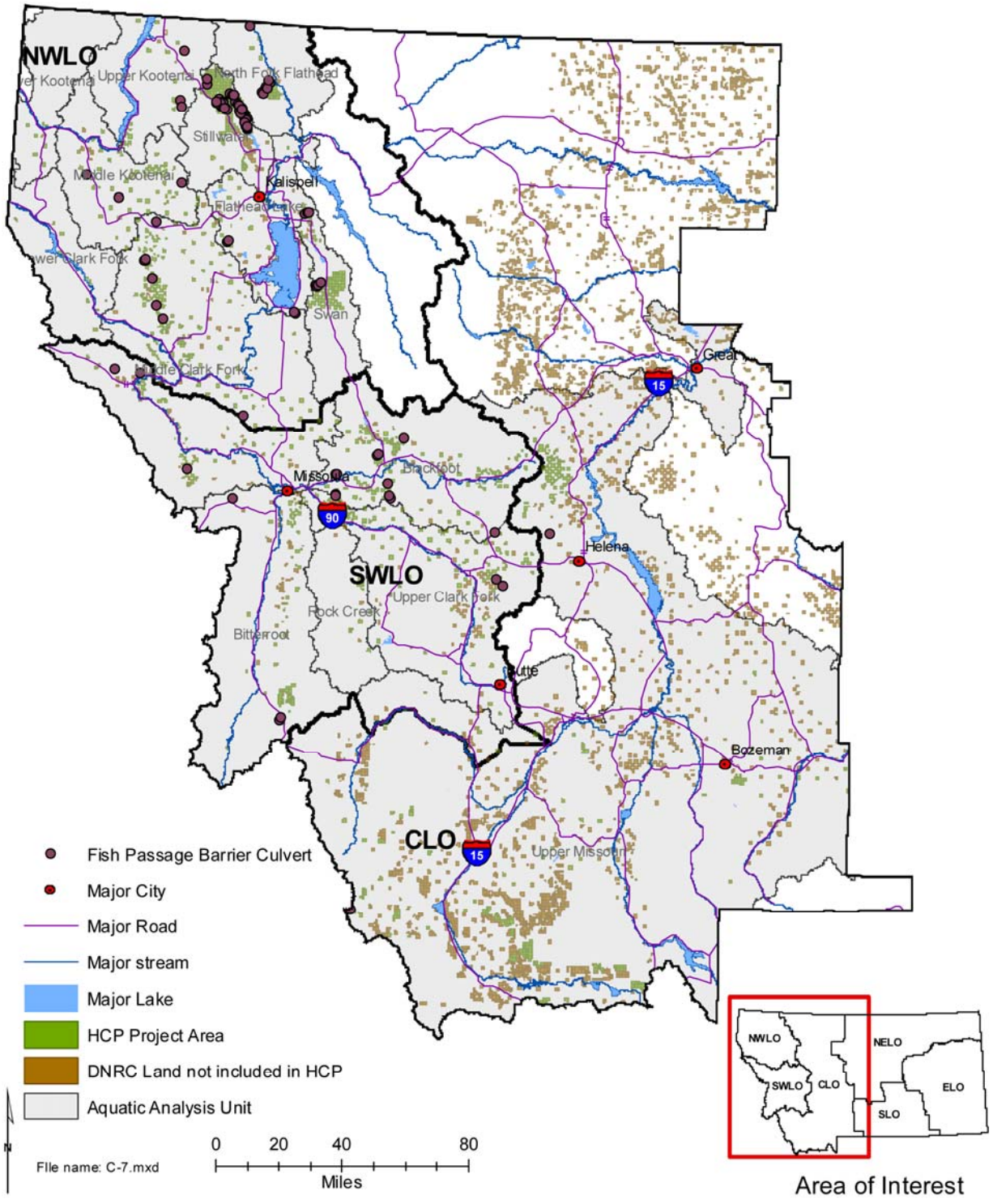

FIGURE D-10A. LOCATION OF SENSITIVE PARCELS IN THE NORTHWESTERN LAND OFFICE

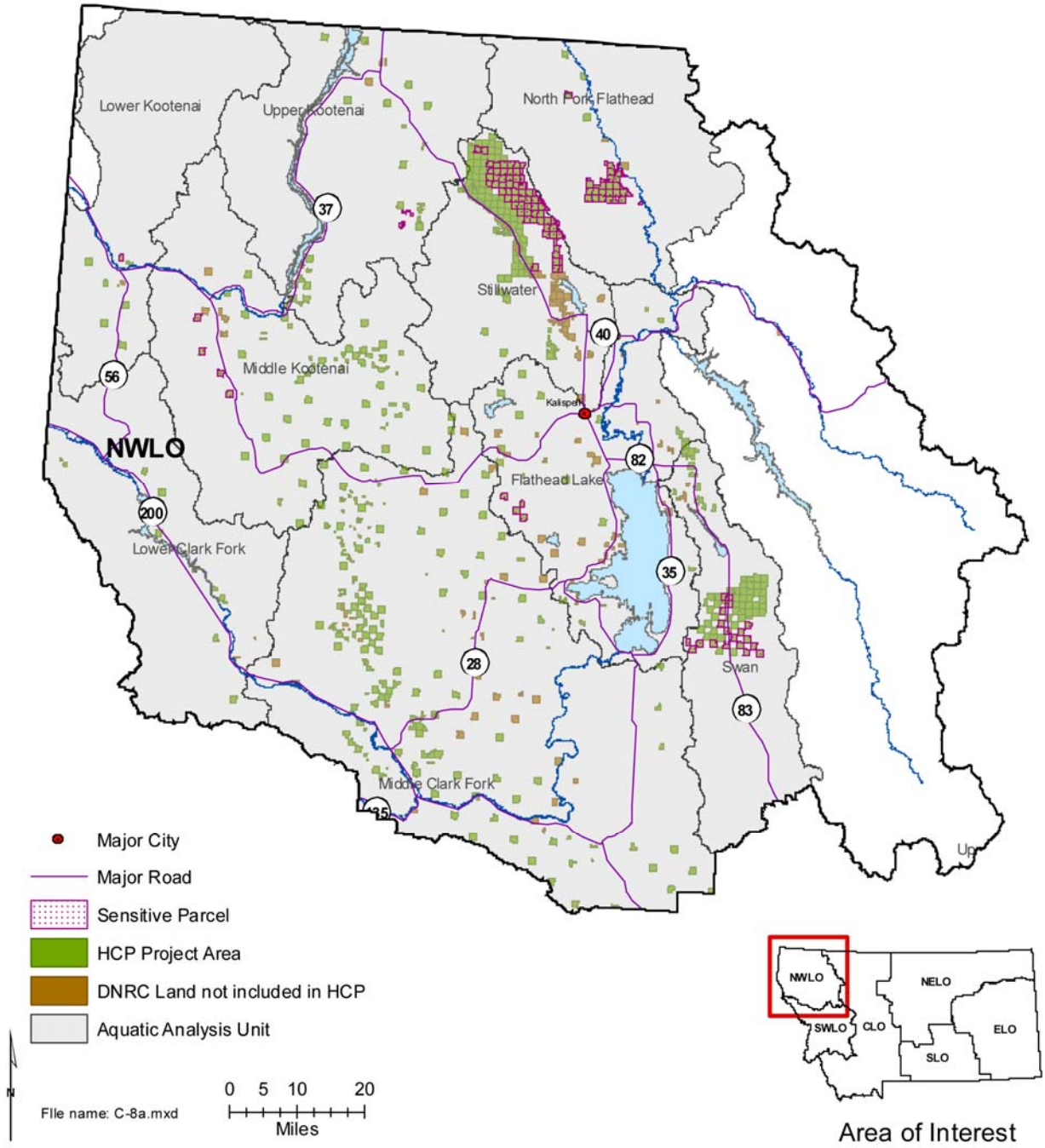

FIGURE D-10B. LOCATION OF SENSITIVE PARCELS IN THE SOUTHWESTERN LAND OFFICE

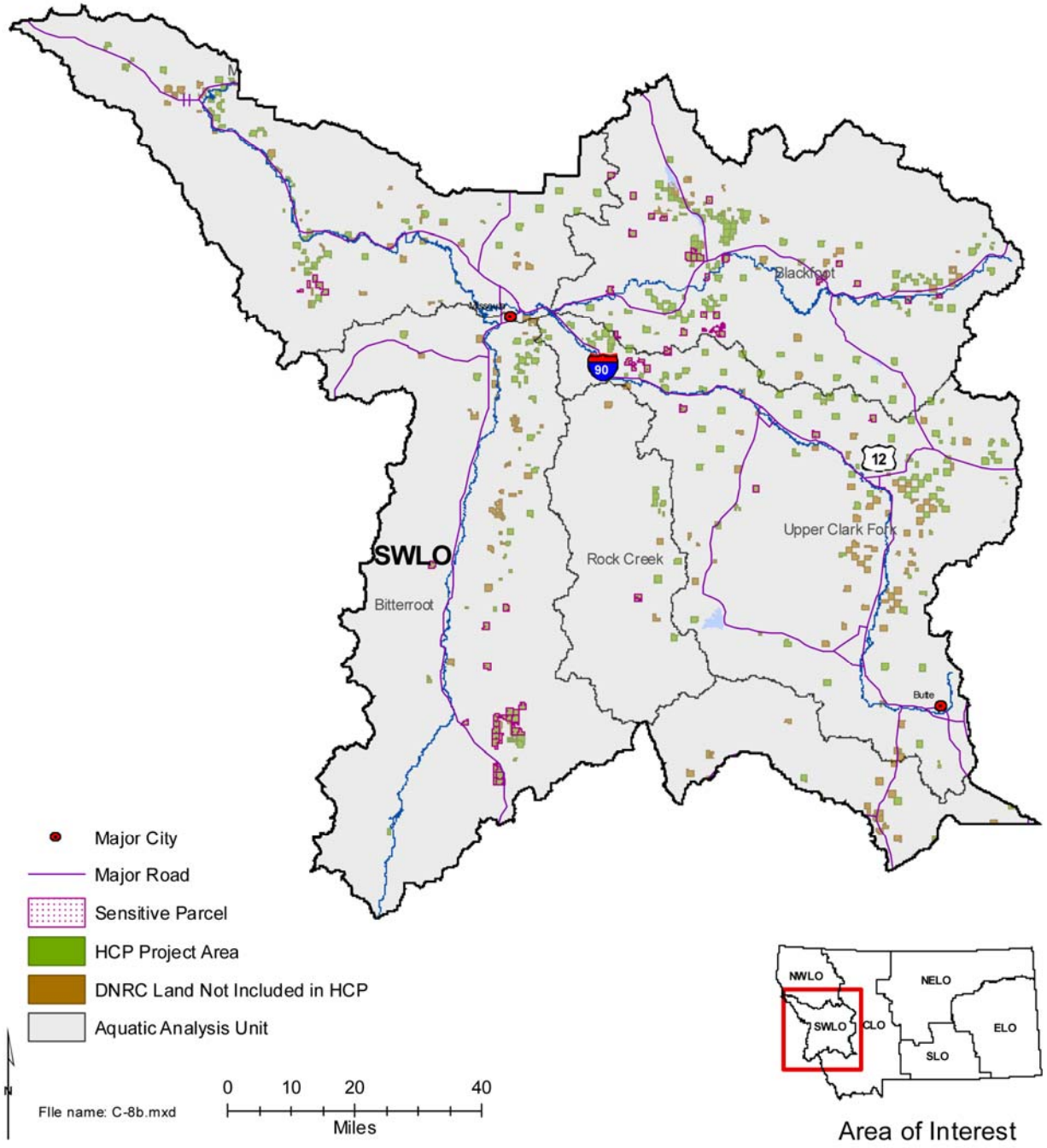

FIGURE D-10C. LOCATION OF SENSITIVE PARCELS IN THE CENTRAL LAND OFFICE

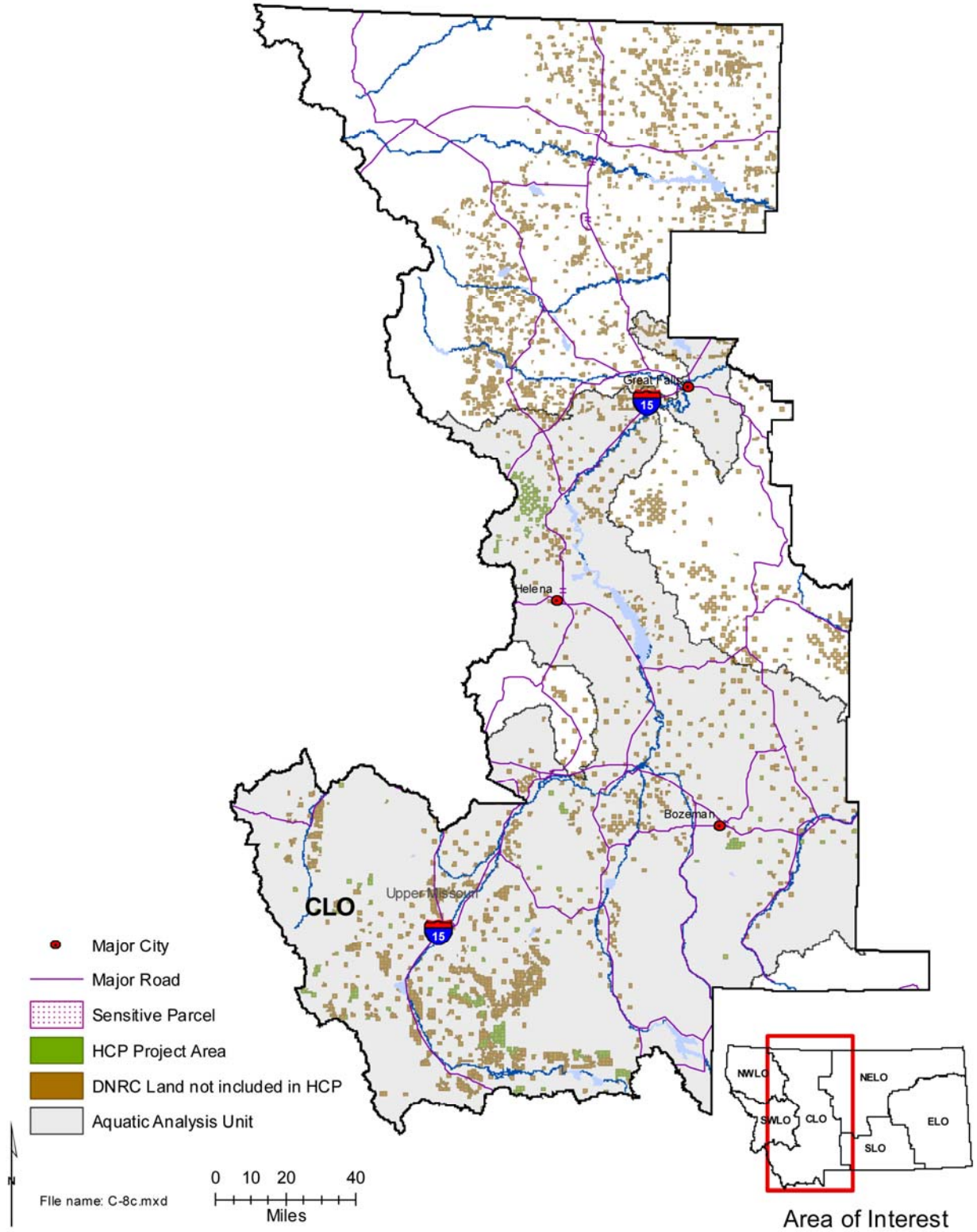

FIGURE D-11. DISTRIBUTION OF COLD-WATER FISH SPECIES WITHIN THE PLANNING AREA

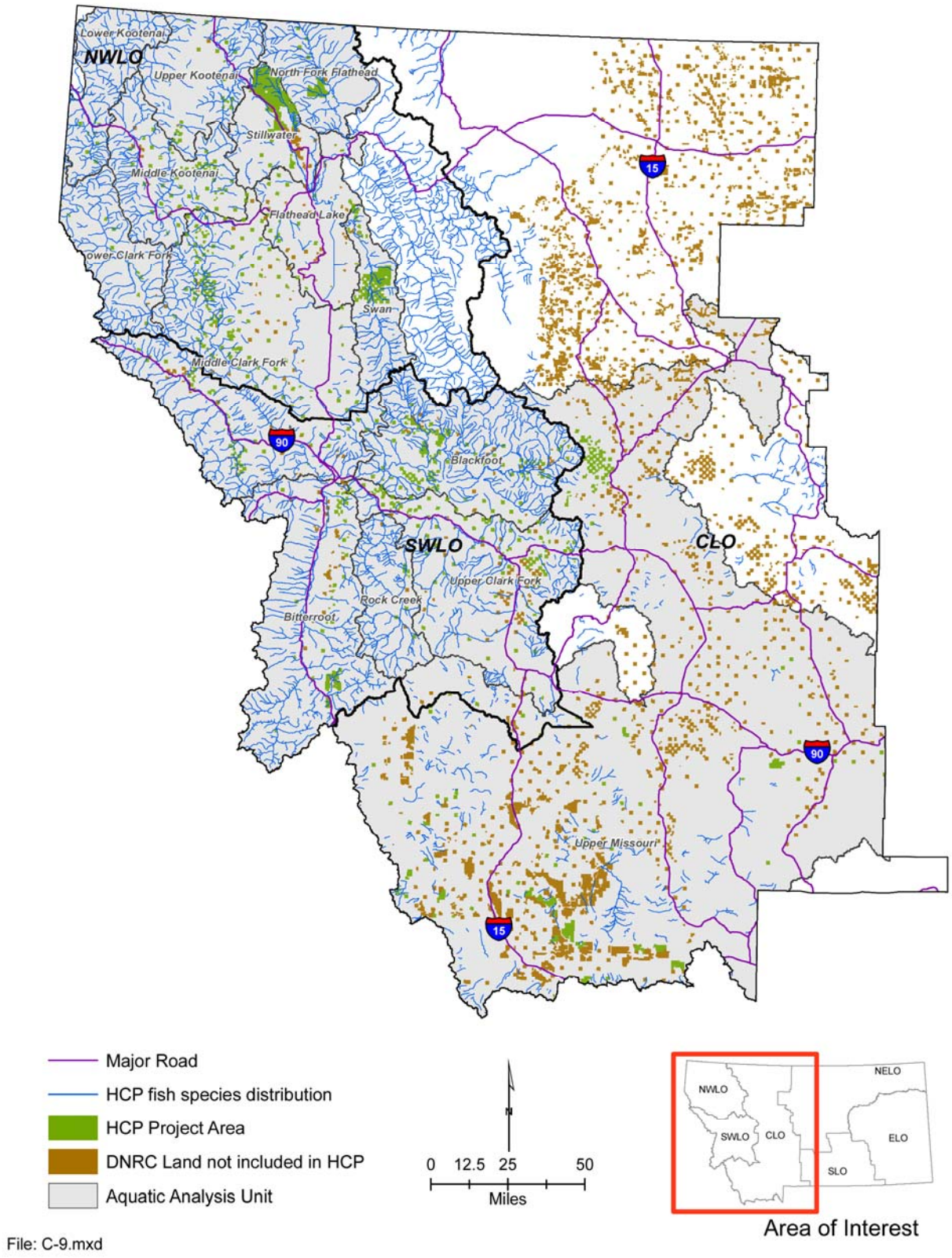

FIGURE D-12A. BULL TROUT DISTRIBUTION WITHIN THE HCP PROJECT AREA BY AQUATIC ANALYSIS UNIT FOR THE NORTHWESTERN LAND OFFICE

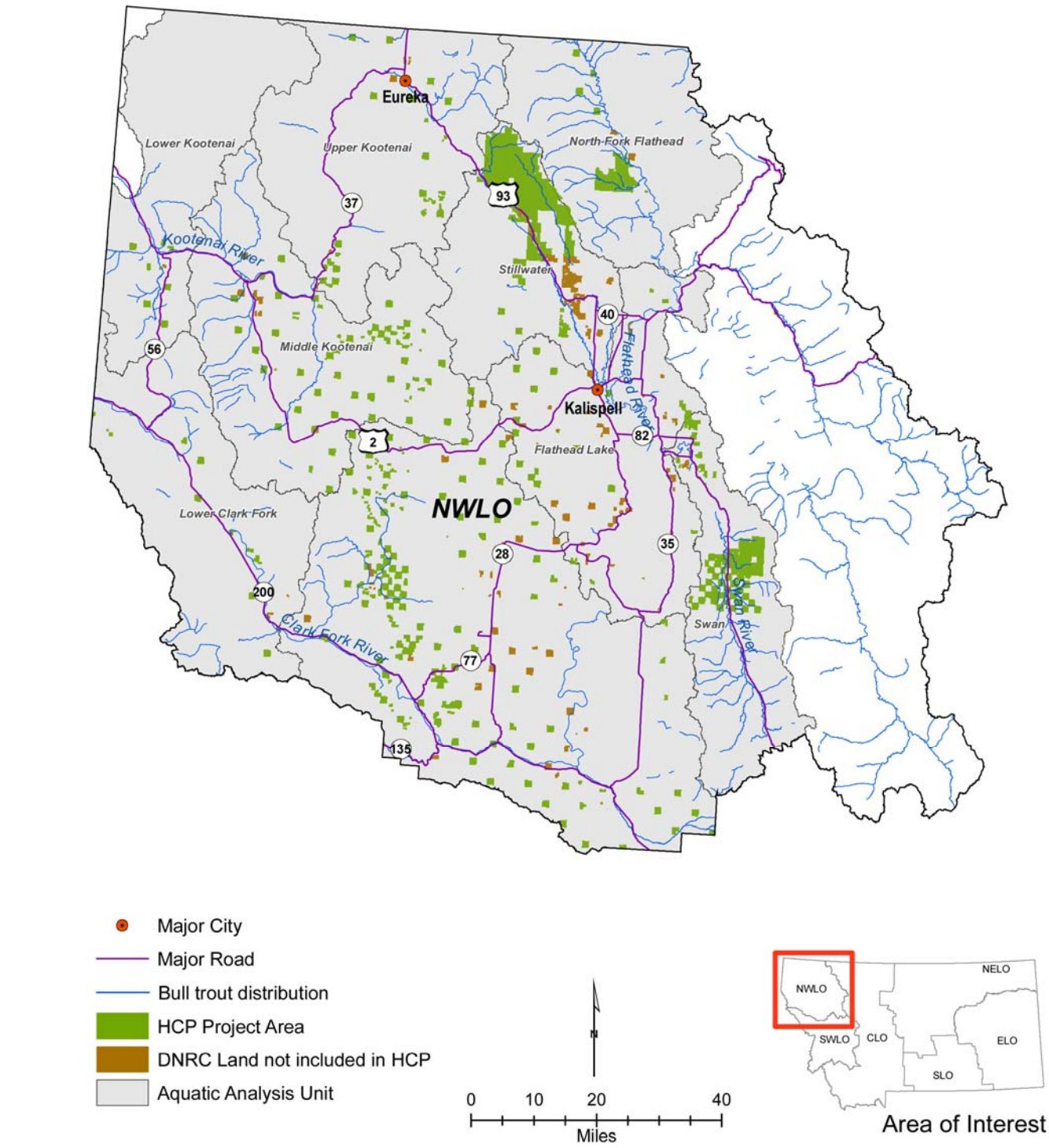

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FIGURE D-12B. BULL TROUT DISTRIBUTION WITHIN THE HCP PROJECT AREA BY AQUATIC ANALYSIS UNIT FOR THE SOUTHWESTERN LAND OFFICE

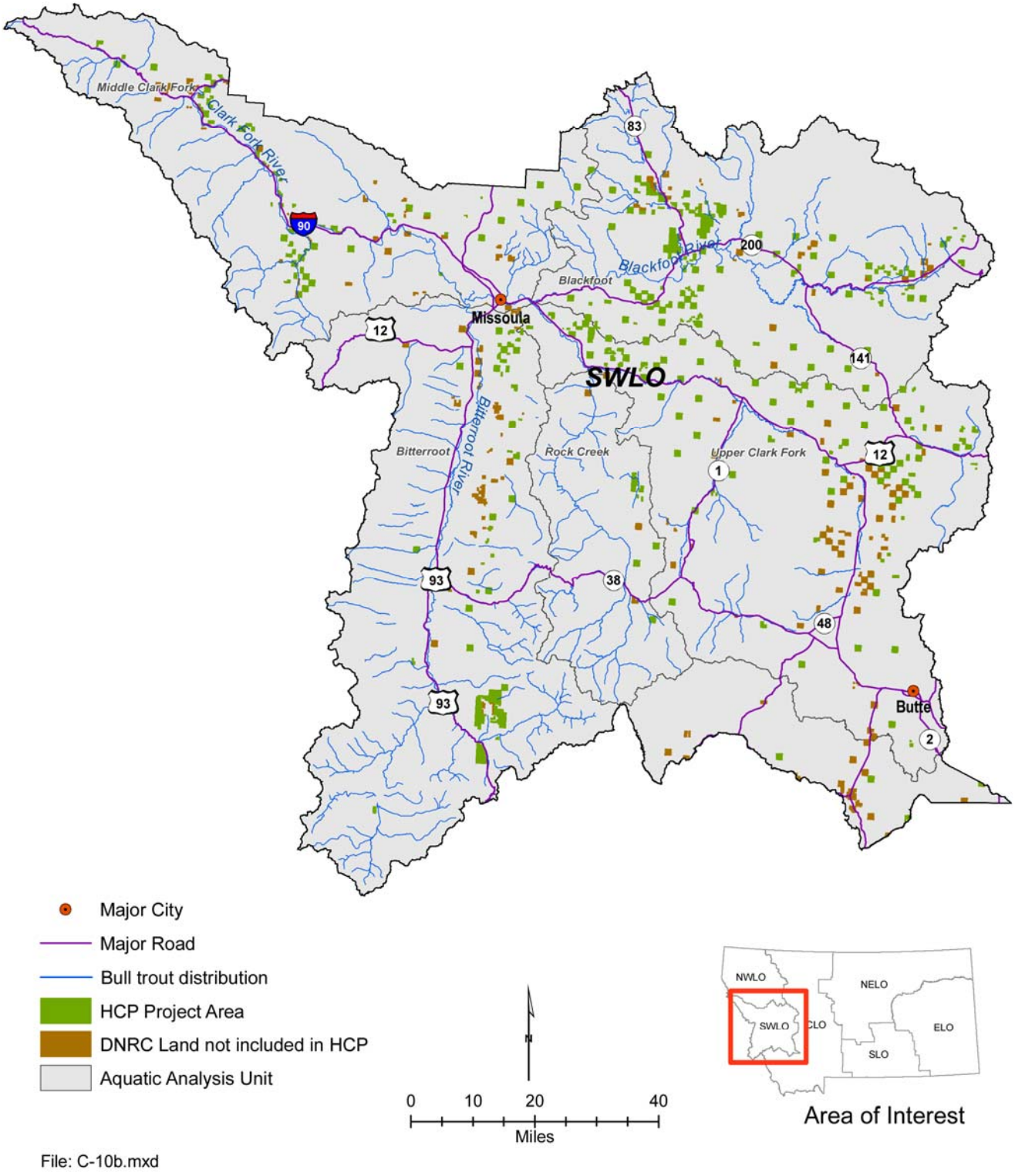


FIGURE D-12C. BULL TROUT DISTRIBUTION WITHIN THE HCP PROJECT AREA BY AQUATIC ANALYSIS UNIT FOR THE CENTRAL LAND OFFICE

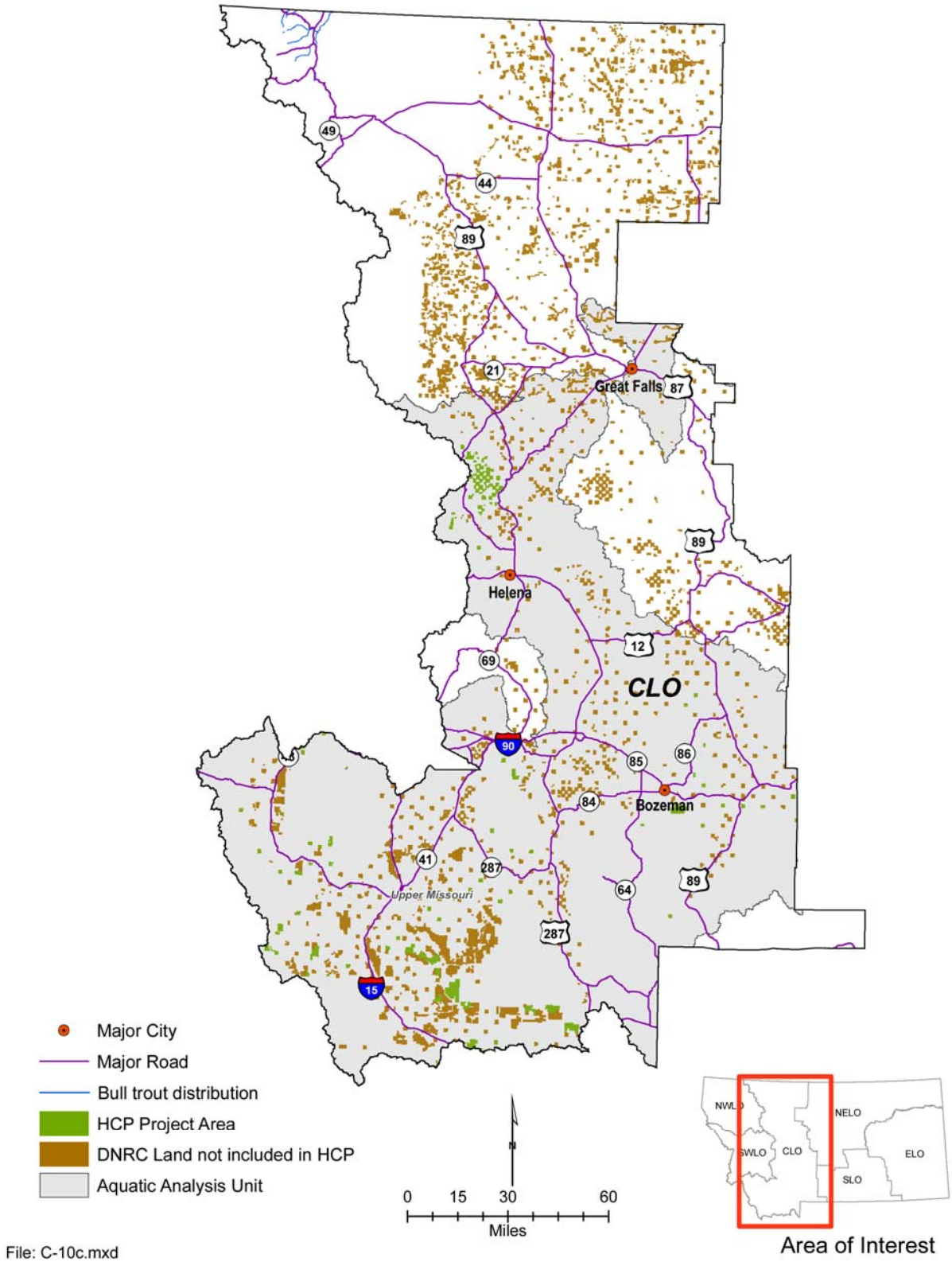


FIGURE D-13. LOCATION OF BULL TROUT CORE AREAS WITHIN THE HCP PROJECT AREA

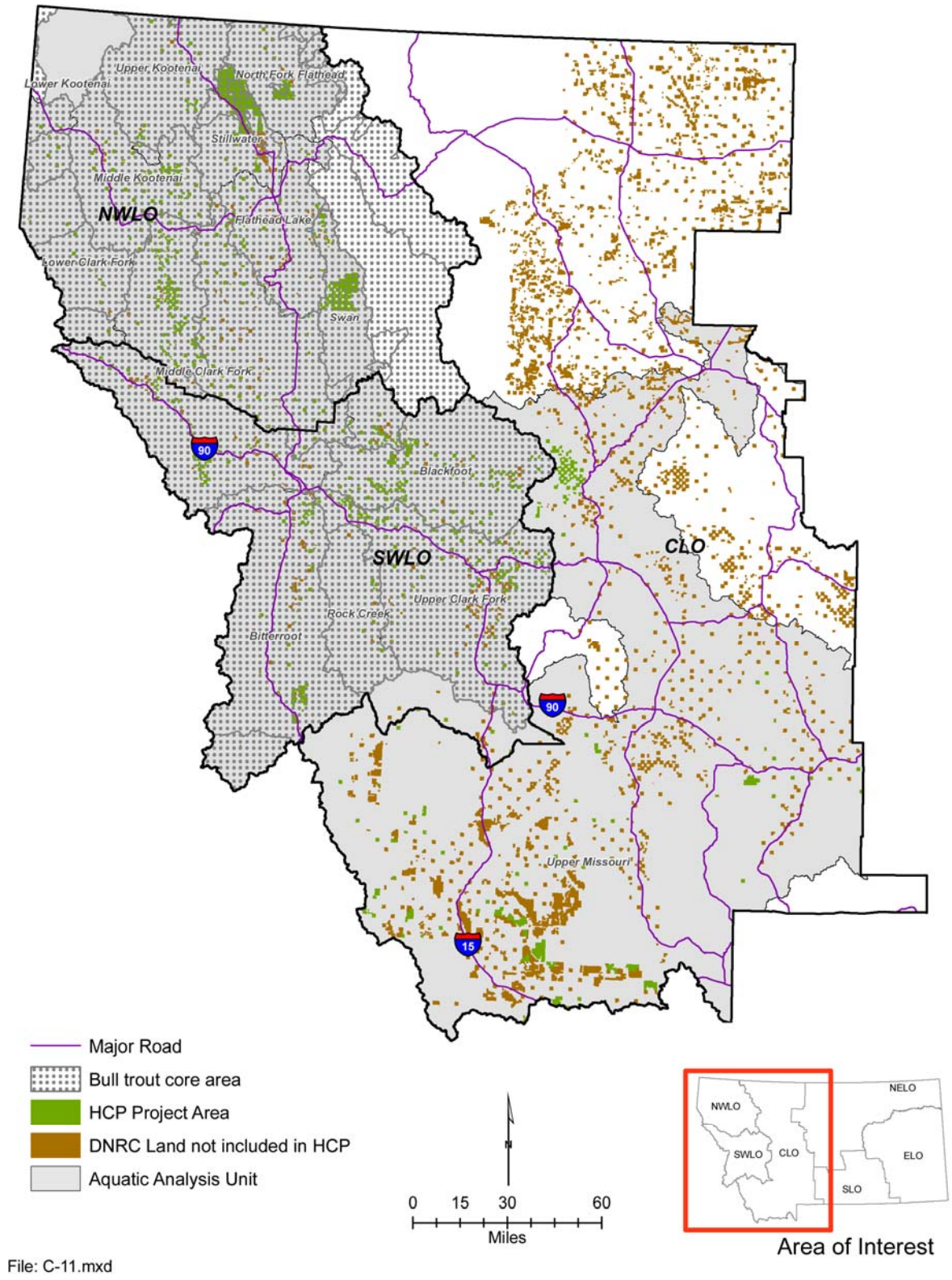


FIGURE D-14. LOCATION OF BULL TROUT CRITICAL HABITAT WITHIN THE HCP PROJECT AREA

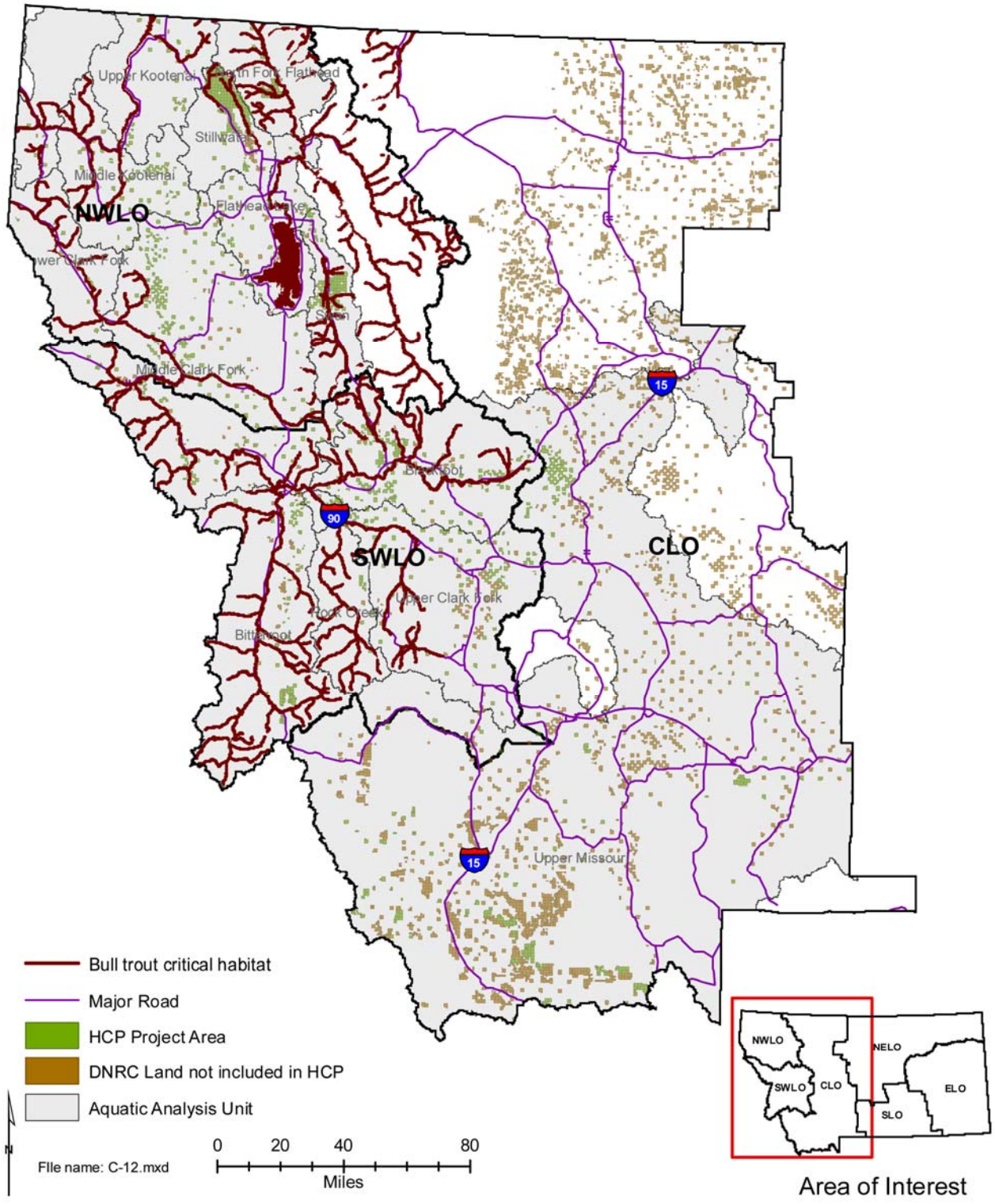


FIGURE D-15A. WESTSLOPE CUTTHROAT TROUT DISTRIBUTION BY AQUATIC ANALYSIS UNIT IN THE NORTHWESTERN LAND OFFICE

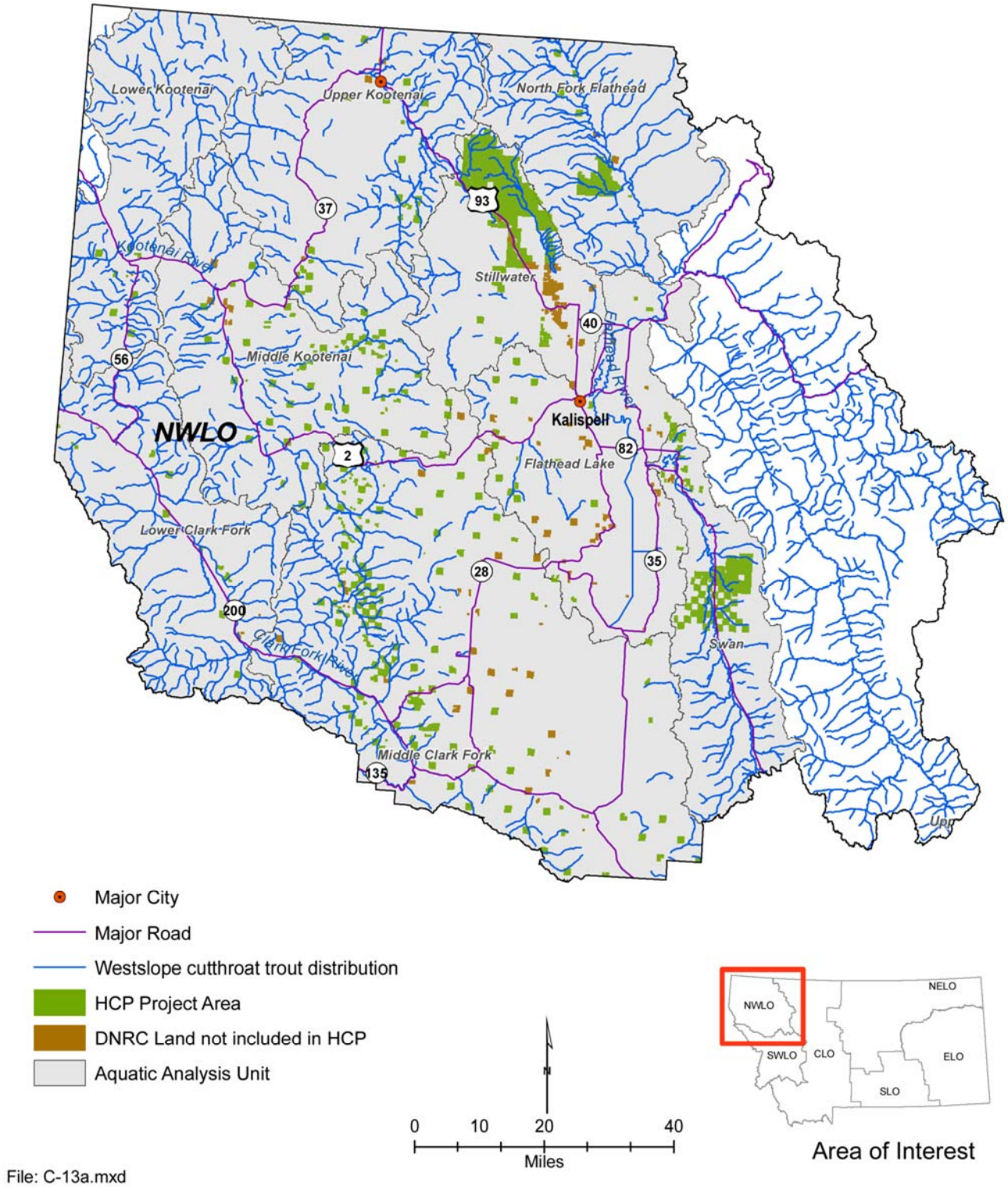


FIGURE D-15B. WESTSLOPE CUTTHROAT TROUT DISTRIBUTION BY AQUATIC ANALYSIS UNIT IN THE SOUTHWESTERN LAND OFFICE

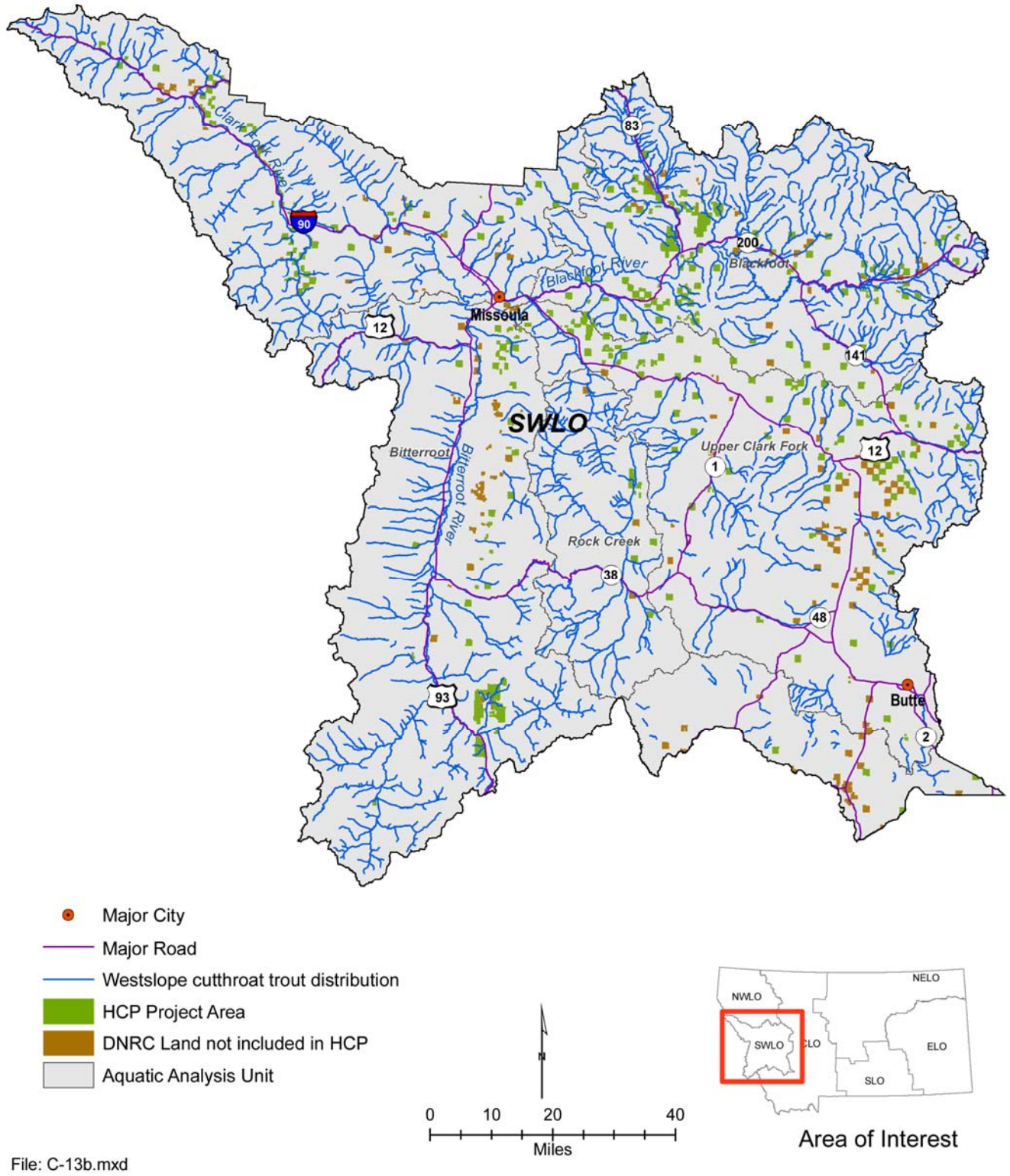


FIGURE D-15C. WESTSLOPE CUTTHROAT TROUT DISTRIBUTION BY AQUATIC ANALYSIS UNIT IN THE CENTRAL LAND OFFICE

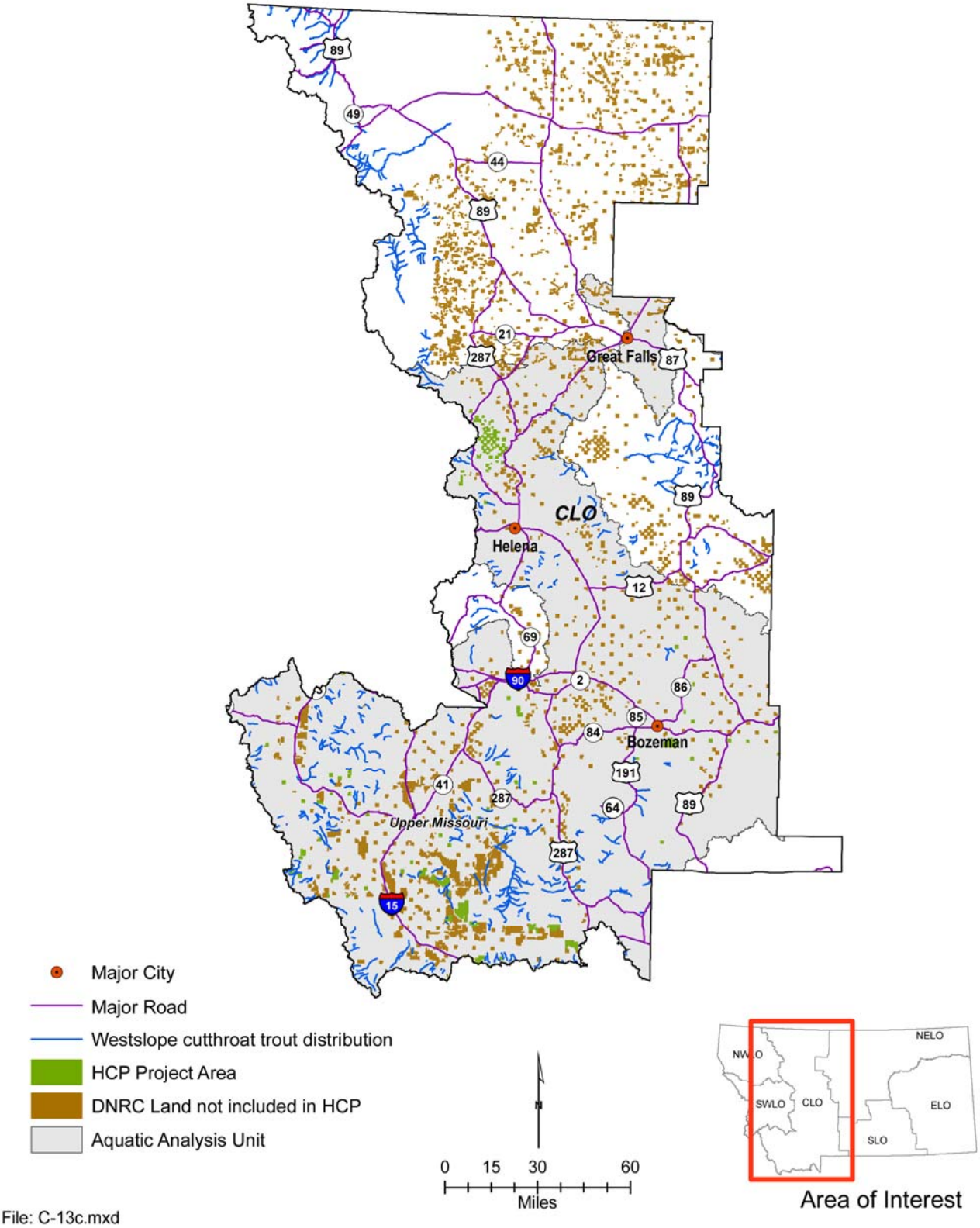


FIGURE D-16. COLUMBIA REDBAND TROUT DISTRIBUTION BY AQUATIC ANALYSIS UNIT IN THE NORTHWESTERN LAND OFFICE

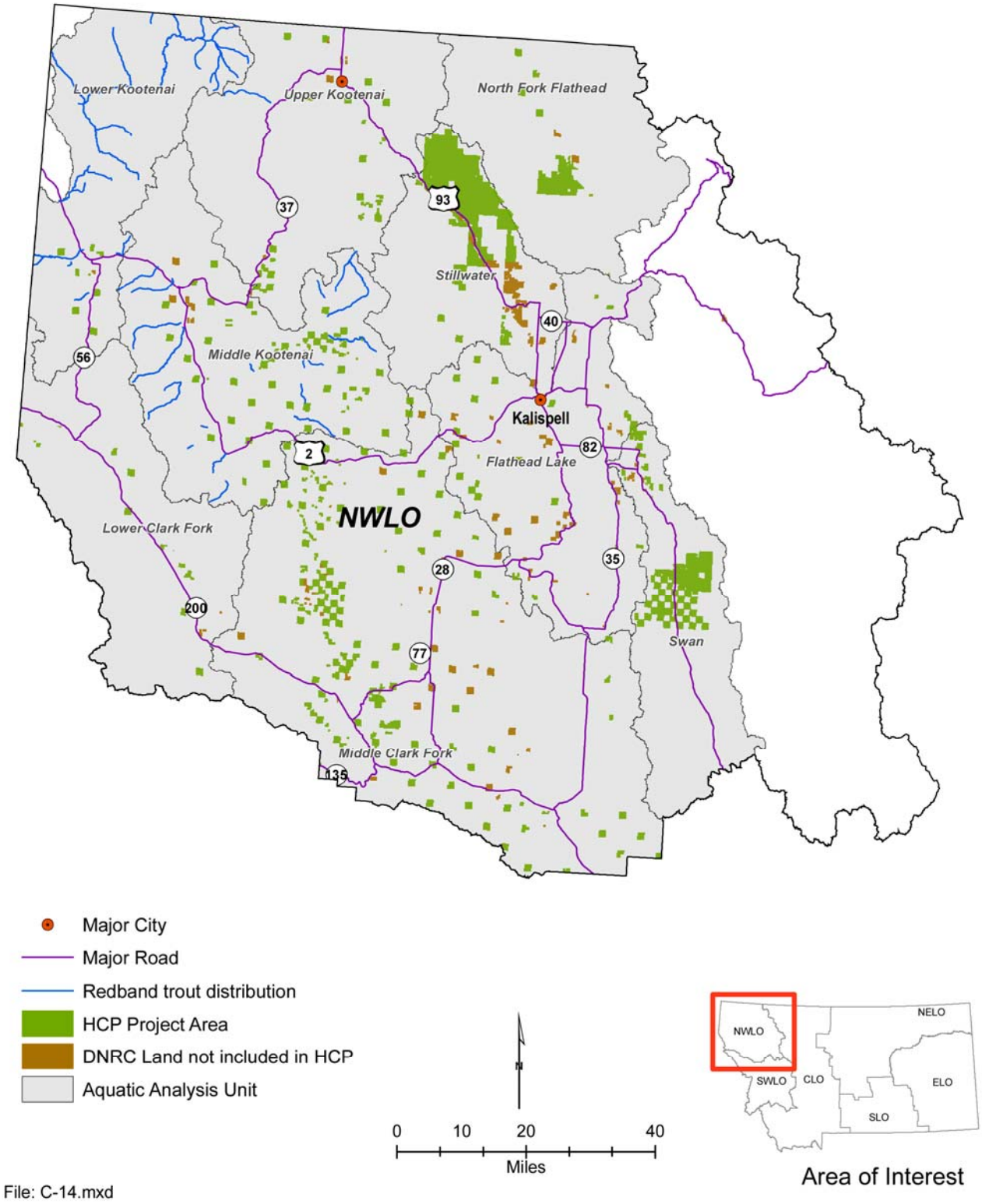


FIGURE D-17. GRIZZLY BEAR DISTRIBUTION IN WESTERN MONTANA

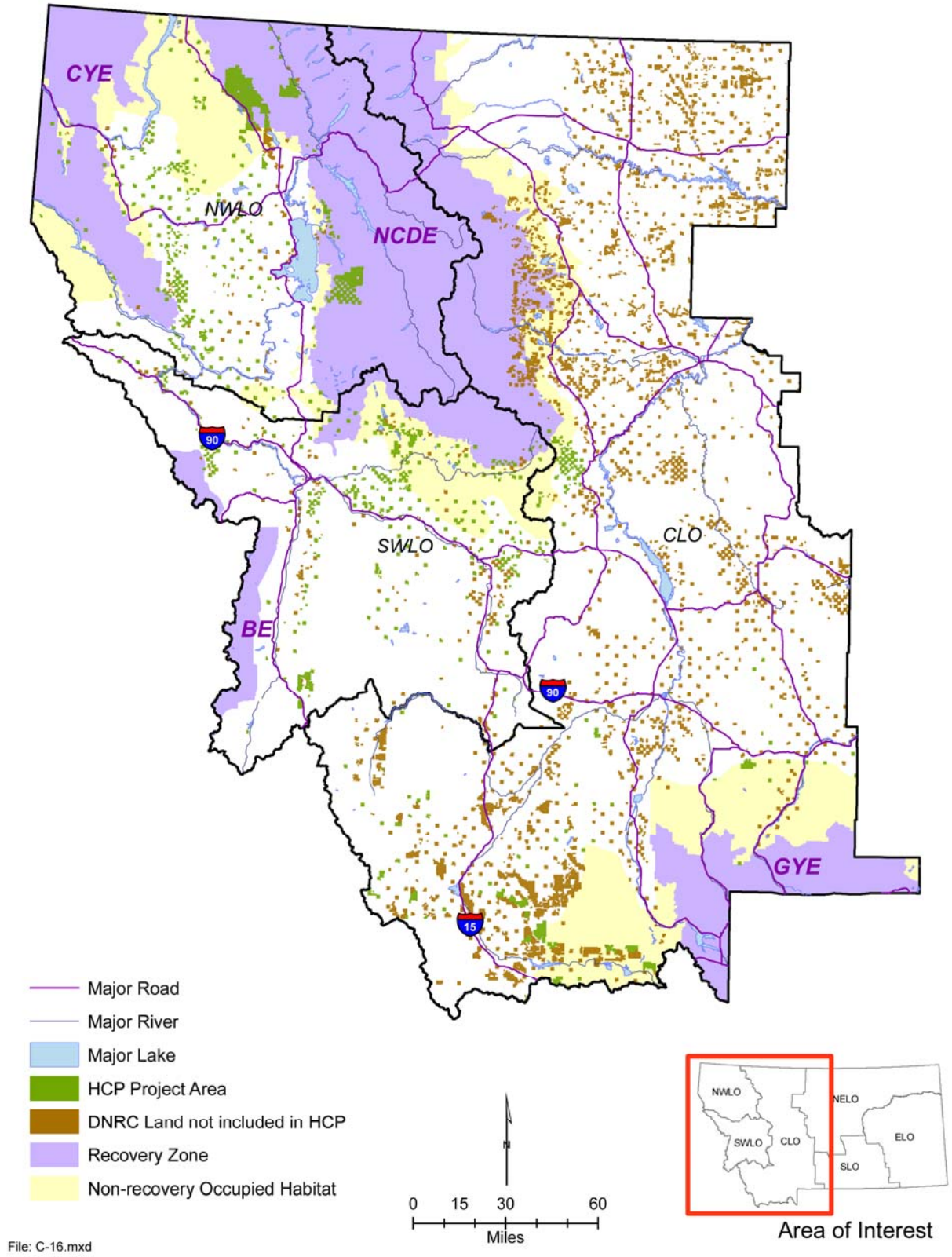


FIGURE D-18A. WILDLIFE LINKAGE ZONES IN THE PLANNING AREA AND HCP PROJECT AREA WITHIN THE NORTHWESTERN LAND OFFICE

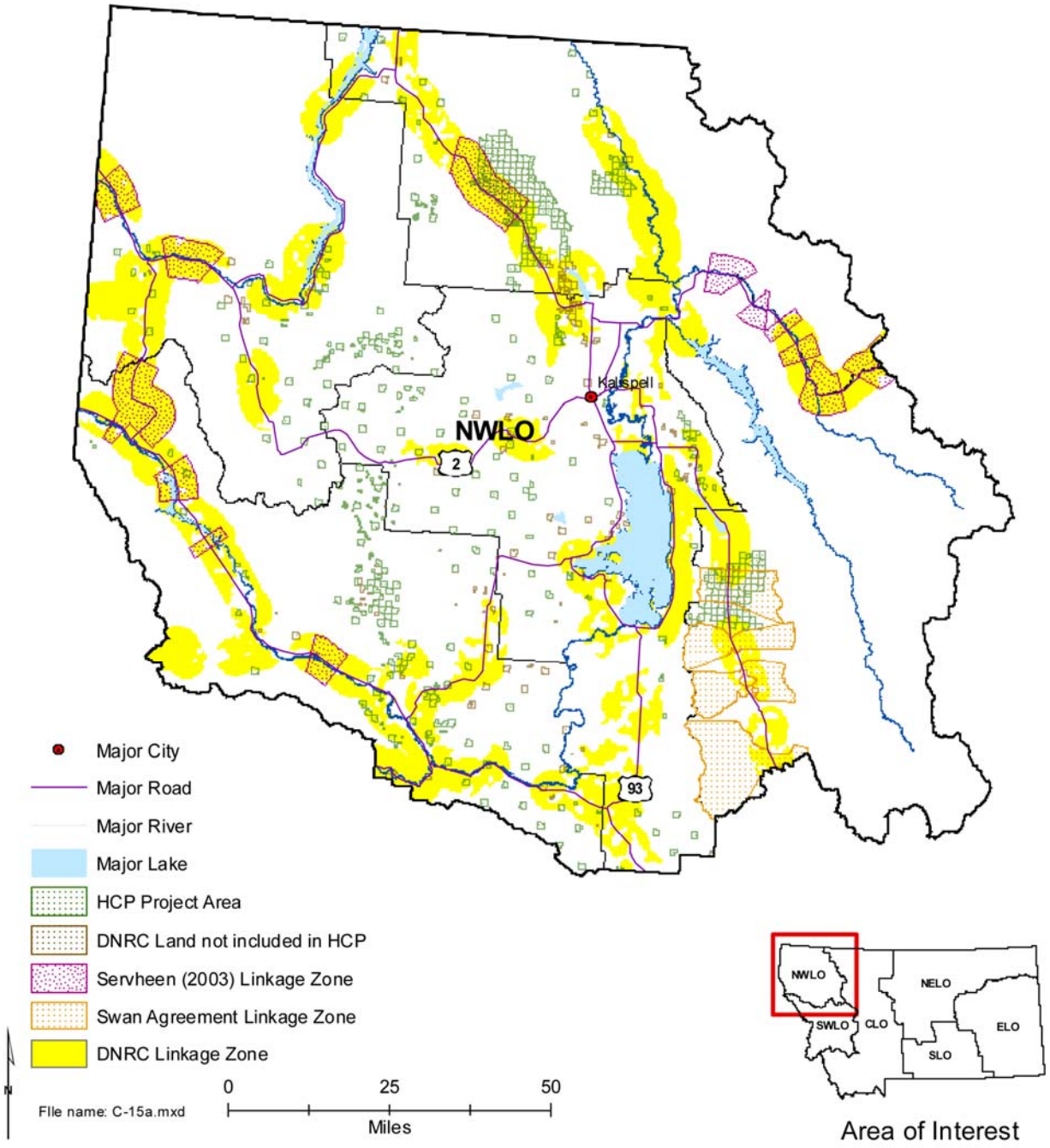


FIGURE D-18B. WILDLIFE LINKAGE ZONES IN THE PLANNING AREA AND HCP PROJECT AREA WITHIN THE SOUTHWESTERN LAND OFFICE

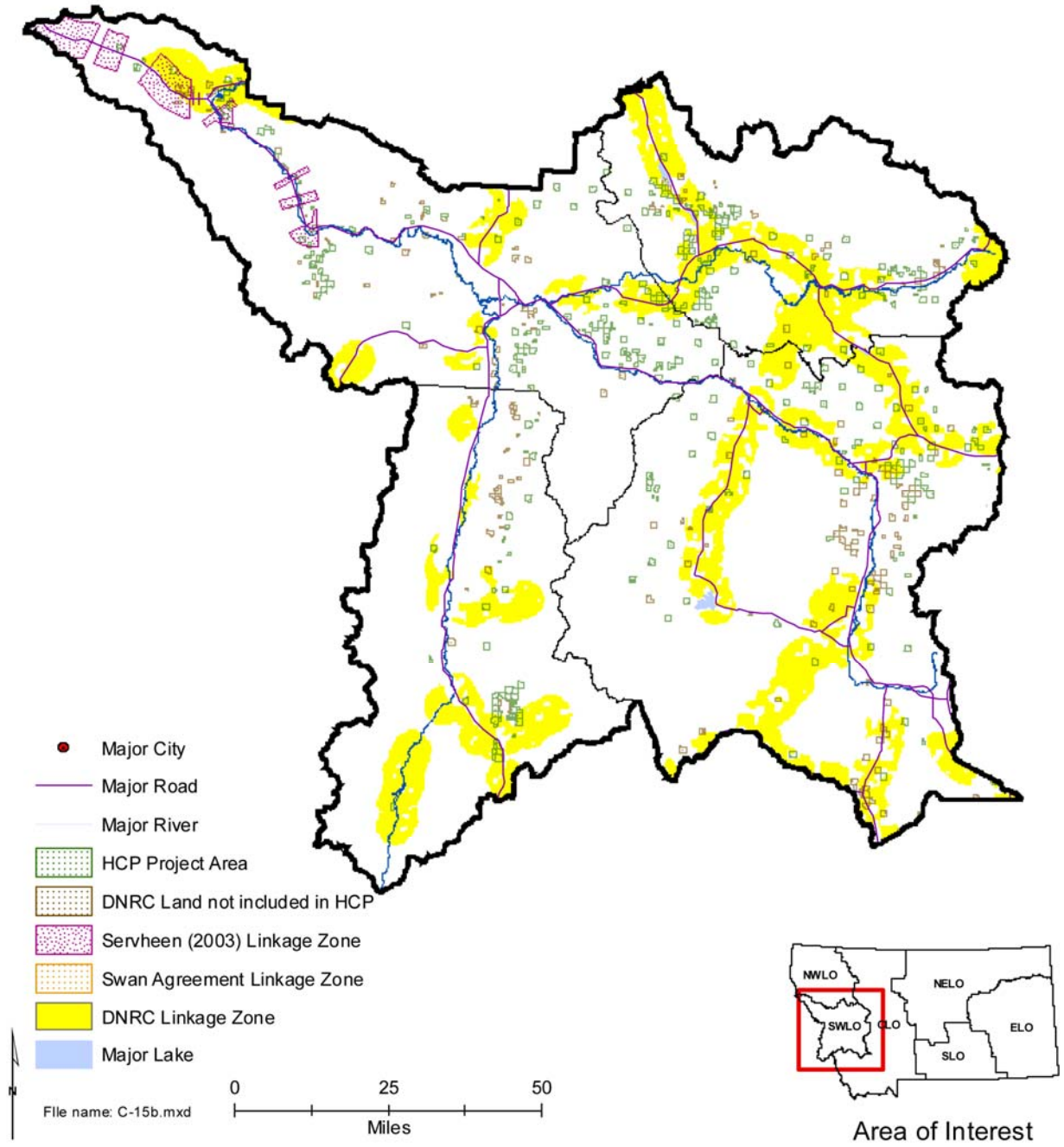


FIGURE D-18C. WILDLIFE LINKAGE ZONES IN THE PLANNING AREA AND HCP PROJECT AREA WITHIN THE CENTRAL LAND OFFICE

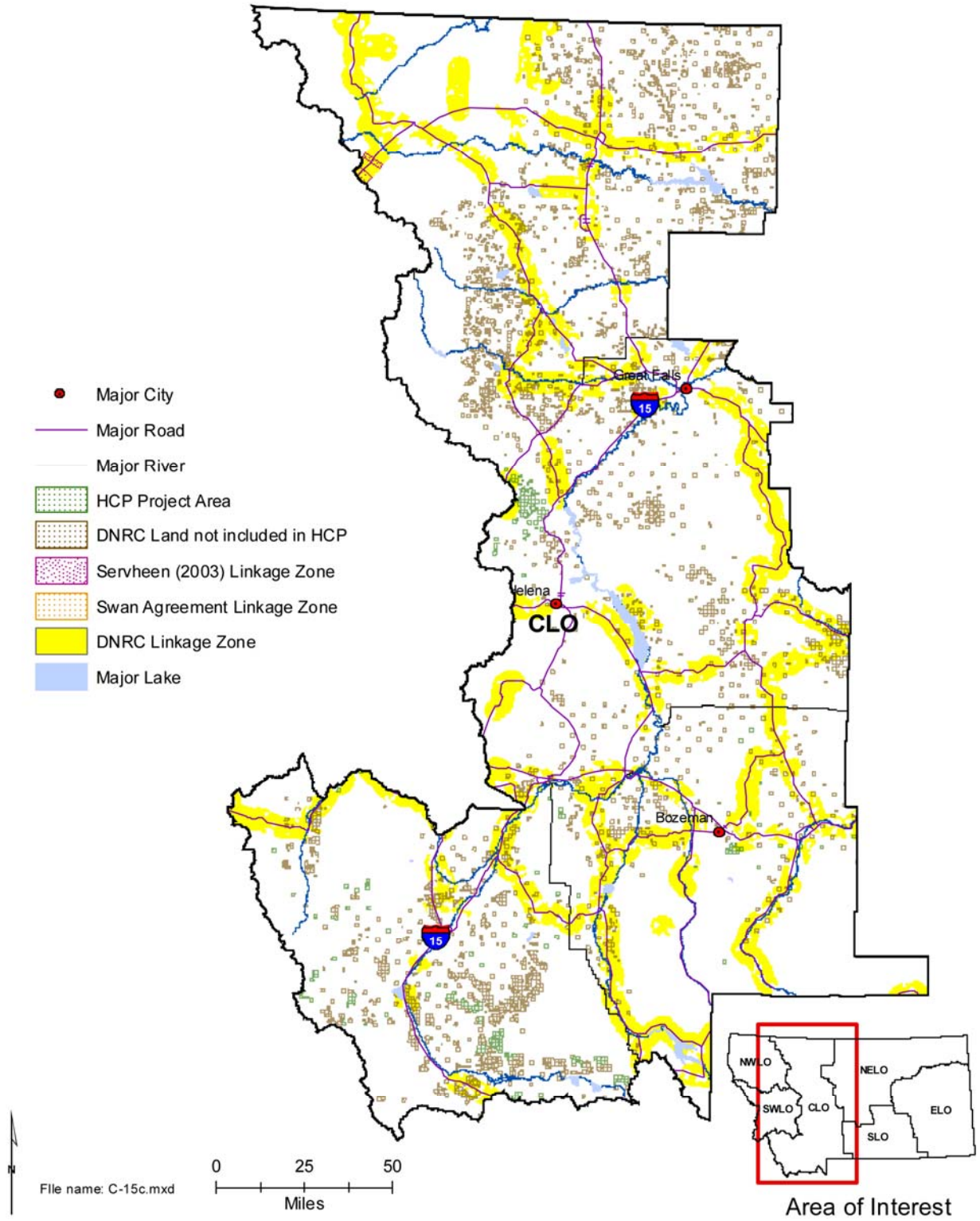


FIGURE D-19. CANADA LYNX DISTRIBUTION IN WESTERN MONTANA

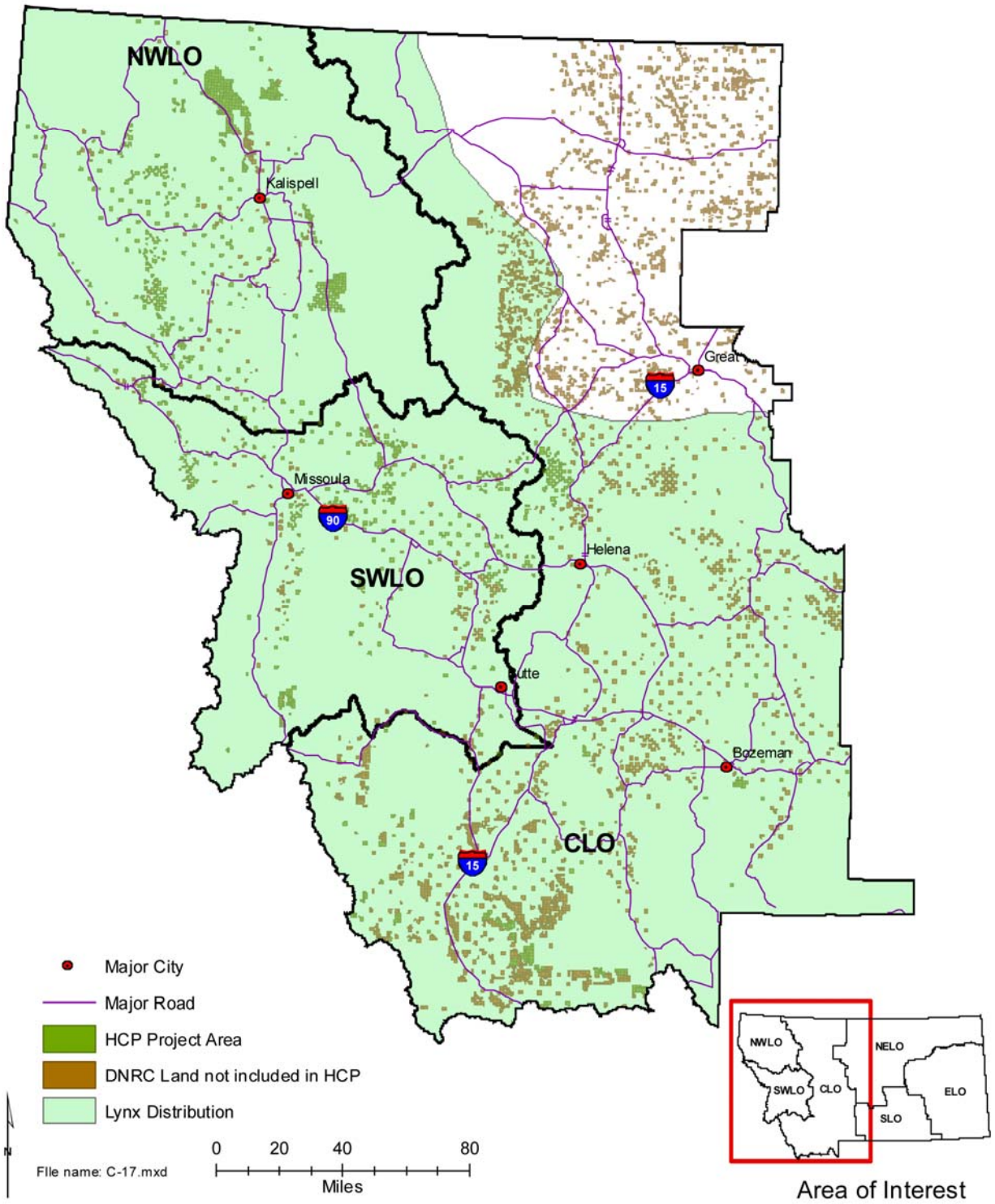


FIGURE D-20. LYNX CRITICAL HABITAT IN THE HCP PROJECT AREA

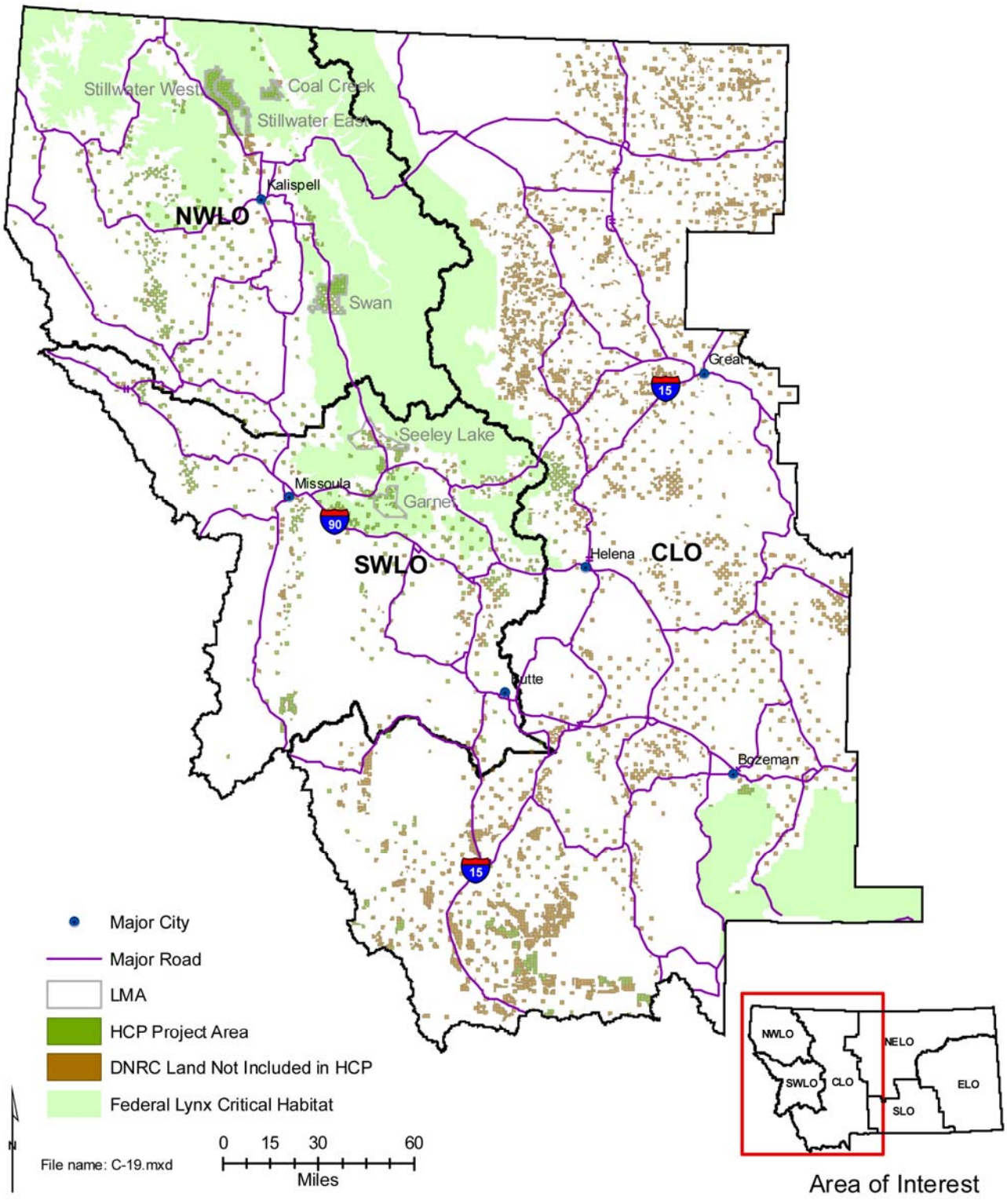


FIGURE D-21. WOLF PACK TERRITORIES IN THE PLANNING AREA AND HCP PROJECT AREA

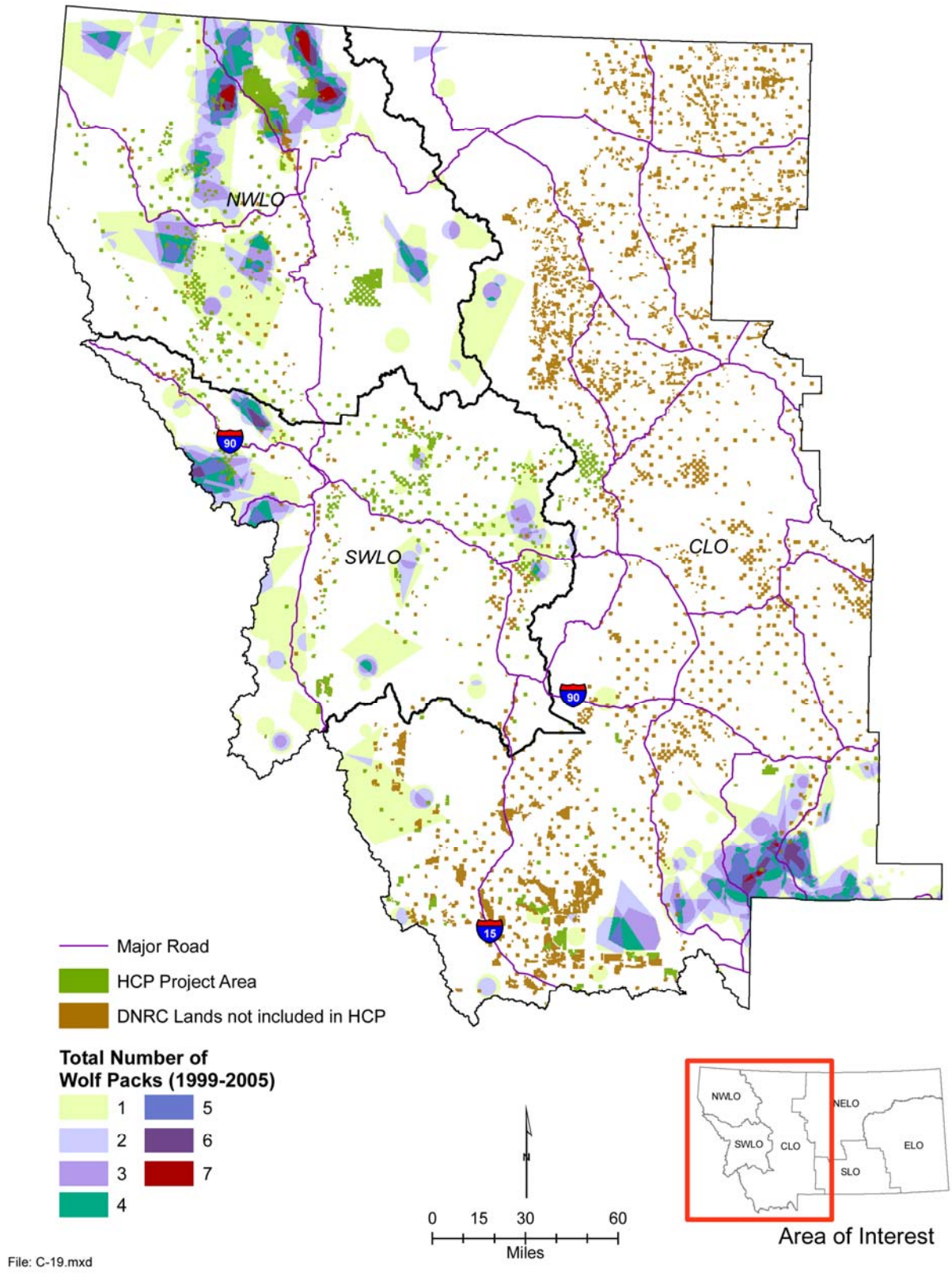


FIGURE D-22. BALD EAGLE NESTING TERRITORIES AND POTENTIAL BALD EAGLE NESTING HABITAT IN THE PLANNING AREA AND HCP PROJECT AREA

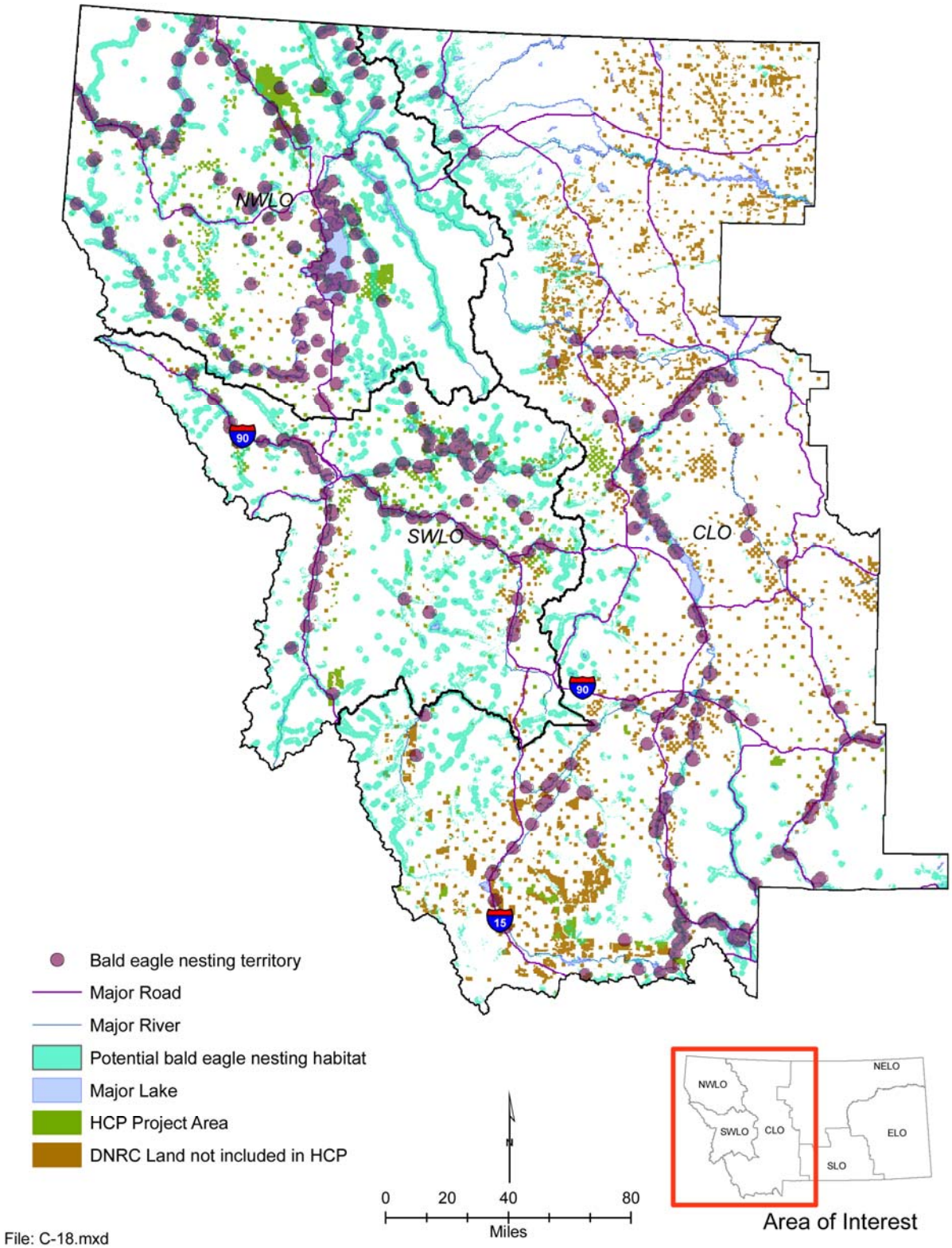
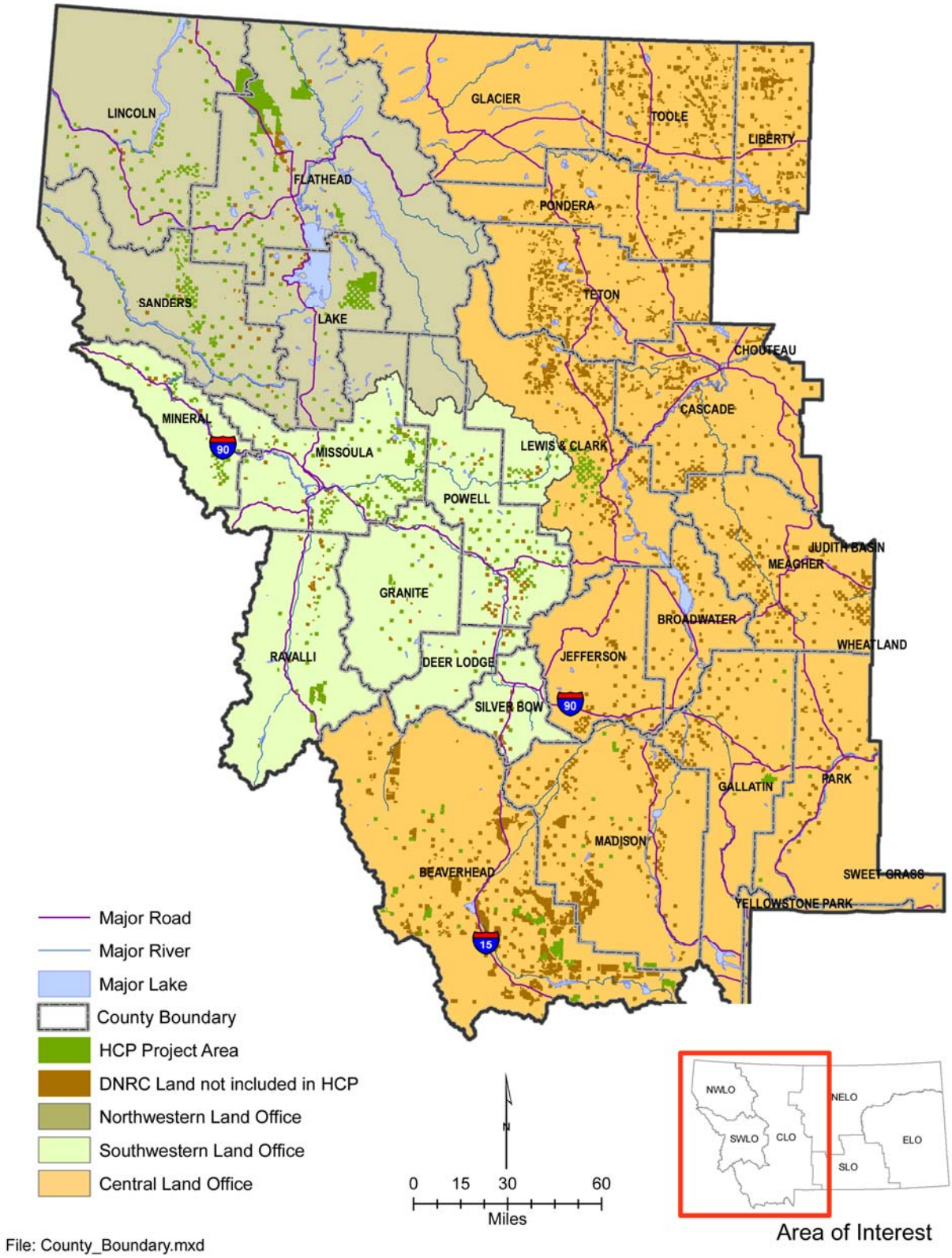
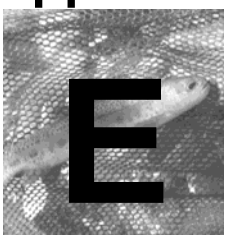


FIGURE D-23. LOCATION OF COUNTY BOUNDARIES WITHIN THE PLANNING AREA



Appendix



EIS Tables

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TABLE E3-1. GRIZZLY BEAR CONSERVATION COMMITMENTS BY ALTERNATIVE

No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Program-wide Conservation Commitments			
Information and Education			
Informal training, as needed.	GB-PR1 Information and Education: Grizzly bear awareness information to contractors and their employees and training to DNRC's employees.		
Firearms			
Firearm prohibition for contractors and DNRC employees, unless the employee is specifically authorized to carry a firearm under DNRC Policy 3-0621.	GB-PR2 Firearm Restrictions: Same as Alternative 1, plus, any employee authorized to carry a firearm under DNRC Policy 3-0621 required to maintain current written authorization on file.		
Food Storage/Sanitation			
In contract language for contractors, as needed informally for employees.	GB-PR3 Food Storage/Sanitation: New regulations requiring bear-resistant storage of food and sanitation requirements for all DNRC personnel and in contracts for contractors and their employees who conduct forest management activities or camp in the HCP project area.	Within 2 years of Permit, implement a DNRC-wide food storage/sanitation order for all activities (not just forest management). The order would be designed following IGBC Task Force recommendations (IGBC 2005).	Same as Alternative 2.
Road Management			
Minimize total roads on the landscape and implement measures to minimize impacts of roads as described in ARMs 36.11.302 through 313 and MCA 77-5-301 through 307.	GB-PR4 New Open Road Construction in Riparian Areas and Avalanche Chutes: Minimize new open road construction in ~~riparian zones~~RMZs, WMZs, or avalanche chutes.		
Active Den Site Protection			
Considered on a project-by-project basis.	GB-PR5 Active Den Site Protection: No mechanized operations within 0.6 miles of active, occupied den site from time of discovery through May 31, unless DNRC confirms that bears have vacated den site vicinity prior to May 31.		

TABLE E3-1. GRIZZLY BEAR CONSERVATION COMMITMENTS BY ALTERNATIVE (CONTINUED)

No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Retention of Visual Screening			
SMZ rules and forest management rules (see description under Riparian Harvest Conservation Commitments in Table E3-3).	GB-PR6 Retention of Visual Screening in Riparian and Wetland Management Zones: Provide visual screening in riparian areas as described in Table E-3 for AQ -RM1 and~~,~~ AQ-RM2~~, and AQ-RM3~~, and in wetlands through implementation of forest management ARMs pertaining to WMZs.		
Gravel Operations			
Adhere to requirements of Opencut Mining Permit for large gravel pits.	GB-PR7 Noxious Weed Control at Gravel Pits: DNRC gravel pits will comply with biennial agreements with county weed boards. Noxious weeds will be managed using an integrated weed management approach. Non-vegetated areas associated with large gravel pits may not exceed 40 acres.		
Helicopter Use			
In the Stillwater Block, minimize the duration of air- and ground-based harvest to the extent practicable when conducting project activities in or near security core and areas of seasonal importance for bears through ARM 36.11.432(1)(f). Make efforts to design flight paths to avoid or minimize flight time across security core or areas of seasonal importance for bears and, where practicable, to design flight paths to occur at least 1 mile from these areas.	GB-PR8 Helicopter Use: DNRC will design helicopter operations requiring flights less than 500 meters above ground level for forest management activities in a manner that avoids or minimizes flight time over known seasonally important areas in NROH or recovery zones, scattered parcels in rest in recovery zones, grizzly bear subzones in rest in recovery zones, and/or federally designated security core areas in recovery zones. Where practicable, DNRC will design flight paths less than 500 meters above ground level to occur at least 1 mile from such areas.		
Non-recovery Occupied Habitat (NROH) Conservation Commitments (Program-wide commitments also apply under Alternatives 2 through 4)			
New Open Road Construction			
Not applicable.	GB-NR1 New Open Road Construction: Minimize construction of new open roads, but no target or cap on total road densities.		
Granting of Easements			
Environmental impacts from easements considered through DNRC Access Road Easement Policy (2004).	GB-NR2 Granting of Easements: Discourage granting future access easements that relinquish DNRC control of roads, with allowances.		

TABLE E3-1. GRIZZLY BEAR CONSERVATION COMMITMENTS BY ALTERNATIVE (CONTINUED)

No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Spring Management Restrictions			
No spring management commitments.	GB-NR3 Spring Management Restrictions: A. Prohibit commercial forest management activities during spring period in spring habitat. B. Prohibit pre-commercial thinning, or heavy equipment slash treatment during spring period in spring habitat. Other low-intensity activities allowed. C. Annual total of 10 days per administrative unit for mechanical site preparation, road maintenance, and bridge replacement within spring habitat during spring period. D. Minimize motorized activities in spring habitat during spring period, except for necessary low-intensity activities. E. Allow commercial forest management activities and low-intensity forest management activities within 100 feet of an open road during spring period in spring habitat.	Implement Alternative 2 GB-NR3 commitments (A), (B), (D), and (E). Replace commitments (C) and (D) with the following: No motorized activities during spring period in spring habitat, except for seasonally critical activities – planting, burning, patrol of burns, and road maintenance.	Implement Alternative 2 GB-NR3 commitments (A), (B), (D), and (E).
Distance to Visual Screening			
No distance to visual screening requirements.	GB-NR4 Distance to Visual Screening: Distance to visual screening (vegetative or topographic) in new clearcut and seed tree units no greater than 600 feet from any point in unit, with some allowances.		
Grazing Restrictions			
No grazing restrictions.	GB-NR5 Grazing Restrictions: Submit mitigated weed grazing plan to the USFWS 30 days prior to issuing small livestock grazing license. Cooperate with others to address prompt removal of livestock carcasses identified as creating the potential for bear/human encounters.		
Post Denning Mitigation			
No post-denning mitigation.	No post-denning mitigation.	No motorized activities within 0.6 mile of mapped post-denning habitat (slopes > 45% above 6,300 feet) from April 1 through May 31.	No post-denning mitigation.

TABLE E3-1. GRIZZLY BEAR CONSERVATION COMMITMENTS BY ALTERNATIVE (CONTINUED)

No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Gravel Operations			
Adhere to requirements of Opencut Mining Permit for large gravel pits.	GB-NR6 Gravel Operations: A. For each administrative unit, up to three specific, active pits per calendar year within NROH and recovery zones, with up to two being large pits. No restrictions on numbers of pits on scattered parcels outside NROH and recovery zones. B. Pits used for state and federal road projects that are more than 0.25 mile from an open road will be counted as active pits. Such pits within 0.25 mile of an open road will not be counted or subject to season or duration of use restrictions (C and D below). C. Pits within 0.25 mile of an open road may be developed and operated without restrictions on season of use and duration of motorized activity. For this commitment, seasonally restricted roads may be considered "open" during the season they are not restricted under transportation planning. D. Operations may occur in pits more than 0.25 mile from an open road during the spring period, but count operating days against the 10-day limit for low-intensity forest management activities during spring period (GB-NR3).		
Recovery Zone Conservation Commitments (Program-wide and NROH commitments also apply under Alternatives 2 through 4)			
Habitat Considerations			
Minimize impacts to grizzly bear habitat elements project-by-project with input from wildlife biologist.	GB-RZ1 Habitat Considerations: Design timber sales to minimize impacts to important grizzly bear habitat elements.		
Visual Screening			
Retain visual screening along open roads, where practicable.	GB-RZ2 Visual Screening: Leave up to 100 feet of vegetation between open roads and clearcut and seed tree harvest units, with some allowances.	Same as Alternative 2.	Same as Alternative 1.
Road Closure Maintenance			
No requirements for road closure maintenance.	GB-RZ3 Road Closure Maintenance: Examine all primary road closures annually and repair ineffective closures within 1 year of identifying problem.	Examine all primary road closures annually and repair all ineffective closures within the operating season in which they are identified. If resources (time, manpower, contracting funds) were limited in a particular year due to the need to address multiple closures, DNRC would prioritize which closures to address first, repair as many as possible within that season, and repair them all within 1 year of identifying.	Same as Alternative 2, and examine closures on scattered parcels every 2 years and repair ineffective closures within 1 year of identifying problem.
Grazing Restrictions			
No grazing restrictions.	GB-RZ4 Grazing Restrictions: Note: For projects in the recovery zone, this commitment supersedes commitment GB-NR5. A. No authorization of new, or conversion to, small livestock grazing licenses. B. No initiation of establishment of new grazing licenses.		

TABLE E3-1. GRIZZLY BEAR CONSERVATION COMMITMENTS BY ALTERNATIVE (CONTINUED)

No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Post-Denning Mitigation			
No post-denning mitigation.	GB-RZ5 Post-Denning Mitigation: No motorized forest management activities on slopes > 45% at elevations above 6,300 feet from April 1 through May 31.	No motorized activities within 0.6 mile of mapped post-denning habitat (slopes > 45% above 6,300 feet) from April 1 through May 31.	Same as Alternative 1.
Granting of Easements			
Environmental impacts from easements considered through DNRC Access Road Easement Policy (2004).	GB-RZ6 Granting of Easements: Note: This commitment is intended to complement the requirements of GB-NR2. A. Avoid granting existing or new access across HCP-covered lands where possible, except for reciprocal access and cost-share agreements. B. Evaluate and condition easements with bear mitigation measures. Report summary of each easement evaluation to the USFWS. C. Work with existing and future reciprocal access grantees to avoid or mitigate impacts to grizzly bears.		
Stillwater Block Conservation Commitments (Program-wide, NROH, and recovery zone commitments also apply under Alternatives 2 through 4)			
Transportation Management			
Reduce total roads to the extent practicable. No net increase in the proportion of each BMU subunit that exceeds an open road density of 1 mi/mi^2 from 1996 baseline levels, without bureau chief approval. Consider seasonal closures and activity restrictions for mitigating proposed actions. Examine and repair road closures	GB-ST1 Transportation Management: A. Transportation plan designates permanent roads needed, roads with seasonal restrictions, and road miles by road class and type for the next 50 years (see HCP Chapter 2, Table 2-2 in EIS Appendix A). B. Maintain up to 8 miles of temporary roads at any one time, to a minimum standard and reclaimed within one operating season following project completion. C. Install signs indicating bear presence on main open (portal) roads entering the Stillwater and Coal Creek State Forests.	Same as Alternative 1, plus commitment GB-ST1(C) under Alternative 2.	Same as Alternative 2.
Forest Harvest and Road Activities			
Security core area commitments: No net decrease from 1996 baseline in the proportion of each BMU subunit (trust lands only) designated as security core areas without bureau chief approval. Security core kept intact for 10 years, as practicable. Establish security core in areas of known seasonal importance.	GB-ST2 Class A Lands: A. No new permanent roads. B. Maximum 4 years active forest management, followed by minimum 8-year rest period. During the rest period: 1. low-intensity forest management activities allowed, except as restricted during spring period in GB-NR3; 2. rest status not applicable during the winter period (November 16 to March 31);	Same as Alternative 1, plus the following: Do not allow a net decrease from 1996 baseline in the proportion of each BMU (trust lands only) designated as security core, without USFWS approval. Keep core intact for 10 years, as practicable. Provide security in areas of known seasonal importance.	Same as Alternative 2.

TABLE E3-1. GRIZZLY BEAR CONSERVATION COMMITMENTS BY ALTERNATIVE (CONTINUED)

No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Conduct management activities during the denning period (November 16 to March 31). Minimize duration of air/ground harvest activities to the extent practicable when working near security core areas during the non-denning season. Provide for secure areas of known seasonal importance for displaced bears where displacement risk is deemed high. Retain no less than 40% of any BMU subunit (trust lands only) in hiding cover.	3. commercial forest activities allowed for minor projects after the spring period, with a total of 30 aggregate operating days per year per subzone, for which two operations within 0.5 mile of one another may count as one operation and operations within 100 feet of an open road do not count against the allowable days.		
No salvage allowance unless activities are conducted during the denning period or through helicopter harvest.	GB-ST3 Salvage on Rested Class A Lands: A. Conduct salvage harvest activities under the following order of preference when economically and operationally practicable: 1. during winter period; 2. in an expedient manner if outside winter period; 3. count operating days from June 15 through November 15 toward 30-day limit for minor projects (GC-ST2); and 4. forgo unused annual operating days in other inactive subzones to compensate. B. If approach above can't be followed, DNRC allowed to interrupt rest period for 30 to 150 days. DNRC not required to restart the 8-year rest period, but only one interruption allowed per rest period. C. Document the necessity for interrupting a rest period, including preparation of a site-specific mitigation plan submitted to the USFWS.	Same as Alternative 1.	Same as Alternative 2.
See Transportation Management above.	GB-ST4 Class B Lands: A. Transportation plan designates proposed new roads (see HCP Chapter 2, Table 2-2 in EIS Appendix A) and specifies seasonal restrictions.	Same as Alternative 1.	Same as Alternative 2.

TABLE E3-1. GRIZZLY BEAR CONSERVATION COMMITMENTS BY ALTERNATIVE (CONTINUED)

No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
	B. Prohibit commercial forest management and motorized activities on 39.6 miles of road identified in the transportation plan.		
Gravel Operations			
Adhere to requirements of Opencut Mining Permit for large gravel pits.	GB-ST5 Gravel Operations: A. Specific, active pits limited to five per calendar year, with no more than three large pits. B. Large pits more than 0.25 mile from an open road prohibited on Class A lands. C. During the 4-year active management window for each subzone, development and operation of gravel pits more than 0.25 mile from an open road allowed outside spring period without restriction on amount or duration of activity. D. Operate only one pit more than 0.25 mile from an open road on Class B lands. Operation and duration of use will comply with transportation plan. E. Operation of one pit more than 0.25 mile from an open road on Class B lands allowed without following transportation plan restrictions if DNRC minimizes distance from pit to open road and, to the extent possible, ceases activity on all allowable remaining pits while the pit is active.		
Swan River State Forest Conservation Commitments (Program-wide, NROH, and recovery zone commitments also apply under Alternatives 2 through 4)			
Transportation Management			
Manage in accordance with the Swan Agreement. Keep open road density below 1 mi/mi^2 on at least 33% of BMU subunits. Retain minimum 40% hiding cover by BMU subunit.	GB-SW1 Transportation Management: A. Transportation plan designates permanent roads needed, roads with seasonal restrictions, and road miles by road class and type for the next 50 years (see HCP Chapter 2, Table 2-3 in EIS Appendix A). Miles of new road construction limited by decade (see HCP Chapter 2, Table 2-4). B. New road construction (closed to public) limited to approximately 70.3 miles identified in Swan River State Forest Transportation Plan map. C. Limit new temporary road construction to 5 miles in any given year, to a minimum standard and reclaimed within one operating season following project completion. D~~C~~. Limit traffic on DNRC restricted use roads to "low use" (< 1 vehicle/day), except roads used for commercial forest management activities. E. Install signs indicating bear presence on main open (portal) roads entering the Swan River State Forest.		
Adjacent Landowners			
Cooperative management with neighboring USFS and Plum Creek Timber Company through the Swan Agreement.	GB-SW2 Adjacent Landowners: Consider cooperative management opportunities with adjoining landowners for grizzly bear conservation.	DNRC would participate if a collaborative Section 7 planning process is initiated with neighboring USFS and other willing cooperators to coordinate activities and access management (similar to the Swan Agreement).	Same as Alternative 2.
Active Management Followed by Rest			
Active management (3 years) followed by rest (6 years) in cooperation with neighboring USFS and Plum Creek Timber Company, with some exceptions.	GB-SW3 Active Management Followed by Rest: Manage each of five Swan River State Forest subzones independently on a rest-rotation basis with maximum 4 years active management, followed by minimum 8-year rest period. During the rest period: 1. low-intensity forest management activities allowed, except as restricted during spring period in GB-NR3; 2. rest status not applicable during the winter period (November 16 to March 31); and		

TABLE E3-1. GRIZZLY BEAR CONSERVATION COMMITMENTS BY ALTERNATIVE (CONTINUED)

No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
	3. commercial forest activities allowed for minor projects after the spring period, with a total of 30 aggregate operating days per year per subzone (only from June 16 through September 15), for which two operations within 0.5 mile of one another may count as one operation and operations within 100 feet of an open road do not count against the allowable days.		
Salvage harvest shall not continue for periods of more than two consecutive weeks or for more than 30 days in the aggregate during a given calendar year in the non-denning period (April 1 to November 15). Salvage activities that result from catastrophic fire or blowdown and that require more than two consecutive weeks to complete, require special management considerations.	GB-SW4 Salvage on Rested Subzones: A. Conduct salvage harvest activities under the following order of preference when economically and operationally practicable: 1. during winter period; 2. in an expedient manner if outside winter period; 3. count operating days from June 16 through September 15 toward 30-day limit for minor projects (GC-SW3); and 4. forgo unused annual operating days in other inactive subzones to compensate. B. If approach above can't be followed, DNRC allowed to interrupt rest period for 30 to 150 days. DNRC not required to restart the 8-year rest period, but only one interruption allowed per rest period. C. Document the necessity for interrupting a rest period, including preparation of a site-specific mitigation plan submitted to the USFWS.		
Gravel Operations			
Adhere to requirements of Opencut Mining Permit for large gravel pits.	GB-SW5 Gravel Operations: A. Specific, active pits limited to four per calendar year, with no more than three large pits. B. During the 4-year active management window for each subzone, development and operation of gravel pits more than 0.25 mile from an open road allowed outside spring period without restriction on amount or duration of activity. C. Operation of one pit more than 0.25 mile from an open road in one selected resting subzone allowed. DNRC would minimize distance from pit to open road and, to the extent possible, cease activity on all allowable remaining pits while the pit is active.		
Conservation Commitments for Scattered Parcels in Recovery Zones (Program-wide, NROH, and recovery zone commitments also apply under Alternatives 2 through 4)			
Open Roads			
No permanent increase in open road density for parcels exceeding 1 mi/mi^2. Temporary increases allowed. Reduce total road density when compatible with other agency goals and objectives.	GB-SC1 Open Roads: This commitment supersedes commitment GB-NR1. A. Evaluate potential for restricting access to open roads at the project level. Document rationale for not restricting or closing open roads. B. Do not exceed (with minor allowances) the HCP analysis baseline open road amounts (total length) at the administrative unit level for the purpose of conducting forest management activities. C. Update DNRC GIS road layer by project-level road assessments.	Same as Alternative 2, plus no net increase in baseline total road densities for forest management projects at the DNRC administrative unit level.	Same as Alternative 2.

TABLE E3-1. GRIZZLY BEAR CONSERVATION COMMITMENTS BY ALTERNATIVE (CONTINUED)

No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Active Management Followed by Rest			
No mandatory rest periods.	GB-SC2 Active Management Followed by Rest: Manage scattered parcels independently on a rest-rotation basis with maximum 4 years management followed by minimum 8 years rest. The 4-year management period may be extended due to management delays beyond DNRC's control, with explanation submitted to the USFWS. During the rest period: 1. low-intensity forest management activities allowed, except as restricted during spring period in GB-NR3; 2. rest status not applicable during the winter period (November 16 to March 31); and 3. commercial forest activities allowed for minor projects after the spring period, with a maximum number aggregate operating days per year per administrative unit, for which two operations within 0.5 mile of one another may count as one operation and operations within 100 feet of an open road do not count against the allowable days.		
Salvage Harvest			
Commitments applied on project-by-project basis.	GB-SC3 Salvage Projects on Rested Parcels: A. Conduct salvage harvest activities under the following order of preference when economically and operationally practicable: 1. during winter period; 2. in an expedient manner if outside winter period; 3. count operating days from June 15 through November 15 toward 30-day limit for minor projects (GC-SC2); and 4. forgo unused annual operating days in other inactive parcels to compensate. B. If approach above can't be followed, DNRC allowed to interrupt rest period for 30 to 150 days. DNRC not required to restart the 8-year rest period, but only one interruption allowed per rest period. C. Document the necessity for interrupting a rest period, including preparation of a site-specific mitigation plan submitted to the USFWS.	Same as Alternative 2, but mitigation plans required under (C) subject to USFWS approval.	Same as Alternative 2.
Gravel Operations			
Adhere to requirements of Opencut Mining Permit for large gravel pits.	GB-SC4 Gravel Operations on Rested Parcels: Operation of one pit more than 0.25 mile from an open road in one rested scattered parcel allowed. DNRC to minimize distance from pit to open road and, to the extent possible, cease activity on all allowable remaining pits while the pit is active.		

TABLE E3-1. GRIZZLY BEAR CONSERVATION COMMITMENTS BY ALTERNATIVE (CONTINUED)

No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Cabinet-Yaak Ecosystem Conservation Commitments (Program-wide, NROH, and recovery zone commitments, as well as commitments for scattered parcels in recovery zones, also apply under Alternatives 2 through 4).			
Minor Project During Rest			
Not applicable.	GB-CY1 Minor Projects During the 8-year Rest Period: (Apply in RZ and NROH) A. Commercial forest management activities (including salvage harvest) allowed after spring period, but limited to an annual maximum number of operating days per administrative unit. B. When the USFWS determines the CYE grizzly bear population no longer warrants endangered status and can sustain the anticipated level of take associated with relaxing CYE commitments to those consistent with the NCDE Recovery Zone and NROH, the maximum allowable operating days for the Libby and Plains Units will be increased for parcels in the Recovery Zone and lifted for parcels in the NROH.	For parcels in CYE RZ, restricted road use associated with minor allowances would follow USFS standards for CYE -- Do not exceed 57 vehicle round trips during non-denning period per parcel, apportioned as follows: ≤ 19 round trips in spring (April 1 through June 15); ≤ 23 round trips in summer (June 16 through September 15); and ≤ 15 round trips in fall (September 16 through November 15).	Same as Alternative 2.
Salvage Harvest			
Commitments applied on a project-by-project basis.	GB-CY2. Salvage Harvest. (Apply in RZ and NROH) Implement Commitment GB-SC3, but for measure (C), allow time for USFWS review and consideration of the proposed mitigations.	Same as Alternative 2, but for measure (C) require USFWS approval of mitigation plan.	Same as Alternative 2.
More Restrictive Management in Spring Period			
Not applicable.	GB-CY3 More Restrictive Management in Spring Period: (Apply in RZ and NROH) Implement commitment GB-NR3(A), (B), (C), and (E). Replace GB-NR3(D) with the following: Motorized low-intensity activities allowed on 50% of parcels in CYE Recovery Zone and CYE NROH in spring habitat during spring period, up to 10 days total per parcel.	Implement commitment GB-NR3 (A), (B), and (E). Replace GB-NR3 (C) and (D) with the following: 1. Non-motorized use only for inventory, sale preparation, road location, planting, monitoring, data collection, and weed management; 2. Road maintenance and bridge replacement only along open roads (emergencies exempt); and 3. Mechanical site preparation, prescribed burning, and patrol of winter burns only conducted when parcel is in a management period.	Same as Alternative 2.

TABLE E3-1. GRIZZLY BEAR CONSERVATION COMMITMENTS BY ALTERNATIVE (CONTINUED)

No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Open Roads			
No permanent increase in open road density for parcels exceeding 1 mi/mi^2.	GB-CY4 Expedited Reduction of Open Road Densities for Recovery Zone Parcels (Apply in Recovery Zones only): For parcels in the CYE Recovery Zone, DNRC to expedite addressing open road densities, rather than doing it on a project-by-project basis.		
Helicopter Use			
Not applicable.	GB-CY5 Helicopter Use in the CYE: A. For scattered parcels in the CYE recovery zone, DNRC will design helicopter operations less than 500 meters above ground level for commercial log yarding to avoid important areas for grizzly bears by requiring flight paths to be at least 1 mile from scattered parcels in rest or federally designated security core areas. Where practicable, flight paths will also be designed to avoid or minimize disturbance to any known seasonally important areas. B. For scattered parcels in the CYE recovery zone and NROH only, DNRC will limit helicopter use associated with activities of short duration requiring few or multiple trips, such as, but not limited to, weed control, prescribed burning ignition and control actions, aerial seeding, and moving large pieces of equipment or materials to remote and/or rugged locations, to those requiring less than 48 hours to complete.		

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TABLE E3-2. CANADA LYNX CONSERVATION COMMITMENTS BY ALTERNATIVE

No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Lynx Habitat Commitments			
Includes mapped lynx habitat on blocked lands and scattered parcels.	**Includes mapped lynx habitat on all HCP lands.**		
Lynx Habitat Map			
Lynx habitat defined in ARM based on DNRC lynx habitat mapping protocol.	LY-HB1 Lynx Habitat Map: Establish and maintain a lynx habitat map, based on DNRC lynx habitat mapping protocol and modeling procedures. For gravel pits greater than 5 acres, track and account for acres cleared for development in normal stand level inventory (SLI) data collection and subtract those acres from mapped lynx habitat until re-forested.		
Den Site Attributes (Potential Dens)			
No salvage within stands identified as necessary to meet denning habitat requirements. When assessing lynx habitat, consider proximity to foraging habitat and habitat connectivity. **Scattered parcels:** For parcels containing appreciable amounts of lynx habitat, maintain minimum of 5 acres of denning habitat. **Blocked lands:** Retain 5% of total lynx habitat as denning habitat in patches of > 5 acres.	Monitor post-harvest to demonstrate retention of lynx denning material. ~~LY-HB2 Den Site Attributes:~~ ~~A. At project level, retain at least two potential den sites per square mile in lynx habitat, except for blowdown salvage units.~~ ~~B. On blowdown salvage units, leave 1% of the area unsalvaged.~~ ~~C. During timber sale layout, position retained den sites adjacent to suitable lynx habitat where conditions allow.~~	Denning Habitat Retention: A. Denning habitat programmatically estimated using SLI. Requirement would be applied at the project level and verified in the field. B. Retain at least 10% of denning habitat within each LMA and at the parcel level for each scattered parcel. C. Retain at least two dens sites of ≥ 5 acres of denning habitat per square mile. ~~D. Following natural disturbance (not just blowdown), no salvage units ≥ 5 acres in size allowed. Allowances :~~ ~~1. in case of fire interface protection around developments or campgrounds, or~~ ~~2. where inventory verifies ≥ 10% denning habitat and at least two sites per square mile.~~	Same as Alternative 2.~~, except blowdown requirement same as elsewhere - retain at least two potential den sites per square mile in lynx habitat.~~

TABLE E3-2. CANADA LYNX CONSERVATION COMMITMENTS BY ALTERNATIVE (CONTINUED)

No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Coarse Woody Debris (CWD)/Snag Retention			
Maintain adequate amounts of CWD on site. Apply CWD abundance at the project level based on scientifically accepted technical references. Retain two snags and two live snag recruitment trees > 21 inches diameter at breast height (dbh) on warm and moist and wet habitat type groups. Retain one snag and one live snag recruitment tree > 21 inches dbh on all other habitat type groups.	LY-HB2 Coarse Woody Debris (CWD): A. For CWD retention at the project level, follow Graham et al. (1994), with some allowances. B. For CWD recruitment at the project level, retain average of two snags and two live snag recruitment trees (> 21 inches dbh) per acre on the warm and moist, and wet habitat type groups; retain average of one snag and one live snag recruitment tree (> 21 inches dbh, or other largest ones, if > 21 inches not available) per acre on all other habitat type groups. C. On blowdown salvage units, leave 1% of the area unsalvaged.	Same as LY-HB2 (A) and (B), plus: Following natural disturbance (not just blowdown), no salvage units ≥ 5 acres in size allowed. Allowances: 1. in case of fire interface protection around developments or campgrounds, or 2. where inventory verifies ≥ 10% denning habitat and at least two sites per square mile.	Same as Alternative 2, except within blowdown areas, retain at least two potential den sites per square mile in lynx habitat.
Den Site Protection			
Den sites protected on a case-by-case basis.	LY-HB3 Den Site Protection: Prohibit motorized forest management activities and associated prescribed burning within 0.25 mile of known active lynx den sites from May 1 through July 15, or earlier for any site documented to be fully vacated prior to July 15.	Same as Alternative 2, plus: on lynx management areas (LMAs) with less than 10% denning habitat, no motorized forest management activities or burning from May 1 through July 15 within 0.25 mile of denning habitat. (Note: Denning habitat would be identified through SLI and verified in the field).	Same as Alternative 2.
Foraging Habitat Treatments			
Scattered parcels: In lynx habitat, delay thinning in young foraging habitat stands with stem density ≥ 4,000 stems per acre until average tree height is ≥ 15 feet. Retain approximately 10% of the lynx habitat acreage in mature or young foraging habitat at appropriate sites. **Blocked lands within the Stillwater Block and Swan River State Forest:** By BMU, manage for 10% of total lynx acreage to be in a mixture of mature foraging and young foraging habitat.	LY-HB4 Foraging Habitat Attribute Retention: A. Retain small, shade-tolerant trees in thinned portions of pre-commercial thinning units within lynx habitat that do not pose substantial competition risks to desired crop trees. B. Retain patches of advanced regeneration of shade-tolerant trees, where operationally feasible, as a component of commercial harvest prescriptions in winter foraging habitat.		

TABLE E3-2. CANADA LYNX CONSERVATION COMMITMENTS BY ALTERNATIVE (CONTINUED)

No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Allow salvage in mature foraging stands provided understory sapling densities are not reduced below the moderately stocked condition and CWD is enhanced or not appreciably altered.			
Habitat Connectivity			
When assessing lynx habitat, consider habitat connectivity. Minimize new road construction, use temporary roads, and obstruct or obliterate unnecessary existing roads in lynx habitat. Additional connectivity provided through SMZ rules.	LY-HB5 Habitat Connectivity: A. At project level, design harvest units to maintain a connected network of suitable lynx habitat along riparian areas, ridge tops, and saddles, with allowances. B. Additional connectivity provided by measures in the riparian harvest conservation strategy for riparian cover and grizzly bear conservation strategy (maximum 600-foot distance to cover).	Implement LY-HB5 (A) and (B) described for Alternative 2, plus: C. On scattered parcels outside of LMAs, limit contiguous occurrences of temporary non-suitable habitat to ≤ 200 acres. D. Within harvest units, provide interspersed patches of suitable habitat 100 yards wide when possible (does not apply in cases where existing cover type or natural disturbance has created impossible baseline conditions to apply this prescription).	Same as Alternative 2.
Habitat Suitability			
Not Applicable.	LY-HB6 Habitat Suitability: Of total potential lynx habitat within scattered parcels at the land office scale, maintain at least 65% as suitable lynx habitat and no more than 35% as temporary non-suitable.	Of total potential lynx habitat within scattered parcels at the land office scale, maintain at least 70% as suitable lynx habitat and no more than 30% as temporary non-suitable.	Of total potential lynx habitat within scattered parcels at the land office scale, maintain at least 60% as suitable lynx habitat and no more than 40% as temporary non-suitable.
Lynx Management Area Commitments			
Habitat Suitability			
Not Applicable.	LY-LM1 Habitat Suitability: Maintain at least 65% of total potential lynx habitat as suitable lynx habitat and no more than 35% as temporary non-suitable within each LMA.	Maintain at least 70% of total potential lynx habitat as suitable lynx habitat and no more than 30% as temporary non-suitable within each LMA.	Maintain at least 60% of total potential lynx habitat as suitable lynx habitat and no more than 40% as temporary non-suitable within each LMA.
Not Applicable.	LY-LM2 Habitat Conversion: Convert no more than 15% of total lynx habitat to temporary non-suitable lynx habitat per decade within each LMA.	Same as Alternative 2.	Convert no more than 20% of total lynx habitat acres to temporary non-suitable lynx habitat per decade within each LMA.

TABLE E3-2. CANADA LYNX CONSERVATION COMMITMENTS BY ALTERNATIVE (CONTINUED)

No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
	LY-LM3 Foraging Habitat: A. Maintain at least 20% of total potential lynx habitat as winter foraging habitat ~~(any combination of winter and young foraging habitat)~~. B. On pre-commercial thinning units targeting saplings in lynx habitat, retain 20% of the unit in an unthinned condition. Patches can not be re-entered for commercial harvest or additional thinning until they have matured and grown into a minimum sawtimber size class (as defined in DNRC's SLI database).	~~Same as Alternative 2, plus,~~ A. Maintain at least 20% of total potential lynx habitat as foraging habitat (any combination of winter and young foraging habitat). B. F~~f~~or thinning projects in lynx habitat, retain at least 20% of acres per available stand for thinning in an unthinned condition until lower dead branches grow to above snow level (about 6 feet).	A. Same as Alternative ~~2~~3. B. ~~, plus, f~~For thinning projects in lynx habitat, retain at least 10% of acres available for thinning in an unthinned condition until lower dead branches grow to above snow level (about 6 feet).

TABLE E3-3. AQUATIC CONSERVATION STRATEGIES BY ALTERNATIVE

No-Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Riparian Harvest Conservation Commitments			
Class 1 streams and lakes ~~with HCP fish species~~: Stream management zone (SMZ) defined as ordinary high water mark (OHWM) to 50. On slopes > 35% SMZ extended to 100 feet. SMZ boundary is extended to include adjacent wetlands that intercept the normal SMZ boundary. On Class 1 streams or lakes supporting fish, RMZ is also established and extends from OHWM to one site potential tree height (SPTH). Within the SMZ: No clearcutting. Retain shrubs, sub-merchantable trees. Retain at least 50% of trees ≥ 8 inches dbh or 10 trees ≥ 8 inches dbh per 100-foot segment, whichever is greater. Some exceptions to address salvage harvest. Within the RMZ: Retain trees to ensure adequate levels of shade and potential large woody debris (LWD) recruitment.	~~Class 1 streams and lakes with HCP fish species~~ **AQ-RM1 Class 1 Riparian Management Zone Commitments ~~apply~~:** Applies to all Class 1 streams and lakes. RMZ defined as OHWM to one 100-year site index tree height (typically 80 to 120 feet). ~~RMZs to be extended for some CMZs.~~ Within the RMZ: 50-foot no-harvest buffer. For remainder of RMZ (50 feet to 100-year site index tree height): Retain shrubs, sub-merchantable trees. Retain at least 50% of trees ≥ 8 inches dbh. Some allowances within the RMZ ~~to harvest restrictions~~ to address fire, disease, and insects, while still meeting minimum requirements of SMZ Law. ~~However, within a DNRC administrative unit, no greater than 15% of total riparian area in the unit may be in un-stocked or seedling/sapling size class.~~ RMZs extended to include CMZs likely to influence riparian functions potentially affected by timber harvest on HCP fish-bearing streams: Type 1 CMZ – 50% retention area for RMZ extended to include entire flood-prone area. Type 2 CMZ – No harvest in entire flood-prone width, plus an additional 25-foot no-harvest buffer. Delineation of RMZ, including 25-foot no-harvest buffer, begins at edge of flood-prone width.	~~Class 1 streams and lakes with HCP fish species:~~ ~~Same as Alternative 2, but~~ Applies to Class 1 streams and lakes with HCP fish species. Similar to Alternative 2, but no-harvest buffer is the entire RMZ and is extended to include CMZs. For both Type 1 and Type 2 CMZs, no harvest for the entire flood-prone width.	Applies to Class 1 streams and lakes with HCP fish species. Same as Alternative 1, plus: 25-foot no-harvest buffer. From 26 to 50 feet, retain shrubs, sub-merchantable trees, and at least 50% of trees ≥ 8 inches dbh. CMZs managed as under Alternative 2.
Riparian Harvest Conservation Commitments			
Class 1 streams and lakes with non-HCP fish species: Same as Class 1 streams and lakes with HCP fish species.	Not Applicable. ~~Class 1 streams with non-HCP fish species: AQ-RM2 applies, but is the same as Alternative 1 for Class 1 streams.~~	Same as Alternative 1.	Same as Alternative 1.

TABLE E3-3. AQUATIC CONSERVATION STRATEGIES BY ALTERNATIVE (CONTINUED)

No-Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Class 2 and 3 streams: SMZ defined as OHWM to 50. Class 2 streams, where ~~On~~ slopes > 35%, SMZ extended to 100 feet. SMZ boundary is extended to include adjacent wetlands that intercept the normal SMZ boundary. Within the SMZ: No clearcutting. Retain shrubs, sub-merchantable trees. For Class 2 streams, r~~R~~etain at least 50% of trees ≥ 8 inches dbh or 5 trees ≥ 8 inches dbh per 100-foot segment, whichever is greater. Some exceptions to address salvage harvest.	Class 2 and 3 streams: AQ-RM2 applies, but is the same as Alternative 1.		
~~Class 3 streams and other bodies of water:~~ ~~SMZ defined as OHWM to 50.~~ ~~SMZ boundary is extended to include adjacent wetlands that intercept the normal SMZ boundary.~~ ~~Within the SMZ:~~ ~~No clearcutting.~~ ~~Retain shrubs, sub-merchantable trees.~~ ~~Some exceptions to address salvage harvest.~~	~~Class 3 streams and other bodies of water: AQ-RM3 applies, but is the same as Alternative 1.~~		
Sediment Delivery Reduction Conservation Commitments			
Minimizing Roads			
Minimize amount of roads. Conduct comprehensive road management planning. Where feasible, plan road systems cooperatively with adjacent landowners and consider yarding systems that minimize roads. Abandon or reclaim roads that are non-essential to near-term future management needs or where unrestricted access would cause excessive resource damage. Prohibit road construction within SMZs, except when necessary to cross a stream.	AQ-SD1 Commitments for Minimizing Forest Management Roads: Same as described under Alternative 1, except DNRC will reclaim roads that are non-essential to near-term future management needs or where unrestricted access would cause excessive resource damage.	Same as Alternative 1.	Same as Alternative 1.

TABLE E3-3. AQUATIC CONSERVATION STRATEGIES BY ALTERNATIVE (CONTINUED)

No-Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Existing Roads/Corrective Actions			
Complete sediment delivery road inventory during timber sale planning, design, and environmental assessment. Bring roads up to BMP standards on a project-by-project basis where feasible and when funding is available. Assess and prioritize road maintenance needs by inspecting the condition of both open and closed roads every 5 years. (Currently on scattered parcels, the inspection interval is somewhat longer then every 5 years.)	AQ-SD2 Commitments for Reducing Sediment Delivery from Existing Roads: Same as described under Alternative 1, plus classify road segments or sites by level of sediment delivery risk and prioritize corrective actions: A. Inventory all roads and stream crossings for which DNRC has legal access and sole ownership, or cost-share or reciprocal road agreements for sediment delivery in bull trout watersheds within 10 years and westslope cutthroat trout (WCT) and Columbia redband trout within 20 years. B. Complete corrective actions on all roads for which DNRC has legal access and sole ownership with high risk of sediment delivery in bull trout watersheds within 15 years, and within 25 years for WCT and Columbia redband trout watersheds. On shared roads where DNRC does not have access and sole ownership, work with other cooperators to address moderate- and high-risk sediment delivery road segments. C. Moderate-risk sediment delivery roads to have corrective actions, on a project-by-project basis, for those watersheds with HCP fish species. D. Incorporate goals, targets, and prescriptions in approved total maximum daily loads (TMDLs) applicable to HCP-covered forest management activities where DNRC has actively participated in the TMDL's development and the TMDL planning area is within a watershed containing HCP project area parcels supporting HCP fish species. DNRC would actively participate in TMDL development when 25% or more of the TMDL planning area consists of HCP project area parcels in watersheds supporting HCP fish species.	Same as Alternative 2, plus: Inventory completed in 5 years for bull trout watersheds, and 10 years for WCT and Columbia redband trout watersheds. Corrective actions on high-risk sites within 10 years for bull trout watersheds, and 20 years for WCT and Columbia redband trout watersheds.	Same as Alternative 2, plus: Inventory completed in 15 years for bull trout watersheds, and 25 years for WCT and Columbia redband trout watersheds. Corrective actions on high-risk sites for all HCP species watersheds on a project-by-project basis.

TABLE E3-3. AQUATIC CONSERVATION STRATEGIES BY ALTERNATIVE (CONTINUED)

No-Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
New Road Construction, Reconstruction, Maintenance, and Use			
Minimize sediment delivery from roads by implementing BMPs. Minimize amount of roads; prohibit road construction within SMZs, except when necessary to cross a stream; minimize stream crossings. DNRC water resource specialist typically reviews proposed road management activities in watersheds with sensitive fish and makes recommendations to reduce risk of sediment delivery. However, the review is not required by the ARMs.	AS-SD3 Commitments for Reducing Sediment Delivery from New Road Construction, Reconstruction, Maintenance, and Use: Same as described under Alternative 1, plus DNRC water resource specialist required to review road management activities associated with forest management activities located within watersheds supporting HCP fish species. Specialist would make recommendations to reduce risk of sediment delivery. Incorporate goals, targets, and prescriptions in approved TMDLs applicable to HCP-covered forest management activities where DNRC has actively participated in the TMDL's development and the TMDL planning area is within a watershed containing HCP project area parcels supporting HCP fish species.		
Timber Harvest, Site Preparation, and Slash Treatments			
Implement SMZ and RMZ harvest restrictions described above for Riparian Timber Harvest Commitments. Additionally, within the SMZ prohibit operation of wheeled or tracked equipment except on established roads, with some exceptions; and prohibit broadcast burning without a site-specific alternative practice. When required, establish an RMZ and prohibit ground-based equipment operations on sites with slopes greater than 35 percent and implement restrictions on slopes less than 35 percent to those operations and conditions that do not cause excessive compaction or displacement of the soil. Establish WMZs and limit equipment operations to low-impact harvest systems and operations that do not cause excessive compaction, displacement, or erosion of the soil. Also, select logging systems to minimize erosion within WMZs. DNRC water resource specialist typically reviews proposed forest management activities in watersheds with sensitive fish and makes recommendations to reduce risk of sediment delivery. However, the review is not required by the ARMs.	AQ-SD4 Commitments for Reducing Potential Sediment Delivery from Timber Harvest, Site Preparation, and Slash Treatments: Minimize sediment delivery from timber harvest: see AQ-RM1; restrictions on equipment use and associated forest management activities within RMZs; implement BMPs; site-specific mitigation measures. DNRC water resource specialist required to review >100 MBF timber harvests in HCP species watersheds and provide recommendations to reduce risk of sediment delivery, except in some instances with low risk of soil disturbance. Incorporate goals, targets, and prescriptions in approved TMDLs applicable to HCP-covered forest management activities where DNRC has actively participated in the TMDL's development and the TMDL planning area is within a watershed containing HCP project area parcels supporting HCP fish species.	See RMZ harvest restrictions above; otherwise, same as Alternative 2.	Same as Alternative 1.

TABLE E3-3. AQUATIC CONSERVATION STRATEGIES BY ALTERNATIVE (CONTINUED)

No-Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Gravel Operations			
Adhere to ARM 36.11.421 Apply BMPs for forestry in Montana pertaining to borrow and gravel pits (January 2002). Adhere to requirements of Opencut Mining Permit for large gravel pits.	AQ-SD5 Commitments to Reduce Potential for Sediment Delivery from Gravel Pits: A. Design and implement site-specific BMPs and other mitigation measures to reduce the risk of sediment delivery to streams affecting HCP fish species from all gravel pits. DNRC water resource specialist to recommend what would be integrated into contract specifications, permits, and Plans of Operations (as required under ARM 17.24.217). B. DNRC gravel pits would comply with biennial agreements established with county weed boards. Noxious weeds would be managed utilizing an integrated weed management approach. Such practices include, but are not limited to: 1) The use of weed-free equipment; 2) re-vegetation of disturbed areas with site-adapted species, including native species as available; and 3) biological control measures included in timber sale contracts and Plans of Operations (as required under ARM 17.24.217). C. Non-vegetated areas associated with large gravel pits may not exceed 40 acres. D. No development of gravel pits within SMZs. If borrows occur in SMZs, DNRC water resource specialist to develop measures to minimize risk of sediment delivery, and these would be integrated into contract specifications or permits. E. No development of gravel pits within RMZs, except for one medium-sized non-reclaimed pit within the portion of RMZ extending beyond the SMZ in both the Stillwater Block and Swan Unit.		
Fish Connectivity Conservation Commitments (AQ-FC1)			
When installing new stream crossing structures on fish-bearing streams, provide for fish passage as specified in MCA 87-5-501 and the Stream Protection Act (124 permits).	AQ-FC2 - Provide connectivity to adult and juvenile bull trout, WCT, and Columbia redband trout during low to bankfull flows by emulating streambed form and function at stream crossings, with some allowances. AQ-FC9 – Selection of structures for new installations or replacement of existing installations dictated by stream conditions, cost, sediment risks, and anticipated use and subject to permit approval. (See Chapter 2 HCP, AQ-FC9(a through i) in EIS Appendix A for design options by order of preference.)		
Maintain and update existing DNRC fish passage inventory and connectivity assessment. DNRC prioritizes sites based on existing levels of connectivity, as well as species status and biological goals established with MFWP and other stakeholders. Culverts are replaced on a project-by-project basis.	AQ-FC3 - Update existing DNRC fish passage assessment to inventory and assess connectivity for all existing stream crossings on known and presumed bull trout, WCT, and Columbia redband trout habitat. AQ-FC4 - Road-stream crossing improvements prioritized for streams with HCP species based on connectivity, HCP species presence and status, and population conservation goals. AQ-FC5,6,&7 – Develop a schedule and complete connectivity improvements for streams with HCP species: 15 years for bull trout streams, 30 years for WCT and Columbia redband trout, with some allowances. AQ-FC8 - Every 5 years, one-sixth of all sites that do not meet the objectives of the conservation strategy would be improved to meet the strategy, or, at a minimum, have final plans and designs for improvements.	Commitments AQ-FC3, 4 and 8 are the same as Alternative 2. AQ-FC 5, 6, &7 - Develop a schedule and complete connectivity improvements for streams with HCP species: 10 years for bull trout streams, 20 years for WCT and Columbia redband trout, with some allowances.	Commitments AQ-FC3, 4 and 8 are the same as Alternative 2. AQ-FC 5, 6, &7 – Same as Alternative 1 - Connectivity improvements completed on a project-by-project basis.

TABLE E3-3. AQUATIC CONSERVATION STRATEGIES BY ALTERNATIVE (CONTINUED)

No-Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Incorporate BMPs into project design and implementation of all forest management activities, including stream crossings. Additional mitigation associated with stream crossings implemented on a case-by-case basis.	AQ-FC10 - Apply additional mitigations for crossings constructed on streams with HCP fish species (e.g., construction windows, exclude or salvage fish from construction sites, reintroduction of stream flow). Implement Montana forestry BMPs during and after site modification or construction. Require DNRC contract administrator to be on site during modification or construction. Provide training on fish connectivity design and construction techniques to all staff responsible for structure installations.		
Grazing Conservation Commitments (AQ-GR1)			
Midterm License Inspection - Evaluate range conditions, levels of riparian forage and browse utilization, levels of streambank disturbance, and overall tract conditions. Renewal License Inspection – Evaluate range conditions, plant species composition, and levels of riparian forage; and browse utilization, levels of streambank disturbance, presence of noxious weeds, erosion, and condition of improvements on each grazing license.	Same as Alternative 1, plus enhanced coarse filter review regarding damage to stream banks, riparian vegetation, and noxious weed infestation, and evaluation of noxious weeds. Renewal License Inspection – Same as Alternative 1, plus enhanced coarse filter review regarding damage to stream banks, riparian vegetation, and noxious weed infestation.	Same as Alternative 2, except monitor grazing effects every year.	Same as Alternative 2, except monitor grazing effects every 10 years.
Informal training on implementation for all DNRC staff involved in grazing license administration.	Develop and complete formal training on implementation for all DNRC staff involved in grazing license administration. Provide grazing licensees with informal training opportunities and education outreach materials.	Same as Alternative 2.	Same as Alternative 1.
Set license conditions, including stocking rates, animal unit months (AUMs), type of livestock, and grazing period. Require stipulations at any time during the license term. Design grazing plans to minimize loss of riparian streambank vegetation and to reduce structural damage to stream banks.	Same as Alternative 1.		

TABLE E3-3. AQUATIC CONSERVATION STRATEGIES BY ALTERNATIVE (CONTINUED)

No-Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
DNRC and licensee required to mitigate or rehabilitate riparian and stream channel when damage is greater than the level specified in the ARMs.	Same as Alternative 1.		
	Develop and document site-specific corrective actions for addressing verified grazing problems.	Same as Alternative 2.	Same as Alternative 1.
	Grazing licenses affecting streams with HCP fish species: designated time frames for field verification of potential problem sites as identified through a grazing coarse filter approach. Time limits for prioritized corrective actions.	Same as Alternative 2.	Same as Alternative 1.
	Effectiveness monitoring and evaluations to occur within 1 year following corrective actions. Adjust licenses and continue monitoring until improvements are verified effective.	Same as Alternative 2, plus includes measurable targets for desired future conditions.	Same as Alternative 1.
	Grazing monitoring report required at 1- and 5-year intervals.	Same as Alternative 2.	Same as Alternative 2.
Cumulative Watershed Effects (CWE) Conservation Commitments (for Watersheds with HCP Fish Species) (AQ-CW1)			
Watershed coarse filters completed on most forest management activities. The level of additional CWE analysis is based on the potential for CWE after considering variables such as proposed activity, level of past activity, and beneficial uses at risk.	AQ-CW1 - Same as Alternative 1.		
CWE thresholds established on a watershed-level basis by taking into account items such as stream bank stability, beneficial water uses, and watershed conditions. Thresholds are set at a level that ensures compliance with water quality standards and protection of beneficial water uses with a low to moderate degree of risk. In watersheds of water-quality-limited waterbodies, thresholds are set at a level that provides a low degree of risk. When feasible, DNRC will cooperate with other landowners in watersheds with mixed ownership to minimize cumulative watershed effects within acceptable levels of risk.	AQ-CW1 - Same as Alternative 1, but includes a formalized method for analyzing cumulative watershed effects and process for setting project-level thresholds.	Regardless of thresholds, if equivalent clearcut areas (ECAs) on HCP watersheds exceed 25%, a Level 3 watershed analysis would be mandatory. If Level 3 analysis indicates a moderate or high level of watershed risk, a mitigation plan would be completed by DNRC and reviewed and approved by the USFWS.	Same as Alternative 1.

TABLE E3-3. AQUATIC CONSERVATION STRATEGIES BY ALTERNATIVE (CONTINUED)

No-Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
	AQ-CW1 - Projects implemented in watersheds at high risk of CWE would include mitigations designed to reduce risk of CWE to moderate or low levels.	Regardless of thresholds, if ECAs on HCP watersheds exceed 25%, a Level 3 watershed analysis would be mandatory. If Level 3 analysis indicates a moderate or high level of watershed risk, a mitigation plan would be completed by DNRC and reviewed and approved by the USFWS.	Same as Alternative 2.

TABLE E3-4. SUMMARY OF EFFECTS BY ALTERNATIVE

Evaluation Criterion	No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Climate				
Estimated CO_2 Emissions from New Road Construction and Existing Road Improvement, Maintenance, and Upgrades (metric tons)	956 to 1,271	953 to 1,267	943 to 1,254	953 to 1,267
Estimated Carbon Emissions from Harvested Stands (metric tons)	425.4	460.6	404.6	463.8
Net Change in CO_2 Emissions	After harvest, the ability of those forest stands to store carbon would be reduced, with the level dependent on the intensity of harvest. However, as harvested areas regenerate, they would be able to store more carbon. By maintaining a consistent harvest rotation and forest productivity historically and throughout the Permit term, losses of carbon from newly harvested stands would be expected to be offset by increased carbon intake from regenerating stands harvested in previous years, resulting in little or no net change in CO_2 emissions.			
Forest Vegetation				
Timber Harvest – Annual Sustainable Yield (million board feet)	53.2	57.6	50.6	~~Same as Alternative 2~~58.0
Forest stand attributes (Size Class, Age Class, Old Growth, Crown Closure)	At the landscape level, the effects on forest stand attributes would be similar under each alternative. Progress toward desired future conditions (DFCs) would continue, with the amount of younger stands increasing and the amount of older stands, including old-growth, decreasing compared to current levels. At the localized level, the amount of old-growth is expected to be discernable between the alternatives.	Initiating forest management in the Stillwater Core would result in greater decreases in the amount of old growth in the Stillwater Unit compared to Alternatives 1 and 3.	Same as Alternative 1, but the decrease in the amount of old growth in riparian areas along streams with HCP fish is likely to be less than other alternatives.	Same as Alternative 2
Insects and Disease; Size, Intensity, and Frequency of Wildfire	These factors are likely to increase somewhat under all alternatives, but not due to management activities or HCP commitments. Whether or not an HCP is adopted, insects, disease, and wildfires are expected increase due to outside factors such as persistent drought, increasingly warmer and drier summers, and the influence of activities (or the lack of them) on adjacent ownerships.			

TABLE E3-4. SUMMARY OF EFFECTS BY ALTERNATIVE (CONTINUED)

Evaluation Criterion	No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Air Quality				
	Compared to current levels, adverse effects to air quality are not expected to increase under any alternative and are not expected to be discernable amongst the alternatives. Any increases in adverse effects to air quality would likely be due to outside factors such as persistent drought, increasingly warmer and drier summers, and the influence of activities (or the lack of them) on adjacent ownerships.			
Transportation				
Road Management	Continue to implement existing ARMs that direct DNRC to minimize the extent and impact of road miles.	Similar to Alternative 1, except DNRC would commit to 50-year transportation management plans for the Stillwater Block and the Swan River State Forest.		
Total Road Miles				
Amount of Road Miles − Total Road Miles in the Project Area at Year 50 (2,645.1 at Year 0)	4,053.0	4,032.5	3,967.1	Same as Alternative 2
Amount of Road Miles − Change in Total Road Miles (Year 50 minus Year 0)	+1,407.9	+1,387.3	+1,322.0	Same as Alternative 2
Distribution of Roads − Average Road Density in the Project Area (mi/mi^2) at Year 50 (3.1 at Year 0)	4.7	Same as Alternative 1	4.6	Same as Alternative 1
Distribution of Roads − Change in Total Road Density (mi/mi^2) (Year 50 minus Year 0)	+1.6	Same as Alternative 1	+1.5	Same as Alternative 1
Total Road Miles (excluding abandoned and reclaimed roads)				
Amount of Road Miles − Total Road Miles in the Project Area at Year 50 (2,510.7 at Year 0)	3,631.4	3,610.9	3,545.5	Same as Alternative 2

TABLE E3-4. SUMMARY OF EFFECTS BY ALTERNATIVE (CONTINUED)

Evaluation Criterion	No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Amount of Road Miles –New Road Miles at Year 50	+1,120.7	+1,100.2	+1,034.8	Same as Alternative 2
Distribution of Roads –Average Net Road Density in the Project Area (mi/mi^2) at Year 50 (2.9 at Year 0)	4.2	Same as Alternative 1	4.1	Same as Alternative 1
Distribution of Roads − Change in Net Total Road Density (mi/mi^2) (Year 50 minus Year 0)	+1.3	Same as Alternative 1	+1.2	Same as Alternative 1
Geology/Soils				
Soil Productivity and Erosion	At a landscape level, risk to soil productivity and erosion as a result of road building is expected to increase. Risk to soil productivity as a result of harvesting and grazing licenses is expected to continue similar to current levels. Ongoing culvert repair would result in a gradual reduction in erosion from stream crossings.	At a landscape level, risk to soil productivity and erosion as a result of road building is expected to be similar to Alternative 1. Due to the higher annual sustainable yield, risk to soil productivity is expected to be greater than Alternative 1, but is expected to be offset by the following: enhanced monitoring and corrective actions associated with grazing licenses, reduced timeframes associated with improving stream crossings, and increased buffers along streams with HCP fish. Initiating forest management in the Stillwater Core would result in increased risk to soil productivity and erosion in the Stillwater Unit compared to Alternatives 1 and 3.	At a landscape level, risk to soil productivity and erosion as a result of road building, harvesting, and improving stream crossings is expected to be less than the other alternatives due to the lower annual sustainable yield, fewer road miles constructed, and faster timeframe for corrective actions associated with grazing licenses and for improving stream crossings.	Risk to soil productivity and erosion as a result of road building and harvesting is expected to be similar to Alternative 2. However, leniencies in timeframes established for monitoring and implementing corrective actions associated with grazing licenses and for improving stream crossings are expected to increase risk to soil productivity and erosion compared to Alternatives 2 and 3, yet decrease risk compared to Alternative 1.

TABLE E3-4. SUMMARY OF EFFECTS BY ALTERNATIVE (CONTINUED)

Evaluation Criterion	No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Water Resources				
Water Quality	New road miles would increase sediment delivery to streams due to surface runoff and erosion, thereby increasing the potential to adversely affect water quality. There is potential for minor changes in water temperature and sediment delivery to streams due to continued partial harvest in SMZs. Adverse effects would be minimized by implementing current practices (ARMs, SMZ Law, BMPs, SFLMP).	At a landscape level, risk to water quality as a result of road building is expected to be similar to Alternative 1. Initiating forest management and road building in the Stillwater Core would result in increased risk to water quality in the Stillwater Unit compared to Alternatives 1 and 3. Adverse effects to water quality in all Class 1 streams ~~with HCP fish~~ would be less than Alternative 1 due to: conducting inventory of road sediment delivery problem sites and instituting a schedule for completing corrective actions at problem sites (15 years for bull trout streams); enhancing monitoring (every 5 years) and corrective actions associated with grazing licenses; establishing a 50-foot no-harvest buffer; and designing, implementing, and monitoring site-specific mitigation measures.	At a landscape level, risk to water quality as a result of road building is expected to be similar to Alternative 1. In streams with HCP fish, adverse effects to water quality would be less than all other alternatives due to: reducing the timeframe for conducting inventory of road sediment delivery problem sites and for completing corrective actions at problem sites (10 years for bull trout streams); reducing the timeframe for monitoring associated with grazing licenses (every year); and establishing a no-harvest buffer the entire width of the RMZ.	At a landscape level, risk to water quality as a result of road building is expected to be similar to Alternative 1. Effects to water quality in the Stillwater Unit would be similar to Alternative 2. Adverse effects to water quality in streams with HCP fish would be less than Alternative 1 but greater than Alternatives 2 and 3 due to: an extended timeframe for conducting inventory of road sediment delivery problem sites and no certain timeframe for completing corrective actions at problem sites (project-by-project basis); an extended timeframe for monitoring associated with grazing licenses (10 years); and increased harvest allowed within the RMZ.

TABLE E3-4. SUMMARY OF EFFECTS BY ALTERNATIVE (CONTINUED)

Evaluation Criterion	No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Water Quantity	All alternatives include requirements to establish watershed-level thresholds to protect beneficial water uses with a low to moderate degree of risk. Project-level cumulative watershed effects analyses and mitigations would continue under all alternatives. Some measurable changes in water quantity for all alternatives would be expected, but only where timber harvest occurs in small watersheds, particularly within the rain-on-snow elevation zone.			
Plant Species of Concern, Noxious Weeds, and Wetlands				
Plant Species of Concern (SOC)	Current practices (ARMs and MCA) that address identified Plant SOC will be implemented. Activities associated with the alternative are not expected to adversely effect known populations of the threatened species Spalding's campion and water howellia that occur in the HCP project area.	Same as Alternative 1, but some HCP conservation commitments for fish (AQ-RM1, AQ-SD2, AQ-SD5, AQ-GR1) and wildlife species (GB-PR4, GB-NR3, GB-RZ3, GB-RZ5, GB-ST2) would result in greater protection of potential habitat of Spalding's campion, water howellia, and other plant SOC (where unknown populations may exist). Alternative 3 would provide slightly greater protection in riparian areas.		
Noxious Weeds	Current practices (ARMs and MCA) aimed at minimizing the spread of noxious weeds would be implemented.	As compared to Alternative 1, some HCP conservation commitments for fish (AQ-SD2, AQ-SD3, AQ-GR1) and wildlife species (GB-PR7, GB-RZ1, GB-NR4, GB-RZ6) would systematically help reduce the spread of noxious weeds.	Alternative 3 would provide the greatest level of protection against noxious weed spread because it would construct the fewest miles of road, place more roads under restrictions from public access, require the shortest timeframe for correction of eroding roads, and require the most frequent grazing inspections.	Same as Alternative 2.
Wetlands	Under all alternatives, wetland protection would continue as under current conditions (ARMs 36.11.301 through 36.11.313 and ARM 36.11.426). However, under the action alternatives, some HCP conservation commitments for fish species (AQ-RM1, AQ-SD2, AQ-GR1) would result in enhanced wetland protection over Alternative 1. ~~Alternative 3 would provide the greatest protection of wetlands due to wider streamside buffers where harvest would be prohibited, which would protect wetlands located in the riparian zones of streams.~~ Alternative 3 would have the shortest timeline for identifying and correcting sedimentation issues on roads, which may reduce sediment and erosion impacts on wetlands.			
Fish and Fish Habitat				
Risk of Adverse Effects on Aquatic Habitat	All of the alternatives are generally effective at maintaining key habitat components at a level that provides for healthy fish populations.			
Sedimentation	Sediment production and delivery would be relatively equivalent under all alternatives by the end of the Permit term (50 years). However, all the action alternatives would systematically reduce sediment production and delivery rates sooner on HCP species streams than Alternative 1, resulting in greater cumulative benefits during the entire Permit term. Considering the various riparian buffer widths and timeframes for correcting sediment problems, Alternative 3 provides the most conservation benefits to fish species and habitat in the			

TABLE E3-4. SUMMARY OF EFFECTS BY ALTERNATIVE (CONTINUED)

Evaluation Criterion	No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
	short term, followed sequentially by Alternatives 2, 4, and 1.			
Large Woody Debris (LWD) Frequency	All of the alternatives are expected to maintain adequate stream form and function characteristics; however the action alternatives would better ensure in-stream LWD levels to support native fish species. ~~Also, because the riparian buffer width for the action alternatives is greatest in situations where HCP aquatic species are present, the HCP species would have an increased assurance of properly functioning LWD conditions.~~ Model results show that Alternative 3 would provide the greatest LWD levels, with sequentially decreasing levels for Alternatives 2, 4, and 1. However, Alternative 2 would provide increased LWD frequencies over a substantially larger portion of the HCP project area than would either of the other action alternatives (Alternatives 3 and 4).			
Shade and Temperature	Modeling indicates that all three action alternatives are similarly effective at maintaining the key riparian functions of shading and stream temperature at a level that provides for the conservation of fish, including HCP aquatic species. Stream shading under Alternative 1 is substantially decreased by initial harvest. Although Alternative 1 stream shading showed a gradual increase through the end of the modeling period, the level of shading never exceeded the shade levels of the action alternatives. None of the action alternatives would result in a measurable negative effect on maximum summer or minimum winter stream temperatures.			
Connectivity	Timeframes for culvert replacement vary between the alternatives. Alternatives 2 and 3 contain specific commitments for replacing known barrier culverts and for correcting identified high-risk road-stream crossings. Alternatives 1 and 4 do not contain these specific commitments. Alternatives 2 and 3 contain effectiveness monitoring and adaptive management components to ensure that desired levels of connectivity are being achieved. Therefore, Alternative 3, which would correct connectivity problems more expeditiously, would improve fish passage sooner, especially for the HCP fish species. Alternative 2 would also improve connectivity, but at a slightly slower rate than Alternative 3.			
Other Habitat Factors	All of the alternatives would provide adequate aquatic habitat conditions, and in the long term, maintain properly functioning channel form and function and microclimate conditions. While there are some differences in the way each alternative addresses channel form and function and microclimate, it is not known if significant differences between the action alternatives would result.			
Wildlife				
Grizzly Bear				
Total Roads	Increases in road miles would result in increases in total road densities on DNRC lands and in BMU subunits in recovery zones. High road densities may reduce habitat effectiveness and displace bears from important habitats. Alternative 1 partially offsets some of these effects by implementing secure habitat in the Stillwater Block and quiet areas in the Swan River State Forest, minimizing effects on important habitat elements in timber harvest design, and retaining hiding cover. Under the action alternatives, the effects of increased roads are partially offset by restricting DNRC and public use of roads, implementing spring restrictions, establishing quiet areas on blocked lands and scattered parcels, and retaining hiding cover and other important habitat elements.			
Total Roads on Scattered Parcels in Non-Recovery Occupied Habitat (mi/mi^2)	Under each alternative, total road density increases would be the same and would increase by 0.7 in NWLO, 1.3 in SWLO, and 1.4 in CLO.			

TABLE E3-4. SUMMARY OF EFFECTS BY ALTERNATIVE (CONTINUED)

Evaluation Criterion	No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Total Roads on Scattered Parcels in Recovery Zone (mi/mi^2)	+0.6 in NWLO +1.2 in SWLO +0.4 in CLO	Same as Alternative 1.	No increase.	Same as Alternative 1.
Total Roads in the Stillwater Block (miles)	+17.6 Increases in new permanent roads would be prohibited in the Stillwater Core.	+19.3 Increases in new permanent roads would be allowed in the Stillwater Core, but prohibited on Class A lands.	Same as Alternative 1.	Same as Alternative 2.
Total Roads in the Swan River State Forest (miles)	+70.3			
Open Roads on Scattered Parcels in Non-recovery Occupied Habitat (mi/mi^2)	Under all alternatives, open road density would only increase in the SWLO (by 0.1).			
Open Roads on Scattered Parcels in Recovery Zones (mi/mi^2)	Under Alternatives 2, 3, and 4, there would be no increase in open road densities in recovery zones. Under Alternative 1, the increase would be very minimal (0.1) and not likely result in noticeable differences in effects on grizzly bears compared to the other alternatives.			
Open Roads in the Stillwater Block	No increase.	No increases in roads open year-round. Increase in roads open seasonally in the Stillwater Core.	Same as Alternative 1	Same as Alternative 2.
Open Roads in the Swan River State Forest	No increase.	Under worst-case scenario, if the Swan Agreement dissolves, there could be an increase of up to 28.4 miles in open roads.	Same as Alternative 2.	Same as Alternative 2.
Helicopter Use	Restrictions on air- and ground-based harvest applied in the Stillwater Block for security core and seasonally important areas for bears under ARM 36.11.432(1)(f).; flight paths designed to occur at least 1 mile from these areas where practicable.	Effects on grizzly bears attributable to DNRC's helicopter activities, would likely be minor across all alternatives considered since helicopter logging occurs infrequently within DNRC's forest management program, relatively small areas are typically affected by helicopter use (less than 320 acres annually on average), and the disturbance is brief (usually initiated and completed within one 3- to 6-month operating season). While short-term helicopter disturbance can be intense for local bears using an area, the effect of the activity provides less long-term risk than similar ground based yarding methods requiring new road construction or existing road systems. Application of new commitments for helicopter use across the entire HCP project area would minimize any remaining disturbance of bears from helicopter use.		

TABLE E3-4. SUMMARY OF EFFECTS BY ALTERNATIVE (CONTINUED)

Evaluation Criterion	No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Secure Habitat and Quiet Areas	Alt. 1 would maintain secure habitat in the Stillwater Core (39,600 acres) and implement quiet areas on the Swan River State Forest as outlined in the Swan Agreement (3 years activity followed by 6 years rest).	In the Stillwater Block, 19,400 acres established as quiet areas with 4 years active management followed by 8 years rest. If the Swan Agreement dissolves, quiet areas would be implemented on a schedule of 4 years active and 8 years rest. All scattered parcels in recovery zones would be subject to schedule of 4 years active and 8 years rest.	Same as Alternative 1 in the Stillwater Block. Same as Alternative 2 on the Swan River State Forest and on scattered parcels in recovery zone.	Same as Alternative 2.
Direct Conflicts	Current program of informal training of employees on bear awareness and food storage and sanitation; firearm prohibitions; and case-by-case mitigation measures for grazing licenses where conflicts with bears may occur; no encounters by DNRC staff and contractors leading to the death of a bear to date.	Additional measures including formal training for all employees and contractors on bear awareness, food storage, and sanitation and grazing license commitments would further minimize the risk of DNRC employee or contractor conflicts with bears. However, over 50-year Permit term, potential conflicts in the NCDE may occur because DNRC has considerable ownership in grizzly bear habitat and because bears are currently relatively abundant.		
Spring Habitat	Seasonal restrictions applied in the Swan River State Forest under the existing Swan Agreement.	Spring habitat restrictions would be implemented on 161,068 acres of trust lands, including approximately 48,600 acres in the Stillwater Block, 31,700 acres in the Swan River State Forest, and 17,900 acres in the CYE (Table 4.9-5). By limiting the types of allowable activities during the spring period in areas where bears are more likely to be present, Alternative 2 would reduce the risk (compared to Alternative 1) of displacement from crucial habitat during this important season for bears.	Similar acreage subject to spring restrictions as under Alternative 2, but more stringent restrictions apply; thereby reducing potential risk of effects by a slight degree compared to Alternative 2.	Alternative 4 is similar to Alternative 2 but would provide slightly more management flexibility thereby increasing the risk of displacements by a slight degree compared to Alternative 2.

TABLE E3-4. SUMMARY OF EFFECTS BY ALTERNATIVE (CONTINUED)

Evaluation Criterion	No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Potential Denning Habitat	Some potential for disturbance of bears in undetected dens or emerging from undetected dens	Potential for disturbance avoided by imposing management restrictions on specific geographic area of potential denning habitat. For Alternatives 2 and 4, only the recovery zones receive the restrictions, and the area amounts to 5,863 acres. Under Alternative 3, the restrictions also apply to NROH, and an extra buffer on the area is added, for a total of 66,376 acres.		
Habitat Modification	Modeling results for all alternatives reflect an increase in hiding cover over time, with very little differences between alternatives. Under Alternative 1, impacts to habitat elements would be addressed as identified for individual projects through the MEPA interdisciplinary process. Alternatives 2, 3, and 4 contain specific provisions for assessing impacts to specific grizzly bear habitat elements for projects in recovery zones. DNRC would develop mitigations that minimize impacts to these specific habitat elements. As a result, the risk of adverse effects on foraging opportunities in key sites would be reduced compared to Alternative 1. All three action alternatives provide greater certainty of maintaining linkage in important areas over the 50-year Permit term than Alternative 1.			
Canada Lynx				
Suitable habitat	Manage 15 percent (~~28,538~~32,805 acres) of total potential habitat (~~190,251~~218,700 acres) for lynx.	All action alternatives would require retention of more suitable habitat than Alternative 1, which would conserve lynx by promoting a balance of stands in various structural stages. Alternative 3 requires 70 percent (~~133,174~~180,134 acres), Alternative 2 requires 65 percent (~~123,663~~167,267 acres), and Alternative 4 requires 60 percent (~~114,151~~154,400 acres) of the total potential habitat within LMAs and scattered parcels be maintained as suitable. Under Alternatives 2 and 3, no more than 15 percent of suitable habitat could be converted to temporary non-suitable per decade in any LMA; the limit under Alternative 4 would be 20 percent.		
Foraging Habitat	Provides adequate foraging habitat for lynx.	While the action alternatives require DNRC to retain more foraging habitat for lynx ~~(20 percent of total potential habitat in an LMA)~~ than currently required under ARMs, the amount of foraging habitat could be reduced considerably over the permit term, which may have adverse effects on lynx. These effects are partially offset by expected improvements in availability and quality of foraging habitat within LMAs, ~~and provisions within~~ requirements for retention of winter foraging habitat and pre-commercial thinning units, as well as prescriptions to maintain some level of snowshoe hare use in pre-commercial thinning units and to help expedite the development of future winter foraging habitat. ~~Under Alternative 3, retention of unthinned patches within pre-commercial thinning units totaling 20 percent would provide additional assurances for lynx foraging in young stands.~~		
Denning Habitat	Provides sufficient denning habitat by maintaining 5 percent of total potential habitat as denning habitat on scattered parcels and within the Stillwater Block and Swan River State Forest and adhering to the ARMs for snags and snag recruits (36.11.411) and coarse woody debris (36.11.414).	All action alternatives are expected to benefit lynx by adequately conserving den site attributes during timber harvest activities (including salvage).	Alternative 3 would benefit lynx slightly more than other alternatives because it would retain ~~ensure that~~ at least ~~some of the~~ 2 den sites per square mile ~~occur~~ within or adjacent to stands providing the structural requirements for lynx denning.	Alternative 4 would retain 2 den sites per square mile but ~~Least beneficial because it~~ would not retain 1 percent of blowdown salvage. Difference not expected to have substantial effect on lynx.

TABLE E3-4. SUMMARY OF EFFECTS BY ALTERNATIVE (CONTINUED)

Evaluation Criterion	No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Habitat Connectivity and Linkage	Adequately conserves lynx habitat connectivity and linkage.	All action alternatives provide greater assurances that connectivity would be maintained for essential denning, foraging, and dispersal activities for lynx compared to Alternative 1. Alternative 3 would likely provide a slightly greater level of assurance that connectivity is maintained followed by Alternatives 2 and then 4. This is attributed to the preservation of the Stillwater Core and commitments to limit contiguous occurrences of temporary nonsuitable habitat.		
Den Site Protection	Generally, known den sites receive adequate protection.	All action alternatives provide additional protection for denning lynx compared to Alternative 1 by applying specific restriction dates. Forest management activities are not expected to result in adverse effects on denning lynx because of the low likelihood of overlap between a harvest unit and a lynx den site.		
Other Wildlife Species				
Effects on Other Wildlife Species	No change	No policy changes are specifically proposed for other wildlife species. Substantial effects to other wildlife species are not expected. Most identified effects tend to be beneficial. Extensive analysis of other wildlife species contained in Section 4.9 of the Draft EIS.		
Recreation				
Scattered Parcels	Very slight increase (4 to 6%) in amount of road miles open year-round or seasonally to motorized public access under each alternative; motorized users would not benefit greatly. Increase in amount of road miles limited to non-motorized public access would more than double under each alternative; non-motorized users such as hunters, bicyclists, berry-pickers, hikers, cross country skiers who seek easier access to areas would benefit. Recreationists who seek undisturbed areas in which to recreate may view increases in open and restricted road miles unfavorably.			

TABLE E3-4. SUMMARY OF EFFECTS BY ALTERNATIVE (CONTINUED)

Evaluation Criterion	No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Stillwater Block and Swan River State Forest	No changes in amount of road miles open year-round or seasonally to motorized public access would occur in the Stillwater Block or Swan River State Forest. Motorized user groups would gain no further road access than is currently present. Amount of road miles limited to non-motorized public access would increases in both the Stillwater Block and the Swan River State Forest. Such increases may be viewed favorably by non-motorized users such as hunters, mountain bikers, berry-pickers, and hikers who seek easier access to areas. Recreationists who seek undisturbed areas in which to recreate may view increases in open and restricted road miles unfavorably.	Amount of road miles open year-round to motorized public access in the Stillwater Block would decrease by 18.3 miles, which may be viewed negatively by motorized users. However, this negative effect may be partially offset by the increase in seasonal motorized access to two important recreation areas in the Stillwater Core: Stryker Basin and Herrig Lake. In the Swan River State Forest, if the Swan Agreement is terminated, the amount of road miles open year-round to motorized public access may increase by over 20 miles, which would benefit motorized-user groups. The amount of road miles with seasonal restrictions would increase by 47 miles in the Stillwater Block, and would increase by 23 miles in the Swan River State Forest, providing increased seasonal motorized access as well as increased non-motorized public access. Increases in timber management in the Stillwater Core may have negative localized effects on the quality of the recreational experience for some user groups; however, these effects would be short-term.	For Stillwater Block, similar to Alternative 1. For the Swan River State Forest, similar to Alternative 2.	For both the Stillwater Block and the Swan River State Forest, similar to Alternative 2.

TABLE E3-4. SUMMARY OF EFFECTS BY ALTERNATIVE (CONTINUED)

Evaluation Criterion	No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Visual Resources				
Risk of Adverse Effects on Visual Landscape	Increases in the amount of roaded areas and forest in the non-stocked and seedling/sapling size classes would result in decreases in the amount of natural-appearing forested landscape. Although the amount of roaded areas and acres in the non-stocked and seedling/sapling size classes would be different under each alternative, the effects to visual resources would be indistinguishable between the alternatives, except for activities associated with the Stillwater Core. User-groups who prefer to recreate in more natural-appearing landscapes may view the effects to the visual landscape unfavorably.			
Stillwater Core	Minimal active forest management, so no or minimal changes to visual landscape from DNRC activities.	Harvest areas and roads would increase the amount of visibly modified forestland. Visibility from a distance more likely due to greater use of even-aged management. User-groups who prefer to recreate in more natural-appearing landscapes may view the effects to the visual landscape of the Stillwater Core unfavorably.	Similar to Alternative 1.	Similar to Alternative 2.
Archaeological, Historical, Cultural, and Tribal Trust Resources				
Risk of Adverse Effects on Resources	Activities associated with timber harvest and road construction may have some adverse effects on cultural or paleontological resources. Although the amount of new road miles and sustainable yield would be different under each alternative, the effects to cultural or paleontological resources would be indistinguishable between the alternatives, except for activities associated with the Stillwater Core.			
Stillwater Core	Minimal active forest management, so minimal risk of encountering or disturbing cultural or paleontological resources or Traditional Cultural Properties from DNRC activities.	Increase in active forest management, including new road construction; therefore, increased risk of encountering or disturbing cultural or paleontological resources or Traditional Cultural Properties.	Similar to Alternative 1.	Similar to Alternative 2.
Socioeconomics				
Present Net Value (millions of dollars)	$146.1	$155.8	$124.5	$160.2
Forestry Sector Jobs (# jobs per year)	507	553	482	557
Forestry Sector Wages (per year, $1,000,000)	$19.7	$21.5	$18.7	$21.6

TABLE E3-4. SUMMARY OF EFFECTS BY ALTERNATIVE (CONTINUED)

Evaluation Criterion	No Action (Alternative 1)	Proposed HCP (Alternative 2)	Increased Conservation HCP (Alternative 3)	Increased Management Flexibility HCP (Alternative 4)
Gross Revenues	$12,187,865	$13,293,677	$11,584,481	$13,377,804
Expenditures	$6,157,986	$6,716,682	$6,462,184	$6,720,252
Net Revenues	$6,029,878	$6,576,994	$5,122,298	$6,657,552
Recreational Use License Revenue and Forest-related Recreation Jobs	Sales of recreation use licenses and forest-related recreation job opportunities likely to follow existing trends.	Increased sales of recreation use licenses and forest-related recreation job opportunities due to increased access into the Stillwater Core. Commercial and general recreation users may benefit from greater access into the Stillwater Core.	Similar to Alternative 1.	Similar to Alternative 2.
Natural Amenities and Non-use Value	Changes to natural amenities and non-use values likely to continue in a similar pattern as they have since DNRC's current forest management program went into effect. Residents and tourists who derive value from unmanaged landscapes would continue to be affected by ongoing harvesting.	Slightly lower level of effects on natural amenities and non-use values at the landscape level due to increased conservation commitments. ~~Opening~~Increasing management in the Stillwater Core would affect the natural amenities and non-use values in that area, thereby negatively affecting residents and tourists who derive value from unmanaged landscapes.	Changes to natural amenities and non-use values likely to be less than all alternatives due to additional protection and mitigation requirements for sensitive areas and wildlife species.	Similar to Alternative 2
Environmental Justice				
	Project effects not expected to fall disproportionately on minority or low-income populations.			

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TABLE E4-1. HCP PROJECT AREA LANDS BY CURRENT COVER TYPE, DESIRED FUTURE CONDITION (DFC), AND LAND OFFICE

Land Office, Cover Type	Acres of Current Cover Type (CCT)	Acres of Current Cover Type that Meet DFCs (CCT = DFC)	Acres of Target DFC	Percent of DFC Target Met	Acres of CCT that Need to be Converted to Another Cover Type (CCT ≠ DFC)	Percent of CCT that Needs to be Converted to Another Cover Type
CLO						
Mixed conifer	390	387	392	98.7%	3	0.8%
Hardwoods	656	656	656	100.0%	0	0.0%
Douglas-fir	35,620	35,620	36,619	97.3%	0	0.0%
Ponderosa pine	6,045	6,045	6,053	99.9%	0	0.0%
Lodgepole pine	7,413	7,413	7,494	98.9%	0	0.0%
Subalpine fir	5,385	5,316	5,442	97.7%	69	1.3%
Non-commercial	64	0	0	0	64	100.0%
Non-stocked	1,083	0	0	0	1,083	100.0%
NWLO						
Mixed conifer	65,536	14,360	17,141	83.8%	51,176	78.1%
Hardwoods	816	293	360	81.3%	523	64.1%
Western larch/Douglas-fir	65,402	54,320	105,607	51.4%	11,082	16.9%
Douglas-fir	7,046	4,264	5,870	72.7%	2,781	39.5%
Ponderosa pine	47,552	43,823	51,648	84.8%	3,729	7.8%
Lodgepole pine	20,363	13,449	18,033	74.6%	6,914	34.0%
Subalpine fir	37,470	23,549	27,172	86.7%	13,922	37.2%
Western white pine	7,790	7,790	32,070	24.3%	0	0.0%
Non-commercial	96	0	0	0	96	100.0%
Non-stocked	5,830	0	0	0	5,830	100.0%
SWLO						
Mixed conifer	4,523	727	897	81.0%	3,796	83.9%
Hardwoods	569	525	525	100.0%	43	7.6%
Western larch/Douglas-fir	20,857	19,651	27,980	70.2%	1,207	5.8%
Douglas-fir	29,242	26,392	31,206	84.6%	2,850	9.7%
Ponderosa pine	48,640	48,122	57,657	83.5%	518	1.1%
Lodgepole pine	12,432	9,826	10,857	90.5%	2,606	21.0%
Subalpine fir	5,117	1,785	2,032	87.9%	3,332	65.1%
Western white pine	207	207	383	54.2%	0	0.0%
Non-commercial	293	0	0	0	293	100.0%
Non-stocked	9,657	0	0	0	9,657	100.0%

TABLE E4-1. HCP PROJECT AREA LANDS BY CURRENT COVER TYPE, DESIRED FUTURE CONDITION (DFC), AND LAND OFFICE (CONTINUED)

Land Office, Cover Type	Acres of Current Cover Type (CCT)	Acres of Current Cover Type that Meet DFCs (CCT = DFC)	Acres of Target DFC	Percent of DFC Target Met	Acres of CCT that Need to be Converted to Another Cover Type (CCT ≠ DFC)	Percent of CCT that Needs to be Converted to Another Cover Type
TOTAL						
Mixed conifer	70,450	15,474	18,431	84.0%	54,975	78.0%
Hardwoods	2,041	1,474	1,541	95.6%	567	27.8%
Western larch / Douglas-fir	86,260	73,971	133,587	55.4%	12,289	14.2%
Douglas-fir	71,908	66,276	73,695	89.9%	5,631	7.8%
Ponderosa pine	102,237	97,990	115,358	84.9%	4,247	4.2%
Lodgepole pine	40,208	30,688	36,385	84.3%	9,520	23.7%
Subalpine fir	47,972	30,650	34,646	88.5%	17,322	36.1%
Western white pine	7,997	7,997	32,453	24.6%	0	0.0%
Non-commercial	452	0	0	0	452	100.0%
Non-stocked	16,570	0	0	0	16,570	100.0%

Source: DNRC (2008a).

TABLE E4-2. DISTRIBUTION AND HABITAT PREFERENCE OF PLANT SOC IN THE HCP PROJECT AREA

Scientific Name	Common Name	State Status[1]	Federal Status[2]	Known Habitat Preferences[3]	Management Practices / Disturbances Affecting Species and/or Habitat[3]	Documented Presence in the HCP Project Area[4]		
						NWLO	CLO	SWLO
Aloina brevirostris	Aloina brevirostris	S1	None	**Information is not complete**	Uncertain	+	–	–
Amblyodon dealbatus	Amblyodon dealbatus	SH	None	**Information is not complete**	Uncertain	+	–	–
Amerorchis rotundifolia	Round-leaved orchis	S2S3	Sensitive	**Moist Forest:** Spruce forest around seeps or along streams	Timber Harvesting, Road Construction	+	–	–
Aquilegia formosa	Sitka columbine	S1S2	Sensitive	**Moist Forest:** Moist soil of open coniferous, cottonwood, or aspen forests in the montane to subalpine zone	Uncertain	–	+	–
Arabis fecunda	Sapphire rockcress	S2S3	Sensitive	**Shrub Steppe / Dry Woodland:** Moderate to steep slopes with sparse vegetation or open dry ponderosa pine woodlands	Noxious weeds, Grazing, Road construction	–	–	+
Asplenium trichomanes	Maidenhair spleenwort	SH	None	**Rock Outcroppings:** Moist rock crevices and talus slopes in montane zone	Uncertain	+	–	–
Astragalus cermicus var. apus	Painted milkvetch	S1	Sensitive	**Other:** Early successional habitats, including sandy soil on moderately steep south and west facing slopes	Dune stabilization through fire, grazing, and gopher activity	–	+	–
Athysanus pusillus	Sandweed	S1	Sensitive	**Moist Forest:** Shallow soil on steep slopes or cliffs in the lower mountain zone	Noxious weeds	–	–	+

TABLE E4-2. DISTRIBUTION AND HABITAT PREFERENCE OF PLANT SOC IN THE HCP PROJECT AREA (CONTINUED)

Scientific Name	Common Name	State Status[1]	Federal Status[2]	Known Habitat Preferences[3]	Management Practices / Disturbances Affecting Species and/or Habitat[3]	Documented Presence in the HCP Project Area[4]		
						NWLO	CLO	SWLO
Atriplex truncata	Wedge-leaved saltbrush	S1	None	**Wetland/Riparian:** Vernally moist, alkaline soils around ponds and along valley streams	Uncertain	–	+	–
Bidens beckii	Beck water-marigold	S2	Sensitive	**Wetland/Riparian:** Still or slow-moving water of lakes, rivers, and sloughs in valleys	Uncertain	+	–	–
Botrychium ascendens	Upward-lobed moonwort	S1S2	Sensitive	**Wetland/Riparian:** Stream floodplain habitats	Noxious Weeds, Road Construction	+	–	–
Botrychium crenulatum	Wavy moonwort	S2S3	Sensitive	**Wetland/Riparian:** Stream bottoms and along edges of seeps, marshes and wet roadsides	Noxious Weeds, Road Construction	++	–	–
Botrychium montanum	Mountain moonwort	S3	None	**Moist Forest:** Deep litter of mature forests and along riparian thickets, mesic meadows, and grassy trail edges	Uncertain	+	–	–
Botrychium pedunculosum	Stalked moonwort	S1S2	Sensitive	**Moist Forest:** Litter of mature forests and old stream channel bottoms	Timber Harvesting, Road Construction	+	–	–
Bryum calobryoides	Bryum calobryoides	SH	None	**Information is not complete**	Uncertain	+	–	–
Carex idahoa	Idaho sedge	S2S3	Sensitive	**Wetland/Riparian:** Meadows alongside streams in valley bottoms	Grazing, Noxious Weeds, Road Construction	–	–	+
Castilleja cervina	Deer Indian paintbrush	SH	None	**Grasslands / Dry Woodland:** Grasslands and open coniferous forests in lower montane zones	Uncertain	+	–	+

TABLE E4-2. DISTRIBUTION AND HABITAT PREFERENCE OF PLANT SOC IN THE HCP PROJECT AREA (CONTINUED)

Scientific Name	Common Name	State Status[1]	Federal Status[2]	Known Habitat Preferences[3]	Management Practices / Disturbances Affecting Species and/or Habitat[3]	Documented Presence in the HCP Project Area[4]		
						NWLO	CLO	SWLO
Cetraria subalpina	Cetraria subalpina	S2	None	**Information is not complete**	Uncertain	+	–	–
Cirsium brevistyl um	Short-styled thistle	S1S2	None	**Grasslands / Dry Woodland:** Meadows and disturbed forests in valley and montane zones	Uncertain	+	–	–
Collema curtisporum	Collema curtisporum	S1	Sensitive	**Information is not complete**	Uncertain	+	–	–
Cryptantha humilis	Round-headed cryptantha	SH	None	**Shrub steppe / Dry Woodland:** Sagebrush steppe and valley woodlands	Uncertain	–	+	–
Cyperus erythrorhizos	Red-root flatsedge	SH	None	**Wetland/Riparian:** Along major rivers	Uncertain	+	–	–
Cypripedium fasciculatum	Clustered lady's-slipper	S2	Sensitive	**Dry Woodland:** Warm, dry mid-seral montane forests	Timber Harvesting	+	–	+
Cypripedium passerinum	Sparrow's-egg lady's slipper	S2	Sensitive	**Moist Forest:** Mossy, moist, or seepy places in coniferous forests	Timber Harvesting	++	–	–
Drosera anglica	English sundew	S2S3	Sensitive	**Moist Forest:** Found with sphagnum moss in wet soils in montane zone	Uncertain	++	–	–
Dryopteris cristata	Crested shieldfern	S2	Sensitive	**Moist Forest:** Moist to wet soils in forest margins of fens and swamps in montane zone	Timber Harvesting	++	–	–
Eleocharis rostellata	Beaked spikerush	S2	Sensitive	**Wetland/Riparian:** Wet soils along warm springs or fens in valleys	Timber Harvesting	++	–	–
Epipactis gigantea	Giant helleborine	S2	Sensitive	**Wetland/Riparian:** Stream banks, lake margins, fens, springs, and seeps	Timber Harvesting	++	–	–

TABLE E4-2. DISTRIBUTION AND HABITAT PREFERENCE OF PLANT SOC IN THE HCP PROJECT AREA (CONTINUED)

Scientific Name	Common Name	State Status[1]	Federal Status[2]	Known Habitat Preferences[3]	Management Practices / Disturbances Affecting Species and/or Habitat[3]	Documented Presence in the HCP Project Area[4]		
						NWLO	CLO	SWLO
Eriophorum gracile	Slender cottongrass	S2	Sensitive	**Moist Forest:** Wet soils along fens in valleys and montane zones	Timber Harvesting	++	–	–
Grindelia howellii	Howell's gumweed	S2S3	Sensitive	**Moist Forest:** Moist lightly disturbed soil adjacent to ponds, marshes, grazed pastures, and roadsides	Road Construction, Noxious Weeds	–	–	+
Howellia aquatilis	Water howellia	S2	Threatened	**Moist Forest:** Small vernal wetlands and at the edges of deeper ponds	Noxious weeds, Timber Harvesting	++	–	–
Hutchinsia procumbens	Hutchinsia	S1	Sensitive	**Shrub steppe / Dry Woodland:** Vernally moist soil of sagebrush steppe in the lower montane zone	Uncertain	+	–	–
Idahoa scapigera	Scalepod	S1	Sensitive	**Moist Forest :** Vernally moist soil on rock ledges in the lower mountain zone	Uncertain	–	–	+
Lathyrus bijugatus	Latah tule pea	S1	Sensitive	**Dry Woodland:** Open ponderosa pine and western larch forests in lower montane zones and valleys	Uncertain	+	–	–
Lesquerella carinata	Garnet bladderpod	S1	Sensitive	**Grasslands:** Gravelly grassland slopes in foothills zone	Noxious Weeds	–	–	+
Liparis loeselii	Loesel's twayblade	S1S2	Sensitive	**Wetland/Riparian:** Wet soils along fens in valley and montane zones	Timber Harvesting	++	–	–
Neckera douglasii	Neckera douglasii	S1	None	**Information is not complete**	Uncertain	+	–	–

TABLE E4-2. DISTRIBUTION AND HABITAT PREFERENCE OF PLANT SOC IN THE HCP PROJECT AREA (CONTINUED)

Scientific Name	Common Name	State Status[1]	Federal Status[2]	Known Habitat Preferences[3]	Management Practices / Disturbances Affecting Species and/or Habitat[3]	Documented Presence in the HCP Project Area[4]		
						NWLO	CLO	SWLO
Nymphaea tetragona ssp. Leibergii	Pygmy water-lily	S1	None	**Wetland/Riparian:** Along quiet, fresh water of lakes and sloughs in valleys	Timber Harvesting, Noxious Weeds	–	–	+
Ophioglossum pusillum	Adder's tongue	S2	Sensitive	**Wetland/Riparian:** Wet meadows, margins of fens, and gravelly moist soils	Grazing, Noxious Weeds	++	–	–
Penstemon lemhiensis	Lemhi beardtongue	S3[5]	Sensitive	**Shrub Steppe:** Moderate to steep relatively dry slopes	Grazing, Noxious Weeds, Road Construction	–	+	+
Potamogeton obtusifolius	Blunt-leaved pondweed	S2	Sensitive	**Wetland/Riparian:** Shallow water of lakes, ponds, and sloughs in valley, foothill, and montane zones	Timber Harvesting	++	–	–
Scheuchzeria palustris	Pod grass	S2	Sensitive	**Wetland/Riparian:** Wet soils along fens in valley and montane zones	Timber Harvesting	++	–	–
Scirpus cespitosus	Tufted club-rush	S2	Sensitive	**Wetland/Riparian:** Wet meados and sphagnum bogs in montane and alpine zones	Uncertain	+	–	–
Scirpus subterminalis	Water bulrush	S2	Sensitive	**Wetland/Riparian:** Open water and boggy margins of ponds, lakes, and sloughs in valley, foothill, and montane zones	Timber Harvesting	++	–	–
Silene spaldingii	Spalding's campion	S1	Threatened	**Grasslands:** Open, mesic grasslands in valleys and foothills	Noxious Weeds, Grazing, Road Construction	+	–	–
Sphagnum wulfianum	Sphagnum wulfianum	S1	None	**Information is not complete**	Uncertain	+	–	–

TABLE E4-2. DISTRIBUTION AND HABITAT PREFERENCE OF PLANT SOC IN THE HCP PROJECT AREA (CONTINUED)

Scientific Name	Common Name	State Status[1]	Federal Status[2]	Known Habitat Preferences[3]	Management Practices / Disturbances Affecting Species and/or Habitat[3]	Documented Presence in the HCP Project Area[4]		
						NWLO	CLO	SWLO
Taraxacum eriophorum	Rocky Mountain dandelion	S2	Sensitive	**Wetland/Riparian:** Open riparian and wetland ares of foothills and montane zones	Noxious Weeds, Grazing	–	+	–
Thelypodium sagittatum	Slender thelypody	S2	Sensitive	**Grassland:** Moist meadows in valley to montane zones	Uncertain	–	+	–
Trifolium gymnocarpon	Hollyleaf clover	S2	Sensitive	**Dry Woodland:** Open woods and slopes in lower montane zones	Timber Harvesting, Road Construction	–	–	+
Utricularia intermedia	Flat-leaved bladderwort	S1S2	Sensitive	**Wetland/Riparian:** Shallow water of peatlands in valley to montane zones	Uncertain	+	–	–
Viola selkirkii	Great-spurred violet	S1	Sensitive	**Other:** Spotty distribution	Uncertain	+	–	–

[1] Source: MNHP (2008a).
[2] Federal status includes U.S. Fish and Wildlife Service, Bureau of Land Management, and U.S. Forest Service rankings. Federal Status ranking indicates that one, more than one, or all agencies have listed the species as either Sensitive or Threatened.
[3] Data obtained from the Montana Field Guide (http://fieldguide.mt.gov).
[4] + Data obtained from MNHP Natural Heritage Tracker database (MNHP 2008b). ++ Data obtained from surveys conducted in Swan River State Forest (Pierce and Barton 2000, 2001, and 2003).
[5] Although S3 listed species are not typically identified as SOC, this plant was recorded as such in the MNHP database and was accounted for accordingly in the query for SOC on HCP project area lands.

TABLE E4-3. EIS AQUATIC ANALYSIS UNIT ACREAGE

	Clark Fork Basin						Flathead Basin			
	Bitterroot	Blackfoot	Lower Clark Fork	Middle Clark Fork	Rock Creek	Upper Clark Fork	Flathead Lake	N. Fork Flathead	Stillwater	Swan
Planning Area (Acres)	1,827,284	1,478,362	714,038	3,197,557	568,475	1,793,565	761,502	612,855	498,460	466,102
All DNRC Ownership Within Planning Area (Acres)	40,079	67,753	4,493	112,967	6,731	74,191	18,885	18,835	101,631	45,523
HCP Project Area (Acres)	27,743	56,528	4,185	88,512	4,592	47,173	10,470	18,499	87,321	44,613
Project Area Acres Within Planning Area (%)	1.52	3.82	0.59	2.77	0.81	2.63	1.37	3.02	17.52	9.57
HCP Project Area Parcels	68	142	14	218	10	103	26	45	163	85
All DNRC Parcels	115	178	16	311	15	168	66	47	212	91
Bull Trout Habitat (Acres)[1]	1,757,736	1,065,986	450,891	2,070,975	556,713	1,114,737	379,094	503,268	361,302	466,090
Westslope Cutthroat Trout Habitat (Acres)[1]	1,827,250	1,465,783	714,026	2,799,720	568,439	1,499,782	545,401	574,940	432,674	466,090
Columbia Redband Trout Habitat (Acres)[1]	0	0	0	0	0	0	0	0	0	0
Any HCP Fish Species Habitat (Acres)[1]	1,827,250	1,465,783	714,026	2,966,249	568,439	1,587,951	566,373	574,940	480,891	466,090
HCP Project Area Within Bull Trout Habitat (Acres)	22,187	41,803	1,650	60,237	4,059	27,407	2,002	16,259	85,730	44,506
HCP Project Area Within Westslope Cutthroat Trout Habitat (Acres)	25,369	51,842	2,933	77,015	4,059	38,050	5,449	16,648	85,730	44,506
HCP Project Area Within Columbia Redband Trout Habitat (Acres)	0	0	0	0	0	0	0	0	0	0
HCP Project Area Within An HCP Fish Species Habitat (Acres)	25,369	51,842	2,933	78,308	4,059	38,661	5,449	16,648	85,730	44,506

TABLE E4-3. EIS AQUATIC ANALYSIS UNIT ACREAGE (CONTINUED)

	Kootenai Basin			Upper Missouri Basin	
	Lower Kootenai	Middle Kootenai	Upper Kootenai	Upper Missouri	TOTAL
Planning Area (Acres)	622,274	893,582	807,903	14,298,458	**28,540,416**
All DNRC Ownership Within Planning Area (Acres)	3,650	31,180	12,368	802,565	**1,340,849**
HCP Project Area (Acres)	3,527	28,767	11,153	115,441	**548,525**
Non-DNRC Ownership Within Planning Area (Acres)	618,624	862,402	795,535	13,493,144	**27,195,588**
HCP Project Area Acres Within Planning Area (%)	0.57	3.22	1.38	0.89	**2.02**
HCP Project Area Parcels	8	66	30	231	**1,208**[2]
All DNRC Parcels	9	72	35	2,062	**3,101**[2]
Bull Trout Habitat (Acres)[1]	240,505	597,718	404,278	0	**9,969,296**
Westslope Cutthroat Trout Habitat (Acres)[1]	622,273	883,247	768,088	4,079,348	**17,247,060**
Columbia Redband Trout Habitat (Acres)[1]	542,278	646,531	58,435	0	**1,247,244**
Any HCP Fish Species Habitat (Acres)[1]	622,273	883,247	768,088	4,079,348	**17,570,946**
HCP Project Area Within Bull Trout Habitat (Acres)	2,555	15,177	7,076	0	**330,648**
HCP Project Area Within Westslope Cutthroat Trout Habitat (Acres)	2,555	25,317	9,563	27,865	**416,901**
HCP Project Area Within Columbia Redband Trout Habitat (Acres)	2,267	17,826	988	0	**21,081**
HCP Project Area Within An HCP Fish Species Habitat (Acres)	2,555	25,317	9,563	27,865	**418,804**

[1] Defined as a sixth-order HUC where there is a known presence of the species(s) concerned.
[2] Individual parcels were double counted if the parcel straddled two or more analysis units.
Source: DNRC (2008a).

TABLE E4-4. STREAM MILES AND FISH USE WITHIN THE PLANNING AREA, BY EIS AQUATIC ANALYSIS UNITS

	Stream Miles within Planning Area			Stream Miles Supporting HCP Fish Species[1]			
EIS Aquatic Analysis Unit	Stream Miles	Perennial Stream Miles	Intermittent Stream Miles	Bull Trout	Westslope Cutthroat Trout	Redband Trout	Any Aquatic HCP Species
Bitterroot							
HCP Project Area	110.0	29.5	80.5	19.6	26.1	0.0	26.1
Non-HCP DNRC Ownership	55.3	12.4	42.9	10.0	11.9	0.0	11.9
Non-DNRC Ownership	6,209.1	2,592.4	3,616.7	757.4	1061.2	0.0	1198.0
Blackfoot							
HCP Project Area	163.7	41.0	122.7	23.3	44.3	0.0	44.3
Non-HCP DNRC Ownership	29.9	12.6	17.3	11.6	13.4	0.0	13.4
Non-DNRC Ownership	4,713.7	1,779.4	2,934.4	452.3	1379.1	0.0	1396.5
Flathead Lake							
HCP Project Area	34.7	11.5	23.1	4.1	8.1	0.0	8.2
Non-HCP DNRC Ownership	26.6	11.9	14.7	3.4	6.0	0.0	6.0
Non-DNRC Ownership	1,589.5	568.1	1,021.3	60.5	145.7	0.0	154.6
Lower Clark Fork							
HCP Project Area	9.7	1.5	8.2	0.2	1.4	0.0	1.4
Non-HCP DNRC Ownership	0.7	0.5	0.2	0.5	0.5	0.0	0.5
Non-DNRC Ownership	2,083.2	685.8	1,397.4	127.1	554.3	0.0	577.3
Lower Kootenai							
HCP Project Area	11.2	3.8	7.4	3.8	3.8	1.6	3.8
Non-HCP DNRC Ownership	0.9	0.9	0.0	0.9	0.9	0.9	0.9
Non-DNRC Ownership	1,739.9	774.1	965.8	96.0	459.7	160.4	591.6
Middle Clark Fork							
HCP Project Area	269.3	72.2	197.1	52.1	75.7	0.0	75.7
Non-HCP DNRC Ownership	103.9	29.2	74.6	20.6	28.1	0.0	28.1
Non-DNRC Ownership	10,018.8	2,947.9	7,070.8	723.3	1630.7	0.0	1798.5
Middle Kootenai							
HCP Project Area	93.5	18.4	75.1	12.4	21.3	13.7	21.3
Non-HCP DNRC Ownership	13.2	8.9	4.3	8.9	8.9	8.0	8.9
Non-DNRC Ownership	2,734.5	827.8	1,906.8	199.0	466.8	117.5	620.6

TABLE E4-4. STREAM MILES AND FISH USE WITHIN THE PLANNING AREA, BY EIS AQUATIC ANALYSIS UNITS (CONTINUED)

EIS Aquatic Analysis Unit	Stream Miles within Planning Area			Stream Miles Supporting HCP Fish Species[1]			
	Stream Miles	Perennial Stream Miles	Intermittent Stream Miles	Bull Trout	Westslope Cutthroat Trout	Redband Trout	Any Aquatic HCP Species
North Fork Flathead							
HCP Project Area	56.8	39.0	17.9	36.0	38.8	0.0	38.8
Non-HCP DNRC Ownership	2.7	2.3	0.5	2.4	2.4	0.0	2.3
Non-DNRC Ownership	1,448.9	877.4	571.4	232.8	477.5	0.0	488.6
Rock Creek							
HCP Project Area	14.1	1.4	12.7	2.2	2.5	0.0	3.3
Non-HCP DNRC Ownership	6.7	3.1	3.6	3.3	3.3	0.0	3.3
Non-DNRC Ownership	1,855.4	737.7	1,117.6	286.8	459.1	0.0	491.2
Stillwater							
HCP Project Area	275.2	112.0	163.2	101.1	97.7	0.0	104.9
Non-HCP DNRC Ownership	43.7	13.0	30.7	12.0	11.5	0.0	13.2
Non-DNRC Ownership	1,114.7	430.1	684.6	95.6	104.7	0.0	175.8
Swan							
HCP Project Area	136.6	66.6	69.9	56.9	66.2	0.0	66.2
Non-HCP DNRC Ownership	0.5	0.1	0.4	0.1	0.1	0.0	0.1
Non-DNRC Ownership	1,239.1	581.2	657.9	207.3	305.3	0.0	326.6
Upper Clark Fork							
HCP Project Area	135.5	36.0	99.6	15.9	31.4	0.0	31.4
Non-HCP DNRC Ownership	91.7	22.2	69.5	12.3	16.6	0.0	16.7
Non-DNRC Ownership	5,350.1	2,100.9	3,249.2	320.0	809.1	0.0	949.7
Upper Kootenai							
HCP Project Area	34.6	10.0	24.6	7.3	10.0	0.0	10.0
Non-HCP DNRC Ownership	0.6	0.1	0.5	0.3	0.3	0.3	0.3
Non-DNRC Ownership	2,099.7	676.7	1,423.0	89.8	497.9	8.7	505.0
Upper Missouri							
HCP Project Area	232.9	91.5	141.4	0.0	15.6	0.0	15.6
Non-HCP DNRC Ownership	1,515.0	354.9	1,160.1	0.0	24.1	0.0	24.0
Non-DNRC Ownership	29,938.4	15,059.5	14,878.9	0.0	1086.6	0.0	1086.6

TABLE E4-4. STREAM MILES AND FISH USE WITHIN THE PLANNING AREA, BY EIS AQUATIC ANALYSIS UNITS (CONTINUED)

	Stream Miles within Planning Area			Stream Miles Supporting HCP Fish Species[1]			
EIS Aquatic Analysis Unit	Stream Miles	Perennial Stream Miles	Intermittent Stream Miles	Bull Trout	Westslope Cutthroat Trout	Redband Trout	Any Aquatic HCP Species
All Aquatic Analysis Units							
HCP Project Area	1,577.7	534.3	1,043.4	334.9	443.1	15.3	451.0
Non-HCP DNRC Ownership	1,891.4	472.1	1,419.3	86.3	128.0	9.1	129.6
Non-DNRC Ownership	72,135.0	30,639.0	41,496.0	3,647.9	9,437.7	286.6	10,360.7
TOTAL	**75,604.1**	**31,645.5**	**43,958.6**	**4,069.2**	**10,008.9**	**311.0**	**10,941.3**

[1] The number of stream miles supporting an HCP fish species were compiled using the I00K NRIS fish distribution dataset and the DNRC 24K Conflation Dataset. Calculations on DNRC lands were performed using the 24K dataset while calculations on non-DNRC lands used the I00K dataset. Stream miles supporting an HCP fish species not on DNRC lands are more than likely underestimated given the coarse nature of the dataset.

Source: DNRC (2008a).

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TABLE E4-5. DISTRIBUTION OF FISH SPECIES BY DNRC LAND OFFICE

Group / Common Name	Species Scientific Name	Species Presence within the Planning Area by DNRC Land Office		
		CLO	NWLO	SWLO
HCP Fish Species				
Bull Trout	*Salvelinus confluentus*	Yes	Yes	Yes
Columbia River Redband Trout	*Oncorhynchus mykiss gairdneri*	-	Yes	-
Westslope Cutthroat Trout	*Oncorhynchus clarki lewisi*	Yes	Yes	Yes
Special Status Species				
Fluvial Arctic Grayling	*Thymallus arcticus montanus*	Yes	-	-
Northern Redbelly X Finescale Dace	*Phoxinus eos x phoxinus neogaeus*	Yes	-	-
Paddlefish	*Polyodon spathula*	Yes	-	-
Pallid Sturgeon	*Scaphirhynchus albus*	Yes	-	-
Sauger	*Stizostedion canadense*	Yes	-	-
Spoonhead Sculpin	*Cottus ricei*	Yes	-	-
Torrent Sculpin	*Cottus rhotheus*	-	Yes	-
White Sturgeon (Kootenai River)	*Acipenser transmontanus*	-	Yes	-
Yellowstone Cutthroat Trout	*Oncorhynchus clarki bouvieri*	Yes	-	-
Brassy Minnow	*Hybognathus hankinsoni*	Yes	-	-
Brook Stickleback	*Culaea inconstans*	Yes	Yes (Non-nat)	Yes (Non-nat)
Burbot	*Lota lota*	Yes	Yes	Yes
Lake Trout (Native Pop.)	*Salvelinus namaycush*	Yes	-	-
Northern Red-bellied Dace	*Phoxinus eos*	Yes	-	-
Plains Minnow	*Hybognathus placitus*	Yes	-	-
Pygmy Whitefish	*Prosopium coulteri*	-	Yes	-
Shorthead Sculpin	*Cottus confusus*	Yes	Yes	Yes
Cold-water Species				
Kokanee Salmon	*Oncorhynchus nerka*	Yes	Yes	Yes
Rainbow Trout	*Oncorhynchus mykiss*	Yes	Yes	Yes
California Golden Trout	*Oncorhynchus mykiss aguabonita*	Yes	Yes	Yes
Lake Trout (Non-nat)	*Salvelinus namaycush*	Yes	Yes	Yes
Brown Trout	*Salmo trutta*	Yes	Yes	Yes
Brook Trout	*Salvelinus fontinalis*	Yes	Yes	Yes
Mountain whitefish	*Prosopium williamsoni*	Yes	Yes	Yes
Mottled Sculpin	*Cottus bairdi*	Yes	Yes	Yes
Longnose Sucker	*Catostomus catostomus*	Yes	Yes	Yes
Lake Whitefish	*Coregonus clupeaformis*	Yes	Yes (Non-nat)	-
River Carpsucker	*Carpiodes carpio*	Yes	-	-
White Sucker	*Catostomus commersoni*	Yes	-	-
Mountain Sucker	*Catostomus platyrhynchus*	Yes	-	-

TABLE E4-5. DISTRIBUTION OF FISH SPECIES BY DNRC LAND OFFICE (CONTINUED)

Group / Common Name	Species Scientific Name	Species Presence within the Planning Area by DNRC Land Office		
		CLO	NWLO	SWLO
Cisco	*Coregonus artedi*	Yes	-	-
Shovelnose sturgeon	*Scaphirhynchus platorynchus*	Yes	-	-
Trout-perch	*Percopsis omiscomaycus*	Yes	-	-
Largescale Sucker	*Catostomus macrocheilus*	-	Yes	Yes
Slimy Sculpin	*Cottus cognatus*	-	Yes	Yes
Warm- and Cool-water Species				
Black Bullhead	*Ictalurus melas*	Yes	Yes	Yes
Goldfish	*Carassius auratus*	Yes	Yes	Yes
Longnose Dace	*Rhinichthys cataractae*	Yes	Yes	Yes
Western Mosquitofish	*Gambusia affinis*	Yes	Yes	Yes
Largemouth Bass	*Micropterus salmoides*	Yes	Yes	Yes
Black Crappie	*Pomoxis nigromaculatus*	Yes	Yes	Yes
Pumpkinseed	*Lepomis gibbosus*	Yes	Yes	Yes
Yellow Perch	*Perca flavescens*	Yes	Yes	Yes
Redside Shiner	*Richardsonius balteatus*	Yes (Non-nat)	Yes	Yes
Northern Pike	*Esox lucius*	Yes	Yes (Non-nat)	Yes (Non-nat)
Fathead minnow	*Pimephales promelas*	Yes	Yes (Non-nat)	Yes (Non-nat)
Smallmouth Bass	*Micropterus dolomieu*	Yes	Yes	-
Bluegill	*Lepomis macrochirus*	Yes	Yes	-
Shorthead Redhorse	*Moxostoma macrolepidotum*	Yes	-	-
Lake Chub	*Couesius plumbeus*	Yes	-	-
Utah Chub	*Gila atraria*	Yes	-	-
Emerald Shiner	*Notropis atherinoides*	Yes	-	-
Common Carp	*Cyprinus carpio*	Yes	-	-
Western Silvery Minnow	*Hybognathus argyritis*	Yes	-	-
Golden Shiner	*Notemigonus crysoleucas*	Yes	-	-
Spottail Shiner	*Notropis hudsonius*	Yes	-	-
Flathead Chub	*Hybopsis gracilis*	Yes	-	-
Walleye	*Stizostedion vitreum*	Yes	-	-
Channel Catfish	*Ictalurus punctatus*	Yes	-	-
Goldeye	*Hiodon alosoides*	Yes	-	-
Stonecat	*Noturus flavus*	Yes	-	-
Peamouth	*Mylocheilus caurinus*	-	Yes	Yes
Northern Pikeminnow	*Ptychocheilus oregonensis*	-	Yes	Yes

- = Species absent within DNRC land office boundary.
Non-nat = Distribution of species within this land office is a non-native population.
Source: NRIS (2005b).

TABLE E4-6. SPECIAL STATUS FISH SPECIES WITHIN THE PLANNING AREA, THEIR LEGAL STATUS, AND PREFERRED HABITAT

Common Name	USFWS[1]	DNRC Sensitive Species[2]	MFWP/AFS Species of Concern[3]	MFWP Potential Species of Concern[3]	Occurring within HCP Project Area	Preferred Habitat Features
Bull Trout	T		X		Yes	Cold water, suitable substrate and lack of fine sediment, habitat complexity, and habitat connectivity
Westslope Cutthroat Trout		X	X		Yes	Cold, nutrient-poor, high-gradient water having pools and cover
Columbia River Redband Trout		X	X		Yes	Riparian cover, including undercut banks, LWD, overhanging vegetation, pool habitat, depths ≤ 1.3 feet, low to moderate water velocities
Fluvial Arctic Grayling	C		X		Yes	Small, cold, clear lakes with tributary spawning habitat
Northern Redbelly X Finescale Dace			X		No[4]	Boggy lakes, creeks, and ponds, often with cool, dark, tea-colored water.
Paddlefish			X		No[4]	Calm, open waters of large rivers
Pearl Dace			X		No	Cool or cold water lakes, bog ponds, creeks and springs
Sauger			X		No[4]	Large turbid rivers, lakes and reservoirs
Spoonhead Sculpin			X		No	Small, swift streams to larger rivers and in lakes
Torrent Sculpin			X		Yes	Riffles of cold, clear streams, and lakes
Kootenai White Sturgeon	E		X		Yes[5]	Large cool rivers, known to occur in the Kootenai River
Yellowstone Cutthroat Trout		X	X		Yes	Relatively clear, cold streams, rivers, and lakes
Blue Sucker			X		Yes[5]	Primarily found in larger rivers, particularly the Missouri and Yellowstone Rivers.
Trout-perch			X		No	Lake shoals and deeper stream pools with clean sand, gravel, or rubble substrate
Brassy Minnow				X	No[4]	Clear, slow streams mud substrate in upper watersheds

TABLE E4-6. SPECIAL STATUS FISH SPECIES WITHIN THE PLANNING AREA, THEIR LEGAL STATUS, AND PREFERRED HABITAT (CONTINUED)

Common Name	USFWS[1]	DNRC Sensitive Species[2]	MFWP/AFS Species of Concern[3]	MFWP Potential Species of Concern[3]	Occurring within HCP Project Area	Preferred Habitat Features
Brook Stickleback				X	Yes[5]	Slow, clear streams and shallow lakes with vegetation
Burbot				X	Yes	Large rivers and cold deep lakes and reservoirs
Northern Red-bellied Dace				X	No[4]	Small, clear, plains streams and ponds.
Plains Minnow				X	No[4]	Large streams with sand or silt substrate
Pygmy Whitefish				X	Yes	Deep, cold lakes and associated tributary streams
Shorthead Sculpin				X	Yes	Rocky riffles in cold headwater streams

[1] Refers to status under the Endangered Species Act: C = candidate for listing, E = endangered, T = threatened.
[2] As defined by DNRC (2003d).
[3] As defined by MFWP and American Fisheries Society (AFS) (MFWP 2005a; AFS 2008).
[4] May occur in the HCP project area (adjacent or near non-HCP trust lands).
[5] Very limited or spotty distribution in waters adjacent to or near HCP project area parcels.

TABLE E4-7. WILDLIFE SPECIES KNOWN OR EXPECTED TO OCCUR IN THE PLANNING AREA

Species	Grass/Forb (Non-stocked Forests)	Seedling/ Sapling (Predominantly < 5 Inches dbh)	Poletimber (Predominantly 5 to 9 Inches dbh)	Young Sawtimber (Predominantly > 9 inches dbh and Estimated to be < 100 Years Old)	Mature Sawtimber (Predominantly > 9 Inches dbh and Estimated to be < 100 Years Old)	Old Growth (Based on Structural Characteristics as Defined in Green et al. [1992])	Large Trees/ Snags/CWD	Forested Riparian
Mammals								
Masked Shrew	X	X	X	X	X	X	X	X
Preble's Shrew	X	X	X	X	X	X	X	X
Vagrant Shrew[1]	X	X	X	X	X	X	X	X
Dusky or Montane Shrew[1]	X	X	X	X	X	X	X	X
Dwarf Shrew[1]	X	X	X	X	X	X	X	X
Northern Water Shrew							X	X
Pygmy Shrew[1]			X	X	X	X	X	X
Little Brown Myotis[1]	X	X	X	X	X	X	X	X
Yuma Myotis[1]	X							X
Long-eared Myotis	X	X	X	X	X	X	X	X
Fringed Myotis[1]	X	X	X	X	X	X	X	X
Long-legged Myotis[1]	X	X			X	X	X	X
California Myotis	X	X			X	X	X	X
Western Small-footed Myotis[1]	X	X			X	X	X	X
Silver-haired Bat[1]	X	X	X	X	X	X	X	X
Big Brown Bat[1]	X	X	X	X	X	X	X	X
Hoary Bat[1]	X	X	X	X	X	X	X	X
Townsend's Big-eared Bat[1]	X	X	X	X			X	X
Pika	X							
Mountain Cottontail	X							
Desert Cottontail	X							
Snowshoe Hare[1]	X	X	X	X	X	X	X	X
White-tailed Jackrabbit	X							

TABLE E4-7. WILDLIFE SPECIES KNOWN OR EXPECTED TO OCCUR IN THE PLANNING AREA (CONTINUED)

Species	Grass/Forb (Non-stocked Forests)	Seedling/ Sapling (Predominantly < 5 Inches dbh)	Poletimber (Predominantly 5 to 9 Inches dbh)	Young Sawtimber (Predominantly > 9 inches dbh and Estimated to be < 100 Years Old)	Mature Sawtimber (Predominantly > 9 Inches dbh and Estimated to be < 100 Years Old)	Old Growth (Based on Structural Characteristics as Defined in Green et al. [1992])	Large Trees/ Snags/CWD	Forested Riparian
Black-tailed Jackrabbit	X							
Pygmy Rabbit	X							
Least Chipmunk[1]	X	X	X	X	X	X	X	X
Yellow-pine Chipmunk	X	X	X	X	X	X	X	X
Red-tailed Chipmunk[1]		X	X	X	X	X	X	
Uinta Chipmunk[1]		X	X	X	X	X	X	
Yellow-bellied Marmot	X							
Hoary Marmot	X				X			
Richards's Ground Squirrel	X							
Uinta Ground Squirrel	X	X		X	X			
Columbian Ground Squirrel	X	X		X	X			X
Thirteen-lined Ground Squirrel	X							
Golden-mantled Ground Squirrel	X			X	X			
Wyoming Ground Squirrel	X	X		X	X			
Black-tailed Prairie Dog	X							
Eastern Gray Squirrel[1]					X	X		X
Eastern Fox Squirrel[1]					X	X		X
Red Squirrel[1]			X	X	X	X	X	X
Northern Flying Squirrel[1]			X	X	X	X	X	X
Northern Pocket Gopher	X							X
Idaho Pocket Gopher	X							X
Great Basin Pocket Mouse	X							
American Beaver		X						X
Deer Mouse[1]	X	X	X	X	X	X	X	X

TABLE E4-7. WILDLIFE SPECIES KNOWN OR EXPECTED TO OCCUR IN THE PLANNING AREA (CONTINUED)

Species	Grass/Forb (Non-stocked Forests)	Seedling/ Sapling (Predominantly < 5 Inches dbh)	Poletimber (Predominantly 5 to 9 Inches dbh)	Young Sawtimber (Predominantly > 9 inches dbh and Estimated to be < 100 Years Old)	Mature Sawtimber (Predominantly > 9 Inches dbh and Estimated to be < 100 Years Old)	Old Growth (Based on Structural Characteristics as Defined in Green et al. [1992])	Large Trees/ Snags/CWD	Forested Riparian
Northern Grasshopper Mouse	X							
Bushy-tailed Woodrat[1]	X	X	X	X	X	X	X	X
Southern Red-backed Vole[1]			X	X	X	X	X	X
Heather Vole[1]	X	X						
Meadow Vole[1]	X							X
Montane Vole	X							X
Long-tailed Vole[1]	X	X	X	X	X			X
Prairie Vole	X							
Water Vole	X							X
Sagebrush Vole	X							
Muskrat								X
Northern Bog Lemming[1]	X	X	X					X
Norway Rat	X							
House Mouse	X						X	X
Western Jumping Mouse	X							X
Porcupine[1]	X	X	X	X	X	X	X	X
Coyote[1]	X	X	X	X	X	X		X
Gray Wolf[1]	X	X	X	X	X	X		
Red Fox[1]	X	X	X	X	X	X		X
Black Bear[1]	X	X	X	X	X	X	X	X
Grizzly Bear[1]	X	X	X	X	X	X	X	X
Raccoon[1]	X	X	X	X	X	X	X	X
American Marten[1]			X	X	X	X	X	X
Fisher[1]			X	X	X	X	X	X
Ermine[1]	X	X	X	X	X	X	X	X

TABLE E4-7. WILDLIFE SPECIES KNOWN OR EXPECTED TO OCCUR IN THE PLANNING AREA (CONTINUED)

Species	Grass/Forb (Non-stocked Forests)	Seedling/ Sapling (Predominantly < 5 Inches dbh)	Poletimber (Predominantly 5 to 9 Inches dbh)	Young Sawtimber (Predominantly > 9 inches dbh and Estimated to be < 100 Years Old)	Mature Sawtimber (Predominantly > 9 Inches dbh and Estimated to be < 100 Years Old)	Old Growth (Based on Structural Characteristics as Defined in Green et al. [1992])	Large Trees/ Snags/CWD	Forested Riparian
Least Weasel	X			X	X	X	X	X
Long-tailed Weasel[1]	X	X	X	X	X	X	X	X
Mink								X
Wolverine[1]	X	X	X	X	X	X	X	
Badger	X	X						
Western Spotted Skunk	X	X	X	X	X		X	X
Striped Skunk[1]	X	X	X	X	X	X	X	X
Northern River Otter								X
Mountain Lion[1]	X	X	X	X	X	X		X
Lynx[1]	X	X	X	X	X	X	X	X
Bobcat[1]	X	X	X	X	X	X	X	X
Elk[1]	X	X	X	X	X	X		X
Mule Deer[1]	X	X	X	X	X	X		X
White-tailed Deer[1]	X	X	X	X	X	X		X
Moose[1]	X	X	X	X	X	X		X
Woodland Caribou[1]				X	X	X		
Pronghorn	X							
Mountain Goat	X			X	X			
Bighorn Sheep	X							
Birds								
Common Loon								X
Pied-billed Grebe								X
Horned Grebe								X
Red-necked Grebe								X
Eared Grebe								X

TABLE E4-7. WILDLIFE SPECIES KNOWN OR EXPECTED TO OCCUR IN THE PLANNING AREA (CONTINUED)

Species	Grass/Forb (Non-stocked Forests)	Seedling/ Sapling (Predominantly < 5 Inches dbh)	Poletimber (Predominantly 5 to 9 Inches dbh)	Young Sawtimber (Predominantly > 9 inches dbh and Estimated to be < 100 Years Old)	Mature Sawtimber (Predominantly > 9 Inches dbh and Estimated to be < 100 Years Old)	Old Growth (Based on Structural Characteristics as Defined in Green et al. [1992])	Large Trees/ Snags/CWD	Forested Riparian
Western Grebe								X
Clark's Grebe								X
American White Pelican								X
Double-crested Cormorant								X
American Bittern								X
Great Blue Heron[1]	X			X	X	X		X
Black-crowned Night-heron[1]								X
White-faced Ibis								X
Tundra Swan								X
Trumpeter Swan								X
Mute Swan								X
Greater White-fronted Goose	X							X
Snow Goose	X							X
Ross's Goose	X							X
Canada Goose	X							X
Wood Duck[1]					X	X		X
Green-winged Teal	X							X
Mallard	X							X
Northern Pintail	X							X
Blue-winged Teal	X							X
Cinnamon Teal	X							X
Northern Shoveler								X
Gadwall	X							X
American Wigeon	X							X
Canvasback								

TABLE E4-7. WILDLIFE SPECIES KNOWN OR EXPECTED TO OCCUR IN THE PLANNING AREA (CONTINUED)

Species	Grass/Forb (Non-stocked Forests)	Seedling/ Sapling (Predominantly < 5 Inches dbh)	Poletimber (Predominantly 5 to 9 Inches dbh)	Young Sawtimber (Predominantly > 9 inches dbh and Estimated to be < 100 Years Old)	Mature Sawtimber (Predominantly > 9 Inches dbh and Estimated to be < 100 Years Old)	Old Growth (Based on Structural Characteristics as Defined in Green et al. [1992])	Large Trees/ Snags/CWD	Forested Riparian
Redhead								
Ring-necked Duck								X
Greater Scaup								X
Lesser Scaup								X
Harlequin Duck				X	X	X		X
Common Goldeneye[1]				X	X	X		X
Barrow's Goldeneye[1]				X	X	X		X
Bufflehead				X	X	X		X
Hooded Merganser[1]				X	X	X		X
Common Merganser[1]				X	X	X		X
Red-breasted Merganser[1]								X
Ruddy Duck								X
Turkey Vulture[1]	X	X			X	X	X	X
Osprey					X	X	X	X
Bald Eagle[1]	X	X	X	X	X	X	X	X
Northern Harrier	X							X
Sharp-shinned Hawk[1]	X	X	X	X	X	X	X	
Cooper's Hawk[1]	X	X	X	X	X	X	X	X
Northern Goshawk[1]	X	X		X	X	X	X	X
Broad-winged Hawk[1]	X	X	X	X	X	X	X	
Swainson's Hawk	X	X			X	X	X	X
Red-tailed Hawk[1]	X	X	X	X	X	X	X	X
Ferruginous Hawk	X						X	
Rough-legged Hawk	X				X		X	X
Golden Eagle	X						X	

TABLE E4-7. WILDLIFE SPECIES KNOWN OR EXPECTED TO OCCUR IN THE PLANNING AREA (CONTINUED)

Species	Grass/Forb (Non-stocked Forests)	Seedling/ Sapling (Predominantly < 5 Inches dbh)	Poletimber (Predominantly 5 to 9 Inches dbh)	Young Sawtimber (Predominantly > 9 inches dbh and Estimated to be < 100 Years Old)	Mature Sawtimber (Predominantly > 9 Inches dbh and Estimated to be < 100 Years Old)	Old Growth (Based on Structural Characteristics as Defined in Green et al. [1992])	Large Trees/ Snags/CWD	Forested Riparian
American Kestrel	X	X	X	X	X	X	X	X
Merlin	X	X	X	X	X	X	X	X
Peregrine Falcon	X						X	X
Gyrfalcon	X							
Prairie Falcon	X							
Gray Partridge	X							X
Chukar	X							
Ring-necked Pheasant	X							X
Spruce Grouse[1]	X	X	X	X	X	X		X
Blue Grouse[1]	X	X	X	X	X	X		
White-tailed Ptarmigan	X							
Ruffed Grouse[1]	X	X	X	X	X	X	X	X
Sage Grouse	X							
Columbian Sharp-tailed Grouse	X							X
Wild Turkey[1]	X	X	X	X	X	X	X	X
Northern Bobwhite	X	X	X	X				
Virginia Rail								X
Yellow Rail								X
Sora								X
American Coot								X
Sandhill Crane	X							X
Whooping Crane	X							
Black-bellied Plover	X							X
American Golden-Plover								X
Semipalmated Plover								X

TABLE E4-7. WILDLIFE SPECIES KNOWN OR EXPECTED TO OCCUR IN THE PLANNING AREA (CONTINUED)

Species	Grass/Forb (Non-stocked Forests)	Seedling/ Sapling (Predominantly < 5 Inches dbh)	Poletimber (Predominantly 5 to 9 Inches dbh)	Young Sawtimber (Predominantly > 9 inches dbh and Estimated to be < 100 Years Old)	Mature Sawtimber (Predominantly > 9 Inches dbh and Estimated to be < 100 Years Old)	Old Growth (Based on Structural Characteristics as Defined in Green et al. [1992])	Large Trees/ Snags/CWD	Forested Riparian
Piping Plover								X
Killdeer	X							X
Mountain Plover	X							X
Black-necked Stilt								X
American Avocet								X
Greater Yellowlegs								X
Lesser Yellowlegs								X
Solitary Sandpiper								X
Willet								X
Spotted Sandpiper								X
Upland Sandpiper	X						X	
Whimbrel								X
Long-billed Curlew	X							X
Marbled Godwit								X
Ruddy Turnstone								X
Sanderling								X
Semipalmated Sandpiper								X
Western Sandpiper								X
Least Sandpiper								X
Baird's Sandpiper								X
Pectoral Sandpiper								X
Dunlin								X
Stilt Sandpiper								X
Short-billed Dowitcher								X
Long-billed Dowitcher								X

TABLE E4-7. WILDLIFE SPECIES KNOWN OR EXPECTED TO OCCUR IN THE PLANNING AREA (CONTINUED)

Species	Grass/Forb (Non-stocked Forests)	Seedling/ Sapling (Predominantly < 5 Inches dbh)	Poletimber (Predominantly 5 to 9 Inches dbh)	Young Sawtimber (Predominantly > 9 inches dbh and Estimated to be < 100 Years Old)	Mature Sawtimber (Predominantly > 9 Inches dbh and Estimated to be < 100 Years Old)	Old Growth (Based on Structural Characteristics as Defined in Green et al. [1992])	Large Trees/ Snags/CWD	Forested Riparian
Common Snipe	X							X
Wilson's Phalarope								X
Red-necked Phalarope								X
Franklin's Gull								X
Bonaparte's Gull								X
Ring-billed Gull								X
California Gull								X
Caspian Tern								X
Common Tern								X
Forster's Tern								X
Least Tern								X
Black Tern								X
Rock Dove	X							
Mourning Dove[1]	X	X	X	X	X	X		X
Black-billed Cuckoo[1]		X	X	X	X	X		X
Yellow-billed Cuckoo[1]		X	X	X	X	X		X
Barn Owl	X						X	
Flammulated Owl[1]	X	X			X	X	X	
Eastern Screech-owl[1]				X	X	X	X	X
Western Screech-owl[1]				X	X	X	X	X
Great Horned Owl[1]	X	X	X	X	X	X	X	X
Snowy Owl	X						X	
Northern Hawk Owl[1]	X			X	X		X	X
Northern Pygmy-owl[1]	X	X	X	X	X	X	X	X
Burrowing Owl	X							

TABLE E4-7. WILDLIFE SPECIES KNOWN OR EXPECTED TO OCCUR IN THE PLANNING AREA (CONTINUED)

Species	Grass/Forb (Non-stocked Forests)	Seedling/ Sapling (Predominantly < 5 Inches dbh)	Poletimber (Predominantly 5 to 9 Inches dbh)	Young Sawtimber (Predominantly > 9 inches dbh and Estimated to be < 100 Years Old)	Mature Sawtimber (Predominantly > 9 Inches dbh and Estimated to be < 100 Years Old)	Old Growth (Based on Structural Characteristics as Defined in Green et al. [1992])	Large Trees/ Snags/CWD	Forested Riparian
Barred Owl[1]	X	X		X	X	X	X	X
Great Gray Owl[1]	X	X		X	X	X	X	X
Long-Eared Owl[1]	X	X	X	X	X	X	X	X
Short-Eared Owl	X							X
Boreal Owl[1]	X	X	X	X	X	X	X	X
Northern Saw-whet Owl[1]		X	X	X	X	X	X	X
Common Nighthawk	X	X	X	X	X	X		X
Common Poorwill	X	X	X	X	X	X		
Black Swift								
Chimney Swift							X	
Vaux's Swift[1]	X	X	X	X	X	X	X	X
White-throated Swift								
Black-chinned Hummingbird	X	X	X	X	X	X		X
Calliope Hummingbird	X	X	X	X	X	X		X
Rufous Hummingbird[1]	X	X	X	X	X	X		
Broad-tailed Hummingbird	X	X	X	X	X	X		
Belted Kingfisher								X
Lewis's Woodpecker[1]	X				X		X	X
Red-headed Woodpecker[1]	X		X	X	X	X	X	X
Yellow-bellied Sapsucker[1]			X	X	X	X	X	X
Red-naped Sapsucker[1]			X	X	X	X	X	X
Williamson's Sapsucker[1]			X	X	X	X	X	X
Downy Woodpecker[1]			X	X	X	X	X	X
Hairy Woodpecker[1]			X	X	X	X	X	X
Three-toed Woodpecker[1]				X	X	X	X	X

TABLE E4-7. WILDLIFE SPECIES KNOWN OR EXPECTED TO OCCUR IN THE PLANNING AREA (CONTINUED)

Species	Grass/Forb (Non-stocked Forests)	Seedling/ Sapling (Predominantly < 5 Inches dbh)	Poletimber (Predominantly 5 to 9 Inches dbh)	Young Sawtimber (Predominantly > 9 inches dbh and Estimated to be < 100 Years Old)	Mature Sawtimber (Predominantly > 9 Inches dbh and Estimated to be < 100 Years Old)	Old Growth (Based on Structural Characteristics as Defined in Green et al. [1992])	Large Trees/ Snags/CWD	Forested Riparian
Black-backed Woodpecker[1]				X	X	X	X	X
Northern Flicker[1]	X	X	X	X	X	X	X	X
Pileated Woodpecker[1]				X	X	X	X	X
Olive-sided Flycatcher[1]	X	X	X	X				X
Western Wood-pewee[1]		X	X	X	X	X		X
Alder Flycatcher								X
Willow Flycatcher								X
Least Flycatcher								X
Hammond's Flycatcher[1]		X	X	X	X	X		
Dusky Flycatcher[1]	X	X	X	X	X	X		X
Cordilleran Flycatcher[1]		X	X	X	X	X	X	X
Say's Phoebe	X	X						
Western Kingbird	X	X	X	X	X	X		X
Eastern Kingbird	X	X	X	X	X	X		X
Horned Lark	X							
Tree Swallow	X	X		X	X	X	X	X
Violet-green Swallow[1]	X	X	X	X	X	X	X	X
Northern Rough-winged Swallow	X	X						X
Bank Swallow	X	X						X
Cliff Swallow	X	X	X	X				X
Barn Swallow								X
Gray Jay[1]		X	X	X	X	X		X
Steller's Jay[1]	X	X	X	X	X	X	X	
Blue Jay[1]	X			X	X			X

TABLE E4-7. WILDLIFE SPECIES KNOWN OR EXPECTED TO OCCUR IN THE PLANNING AREA (CONTINUED)

Species	Grass/Forb (Non-stocked Forests)	Seedling/ Sapling (Predominantly < 5 Inches dbh)	Poletimber (Predominantly 5 to 9 Inches dbh)	Young Sawtimber (Predominantly > 9 inches dbh and Estimated to be < 100 Years Old)	Mature Sawtimber (Predominantly > 9 Inches dbh and Estimated to be < 100 Years Old)	Old Growth (Based on Structural Characteristics as Defined in Green et al. [1992])	Large Trees/ Snags/CWD	Forested Riparian
Pinyon Jay	X			X	X			
Clark's Nutcracker[1]				X	X	X		
Black-billed Magpie	X	X	X	X	X	X		X
American Crow	X	X	X	X	X	X		X
Common Raven[1]	X	X	X	X	X	X	X	X
Black-capped Chickadee[1]		X	X	X	X	X	X	X
Mountain Chickadee[1]		X	X	X	X	X	X	X
Boreal Chickadee[1]				X	X	X	X	X
Chestnut-backed Chickadee[1]		X	X	X	X	X	X	X
Red-breasted Nuthatch[1]			X	X	X	X	X	X
White-breasted Nuthatch[1]				X	X	X	X	X
Pygmy Nuthatch[1]			X	X	X	X	X	
Brown Creeper[1]			X	X	X	X	X	X
Rock Wren	X							
Canyon Wren	X							X
House Wren		X	X	X	X	X	X	X
Winter Wren[1]		X	X	X	X	X	X	X
Marsh Wren	X							X
American Dipper								X
Golden-crowned Kinglet[1]			X	X	X	X	X	X
Ruby-crowned Kinglet[1]			X	X	X	X		X
Eastern Bluebird	X	X	X	X	X	X	X	
Western Bluebird	X	X	X	X	X	X	X	
Mountain Bluebird	X	X	X	X	X	X	X	
Townsend's Solitaire[1]	X	X	X	X	X	X	X	X

TABLE E4-7. WILDLIFE SPECIES KNOWN OR EXPECTED TO OCCUR IN THE PLANNING AREA (CONTINUED)

Species	Grass/Forb (Non-stocked Forests)	Seedling/ Sapling (Predominantly < 5 Inches dbh)	Poletimber (Predominantly 5 to 9 Inches dbh)	Young Sawtimber (Predominantly > 9 inches dbh and Estimated to be < 100 Years Old)	Mature Sawtimber (Predominantly > 9 Inches dbh and Estimated to be < 100 Years Old)	Old Growth (Based on Structural Characteristics as Defined in Green et al. [1992])	Large Trees/ Snags/CWD	Forested Riparian
Veery[1]		X	X	X	X	X		X
Swainson's Thrush[1]		X	X	X	X	X		X
Hermit Thrush[1]		X	X	X	X	X		X
American Robin[1]	X	X	X	X	X	X		X
Varied Thrush[1]		X	X	X	X	X	X	X
Gray Catbird								X
Sage Thrasher	X							
Brown Thrasher	X				X			X
American Pipit	X							X
Sprague's Pipit	X							
Bohemian Waxwing[1]		X	X	X	X	X		X
Cedar Waxwing[1]		X	X	X	X	X		X
Northern Shrike	X	X			X			X
Loggerhead Shrike	X	X	X	X	X			
European Starling	X	X					X	X
Solitary Vireo[1]			X	X	X	X		X
Warbling Vireo[1]		X	X	X	X	X		X
Red-eyed Vireo[1]		X	X	X	X	X	X	X
Tennessee Warbler								X
Orange-crowned Warbler[1]		X	X	X	X	X		X
Nashville Warbler			X	X				X
Yellow Warbler	X	X						X
Yellow-rumped Warbler[1]			X	X	X	X		X
Townsend's Warbler[1]				X	X	X	X	
Blackpoll Warbler[1]				X	X	X		X

TABLE E4-7. WILDLIFE SPECIES KNOWN OR EXPECTED TO OCCUR IN THE PLANNING AREA (CONTINUED)

Species	Grass/Forb (Non-stocked Forests)	Seedling/ Sapling (Predominantly < 5 Inches dbh)	Poletimber (Predominantly 5 to 9 Inches dbh)	Young Sawtimber (Predominantly > 9 inches dbh and Estimated to be < 100 Years Old)	Mature Sawtimber (Predominantly > 9 Inches dbh and Estimated to be < 100 Years Old)	Old Growth (Based on Structural Characteristics as Defined in Green et al. [1992])	Large Trees/ Snags/CWD	Forested Riparian
Black-and-white Warbler[1]			X	X	X	X		X
American Redstart[1]			X	X	X			X
Ovenbird[1]		X	X	X	X	X		
Northern Waterthrush[1]	X	X						X
Macgillivray's Warbler[1]	X	X						X
Common Yellowthroat[1]	X	X						X
Wilson's Warbler[1]	X	X	X	X	X			X
Yellow-breasted Chat	X	X						X
Western Tanager[1]				X	X	X	X	
Black-headed Grosbeak[1]	X	X	X	X	X	X		X
Lazuli Bunting	X	X						X
Indigo Bunting	X	X						X
Dickcissel	X							
Green-tailed Towhee	X	X						X
Rufous-sided Towhee	X	X						X
American Tree Sparrow	X	X						X
Chipping Sparrow[1]		X	X	X	X	X		X
Clay-colored Sparrow	X	X		X				
Brewer's Sparrow	X	X						
Field Sparrow	X	X						
Vesper Sparrow	X	X						
Lark Sparrow	X	X						
Lark Bunting	X							
Savannah Sparrow	X							
Baird's Sparrow	X							

TABLE E4-7. WILDLIFE SPECIES KNOWN OR EXPECTED TO OCCUR IN THE PLANNING AREA (CONTINUED)

Species	Grass/Forb (Non-stocked Forests)	Seedling/ Sapling (Predominantly < 5 Inches dbh)	Poletimber (Predominantly 5 to 9 Inches dbh)	Young Sawtimber (Predominantly > 9 inches dbh and Estimated to be < 100 Years Old)	Mature Sawtimber (Predominantly > 9 Inches dbh and Estimated to be < 100 Years Old)	Old Growth (Based on Structural Characteristics as Defined in Green et al. [1992])	Large Trees/ Snags/CWD	Forested Riparian
Grasshopper Sparrow	X							
Le Conte's Sparrow	X							X
Fox Sparrow		X	X	X	X			X
Song Sparrow		X						X
Lincoln's Sparrow	X	X						X
White-throated Sparrow[1]	X	X	X	X				X
White-crowned Sparrow		X	X	X				X
Harris's Sparrow	X	X	X	X				
Dark-eyed Junco[1]	X	X	X	X	X	X		X
McCown's Longspur	X							
Lapland Longspur	X							
Chestnut-collared Longspur	X							
Snow Bunting	X							
Bobolink	X							
Red-winged Blackbird	X							X
Western Meadowlark	X							
Yellow-headed Blackbird	X							X
Rusty Blackbird	X	X	X	X				X
Brewer's Blackbird	X	X	X	X				X
Common Grackle	X	X	X	X				
Brown-headed Cowbird [1]	X	X	X	X	X	X		
Northern Oriole				X	X			X
Rosy-finch	X							
Pine Grosbeak[1]			X	X	X			
Purple Finch[1]	X	X	X	X	X			

TABLE E4-7. WILDLIFE SPECIES KNOWN OR EXPECTED TO OCCUR IN THE PLANNING AREA (CONTINUED)

Species	Grass/Forb (Non-stocked Forests)	Seedling/ Sapling (Predominantly < 5 Inches dbh)	Poletimber (Predominantly 5 to 9 Inches dbh)	Young Sawtimber (Predominantly > 9 inches dbh and Estimated to be < 100 Years Old)	Mature Sawtimber (Predominantly > 9 Inches dbh and Estimated to be < 100 Years Old)	Old Growth (Based on Structural Characteristics as Defined in Green et al. [1992])	Large Trees/ Snags/CWD	Forested Riparian
Cassin's Finch[1]	X	X	X	X	X	X		
House Finch	X	X	X	X	X			
Red Crossbill[1]				X	X	X		
White-winged Crossbill[1]				X	X	X		X
Common Redpoll[1]	X	X						X
Hoary Redpoll	X							
Pine Siskin[1]	X	X	X	X	X	X		
American Goldfinch	X	X	X	X				X
Evening Grosbeak[1]	X	X	X	X	X	X		
House Sparrow	X	X	X	X	X	X		
Amphibians and Reptiles[1]								
Amphibians								
Long-toed Salamander[1]	X	X	X	X	X	X	X	X
Coeur d'Alene Salamander[1]	X	X	X	X	X	X		X
Tiger Salamander	X						X	X
Tailed Frog[1]	X	X	X	X	X	X	X	X
Western Toad	X	X	X	X	X	X	X	X
Great Plains Toad	X							X
Pacific Treefrog[1]	X	X	X	X	X			X
Boreal Chorus Frog[1]	X							X
Plains Spadefoot	X							X
Bullfrog	X							X
Northern Leopard Frog	X							X
Columbia Spotted Frog[1]	X	X	X	X	X	X		X

TABLE E4-7. WILDLIFE SPECIES KNOWN OR EXPECTED TO OCCUR IN THE PLANNING AREA (CONTINUED)

Species	Grass/Forb (Non-stocked Forests)	Seedling/ Sapling (Predominantly < 5 Inches dbh)	Poletimber (Predominantly 5 to 9 Inches dbh)	Young Sawtimber (Predominantly > 9 inches dbh and Estimated to be < 100 Years Old)	Mature Sawtimber (Predominantly > 9 Inches dbh and Estimated to be < 100 Years Old)	Old Growth (Based on Structural Characteristics as Defined in Green et al. [1992])	Large Trees/ Snags/CWD	Forested Riparian
Reptiles								
Painted Turtle	X	X	X	X	X	X	X	X
Northern Alligator Lizard[1]	X	X	X	X	X	X		X
Greater Short-horned Lizard	X							
Western Fence Lizard	X	X	X	X			X	
Common Sagebrush Lizard	X	X	X	X	X		X	
Western Skink[1]	X	X	X	X	X	X	X	X
Rubber Boa [1]	X	X	X	X	X	X	X	X
Eastern Racer	X							X
Western Hognose Snake	X							X
Gopher Snake	X	X	X	X	X	X		X
Western Terrestrial Garter Snake [1]	X	X	X	X	X	X		X
Plains Garter Snake	X	X	X	X	X	X	X	X
Terrestrial Garter Snake	X	X	X	X	X	X	X	X
Common Garter Snake[1]	X	X	X	X	X	X	X	X
Western Rattlesnake[1]	X	X	X	X	X	X	X	X

[1] Amphibian species of questionable occurrence in the planning area include the Idaho giant salamander, rough-skinned newt, Great Basin spadefoot, pigmy short-horned lizard and Canadian toad (Werner et al. 2004).

Source: Table excerpted from Montana DNRC SFLMP, Appendix WLD (DNRC 1996), as modified based on Lenard et al. (2003), Werner et al. (2004), and MFWP (2005a).

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TABLE E4-8. MANAGEMENT REQUIREMENTS OF WILDLIFE-RELATED ARMS RELATIVE TO FOREST MANAGEMENT ACTIVITIES

Administrative Rule	Topic	Application on State Lands
36.11.405-408 and 415-419	Biodiversity	Guidelines for timber harvest to promote biodiversity and desired mix of forest and stand cover types, age classes, tree species compositions, and patch sizes.
36.11.409-411 and 413-414	Biodiversity	Guidelines on salvage and timber harvesting, for maintaining snags and snag recruits (1-2 per acre), and retaining cull materials and coarse woody debris (4.5 to 24.5 tons per acre depending on the habitat type).
36.11.418	Old Growth Management	Guidelines for management to achieve biodiversity while considering site-specific needs and concerns.
36.11.421	Road Management	Minimize the miles and size of roads. Build, maintain, and abandon roads to maximize efficiency.
36.11.422	Watershed Management	Maintain high-quality water. Incorporate appropriate BMPs.
36.11.423	Cumulative Effects	Assess and minimize cumulative watershed effects
36.11.425-426	Riparian Management Zones (RMZs) and Wetland Management Zones (WMZ)	Restricts timber harvest activities in RMZs and WMZs and protects forested wetlands.
36.11.428	Threatened and Endangered Species	Participate in recovery efforts of threatened and endangered plant and animal species. Confer with USFWS)to develop habitat mitigation measures. Participate in interagency working groups established to develop guidelines and implement recovery plans for threatened and endangered species.
36.11.429	Threatened and Endangered Species – Bald Eagle	Timber harvest conducted pursuant to the Montana Bald Eagle Management Plan (MBEWG 1994), and the Habitat Management Guide for Bald Eagles in Northwestern Montana (MBEWG 1991). Timber harvest, road and trail construction and use, and various other activities should be conducted to prevent disturbance to eagles during the nesting season and to prevent or minimize impacts to their habitat
36.11.430	Threatened and Endangered Species – Wolves	Guidelines for timber harvest in areas with known wolf activity (den sites) or suspected rendezvous sites present conflicts with wolf use as well as to promote maintenance and development of ecological features that are important elements of the life-history requirements of: white-tailed deer, mule deer, and/or elk (wolf prey species).

TABLE E4-8. MANAGEMENT REQUIREMENTS OF WILDLIFE-RELATED ARMS RELATIVE TO FOREST MANAGEMENT ACTIVITIES (CONTINUED)

Administrative Rule	Topic	Application on State Lands
36.11.431 through 434	Threatened and Endangered Species — Grizzly Bear	For lands covered by the Swan Agreement, follow management considerations and participate in grizzly bear monitoring and reporting outlined in the agreement. On the Stillwater Block, adhere to restrictions governing road density, activities within security core, visual screening, seasonal activities, and cover retention. On scattered parcels in recovery zones, consider measures to comply with ESA including: cover retention, activity duration, seasonal restrictions, riparian zone hiding cover, food storage (where applicable), and road density. Road densities are further restricted in the NCDE and CYE.
36.11.435	Threatened and Endangered Species — Canada Lynx	Lynx rules applicable to NWLO, SWLO, CLO, and NELO; recognition of the importance to lynx of specific habitat features (i.e., denning and foraging habitat); manage for lynx habitat using coarse filter approach, emulating natural processes; no salvage within denning habitat stands; delay pre-commercial thinning in young foraging lynx habitat; minimize road construction and consider road abandonment in lynx habitat; consider specific lynx habitat measures on blocked lands; and consider other specific lynx habitat measures on scattered parcels.
36.11.436	Sensitive Species	Identifies general standards for providing habitat features and protecting habitat for sensitive species. Requires reporting of notable observations to aid in furthering the understanding of species occurrence and natural history. Includes follow-up surveys providing a basis for an adaptive management approach where new information on species' response to a given activity guides further management actions and mitigation.
36.11.437	Flammulated owl	Includes consideration of owl habitat needs when working in preferred habitat types. Considerations include favoring certain species, snags, stand density, patch configuration.
36.11.438	Black-backed woodpecker	For projects in areas recently burned (less than 5 years) with forest patches greater than 40 acres in size, requires seasonal restrictions on mechanized activities, retention of 10 percent of the burned acreage and standing sub-merchantable burned trees where considerations allow.
36.11.439	Pileated woodpecker	Within pileated woodpecker preferred habitat, manage for snags, snag recruits, and CWD according to ARMs 36.11.411, 36.11.413, and 36.11.414 particularly favoring retention of favored tree species and snags.
36.11.440	Fisher	An assessment of fisher habitat on projects that contain preferred fisher cover types required within the NWLO and SWLO. Requirements include managing 75 percent of the acreage (trust lands only) to be in the sawtimber size class in moderate to well-stocked density and postpone of treatments where this cannot be accomplished.

TABLE E4-8. MANAGEMENT REQUIREMENTS OF WILDLIFE-RELATED ARMS RELATIVE TO FOREST MANAGEMENT ACTIVITIES (CONTINUED)

Administrative Rule	Topic	Application on State Lands
36.11.441	Common loon	Requires specific limitation on activities within specified radius of a nesting pairs.
36.11.442	Peregrine falcon	Manage for falcons within a 0.25-mile radius of a known nest site, and develop appropriate site-specific silvicultural mitigation measures such as limiting human and mechanized activities with seasonal restrictions.
36.11.443	Big game	Timber harvest guidelines provide for big game habitat to the extent possible and implement measures to mitigate potential impacts. Encourages coordination with MFWP.

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TABLE E4-9. REQUIRED AMOUNTS OF LYNX HABITAT AS A PERCENTAGE OF TOTAL POTENTIAL LYNX HABITAT (TPH) UNDER ALTERNATIVE 1 (FOREST MANAGEMENT ARMS) AND MINIMUM ACRES AS A PERCENTAGE OF TPH REQUIRED UNDER THE PROPOSED ALTERNATIVES BY LMA IN THE HCP PROJECT AREA

	Stillwater LMAs							
	Alternative 1[5]		Alternative 2		Alternative 3		Alternative 4	
Habitat Category	Required Habitat	Minimum Acres Required	Required Habitat	Minimum Acres Required	Required Habitat	Minimum Acres Required	Required Habitat	Minimum Acres Required
Foraging Habitat[1]	10% of TPH	7,655	20% of TPH	16,848	20% of TPH	16,848	20% of TPH	16,848
Denning Habitat	5% of TPH	3,827	NA[4]	NA	10% of TPH	8,424	NA[4]	NA
Suitable Habitat[2]	NA	NA	65% of TPH	54,755	70% of TPH	58,967	60% of TPH	50,543
Total Potential Lynx Habitat[3]	**NA**	**76,546**	**NA**	**84,238**	**NA**	**84,238**	**NA**	**84,238**
	Swan LMA							
	Alternative 1[5]		**Alternative 2**		**Alternative 3**		**Alternative 4**	
	Required Habitat	**Minimum Acres Required**	**Required Habitat**	**Minimum Acres Required**	**Required Habitat**	**Minimum Acres Required**	**Required Habitat**	**Minimum Acres Required**
Foraging Habitat[1]	10% of TPH	2,536	20% of TPH	7,331	20% of TPH	7,331	20% of TPH	7,331
Denning Habitat	5% of TPH	1,268	NA[4]	NA	10% of TPH	3,665	NA[4]	NA
Suitable Habitat[2]	NA	NA	65% of TPH	23,825	70% of TPH	25,658	60% of TPH	21,992
Total Potential Lynx Habitat[3]	**NA**	**25,355**	**NA**	**36,654**	**NA**	**36,654**	**NA**	**36,654**
	Seeley Lake LMA							
	Alternative 1[5]		**Alternative 2**		**Alternative 3**		**Alternative 4**	
	Required Habitat	**Minimum Acres Required**	**Required Habitat**	**Minimum Acres Required**	**Required Habitat**	**Minimum Acres Required**	**Required Habitat**	**Minimum Acres Required**
Foraging Habitat[1]	10% of TPH	577	20% of TPH	893	20% of TPH	893	20% of TPH	893
Denning Habitat	5% of TPH	289	NA[4]	NA	10% of TPH	447	NA[/]	NA
Suitable Habitat[2]	NA	NA	65% of TPH	2,903	70% of TPH	3,126	60% of TPH	2,680
Total Potential Lynx Habitat[3]	**NA**	**5,773**	**NA**	**4,466**	**NA**	**4,466**	**NA**	**4,466**

TABLE E4-9. REQUIRED AMOUNTS OF LYNX HABITAT AS A PERCENTAGE OF TOTAL POTENTIAL LYNX HABITAT (TPH) UNDER ALTERNATIVE 1 (FOREST MANAGEMENT ARMS) AND MINIMUM ACRES AS A PERCENTAGE OF TPH REQUIRED UNDER THE PROPOSED ALTERNATIVES BY LMA IN THE HCP PROJECT AREA (CONTINUED)

	Garnet LMA							
	Alternative 1[5]		Alternative 2		Alternative 3		Alternative 4	
	Required Habitat	Minimum Acres Required	Required Habitat	Minimum Acres Required	Required Habitat	Minimum Acres Required	Required Habitat	Minimum Acres Required
Foraging Habitat[1]	10% of TPH	358	20% of TPH	785	20% of TPH	785	20% of TPH	785
Denning Habitat	5% of TPH	179	NA[4]	NA	10% of TPH	392	NA[4]	NA
Suitable Habitat[2]	NA	NA	65% of TPH	2,550	70% of TPH	2,746	60% of TPH	2,354
Total Potential Lynx Habitat[3]	**NA**	**3,583**	**NA**		**NA**	**3,923**	**NA**	**3,923**

[1] Foraging habitat consists of winter foraging and young foraging habitat under Alternative 1 and winter foraging and summer foraging habitat under Alternatives 3 and 4. Only winter foraging habitat is included under Alternative 2.
[2] Suitable habitat is all habitat with structural characteristics capable of providing lynx habitat.
[3] Total potential lynx habitat represents all lands potentially supporting lynx preferred climax vegetation types over time regardless of their current structural condition.
[4] For Alternatives 2 and 4, the requirement for denning habitat is to retain minimum levels of ~~at least two den sites per square mile~~ CWD at the project level, rather than a requirement to retain a certain acreage of habitat as required under Alternative 1, or to maintain an acreage of habitat and at least two potential den sites per square mile as required by Alternative 3.
[5] Commitments of habitat percentages are applied under Alternative 1 using DNRC Forest Management ARMs at the scale of grizzly BMU subunits and not LMAs.
[6] Stillwater LMAs include the Stillwater East, Stillwater West, and Coal Creek LMAs.

Source: DNRC (2008a).

TABLE E4-10. REGULATORY STATUS, DISTRIBUTION, AND HABITAT OF STATE-LISTED S1 AND S2 SPECIES AND/OR DNRC-LISTED SPECIES

Species	Listing Status[1]	Distribution in Montana[2]	Principal Habitat[2]
Common Loon	MFWP - S2 (for breeding birds only), DNRC	Breeding range is primarily restricted to the northwest corner of the state.	Lakes greater than 13 acres in size and over 5,000 feet elevation. Breeding range is primarily restricted to the northwest corner of the state.
Caspian Tern	MFWP - S2 (for breeding birds only)	Rare breeder in northern and central Montana	Islands within large lakes or reservoirs
Forster's Tern	MFWP - S2 (for breeding birds only)	Rare breeder in northern Montana	Large marshes with extensive reeds and muskrat houses
Trumpeter Swan	MFWP - S2	Rare breeder and winter resident in southwestern Montana. The species is also being re-introduced on the Flathead Indian Reservation in northwestern Montana.	For breeding habitat, small lakes and ponds with emergent vegetation and with little or no human disturbance. Wintering habitat includes lakes, ponds, and rivers that do not freeze.
Harlequin Duck	MFWP - S2 (for breeding birds only), DNRC	Fragmented distribution in Montana; mostly restricted to the west side of the Continental Divide.	Fast-moving, low-gradient mountain streams. Adjacent riparian areas are generally forested, but forest age (e.g., young vs. old forest) appears unimportant.
Mountain Plover	MFWP - S2 (for breeding birds only), DNRC	Primarily occur in north-central and northeastern portion of state outside of the planning area. Within planning area, occur in Jefferson, Broadwater, and Madison Counties.	Prairie dog colonies and native short-grass prairie sites are preferred breeding habitats.
Ferruginous Hawk	MFWP - S2 (for breeding birds only)	Breeds east of the Continental Divide in the state.	Grassland and shrublands
Peregrine Falcon	MFWP - S2 (for breeding birds only), DNRC	Breeds in scattered locations throughout the State of Montana.	Nesting sites are usually on cliffs near water with abundant prey (mostly birds)
Burrowing Owl	MFWP - S2 (for breeding birds only)	Breeds east of the Continental Divide in the state.	Grasslands, especially with abandoned prairie dog burrows
Flammulated Owl	MFWP – S3B, DNRC-Listed	Breeds throughout the montane forests of western Montana.	Mature and old-growth dry ponderosa pine/Douglas-fir forests with low to moderate canopy cover. Snags, particularly large snags, are a critical habitat component (Powers et al. 1996). Thickets of young, dense trees appear important for roosting (Hayward and Verner 1994; McCallum 1994).
Columbian Sharp-Tailed Grouse	MFWP - S1, DNRC	Most common in eastern portion of state; some populations in inter-mountain valleys in southwestern Montana.	Native grasslands and sagebrush-grasslands
Sage Grouse	DNRC	East of Continental Divide	Native grasslands and sagebrush

TABLE E4-10. REGULATORY STATUS, DISTRIBUTION, AND HABITAT OF STATE-LISTED S1 AND S2 SPECIES AND/OR DNRC-LISTED SPECIES (CONTINUED)

Species	Listing Status[1]	Distribution in Montana[2]	Principal Habitat[2]
Black-backed Woodpecker	MFWP - S2	In Montana, occur in the western (especially the northwestern) part of the state, and also known to occur in a small area in the southeastern part of the state.	Recently burned (or otherwise killed trees) mixed conifer, lodgepole pine, Douglas-fir, and spruce-fir forests
Pileated Woodpecker	DNRC	Throughout forested zone in western Montana	Dense coniferous and deciduous forests below 6,200 feet elevation and characterized by abundant, large-diameter trees and/or snags (dbh greater than 20 inches); CWD; and canopy closure greater than 60 percent (McClelland 1977; Schroeder 1983; Bull and Jackson 1995; MPIF 2000; USFS 2002)
Bald Eagle	MFWP- S3, DNRC	Throughout state within large bodies of water or alongside large rivers	Nest and perch in large trees (usually conifers or cottonwoods), typically within 1 mile of a lake or reservoir (greater than 80 acres), or a large river (MBEWG 1994). Nest stands are usually greater than 20 acres in size and contain several large trees (MBEWG 1994; MPIF 2000). Roost sites are typically located in mature conifer or cottonwood stands less than 10 acres in size
Black-tailed Jackrabbit	MFWP - S2	Occurs in the southwestern corner of the state.	Grasslands
Northern Bog Lemming	MFWP - S2, DNRC	Primarily occurs west of the Continental Divide. Locations of documented sightings in the state range from 3,340 feet to 7,400 feet.	Generally, moist sites including bogs, wet meadows, moist mixed and conifer forests, alpine tundra, and mossy streamsides.
Black-Tailed Prairie Dog	MFWP – S3, DNRC	Range includes central and eastern Montana.	Flat, open, grasslands and shrub/grasslands with low, relatively sparse vegetation.
White-Tailed Prairie Dog	MFWP – S1 , DNRC	East of Continental Divide	Grasslands
Townsend's Big-Eared Bat	MFWP - S2, DNRC	Occurs throughout Montana.	Caves, abandoned mines, and abandoned buildings for maternal roosts and hibernacula. Surrounding habitats range from conifer forests and woodlands to shrublands and cottonwood riparian areas.
Fisher	MFWP – S3 , DNRC	Breeds in northwestern Montana within mid elevation montane forests.	Dense, usually mature or old-growth, moist, coniferous and mixed forests with a diversity of tree sizes, understory vegetation, snags, and logs (Aubry and Raley 2002; Weir and Harestad 2003)
Coeur d' Alene Salamander	MFWP - S2, DNRC	Extreme western (north and central) portion of the state – Lincoln, Sanders, Mineral, Missoula, and Ravalli Counties	Seeps, springs, waterfall spray zones, and streams edges within conifer forests and woodlands

TABLE E4-10. REGULATORY STATUS, DISTRIBUTION, AND HABITAT OF STATE-LISTED S1 AND S2 SPECIES AND/OR DNRC-LISTED SPECIES (CONTINUED)

Species	Listing Status[1]	Distribution in Montana[2]	Principal Habitat[2]
Boreal Toad	MFWP - S2	Occurs in western Montana.	Breeds in ponds, reservoirs, lakes, streams, wetlands, and backwater channels of rivers, preferably with mud bottoms. Non-breeding habitat is variable and not restricted to forests.

[1] Source: MFWP (2005a). State status rank: S1 = At high risk; S2 = At risk. DNRC (2003d). A species with multiple state ranking is an indication that the information the state has on the species is insufficient to assign a single S rank. In such cases, a range of S ranks is assigned as a way of locating the species somewhere on the scale but indicates the uncertainty involved in assigning the rank.

[2] Sources: Lenard et al. (2003); MFWP (2005a).

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TABLE E4-11. DISTRIBUTION AND HABITAT FOR GAME SPECIES AND FURBEARERS

Species	Status	Distribution in Montana	Principal Habitat
Black Bear	Game	Range includes western Montana, and southeastern portion of state.	Dense forests, riparian areas, and open slopes or avalanche chutes during spring.
Mountain Lion	Game	Range includes western and southern Montana, and also portions of central Montana.	Mostly mountains and foothills, but any habitat with sufficient food, cover, and room to avoid humans.
Mule Deer	Game	Range includes most of the State of Montana.	Varied: grasslands interspersed with coulees or breaks, shrublands, riparian areas along prairie rivers, open to dense montane and subalpine coniferous forests, aspen stands.
White-tailed Deer	Game	Scattered distribution throughout the state.	River and creek bottoms; dense vegetation at higher elevations. In summer, use mature, moist coniferous forests. In winter, prefer dense forests with low snow depths.
Rocky Mountain Elk	Game	Most of western Montana and portions of central and eastern Montana.	Coniferous forests interspersed with natural or human-made openings (e.g., meadows, grasslands, burns, logged areas). High open road densities reduce habitat quality.
Moose	Game	Occurs in western portion of the state.	Varied: in summer, mountain meadows, river valleys, swampy area, clearcuts; in winter, willow flats or mature coniferous forests. Closed canopy forests may be important in late winter.
Pronghorn	Game	Occurs mostly southwest, central, and eastern portion of the state.	Open, rolling brushlands and grasslands.
Mountain Goat	Game	Occurs in western portion of the state (in scattered locations).	Cliffy areas and other steep terrain; south-facing slopes in winter; alpine and subalpine meadows; sometimes use subalpine forests.
Bighorn Sheep	Game	Scattered locations in western, central and eastern portions of the state.	Cliffs; mountain slopes; rolling foothills. Semi-open to open vegetation types preferred.
Marten	Furbearer	Range includes most of western Montana.	Mature and old-growth conifer or mixed forests. Large snags and logs are important for den sites and foraging.
Mink	Furbearer	Occurs throughout the state.	Wetland and riparian habitats, streams, rivers, and lakes.
River Otter	Furbearer	Western and central Montana, extending into portions of eastern part of the state.	Rivers and streams, especially with densely vegetated and undercut banks. Sloughs and side channels for brood rearing and wintering habitat.
Bobcat	Furbearer	Occurs throughout the state.	Uses a wide variety of habitats but prefers rimrock, grasslands, and shrublands.
Muskrat	Furbearer	Occurs throughout the state.	Wetlands, riparian areas, lakes, rivers, and streams. Needs water of sufficient depth and/or velocity to prevent freezing. Also requires terrestrial and aquatic herbaceous vegetation.

TABLE E4-11. DISTRIBUTION AND HABITAT FOR GAME SPECIES AND FURBEARERS (CONTINUED)

Species	Status	Distribution in Montana	Principal Habitat
Beaver	Furbearer	Occurs throughout the state.	Ponds, lakes, meandering streams, and rivers with adjacent woody vegetation.
Wolverine	Furbearer	Occurs in western Montana and the south-central part of the state.	Large tracts of remote, generally roadless areas. Particular vegetation is less important, but tends to occur in mid-aged and mature high-elevation forests near natural openings (e.g., cliffs, slides, meadows) (USFS 1989). Riparian areas may be important winter habitat.
Fisher	Furbearer	Occurs in western Montana and the south-central part of the state.	Large tracts of dense coniferous or mixed forests with diverse structures. Dense understories are important. Large snags are used as maternal den sites.
Game Birds: wild turkey, sharp-tailed grouse, sage grouse, pheasant, partridge, mourning dove, common snipe, sandhill crane, ducks, geese, swans, coots.	Game	Varies by species.	Rivers, lakes, streams, and wetlands for waterfowl and waterbirds. Upland game bird habitat varies from grasslands to forests. Upland game birds associated with forests include blue grouse, ruffed grouse, and spruce grouse.

TABLE E4-12. ACREAGE ESTIMATES OF GRAY WOLF TERRITORY AREA FOR YEAR 2005 WITHIN THE PLANNING AREA AND HCP PROJECT AREA

Montana Wolf Packs by Recovery Area	Acreage of Wolf Pack Territory within the Planning Area[1,3]	Acreage of Wolf Pack Territory on DNRC Lands within the Planning Area[1] (% of total in Planning Area)		Acreage of Wolf Pack Territory on DNRC Lands within the HCP Project Area (% of total in Planning Area)[1,2]	
Northwest Montana Recovery Area Subtotal	**904,820**	**38,279**	**(4.2)**	**33,015**	**(3.6)**
Big Hole	8,472	0	(0.0)	0	(0.0)
Candy Mountain	69,862	0	(0.0)	0	(0.0)
Fish Creek	137,549	7,216	(5.2)	6,115	(4.4)
Fish Trap	109,788	6,793	(6.2)	6,793	(6.2)
Great Bear	18,207	0	(0.0)	0	(0.0)
Halfway	147,111	8,156	(5.5)	6,557	(4.5)
Hog Heaven	85,091	5,014	(5.9)	4,303	(5.1)
Kintla	25,890	452	(1.7)	452	(1.7)
Kootenai South	74,138	5,389	(7.3)	4,025	(5.4)
Lazy Creek	12,059	0	(0.0)	0	(0.0)
Livermore	18,198	0	(0.0)	0	(0.0)
Marias	18,204	0	(0.0)	0	(0.0)
Murphy Lake	82,471	1,931	(2.3)	1,931	(2.3)
Ninemile	27,922	161	(0.6)	0	(0.0)
Red Shale	18,210	0	(0.0)	0	(0.0)
Spotted Bear	18,761	0	(0.0)	0	(0.0)
Spotted Dog	18,228	1,663	(9.1)	1,663	(9.1)
Superior	18,222	0	(0.0)	0	(0.0)
Whitefish	77,272	3,983	(5.2)	2,053	(2.7)
Wolf Prairie	28,721	1,932	(6.7)	1,932	(6.7)

TABLE E4-12. ACREAGE ESTIMATES OF GRAY WOLF TERRITORY AREA FOR YEAR 2005 WITHIN THE PLANNING AREA AND HCP PROJECT AREA (CONTINUED)

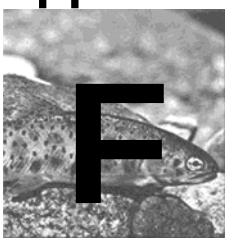
Montana Wolf Packs by Recovery Area	Acreage of Wolf Pack Territory within the Planning Area[1,3]	Acreage of Wolf Pack Territory on DNRC Lands within the Planning Area[1] (% of total in Planning Area)		Acreage of Wolf Pack Territory on DNRC Lands within the HCP Project Area (% of total in Planning Area)[1,2]	
Greater Yellowstone Experimental Population Area Subtotal	**433,766**	**8,772**	**(2.0)**	**4,829**	**(1.1)**
Beartrap	1,840	0	(0.0)	0	(0.0)
Buffalo Fork	18,250	0	(0.0)	0	(0.0)
Carbonate Mountain	16,601	0	(0.0)	0	(0.0)
Casey Lake	20,650	0	(0.0)	0	(0.0)
Chief Joe %	149,222	642	(0.4)	642	(0.4)
Deadhorse	66,450	0	(0.0)	0	(0.0)
Donohue	24,013	0	(0.0)	0	(0.0)
Freezeout	97,368	1,331	(1.4)	1,065	(1.1)
Mill Creek	3,055	0	(0.0)	0	(0.0)
Mission Creek	29,177	571	(2.0)	0	(0.0)
Moccasin Lake	0	0	(0.0)	0	(0.0)
Rosebud	0	0	(0.0)	0	(0.0)
Sage Creek	0	0	(0.0)	0	(0.0)
SW 28	1,704	0	(0.0)	0	(0.0)
SW 57	18,252	5,594	(30.6)	3,122	(17.1)
Wedge	25,200	634	(2.5)	0	(0.0)
Central Idaho Experimental Population Area Subtotal	**827,116**	**19,752**	**(2.4)**	**7,960**	**(1.0)**
Battlefield	357,958	13,880	(3.9)	3,151	(0.9)
Big Hole	40,743	0	(0.0)	0	(0.0)
Black Canyon	16,167	374	(2.3)	0	(0.0)
Brooks Creek	58,252	0	(0.0)	0	(0.0)
Fish Creek	804	0	(0.0)	0	(0.0)
Lake Como	18,236	172	(0.9)	172	(0.9)
Mt Haggin	18,237	0	(0.0)	0	(0.0)

TABLE E4-12. ACREAGE ESTIMATES OF GRAY WOLF TERRITORY AREA FOR YEAR 2005 WITHIN THE PLANNING AREA AND HCP PROJECT AREA (CONTINUED)

Montana Wolf Packs by Recovery Area	Acreage of Wolf Pack Territory within the Planning Area[1,3]	Acreage of Wolf Pack Territory on DNRC Lands within the Planning Area[1] (% of total in Planning Area)		Acreage of Wolf Pack Territory on DNRC Lands within the HCP Project Area (% of total in Planning Area)[1,2]	
Painted Rocks	18,240	91	(0.5)	91	(0.5)
Sapphire	152,992	686	(0.4)	641	(0.4)
Skalkaho	18,234	376	(2.1)	376	(2.1)
Sula	58,342	1,335	(2.3)	1,335	(2.3)
Willow Creek	69,115	2,836	(4.1)	2,193	(3.2)
Total	**2,165,702**	**66,802**	**(3.1)**	**45,804**	**(2.1)**

[1] Planning area includes all of NWLO, SWLO, and CLO.
[2] HCP project area includes all DNRC HCP-covered lands within the planning area.
[3] Values presented in this column will not add up to the corresponding subtotals due to overlap of pack territories, which was removed for the analysis.
Sources: Rocky Mountain Wolf Recovery 2005 Interagency Annual Report (USFWS et al. 2006); DNRC (2008a).

Appendix



Implementing Agreement

IMPLEMENTING AGREEMENT

by and between the

Montana Department of Natural Resources and Conservation (DNRC)

and the

U.S. Fish and Wildlife Service (USFWS)

(Draft 05-1-09)

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1.0 PARTIES

This Implementing Agreement ("IA") made and entered into as of the __ day of _____ 20__, by and between the Montana Department of Natural Resources and Conservation (DNRC) and the United States Fish and Wildlife (USFWS), hereinafter referred to as the "Parties," defines the Parties' roles and responsibilities and provides a common understanding of the actions that will be undertaken to minimize and mitigate the effects on the subject listed and unlisted species and their habitats of the proposed DNRC Forest Management Program.

2.0 RECITALS AND PURPOSES

2.1 Recitals. The parties have entered into this IA in consideration of the following facts:

a. The DNRC manages approximately 548,530 acres of land (HCP Project Area as defined in Section 3.4 of this IA) in Montana that has been determined to be habitat for the Covered Species named in Section 1.4.1 of the HCP; and

b. The DNRC's Covered Activities, as defined in Section 3.3 of this IA, may affect habitat of the Covered Species; and

c. The DNRC, with assistance from the USFWS, has developed a series of measures, described in the (***include DATE***) habitat conservation plan (HCP), to minimize and mitigate to the maximum extent practicable the effects of any Take which may occur incidental to its Covered Activities; and

d. The USFWS has fully reviewed the DNRC's HCP and this IA, and found them to meet all requirements under the Endangered Species Act (ESA), for issuance of an Incidental Take Permit (Permit), as defined below in Section 3.11.

2.2 Purposes. The purposes of this IA are:

a. To ensure implementation of each of the terms of the HCP.

b. To establish the roles, responsibilities, and other obligations of the parties and establish contingencies.

c. To describe remedies and recourse should any party fail to perform its obligations as set forth in this IA.

d. To provide assurances to DNRC that as long as the terms of the HCP and the Permit issued to it are fully performed, no additional mitigation will be required except as provided for in this IA, the HCP, or required by law.

3.0 DEFINITIONS

The following terms as used in this IA will have the meanings set forth below:

3.1 Terms Defined in Endangered Species Act. Terms used in this IA and specifically defined in the ESA or in regulations adopted by the USFWS under the ESA have the same meaning as in the ESA and its implementing regulation unless this IA expressly provides otherwise

3.2 "Changed Circumstances" means a change or changes in the circumstances affecting a Covered Species or the Covered Lands that can reasonably be anticipated by DNRC and the USFWS and that therefore can reasonably be, and has been, planned for in the HCP. Changed Circumstances are not Unforeseen Circumstances. All Changed Circumstances that can exist in connection with the HCP (together with the planned DNRC responses under the HCP to those circumstances) are contained in Chapter 6 of the HCP.

3.3 "Covered Activities" means those identified activities carried out by DNRC and its contractors on Covered Lands that may result in Incidental Take of Covered Species provided that such activities are otherwise lawful. All Covered Activities are identified in Chapter 1 of the HCP.

3.4 "Covered Lands" means the lands (including lands added to the HCP pursuant to Chapter 3 of the HCP) where the Covered Activities occur and the lands to which the HCP's minimization and mitigation measures apply and where the Permit authorizes Incidental Take to DNRC and its contractors. The Covered Lands are referred to in the HCP and EIS as the "HCP Project Area" and are further described in detail in the Chapter 1 of the HCP.

3.5 "Covered Species" means the Listed and Unlisted Species identified in and discussed in detail in Chapter 2 of the HCP, each of which the USFWS has determined the HCP addresses in a manner sufficient to meet all of the criteria for issuing a Permit under the ESA §10(a)(1)(B), pursuant to findings made by the USFWS with respect to issuance of the Permit. The permit will provide coverage for the follow three species listed under the ESA:

a. Grizzly bear (*Ursus arctos horribilis*)

b. Canada lynx (*Lynx canadensis*)

c. Bull trout (*Salvelinus confluentus*)

The Permit will also provide coverage for two additional species should these species become listed during the 50-year permit period:

a. Westslope cutthroat trout (*Oncorhynchus clarki lewisi*)

b. Redband trout (*Oncorhynchus mykiss gairdneri*)

3.6 "**ESA"** means the Endangered Species Act of 1973, as amended, 16 U.S.C. §§ 1531 *et seq*., and as may be further amended from time to time.

3.7 **"HCP"** means the DNRC Habitat Conservation Plan ***insert date*** and that was prepared by DNRC for Covered Lands.

3.8 **"HCP/EIS"** means the combined document containing both the HCP and the EIS prepared by the Parties pursuant to the Montana Environmental Policy Act ("MEPA") and the National Environmental Policy Act ("NEPA").

3.9 **"Incidental Take"** means Take that results from, but is not the purpose of, carrying out an otherwise lawful activity.

3.10 **"Listed Species"** means a Species that is listed as endangered or threatened under the ESA.

3.11 **"Permit"** means the Incidental Take Permit issued by the USFWS to the DNRC pursuant to § 10(a)(1)(B) of ESA for Take incidental to Covered Activities, as it may be amended from time to time.

3.12 **"Permittee"** means the DNRC.

3.13 **"Species"** means and includes any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature.

3.14 **"Take"** means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or colle**c**t, or to attempt to engage in any such conduct and has the same meaning as the term is used in the ESA, 16 U.S.C. § 1532(19) and implementing regulations, as they may be amended in the future from time to time.

3.15 **"Unforeseen Circumstances"** means changes in circumstances affecting a species or geographic area covered by a conservation plan that could not reasonably have been anticipated by plan developers and the USFWS at the time of the conservation plan's negotiation and development, and that result in a substantial and adverse change in the status of the covered species.

3.16 **"Unlisted Species"** means a Species that is not listed as endangered or threatened under the ESA.

4.0 OBLIGATIONS OF THE PARTIES

4.1 **Obligations of Permittee.** The DNRC shall perform the following duties:

a. Fully and faithfully perform all obligations required of it under this IA, the HCP, and the Permit.

b. Notify the USFWS within 30 days if, for any reason (including lack of sufficient appropriated funds or court decisions), the DNRC has become or is likely to become unable to fulfill any obligation undertaken by it in the HCP, the Permit, or the IA.

c. Promptly respond to all notices and inquiries received from the USFWS under the HCP, the Permit, or this IA consistent with applicable laws and the terms of the HCP. If the HCP does not provide for a timeline for a response, promptly will mean within 30 days.

d. Use its best efforts to help resolve any disputes that may arise among the USFWS, any agency, local government entity, state or local officials, or private parties with respect to the application and interpretation of the HCP, the Permit, or this IA using the dispute-resolution processes specified in this IA or other dispute-resolution processes that may be agreed to with respect to a particular dispute consistent with applicable laws.

e. Immediately notify the USFWS of any lawsuits filed against the DNRC, or any formal written notices of intent to file such suits, to challenge the validity of the Permit or any decisions made by the DNRC in connection with the HCP, the Permit, or this IA.

4.2 Obligations of the USFWS. The USFWS shall perform the following duties to the extent permitted by the ESA and other applicable federal law.

a. Upon execution of this IA by both Parties and satisfaction of all other applicable legal requirements, the USFWS will issue the DNRC a Permit under § 10(a)(1)(B) of the ESA. The Permit will authorize Incidental Take of Covered Species on Covered Lands that may occur in connection with Covered Activities during the times the HCP, the Permit, and this IA are in effect.

b. Within 60 days of publication of any proposed or final rule, notify the DNRC whenever the USFWS proposes to list as threatened or endangered, change the listing status, or designate critical habitat for any Covered Species, and again notify the DNRC when any listing, change in listing status, or designation is made final.

c. Notify the DNRC within 30 days if, for any reason (including lack of sufficient appropriated funds or court decisions), the USFWS has or is likely to become unable to fulfill any obligation undertaken in connection with the HCP, the Permit, or this IA.

d. Promptly respond to all notices and inquiries received from the DNRC under the HCP, the Permit, or this IA consistent with applicable laws and the terms of the HCP. If the HCP does not provide for a time frame for a response, promptly will mean within 30 days.

e. If requested by the DNRC, the USFWS shall use its best effort to help resolve any disputes that may arise among the USFWS, the DNRC, any state or local agency or officials, or private parties with respect to the application and interpretation of the HCP, the Permit, or this IA using the dispute-resolution processes specified in this IA or other dispute-resolution processes that may be agreed to with respect to a particular dispute consistent with applicable laws.

f. Immediately notify the DNRC of any lawsuits filed against the USFWS, or any formal written notices of intent to file such suits, to challenge the validity of the Permit or any decisions made by the USFWS in connection with the HCP, the Permit, or this IA.

g. Provided that DNRC has complied with its obligations under the HCP, this IA, and the Permit, the Service may only require DNRC to provide mitigation beyond that provided for in the HCP under unforeseen circumstances and only in accordance with the "No Surprises" regulations at 50 CFR 17.22 (b)(5) and 17.32(b)(5). If the USFWS makes a finding of unforeseen circumstances, during the period necessary to determine the nature and location of additional or modified mitigation, DNRC will avoid contributing to appreciably reducing the likelihood of survival and recovery of the affected species.

5.0 INCORPORATION OF THE HCP

The HCP and each of its provisions are intended to be, and by this reference are, incorporated herein. In the event of any direct contradiction between the terms of this IA and the HCP, the terms of this IA shall control. In all other cases, the terms of this IA and the terms of the HCP shall be interpreted to be supplementary to each other.

6.0 TERM

6.1 Effective Date and Permit Term. This IA will become effective on the date the USFWS issues the Permit. This IA, the HCP, and the Permit will remain in effect for (50) years from issuance of the original permit, except as provided below.

6.2 Permit Suspension or Revocation. The USFWS may suspend or revoke the Permit only for cause, and only in accordance with regulations in force at the time of such suspension or revocation. (These regulations are currently codified at 50 C.F.R. §§ 13.27 through 13.29) except that the USFWS may suspend or revoke the permit only based on a determination that the continuation of the permitted activity would be likely to jeopardize the continued existence of the Covered Species only if the Service has not been successful in remedying the situation in a timely fashion through other means as provided in the No Surprises regulations. Such suspension or revocation may apply to the entire permit, or may apply only to specified Covered Species, Covered Lands or Covered Activities.

6.3 Relinquishment of the Permit. The DNRC may voluntarily relinquish the Permit and discontinue HCP implementation. If DNRC wishes to relinquish the

Permit before expiration of the term, DNRC will provide notice of its intent to do so to the USFWS at least 60 days prior to the planned relinquishment. The USFWS will review all relevant data to determine whether Take of Covered Species, occurring prior to the date of Permit relinquishment, has been fully minimized and mitigated in accordance with the Permit and HCP. If Take has been fully minimized and mitigated and DNRC is in compliance with the terms of the HCP and Permit upon relinquishment, DNRC shall have no further obligation(s) under the Permit. If the USFWS demonstrates that Take of such Species that occurred during the term of the Permit has not been minimized and mitigated, the USFWS may require continuation of specified HCP activities until such time as mitigation is substantially completed. Minimization and mitigation will have occurred if the minimization and mitigation that has been provided under the HCP compensates for the Take that has occurred under the Permit as of that date. This process will also be utilized in the instance DNRC wishes to relinquish the permit as to any, but less than all of the specified Covered Species, Covered Lands, or Covered Activities.

6.4 Extension of the Permit. Upon agreement of the parties and compliance with all applicable laws, the Permit may be extended beyond its initial term under regulations of the USFWS in force on the date of such extension. If DNRC desires to extend the Permit, it will so notify the USFWS at least 180 days before the then-current term is scheduled to expire. Extension of the permit constitutes extension of the HCP and this IA for the same amount of time, subject to any modification that the USFWS and DNRC may agree to at the time of extension, consistent with regulations then in force pertaining to extensions.

6.5 Treatment of Unlisted Species. For purposes of Sections 6.2 and 6.3 of this IA, Unlisted Covered Species will be treated as though they were Listed Species in determining the amount of Take and the minimization and mitigation required.

7.0 FUNDING

DNRC will expend its appropriated funds as may be necessary to fulfill its obligations under the HCP. The DNRC will promptly notify the USFWS of any material change in its funding resources, and will cooperate with the USFWS to minimize the adverse effects of any such change on the conservation goals of the HCP.

8.0 MONITORING AND REPORTING

8.1 Monitoring. As described in the HCP, DNRC will conduct monitoring and will submit monitoring reports describing its activities and results of the monitoring program provided for in the HCP.

8.2 Other Reporting. DNRC will provide, within 30 days of being requested by the USFWS, any additional information in its possession or control related to implementation of the HCP that is requested by the USFWS for the purpose of assessing whether the terms and conditions of the Permit and the HCP, including the HCP's adaptive management plan, are being fully implemented.

8.3 Monitoring by the USFWS. The USFWS may conduct inspections and monitoring in connection with the permit in accordance with its regulations (See 50 CFR 13.47)

9.0 ADAPTIVE MANAGEMENT AND CHANGED CIRCUMSTANCES

9.1 Adaptive Management. DRNC and the USFWS will implement the adaptive management provisions in Chapter 4 of the HCP. Such changes are provided for in the HCP, and hence do not constitute unforeseen circumstances or require amendment to the Permit or HCP, except as provided for in this section.

9.2 Reduction in Mitigation. DNRC will not implement adaptive management changes that may result in less mitigation than provided for Covered Species under the original terms of the HCP, unless the USFWS first provides written approval. DNRC may propose any such adaptive management changes by notice to the USFWS, specifying the adaptive management modifications proposed, the basis for them, including supporting data, and the anticipated effects on Covered Species, and other environmental impacts. Within 120 days of receiving such a notice, the USFWS will either approve the proposed adaptive management changes, approve them as modified by the USWFS, or notify DNRC that the proposed changes constitute permit amendments that must be reviewed under Section 11.2 of this IA.

9.3 No Increase in Take. This section does not authorize any modification that would result in an increase in the amount and nature of Take, or increase the impacts of the Take, of Covered Species beyond that analyzed under the original HCP, section 7 biological Opinion conducted by USFWS on issuance of the permit and any amendments thereto. Any such modification must be reviewed as a permit amendment under Section 11.2 of the IA.

10.0 UNFORESEEN CIRCUMSTANCES AND "NO SURPRISES."

10.1 Provided that the DNRC has complied with its obligations under the HCP, the IA, and the Permit, the USFWS may only require DNRC to provide mitigation beyond that provided for in the HCP in accordance with the "No Surprises" regulations at 50 C.F.R. §§ 17.22(b)(5) and 17.32(b)(5).

10.2 Rights and Authorities Preserved. Except as otherwise specifically provided in the HCP, nothing herein contained shall be deemed to restrict the rights, privileges, and powers of the DNRC to manage the use of, or exercise all rights incident to land ownership associated with, Covered Lands. Nothing herein

contained shall be interpreted to restrict the authority of the USFWS to administer the Permit with respect to permit lands in accordance with this IA and the ESA.

11.0 MODIFICATIONS AND AMENDMENTS

11.1 Minor Modifications.

(a) DNRC or the USFWS may propose minor modifications to the HCP or this IA. Such notice shall include a statement of the reason for the proposed modification and an analysis of its environmental effects on operations under the HCP and on Covered Species. The DNRC and USFWS will use best efforts to respond to proposed modifications within 60 days of receipt of such notice. Proposed modifications will become effective upon DNRC and USFWS written approval. If, for any reason, USFWS or DNRC objects to a proposed modification, it must be processed as an amendment of the permit in accordance with subsection 11.2 of this section. USFWS will not propose or approve minor modifications to the HCP or this IA if the USFWS determines that such modifications would result in operations under the HCP that are significantly different from those analyzed in connection with original HCP, or additional take not analyzed in connection with the original HCP.

(b) Minor modifications to the HCP and IA processed pursuant to this subsection may include but are not limited to the following:

(1) Corrections of typographic and grammatical errors and similar editing errors that do not change the intended meaning.

(2) Corrections to any maps, or exhibits to correct errors in mapping or to reflect previously changes in the permit or HCP;

(3) Minor changes to survey, monitoring or reporting protocols; and

(4) Adding and removing lands from Covered Lands, as described in Chapter 3 of the HCP.

(c) Any other modification to the HCP or IA will be processed as amendments of the permit in accordance with subsection 11.2 of this section

11.2 Amendment of the Permit.

The Permit may be amended in accordance with all applicable legal requirements, including but not limited to the ESA, the National Environmental Policy Act, and the USFWS section 10(a)(1)(B) permit regulations. The Party proposing the amendment shall provide a statement of the reason for the amendment and an analysis of its environmental effects, including its effects on operations under the HCP and on Covered Species.

12.0 REMEDIES, ENFORCEMENT AND DISPUTE RESOLUTION

12.1 In General. Except as set forth below, each Party shall have all remedies otherwise available to enforce the terms of this IA, the Permit, and the HCP.

12.2 No Monetary Damages. No Party shall be liable in damages to any other Party or other person for any breach of this IA, any performance or failure to perform a mandatory or discretionary obligation imposed by this IA or any other cause of action arising from this IA.

12.3 Dispute Resolution. The Parties recognize that disputes concerning implementation of or compliance with this IA, the HCP, and the Permit may arise from time to time. In particular, the adaptive management and changed circumstances provisions of the HCP in Chapters 4 and 6 establish procedures that call for collaboration and agreement by the parties through a structured process; the Parties recognize that good faith disputes may arise from time to time during that process. The Parties agree to work together in good faith to resolve such disputes, using the informal dispute resolution procedures set forth in this Section, or such other procedures upon which the Parties may later agree. However, if at any time any Party determines that circumstances so warrant, it may seek any available remedy without waiting to complete informal dispute resolutions. Unless the Parties agree upon another dispute resolution process, or unless a Party has initiated administrative proceedings or suit in federal court, the parties may use the following process to attempt to resolve disputes:

1. Party with concern notifies other party of concern and proposed remedy.

2. Notified party has 30 days to respond.

3. Parties can then decide how to discuss and may consider non-binding mediation or some other alternate dispute-resolution process.

4. Parties can seek their individually available remedies. The Parties acknowledged that the Covered Species are unique and that their loss as species would result in irreparable damage to the environment, and that therefore injunctive and temporary relief may be appropriate to ensure compliance with the terms of this IA.

12.4 Responsibility of the United States. Nothing contained in this IA is intended to limit the authority of the United States government to seek civil or criminal penalties or otherwise fulfill its enforcement responsibilities under the ESA.

13.0 MISCELLANEOUS PROVISIONS

13.1 No Partnership. Except as otherwise expressly set forth herein, neither this IA nor the HCP shall make or be deemed to make any Party to this IA the agent for or the partner of any other Party.

13.2 Notices. Any notice shall be delivered personally to the persons set forth below or shall be deemed given five (5) days after deposit in the United States mail, certified and postage prepaid, return receipt requested and addressed as follows or at such any other address a Party may from time to time specify to the other Parties in writing:

Assistant Regional Director
United States Fish and Wildlife USFWS
134 Union Boulevard
Lakewood, Colorado 80228-1807.
Telephone: 303 236-8155
Telefax: 303 236-8101

Director
Montana Department of Natural Resources and Conservation
1625 - 11th Ave.
Helena, MT 59620
Telephone: 406 444-2074
Telefax: 406 444-2684

13.3 Integration. This IA, together with the HCP and the Permit, constitutes the entire agreement between the Parties. It supersedes any and all other agreements outside those listed, either oral or in writing, among the Parties with respect to the subject matter hereof and contains all of the covenants and agreements among them with respect to said matters, and each Party acknowledges that no representation, inducement, promise or agreement, oral or otherwise, has been made by any other Party or anyone acting on behalf of any other Party that is not embodied herein.

13.4 Severability. If a portion of the IA, HCP, or Permit is found to be invalid or unenforceable, or this IA is terminated in part, all other commitments shall remain in effect to the extent they can still be reasonably applied.

13.5 Elected Officials Not To Benefit. No member of, or delegate to, Congress shall be entitled to any share or part of this IA, or to any benefit that may arise from it.

13.6 Availability of Funds. Implementation of this IA and the HCP by the USFWS is subject to the requirements of the Anti-Deficiency Act and the availability of appropriated funds. Nothing in this IA will be construed by the Parties to require the obligation, appropriation, or expenditure of any money from the U.S. Treasury. The Parties acknowledge that the USFWS will not be required under this IA to expend any Federal agency's appropriated funds unless and until an authorized official of that agency affirmatively acts to commit to such expenditures as evidenced in writing.

13.7 Duplicate Originals. This IA may be executed in any number of duplicate originals. A complete original of this IA shall be maintained in the official records of each of the Parties hereto.

13.8 No Third-Party Beneficiaries. Without limiting the applicability of the rights granted to the public pursuant to the ESA or other federal law, this IA shall not create any right or interest in the public, or any member thereof, as a third party beneficiary hereof, nor shall it authorize anyone not a Party to this IA to maintain a suit for personal injuries or property damages pursuant to the provisions of this IA. The duties, obligations, and responsibilities of the Parties to this IA with respect to third parties shall remain as imposed under existing Federal or State law.

13.9 Applicable Laws. All activities undertaken pursuant to this IA, the HCP, or the Permit must be in compliance with all applicable State and Federal laws and regulations.

13.10 Reference to Regulations. Any reference in this IA, the HCP, or the permit to any regulation or rule of the Service shall be deemed to be a reference to such regulation or rule in existence at the time an action is taken. Actions occurring in the future will comply with all regulations existing at the time an action is taken, subject to paragraph 4.2g of this IA.

13.11 Successors and Assigns. This IA and each of its covenants and conditions shall be binding on and shall inure to the benefit of the parties and their respective successors and assigns. Assignments or other transfer of the Permit shall be governed by the USFWS's regulations in force at the time.

13.12 Relationship to the ESA and other Authorities. The terms of this IA shall be governed by and construed in accordance with the ESA and applicable federal law. In particular, nothing in this IA is intended to limit the authority of the USFWS to seek penalties or otherwise fulfill its responsibilities under the ESA. Moreover, nothing in this IA is intended to limit or diminish the legal obligations and responsibilities of the USFWS as an agency of the federal government. Nothing in this IA will limit the right or obligation of any federal agency to engage in consultation required under section 7 of the ESA or other federal law; however, it is intended that the rights and obligations of DNRC under this HCP and this IA will be considered in any consultation affecting Permittee's use of the Covered Lands.

IN WITNESS WHEREOF, THE PARTIES HERETO have executed this Implementing Agreement to be in effect as of the date last signed below.

BY _____ Date_____

Regional Director
United States Fish and Wildlife USFWS
Denver, Colorado

BY _____ Date_____

Director
Montana Department of Natural Resources and Conservation
Helena, Montana

Appendix

Responses to Comments on the Draft EIS/HCP

1 INTRODUCTION

This appendix was prepared in response to public comments received by the U.S. Fish and Wildlife Service (USFWS) regarding public review of the Draft Montana Department of Natural Resources and Conservation (DNRC) Forested State Trust Lands Habitat Conservation Plan (Draft HCP), dated June 2009, and the associated draft environmental impact statement (Draft EIS), also dated June 2009.

The following subsections provide an overview of the public comments received. Section 2 (Responses to Comments) provides general responses to similar comments addressing several topics, as well as responses to individual public comments received on the Draft EIS/HCP. References cited by comment responses in this appendix are included in EIS Chapter 7 (References).

1.1 Public Comment Process

The Draft EIS/HCP was released for a 90-day public comment period that began June 26 and was extended to October 9, 2009. During this time, the USFWS received 523 individual comment letters and emails on the Draft EIS/HCP. Among these comment letters there were two distinct form letters that were submitted by numerous individuals. These two form letters represent 355 of the letters submitted (including slight variations of the form letters), or 68 percent. Variants of these two form letters were received from 39 other individuals (7 percent) and were counted as unique letters because they each contained one or more additional comments not found in the original form letters. Additionally, 54 letters (10 percent) included one or more comments based on substantive points made in a brochure published by the Montana Environmental Information Center (MEIC), and some of these letters also included additional comments not based on MEIC's brochure. While these letters were counted as individual letters, any comments based on the MEIC brochure were counted once for the purpose of summarizing comments and preparing responses. Two groups of county commissioners from Lincoln and Mineral Counties sent identical letters, and these were counted as one unique letter for responding to the comments included in those letters. In addition, the Town of Lima and the Meagher County commissioners sent identical letters; as with the Lincoln and Mineral County letters, these were counted as a single letter. The remaining 73 letters received (14 percent) were unique.

Each public comment letter was assigned a unique identifying number, and then individual comments within each letter were identified. More than 700 individual comments were identified from the comment letters. These individual comments were entered into a database and categorized by issue and sub-issue. A team was formed consisting of several individuals from the USFWS to draft responses to public comments. Input was sought from the DNRC and USFWS on technical comments related to DNRC's Draft HCP application.

Responses to public comments were categorized by issue and sub-issue and then organized into the topics reflected in the subsections that make up Section 2 (Responses to Comments), below. The order in which topics are presented in this appendix is guided by the number of comments received. Topics and subtopics that were the subject of the most comments are presented first.

1.2 Public Comments Received

This section summarizes the individual public comment letters received on the Draft EIS/HCP. Table 1-1 identifies each numbered public comment letter and the name of the individual or organization that submitted the letter. This table also informs readers where to find responses to the comments contained in each letter. The subsequent two tables identify the individuals that submitted one of the two form letters. The USFWS

encourages everyone who submitted public comments to read the responses to comments in their entirety for a full understanding of all the comments received and the USFWS' responses to these comments.

TABLE 1-1. UNIQUE PUBLIC COMMENT LETTERS RECEIVED

Letter Number	Name / Organization	Section(s) Containing Responses to Comments
1	Lorin Hicks / Plum Creek Timber Company, Inc.	2.1
2	Steve Anderson	2.2.1, 2.2.4, 2.11
3	Tom Maguire / Montana Wildlife Federation	2.1.1
4	Richard Mousel	2.1.1, 2.1.12
5	Jack Atcheson / Coalition for State and Public Land Access	2.1.10, 2.2.2, 2.14, 2.18
6	Bruce Hunner	2.1.1, 2.3, 2.5
7	Cliff Wenzek	2.1.1, 2.2.3, 2.5, 2.8
8	Peter Lesica / Montana Native Plant Society	2.11
9	Julie A. DalSoglio / EPA Region 8	2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.1.5, 2.1.6, 2.1.7, 2.1.9, 2.1.10, 2.1.11, 2.1.12, 2.1.13, 2.1.15, 2.1.16, 2.1.17, 2.1.18, 2.2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.9, 2.10, 2.11, 2.15, 2.17, 2.19, 2.22, 2.25
10	Jim Olson and Craig Sharpe / Montana Wildlife Federation	2.5, 2.6, 2.12, 2.16
11	Betty Holder, District Ranger / Fortine Ranger District, Kootenai National Forest (USFS)	2.21
12	Natural Resources Defense Council on behalf of 225 unique individuals (see Table 1-2)	2.2.4, 2.5
13	Stephen Wallace	2.1.1, 2.2.3, 2.2.4, 2.4, 2.7
14	George Holton	2.1.1, 2.4, 2.6, 2.7, 2.8
15	Jennifer Abbott	2.1.1, 2.4, 2.6, 2.7, 2.8
16	Lydia Garvey	2.3
17	STarshine	2.3
18	Pat Helvey	2.2.4, 2.3
19	Amy F. Davis	2.1.1, 2.4, 2.6, 2.7, 2.8
20	Bill Jaynes	2.3
21	Mollie Kieran	2.6
22	Kathleen Stachowski	2.3, 2.4, 2.5, 2.7
23	Julie Wood	2.24
24	Ronda Lee Gagnon	2.3
25	Collette Brooks-Hops and Larry Hops	2.4, 2.8, 2.15, 2.21
26	Fred Longhart	2.3, 2.4, 2.5, 2.7, 2.16
27	Suzanna McDougal	2.1.1, 2.4, 2.6, 2.7, 2.8
28	Kate McMahon	2.1.1, 2.5, 2.7
29	Wade Sikorski	2.8
30	Bruce Spring	2.1.1, 2.4, 2.6, 2.7, 2.8
31	Dr. O. Alan Weltzien	2.5

TABLE 1-1. UNIQUE PUBLIC COMMENT LETTERS RECEIVED (CONTINUED)

Letter Number	Name / Organization	Section(s) Containing Responses to Comments
32	Ronald Buentemeier	2.1.1, 2.1.7, 2.2.1, 2.2.3, 2.2.4, 2.13, 2.14, 2.16, 2.23
33	Mark S. Connell	2.3
34	Robert Oset	2.1.1, 2.7, 2.8
35	Cliff Wenzek	2.3
36	Defenders of Wildlife on behalf of 126 unique individuals (see Table 1-3)	2.4, 2.5, 2.6, 2.8
37	Doris Fischer	2.1.1, 2.4, 2.6, 2.7, 2.8
38	Richard Fisher	2.1.1, 2.4, 2.6, 2.7, 2.8
39	Jackie Foster	2.1.1, 2.4, 2.6, 2.7, 2.8
40	Marilyn Guggenheim	2.6
41	Norma Hamilton	2.5
42	Craig and Jackie Mathews / Blue Ribbon Flies	2.1.1, 2.4, 2.6, 2.7, 2.8
43	Marvin Smith	2.1.1, 2.4, 2.6, 2.7, 2.8
44	Ken Wallace	2.1.1, 2.2.4, 2.3, 2.5, 2.6, 2.16, 2.20, 2.21
45	Keith Hammer / Swan View Coalition	2.1.1, 2.2.3, 2.2.4, 2.4, 2.5, 2.7, 2.8, 2.11, 2.13, 2.21
46	John E. Dunkum	2.1.1, 2.4, 2.6, 2.7, 2.8
47	Joe Gutkoski / Montana River Action	2.6
48	Edwin F. Prach	2.3
49	John Boehmke	2.4
50	Terry Burns	2.1.1, 2.3, 2.4, 2.5
51	Mary Fay	2.1.1, 2.4, 2.6, 2.7, 2.8
52	Treasa Glinnwater	2.5
53	Pam Hillery	2.1.1, 2.4, 2.6, 2.7, 2.8
54	Suzy Holt	2.3
55	Dana Huschle	2.3
56	Gerry Jennings	2.1.1, 2.4, 2.6, 2.7, 2.8
57	Mark Johnstad	2.3, 2.4
58	Eldora Landman	2.7
59	David Lehnherr	2.1.1, 2.4, 2.6, 2.7, 2.8
60	*tmlynch (no name provided)*	2.1.1, 2.4, 2.6, 2.7, 2.8
61	Amy Monteith	2.1.1, 2.4, 2.6, 2.7, 2.8
62	Roy O'Connor	2.3
63	Jeanne O'Neill	2.5
64	Andrew Pierce	2.1.1, 2.4, 2.6, 2.7, 2.8
65	Ted Reeves	2.1.1, 2.4, 2.6, 2.7, 2.8
66	Jeff Smith	2.1.1, 2.4, 2.6, 2.7, 2.8
67	Linda Smith	2.8
68	Valley Ellingsen	2.3, 2.4, 2.5, 2.7
69	Andrea Morgan	2.1.1, 2.4, 2.7

TABLE 1-1. UNIQUE PUBLIC COMMENT LETTERS RECEIVED (CONTINUED)

Letter Number	Name / Organization	Section(s) Containing Responses to Comments
70	Orville Bach	2.5
71	Joyce W. Brown	2.4
72	Janet H. Ellis / Montana Audubon	2.1.1, 2.2.3, 2.2.4, 2.5, 2.7, 2.8, 2.20
73	Erryl Eyster	2.1.1, 2.2.4, 2.3, 2.4, 2.5
74	Rae Marie Fauley	2.1.1, 2.5
75	John D. and Darlene L. Grove	2.1.1, 2.1.5, 2.3, 2.5, 2.8, 2.21
76	Tom Heyes	2.1.1, 2.3, 2.5, 2.7
77	Grace Hodges	2.1.1, 2.4, 2.6, 2.7, 2.8
78	Rich Landini	2.1.1, 2.4, 2.6, 2.7, 2.8
79	Jaime Schiller	2.5
80	Linda Helding Schure	2.1.1, 2.4, 2.6, 2.7, 2.8
81	Arlo Skari	2.4
82	Elizabeth A. Taylor	2.1.1, 2.4, 2.6, 2.7, 2.8
83	Clark Conrow, B. J. McComb, Duane Simons / Mineral County Commissioners	2.6
84	Robert Ray / Watershed Protection, Montana DEQ	2.1.1, 2.1.2, 2.1.4, 2.1.7, 2.1.10, 2.1.11, 2.1.12, 2.1.13, 2.1.17, 2.1.18, 2.7
85	James R. Clinkingbeard	2.5
86	Joan Ryshavy	2.7, 2.20
87	Gary Aitken	2.3, 2.4
88	Ingrid Akerblom	2.4
89	Carla Augustad	2.16
90	Stephen Braun	2.1.1, 2.1.4, 2.1.6, 2.1.12, 2.1.13, 2.1.15, 2.2.2, 2.2.4, 2.3, 2.5, 2.6, 2.8, 2.9, 2.10, 2.11, 2.12, 2.13, 2.15, 2.16, 2.21, 2.22, 2.23, 2.25
91	Kerrie Byrne	No substantive comments on the HCP or the EIS
92	Anne Carlson / The Wilderness Society	2.7, 2.8
93	Linda Christensen	2.1.1, 2.4, 2.6, 2.7, 2.8
94	Bruce Farling / Montana Trout Unlimited	2.1.1, 2.1.3, 2.1.7, 2.1.8, 2.1.12, 2.1.16, 2.1.17, 2.4, 2.5, 2.6, 2.9, 2.10, 2.20
95	Edwin Fields	2.1.1, 2.4, 2.6, 2.7, 2.8
96	Jenny K. Harbine / EarthJustice	2.3, 2.5, 2.6, 2.7, 2.8, 2.9, 2.10, 2.17
97	Teresa Hastings	2.13
98	Denise Hayman	2.5
99	Anne Hedges and Kyla Wiens / MEIC	2.1.1, 2.2.4, 2.5, 2.8, 2.15
100	Guenter Heinz	2.1.12, 2.3, 2.7, 2.15, 2.21
101	Lorin Hicks / Plum Creek Timber Company, Inc.	2.1.12, 2.2.1, 2.2.4, 2.9
102	Cedron Jones	2.7, 2.10

TABLE 1-1. UNIQUE PUBLIC COMMENT LETTERS RECEIVED (CONTINUED)

Letter Number	Name / Organization	Section(s) Containing Responses to Comments
103	Curtis and Stephanie Kruer	2.11
104	Pat Mackinder	2.5, 2.7
105	Carol S. and Lawrence R. McEvoy	2.1.1, 2.1.4, 2.2.2, 2.3, 2.4
106	Paul R. McKenzie / F.H. Stoltze Land & Lumber Company	2.1.1, 2.1.3, 2.1.6, 2.1.7, 2.1.11, 2.1.12, 2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.6, 2.15, 2.16, 2.20, 2.22, 2.23, 2.24
107	Ken McLean	2.5, 2.7, 2.13, 2.16
108	John and Sharene Menson	2.1.1, 2.3, 2.21
109	Arlene Montgomery / Friends of the Wild Swan	2.1.1, 2.1.10, 2.1.14, 2.1.17, 2.1.18, 2.2.2, 2.2.3, 2.2.4, 2.4, 2.5, 2.6, 2.8, 2.11, 2.13, 2.17, 2.20, 2.25
110	Ernest Scherzer	2.2.2, 2.2.3, 2.2.4, 2.3, 2.4, 2.5, 2.8
111	Liz Sedler / Alliance for the Wild Rockies	2.2.2, 2.2.4, 2.5, 2.6
112	Gonnie Siebel	2.1.1, 2.4, 2.6, 2.7, 2.8
113	Pat Simmons	2.3
114	Don Snow	2.3
115	Will and Jennifer Swearingen	2.3
116	Jason Todhunter / Montana Logging Association	2.1.1, 2.1.3, 2.1.16, 2.2.1, 2.6
117	Louisa Wilcox /Natural Resources Defense Council	2.2.1, 2.2.4, 2.6, 2.7, 2.8, 2.9, 2.15
118	Lewis Young / Flathead Audubon Society	2.1.1, 2.2.2, 2.2.4, 2.6, 2.7, 2.9, 2.13
119	David Gaillard / Defenders of Wildlife	2.2.2, 2.2.3, 2.2.4, 2.3, 2.4, 2.5, 2.6, 2.8, 2.13, 2.16, 2.17
120	Brianna Randall / Clark Fork Coalition	2.1.1, 2.1.3, 2.1.6, 2.1.7, 2.1.9, 2.1.14, 2.1.17, 2.1.18, 2.3, 2.5, 2.6, 2.7, 2.8, 2.11, 2.17
121	John Konzen, Marianne Roose, Anthony Berget / Lincoln County Commissioners	2.6
122	Eric Saalborn	2.1.1, 2.7, 2.21
123	Heidi Barrett	2.1.1, 2.4, 2.6, 2.7, 2.8
124	Michael Ford	2.5, 2.7
125	Karen, Eric, and Anni Shores	2.3, 2.4, 2.5
126	Ken and Carol Kunz	No substantive comments on the HCP or the EIS
127	Bill McLaughlin	2.1.1, 2.3, 2.5, 2.7, 2.21
128	David Olsen / Town of Lima	2.2.2, 2.10, 2.12, 2.16, 2.17, 2.20, 2.23
129	Herb Townsend, Bernie Lucas, Ben Hurwitz / Meagher County Commissioners	2.2.2, 2.10, 2.12, 2.16, 2.17, 2.20, 2.23
130	Alan McNeil	2.5
131	Pete Rorvik	2.2.4
132	Gail Richardson	2.2.4, 2.5

TABLE 1-1. UNIQUE PUBLIC COMMENT LETTERS RECEIVED (CONTINUED)

Letter Number	Name / Organization	Section(s) Containing Responses to Comments
133	Timothy Border	2.2.4, 2.5
134	Carole Reeves	2.2.4, 2.5
135	Jennifer Nitz	2.2.4, 2.5
136	Margaret Adam	2.2.4, 2.7
137	Carl Clark	2.2.4, 2.5
138	Peggy Miller	2.5
139	Jim Moore	2.2.4, 2.5
140	Dorothy Keeler	2.2.4, 2.5
141	Alex Hasson	2.2.4, 2.5
142	Eric Bindseil	2.5
143	Barbara OGrady	2.2.4, 2.3
144	Albert Banwart	2.2.4, 2.5
145	Lowry Bass	2.2.4
146	Chris Burley	2.4, 2.5, 2.6, 2.8
147	Margaret Jarrett	2.4, 2.5, 2.6, 2.8
148	Eileen Schmidt	2.4, 2.5, 2.6, 2.8
149	Diana Anthony	2.4, 2.5, 2.6, 2.8
150	Arvin Eyre	2.4, 2.5, 2.6, 2.8
151	Ashea Mills	2.3
152	Sue Ann Stephenson-Love	2.4, 2.5
153	Phyllis Leslie	2.4, 2.5, 2.6, 2.8
154	Jonathan Ruthchild	2.4, 2.5, 2.6, 2.8
155	Paul Kerman	2.4, 2.5, 2.6, 2.8
156	Lara Adams	2.4, 2.5, 2.6, 2.8
157	Larry Ficks	2.4
158	Lindsey Lampe	2.4, 2.5, 2.6, 2.8
159	Marty Howe	2.4, 2.5, 2.6, 2.8
160	Pam Knowles	2.4
161	Mrs. Leo Keeler	2.4, 2.5, 2.6, 2.8
162	Caroline Adams	2.3, 2.4, 2.16
163	Annick Smith	2.3, 2.4, 2.5, 2.8, 2.17
164	Tammie Storli	2.3
165	Berma Saxton	2.4, 2.5, 2.6, 2.8
166	Paul Richards	2.3, 2.5, 2.8
167	Kent Watson	2.17
168	Rena Martin	2.5
169	T.O. Smith / Montana Fish, Wildlife & Parks	2.1.1, 2.1.5, 2.1.7, 2.1.10, 2.1.11, 2.1.17, 2.2.2, 2.2.3, 2.2.4, 2.9, 2.12, 2.14, 2.17, 2.23
170	Dave Risley / Montana Fish, Wildlife & Parks	2.18
MEIC	Multiple commenters, based on MEIC brochure (see Section 1.1)	2.1.1, 2.4, 2.6, 2.7, 2.8

The following two tables identify the individuals who submitted copies of the two form letters. Letter number 12 was submitted by the Natural Resources Defense Council (NRDC) on behalf of 229 individuals (Table 1-2), and letter number 36 was submitted by the Defenders of Wildlife (DOW) on behalf of 126 individuals (Table 1-3).

TABLE 1-2. INDIVIDUALS WHO SUBMITTED THE NRDC FORM LETTER

Ellie Akins	Richard Conviser	Laurie Gilleon
Yvonne Allen	C. Cramer	Lu Goodrum
Marni Anderson	Klazina Crawford	Gretchen Grayum
April Armstrong	Francisco Crespo	Ivana Grmoja
Steve J. Azure	Stephanie Cunningham	Darlene L. Grove
John Banta	Joan Daniels	Loren Haarr
Juliana Barnes	Marit de Vries	Kathleen Hansen
Lowry Bass	Linda del Duca	Theresa Helus
Guy Bateman	Michele Dieterich	John Heminway
James & Evelyn Bentley	Caryn DiMarco	Greg Henry
Troy Bertelsen	Steve Dober	Rita Hickey
Scott Bischke	Lynn Patrick Doyle	Suzanne Hollingsworth
Norman Bishop	Eric Drissell	Eric Holm
JoAnne Blake	Lorie Dulemba	Bob Holman
Ramie Blakeman	Janet Dunham	Jet Holoubek
Robert Blickenstaff	Liz Dybdal	Ashley Holtorf
Kris Bodean	Sheryl Eaglewoman	Laura Holtz
Tami Boudreau	Stefan Ekernas	Maurice Horn
Chad Bowers	David Ellenberger	L Horne
Pat Bowers	Susan Erickson	Ellen Horowitz
Sara Brigham	Ashley Falkenstein	Gary Huckabone
Jan Brooks	Ralph Famularo	Ripley Hugo
Dona Brown	Michal Farley	Kyle Huth
Richard Brown	Mopsey Farrin	Melanie Ippolito
Jim Bryan	Al Feldstein	Kay Izlar
Lisa Buehler	Jim Fiddler	Dru Jackman
Don J. Burgard	Tammy Filliater	Erin Janoso
Julia Burwell	Brenna Fischer	Sue Janssen
Brooke Buttgen	Merial Fitzgerald	Alden Johnson
Robert Byron	Genevieve Fix	Jerome Kalur
Christine E. Cairns	Loga Fixico	Ann Karp
Julian Calabrese	Dick Forehand	Dorothy Keeler
C Camamile	Rodney Foster	Paul Kerman
Christine Carbo	Donna Fraser	Ann King
Jesse Casterson	Roxie Fredrickson	Andrew Kinter
Steven Cieslawski	Nancy Fritz	Anna Klene
Kit Clark	Devon Gainer	Wesley Krause
Patricia Clark	Paul Garman	Jeffrey Kreidler
		Tonya Lauriski

TABLE 1-2. INDIVIDUALS WHO SUBMITTED THE NRDC FORM LETTER (CONTINUED)

Alan Leftridge	Kaye Norris	Dan Sullivan
Margaret Lehmann	Michael O'Connell	Anna Taft
Whitney Leonard	Jane Olson	Adrien Tanguay
Mick Leslie	Maureen O'Mara	Janet Tatz
LaVonne Limpus	Kelly Ordway	Elizabeth A. Taylor
Elissa Lindberg	Brenda Oviatt	Kimberley Taylor
Pam Linn	James Pahre	Linda Teren
Kathy Lloyd	Carole Parker	Pam Thompson
Peter Lockwood	Lisa Pavlock	Travis Toelkes
Brian Logan	Erich Pessl	Melissa Trauth
Ann Looby	Jeffrey Peters	Susan Trivino
Gretchen Lutz	Donna Peterson	Catherine Truman
Peggy Lynn	Kathryn Posten	Kessley Truman
Tara Macdonald	Pamela Poulsen	Lisa Upson
Rande Mack	Joyce Pritchard	Christine Valentine
Donna Magnus	Linda Reeves	Gerard Vandeberg
Carla Majernik	Douglas Reno	Beverly Villinger
Graciela Marin	Marlene Renwyck	Robin Vogler
Frances Markovic	Pola Rest	Kelly Wade
Carol Marsh	Bettie Rhodes	Tom Walls
Lisa Anne Marshall	Fredrick Robbins	Barbara Walsh
Tony Martin	Lorraine Rowe-Conlan	Allison Warren
David Marx	Karen Salo	Tzeidle Wasserman
Jean B. McAllister	Darryl San Souci	Anje' Waters
Steve McArthur	Tracy Schiess	Steven Weidenbach
Sandra McCormick	Louis Schmidt	Lawrence Weirick
Patricia McCoy	Jennifer Schon	Topher Weiss-Lehman
Paul Messina	Janet Scott	Kasey Welles
Barbara Michelman	Ruth Scott	Jack Welscott
Leslie Millar	Sheldon Scrivner	Michael Williams
Jean Modesette	Robert Seibert	P.A. Williams
Debbie Moon	Duke Sharp	Nancy Winget
Juliana Morgan	Sara Shier	Sharon Winnett
Nony Morgan	Matthew Skoglund	Prairie Wolfe
Sherry Morgan	Sarah Skoglund	Shawn Wozniak
Ted Muhs	Darryl Slattengren	Mary Wulff
Rocio Muhs	Shirley & Glenn Smith	Joyce Yeung
Mary Mummaw	Kara Strider	Grace Young

TABLE 1-3. INDIVIDUALS WHO SUBMITTED THE DOW FORM LETTER

Leslee Abern	Brenda Hixenbaugh	Elizabeth Rutledge
Janet Atchison	Raso Hultgren	Glorianne Saliba
Duggan Backhouse-Prentiss	Meagan Hutlberg	Darryl San Souci
Michael Bailey	Chelsea Hyde	Wesley Sarmento
Melissa Bangs	Sally Janover	Edie Schroedel
Clyde Beardsley	Donna Johnston	Janet Scott
Linda Blair	Brian Jones	Bob Seibert
Elizabeth Bloom	Gil Jordan	Elena Shahan
Dian Bottcher	Nancy Kessler	Jeffrey Sherwood
Pat Bowers	Kenneth Kijewski	Lauren Simmons
Mary and John Bremer	Meghan Kilroy	Mary Stange
Vickie Brewer	Rachel Klempel	Megan Stearns
Sara Brigham	Allison Klocke	Jennifer Stevens
Karen Brown	Kasey Krum	Kara Strider
Jeremy Buss	Roger Lasken	Shari Sutherland
Sharon Case	Shannon Lenz-Wall	Darcy Tickner
Janet Clark	Paul Lincoln	Jane Timmerman
Bradley Clough	Chloris Littlebird	Joanna Trainor
Janice Coats	Peggy Macki	Jessica Trauth
Michel Colville	Frances Markovic	Judith TreeCrone
Hannah Conroy	Carol Marsh	Carmen Tucker
Ingeborg Cordova	Jonathan Matthews	Therese Vacek
Isobel Cowan	Susan McClure	Gerard Vandeberg
Lynn Coy	Patricia McCoy	Alan Vangemart
Cassandra Crnich	Graeme McDougal	Roger Veik
K B Crogan	Sharon Miles	Julia Vincent
Donna Curry	Leslie Millar	Marilyn Washburn
LeeRoy DeJohn	Kathi Miller	MaryAnn Wegner
Susan Dietsche	Rob Milyko	Joanna Welch
Eric Drissell	Debbie Moon	Kasey Welles
Laura Dunn	Marlene Moran	Michael Williams
Erik Engelbert	Juliana Morgan	Pamela Williams
Zacchary Fairbairn	Nony Morgan	Laura Wilson
Ashley Falkenstein	Julia Morrissey	Christopher Wishert, Sr.
Al Feldstein	Brooke Murphy	Mary Wulff
Jillian Fiedor	Cyndi Nelson	Rebeca Zambrano
Lisa Flynn	Joe Newman	
David Gaillard	Jane Olson	
Bruce Gerrard	James Pahre	
Laurie Gilleon	Littlebird Parks	
Kendra Gosse	David Parrott	
Courtney Grigg	Stephanie Peterson	
Tricia Halbedel	Martha Rhoades	
Ruth Hazelton	Vivecka Rodriguez	
Lori Henes	Shari Roe	

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2 RESPONSES TO COMMENTS

The following subsections present the USFWS' responses to comments on the Draft EIS/HCP. The comments reflect a wide range of concerns regarding the HCP and the EIS. In many cases, multiple commenters expressed concerns about similar issues. To avoid redundancy in responses to individual comments, and to provide thorough responses that address related issues, general responses were prepared for several issues that were raised by numerous commenters. General responses are provided for the following topics:

- Aquatic resources (streamside buffers)
    - 25-foot no-harvest buffers
    - Riparian buffer width
    - Implementation of guidelines similar to those for federal lands
    - Allowances for timber harvest in RMZs
- Function of the HCP
    - Adequacy of the HCP
    - Recovery of the HCP species
    - Take minimization and mitigation
    - The jeopardy standard
- Timber harvest
    - Timber harvest and alternative markets on state trust lands
    - Sustainable yield
    - Compatibility of revenue generation and species conservation
- Proposed road building under the HCP
    - Total road miles
    - Roads and HCP species conservation
        - Current measures for minimizing the effects of roads
        - Proposed new measures for minimizing the effects of roads
    - Increased motorized access

Each topic area includes a list of relevant individual comments, with each comment followed by a direct response. Responses to comments that are addressed by the general responses include cross-references to the subsection(s) that include the appropriate general response(s) to those comments.

2.1 Aquatic Resources

2.1.1 Streamside Buffers

2.1.1.1 General Responses

25-foot No-harvest Buffers

Several commenters stated that a 25-foot no-harvest buffer was inadequate to protect riparian functions. While the Draft HCP proposed a 25-foot no-harvest buffer, we would like to clarify that the overall streamside buffer proposed in the Draft HCP and analyzed in the Draft EIS is the entire riparian management zone (RMZ). The RMZ width is equal to the potential height of trees growing on a specific streamside site at age 100 years (100-year site potential tree height). This width generally ranges from 80 to 120 feet on each side of streams occurring across the HCP project area. Under the Draft HCP, the RMZ would be managed with a 25-foot no-harvest buffer immediately adjacent to the stream, and the remainder of the RMZ could be harvested using a selective harvest prescription. The harvested portions of the RMZ would be required to retain at least 50 percent of trees that are equal to or greater than 8 inches diameter at breast height (dbh), and all of the sub-merchantable trees and shrubs to the extent practicable. Under commitments AQ-RM2 and AQ-RM3, non-HCP fish-bearing, Class 2, and Class 3 streams would be managed in accordance with the Montana Streamside Management Zone Law (SMZ Law) and Administrative Rules of Montana (ARMs) for Forest Management (Forest Management ARMs).

In addition to the HCP commitments, other restrictions apply in all streamside areas in accordance with existing DNRC practices, Forest Management ARMs, and the SMZ Law. Under the SMZ Law, ground-based equipment operation is prohibited within 50 feet of all Class 1 streams and, on slopes steeper than 35 percent, the equipment operation is prohibited within 100 feet of Class 1 streams. Under the Forest Management ARMs, DNRC extends equipment operation restrictions on sites with high erosion risks even farther than required by the SMZ Law. We also note that the riparian timber harvest strategy is a programmatic approach for RMZ design, where actual RMZ widths and RMZ harvest prescriptions would be based on site-specific conditions. For example, the watershed analysis conducted under existing cumulative watershed effects (CWE) practices and under the HCP CWE conservation strategy may influence RMZ design, including but not limited to increased RMZ width, additional tree retention, and an expanded no-harvest zone. Lastly, under HCP commitment AQ-RM1 item (7), the RMZ may be extended to include the channel migration zone (CMZ) if certain conditions are met, and under commitment AQ-SD4 item (3), DNRC may modify harvest prescriptions and design to avoid increasing risk of mass failure.

Riparian Buffer Width

Many commenters suggested that the riparian buffer width proposed under the DNRC HCP should be wider to protect riparian functions. The riparian buffer is intended to protect the key habitat parameters most important to the HCP fish species, including stream temperature, sediment, large woody debris (LWD), bank stability, and water quality, while allowing some management flexibility within a riparian zone to harvest merchantable timber, salvage harvest, control insect and disease outbreaks, and to emulate natural disturbances. The HCP commitments are intended to avoid or reduce impacts to riparian functions and used the best available science to determine streamside buffer widths in the HCP (see Draft HCP page 2-66, line 13 through page 2-70, line 20). Based on this scientific literature, RMZ buffer widths were deemed adequate to protect these features and functions by providing the highest level of tree retention nearest the stream and moderate levels of tree retention for the remaining portion of the RMZ. Further, the Draft EIS analysis showed that the proposed HCP would (1) minimize sediment delivery to streams from timber harvest and runoff through implementation of best management practices (BMPs) (page 4-227, lines 7 through 11), (2) reduce sediment delivery to streams from roads and provide benefits to fish and fish habitat by correcting

problem sites sooner (page 4-229, line 21 through page 4-231, line 29), (3) meet LWD targets and result in increasing trends in LWD amounts for the two exceptions when targets are not met (page 4-233, line 23 through page 4-245, line 18), (4) exceed shade targets and generally improve shade over the incidental take permit (Permit) term (page 4-247, line 17 through page 4-254, line 15), and (5) be adequate to maintain stream/riparian functions, including microclimate and chemical and physical filtering processes (page 4-261, line 19 through page 4-262, line 21).

Although the Draft HCP strategies were considered adequate in the Draft EIS analysis, two revisions were made to the riparian timber harvest conservation strategy in the Final HCP. These revisions were made in response to the public comment process to provide a higher degree of certainty that riparian functions would be maintained or improved over the Permit term.

(1) The riparian timber harvest conservation strategy was broadened to provide a higher level of protection to all Class 1 streams (as defined under the SMZ Law and ARM 36.11.312). This revision would better protect temperature and LWD regimes of streams discharging into HCP fish-bearing streams.

(2) The no-harvest buffer on all Class 1 streams was increased from 25 to 50 feet. Along with increasing the certainty that riparian functions would be maintained and improved, increasing the no-harvest buffer within RMZs would also serve as a proactive approach to better insulating streams against the effects of climate change.

These revisions would result in a denser riparian buffer being applied to a larger percentage of riparian harvests, including all harvests along fish-bearing streams, and perennial tributaries to fish-bearing streams. The revisions would help ensure that riparian functions, including habitat complexity, shade/stream temperature, microclimate, and sediment regime, are maintained at a level sufficient to support HCP fish species through resulting increases in the amount of LWD recruitment, sediment reduction, and stream shading. Please see the revised analysis in Final EIS Section 4.8.4 (Fish and Fish Habitat – Environmental Consequences).

Implementation of Guidelines Similar to Those for Federal Lands

Several commenters suggested that the HCP should adopt 300-foot buffers as prescribed in the United States Department of Agriculture, Forest Service (USFS) and United States Bureau of Land Management (BLM) Inland Native Fish Strategy (INFISH) guidelines. Other commenters noted that the limitations on riparian harvest under the INFISH guidelines are more restrictive than the HCP. Requirements for federal land managers under Section 7 of the Endangered Species Act (ESA) are different than those required by private and state landowners under Section 10 of the ESA. While federal agencies are required to recover listed species on federal lands, HCPs are not explicitly required to recover a listed species, nor is an HCP required to benefit an affected species (HCP Handbook, pages 3-20 and 3-21, USFWS and NMFS 1996). However, the USFWS considers recovery an important consideration in any HCP and encourages applicants to develop HCPs that contribute to recovery and that are consistent with federal recovery efforts (HCP Handbook, page 3-20). Although not the same as and not as conservative as federal standards designed for recovery of listed fish species, the streamside buffer prescriptions included in the Final HCP riparian timber harvest strategy are adequate to protect the most important riparian habitat features for native fish. Specifically, the 50-foot no-harvest buffer provides greater certainty that riparian functions, such as stream temperature and LWD recruitment, would be provided given the variability of site-specific riparian habitat conditions (e.g., tree densities, canopy coverage) in the HCP project area.

Regarding the comparison of the HCP to the INFISH guidelines, the USFS formulated INFISH to apply at a programmatic level across a portion of their ownership occupied by inland native fish. As part of the strategy, the USFS formulated riparian management objectives (RMOs) to apply uniformly in the absence of site-specific data. The INFISH strategy recognizes that conditions in specific watersheds or stream reaches can vary based on local conditions (geology, topography, climate, and potential vegetation). Although

establishment of alternative RMOs is predicated on a watershed analysis being performed, the strategy also notes that "RMO's may be modified by amendment in the absence of watershed analysis where watershed or stream reach specific data support the change." DNRC has integrated this general approach into the proposed HCP in several different ways: (1) the RMZ width is based on site-specific features, including 100-year site potential tree height, incorporating watershed and reach level information, and accounting for biogeographical influences; (2) the criterion for LWD recruitment is based on site-specific LWD numerical targets using on-site stream reach baseline LWD data or local reference reach LWD data; and (3) the sediment delivery reduction and fish connectivity conservation strategies use the results of site-specific inventory data to prioritize and address problem areas. In addition, the identification of high-risk sites under the Draft HCP (such as the designation of temperature-sensitive reaches under the riparian timber harvest conservation strategy and sensitive parcels under the CWE conservation strategy) uses similar principles as those described in the INFISH priority watershed guidance. Lastly, the proposed HCP has directly or indirectly integrated multiple strategies that overlap INFISH standards and guidelines for timber, roads, and grazing, as well as general riparian management. For example, the proposed HCP includes commitments for road management that specify the use of state-of-the-art road design criteria, elements, and standards that govern construction, reconstruction, maintenance, and use of existing or planned roads to avoid sediment delivery to streams.

Allowances for Timber Harvest in RMZs

Several commenters stated that the proposed allowances for timber harvest in RMZs would compromise the riparian timber harvest conservation strategy. The Draft EIS analysis (pages 4-244 and 4-252) found that the allowances would not compromise the ability of the riparian timber harvest commitments to provide adequate riparian functions.

At least one commenter observed that the riparian timber harvest allowances were not limited under the Draft HCP. In response to this comment, the Final HCP, Allowances within the Class 1 RMZ under commitment AQ-RM1, was revised to include a limit on the amount of Class 1 RMZ area that may be harvested under the allowances. While the types of allowances would remain the same as those described on Draft HCP pages 2-74 and 2-76, DNRC has committed to limiting the use of these allowances at 20 percent of DNRC's Class 1 RMZ acres for any given EIS aquatic analysis unit. This limit includes both stands harvested under allowances and those stands subject to natural disturbances that reduce an RMZ to non-stocked and seedling/sapling size classes or low stocking densities of poletimber and sawtimber size classes (as determined using standard DNRC stand level inventory [SLI] procedures). Additionally, a DNRC water resource specialist would review all sites where an allowance is proposed, regardless of the number of RMZ acres affected, and DNRC would be required to annually report to the USFWS all circumstances where the allowance is invoked. This annual review would alert DNRC and the USFWS to any trends leading to a potential exceedance so that it could be avoided. If the allowance is reached, DNRC would not invoke the allowance again until it is in compliance with the original limit and conditions on the allowance. The analysis has been revised in subsections Habitat Complexity and Stream Temperature and Shading in Final EIS Section 4.8.4 (Fish and Fish Habitat – Environmental Consequences) to address the changes in this allowance. The conclusions remain the same, however, in that the allowance would not compromise the ability of the riparian timber harvest conservation strategy commitments to provide adequate riparian functions.

2.1.1.2 Responses to Individual Comments

Letter 3, comment 15: The 25-foot buffer is not nearly enough to protect streams from degradation in the form of runoff, logging debris, and the overall aesthetics of mountain streams. There should be 200-foot buffers on all streams.

Response: Please refer to the general responses to comments concerning riparian buffer width and 25-foot no-harvest buffers under the proposed HCP, above. Concerning aesthetics along mountain streams, the Draft

EIS states that the no-harvest buffers proposed under the action alternatives would provide increased visual screening along streams compared to Alternative 1 (pages 4-410 through 4-441).

Letter 4, comment 16: There should be 50-foot no harvest zones along streams.

Response: The riparian harvest strategy in the Final HCP has been revised to include a 50-foot no-harvest buffer adjacent to all Class 1 streams. Class 2 and Class 3 streams (as defined under ARM 36.11.312) would receive the same levels of protection as provided under the SMZ Law and DNRC Forest Management ARMs, as originally proposed in the Draft HCP.

Letter 6, comment 28: 25-foot streamside buffers are totally inadequate. Buffers should be >= 300 feet as with the USFS. Admit global warming and the resultant stream temperature increases and protect riparian shade.

Response: Please refer to the general responses to comments concerning 25-foot no-harvest buffers, riparian buffer width, and implementation of guidelines similar to those for federal lands under the proposed HCP, above.

Letter 7, comment 33: Your office proposed to allow timber harvesting up to 25 feet from streams. Scientific studies have shown that larger buffer zones are essential to protect water quality and fish populations. The U.S. Forest Service requires a 300-foot setback in similar situations. Your proposal is simply inadequate to ensure the long-term protection of sensitive fish species such as bull trout.

Response: Please refer to the general responses to comments concerning 25-foot no-harvest buffers, riparian buffer width, and implementation of guidelines similar to those for federal lands under the proposed HCP, above.

Letter 9, comment 40: We recommend that the USFWS negotiate with DNRC to achieve more protective riparian management prescriptions and riparian buffers that provide for a higher level of protection to aquatic ecological functions, water quality, and HCP fish species.

Response: Please refer to the general responses to comments concerning riparian buffer width under the proposed HCP, above.

Letter 9, comment 43: We are concerned that DNRC's proposed HCP riparian buffer, while an improvement over the current SMZ rules, may still not protect fisheries and aquatic ecological functions in many streams and riparian areas. The proposed HCP riparian buffer width is significantly smaller than used by BLM and the USFS under INFISH (300 feet). The limitations on harvest within the INFISH riparian buffers are much more protective than allowing 50 percent of trees larger than 8 inches to be harvested within the riparian buffer except for a narrow 25-foot no-harvest strip along the streambank, with no watershed analysis.

Response: Please refer to the general responses to comments concerning 25-foot no-harvest buffers, riparian buffer width, and implementation of guidelines similar to those for federal lands under the proposed HCP, above.

Letter 9, comment 45: We are concerned that the aquatic functions of recruitment of LWD and protection of riparian microclimate will not be fully protected with the proposed HCP riparian buffer. The proposed HCP buffer of a 25-foot no-harvest zone and a 50 percent partial riparian harvest zone beyond 25 feet will not adequately provide for LWD recruitment.

Response: Please refer to the general responses to comments concerning 25-foot no-harvest buffers and riparian buffer width under the proposed HCP, above.

Letter 9, comment 48: Developers of the Aquatic Conservation Strategy for the Northwest Forest Plan believe wider buffers are needed to maintain microclimatic conditions. Figure 9.5 in Northwest Forest Plan document, *The First 10 Years (1994-2003): Synthesis of Monitoring and Research Results* (Chapter 9, page 202), suggests that a riparian buffer width of only one SPTH would only have approximately 75%

cumulative effectiveness. The paper, Riparian Microclimate and Stream Temperature Response to Forest Harvesting: A Review (JAWRA, Volume 41, Issue 4, pages 813-834, August 2005) indicates that a one-tree-height buffer on each side of a stream should be reasonably effective in reducing harvesting impacts on both riparian microclimate and stream temperature. However, we believe they are referring to a buffer that retains all or most of the shade canopy within the buffer, rather than a buffer that allows harvest of 50% or more of the large trees in the buffer area, as proposed in the HCP. The 75% cumulative effectiveness of a buffer width of one SPTH may have even less effectiveness if 50 percent or more of the large trees are harvested within a large segment of the proposed buffer.

Response: Please refer to the general responses to comments concerning riparian buffer width under the proposed HCP, above. Additionally, while we recognize the advantage of wide buffers to fully maintain microclimatic conditions, it should be recognized that buffer widths analyzed in the Northwest Forest Plan document, *The First 10 Years (1994-2003): Synthesis of Monitoring and Research Results*, were, for the most part, based on studies conducted in the Cascade Mountains of Washington and Oregon, and Coastal British Columbia. As noted on Draft HCP page 2-69, these systems differ from forest settings in Montana in two important ways: (1) forest development in western Montana is driven by disturbances such as fire, which create a mosaic of stand types of highly variable age and basal area; and (2) western Montana riparian forests also have lower general productivity, primarily due to lower annual precipitation. Also, as compared to coastal forests, Montana forests have smaller trees, less basal area, and significantly less canopy closure. Because the levels of average existing vegetation growth within the riparian zones of the HCP project area likely have a highly variable and limited effect on microclimate characteristics, the selective harvest regimes proposed in the HCP are not expected to have a detectable adverse effect on the range of riparian microclimates found throughout the HCP project area.

Multiple studies relating buffer width and harvest type to riparian microclimate and stream temperature were reviewed by Moore et al. (2005). Based on physiographic factors present in Montana, it is most appropriate to look to the studies cited in this review, which were conducted in interior British Columbia, versus those conducted in the Cascades. For these study areas, the review indicates that clearcuts affecting from 6 to 13 percent of the catchment area increased stream temperatures by a maximum of 0.5° C (0.9° F) or less. Furthermore, the riparian buffers in these studies often included harvest of all merchantable trees within a 30-meter (98-foot) buffer.

The proposed HCP specifies that the total width of a RMZ be based on potential height of trees growing on a specific site. The RMZ includes a no-harvest buffer, which has been extended from 25 to 50 feet and now applies to all Class 1 streams, not just streams supporting HCP fish species. Some selective timber harvesting would be allowed in the remainder of the RMZ under certain conditions. Therefore, it is reasonable to (1) assume that the riparian measures proposed in the HCP would be significantly more restrictive, resulting in an overall RMZ (on average) that retains more than 80 percent of all trees, shrubs, and other ground cover following harvest, and (2) expect that any changes to microclimate would be minimal and would not be of a scale that would adversely affect HCP fish species.

Letter 9, comment 53: We suggest that it would be more prudent and protective of aquatic ecological functions and fisheries to use more conservative riparian buffer areas and riparian management prescriptions (i.e., more protective of aquatic ecological functions) on a routine basis, and then to classify specific areas as "less temperature sensitive reaches" where greater riparian harvest could be allowed. Such a modification to the HCP would show a willingness to give priority to protection of HCP aquatic species. Currently the DNRC priority appears to be in minimizing modifications to timber harvest and silvicultural practices, even where modifications may be needed for more effective aquatics species protection.

Response: Please refer to the general responses to comments concerning riparian buffer width under the proposed HCP, above. Please also refer to the general response to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 9, comment 56: DNRC's proposed HCP does not seem to provide adequate protection for small headwater streams tributary to perennial fish streams. Small headwater streams are important ecologically even where they do not contain fish. They are sources of sediment and wood for fish-bearing streams, and are also storage and processing sites of nutrients and organic matter, and important components of the energy base for organisms used by fish for food. Tributary junctions between headwater streams and larger channels are important nodes for regulating material flows in a watershed, and are the locations where site-specific effects from management activities are often observed. These locations have unique hydrologic, geomorphic, and biological attributes. The movement of sediment, wood, and other materials through these locations results in sites of high biodiversity. Habitat in these sites may also range from simple to complex, depending on time from the disturbance (such as landslides and debris flows) and the types and amount of materials delivered to the channel.

Response: We agree that small non-fish-bearing headwater streams are vital to watershed processes that maintain important habitat features essential to downstream fish-bearing streams. The Final HCP riparian timber harvest conservation strategy has been revised to provide greater levels of protection to all Class I streams (as defined under ARM 36.11.312). Class 1 streams include those streams supporting both HCP fish species (referred to as Tier 1 streams in the Draft HCP) and non-HCP fish species (referred to as Tier 2 streams in the Draft HCP), as well as perennial tributaries to those streams. Under the revised approach, the no-harvest buffer on all Class I streams would increase from 25 feet to 50 feet.

Letter 9, comment 57: It is not clear if SMZ/riparian buffer exemptions when land is converted to non-timber uses would also apply under the HCP. This should be clarified in the FEIS. To provide effective protection to aquatic ecological functions and fisheries, we believe the integrity of riparian buffers should be maintained regardless of use.

Response: As described in Draft EIS Section 1.3.3.2 (Covered Activities), the proposed HCP would cover DNRC's forest management activities only. Any HCP project area lands converted to non-timber uses would no longer be covered under the HCP. However, lands identified for removal from or addition to the HCP project area would be addressed through the transition lands strategy (Draft HCP Chapter 3, Transition Lands Strategy). The transition lands strategy includes provisions to minimize the effect on the HCP species for DNRC lands transitioned out of the HCP project area.

Letter 9, comment 88: We recommend that the Interior Columbia Basin Strategy (http://www.icbemp.gov/html/icbstrat.pdf) and A Framework for Incorporating the Aquatic and Riparian Habitat Component of the Interior Columbia Basin Strategy into BLM and Forest Service Plan Revisions (http://www.icbemp.gov/html/aqripfrm7804.pdf) be evaluated and considered for integration into the HCP. We believe the Interior Columbia Basin Aquatic Strategy provides an improved framework or model for protection of aquatic and riparian habitat that would be more consistent with conservation and recovery of bull trout, westslope cutthroat trout, and Columbia redband trout. Riparian management objectives described in the Interior Columbia Basin Strategy include: (1) Achieve physical integrity of aquatic ecosystems. (2) Provide an amount and distribution of woody debris sufficient to sustain physical and biological complexity. (3) Provide adequate summer and winter thermal regulation. (4) Provide appropriate amounts and distribution of source habitats for riparian- or wetland-dependent species. (5) Restore or maintain water quality and hydrologic processes. (6) Restore or maintain naturally functioning riparian vegetation communities. For your information, EPA has identified general recommendations for National Management Measures to Protect and Restore Wetlands and Riparian Areas for the Abatement of Nonpoint Source Pollution at http://www.epa.gov/owow/nps/wetmeasures/pdf/guidance.pdf.

Response: The Interior Columbia Basin Strategy applies to lands administered by the USFS and BLM and provides these agencies with a basin-wide framework to help make management decisions at the local level, which is beyond the scope of this HCP. However, the proposed HCP integrates very similar riparian management objectives as those contained in the aquatic conservation strategy for the Interior Columbia Basin Strategy and are intended to allow for recovery and conservation of the HCP species. Conservation

standards for federal agencies are intended to promote recovery and conservation of native fish species within the Columbia River Basin, whereas standards for non-federal entities under HCPs are slightly less stringent, because they should allow for, or not preclude, recovery of the HCP species.

Letter 13, comment 133: Waterways must be protected. USFS standards and the timber industry have generally agreed to 300-foot stream buffers. DNRC's proposed 25-foot buffers are a recipe for degradation of streams.

Response: Please refer to the general responses to comments concerning 25-foot no-harvest buffers, riparian buffer width, and implementation of guidelines similar to those for federal lands under the proposed HCP, above.

Letter 28, comment 162: Water quality is one of the most critical issues in our state. The stream buffer in the proposed conservation alternative is inadequate. It should be increased to be consistent with recommended practices by both the USFS and timber industry. This would mean prohibiting harvesting within 300 feet of streams.

Response: Please refer to the general responses to comments concerning 25-foot no-harvest buffers, riparian buffer width, and implementation of guidelines similar to those for federal lands under the proposed HCP, above.

Letter 32, comment 167: In management of the areas along streams, rivers, and lakes, the plan calls for in general a "no-touch" zone of 50 to 200 feet, depending on slope. I agree these areas need special management, but we must recognize that these areas are "maturing" and that if they are to continue to provide the protection needed that they must be managed; i.e., cut, thin, and plant various types of vegetation. We must also remember that, for every mile of stream we set aside 50 feet of width, we are involving 7.2 acres of land. In the Flathead, there are over 500 streams. If each of these were 10 miles in length and we use 50 feet on each side, this is 85,200 acres. Realizing only part of these are on trust lands, this still is a significant area with "no management." Where is the science that justifies these extensive no management areas?

Response: For clarification of the streamside buffers proposed under the Draft HCP versus those proposed in the Final HCP, please refer to the general response to comments concerning riparian buffer width under the proposed HCP, above. While the Final HCP widens the no-harvest buffer and applies it over a wider range of streams, DNRC would still have the flexibility to manage riparian forests with special management needs. These provisions are described under commitment AQ-RM1 (Allowances within Class 1 RMZs) in Final HCP Chapter 2 (Conservation Strategies). The science concerning streamside buffers is summarized in the Draft HCP (pages 2-67 through 2-70) and in the Draft EIS (pages 4-171 and 4-180).

Letter 34, comment 177: Timber harvest within 25 feet of waterways is ridiculous. 300 feet is the right distance, which science and the timber industry.

Response: Please refer to the general responses to comments concerning 25-foot no-harvest buffers and riparian buffer width under the proposed HCP, above.

Letter 44, comment 190: Such narrow (25-foot) stream buffers would be impossible to control, as soil erosion and hydrological impacts from timber harvests near buffer zones always extend further into protected areas. Timber and vegetation removal this close to streams will reduce important wildlife cover, including shade that helps to keep water temperatures down and aquatic algal growth limited, important for fisheries, not to mention recreational uses. Why would DNRC propose such narrow corridors when federal agencies and even timber companies routinely use buffer zones of 100 feet or more from stream edges?

Response: Please refer to the general responses to comments concerning 25-foot no-harvest buffers, riparian buffer width, and implementation of guidelines similar to those for federal lands under the proposed HCP, above. Regarding soil erosion from timber harvest, please refer to the response to Letter 50, comment 210. Regarding the effects of timber removal on the use of riparian areas by wildlife, subsections Forested Riparian Habitats and Habitat Linkage for Non-HCP Species in Draft EIS Section 4.9.7 (Other Wildlife

species) conclude that, for all action alternatives, the riparian timber harvest prescriptions would provide adequate cover for most wildlife to continue to use riparian areas as movement corridors. These conclusions have not changed in the Final EIS. Additionally, while recreationists would not have access to areas being actively harvested, Draft EIS Section 4.10.2 (Recreation – Environmental Consequences) states that the proposed riparian timber harvest conservation strategy would not compromise recreational use of streamside resources after harvest. These conclusions have not changed in the Final EIS.

Letter 45, comment 200: Water quality and fish cannot be adequately protected when logging is allowed to occur within all but 25 feet of streams, when the USFS and others require 300-foot stream buffers.

Response: Please refer to the general responses to comments concerning 25-foot no-harvest buffers, riparian buffer width, and implementation of guidelines similar to those for federal lands under the proposed HCP, above.

Letter 50, comment 210: The buffer zone for timber harvest near streams should equal federal standards of 300 feet. The streams will suffer serious erosion and runoff with timber activity within 25 feet.

Response: Please refer to the general responses to comments concerning 25-foot no-harvest buffers, riparian buffer width, and implementation of guidelines similar to those for federal lands under the proposed HCP, above. Regarding the erosion and runoff associated with timber harvest in the RMZ, the primary risk of sediment delivery to streams results from stream crossings, high road densities, and roads located within 300 feet of streams. The Draft EIS (page 4-227) states that DNRC's existing practices, along with the proposed HCP commitments (AQ-SD4 on Draft HCP pages 2-97 through 2-99), are effective at minimizing soil disturbance activities and provide adequate buffer and filtration of sediments during timber harvest.

Letter 69, comment 226: I urge you to follow USFS guidelines in prescribing 300-foot stream buffers. Prescribing 25-foot buffers along streams in logging units is not enough to ensure water quality and riparian habitat protection.

Response: Please refer to the general responses to comments concerning 25-foot no-harvest buffers, riparian buffer width, and implementation of guidelines similar to those for federal lands under the proposed HCP, above.

Letter 72, comment 235: The HCP does not provide adequate streamside buffers. The DEIS portrays the 25-foot section of the stream buffer as a "no-cut" area. However, numerous exceptions allow for salvage logging in these areas. The DEIS fails to provide any scientific basis to justify the adequacy of these small buffers. The only support for this significant policy is that the SMZ Law, ARMs, BMPs, and forest management policies are "generally effective" at minimizing soil disturbance in a DNRC implementation monitoring report (see page 4-227). Montana's SMZ Law (77-5-301 MCA), which prohibits clearcutting timber within 50 feet of a stream, was designed to help protect fish streams. Every 2 years audits are conducted under the SMZ program to determine compliance with all aspects of the law--and not for water quality monitoring purposes. Water quality in streams adjacent to logging operations is not measured for improvements or impacts from logging operations. Therefore, although the SMZ program helps water quality, it is impossible to say that this law protects water quality. The State of Montana's Nonpoint Source Management Plan states that a "buffer of at least 100 feet is recommended for water quality protection...Minimum widths for buffers should be 50 feet for low order headwater streams, with expansion to as much as 200 feet or more for larger streams." Montana's Nonpoint Source Management Plan identifies locally-adopted water body setbacks as important "Best Management Practices" to protect and improve water quality from nonpoint source pollution (MDEQ 2007). Additionally, the 25-foot buffer does not appear adequate for recruitment of LWD. To maintain fish populations and fish habitat, at least a 45-meter (150-foot) vegetated buffer is recommended because without adequate LWD recruitment, a critical habitat component is missing from the aquatic ecosystem (Knutson and Naef, 1997). A larger buffer needs to be adopted in the HCP.

Response: Please refer to the general responses to comments concerning 25-foot no-harvest buffers and riparian buffer width under the proposed HCP, above. Regarding the reference to the 100-foot minimum buffer recommended on page 74 of the *Montana Nonpoint Source Management Plan* (MDEQ 2007), that recommendation specifically refers to urban/suburban buffers, where impervious surfaces and activities associated with development result in substantially different non-point sources and runoff pathways than are present in forested settings.

Letter 73, comment 240: Less encroachment on streamsides, not more.

Response: Please refer to the general response to comments concerning riparian buffer width under the proposed HCP, above.

Letter 74, comment 242: Please change your plan to include a 300-foot stream buffer instead of only a 25-foot one, which is not nearly enough.

Response: Please refer to the general responses to comments concerning 25-foot no-harvest buffers and riparian buffer width under the proposed HCP, above.

Letter 75, comment 245: 25 feet of protection for waterways is ridiculous and indefensible. It should be at least 300', and 500' would be better.

Response: Please refer to the general responses to comments concerning 25-foot no-harvest buffers and riparian buffer width under the proposed HCP, above.

Letter 76, comment 251: The setbacks for logging in stream areas is totally inadequate, at least conform to the USFS accepted 300' setback.

Response: Please refer to the general responses to comments concerning riparian buffer width and implementation of guidelines similar to those for federal lands under the proposed HCP, above.

Letter 84, comment 300: The HCP refers to riparian areas of headwater streams as Tier 2 and Tier 3 RMZs, and indicates that the current Montana SMZ rules would be used for aquatic protection in Tier 2 and Tier 3 RMZs (AQ-RM2, HCP pages 2-77 and 2-78). As noted in a previous comment, we are concerned that existing RMZs may not provide sufficient shading protection, LWD recruitment, and aquatic ecological functions associated with stream habitat. As indicated in the previous comment, we recommend use of the no or substantially limited harvest in the RMZ buffer, as described in Alternative 3.

Response: Please refer to the response to Letter 9, comment 56, above.

Letter 90, comment 319: The streamside setbacks are not large enough or restrictive enough to protect water quality, temperature and maintaining recruitment of LWD.

Response: Please refer to the general responses to comments concerning riparian buffer width under the proposed HCP, above.

Letter 90, comment 332: The streamside setbacks are too small, and there are too many examples of reasons to enter SMZs. The SMZ is not a hard no-entry zone. Roads and opening for cable logging are examples of reasons to enter the 25-foot setback. The SMZ law prohibits 7 management activities. Is clearcutting the SMZ for cable logging allowed?

Response: Regarding the commenter's statements that the setbacks are too small and there are too many reasons to enter streamside management zones (SMZs), please refer to the general responses to comments concerning riparian buffer width under the proposed HCP, above. Cable yarding across streams is a relatively uncommon practice, and it would occur only under those circumstances described on Draft HCP page 2-72. The cable corridors would be limited in width and total RMZ area affected, as described in the rationale for commitment AQ-RM1 item (2) (Draft HCP page 2-72). In the Final HCP, the rationale has been revised to include the following additional conditions on use of the allowance: "Under this allowance, the portion of a cable corridor located within the 50-foot no-harvest buffer would not be clearcut. This allowance

simply recognizes that some overstory trees may need to be removed to provide clearance for the cable system so that transported logs can be fully suspended over the stream. Only those trees that are necessary to provide safe operation of the logging system and full suspension to protect the stream will be removed."

Letter 90, comment 333: A 100-year potential tree height is not a true potential tree height, because the setback is only 100 feet. There are many trees growing on state lands over 150 feet tall. I find it troubling that larger setbacks are not part of this HCP as it ignores present live trees. Trees do grow taller than 100 feet and to minimize effects on fisheries and to provide enough LWD, larger setbacks are needed. Edge effects are two potential tree heights. These setbacks are too small to maintain a healthy SMZ.

Response: The proposed HCP would establish RMZ widths based on the 100-year site index tree height. This height is not necessarily 100 feet, as stated by the commenter. The 100-year site index tree height for DNRC streamside riparian stands generally ranges from approximately 80 to 120 feet. The actual height is largely dependent on soil and climate, as well as other factors that can affect the productivity of a site. In some cases, 100-year site index tree heights of 140 to 160 feet can occur within highly productive sites in Montana, and the RMZ established under the HCP would reflect such conditions.

Letter 90, comment 339: Wide buffers between roads and surface water are important to minimize sediment delivery to the streams. And even under limited rainfall, 30-foot buffers were needed (EIS page 4-96). It seems logical that the SMZ Law is not adequate to prevent sediment loading in streams. I think a 300-foot buffer would fall within the wide buffer category.

Response: Please refer to the general responses to comments concerning riparian buffer width under the proposed HCP, above, and to the response to Letter 9, comment 61.

Letter 94, comment 372: DNRC's proposal to allow "corridors" within the RMZ (HCP page 2-72) to accommodate cable logging systems should only be approved if it includes an offset. For example, if it is necessary to encroach on a no-harvest zone to accommodate a cable system, then the amount of buffer harvested should be offset by an equal amount of unharvested area outside the minimum buffer in the same area. The site for the timber-retention offset should be in an area where the additional shade or potential recruitment of LWD could be beneficial beyond the regulatory minimum. This, importantly, would also create an incentive to ensure the allowance for corridors is kept to the minimum necessary.

Response: Please refer to the response to Letter 90, comment 332 (above) regarding the allowance for cable corridors.

Letter 94, comment 370: We find the proposed strategies in the preferred alternative for Tier 1 streams and lakes supporting HCP species unduly complicated and not protective enough. This proposal requires too small a no-harvest buffer and it includes too much discretion for determining the CMZ and what will and will not be harvested outside the buffer but still inside the RMZ. We recommend several alternatives instead for Tier 1 streams and lakes with HCP species, in declining order of preferences. (1) Adopt the "no harvest within the RMZ" proposal from Alternative 3, but instead increase the RMZ to 1.5 times the width of the SPTH. This is simple, increases protection, and still leaves DNRC many opportunities to harvest timber, albeit less along some streams. (2) Adopt Alternative 3 with the RMZ to be 1.5 times the width of the SPTH along those Tier 1 streams where DNRC owns at least 25% of the stream length (Note: a 25% standard for ownership in a planning landscape is what DNRC proposes imposing on itself as a trigger for its involvement in TMDL development. See HCP page 2-9). This helps ensure DNRC's actions, if they affect most of a stream, are addressed. But it also allows the agency more leeway when it is the minority owner. (3) Adopt Alternative 3 with the RMZ to be 1.5 times the width of the SPTH along those Tier 1 streams where DNRC owns considerable acreages of bull trout core habitat, such as the upper Stillwater, upper Whitefish Lake, Cyclone Lake Swan Lake drainages. Make the RMZ identical to Alternative 3 for all other Tier 1 native fish streams.

Response: Please refer to the general responses to comments concerning riparian buffer width under the proposed HCP, above. Additionally, Draft HCP page 2-73 clearly describes the situations in which the RMZ

would be extended to include the CMZ, the methods to be used to delineate CMZs, and the requirement for DNRC to use fisheries biologists or water resource specialists to implement the commitment. In the Final HCP, this commitment has been revised for clarity.

Letter 94, comment 371: There is a high level of uncertainty in the science DNRC has applied to its recommendations. Much of the literature cited by DNRC is selective and based on findings presented at conference proceedings, but not peer-reviewed and published. For instance, supporting literature cited on HCP page 2-66 includes Brown and Kryger (1971), which does not appear to have been peer-reviewed or published, Sugden and Steiner (1993), also not reviewed and published, and Gomi et al. (2003), also apparently not reviewed and published. Further, we could not find Martin et al. (1985), Steinblums et al (1984), and Davies and Nelson (1994) in the list of references. The literature on streamside protection and how it relates to sediment filtering, woody debris recruitment, bank and channel stability, and stream temperature is wide and varied. Inferences from most research indicates that a 25-foot no-harvest buffer and 50% retention harvest for the rest of the RMZ is at the lower end of the scale for providing sufficient recruitment of LWD over a 50-year period, which is the period for this Permit. Further, buffer recommendations in many instances, and certainly in the case of what is recommended by DNRC, do not account for the affect canopy removal has along streams as it relates to the ability of timber stands to withstand wind-throw, which sometimes "recruits" decades of potential LWD to the stream in one event. However, rather than argue about what literature supports what (literature cited in the INFISH strategy, for example, argues for larger, nonharvested buffers than DNRC recommends), we recommend DNRC take a more conservative--but still not without risk--approach, as we've suggested in our previous comment, for a riparian protection strategy on Tier 1 streams.

Response: The complete citations for all references cited on Draft HCP page 2-66 are contained in Draft HCP Chapter 10 (References). We agree that the literature on the relationship between riparian buffer width and configuration is wide and varied. However, the majority of the available peer-reviewed literature pertains to the effectiveness of a single zone with an unmanaged buffer. Because the HCP strategy proposes a managed buffer, all available literature that addressed this specific topic was reviewed and incorporated into the Draft HCP and EIS analysis, whether peer-reviewed or gray literature. Regarding the commenter's request for a more conservative approach to streamside buffers in the HCP, please refer to the general responses to comments concerning 25-foot no-harvest buffers, riparian buffer width, and implementation of guidelines similar to those for federal lands under the proposed HCP, above.

Letter 99, comment 406: The DEIS acknowledges that global warming will have an adverse impact on cold-water fisheries habitat. The DEIS acknowledges that increased stream buffers provide better protection for these species. However, DNRC's proposal is extremely and unnecessarily complex. As a result the PHCP is unenforceable due to the complexity of the exceptions, the case-by-case nature of the determinations, and the discretion available to the foresters and loggers in any given situation. In fact, the provision to determine stream buffers is so complex that at the open house in Helena on August 2009, the staff present were unable to explain how the buffer zones would be practically implemented.

Response: Please refer to the general responses to comments concerning riparian buffer width under the proposed HCP, above. Regarding the commenter's concerns over implementation of the buffers, we note that the proposed revisions to the stream buffer widths in the Final EIS would be more practicable for DNRC practitioners to implement. Additionally, DNRC is in the process of developing its HCP implementation program, which will include necessary training for field staff. The USFWS is confident that both parties developed a strategy that could and would be successfully implemented by DNRC.

Letter 105, comment 425: Logging should be halted within 300 feet of waterways as practiced presently by the USFS.

Response: Please refer to the general responses to comments concerning riparian buffer width and implementation of guidelines similar to those for federal lands under the proposed HCP, above.

Letter 106, comment 457: The EIS and HCP both recognize the successes and effectiveness of the BMP-SMZ programs in the State in mitigating water quality and fish habitat impacts of forest management activities. However, the detail and additional restrictions included in this section indicate that the current system is not sufficient, yet your own analysis shows it is. Empirically, we have seen significant improvements in fish populations for the listed species since the implementation of the SMZ/BMP programs. We feel that this is a dangerous precedent. While there may be some additional habitat benefits of the proposed commitments and generally larger buffers, those benefits are likely more to terrestrial or reptile species than to the target fish. It has been shown that the return with respect to improved fish habitat of additional buffer width declines sharply as the buffer widens. It is not clear that the precautions outlined here have been adequately analyzed to ensure the costs do not outweigh the benefits.

Response: The USFWS recognizes the effectiveness of the SMZ Law and Montana Forestry BMPs for protecting riparian habitat functions and reducing sediment delivery to streams. Consequently, the proposed HCP uses these programs as the basis for many of the commitments in its aquatic conservation strategies. The additional buffer width restrictions under the proposed HCP are similar to other forest management HCPs in the Pacific Northwest and the Plum Creek Native Fish HCP in western Montana. The additional mitigation measures were largely focused on those areas where additional protections were deemed necessary to protect fish habitat based on the scientific literature, such as CMZs, and were not addressed in the SMZ Law or in the Forest Management ARMs. At this time, no scientific analysis of SMZ Law effectiveness in Montana has demonstrated that the law does not adequately protect critical fisheries resources; thus, the HCP RMZ is simply a tool to reduce risks and uncertainty associated with the measures prescribed by the SMZ Law. The scientific literature indicates that buffer width distances of one 100-year site index tree height (or larger) are adequate to address the most important habitat functions for fish, such as stream temperature, LWD recruitment, and sediment input (Draft HCP pages 2-66 and 2-67). DNRC recognized this by incorporating this buffer width into its Forest Management ARMs. Note that the 25-foot no-harvest portion of the RMZ has been extended to 50 feet under the Final HCP to increase certainty that the most important riparian habitat functions for HCP fish species would be protected in the long term and in light of the riparian stand variation over a large landscape. Because the area of the RMZ outside of the 50-foot no-harvest buffer is a managed portion of the RMZ, where harvest of 50 percent of trees greater than 8 inches dbh can occur, the actual costs to the timber program are expected to be minimal.

Letter 108, comment 470: Stream setbacks are essential for long-term viability of our streams and rivers. No timber harvest within 500 feet of a river should be allowed for any reason. Require maximum setbacks on all streams and rivers.

Response: Please refer to the general responses to comments concerning riparian buffer width and implementation of guidelines similar to those for federal lands under the proposed HCP, above.

Letter 109, comment 476: The DEIS and HCP do not provide adequate streamside buffers. The DEIS admits that impacts decrease with increased buffer widths. Yet Alternatives 2 and 4 allow for only 25-foot stream buffers. The DEIS portrays these as no-cut buffers; however, numerous exceptions allow for salvage logging in them. The DEIS fails to provide any scientific basis to justify the adequacy of these small buffers. The only support for the statement that the SMZ Law, ARMs, BMPs, and forest management policies are "generally effective" at minimizing soil disturbance is a DNRC implementation monitoring report (DEIS, page 4-227). The USFWS developed the Bull Trout Interim Conservation Guidance to, among other things, assist in negotiating HCPs. This plan utilizes a "caution zone," which are areas where land management activities have the greatest potential to adversely affect bull trout--this generally includes the 100-year floodplain plus one SPTH distance on both sides of the stream (approximately 90 to 150 feet). The Conservation Guidance cites the Montana Bull Trout Scientific Group's report The Relationship between Land Management Activities and Habitat Requirements of Bull Trout for its rationale. The Conservation Guidance states, "the Service believes activities that occur within the caution zone may inherently pose some risk, and should not occur unless sufficient information is available to reliably demonstrate that the activity will not adversely affect habitat characteristics necessary to support bull trout." Rather than making logging

and other activities an exception in the caution zone, this HCP allows intensive activities to occur without limit.

Response: Please refer to the general responses to comments concerning 25-foot no-harvest buffers and riparian buffer width under the proposed HCP, above.

The Draft EIS statement cited by the commenter has been updated with additional citations to substantiate the conclusion that BMPs minimize soil disturbance and subsequent sediment discharge to streams.

The *USFWS Bull Trout Interim Conservation Guidance* (1998) was developed as a tool for use by USFWS biologists in bull trout conservation and recovery, and it addresses large-scale, range-wide issues affecting bull trout. The Guidance is not intended to provide site-specific land management prescriptions, but to provide recommended actions that may be adapted and modified to benefit bull trout in a particular locale. Responsibilities for bull trout conservation and recovery vary by land ownership (public and private), and effects of management activities vary by location; therefore, the Guidance uses broadly defined recommended actions and performance indicators as tools to provide some flexibility in application. The Guidance was designed to suggest risk-averse approaches to land management that the USFWS could confidently view as leading to habitat and species recovery. In most cases, if all provisions of the Guidance were strictly followed, the reduction in risk of impact to bull trout may even be sufficient to conclude that take would be avoided altogether. In the case where an applicant is seeking an incidental take permit under Section 10 of the ESA, the Guidance provides direction for working toward habitat and species recovery, rather than a minimum set of land management requirements. This is because the requirements for federal land managers under Section 7 of the ESA are different than those required by private and state landowners under Section 10 of the ESA. While federal agencies are required to recover listed species on federal lands, HCPs are not explicitly required to recover a listed species, nor is an HCP required to benefit an affected species.

The caution zone in the Guidance is defined as areas where land management activities have the greatest potential to adversely affect bull trout. This does not necessarily mean that all management activities need to be restricted in the caution zone, but that best protection options should be implemented within the caution zone wherever bull trout occur and in tributary streams that might affect bull trout. The proposed HCP uses this approach by defining the RMZ as the area where forest management may have the greatest effect on HCP fish species. The RMZ corresponds similarly to a caution area and is based on a 100-year site index tree height, which ranges from about 80 to 120 feet.

The RMZ designation limits the extent of logging that can occur within its boundaries. The general responses to comments concerning riparian buffer width under the proposed HCP (above) describes the revised riparian timber harvest conservation strategy in the Final HCP. These restrictions within the RMZ are adequate to protect the habitat functions most important to HCP fish species.

Letter 109, comment 477: The USFWS recently completed a Five Year Status Review of bull trout and also issued a Biological Opinion on Road Related Actions on Western Montana's Federal Lands. The USFS uses the INFISH buffers of 300 feet on perennial fish-bearing streams. Some conclusions from these assessments are: (1) The review of Section 7 Watershed Baseline conditions indicate that overall population and/or habitat conditions have degraded slightly since 2000. (2) Generally, where status is known and population data exists, bull trout populations throughout the Columbia River basin are at best stable and more often declining. (3) Of the 21 core areas in western Montana, 65% are functioning at an unacceptable risk, 26% are functioning at risk, and 9% are functioning appropriately. In addition, 93% have no change in functioning condition since 2000 (or shortly after bull trout listing), less than 1% were restored to a higher condition, and 5% were degraded in condition class since 2000. The DEIS claims all action alternatives have a "greater potential to improve aquatic habitat conditions, based on either overall scale or rate of change" (DEIS, page 4-264). If conditions on federal lands have not improved under INFISH, then how can the buffers presented in the HCP lead to habitat improvement rather than further degradation? The buffers in this HCP do not minimize or mitigate "take."

Response: We do not disagree that existing habitat conditions for bull trout on federal lands on a regional scale (i.e., in western Montana) have not improved measurably since listing; neither have they degraded to a large degree. Significant habitat restoration projects, road improvements, and road de-commissioning projects have been initiated on federal lands and are ongoing since listing, but biological responses take time. For example, it takes decades for trees to grow large enough and at the densities required to enhance habitat conditions or improve or maintain riparian functions such as LWD recruitment or stream shading. Presently, the status of most bull trout core area populations in this region are at high risk or at risk because of declining numbers, range, and/or habitat conditions. However, in most of the core areas, the major threats are being addressed (e.g., fish passage at three dams on the lower Clark Fork River, fish screens on irrigation diversions in the upper Blackfoot watershed, and lake trout suppression in Glacier National Park and Swan Lake). In some cases, the threats have shifted to other limiting factors, such as introduced species, which require not only continued efforts to protect or improve habitat conditions, but implementation of exotic species control measures for bull trout, as is being done in the East Fork of the Bull River. The expected time to achieve recovery of bull trout populations is a complex process and, according to the *Draft Bull Trout Recovery Plan*, may take 25 years or more. Regarding buffers, please refer to the general responses to comments concerning riparian buffer width under the proposed HCP, above.

Letter 109, comment 482: Maintaining cold water temperatures for bull trout is more important than ever. Riparian buffers must be larger than those proposed in the HCP.

Response: Please refer to the general responses to comments concerning riparian buffer width under the proposed HCP, above.

Letter 109, comment 487: The DEIS does not adequately analyze the effects of 25-foot riparian buffers and the recruitment of LWD.

Response: Please refer to the general responses to comments concerning riparian buffer width under the proposed HCP, above.

Letter 116, comment 532: We are concerned about Alternative 2's implementation of RMZ commitments and CMZs for Tier 1 streams and lakes. These RMZs and CMZs are basically additional restrictions to the current SMZ Law. What precedent is this setting? I have not seen or heard of any scientific data that proves the current SMZ Law is not adequate. Looking at angling restrictions on bull trout in particular shows a positive change since the implementation of BMPs and the SMZ Law in the early 1990s; in comparison then bull trout angling was closed entirely whereas now there are multiple lakes in Montana where bull trout can be angled and kept.

Response: We agree that the SMZ Law helps protect and maintain major habitat functions important for the HCP fish species. These include sediment filtering, streamside shade, LWD recruitment, bank stability, riparian habitats, and floodplain integrity. The SMZ Law was directed at poor timber harvesting practices that can cause erosion and water-quality problems. Compliance with the SMZ Law alone is likely to protect critical functions to a large degree, but the added protections in the proposed HCP RMZ measures are expected to further reduce long-term risks to those critical functions and increase the certainty that these functions would be provided comprehensively when considering the environmental variation that exists in riparian zones within the HCP project area.

The scientific literature indicates the area nearest the stream has the most influence on the most important habitat functions for fish, such as stream temperature (shade), bank stability, sedimentation, LWD recruitment, and nutrient loading. This area is also the most sensitive to disturbance and therefore requires a greater degree of protection to ensure these habitat functions are not adversely affected, especially for species like bull trout, which require very cold stream temperatures, clean water, and complex habitats in order to survive. The added protection of the 50-foot no-harvest area in the Final HCP (25 feet in the Draft HCP) next to the stream, in combination with the extended RMZ, would provide the added protection and still allow DNRC to manage the majority of the riparian area. Also, the CMZ is necessary to ensure these protections

are in place if the channel should suddenly migrate from one location to another, as is often the case in certain floodprone areas and for certain stream types.

We also agree that angling restrictions have greatly benefitted conservation of HCP fish species, particularly the restricted harvest regulations on bull trout. However, even when bull trout can be legally harvested, there are risks to these populations. Angling has always been allowed for bull trout in Swan Lake, and 4 years ago as an experimental project two more lakes were opened for harvest of bull trout (Lake Koocanusa and Hungry Horse Reservoir). Angling in all three lakes is strictly controlled, and only a limited number of bull trout can be harvested to maintain viable populations in these few remaining strongholds. In recent years, concerns about the fate of the Swan Lake bull trout population has emerged because of the threat from introduced lake trout. Also, the future health of the Lake Koocanusa bull trout population is uncertain because of the extensive management activities proposed in the primary watershed in Canada where these fish spawn.

Letter 118, comment 558: The riparian areas management needs to be improved to provide for greater protection of aquatic species.

Response: Please refer to the general responses to comments concerning riparian buffer width under the proposed HCP, above.

Letter 120, comment 609: Revise the DEIS and HCP to ensure activities in the Riparian Management Zones (RMZ) conserve aquatic resources rather than degrade water quality and native fish habitat.

Response: Please refer to the general responses to comments concerning riparian buffer width under the proposed HCP.

Letter 120, comment 610: The DEIS states that RMZs comprise 12,000 acres of the HCP project area. Under the proposed alternatives, DNRC estimates that it will harvest 45-90 acres per year in riparian areas, which translates to 2,250-4,500 acres in total over the 50-year permit timeframe. This HCP could result in timber harvesting activities that affect over one-third of the riparian area in the total project area, which will negatively, possibly irreversibly, impact water quality and stream habitat and therefore increase the "take" of sensitive native fish species.

Response: Please refer to the general responses to comments concerning riparian buffer width under the proposed HCP, above. Under the Final HCP, DNRC anticipates that it will harvest approximately 32 to 64 acres on average per year in riparian areas. Furthermore, the total acreage affected during the Permit term would not have the cumulative effect of adversely affecting water quality and stream habitat because (1) a small amount of acreage would be affected in any one year, (2) the harvest units would be distributed widely in different watersheds over the entire HCP project area, and (3) riparian areas regenerate quickly following harvest so that riparian functions, if affected at all, would likely be affected temporarily and on a very small, localized scale. Commitment AQ-RM1 was revised to provide additional limitations on harvest within riparian areas. Also, an analysis of potential effects from riparian harvest on riparian functions was added to EIS Section 4.8 (Fish and Fish Habitat) and EIS Chapter 5 (Cumulative Effects).

Letter 120, comment 611: The proposed 25-foot "no-cut" buffer does little to protect stream health, much less aid in the recovery of the ESA-listed bull trout. The DEIS and HCP do not provide adequate streamside buffers, even though the analysis clearly states that increasing buffer widths decreases adverse impacts to streams (4-163). Riparian buffers will mitigate DNRC's existing impacts on watershed health, and reduce the "take" of bull, Columbia redband, and westslope cutthroat trout by: decreasing erosion and sediment inputs to waterways; improving water quality by allowing intact riparian forests to filter upland sediments; helping maintain cold stream temperatures by providing shade; and allowing large woody debris recruitment that enhances instream fish habitat.

Response: Please refer to the general responses to comments concerning 25-foot no-harvest buffers and riparian buffer width under the proposed HCP, above.

Letter 120, comment 612: The USFWS' Bull Trout Interim Conservation Guidance delineates a "caution zone" where land management activities have the greatest potential to adversely affect bull trout – this generally includes the 100 year floodplain plus one site-potential tree height distance on both sides of the stream (approximately 90-150 feet). The Conservation Guidance states, "the Service believes activities that occur within the caution zone may inherently pose some risk, and should not occur unless sufficient information is available to reliably demonstrate that the activity will not adversely affect habitat characteristics necessary to support bull trout." Therefore, the HCP should NOT allow intensive activities to occur within the RMZ, and only make an exception if scientific site-specific evidence indicates.

Response: Concerning the *Bull Trout Interim Conservation Guidance*, please see the response for Letter 109, comment 476, above.

Letter 120, comment 614: The U.S. Forest Service uses the Inland Native Fish Strategy (INFISH), which requires riparian buffers of 300 feet on perennial fish bearing streams with the ability to change this buffer if site-specific data demonstrates the same conservation result as the default buffer. Adaptive management should also be built into the HCP to accommodate for land management activities that span thousands of acres of diverse habitat, and to ensure flexibility to deal with unforeseen impacts that will arise over the next several decades while this permit is in place.

Response: Regarding streamside buffer width, please refer to the general responses to comments concerning riparian buffer width and implementation of guidelines similar to those for federal lands under the proposed HCP, above. The proposed HCP includes numerous adaptive management commitments to address potential unforeseen impacts. Implementation and effectiveness monitoring is included for stream shade and temperature, LWD recruitment, sediment delivery reduction, and connectivity (see Draft HCP Section 4.6.1, Riparian Timber Harvest Monitoring and Adaptive Management; Section 4.6.2, Sediment Delivery Reduction Monitoring and Adaptive Management; and Section 4.6.3, Fish Connectivity Monitoring and Adaptive Management). These monitoring efforts also specify pre-determined triggers and adaptive management steps if projected targets are not met.

Letter 120, comment 615: The HCP should commit to increasing the RMZ widths along Tier 1 streams to 1.5 times the average site tree width, and also increase the no-cut buffer zones to at least 50 feet on non-fish bearing streams and to at least 100 feet along fish-bearing streams, as it's been well documented that timber harvesting near waterways adversely impacts native trout and water quality.

Response: Please refer to the general responses to comments concerning riparian buffer width under the proposed HCP, above.

Letter 122, comment 625: The 25-foot waterway buffer zone should be 100 to 300 feet.

Response: Please refer to the general responses to comments concerning 25-foot no-harvest buffers and riparian buffer width under the proposed HCP, above.

Letter 127, comment 636: You really need to increase your stream buffers to 300 feet.

Response: Please refer to the general responses to comments concerning riparian buffer width under the proposed HCP, above.

Letter 169, comment 682: A no-harvest rule should be applied to the entire floodprone width for Type 1 CMZs as is suggested for Type 2 CMZs. As proposed, the flood prone area beyond the 25-foot buffer could be harvested on Tier 1 streams with stable channels. There are two issues of concern with this type of harvest treatment. First, 25 feet is considered too narrow to protect water quality and fisheries. Ellis (2008a) recommends a buffer of at least 100 feet and with minimal disturbances to protect water quality, and Ellis (2008b) suggests a 150-foot buffer for protection of fish populations in forested areas. Second, the allowance of harvest within the CMZ (as in Type 1 CMZ treatment) could de-stabilize streams, particularly stream types C, D, and E. These stream types are sensitive to on-site and watershed-wide disturbances and are likely to migrate (Rosgen 1996), thus possibly causing erosion outside the 25-foot buffer and excessive erosion. We

suggest that it is not worth the risk to maintain only a 25-foot buffer and possibly contribute to de-stabilizing these streams, due to harvest activities or other outside influences. In some instances where streams are immediately adjacent to terraces on the edge of the CMZ (e.g., on many C-channels), it is possible that a 25-foot buffer will be inadequate and result in significant erosion beyond the buffer.

Response: As noted in the general responses to comments concerning riparian buffer width under the proposed HCP (above), the no-harvest buffer width in the Final HCP has been increased from 25 to 50 feet. The Final EIS analysis indicates that this buffer width, combined with appropriate timber harvest and sediment control BMPs, would be effective in protecting water quality in adjacent streams. On-the-ground implementation of the RMZ harvest requirement to retain 50 percent of trees larger than 8 inches dbh, as well as shrubs and sub-merchantable trees to the fullest extent possible, would result in a substantial amount of post-harvest RMZ vegetative cover with deep root mass for soil and slope stability. The risks of erosion are expected to be similar to the pre-harvest stand. Furthermore, the portion of RMZ restricted to 50 percent retention would be extended when necessary to incorporate the entire floodprone area. Also, as stated in Draft HCP commitment AQ-RM1 item (8b), a Type 1 CMZ established on a stream with an unstable stream channel or stream bank exhibiting evidence of recent lateral migration would receive the same level of protection as designated for a Type 2 CMZ. The greatest risks of erosion within the RMZ are due to ground disturbance. Under the SMZ Law, ground-based equipment operation is prohibited within 50 feet of all Class 1 streams, and on slopes steeper than 35 percent, equipment operation is prohibited within 100 feet of Class 1 streams. Under the Forest Management ARMs, DNRC extends equipment operation restrictions on sites with high erosion risks even farther than required by the SMZ Law. In addition, as described in the Draft HCP (commitment AQ-SD4), DNRC has committed to having a water resource specialist field-review all proposed harvest locations located on sites with a high risk of slope instability. In summary, DNRC would modify RMZ/CMZ harvest prescriptions and/or design and implement mitigation measures to avoid increasing the risks of slope or channel instability. These combined factors and commitments would ensure minimal risk of channel migration having a substantial effect on slope stability or sediment generation in Type 1 CMZs, which typically migrate relatively slowly across valley bottoms.

Letter 169, comment 683: We suggest that all HCP-fish bearing streams have a width of "no harvest" equal to the CMZ plus 25 feet on each side of the stream. Adding the CMZ width to the 25-foot buffer is an effective way to consider site-specific conditions such as stream size and channel type and still add needed protection. We also recommend that the remaining RMZ have a reduced disturbance to act more like a buffer. The reduced disturbance should be to retain similar species and age classes of trees in the RMZ, rather than just 50% of trees 8" or greater dbh or 10 trees per 100 feet of stream. By maintaining species and age diversity in the RMZ, it is expected that this area would better withstand erosive forces and wind throw, filter sediments, provide for future LWD and shade and maintain habitat for other species using riparian areas. Lastly, the RMZ should be measured as the CMZ plus SPTH in order to approach recommended buffer widths for protecting fish species and accommodate wildlife uses.

Response: Please refer to the general responses to comments concerning 25-foot no-harvest buffers and riparian buffer width under the proposed HCP, above. The Draft EIS (see subsections Habitat Complexity and Stream Temperature and Shading on pages 4-233 and 4-247, respectively) concluded that the proposed HCP RMZ prescriptions would adequately maintain habitat complexity and stream temperatures. We note that the model used for the analysis of habitat complexity and stream temperature and shading simulated windthrow as a consequence of the riparian harvest approach proposed in the Draft HCP.

Letter MEIC, comment 136: Increase riparian setbacks to protect threatened fisheries. The USFS requires 300-foot stream buffers in similar situations. Even the timber industry has agreed to 300-foot buffers elsewhere in the state.

Response: Please refer to the general responses to comments concerning riparian buffer width and implementation of guidelines similar to those for federal lands under the proposed HCP, above.

2.1.2 Monitoring and Adaptive Management

Letter 9, comment 95: We agree with the statement in the HCP that monitoring is a critical step in assessing the success of the conservation commitments (Volume II, page 2-60). The success of the HCP in terms of achieving biological goals, avoiding "take" of listed species, and protecting and restoring water quality, aquatic habitat, and HCP species depends to a great extent upon the effectiveness of the monitoring and adaptive management program. We are pleased that Chapter 4 of the HCP (Volume II) provides a discussion of monitoring and adaptive management.

Response: The comment is noted.

Letter 9, comment 96: We note that the HCP states that proper installation, operation, and maintenance of state-approved BMPs are presumed to meet a landowner's or manager's obligation of compliance with applicable water quality standards (Volume II, page 2-80), and that EPA guidance requires that BMP effectiveness be demonstrated. The EPA Water Quality Standards Handbook (http://www.epa.gov/waterscience/standards/handbook/) and other guidance (http://www.epa.gov/waterscience/standards/library/npscontrols.pdf) state that although BMPs are designed to protect water quality, the effectiveness of the BMPs at protecting water quality (i.e., meeting Water Quality Standards) should be evaluated with monitoring. EPA supports the Montana Forestry BMP Audit Program and believes it contributes to improving effectiveness of BMPs; however, we are concerned that aspects of water quality, fisheries, and aquatic habitat protection occurring through BMP implementation for such aquatic functions as LWD recruitment, riparian microclimate, stream shading/temperature, stream substrate sedimentation, etc., may not be adequately assessed during the forestry BMP audits. In-stream water quality monitoring and assessments are often needed to adequately determine if Water Quality Standards are maintained during BMP implementation (i.e., protect designated beneficial use and water quality criteria needed for attainment of beneficial use).

Response: Both internal and statewide BMP implementation audits are an integral component of the proposed HCP approach to aquatic monitoring and adaptive management. However, the proposed HCP also includes numerous other monitoring commitments specifically designed to demonstrate the effectiveness of BMPs in protecting designated beneficial uses (cold-water fisheries) and water quality criteria needed for attainment of beneficial uses (see Draft HCP page 4-46, items (2) through (4)). The proposed HCP also includes specific monitoring strategies designed to evaluate the effectiveness of the proposed conservation measures in providing aquatic functions such as LWD, stream shading, stream temperature, and in-stream sedimentation. Draft HCP Table 4-7 and Section 4.6 (Aquatic Monitoring and Adaptive Management) provide details regarding these strategies.

Letter 9, comment 97: We encourage adequate monitoring budgets for conduct of aquatic monitoring to document BMP effectiveness; however, we realize that resources are often not available to conduct comprehensive water quality monitoring to adequately assess BMP effectiveness at protecting and maintaining Water Quality Standards and aquatic ecological functions. We believe it would be helpful to public understanding to acknowledge in the EIS and HCP that resources are often not available to conduct comprehensive monitoring and evaluations of BMP effectiveness to assure that BMPs applied during forest management maintain compliance with Water Quality Standards and protect aquatic ecological functions. Such acknowledgement recognizes that the lack of monitoring resources for aquatic monitoring may increase risks of adverse impacts to HCP fish species.

Response: Draft HCP page 8-2 adequately describes DNRC's HCP funding commitments and acknowledges that DNRC's failure to fund the HCP could lead to suspension or revocation of the Permit. We note that the funding discussion has been updated in Final HCP Section 8.1 (Funding).

Letter 9, comment 98: The HCP states that effectiveness monitoring for the riparian timber harvest conservation strategy will focus on adequacy of (1) LWD recruitment, (2) in-stream shade, and (3) in-stream temperature regimes suitable to support HCP fish species (Volume II, page 4-33). We agree that impacts to

these parameters should be monitored, but ask why other potential aquatic impacts of management activities would not be monitored as well (e.g., effects to percent fines in spawning gravel, substrate cores, pool habitat, channel stability, aquatic biota, etc.). Monitoring should be able to measure, detect all significant aquatic and hydrologic effects of management actions that may affect HCP fish species, and allow evaluation of the effectiveness of riparian management prescriptions.

Response: The monitoring included in the proposed HCP is designed to accurately assess the performance of the specific commitments in meeting the aquatic conservation strategy objectives. The variables and methods selected are those most likely to provide the best information about potential effects and provide the most meaningful feedback for adaptive management response in a practical and cost-effective manner. The proposed HCP does include effectiveness monitoring using quantitative methods, such as substrate scoring, core samples, and measurement of suspended solids, turbidity, and streambank erosion, as well as assessments of fisheries habitat and channel stability (see Draft HCP Section 4.6.2.2, Sediment Delivery Reduction Monitoring and Adaptive Management – Effectiveness Monitoring, and Section 2.2.3.5, Cumulative Watershed Effects Conservation Strategy).

Letter 9, comment 99: While we recognize that resources for monitoring are limited, more comprehensive evaluation of BMP effectiveness would likely require use of additional aquatic monitoring parameters for water quality assessment, such as channel cross-sections, bank stability, width/depth ratios, riffle stability index, pools, LWD, fine sediment, pebble counts, macroinvertebrates, etc. The EPA especially recommends biological monitoring. Monitoring of the aquatic biological community integrates the effects of pollutant stressors over time and thus may provide a more holistic measure of aquatic impacts than grab samples.

Response: Please refer to the response to Letter 9, comment 97, above. Additionally, the proposed HCP specifically includes effectiveness monitoring using measurements of fine sediment, LWD, bank stability, and various assessments of channel morphological feature (see Draft HCP Section 4.6.1.2, Riparian Timber Harvest Monitoring and Adaptive Management – Effectiveness Monitoring; Section 4.6.2.2, Sediment Delivery Reduction Monitoring and Adaptive Management – Effectiveness Monitoring; and Section 4.6.4.1, Grazing Monitoring and Adaptive Management – Implementation and Effectiveness Monitoring). The methods ultimately used to implement these monitoring strategies would not preclude the use of such parameters as channel cross-sections, width/depth ratios, riffle stability index, pools, pebble counts, and macroinvertebrates, among numerous other possibilities. The selection of specific monitoring methods and variables would ultimately depend on the circumstances of the project and site-specific conditions.

Letter 9, comment 100: It is also important that monitoring of reference reaches in streams with little or no anthropogenic impacts be used to determine comparative effects of DNRC management activities. We note that there may not be many undisturbed reference reaches on state forest trust land to use for comparative evaluation, and suggest that appropriate relatively undisturbed reference reaches with similar conditions (geologically, geomorphically, and climatically similar) to state forest trust lands may be found on nearby National Forest lands (e.g., roadless and wilderness areas).

Response: DNRC currently collects reference reach data and uses reference reach data collected by other agencies and landowners. For example, water quality and stream temperature data have been collected on several different unmanaged watersheds on state forest lands for over 25 years. In addition, the LWD targets used in the Draft EIS analysis were derived largely from reference reaches on National Forest System lands. Monitoring proposed under the HCP would include assessing LWD from site-specific, local, and regional reference reaches. Under the proposed HCP, DNRC would commit to using the best available science, data, and information available. This would include collection and use of reference reach data where such data are available or applicable.

Letter 9, comment 101: For your information, the EPA encourages use of the following reference materials in designing an aquatic monitoring program:

The Forest Service publication, "Guide to Effective Monitoring of Aquatic and Riparian Resources," RMRS-GTR-121, available at, http://www.fs.fed.us/rm/pubs/rmrs_gtr121.html.

The Forest Service publication, "Testing common stream sampling methods for broad-scale, long-term monitoring," RMRS-GTR-122, available at, http://www.fs.fed.us/rm/pubs/rmrs_gtr122.html.

"Aquatic and Riparian Effectiveness Monitoring Plan for the Northwest Forest Plan," Gordon H. Reeves, David B. Hohler, David P. Larsen, David E. Busch, Kim Kratz, Keith Reynolds, Karl F. Stein, Thomas Atzet, Polly Hays, and Michael Tehan, February 2001. Available on-line at, www.reo.gov/monitoring/watershed/aremp-compile.htm

Monitoring Guidelines to Evaluate Effects of Forestry Activities in the Pacific Northwest and Alaska; Lee H. McDonald, Alan W. Smart and Robert C. Wissmar; May 1991; EPA/910/9-91-001;

"Aquatic Habitat Indicators and Their Application to Water Quality Objectives Within the Clean Water Act," Stephen B. Bauer and Stephen C. Ralph, 1999, EPA-910-R99-014. (This publication is available on-line at, http://www.pocketwater.com/reports/ahi.pdf)

Western Pilot Study: Field Operations Manual for Wadeable Streams; Environmental Monitoring and Assessment Program Protocols, Edited by David V. Peck, James M. Lazorchak, and Donald J. Klemm, April 2001, available on-line at, http://www.cpa.gov/emap/html/pubs/docs/groupdocs/surfwatr/field/weesm01.pdf

Montana DEQ's Water Quality Monitoring and Assessment information can be found on the website, http://www.deq.state.mt.us/wqinfo/monitoring/index.asp

Rapid Bioassessment Protocols for use in Streams and Rivers; James A. Plafkin, May 1989, EPA/444/4-89-001.

"Montana Stream Management Guide; for Landowners, Managers, and Stream Users", Montana Dept. Of Environmental Quality; December 1995.

The Forest Service Region 5 document entitled, "Water Quality Management for Forest System Lands in California: Best Management Practices," September 2000, is a useful reference for BMP development and BMP effectiveness monitoring. It can be found at the website, http://fsweb.r5.fs.fed.us/unit/ec/water/water-best-mgmt.pdf

"Protocol for Developing Sediment TMDLs" EPA 841-B-99-004, October 1999 http://www.epa.gov/owow/tmdl/sediment/pdf/sediment.pdf

Response: The monitoring program for LWD and stream temperature and shade is described in detail on Draft HCP pages 4-32 through 4-44. The references DNRC would use to develop monitoring programs for assessing effectiveness of BMPs and other mitigation measures at reducing sediment delivery are specified on Draft HCP page 4-49. We note that this list includes a few of the references provided by the commenter. We have examined the list provided and added additional relevant references in the Final HCP. In response to your comment, the Final HCP has also been revised to include the list of relevant references for developing monitoring programs for the fish connectivity and grazing conservation strategies (see Final HCP Section 4.6.3.1, Fish Connectivity Monitoring and Adaptive Management – Implementation and Effectiveness Monitoring, and Section 4.6.4.1, Grazing Monitoring and Adaptive Management – Implementation and Effectiveness Monitoring).

Letter 9, comment 102: Tables 4-6 and 4-7 (Volume II, pages 4-34 to 4-39) identify proposed implementation and effectiveness monitoring for the aquatic conservation strategy. Review of Table 4-7 leaves questions and concerns regarding the adequacy of the monitoring program for assessment of water quality, aquatic, and hydrologic effects. Our concerns regarding proposed management prescriptions in regard to LWD recruitment, stream shading, and stream temperature have been identified in earlier comments. Monitoring performance measures and targets are not clear to us. What is the LWD target that

80% of the RMZ acres harvested must meet (Table 4-7, page 4-38)? Also, the management response to impacts to LWD recruitment are not clear. It is stated that if 5-year monitoring reports show that a threshold is not being met, DNRC will implement a modified approach using pre-harvest conditions. It is not clear what the pre-harvest evaluation would be required to meet in terms of LWD recruitment. LWD recruitment protection and monitoring and adaptive management to assure adequate LWD recruitment protection should be further described.

Response: The monitoring performance measures for LWD recruitment are based on site-specific LWD targets that would be established using on-site stream reach baseline LWD data or local reference reach LWD data. If on-site or local reference reach data are not available, regional LWD targets established from reference reach data compiled for different physiographic regions across the state would be used. An example of these targets (which vary by Rosgen channel type and physiographic region) can be found on Draft EIS pages 4-241 through 4-243. Monitoring would involve the collection of site-specific stand conditions and use of the data to model LWD recruitment of the harvest prescription. The results of the modeling must indicate that at least 80 percent of the sites would meet the prescribed targets. If this goal is not achieved, DNRC would develop and implement a modified approach in the design of Class 1 RMZ timber harvests. Based on site-specific conditions, the modified approach may include a wider no-harvest buffer or RMZ (wider than the 50-foot no-harvest buffer now proposed for Class 1 streams in the Final HCP), or retention of more trees greater than 8 inches in diameter within the RMZ. LWD recruitment modeling using the proposed modified prescription would occur prior to harvest to ensure that the approach would meet in-stream LWD targets. For more information on the adequacy of the proposed HCP to provide for adequate levels of LWD recruitment, see Draft EIS page 4-233, line 23, through page 4-247, line 16.

Letter 9, comment 104: In regard to sediment delivery, it is stated in Table 4-7 that BMP effectiveness must be at or above 80%. It is not clear to use how BMP effectiveness for reducing sediment delivery to streams will be evaluated without in-stream monitoring for sediment or substrate conditions, pebble counts, macroinvertebrate monitoring, etc. We recommend in-stream sediment measures for triggers directed at achieving clean stream substrate adequately protective of fish spawning and rearing needs.

Response: The threshold for BMP effectiveness cited in Draft HCP Table 4-7 is 90 percent, not 80 percent as stated in the comment. This threshold specifically applies to BMP effectiveness scores or ratings on qualitative assessments, such as BMP audits. Thresholds for in-stream or more quantitative BMP effectiveness monitoring would be established through project-level individual monitoring plans developed for site-specific conditions. The proposed HCP includes a programmatic target for a 50 percent net reduction in sediment production from existing road sources identified within the HCP project area throughout the Permit term (see items (3) and (4) on Draft HCP pages 4-46 and 4-47).

Letter 9, comment 106: The extent of monitoring of aquatic biota is not clear (e.g., fish, macroinvertebrates, periphyton). Will DNRC or the USFWS or MFWP be monitoring fish species diversity, age-class distribution, and population density for HCP fish species? If so, how frequently and where will these fish measurements be made, and will results be reported to DNRC to factor in possible need for HCP adjustment to assure appropriate conservation and recovery of HCP fish species? Monitoring of the aquatic biological community is desirable since the aquatic community integrates the effects of pollutant stressors over time and, thus, provides a more holistic measure of impacts than grab samples.

Response: The proposed HCP is a habitat-based plan. Therefore, monitoring efforts to classify the status of fish populations (e.g., fish distribution, age classes, etc.) or other large-scale biological monitoring (e.g., macroinvertebrates, periphyton, etc.) are not included in the HCP as specific commitments. DNRC has completed some limited, smaller-scale fish population modeling, although these efforts have been focused on the watershed or reach scale and usually have been associated with project-level activities (such as a specific fish passage improvement project). However, DNRC recognizes the importance of accessing up-to-date information on these attributes and would continue to participate in larger-scale cooperative or collaborative monitoring efforts with other agencies and entities, as appropriate. Furthermore, any information provided

through monitoring aquatic resources by DNRC or other agencies or entities would be incorporated into the HCP through the HCP's adaptive management process. Available information on fish population trends (data sources may include redd counts, population estimates, results of genetic analysis, etc.) would be used by the USFWS and DNRC at annual HCP meetings to adjust the HCP strategies and monitoring commitments as necessary.

Letter 84, comment 269: Please include "Meets water quality standards" as one of the AQ-SD indicators for water quality and aquatic habitats outcomes (as an element within HCP Table 4-6). In order to provide periodic HCP adaptive management assessments, this HCP element will need to describe the method that will be used to report the number of HCP streams that meet and do not meet state WQS for temperature and sediment (i.e., their "305 listing" status as described on DEIS 4-116). DEQ encourages strengthened DNRC participation in local and interagency watershed-level temperature and other habitat condition monitoring work groups as part of the HCP's ongoing aquatic conservation strategy implementation and adaptive management. These cooperative watershed monitoring efforts are a cost-effective tool within the HCP's adaptive management process.

Response: Under the existing Forest Management ARMs (ARM 36.11.422), DNRC is required to ensure that forest management activities conducted on trust lands maintain high-quality water that meets or exceeds state water quality standards and protects beneficial uses. This existing requirement is described as an existing practice on Draft HCP page 2-79 and would remain in effect under the proposed HCP. Therefore, it is not necessary to include it as a specific element in HCP Table 4-6.

DNRC currently participates in several cooperative watershed monitoring groups, such as the Flathead Basin Commission Water Quality and Fisheries Monitoring programs, Swift Creek Coalition, Swan and North Fork Flathead 319 monitoring projects, as well as numerous other smaller cooperative monitoring projects. DNRC would continue to participate in these and other future programs if the HCP is implemented.

Letter 84, comment 294: DEQ expects that land managers will periodically assess the effectiveness of their BMPs in protecting water quality (i.e., meeting WQS) including evaluated achievement of WQS through instream monitoring. (HCP page 2-80). If monitoring indicates that approved and properly installed BMPs are not achieving WQS, then additional restorative BMPs (reasonable land, soil, and water conservation practices) may be necessary. It is through the iterative process of monitoring and adjustment of BMPs and reasonable land, soil, and water conservation practices that BMPs are expected to achieve WQS.

Response: Please refer to the response to Letter 9, comment 96, above.

Letter 84, comment 303: Achievement of Montana WQS for nonpoint source activities primarily occurs through the implementation of BMPs (including reasonable land, soil, and water conservation practices) for new and historic activities. Although BMPs are designed to protect water quality, effectiveness monitoring is crucial to indicate their success and to identify activities requiring further adaptive management. HCP monitoring should also measure and document improvements in watershed recovery and water quality. Because monitoring is the critical third step in adaptive management, we would expect that the HCP would seek to insure adequate monitoring budgets for aquatic monitoring to document effectiveness of watershed-level HCP activities (see HCP Table 4-7). Please describe the magnitude of necessary budget for effective HCP monitoring and the relative likelihood of sufficient funding for this HCP adaptive monitoring.

Response: We anticipate the DNRC budget for HCP implementation is sufficient to carry out the monitoring as described in Draft HCP Chapter 4 (Monitoring and Adaptive Management) for all the reasons discussed in Draft HCP Chapter 8 (HCP Implementation). This discussion has been updated in the Final HCP. The proposed monitoring includes specific elements designed to evaluate the effectiveness of BMPs in protecting water quality. DNRC's funding assurances are required to meet Permit issuance criteria. If the Permit is issued and the HCP cannot be implemented because of lack of funding, the USFWS can suspend or revoke the Permit.

Letter 84, comment 304: We agree that HCP effectiveness using LWD recruitment, in-stream shade, and in-stream temperature regimes suitable to support HCP fish species should be monitored. We further suggest that these three indicators are insufficient to assess fish habitat conditions and the potential aquatic impacts of land management activities. We would suggest that four additional parameters (percent fines in spawning gravel, pool habitat, channel stability, and aquatic biota [macroinvertebrates]) be systematically included in the sediment reduction monitoring commitment (HCP Table 4-6). We recommend in-stream sediment measure be included as HCP triggers for achieving clean stream substrate ensuring suitable fish spawning and rearing habitat.

Response: DNRC would have a minimum of two ongoing quantitative sediment monitoring projects at any one time (for example, during a field season) to determine the effectiveness of BMPs and other mitigation measures. Monitoring design, methods, and protocols would be selected from established procedures that have been demonstrated to be practicable, cost-effective, and suited for addressing the project-specific monitoring objectives (see relevant citations on Draft HCP page 4-46, lines 23 and 24, for specific examples). As described on Draft HCP page 4-46, lines 23 and 24, these may include quantitative monitoring types and methods, such as in-channel sediment sampling (e.g., grab samples, substrate scoring, core samples, and suspended solids), sediment traps, soil condition surveys, and streambank erosion rate sampling.

In addition, as described in Draft HCP Table 4-6, DNRC would qualitatively monitor BMP effectiveness during BMP audits. The goal for BMP effectiveness is 90 percent or greater. If this target is not achieved and the BMPs fail to provide for the adequate protection of HCP fish species, the adaptive management process would ensure that the BMPs are revised to achieve effectiveness. See the response to Letter 9, comment 106 for further details on how larger-scale monitoring efforts by other agencies or entities would be incorporated into the HCP.

Letter 84, comment 306: It may be helpful to acknowledge in the EIS and HCP that resources are often limited for conducting ongoing evaluations of watershed outcomes and for assessing the cumulative BMP effectiveness in sustaining aquatic functions and meeting WQS. The potential for future gaps in aquatic monitoring and adaptive management may increase the risks of adverse impacts to HCP fish species. Ongoing DNRC participation in local collaborative watershed monitoring efforts would be one desirable way for addressing possible future resource and operating gaps.

Response: DNRC's funding limitations relative to monitoring and the proposed HCP are described in Draft HCP Chapter 4 (Monitoring and Adaptive Management) and Chapter 8 (HCP Implementation), respectively. The monitoring described in the comment is not necessarily required under the HCP. DNRC currently participates in several collaborative watershed monitoring efforts, such as the Flathead Basin Commission Water Quality and Fisheries Monitoring projects, Swift Creek Coalition, Swan and North Fork Flathead 319 monitoring project, and numerous other total maximum daily load (TMDL) efforts. DNRC would continue to participate in these and other future programs if the HCP is implemented. DNRC also reviews and uses relevant data and monitoring results collected by other landowners and agencies while completing CWE assessments and would continue to do so under the proposed HCP. The Draft HCP acknowledges the difficulty assessing CWE in Section 2.2.3.5 (Cumulative Watershed Effects Conservation Strategy).

Letter 84, comment 307: Monitoring of aquatic biological community is desirable since the aquatic community integrates the effects of pollutant stressors over time, and thus provides a more holistic measure of impacts than one-time measurements. Please indicate the types of aquatic biota (macroinvertebrates) parameters that would be most cost-effective in assessing long-term stream habitat conditions.

Response: The proposed HCP does not include monitoring of aquatic biota. Because DNRC ownership in a watershed often represents only a small portion of a basin, and because macroinvertbrate monitoring can also be influenced by measures other than water quality, DNRC would directly monitor those aquatic habitat elements most related to forestry operations, including sediment production, LWD recruitment, and stream temperature. See the response to Letter 9, comment 106 for further details on how larger-scale monitoring

efforts by other agencies or entities (potentially including monitoring of aquatic biota) would be incorporated into the HCP.

Letter 106, comment 459: AQ-RM1 #4: What is the cost of monitoring baseline or post-harvest? If relying on models, how can you be sure the model is accurate?

Response: The monitoring that is required to demonstrate DNRC's compliance with commitment AQ-RM1 item (4) would be completed by actually measuring and recording in-stream water temperatures. Similar in-stream monitoring is presently occurring under implementation of the State Forest Land Management Plan (SFLMP) and Forest Management ARMs; therefore, the costs of such monitoring are already included in the current forest management program budget. Meeting the HCP stream temperature monitoring commitments would primarily involve refocusing the current stream temperature monitoring program efforts.

Letter 169, comment 684: Under Aquatic Monitoring for large woody debris (LWD) and Shade, DNRC indicates that if it meets its standard at 5 sites in the first 10 years, then DNRC will subsequently monitor only one site for up to 25 years. One monitoring site seems insufficient, even if the first 10 years show no impacts. One site could maintain completely different conditions than most other harvested sites and yield biased information. It seems that at a minimum, at least 3 sites located in various terrain and vegetation communities are necessary to have any sense of the effectiveness of the HCP prescriptions.

Response: As described in Draft HCP Table 4-7, DNRC would monitor five or more project sites for LWD and shade during the first 10 years. If thresholds are consistently met for those 10 years of HCP implementation, the monitoring may be reduced to ongoing monitoring at one active project site through year 25 of the HCP. One ongoing project site does not mean that only one site would be monitored during that entire 15-year period. Typically, monitoring of a project site takes 3 to 4 years to complete. This includes pre-harvest monitoring, the active timber sale period, and post-harvest monitoring. Therefore, under the proposed HCP monitoring commitments, there would likely be three to five LWD and shade monitoring projects completed during years 11 through 25 of the Permit term.

2.1.3 Grazing

Letter 5, comment 19: Enclosed is information on the Taylor Grazing Act (TGA) and Unlawful Enclosures Act (UEA) and Multiple Use Law. The UEA was created by Congress especially for State land and private land borders with Federal land (BLM and USFS). This is covered on Chapter 2, pages 7 and 8 of the BLM Federal fence standards. Both BLM and USFS are required by Federal law to notify DNRC and private landowners, but they don't, but they will. However, DNRC may be required to change a fence design. It is a Federal law. It is better to comply--ignorance of the law is not excuse.

Response: Your comment is noted.

Letter 5, comment 26: See the MFWP fencing book, page 41.

Response: Your comment is noted.

Letter 9, comment 80: We did not see identification of the miles of streams and riparian areas on forested trust lands in the HCP project area where there may be degraded stream channel and/or riparian conditions as a result of current grazing practices on state trust land. Such information would be helpful to understand the extent to which current grazing management may be adversely impacting stream functions, fisheries, and riparian conditions. To what extent is current grazing management adversely impacting stream functions, fisheries, and riparian conditions on state trust lands?

Response: See the response to Letter 84, comment 276, below.

Letter 9, comment 81: The HCP proposes to use existing forest management ARMs (ARM 36.11.444) as the basis for the grazing strategy (AQ-GR1, Volume II, page 2-112). We support improvements in grazing management by using practices such as reducing the intensity (number of animals) and duration of livestock

grazing; establishing standards for bank trampling, forage utilization, stubble height, and woody browse use; enhancing fencing and herding; using livestock enclosures; off-stream watering; and other range improvements or practices; and a monitoring and adaptive management approach. AQ-GR1 appears to promote use of some of these types of grazing improvements, although the extent to which they would be used is unclear.

Response: DNRC would use those corrective actions listed on Draft HCP page 2-115 under commitment AQ-GR1 item (10) to develop a plan that addresses the specific issues, conditions, and circumstances at problem sites associated with individual grazing licenses or individual parcels. The types of actions taken would depend on site conditions, nature and magnitude of the problems, and current grazing management and may include some of those identified by the commenter. Therefore, it is not possible to predict the extent that any one approach would be used during the Permit term before the actual problem sites are identified and specifically addressed over time.

Letter 9, comment 82: The extent to which degraded stream conditions resulting from grazing practices would be improved through the AQ-GR1 commitments are unclear.

Response: The proposed HCP grazing conservation strategy is designed to minimize the loss of riparian vegetation, minimize physical damage to stream banks, maintain channel stability and morphological characteristics, and promote diverse and healthy riparian plant communities. This strategy directly supports the achievement of the HCP goals and objectives developed for the HCP fish species as described in Draft HCP Table 1-2.

The extent of degraded stream conditions resulting from grazing practices has not been thoroughly inventoried across the HCP project area. However, the commitments included in the proposed HCP to evaluate and monitor conditions within the specified timelines would provide the information necessary to determine and document the extent of these problems within the first 5 years of HCP implementation. The proposed HCP would also require monitoring of problem sites to determine if implemented corrective actions are effective. These monitoring results would provide important feedback regarding the effectiveness of the grazing conservation strategy in improving degraded conditions.

Letter 9, comment 83: It is important to emphasize that monitoring and adaptive management is needed to assure that grazing practices do not adversely affect stream conditions, fisheries, and aquatic habitat. Monitoring is needed to (1) determine the overall condition and trends of the range, water quality, and related conditions over time; (2) determine management actions to be taken, such as movement of animals within or between pastures; and (3) validate predictions made during the analysis process and documenting improvement. Identification of benchmark conditions to be monitored over the long term are needed to determine relative progress toward a desired condition, and when conditions or triggers are reached that might lead to a change in grazing management. We are pleased that the Montana DNRC Supplemental Grazing Evaluation Form and Instructions provides for assessment of streambank disturbance and extent of browse of riparian vegetation and evaluation of overall health of the riparian area.

Response: DNRC would monitor and adapt measures to ensure forest grazing practices do not adversely affect fisheries and aquatic habitat. These measures are included in commitment AQ-GR1 items (11) through (16) (Draft HCP pages 2-115 and 2-116), as well as in Draft HCP Chapter 4 (Monitoring and Adaptive Management).

Letter 9, comment 84: We recommend that project objectives be established to evaluate progress toward improving stream conditions, fisheries, and aquatic habitat. For example, establish targets for attaining annual operating plan compliance for all grazing licensees within 5 years, maintain riparian systems in proper functioning condition, establish a positive trend for functioning-at-risk or non-functioning riparian systems within 10 years, bring all streams into fully functioning condition within 20 years, reduce weed populations by 50% and eliminate new weed infestations and maintain weed-free areas within 10 years, etc.

Response: The proposed HCP grazing conservation strategy commitments (AQ-GR1) (1) require monitoring and evaluation of all grazing licenses on a 5-year interval, (2) establish criteria for identifying potential problem sites, (3) provide a process for developing corrective actions, (4) establish timelines for implementing corrective actions, (5) require monitoring to demonstrate effectiveness of corrective actions, and (6) include a process to ensure compliance with targets if corrective actions are shown to be ineffective. These commitments were developed to ensure that DNRC-licensed grazing management practices minimize loss of riparian vegetation, minimize physical damage to stream banks, maintain stream channel stability and channel morphological characteristics, and promote diverse and healthy riparian plant communities. The proposed HCP also includes commitments to assess noxious weeds during both license renewal and midterm grazing evaluations (commitment AQ-GR1 item (5)).

Letter 84, comment 274: We encourage the use of the forage condition assessments, particularly assessment methods which focus on riparian indicators keyed on salmonid species (such as the 1997 Beaverhead Forest Riparian Amendment and the 2009 Beaverhead-Deerlodge National Forest grazing guidelines).

Response: The proposed HCP incorporates riparian forage condition assessments, as well as other criteria that are consistent with the Beaverhead-Deerlodge National Forest standards and guidelines (see Draft HCP pages 2-109 through 2-111).

Letter 84, comment 275: Within AQ-GR1 commitments # 2 and 6 (HCP page 2-112), we suggest including a short list of specific riparian/in stream conditions with trigger levels that "identify potential problem sites" (these numerical screens could be drawn from the Beaverhead Forest Assessment Indicators and the Riparian Field Evaluation section of the supplemental Grazing Evaluation Form [Appendix B, page B-30]).

Response: The proposed HCP includes a suite of riparian and streambank condition assessments with criteria that are used as triggers to identify potential problem areas (commitment AQ-GR1 item (2)). These numerical screens are adequate for use as a coarse filter to identify potential problem areas. More detailed assessment would be completed during verification of potential problem sites. These detailed assessments would use additional riparian and in-stream condition indicators.

Letter 84, comment 276: We did not find any indication of the miles of streams and riparian areas on forested trust land in the HCP project area that are in suitable riparian condition or that are in less than suitable riparian condition from past grazing practices. Such information would provide preliminary indicators of the relative magnitude of historic grazing effects on fisheries, stream functions, and riparian conditions. Streambank disturbance (AQ-GR1) is one of the indicators the HCP will use in assessing riparian vegetative conditions. Please provide the approximate miles of streams and riparian areas on forested trust land in the HCP project area that are in suitable riparian condition or that are in less than suitable riparian condition.

Response: Data regarding the miles of stream and riparian areas on DNRC grazing licenses within the HCP project area that provide adequate riparian function are not available at this time and are not necessary given the programmatic nature of the HCP commitments and EIS analysis. Under implementation of the proposed HCP, DNRC would collect and document information on the miles of stream on grazing license parcels meeting the HCP riparian objectives. The Draft HCP (page 2-114) estimates the number of potential problem sites and those requiring corrective action.

Letter 84, comment 277: We recommend that miles (percentage) of riparian proper functioning riparian condition on individual waters within HCP lands with historic and current grazing use be included in the AQ-GR1 #2 coarse filter.

Response: The coarse filter is intended for use on an individual grazing license or parcel of trust land. Individual stream segments or riparian areas associated with a stream segment are typically assessed at this scale. During such an evaluation, the current conditions would be assessed against the numerical and

narrative criteria contained in commitment AQ-GR1, as well as previous midterm and license renewal assessments.

Letter 84, comment 278: We support the use of (1) stream segment stream bank disturbance/raw banks < 10% through greenline assessment, and (2) > 90% of woody vegetation greenline as compared to greenline reference condition, as key coarse filter numeric criteria (AQ-GR1 #2).

Response: Your comment is noted.

Letter 84, comment 279: We support the use of the "moderate" riparian forage utilization rate of 40% (rather than 50% - full riparian utilization) in the AQ-GR1 #2a coarse filter criteria.

Response: The USFWS has noted the commenter's preference for a forage utilization rate of 40 percent for use in the grazing coarse-filter criterion contained in commitment AQ-GR1 item (2a). The 50 percent rate is consistent with other forest management HCPs in Montana and respresents an enhanced commitment by DNRC because the SFLMP and forest management rules use 60 percent forage utilization for continuous season-long grazing.

Letter 84, comment 297: We would suggest that the Supplemental Grazing Evaluation Form assessments along HCP streams be expanded to include greater use of "riparian vegetative condition" (PFC and greenline vegetation) and in-stream channel conditions (width to depth ratios, pool frequency, sinuosity, and pool gravel characterization) as part of the riparian HCP grazing lease monitoring and assessments. The intended outcome of this "riparian monitoring" would be more targeted coarse filter assessments of the degree of suitable and less-than-suitable "HCP fish habitat" conditions influenced by DNRC grazing practices and management (per AQ-GR1 #2).

Response: The numerical and narrative criteria included in the Supplemental Grazing Evaluation Form (Document B-7 in Draft EIS Appendix B, HCP Documents) are used as a coarse filter intended to identify potential problems associated with range conditions, riparian vegetation, streambank stability, and noxious weeds. Under the proposed HCP, additional assessments addressing tree regeneration and the presence of invasive non-native plants not currently listed as noxious weeds would be added to the evaluation form after the list of species is developed (AQ-GR1 item (4b)). DNRC has used this suite of assessments since the implementation of the SFLMP in 1997 and has found them to be adequate for the initial identification of sites that are not meeting the biological objectives developed for the aquatic conservation strategies. The riparian forage, browse utilization, and streambank disturbance criteria all use greenline methods adopted from EPA (1993).

Under the proposed HCP, additional information and evaluations would be completed during field verification of potential problem sites (commitment AQ-GR1 item (7)). These follow-up evaluations would be conducted on sites where coarse-filter results indicate unacceptable levels of livestock use and/or unacceptable levels of impact occurring in riparian areas. Field verification would allow a DNRC water resource specialist to conduct more thorough evaluations using many methods and parameters, including those recommended by the commenter. The information and data collected from the verification process would be useful in determining the degree of suitability of the coarse-filter assessments.

Under the proposed HCP, DNRC would also conduct implementation monitoring on all sites where corrective actions have been implemented. This monitoring would be designed to determine the effectiveness of the improvements. Adaptive management would be triggered if field verifications and implementation monitoring results indicate that the coarse filters are not a reliable indicator of HCP fish habitat conditions. If necessary, additional criteria and/or more rigorous methods could be added to the coarse filter through the adaptive management process.

Letter 84, comment 298: Along with DEQ's grazing temperature effects comments, which are generally applicable to grazing activities generating sediment, DEQ would suggest that the HCP adopt one or more of the following Riparian Management objectives within the grazing coarse filter (AQ-GR1 #2) that will

provide "direct indicators" of stream habitat suitability. These riparian stream objectives (from the 2009 Beaverhead-Deerlodge National Forest grazing guidelines) include: (1) entrenchment ratio (all systems) by Rosgen channel: A (<1.4), B (1.6-1.8), C (>10.3), E, (>7.5); width/depth ratio (all systems) by Rosgen channel: A (<11.3), B (<15.8), C (<28.7), E (<6.9); (3) sediment particle size, % <6.25 mm (all systems), by stream type: B3 (<12), B4 (<28), C3 (<14), C4 (<22), E3 (<26), E4 (<28); and (4) LWD (forested systems) > 20 pieces per mile, > 6 inches diameter, > 12 foot length.

Response: See the response to Letter 84, comment 297.

Letter 84, comment 299: DEQ encourages DNRC to include the following two Beaverhead-Deerlodge National Forest grazing management standards as supplemental permit management criteria for application in "key HCP watersheds" (HCP page 2-111) as a subpart of AQ-GR1 #3 supplemental grazing evaluation process. Standard 14: Grazing practices that prevent attainment of desired stream function, or are likely to adversely affect threatened or endangered species, or adversely impact sensitive species, are modified to attain desired stream function or population objectives. Standard 15: Locate new livestock handling and/or management facilities outside of Riparian Conservation Areas. For existing livestock handling facilities inside Riparian Conservation Areas, assure facilities do not prevent attainment of desired stream function. Relocate or close facilities where these objectives cannot be met.

Response: The proposed HCP grazing conservation strategy includes a suite of criteria very similar to the Beaverhead-Deerlodge National Forest standards. The criteria included in the HCP were modified to better identify grazing practices or conditions likely to adversely affect the HCP fish species on HCP project area lands. The criteria used for this initial assessment only comprise the coarse filter portion of the assessment. Once a potential problem site is identified, the field verification process would involve more rigorous assessment that may include use of additional criteria to confirm a potential problem exists. Once potential problem sites have been verified through more detailed evaluations, DNRC would be required to develop and implement site-specific corrective actions designed to attain the aquatic conservation objectives specified in Draft HCP Table 1-2. Corrective measures could include, but would not be limited to, modifying existing grazing practices such as locating livestock handling and management facilities out of riparian areas.

Letter 109, comment 478: The EIS and HCP must address the issue of bull, cutthroat, and redband trout redds being trampled by grazing. A recent study used clay targets to simulate bull trout redds in streams where cattle had access. The cattle were found to be responsible for affecting 12 to 78% of simulated redds and breaking 6 to 49% of the clay targets. Impacts were higher in pastures where cattle stocking intensity was higher, but impacts were also determined by site conditions adjacent to the simulated redds (Gregory and Gammett 2009).

Response: The USFWS and DNRC are evaluating this issue and related studies that are evolving in Montana. In response to your comment, Final HCP Chapter 4 (Monitoring and Adaptive Management) has been revised to note that DNRC will initiate a pilot study under the proposed HCP to develop a better understanding of the prevalence of this issue on HCP project area lands. The USFWS and DNRC would follow the adaptive management process to develop appropriate conservation commitments to address any concerns raised by the study.

Letter 169, comment 686: For grazing, the forage- and browse-use levels are too high to protect fish and wildlife habitat, based on our experience and brief review of USFS guidelines. The levels in the HCP seem more appropriate solely for cattle production rather than a balance of fish, wildlife, and cattle use. Furthermore, it is apparent that consideration of stream and valley type (some are more sensitive than others), desired future condition, and month or season of use could enhance the effectiveness of grazing management. Provided DNRC stay with the general approach to monitoring grazing, we recommend a riparian forage use of 40%, rather than 60%--that is too high of use in most areas. Likewise, we recommend riparian browse use at 20% of the shrubs in moderate- or light-browse form class. The HCP's use of 25% in the heavy to moderate classes suggests the allowance of overgrazing of grasses and forbs, and the switching to and heavy use of willows, etc. Use of short-duration riparian pastures or exclosures should be stated as an option to

prevent or respond to overgrazing, particularly in sensitive stream types or where grazing occurs in the more important fishery resource areas.

Response: Please see the response to Letter 84, comment 297, above. We note that the riparian forage levels in the grazing coarse filter are 50 percent, not 60 percent as stated in the comment. The values for forage utilization and browse utilization in the Draft HCP are suitable as coarse filters to trigger more extensive follow-up evaluations as described under the verification process.

While specific grazing management options such as short-duration riparian pastures or exclosures are not prescribed in the Draft HCP, they are listed as options DNRC would consider when it develops site-specific corrective actions to address verified problem sites (see commitment AQ-GR1 item (10b)).

2.1.4 Stream Temperature

Letter 9, comment 50: To protect native fish species from increased stream temperatures, the HCP proposed to classify some areas as "temperature sensitive reaches" where "additional protections" would be provided during riparian harvest (Volume II, page 2-72). The "additional protections" that would be used in "temperature sensitive reaches" are not clearly described in the DEIS/HCP. These "additional protections" should be more clearly described so their adequacy can be better assessed.

Response: The additional protections are also described in Draft EIS, page 2-72, and state that: "This will be achieved by committing to no statistically significant increase ($p > 0.05$) in stream temperature attributable to DNRC timber harvest activities...." We note that this commitment has been revised in the Final HCP to demonstrate DNRC's commitment to monitor stream temperatures as described in Chapter 4 (Monitoring and Adaptive Management). Subsection Temperature Monitoring Approach in Final HCP Section 4.6.1.2 (Riparian Timber Harvest Monitoring and Adaptive Management – Effectiveness Monitoring) has also been revised and clarified.

Letter 9, comment 51: It is our understanding that the USFWS Bull Trout Interim Conservation Guidance recommends no increase in temperature in bull trout waters. While we are pleased that AQ-RM1 says there will be no statistically significant increase in stream temperature attributable to DNRC timber harvest in temperature sensitive reaches (Volume II, page 2-72), we are not sure all temperature sensitive reaches will be appropriately identified.

Response: In the Final HCP, the rationale for commitment AQ-RM1 item (5) (item (4) in the Draft HCP) has been revised to state that "DNRC believes that the most current EPA-approved 303(d) list is the most appropriate source of information for identifying temperature-sensitive stream reaches."

Letter 9, comment 52: Montana Water Quality Standards state that for waters classified as A-1 or B-1 (cold water fisheries), the maximum allowable increase over naturally occurring temperature (if the naturally occurring temperature is less than 67° F) is 1° F (approximately 0.5° C) and the rate of change cannot exceed 2° F per hour. If the natural occurring temperature is greater than 67° F, the maximum allowable increase is 0.5° F (ARM 17.30.622(e), ARM 17.30.623(e)). It is our understanding that these limits on stream temperature changes are often included in Montana TMDLs for cold-water fishery streams. We suggest that the HCP limit human-induced forestry activity increases to < 1° F (approx. 0.5° C) for all streams classified for cold water fishery uses, and that this be included in the AQ-RM1 commitments. Use of several temperature criteria, such as a daily maximum temperature, weekly maximum, and time of exposure to critical temperatures may even be more realistic to assess biological impacts.

Response: To ensure compliance with Montana Department of Environmental Quality (MDEQ) standards and no degradation of aquatic habitat conditions, the USFWS and DNRC have revised Final HCP Chapter 4 (Monitoring and Adaptive Management) to clarify that, to ensure protection of native fish species from increased stream temperatures, DNRC would manage for a maximum allowable increase in stream temperature of between 0.3 to 1.0° C (0.5 and 1.8° F) as a result of timber harvest activities. The proposed HCP temperature monitoring commitment (AQ-RM1 item (4) in the Draft HCP, item (5) in the Final HCP)

has been revised to use a variety of allowable stream temperature increases for streams supporting HCP fish species. Dual thresholds were included to address two separate exposure duration scenarios: (1) daily mean weekly maximum temperature (moving average) (MWMT) exceedances, and (2) the period over which exceedances occurred in the diel (24-hour) period. Exposure of HCP fish species to excessive temperatures for prolonged periods can affect a species' ability to recover its original maximum growth rate. The following monitoring thresholds for streams supporting HCP fish species are included in the Final HCP (note that the Draft HCP specified a single threshold of 1.0° C [1.8° F]):

i. For streams with a pre-project peak MWMT of 15.5° C (59.9° F) or less, annual project daily MWMT is not to exceed a 1.0° C (1.8° F) increase for more than 25 percent of the monitoring period (20 days). In these exceedances, not more than 9 days may be consecutive. A daily exceedance is defined as six consecutive 30-minute interval measurements above 16.5° C (61.7° F).

ii. For streams with a pre-project peak MWMT greater than 15.5° C (59.9° F) but less than or equal to 18.0° C (64.4° F), annual project daily MWMT is not to exceed a 0.6° C (1.0° F) increase for more than 10 percent of the monitoring period (8 days). A daily exceedance is defined as six consecutive 30-minute interval measurements above 18.6° C (65.5° F).

iii. For all streams with a pre-project peak MWMT of greater than 18.0° C (64.4° F), post-project annual project daily MWMT is not to exceed a 0.3° C (0.5° F) increase for more than 10 percent of the monitoring period (8 days). A daily exceedance is defined as six consecutive 30-minute interval measurements that are more than 0.3° C (0.5° F) above the pre-project peak MWMT.

In most cases, changes in stream temperatures of this magnitude will not adversely affect HCP fish species, and, where maximum stream temperatures are outside the temperature ranges for these species (see Species Accounts at http://dnrc.mt.gov/HCP/), the criteria are more restrictive than proposed in the Draft HCP. As clarified in the Final HCP (see the rationale for commitment AQ-RM1 item (5)), DNRC would use the most current EPA-approved 303(d) list to identify temperature-sensitive stream reaches, where DNRC would apply the approach for no statistically significant increase in stream temperature. Monitoring would be implemented to ensure compliance with this commitment (see Draft HCP Table 4-7).

In addition, under commitment AQ-RM1 item (5), when in-stream temperatures are already elevated due to human-caused disturbance or activities, DNRC would classify these reaches as temperature-sensitive reaches and provide additional protection during riparian harvest. This would be achieved by committing to no statistically significant increase in stream temperature attributable to DNRC timber harvest activities. The Final HCP has been revised to state that "DNRC believes that the most current EPA-approved 303(d) list is the most appropriate source of information for identifying temperature-sensitive stream reaches."

Letter 9, comment 55: The DEIS states that impacts to stream temperature due to riparian timber harvest by removal of trees providing shade to streams will not be considered "take" under ESA (Volume II, page 7-7). We do not understand how the USFWS and DNRC can state that risks of large stream temperature increases will not result in take of bull trout and/or other HCP fish species. We believe the proposed riparian management prescriptions in the HCP will result in loss of stream shading, which increases risk of stream temperature increases. The FEIS should more clearly explain how increased risks of stream temperature increases due to riparian harvests will not adversely affect aquatic habitat and will not result in "take" under ESA.

Response: We note that there was an error on Draft HCP page 7-8, lines 9 and 30. The stream temperature change specified in both of these sentences has been revised in the Final HCP from 10° C (50° F) to 1° C (1.8° F).

Contrary to the commenter's statement that there are "risks of large stream temperature increases," Draft EIS Figures 4.8-14 through 4.8-16 show that the proposed HCP is expected to have little effect on stream temperature. Draft EIS page 4-252 states that, for the proposed HCP alternative, shade levels tend to increase

per decade for most of the modeled stand types and by the end of the Permit term, shade levels would increase by 10 percent over the target levels. DNRC anticipates no more than a 1° C (1.8° F) increase in non-temperature-sensitive streams and no statistically significant increase in temperature-sensitive streams; therefore, there would be no adverse effects to HCP fish species from changes in stream temperature. To ensure this is the case, DNRC would monitor stream temperature changes to verify modeled outputs and determine whether thresholds are exceeded. An exceedance could trigger a change in the riparian measures through the monitoring and adaptive management process. The USFWS will conduct its analysis of incidental take in the Section 7 ESA biological opinion.

Letter 9, comment 103: In Table 4-7, the steam temperature increase threshold of less than 1° C for non-temperature sensitive streams may need to be adjusted to be consistent with the temperature change requirements allowed under Montana Water Quality Standards. These Standards state that for waters classified as A-1 or B-1 (cold water fisheries), the maximum allowable increase over naturally occurring temperature (if the naturally occurring temperature is less than 67° F) is 1° F (approximately 0.5° C) and the rate of change cannot exceed 2° F per hour. If the natural occurring temperature is greater than 67° F, the maximum allowable increase is 0.5° F (ARM 17.30.622(e), ARM 17.30.623(e)). We had suggested in a previous comment that the HCP limit human-induced forestry activity increased to less than 1° F and that this be included in the AQ-RM1 commitments for cold water fishery streams.

Response: To maintain in-stream temperature regimes that support HCP fish species and meet state water quality standards for waters supporting cold-water fisheries, the proposed HCP has been revised to include dual thresholds in three different temperature tiers for maximum allowable increases in stream temperature for HCP fish-bearing streams (see subsection Maintain In-stream Temperature Regimes to Support HCP Fish Species in Final HCP Section 4.6.1.2, Aquatic Monitoring and Adaptive Management – Effectiveness Monitoring). Additionally, please refer to the response to Letter 9, comment 52, above.

Letter 84, comment 266: The proposed HCP target of no more than 1.0° C forestry-induced increase above naturally occurring (HCP page 2-72 line 33) would exceed Montana WQS which limit human-induced (including forestry) temperature increases to a maximum of no more than 1° F above naturally occurring regimes (see EIS Table 4.6-2). DEQ recommends that the HCP temperature commitment (HCP pages 2-72 and 4-41) include limiting cumulative human-induced forestry activity increases to < 1° F (approximately 0.5° C), and that this statutory requirement be added to the existing AQ-RM1 commitment #4 of no statistically significant increase in stream temperature (as well as to Appendix Table E3-3). Please note that Montana Water Quality Standards are accurately described in the DEIS (see Table 4.6-2).

Response: Please refer to the responses to Letter 9, comments 52 and 103, above.

Letter 84, comment 267: Please update Table 4-7 (HCP page 4-38) stream temperature effectiveness threshold to be consistent with the temperature change requirements under Montana WQS. We suggest that the HCP limit cumulative human-induced forestry activity temperature increases in key HCP fishery habitats to < 1° F.

Response: Please refer to the responses to Letter 9, comments 52 and 103, above. Table 4-7 has been revised in the Final HCP.

Letter 84, comment 268: DEQ would also ask that the AQ-RM1 Temperature commitment #2 (HCP page 2-72) include a specific phrase(s) that incorporates (and references) approved TMDL goals, targets, and prescriptions for stream temperature maintenance and stream temperature restoration on HCP lands (analogous to the AQ-SD2 Sediment #13 [HCP page 2-94] commitment to meet sediment targets in TMDLs).

Response: In the Final HCP, a statement was added to commitment AQ-RM1 that incorporates EPA-approved 303(d) lists for stream temperature maintenance and stream temperature restoration on HCP project area lands. This approach provides higher levels of protection by including all streams identified in need of TMDL development in addition to those where TMDLs have already been approved. The HCP uses an

approach of no statistically significant increase in stream temperature for all streams identified as temperature-impaired on the current 303(d) list. This level of protection would be consistent with the goals, targets, and prescriptions for stream temperature maintenance and restoration in streams with approved TMDLs.

Letter 84, comment 270: DEQ suggests that it would be more conservative and protective of aquatic ecological functions and temperature-sensitive fish habitat to use moderately conservative forest and riparian buffer areas and riparian management prescriptions (i.e., protective of sustained aquatic ecological functioning) as the default RMZ for HCP activities, with the HCP providing a short screening method for identifying those stream sections that are "less temperature sensitive reaches" where moderate riparian harvest would be appropriate. DEQ suggests that a RMZ default of one potential tree height buffer width with a no or substantially limited harvest (> 75% large diameter stem retention) buffer would assure protection of temperature sensitive streams (i.e., key summer fish habitat and TMDL temperature limited streams). "Less temperature sensitive reaches" will be identified as stream sections where decision makers are assured that moderate riparian harvest could occur without adverse effects on watershed aquatic ecological functions (including temperature) and HCP aquatic species, probably using the SMZ's 50% large stem retention criterion.

Response: Based on a review of the best available science and the Draft EIS analysis, the proposed HCP's riparian timber harvest conservation strategy would provide adequate protection of the fisheries and aquatic ecological functions. Draft HCP Chapter 4 (Monitoring and Adaptive Management) includes an approach for monitoring the effectiveness of this conservation strategy to ensure that this would be the case. This approach includes a predetermined adaptive management response that would be triggered if LWD and stream temperature targets are not being met (see Draft HCP Section 4.6.1.3, Riparian Timber Harvest Monitoring and Adaptive Management – Adaptive Management). Additionally, please refer to Section 2.1.1 for the general responses to comments concerning riparian buffer width under the proposed HCP.

Letter 84, comment 271: Temperature is possibly the most sensitive pollutant when it comes to forestry related riparian impacts in western Montana. DEQ has observed occasional recent DNRC harvest units with 50- to 100-foot riparian buffers where the residual lodgepole pines have blown down due to increased wind sheer stresses. Wind throw is more likely on north/south running streams where westerly winds provide strong gusts. In DEQ's experience, 50-foot RMZs do not consistently assure protection against increases in stream temperature. Additionally, some past DNRC forest managers have provided notable exemptions to RMZ buffers. Some RMZ exemptions in the St. Regis watershed have allowed removal of almost all streamside tree shading and are probably hindering achievements of temperature TMDLs. DEQ would suggest that all larger (> 1.0 acre) exemption allowances within sensitive RMZ sections (HCP page 2-74) require consultation with the local MWFP fishery biologist(s) prior to approval by DNRC forest managers.

Response: We recognize the potential for timber harvest in the riparian buffer to potentially affect stream temperature. Please refer to the response to Letter 9, comments 52 and 103, above, for an explanation of the revised temperature monitoring and adaptive management commitments incorporated in the Final HCP.

An additional commitment has been added to the Final HCP requiring a DNRC water resource specialist to review all allowances to Class 1 RMZ harvest that would affect an area greater than 1 acre in size. This commitment would require a similar level of review as required in commitments AQ-SD3 and AQ-SD4 for reducing potential sediment delivery from timber harvest and road management activities. Consultation with a Montana Fish, Wildlife, and Parks (MFWP) fishery biologist was not included in this new commitment because MFWP would not have regulatory authority over covered activities. The USFWS would monitor compliance with the HCP commitments.

The model used for the Draft EIS analysis of habitat complexity and stream temperature and shading simulated windthrow as a consequence of the approach for riparian harvest proposed in the HCP. For a more thorough discussion of these analyses, see subsections Habitat Complexity and Stream Temperature and Shading on Draft EIS pages 4-233 and 4-247, respectively.

Letter 84, comment 272: Please include a new AQ-RM4 legacy temperature restoration strategy and commitment(s) both for forestry activities (road stream crossing removals and road decommissioning) and for grazing activities (woody riparian cover/greenline condition). As outlined in AQ-SD2 #s 5, 6, 7, and 8 (for sediment restoration), the framework for this temperature restoration strategy/commitment can be fairly simple. We acknowledge that shared ownership roads and areas with limited or tiny HCP project area parcels may be screening criteria for priority setting under these temperature restoration commitments.

Response: While the proposed HCP does not contain a strategy specifically addressing legacy stream temperature restoration activities for roads, stream crossings, and grazing, the HCP framework provides multiple mechanisms to fully address potential legacy impacts from these activities. Commitments AQ-SD2 (Draft HCP page 2-91), AQ-FC1 (Draft HCP page 2-103), and AQ-GR1 (Draft HCP page 2-112) all include inventory and evaluation of legacy problems and corrective actions. The scientific literature overwhelmingly indicates that the single greatest potential impact to stream temperature is from timber harvest within the riparian zone. To address this issue, the proposed HCP also includes specific conservation measures (riparian timber harvest conservation strategy on Draft HCP pages 2-63 through 2-78) and monitoring and adaptive management components (see Draft HCP pages 4-40 through 4-43).

Letter 84, comment 273: Please include watershed-type temperature effectiveness monitoring indicators (fish habitat shade conditions [with comparisons to identified reference conditions], in-stream water quality restoration [macroinvertebrate species composition analysis in comparison to reference conditions], riparian vegetation cover and slope condition [both forest and rangeland woody vegetation condition in relation to reference conditions], and stream corridor road effects [such as stream corridor road density in road miles per stream mile in comparison to reference conditions]) in the Cumulative Watershed Effects Conservation Strategy (HCP page 2-117) and the Aquatic Monitoring Strategy, Section 4.6, with specific activities for monitoring in-stream shading, macroinvertebrates, and woody bank cover (as part of AQ-CW1 #3) and for fish habitat complexity (i.e., road corridor effects) as part of AQ-CW1 #3.

Response: The proposed HCP includes measures to monitor the effectiveness of all the individual aquatic conservation strategies. The parameters measured through the monitoring strategy were deemed appropriate for the goals and objectives of the HCP. For example, the HCP includes a site-specific approach for monitoring the effectiveness of riparian timber harvest in maintaining stream shade and temperature regimes to support HCP fish species. For the sediment delivery reduction conservation strategy, the monitoring parameters and methods used will be selected on a project- or site-specific basis from established procedures that have been demonstrated to be practicable, cost-effective, and suited to address HCP conservation objectives. The CWE conservation strategy addresses a process for DNRC to analyze existing watershed conditions, assess proposed project risk, and mitigate risks for specific habitat elements within individual watersheds at a given point in time. While the CWE strategy describes a suite of parameters typically considered, the process allows a DNRC water resource specialist to design the analysis and subsequent monitoring using those parameters and methods most suited for each individual project. In addition, the USFWS would periodically review the adequacy of DNRC CWE analysis and thresholds in protecting HCP fish species habitat and suggest modifications, as necessary, through the adaptive management program.

Letter 84, comment 305: As noted in our previous comment regarding addition of a new legacy temperature restoration strategy and commitments, it is crucial that monitoring include reference reaches in streams with little forestry/grazing activities in order to provide comparative effects of DNRC riparian management activities. Use of reference reaches with similar conditions (geologically, geomorphically, and climatically) to monitored HCP lands would minimize the effects of normal natural season/cyclical/climatic variations and should reduce the overall cost of stream section monitoring and analysis.

Response: Under the proposed HCP, DNRC is required to monitor temperature and LWD against thresholds based on local reference reach data (see Draft HCP Chapter 4, Monitoring and Adaptive Management). In the case of temperature monitoring, any change in temperature would be compared to a baseline temperature as measured during pre-project monitoring (which, in many cases, represents an unmanaged stand that would

essentially function as reference conditions). In addition, the LWD targets are also based on site-specific reference conditions (if data are available). We note that DNRC has conducted ongoing water quality monitoring in selected basins and reaches over the last 20 years. Where available, such site-specific data would be incorporated into the CWE analysis and in setting project-specific monitoring targets.

Letter 109, comment 479: The DEIS discloses that there is scant data on temperature for state lands in Montana (DEIS, page 4-182). Instead the analysis used a model that states 45 to 70% canopy cover meets Washington water quality parameters for salmonids. In 1998, Washington state's temperature criteria was inadequate to protect bull trout (see Bull Trout Interim Conservation Guidance). Have Washington's water quality temperature standards been changed? If so, what are they now and do they maintain temperatures that are cold enough for bull trout? If not, why are they being used?

Response: The Draft EIS acknowledges that the shade model was developed in Washington; however, it also states that the inputs were modified for site-specific characteristics in Montana. The modeling completed for stream shade in the Draft EIS used data from DNRC riparian stands representative of the HCP project area. The results of this analysis indicate that shade levels under the proposed HCP are not expected to decrease when compared to pre-harvest conditions. Based on the shade analysis, stream temperatures are not expected to measurably increase under the proposed HCP. Please see Draft EIS pages 4-247 through 4-254 for details.

Letter 120, comment 617: Maintaining cold water temperatures for bull trout is critical now more than ever, particularly in the face of climate change and a warming watershed. Recent studies in the Columbia River Basin estimate that: "warming over the range predicted could result in losses of … 27–99% of large habitat patches" for bull trout (http://www.clarkfork.org/climate-action-in-the-clark-fork/low-flows-hot-trout.html). The shade modeling used in the DEIS should therefore take into consideration climate change, as the riparian buffers currently needed to maintain cold instream water will likely not be adequate in a few decades based on temperature modeling in the region. Decreasing shade by removing riparian trees also increases evapotranspiration, which can lead to dewatering of the stream and further stream temperature increases.

Response: We agree that maintaining cold-water stream temperatures is critical for bull trout survival and that a warming trend due to climate change on a regional/global scale could adversely affect this species and other cold-water native fish. Reiman et al. (2007) predicted bull trout may be especially vulnerable because of its cold-water adapted spawning and rearing requirements, and Kinsella et al. (2008) suggested that, in general, trout habitat in the western United States could be reduced by half due to global warming.

The shade modeling simulation analysis presented in the Draft EIS used the riparian aquatic interaction simulator (RAIS) model (Welty et al. 2002), which predicts total shade values or percent blocking solar radiation. It is a useful model because of its ability to apply site-specific physical stand characteristics to determine the overall effectiveness of stream channel shading as directly related to stream temperature. Other HCPs also use this model for similar purposes. Furthermore, DNRC commits in the proposed HCP to monitor actual effects on in-stream shading in conjunction with other riparian habitat variables to validate analysis outputs in the Draft EIS and ensure that the aquatic conservation strategies' biological goal of protecting bull trout and their habitat is being met. If in-stream shade monitoring results, in conjunction with stream temperature analysis results, indicate that the goal is not being met, then the adaptive management process would be implemented.

Climate change is addressed in the proposed DNRC HCP as a changed circumstance (see Draft HCP page 6-11). The USFWS and DNRC are aware of the potential effects climate change may have on the aquatic environment over the 50-year Permit term. The discussion of these effects has been updated in the Final EIS (see Section 4.1, Climate, and Section 4.8, Fish and Fish Habitat). The first target objective stated for the proposed HCP's aquatic conservation strategies is that DNRC would "manage for suitable stream temperature regimes" (Draft HCP page 2-59). To ensure this objective would be met over the Permit term, DNRC would annually monitor stream temperatures to verify modeled outputs and to determine whether temperatures are within exceedance criteria (see the response to Letter 9, comment 52). Reiman et al. (2007)

observed that predicted changes were not uniform across the range of bull trout and that some populations may face higher risk than others because the predicted habitat response to climate change will be variable and patchy. Under the proposed HCP, an increase in stream temperature could trigger a change in the riparian prescription for some or all stand types under the monitoring and adaptive management commitments.

2.1.5 Roads, BMPs, and Corrective Actions

Letter 4, comment 17: It's a waste of money to reclaim roads. It also concentrates users into much higher densities.

Response: The factors DNRC considers in its decision to reclaim roads are described in ARM 36.11.421, particularly items (2c), (10), and (11). As demonstrated in this rule, the concerns raised in your comment are considered prior to deciding whether to reclaim a road. We note that under the HCP, ARM 36.11.421 would be revised to replace the term "abandon" with the term "reclaim." Road reclamation requires DNRC to remove drainage structures (culverts) and stabilize the road in a manner in which it would not require ongoing maintenance whereas an abandoned road may retain drainage structures.

Letter 9, comment 65: We support the more timely road condition inventory and corrective actions associated with Alternative 3 (e.g., completing road inventory for bull trout watersheds in 5 years rather than 10 years, and taking corrective actions on high-risk sites within 10 years rather than 15 years).

Response: The USFWS has noted the commenter's preference for the road inventory and corrective action timelines associated with Alternative 3.

Letter 9, comment 66: Grading (blading) of unpaved roads in a manner that contributes to road erosion and sediment transport to streams and wetlands should be avoided. It is important that management direction assures that road maintenance be focused on reducing road surface erosion and sediment delivery from roads to area streams. Practices of expediently sidecasting graded material over the shoulder and widening shoulders and snow plowing can have adverse effects upon streams, wetlands, and riparian areas that are adjacent to roads. Also, road use during spring breakup conditions should be avoided. Snow plowing of roads later in the winter for log haul should also be avoided to limit runoff created road ruts during late winter thaws that increase road erosion (i.e., ruts channel road runoff along roads).

Response: The proposed HCP commitment AQ-SD3 (Draft HCP page 2-94) includes measures that specifically address reduction of sediment delivery from road maintenance activities. These measures include implementation of the current SMZ Law, Forest Management ARMs, and Montana Forestry BMPs, as well as development of site-specific BMPs and other mitigation measures recommended by DNRC water resource specialists. The SMZ Law and Forest Management ARMs prohibit the side-casting of road material into a stream, lake, wetland, or other body of water during road maintenance operations (MCA 77-5-303(1)(f) and ARM 36.11.308). The Montana Forestry BMPs specifically include avoiding the use of roads during wet periods, such as spring breakup, that would likely damage drainage features. DNRC contract administration and contract inspections are used to ensure that roads are not used when wet conditions would cause damage. Under the proposed HCP, DNRC would be required to continue to administer road construction and road maintenance projects on a weekly basis to ensure that BMPs and other resource protection requirements are met.

Letter 9, comment 67: For your information, we have listed below some of our general recommendations regarding road planning, design, construction, and maintenance measures to minimize water quality effects. (1) Minimize road construction and reduce road density as much as possible to reduce potential adverse effects to watersheds. (2) Locate roads away from streams and riparian areas as much as possible. (3) Locate roads away from steep slopes or erosive soils. (4) Minimize the number of road stream crossings. (5) Stabilize cut and fill slopes. (6) Provide for adequate road drainage and control of surface erosion with measures such as adequate numbers of waterbars, maintaining crowns on roads; installing and replacing culverts; installing drainage dips or surface water deflectors; adequate numbers of rolling dips and ditch relief

culverts to promote drainage off roads, avoid drainage or along roads, and avoid interception and routing sediment to streams; ditch construction and cleaning; armoring drainage structures; grading and replacement of aggregate to reinforce wet surface areas. (7) Consider road effects on stream structures and seasonal and spawning habitats. (8) Allow for adequate LWD recruitment to streams and riparian buffers near streams. (9) Properly size culverts to handle flood events, pass bedload and woody debris, and reduce potential for washout. (10) Replace undersized culverts and adjust culverts which are not properly aligned or which present fish passage problems and/or serve as barriers to fish migration. (11) Use bridges or open bottom culverts that simulate stream grade and substrate and that provide adequate capacity for flood flows, bedload and woody debris where needed to minimize adverse fisheries effects of road stream crossings.

Response: The proposed HCP includes commitments to implement the current SMZ Law, existing Forest Management ARMs, and Montana Forestry BMPs, as well as requiring the development of site-specific BMPs and other mitigation measures recommended by DNRC water resource specialists. The comprehensive list of specific practices included in these commitments adequately address all of the commenter's general recommendations regarding road planning, design, construction, and maintenance.

Letter 84, comment 289: We are pleased the HCP makes a commitment to reduce potential sediment delivery from existing roads to streams supporting HCP fish species, and to road management practices and measures intended to reduce sediment delivery to streams support HCP fish species (HCP page 2-79, AQ-SD2 and AQ-SD3, pages 2-91 to 2-99) by 10% per decade (HCP Table 4-7). Improvements to forest road systems and proper road maintenance and road BMP and drainage improvements are critical to protecting and restoring aquatic health.

Response: Your comment is noted.

Letter 84, comment 296: It is important that road maintenance be focused on reducing road surface erosion and sediment delivery from roads to streams. Practices of sidecasting graded material over the shoulder and widening shoulders and snow plowing can have adverse effects upon streams, wetlands, and riparian areas that are adjacent to roads. Road use during spring thaw and frozen road breakup conditions should also be avoided.

Response: Please see the response to Letter 9, comment 66, above.

Letter 90, comment 335: Economics of timber out-weigh water quality improvements. Economics will be favored when moving roads out of SMZs (EIS page 4-54). What is the legal definition of "SMZ impacts cannot be mitigated" (HCP page 2-90)? Why will DNRC only consider relocating roads outside of the SMZ even when impacts cannot be adequately mitigated? Where is the stick here to improve water quality?

Response: While economics are always an important consideration in transportation planning, including the decision to relocate a road outside an SMZ, other factors are also equally considered. These factors include (1) the risk, extent, magnitude, and duration of existing or potential impacts to water quality and aquatic resources; (2) the feasibility of bringing the road up to minimum BMP standards; (3) the availability of alternative road locations; and (4) financial constraints. Please also see the general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 90, comment 336: Finances will be the driving force when deciding road restrictions or abandonment (HCP page 2-90).

Response: While cost is always an important consideration, the decision to restrict, abandon, or reclaim existing roads would be based on many factors in addition to cost, including the risk of resource damage, future management needs, desired future stand conditions, silvicultural objectives, infrastructure needs, fire protection access needs, and available human and financial resources. Please also see the general response to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 94, comment 378: We further believe the objective for AQ-SD2, in which problems are corrected for roads along bull trout streams within 15 years and for other species within 25 years, should be modified. We

recommend shorter timeframes--no more than 10 years for roads along bull trout streams and no more than 15 years for other species.

Response: We have noted the commenter's preference for a shorter timeframe for corrective actions for roads along streams supporting HCP fish species. The USFWS supports the timeframes for corrective actions in the proposed HCP given DNRC's available resources.

Letter 94, comment 379: We recommend that commitment AQ-SD2 be expanded beyond roads in which DNRC has sole ownership. DNRC should also correct problems on road reaches along streams where bull trout and other native species occur within its ownership when the agency owns at least 25% of the stream miles. Further, DNRC in developing and renewing its cooperative road agreements should work in concert with adjacent landowners to promote similar measures on non-DNRC road segments. The USFWS could consider developing a credit system, wherein if DNRC works on a cooperative basis with an adjacent landowner to significantly reduce impacts from a road that is significantly harming bull trout or cutthroat trout habitat (or even leads to removal of that road), then the State could count that against its obligation to do that on its holdings.

Response: The USFWS supports the rationale for DNRC to limit corrective actions to those where it has sole ownership (see Draft HCP page 2-94). On roads with shared ownership, DNRC has committed to working with its road cooperators to address problem road segments, and the Final HCP has been revised to include both moderate- and high-risk sites in this commitment.

Letter 100, comment 407: I realize roads are needed for both management and extraction of resources and to provide for public recreation. However, roads do impact and reduce wildlife habitat, are vectors for invasive species introduction, and can be a source of vandalism and resource damage. There is no disagreement that roads (and associated human use) can and have affected certain wildlife species. Roads have also degraded aquatic habitat. Even though we have improved road design, we still continue to add BMPs to help reduce sediment delivery to waterways. As we continue to come up with new information and BMPs, it is obvious that we acknowledge that waterways are being impacted. I don't think we will ever develop a neutral road system, but we do need some level of road access. Therefore, my experience as a resource manager has been to minimize the amount of road to provide effective management and required land access while managing to provide for other habitat resources. And with these thoughts in mind, we tried to provide for multiple use.

Response: The proposed HCP includes commitments to minimize the amount of roads needed for DNRC forest management activities. These commitments include DNRC conducting transportation planning as part of landscape-level and project-level evaluations. These evaluations will consider: (1) existing and future access needs, (2) existing access routes and road systems on adjacent parcels, (3) logging system capabilities, (4) alternative logging systems that minimize road needs, (5) access needed for fire protection, (6) public access, (7) cooperative road planning with adjacent landowners, and (8) protection of wildlife and aquatic habitat.

Letter 101, comment 417: Commitments AQ-SD2 #s 8 and 9 pertain to DNRC's intent to implement corrective actions for high-risk and moderate-risk sites only on roads where DNRC has legal access and sole ownership. Our reading indicates that DNRC will not engage in corrective action for moderate-risk sites with other cooperators on sites DNRC uses but does not own. Plum Creek suggests that DNRC work with other landowners to bring jointly used roads up to BMP standards regardless of who owns them, as is committed in Plum Creek's NFHCP.

Response: Under the proposed HCP (commitment AQ-SD2 item (9)), DNRC would work with other cooperators to address road segments under shared ownership that have been identified as having a high risk of sediment delivery. The Final HCP has been revised to include both moderate- and high-risk sites when working with other cooperators to address road problems on sites where DNRC does not have sole ownership.

Letter 106, comment 461: AQ-SD1 #6: Do not abandon roads that will be essential to long-term management needs. This short-term view of roads will become extremely costly to DNRC in the future. Especially in grizzly bear areas, once a road is abandoned, it is extremely unlikely that it will ever be re-built or re-used. Most managers are not good at looking at long-term needs, and decisions are based upon short-term desires and conditions rather than true long-term planning.

Response: The Final HCP has been revised to address the commenter's concern regarding road access and long-term management needs. Under the revised commitment, DNRC would restrict or reclaim roads that are non-essential to long-term management needs or where unrestricted access would cause excessive resource damage. When conducting transportation planning, DNRC would carefully consider existing and probable future access needs.

Letter 106, comment 462: AQ-SD2: How can you commit to the timeliness in these sections with no additional funding and personnel? What is the estimated total cost of this commitment?

Response: The estimated cost of HCP implementation is provided in Draft HCP Chapter 8 (HCP Implementation). This chapter also includes a discussion of DNRC's budget process and how DNRC would fund the HCP. DNRC anticipates that implementation of the HCP commitments will be accomplished without adding staff by re-allocating existing staff resources.

2.1.6 Road Mileage and Density

Letter 9, comment 59: There are relatively high road densities on state forested trust lands (3.1 mile per square mile), and this road density is proposed to increase over the 50-year permit period (to 4.7 miles per square mile). The existing and proposed HCP road densities far exceed road densities considered to be protective of bull trout habitat. Increases in road density from 3.1 miles per square mile to 4.7 miles per square mile, as proposed in Alternative 2, appear inconsistent with bull trout conservation and protection. AQ-SD1 provides no meaningful reduction in road density that would conserve and protect bull trout and other HCP fish species.

Response: Please refer to the response to Letter 9, comment 61 (below).

Letter 9, comment 61: To be more consistent with conservation and restoration of the threatened bull trout and other HCP aquatic species, we recommend that a commitment be made over the life of the HCP to reduce road density to a level that is more compatible with conservation and protection of these sensitive trout species. DNRC and the USFWS should at least target reductions in road density for sensitive watersheds and/or high road density watersheds with HCP fish species. Road density would then be another parameter to monitor and assess over time.

Response: Roads are necessary for DNRC to conduct commercial forestry. However, high road densities in bull trout watersheds are of concern to the USFWS, especially roads constructed in riparian areas, and this was identified as a factor in the federal listing of bull trout as threatened. The amount of road proposed under all the HCP alternatives is what DNRC estimates it would need to access all the timber stands in the timber base used in the sustainable yield calculations. The measures DNRC would implement to offset the effects of those roads are described in the general responses to comments concerning proposed road building under the HCP (Section 2.8). Certain road segments, especially those built on erodible soils, steep or unstable slopes, and close to streams, can affect fish through excessive sediment input and related habitat degradation. These conditions are addressed in the proposed HCP through commitments that minimize the number of roads and stream crossings necessary, require inventory and correction of sediment problem sites, and reduce the potential for sediment production from new roads (see commitments AQ-SD1, AQ-SD2, and AQ-SD3, respectively, on Draft HCP pages 2-79 through 2-101).

The USFWS supports the conclusions of the Draft EIS sediment modeling, which showed that despite anticipated increases in road miles, road miles within 300 feet of streams, and stream crossings (Draft EIS Table 4.8-20), there would be an estimated net decrease in sediment production of 72 percent when BMPs are

implemented, based on the net increase and total road miles at the end of the Permit term (Draft EIS Table 4.8-19). The net sediment delivery reduction would primarily result from upgrading existing roads, while minimizing sediment impacts from new roads and stream crossings by applying BMPs and other sediment-reducing mitigation measures as required by the HCP. Furthermore, the effectiveness of BMPs to control road surface drainage away from streams would be monitored and assessed and, under the adaptive management framework, evaluated to ensure that the HCP would achieve the anticipated net reduction in sediment. The provisions of applying BMPs and mitigation measures on new road construction beforehand would ensure that mitigation occurs before adverse impacts can happen.

Through project implementation and monitoring, DNRC would be required to demonstrate that it is minimizing roads, addressing problem sites in a timely manner, and reducing sedimentation associated with new roads in the HCP project area. The monitoring and adaptive management program outlined in Draft HCP Chapter 4 (Monitoring and Adaptive Management) is structured such that the USFWS can monitor DNRC's road commitments and initiate management actions and responses if DNRC is not adequately demonstrating that it is meeting the commitments. The collective actions of minimizing new road construction, applying BMPs to new roads, repairing and upgrading problem areas in a timely manner, and reclaiming or abandoning non-essential roads are expected to adequately minimize and mitigate effects of impacts from roads on HCP fish species and their habitats. However, the USFWS will make this final determination in its ESA Section 7 biological opinion and ESA Section 10 statement of findings.

Letter 9, comment 62: We encourage the USFWS and DNRC to consider including additional road decommissioning in watersheds with bull trout and other HCP fish species to further reduce road densities in the area, particularly in drainages with high road density, water quality problems, and/or fisheries habitat impacts related to roads.

Response: The Draft HCP includes commitments for DNRC to reclaim roads that are non-essential to near-term future use (commitment AQ-SD1 item (6)) and to relocate roads outside of SMZs when potential impacts to water quality and aquatic habitat cannot be adequately mitigated (commitment AQ-SD1 item (5)).

Letter 84, comment 281: In order to provide consistent methods for watershed metrics for assessing watershed road effects, please include a commitment that HCP fishery/road assessment methods (i.e., stream crossings per stream mile, and the 300-foot stream inventory method) will be consistent with adjacent USFS fishery/road assessment methods.

Response: While it is useful to draw from other relevant plans addressing forest management and conservation, the HCP is written based on the needs of the HCP species as affected by the proposed activities while acknowledging the action agency, its mandate, operational needs, program goals, and ESA obligations. Therefore, it is not always appropriate for one entity to adopt the methods or conservation measures of another entity. The Draft HCP road assessment methods for determining stream crossing densities and other metrics of road effects are appropriate to DNRC's forest management program and are adequate to assess watershed-scale issues.

Letter 84, comment 282: As part of AQ-SD1 #s 2, 5, and 6, please identify goals for stream road crossing and riparian corridor (300 feet) riparian road density levels for existing and linkage bull trout/westslope cutthroat trout/Columbia redband trout areas that are protective of trout habitat/populations within HCP lands. Consultation with USFWS and MFWP would be helpful in assembling these core and linkage habitat goals (these guidelines may also include cumulative habitat guidelines).

Response: Please refer to the response to Letter 9, comment 61, above. Additionally, the overall goal of the sediment delivery reduction conservation strategy, including commitment AQ-SD1, is to reduce sediment delivery to streams within the HCP project area. On blocked lands, DNRC has identified existing and proposed new roads, road segments that may be relocated (within 300 feet of a stream), and roads that may be abandoned through its proposed transportation plans (see commitments GB-ST1 and GB-SW1 on Draft HCP pages 2-19 and 2-20, respectively). Additionally, by conducting road inventories in key watersheds occupied

by HCP fish species, DNRC's specific goal is to first address the most serious road sediment problems by fixing those problems posing the highest risk of delivering sediment to the stream. Corrective actions needed to fix the problem road segments or stream crossings would be prioritized by risk and then categorized into a time-sensitive window based on whether the watershed is occupied by bull trout. The USFWS would monitor compliance of this commitment and conduct field inspections to ensure that timely repairs are implemented by DNRC. Regarding improvement of stream crossings, DNRC would coordinate with MFWP to ensure that removing a fish barrier would benefit native fish and not allow expansion of non-native fish distribution into upstream areas that are uninhabited or inhabited by native fish.

Letter 94, comment 377: We largely support AQ-SD1, AQ-SD2, AQ-SD3, and AQ-SD4 as commitments. Not only do they make sense from a sediment delivery perspective, but they help ensure cost effectiveness. However, disappointingly, the HCP includes no target on what should ultimately be the complete road system for DNRC's lands, unit by unit, that best accommodates native fish species and the agency's management obligations. We believe that Alternative 3 reflects most closely where the agency ought to be headed in respect to road inventory.

Response: The USFWS has noted the commenter's support for Alternative 2 sediment delivery commitments and preference for the inventory timeline in Alternative 3. Regarding the comment that there is no target for roads on DNRC lands, please refer to the response to Letter 9, comment 61, above.

Letter 109, comment 484: The DEIS discloses that "despite implementation of the HCP commitments, increased sediment levels may occur from the surface of existing roads that are within 300 feet of a streams…as well as sediment produced from stream crossings… Relative to connectivity, adverse effects associated with 106 fish passage culvert barriers have been identified within the HCP project area." This may result in adverse effects to the Primary Constituent Elements (PCEs) for complex stream channels, substrate habitat, migratory corridors and non-native species interactions (DEIS, page 4-265). Allowing adverse effects to PCEs does not minimize and mitigate "take." The HCP must be more stringent to address those adverse effects and restrict the miles of new roads.

Response: The proposed HCP's aquatic conservation strategies include commitments to reduce sediment delivery from roads within 300 feet of streams and at road-stream crossings and to provide connectivity among sub-populations of HCP fish species. While the Draft EIS analysis of these commitments disclosed potential adverse impacts of possible departures from these commitments, the commitments are intended to minimize and mitigate take to the maximum extent practicable such that more stringent commitments are not warranted. However, departures from these commitments, if they occur, would be reviewed annually by the USFWS to ensure that resource protection is occurring at acceptable levels and appropriate mitigation measures are being implemented, especially near streams containing primary constituent elements (PCEs) for bull trout and essential habitat for other HCP fish species. If not, the USFWS may suspend or revoke all or part of the Permit. Additionally, the USFWS will analyze potential effects of the proposed HCP on critical habitat for bull trout as part of its ESA Section 7 biological opinion before determining whether to issue the Permit.

Letter 109, comment 485: The DEIS discloses that there are 225 sensitive parcels in the HCP project area. The Stillwater aquatic analysis unit has more sensitive parcels than any other at 36%. The Bitterroot, Blackfoot, North Fork Flathead, and Swan each have 10 to 15% of HCP acres in sensitive parcels. Currently under the Swan Agreement, the Swan River State Forest is on a schedule where each grizzly bear management subunit can have 3 years of activity followed by 7 years of rest. Alternatives 2 and 4 would use a similar scheme of 4 years of activity followed by 9 years of rest for the Stillwater State Forest. We understand the rationale for this under the Swan Agreement; however, that agreement was reached in 1995 prior to listing of bull trout and has not been revised to reflect changed conditions. Since the Sustained Yield Calculation, timber sales on the Swan River State Forest have become larger (over 20 million board feet for Three Creeks and White Porcupine timber sales). Coupled with road construction and road upgrades, these projects are compressing many sediment generating activities into a watershed during a 3-year period. This

was never analyzed during the Swan Agreement process, and there is no analysis in this HCP DEIS. Under Alternatives 2 and 4, the Stillwater State Forest would be placed on a similar rotation, again without any analysis of the effects on these sensitive watersheds and fish habitat.

Response: In response to the comment, the Final EIS was revised to include a discussion of the effects of compressing timber harvest activities, including road building, harvest, and implementation of corrective actions, in a condensed time period (Section 5.6, Cumulative Effects – Fish and Fish Habitat). We agree that in areas like the Stillwater and Swan River State Forests there would be an increase in new road construction during the Permit term. Also, we agree that large commercial timber sales would be restricted in these areas to those certain time periods where timber harvest and related activities are allowed. New road construction and correction of problem sites would likely occur during these years of active timber harvest, and the risk of sediment delivery may increase during and for a short time after this active period has ended.

Letter 120, comment 606: The DEIS states that roads have adverse impacts on wildlife, fish habitat and water quality, which is well documented in scientific literature. Yet none of the proposed alternatives minimize overall road densities, which would be an obvious means of reducing "take" for aquatic species. In all alternatives, including the preferred alternative, DNRC plans to increase road densities, which will harm water quality and impede native trout recovery. All HCP alternatives construct between 1,322 and 1,408 miles of new roads and an undetermined amount of temporary roads in addition to the already high road densities on school trust lands. The HCP proposes to construct new roads very near riparian resources, in addition to the 700 miles of existing roads already within 300 feet of a waterway within the HCP area: preferred Alternative 3 would add 101 miles of new roads in riparian areas. Constructing and maintaining roads this close to a stream exponentially increases the threat to water quality and native fisheries. The number of stream crossings will increase under all alternatives proposed in the DEIS from the 2,200 that already exist: preferred Alternative 3 would construct 377 new stream crossings across our fragile waterways, increasing the potential for sediments to erode directly into streams.

Response: Please refer to the response to Letter 9, comment 61, above.

Letter 120, comment 608: The DNRC is unable to maintain the current road network, which contains thousands of miles of "legacy" roads that are already increasing instream sediment and causing connectivity problems for native fish. How does the DNRC propose to mitigate the problems from constructing new roads? The Coalition believes that the HCP must cap and reduce total road densities rather than constructing any new permanent roads, and obliterate or decommission more existing "legacy roads" to conserve the native trout species in the project area.

Response: Most of the problem segments of legacy roads that have contributed to increased sediment delivery to streams and affected fish passage were poorly located (i.e., immediately adjacent to streams or in ephemeral draw bottoms) and were built to lower standards that existed prior to the development and implementation of the current Montana Forestry BMPs. The proposed HCP includes comprehensive commitments to identify and correct these legacy issues (commitments AQ-SD2 and AQ-FC1). For a discussion of road densities and how the HCP mitigates problems associated with constructing new roads, see the response to Letter 9, comment 61.

Letter 169, comment 688: A cap on the density of roads in watersheds that maintain HCP species should be considered. While best management practices (BMPs) and other mitigation measures can help to minimize the impacts of timber harvest in a drainage, high road densities tend to degrade water quality and fish habitat– even if all BMPs are strictly adhered to. It seems that a reasonable road density could be negotiated that would allow timber harvest while providing a higher level of protection for aquatic HCP species.

Response: See the response to Letter 9, comment 61.

2.1.7 Road Inventory

Letter 9, comment 64: We are pleased that DNRC has made a commitment to reduce potential sediment delivery from roads to streams supporting HCP fish species, and to construct, maintain, abandon, reclaim, and use roads with practices and measures that reduce risk of sediment delivery to streams supporting HCP fish species (Volume II, page 2-79, AQ-SD2 and AQ-SD3, pages 2-91 to 2-99). We encourage conduct of inspections and evaluations to identify conditions on roads and other anthropogenic sediment sources in the watersheds in the project area that may cause or contribute to sediment delivery and stream impairment, and to include activities in the HCP to correct as many of these conditions and sources as possible. We also recommend amending the DNRC Road Inventory Field Form (Appendix B, page B-21) to include assessment of road BMPs and road erosion and road drainage conditions, so that conditions that result in erosion of road surfaces and production and transport of sediment to streams and wetlands are evaluated during road inventories.

Response: The road segment description and condition portion of the Road Inventory Field Form (Document B-5 in Draft EIS Appendix B, HCP Documents) includes an evaluation of each road segment regarding the presence and extent of road surface erosion, fill slope or cut slope erosion, mass failures, and existing or potential sediment delivery to streams, ephemeral drainage features, or other water resources. The DNRC Stream Crossing/Drainage Feature Form includes an evaluation of all road surface drainage features, ditch drainage systems, catch basins, and ditch relief structures. We note that DNRC is updating its road inventory data collection methods to use electronic data recorders and spatial attributes that will facilitate more efficient and cost-effective collection and compilation of road inventory data. Through this process, the Stream Crossing/Drainage Feature Form is automatically integrated into the overall road inventory field form. Therefore, DNRC would continue to collect all the information necessary to determine the risk of sediment delivery occurring at each road segment evaluated.

Letter 84, comment 283: We ask that the HCP identify the number and location of road conditions which are contributing to sediment delivery in streams, and that the HCP prioritize BMP and reasonable land, soil, and water conservation practices to correct significant road sediment sources.

Response: Under the proposed HCP, DNRC would inventory all its existing roads to assess existing and potential sources of sediment delivery to streams (commitment AQ-SD2). The USFWS supports this approach and considers the estimates DNRC produced for the purposes of the EIS analysis satisfactory for the programmatic nature of this plan (see Draft EIS page 4-221). Commitment AQ-SD2 includes a system to classify the risk of sediment delivery at each road segment or site, as well as a process for prioritizing implementation of corrective actions. Corrective actions would include the development and implementation of site-specific road improvements, road upgrades, road abandonment or road reclamation, and other mitigation measures necessary to bring problem road segments up to minimum BMPs. These measures are essentially analogous to reasonable land, soil, and water conservation practices.

Letter 84, comment 284: We support amending the DNRC Road Inventory Field Form (Appendix B, page B-21) to include assessment of road BMPs, road drainage, and road erosion conditions, so that erosion from road surfaces and the likely production/transport of sediment to waters of the state and wetlands are assessed during road inventory field work.

Response: See the response to Letter 9, comment 64.

Letter 84, comment 290: We encourage ongoing BMP evaluations to identify conditions on roads and other anthropogenic sediment sources that may contribute to sediment delivery and stream impairment, so that these evaluations will lead to HCP activities to correct these conditions and sources. As mentioned in a previous comment, we also recommend amending the DNRC Road Inventory Field Form (Appendix B, page B-21) to include assessment of erosion and road drainage conditions that result in erosion of road surfaces and production/transport of sediment to state waters and wetlands are evaluated during road inventories.

Response: See the response to Letter 9, comment 64 and Letter 84, comment 283.

Letter 84, comment 291: We suggest that inventory assessments assess the degree to which bridge decks drain directly to streams, and to use these assessments in setting priorities for reducing bridge drainage directly to streams.

Response: See the response to Letter 9, comment 64. DNRC assessments of all stream crossing structures examine the potential for direct sediment delivery to the stream, including drainage from bridge decks. The Road Inventory Field Form (Document B-5 in Draft EIS Appendix B, HCP Documents) includes a section for a general description of deficiencies and recommended corrective actions. This section is used to assess bridge deck drains and potential corrective actions. We note that road inventory forms are being revised and automated for on-site data collection. These revisions will include a prompt for assessing each structure for sediment delivery to streams.

Letter 90, comment 344: The HCP is not complete and already DNRC wants to change it in regards to road inventories (EIS page 4-54).

Response: We assume that the text referenced in the comment pertains to DNRC's existing ARMs (Alternative 1), and we apologize for the confusion. Currently, DNRC is required to inventory roads every 5 years (ARM 36.11.421(12)). The Draft EIS states that DNRC does not currently comply with that ARM's requirement on all lands and needs to reevaluate its current program to either meet the ARM or propose a revision to the ARM with a more achievable timeframe for completing inventories. Under the HCP, DNRC would inventory roads in watersheds occupied by HCP fish species based on the schedule contained in commitment AQ-SD2 (Draft HCP page 2-91).

2.1.8 Temporary Roads

Letter 109, comment 490: The DEIS fails to analyze the impacts of temporary roads. Building roads, even temporary ones, across wet areas and streams have significant effects on watersheds. The impacts of building them are the same as building permanent roads.

Response: Temporary roads were included in the miles of new road estimated for each alternative in Draft EIS Table 4.4-6. The potential effects of temporary roads were considered in the resource-specific analyses of road-related effects.

Letter 120, comment 607: The DEIS fails to analyze the impacts of temporary roads, which also have significant impacts on watershed health, especially when constructed across wet areas, like streams and creeks. The greatest erosion from roads occurs during the construction phase and during the first year after construction. Even if temporary, these roads will have long-lasting impacts on aquatic resources from continued soil erosion and compaction.

Response: Please see the response to Letter 109, comment 490, above.

2.1.9 303(d) List, Impaired Waters, and TMDLs

Letter 9, comment 74: The most current 303(d) list is the 2008 list rather than the 2004 list. It would be helpful to have the analysis of water quality impairments updated using the most current 303(d) list (i.e., the 2008 list).

Response: The most current applicable data would be used during actual implementation of the proposed HCP. For example, the CWE conservation strategy (AQ-CW1) includes review of both 303(d) and TMDL information during project-level coarse filter screening process. Because the EIS/HCP process was initiated in 2003, a decision was made to use data from 2004 for all resource areas analyzed in the Draft EIS. This standard was used to address data consistency issues that are commonly associated with large complex planning projects spanning relatively long timeframes. The 2004 303(d) list was used as the baseline for the Draft EIS/HCP analysis because it was the current and best available data at the time the analysis was

completed. The Draft EIS/HCP was issued in June of 2009. At that time Montana's Draft 2008 303(d) list was still open to public comments, and the 2008 303(d) list was not formally approved by the United States Environmental Protection Agency (EPA) until December 28, 2009.

We have reviewed and compared the 2004 and 2008 lists, and while there are some differences between the lists on a site-specific or watershed scale, the differences are not substantive on a programmatic scale and would not change the conclusions reached in the Draft EIS analysis.

Letter 9, comment 75: It is not clear why the DEIS states that there are 39 threatened or impaired streams located on DNRC trust lands within the HCP project area, and it is also stated that 49 freshwater segments have been identified as impaired due to high temperature (page 4-124). This should be clarified.

Response: The Draft EIS identifies 39 stream segments in the HCP project area (forested state trust lands included in the HCP) that are threatened or impaired due to one or more causes. The Draft EIS also describes 49 freshwater segments that are impaired due to high temperature across all ownerships statewide.

Letter 9, comment 76: We recommend that the FEIS identify the 39 threatened or impaired streams in need of a TMDL on DNRC trust land within the HCP project area, and identify the TMDL status for these 303(d) listed water bodies.

Response: The HCP/EIS is a programmatic plan, and the scale of analysis selected for fisheries is the aquatic planning unit (see Draft EIS Section 4.8.2, Fish and Fish Habitat – Affected Environment - Key Aquatic Habitat Factors). The scale selected for analysis of water resources is the EIS planning area and HCP project area. This use of a relatively large scale is consistent throughout the Draft EIS and for other large-scale programmatic analyses similar to this project. Therefore, the discussion does not focus on individual streams, waterbodies, and smaller watershed areas. These systems would be analyzed and addressed at the project level during HCP implementation.

Letter 9, comment 77: We are pleased that AQ-SD2, AQ-SD3, and AQ-SD4 include commitments to incorporate the goals, targets, and prescriptions contained within approved TMDLs applicable to covered activities where DNRC has actively participated in the development of the TMDL, and the TMDL planning area is located within a watershed containing HCP project area parcels supporting HCP fish species (Volume II, page 2-94). We are also pleased that the DNRC will actively participate in TMDL development when 25% or more of the TMDL planning area consists of HCP project area parcels in watersheds supporting HCP fish species. Proposed land management activities in the drainages of 303(d) listed streams should not cause further degradation of 303(d) listed streams, and should be consistent with the MDEQ's TMDLs and Water Quality Plans. It is important that the HCP be coordinated with MDEQ's water quality staff to assure HCP and State forest management activities are consistent with present and future TMDLs prepared to satisfy CWA requirements. We also recommend that a caveat be included in the HCP that some watershed-scale TMDLs may be completed at a future date that cover DNRC trust land in watersheds of 303(d) listed streams. A "reopener" statement may be needed and/or adaptive management process amended to allow for HCP habitat protections to be reassessed when the larger watershed-scale TMDLs are completed at a later date.

Response: Regardless of the proposed HCP, DNRC forest management activities are subject to the TMDL process as specified in the Montana Water Quality Act (Montana Code Annotated [MCA] 75-5-703). Therefore, it is not necessary to include an additional process for TMDL development. The commitments contained in the proposed HCP do not preclude DNRC from adopting more stringent standards or watershed-specific requirements of present and future TMDLs or other requirements to satisfy the federal Clean Water Act or Montana water quality standards. The USFWS has determined that if DNRC chooses to adopt more stringent water quality standards, these changes would support HCP aquatic species habitat.

Letter 84, comment 280: The FEIS and ongoing watershed prioritization and monitoring planning would benefit from updating EIS Table 4.6-6 through incorporating the most current impaired waters listings (the 305 report for year 2008) into this table, since this current report is notably more detailed and complete that the 2004 report. The impaired waters listed on HCP lands would be an excellent preliminary indicator in

prioritizing likely legacy forest and grazing improvement activities. We recommend that DEIS Table 4.6-6 be updated as part of the FEIS and that a listing of the individual HCP streams with temperature, sediment, and nutrient impairments be included as an HCP appendix.

Response: Please refer to the responses to Letter 9, comments 74 and 76, above. The Draft HCP includes commitments to prioritize corrective actions in 303(d)-listed watersheds and watersheds in which TMDLs are already in place. These commitments, AQ-SD2 item (6) and AQ-GR1 item (9b), include prioritizing corrective actions at problem sites on legacy roads and on verified grazing problems, respectively. The Draft HCP also includes commitment AQ-CW1 item (3b), which requires DNRC to set CWE analysis thresholds for 303(d)-listed waterbodies at a level providing for a low degree of risk to beneficial uses. The most current 303(d) list would be used during implementation of these commitments.

Letter 84, comment 285: We are pleased that AQ-SD2, AQ-SD3, and AQ-SD4 include commitments to incorporate the goals, targets, and prescriptions contained within approved TMDLs where DNRC has actively participated in the development of a TMDL located within a HCP project area watershed parcel supporting HCP fish species (HCP page 2-94).

Response: We have noted your comment.

Letter 84, comment 286: DEQ appreciates that HCP road management implementation plans are intended to be consistent with present and future TMDLs prepared in satisfying CWA requirements. We recommend that the FEIS update the listing of impaired streams in need of a TMDL within the HCP area, and identify the TMDL causes for these listed impaired water bodies in an HCP appendix (as noted in a previous comment). Please note that year 2008 assessment 303/305 list is the most current assessment, rather than the older 2004 assessment.

Response: Please refer to the response to Letter 9, comments 74 and 76, above.

Letter 84, comment 287: DEQ appreciates DNRC's active participation in TMDL development when 25% or more of the TMDL planning area includes HCP project area parcels in watersheds supporting HCP fish species. DEQ notes, however, that in some cases it may be appropriate for DNRC to participate in TMDL development in watersheds with less than 25% DNRC HCP lands, particularly in those cases where DNRC lands have been shown to contribute pollutant loads or contribute to water quality aquatic habitat impairments.

Response: We acknowledge that it may be appropriate for DNRC participation in TMDL development in watersheds where it administers less than 25 percent of the land within the TMDL planning area. However, due to limited resources and staff and MDEQ's accelerated schedule for TMDL development, DNRC cannot commit to programmatic-level participation in every TMDL where it is not a major stakeholder or landowner in the TMDL planning area. Regardless of the proposed HCP commitments, if DNRC lands are identified as a major contributor to pollutant loads or to habitat impairments, DNRC would continue to make every reasonable effort to participate.

Letter 84, comment 288: HCP-guided land management activities in the drainages of 303(d) listed streams should not cause further degradation of impaired streams, and should be consistent with TMDLs and Watershed Restoration Plans. It is important that the HCP implementation be coordinated with MDEQ's water quality staff to assure HCP management activity consistency with present and future TMDLs.

Response: DNRC forest management activities conducted within drainages of 303(d)-listed streams would adhere to all applicable HCP commitments and would be conducted in accordance with MCA 75-5-702 by fully implementing reasonable land, soil, and water conservation practices to achieve compliance with water quality standards. We note that 303(d) and TMDL status is included in DNRC's project-level CWE coarse filter screening process. Additionally, under the proposed HCP, DNRC has committed to incorporating approved TMDLs that are applicable to covered activities in those cases where DNRC has actively

participated in the development of the TMDL. To the extent practicable, all activities implemented under the proposed HCP would be consistent with developed TMDLs and Watershed Restoration Plans.

MDEQ can be added to the DNRC's project scoping list if the MDEQ water quality staff are interested in coordinating present and future TMDL activities with HCP implementation.

Letter 84, comment 295: In order to align with TMDL implementation schedules, we support the less extended schedule for road condition corrective actions included in DEIS Alternative 3 (e.g., taking corrective actions on high-risk bull trout watershed sites within 10 years rather than 15 years).

Response: The schedule for the development and implementation of TMDLs in Montana has been accelerated due to judicial orders. The USFWS supports the implementation schedule for road inventory and corrective actions included in the proposed HCP and the rationale for that timeline as described on Draft EIS pages 2-93 and 2-94.

2.1.10 Baseline Data

Letter 9, comment 41: The geographic scope of the HCP is stated (Volume II, page 2-60) to be set by the distribution of HCP fish species identified in Figure C-32 (Appendix C, page C-67). We note that it may be difficult to precisely know the distribution of HCP fish species since it is difficult to sample fish, and there may be uncertainty regarding fish presence or absence. HCP fish species may become extirpated in some local habitats and recolonize others. We believe the geographic scope of the HCP should be based not only on patterns of present occurrence, since this may result in a misleading view of habitats that may be key to restoring HCP fish populations.

Response: The known distribution of HCP fish species was used to determine the scope of the HCP only in a broad sense at the landscape level. For example, it was one of the criteria used to determine which DNRC administrative units to include in the HCP project area. The actual implementation of HCP commitments regarding HCP fish species presence would be determined on a site-specific basis or on a watershed scale. The criteria used to determine HCP fish species presence is clearly outlined on Draft HCP page 2-71 (subsection Establishing HCP Fish Species Presence). This approach accounts for the difficulty and uncertainty in determining fish presence.

Letter 9, comment 42: The USFWS (to our understanding) is currently managing known occupied and potential habitat under identical guidelines. We believe potentially occupied habitat for HCP fish should be included in Tier 1 watersheds. Determination of potential distribution should involve both a detailed review of historical records of occurrence and modeling of potential habitat.

Response: In the Final HCP, commitment AQ-RM1 applies to all Class 1 streams, rather than just Tier 1 streams. Therefore, this commitment would apply to all HCP fish-bearing streams, as well as those streams that are connected to HCP fish-bearing streams but are unoccupied and have the potential to be occupied by HCP fish species.

Letter 9, comment 49: The DEIS states (Volume II, page 2-69) that only 1.3% of riparian areas adjacent to perennial streams in the HCP project area include well-stocked, mature Douglas-fir stand types resembling those stand types referred to by Chen (1991) and Brosofske et al. (1997) used to develop the microclimate protections for INFISH buffers used on federal lands. It is not clear if this low percentage of well-stocked, mature Douglas-fir stands in riparian areas in the HCP project area may be due to natural conditions or may be associated with past timber harvest practices in riparian areas. Is it appropriate to have past logging activities reduce density of riparian trees, and then state that this condition justifies continued maintenance of lower riparian tree density? The extent to which riparian tree density is a natural condition or may be influenced by prior timber management should be evaluated and discussed.

Response: Density, or trees per acre, is naturally highly variable across the many riparian habitat types in the HCP project area, and high densities in riparian areas may or may not be associated with various types of

"mature" stands. We would expect to find very few riparian stands in the project area that resemble those discussed in Chen (1991) and Brosofske et al. (1997) for many of the reasons described on Draft HCP pages 2-69 and 2-70. Naturally, these conditions were suitable for consideration in the Pacific Anadromous Fish Strategy (PACFISH) project area but are not necessarily representative of the diverse species compositions, precipitations, and stand dimensions found in riparian areas in the HCP project area. The Hessburg et al. (1999) analysis of historical and current forest stand types throughout the Columbia River basin found that forested regions within the HCP project area were expected to have had between 1.6 to 3.1 percent of various old, mature stand types (historically); current conditions contain 1.5 to 3.1 percent. The historical proportion of similar stand types in the Cascades (Hessburg et al. 1999) is expected to have been at least 7 times greater than those found in the HCP project area. Considering our analysis result of 1.3 percent did not include other old, mature riparian stand types, such as western redcedar and mixed composition, the current inventory of mature riparian stands, regardless of past timber management, is generally very representative of both expected historical and current conditions.

Letter 94, comment 364: Though the documents provide maps and a few tables of bull trout, cutthroat trout, and redband trout distribution, they include no data related to known abundance, actual occupied reaches, and known life histories or genetics. Without this detail, it is difficult to determine at any landscape scale exactly how native fish populations will be affected. The distribution maps, for instance, are so general in nature they provide no insight on where the actual occupied reaches are, or how and where connectivity can be improved among isolate populations. These maps basically reflect presence and absence at the reach scale, but include no additional quantitative information. Further, it would have been helpful if the cutthroat data would have been arranged so reviewers could understand the specific locations of populations categorized as "core," "conservation," and "sportfish," as detailed in the state MOU and conservation plan. This would be helpful to understand how the HCP will contribute--or detract from--the priorities and objectives DNRC embraced when it signed the cutthroat MOU and plan.

Response: Draft EIS Chapter 4 (Affected Environment and Environmental Consequences) provides information on the distribution, general life history, and genetics of each HCP fish species that is adequate for a programmatic plan like the proposed DNRC HCP. Also, the Draft EIS provides an analysis of the anticipated effects on native fish populations from implementation of the HCP. This information will be used in the USFWS biological opinion to determine watershed- or basin-specific and population-specific effects at the appropriate scale (e.g., bull trout core area populations) on HCP fish species. Reach-scale native fish conservation status and variables are important management criteria for DNRC, and the proposed HCP addresses reach-scale issues on a project-by-project basis during the design and planning of a project by applying the appropriate HCP prescriptions for that site. The aquatic conservation strategies in the proposed HCP would apply to any HCP fish-bearing stream, whether individuals present number 1 or 1,000. Prior to project design, maps that provide the most current HCP fish species distribution information would be referenced, as well as other information as appropriate (e.g., identification of a spawning reach in the appropriate local database). In addition, Table 4.8-12 and Figure D-9 (Appendix D, EIS Figures) identify the aquatic analysis units and the general location of the priority fish passage barriers that would be addressed to improve connectivity. DNRC makes every effort to achieve the objectives of the Memorandum of Understanding and Conservation Agreement for Westslope Cutthroat and Yellowstone Cutthroat Trout in Montana (MFWP 2007), especially at the project- or reach-scale, when the agency can participate in collaborative conservation efforts. Considering that DNRC is a land management agency with specific resource authorities, the proposed HCP integrates the goals and objectives developed in the Memorandum to the extent possible. Objective 5 in the Memorandum encourages the development of mutually acceptable conservation plans, including ESA conservation agreements such as HCPs.

Letter 94, comment 365: The HCP does say that additional fishery data "may" be collected by DNRC and MFWP, but it doesn't commit to it. It should, and it should include enumerated targets.

Response: The rationale for proposed levels of data collection is described in the Draft HCP subsection titled Establishing HCP Fish Species Presence (page 2-71). Commitment AQ-RM1 in the Final HCP has

been revised to state that DNRC would apply Class 1 stream commitments to streams that have not been verified or surveyed for HCP fish species presence but where it is reasonable to presume that native fish species could otherwise occur.

Letter 106, comment 458: Are there maps of Tier 1 and Tier 2 streams? If not, how can the effects of the commitments be analyzed if the affected areas are not identified? Who will determine presence of listed fish species? I know of multiple occasions where different agencies or different individuals within an agency cannot agree on the presence of a fish in a waterbody. To assume Tier 1 when you don't know has a significant impact in potential over restriction of management activities. The costs of monitoring and implementation have not been examined well.

Response: For the Final HCP, commitment AQ-RM1 has been expanded to apply to all Class 1 streams, eliminating the need for the tiered classification system that was used in the Draft HCP. This change to Alternative 2 is also included in the Final EIS analysis of environmental consequences. Regarding the determination of fish presence, see the response to Letter 9, comment 41. Regarding costs of HCP implementation, see the response to Letter 116, comment 534.

Letter 116, comment 534: The language (HCP, page 2-71) "the DNRC will apply Tier 1 commitments whenever survey data are not available and it is reasonable to believe that an HCP fish species is likely present" is also a concern. With that language, will a majority of Class I streams in western Montana be treated as Tier 1 streams? If this is the case, have the additional restrictions in the RMZ along with the additional costs of monitoring and reporting been considered when the sustained yield calculation was calculated for Alternative 2?

Response: Regarding the application of Tier 1 commitments to Class 1 streams, please note that commitment AQ-RM1 has been revised in the Final HCP so that it applies to all Class 1 streams. The additional cost associated with monitoring and reporting required under these commitments has been included in the estimated annual cost of the HCP (Final HCP Table 8-1). These commitments have also been included and factored into the sustainable yield analysis, as well as the Final EIS analysis of environmental consequences for Alternative 2.

Letter 120, comment 619: The DEIS does not incorporate enough data on the current status of fish populations, nor does the HCP make any commitments to metrics-based species monitoring that will measure the future outcomes of the HCP on fish populations. It's critical to define the current distribution and abundance of the threatened species the HCP aims to conserve. Without this baseline data as a "starting point" for how the populations are faring in the project areas, it's impossible to measure the outcomes of the proposed actions under the HCP. It's also irrational to assume that the HCP will be able to make any real commitment to mitigate 'take' of sensitive species without clearly stated, science-based expected outcomes for how and where the DNRC will protect, conserve, or enhance trout populations. The USFWS recently completed a Five Year Status Review of bull trout and also issued a Biological Opinion on Road Related Actions on Western Montana's Federal Lands. These documents show that of the 21 core areas in western Montana, only 9% are functioning appropriately while 65% are functioning at an unacceptable risk. Since 2000, less than 1% of the core areas have been restored to a higher condition class. Since core areas have not improved on federal lands even while federal lands tend to have higher standards in place for conservation commitments (i.e. the INFISH standards described above), this begs the question of how the DNRC's HCP—which includes intensive timber harvest, new roads, logging within riparian areas, and 25+ year-timelines for mitigation activities—will realistically improve bull trout habitat and mitigate take.

Response: The Draft EIS used a watershed approach (Draft EIS page 4-159) to analyze habitat and fish population conditions within the HCP project area. Information in the Draft EIS regarding distribution of HCP fish species was obtained through the Montana Natural Resource Information System (NRIS) internet database, which is the most current and best source available. Please refer to the response to Letter 9, comment 74 (Section 2.1.9), regarding the use of 2004 data for the programmatic EIS analysis. HCP fish

species presence in the planning area was derived from the NRIS database and is conservative because it included known and presumed fish distribution (see Draft EIS Figure D-11 in Appendix D, EIS Figures).

For the purpose of developing the HCP commitments and EIS analysis, the USFWS presumed baseline conditions for watersheds occupied by HCP fish species were likely functioning at some level of risk. This premise is supported because the distribution and abundance of the federally listed bull trout in the EIS planning area has declined to the degree that they warrant "threatened" status under the ESA, and that redband and westslope cutthroat trout are state sensitive species whose habitats are at risk of degradation (Draft EIS pages 4-208 and 4-212). The aquatic minimization and mitigation measures would be applied programmatically under the proposed DNRC HCP and are intended to improve baseline habitat conditions for HCP fish species over the Permit term. The most important habitat parameters for HCP fish species are used as surrogates for incidental take and would serve as the specific metrics to measure the effect of the take (see DNRC's assessment of take in Draft HCP Chapter 7, DNRC's Identification of Impacts that Have the Potential to Constitute Take under the HCP). Monitoring efforts under the HCP would track the most important habitat variables to ensure that the HCP measures are effective at improving baseline conditions where needed or maintaining baseline conditions that are functioning properly. It is assumed that species distribution and abundance are responsive to changing habitat conditions; however, there are many non-habitat variables (e.g., predation, competition, and disease) that affect these population parameters and may be the limiting factor, or factors, and not attributable to the HCP. Baseline conditions are highly variable across the many watersheds within the EIS planning area and, therefore, the actual effects to HCP fish populations and their habitats cannot be ascertained precisely, but only inferred. The proposed DNRC HCP is designed to reduce adverse impacts to the most important aquatic habitat features (LWD, shade, temperatures, channel form and function, sedimentation, and connectivity) that may be affected by the covered activities over the entire HCP project area. The conservation measures would be applied programmatically and incorporated in design for every project (i.e., covered activity). Given the programmatic, habitat-based approach of the HCP, it was considered impracticable and unwarranted to consider intensive monitoring of individual populations over such a large geographic area of coverage. Nonetheless, monitoring of the HCP species at the population level is done routinely across their range primarily by MFWP, as well as other agencies, and reported either annually or periodically. Also, the USFWS is required to conduct a status review of the federally listed bull trout every 5 years by core area population using the most current and best information available.

In terms of impacts to bull trout in specific core areas, selective timber harvests in riparian areas are expected to have a very small effect because of the relatively small amount of acreage affected—on average about 45 to 90 acres annually. Under the Final HCP, DNRC expects to harvest on average about 32 to 64 acres annually in riparian areas. Also, any timber sale that involves a riparian harvest in a bull trout core area would be designed to protect the most important habitat functions for bull trout (i.e., stream temperature, sediment, large wood recruitment, channel stability) by retaining adequate amounts of shade and large wood through a no-harvest buffer adjacent to the stream, as well as appropriate levels of tree retention in the remaining portion of the RMZ out to a distance of one 100-year site index tree height. Consequently, it is expected that any effect of incidental take resulting from riparian harvest activities, should incidental take occur, would be partially or fully mitigated by the protection of these functions.

The USFWS will assess baseline conditions for HCP fish species in its ESA Section 7 biological opinion. Additionally, in its ESA Section 10 statement of findings, the USFWS must find that take is incidental and minimized and mitigated to the maximum extent practicable to issue the Permit. The USFWS will use these two documents to make its final determination whether the HCP complies with the ESA.

2.1.11 Connectivity

Letter 9, comment 78: We are pleased the HCP includes commitments to address fish passage and connectivity concerns (AQ-FC1, Volume II, page 2-103). We fully support DNRC's efforts to address fish connectivity problems at road-stream crossings, since fish passage barriers and fragmentation of fish

populations is an important factor to address to promote recovery of threatened and endangered fish species. We support the more timely fish passage improvements likely to occur with Alternative 3 over Alternative 2.

Response: Please refer to our response to Letter 84, comment 302, below.

Letter 32, comment 172: There has been a great concern about culverts being barriers to fish migration. In many cases it has been found that these barriers have benefitted the fish by creating areas where genetically pure strains have been found. Before barriers are removed, the benefits must be proven.

Response: As noted in commitment AQ-FC1 items (4), (5), and (9) (Draft HCP pages 2-104 through 2-109), DNRC commits to collaborate with MFWP regarding site-specific and watershed-wide native fisheries conservation efforts when determining the most appropriate action or design at fish passage sites. Furthermore, under the Allowances for AQ-FC1 (see Draft HCP page 2-109), DNRC acknowledges that MFWP may require that, through Montana Stream Protection Act 124 permits, barriers be installed at fish passage sites to achieve special conservation measures.

Letter 84, comment 301: We support DNRC's efforts to address fish connectivity problems at road-stream crossing, since fragmentation of fish populations is an important factor in assisting recovery of fish species. This commitment would be strengthened by incorporating the following Beaverhead-Deerlodge National Forest fishery connectivity standards as part of AQ-FC1 #6 (priority fish connectivity improvements). Standard 21: Provide and maintain fish passage at new, replacement, and reconstructed road crossings of existing and potential fish-bearing streams, unless barriers are determined beneficial for native fish and/or sensitive aquatic species conservation. Standard 22: Complete watershed analysis prior to constructing roads or landings in Riparian Conservation Areas within fish or restoration key watersheds.

Response: All of the concepts contained in the two standards presented in the comment are integrated in the proposed HCP through commitment AQ-FC1 items (2) through (10), Allowances for AQ-FC1, commitment AQ-SD1 items (1) through (5), and commitment AQ-SD3 items (1), (2), (3), (5), and (7).

Letter 84, comment 302: We support the more timely fish passage improvement schedules in Alternative 3 (Appendix E, page E-17). DEQ does not support the extended fish connectivity improvement schedule proposed in the draft HCP because this extended schedule would not achieve TMDL implementation schedule expectations.

Response: The USFWS has noted the commenter's preference for the schedule for making improvements to connectivity contained in Alternative 3. The rationale for the 30-year timeframe for culvert replacements proposed in the Draft HCP (AQ-FC1 item (8)) is discussed on page 2-106. We note that certain fish passage sites may be improved on an accelerated schedule if those sites are also identified as high-risk problem sites under the sediment delivery reduction conservation strategy and if DNRC is able to secure grants or special funding.

Letter 94, comment 376: We applaud DNRC's emphasis on replacing undersized or otherwise problematic culverts at road crossings. We support the design standards being proposed. We do believe, however, that the agency needs to accelerate the schedule of replacement. The 15 and 30 year target dates for Tier 1 and other streams should be accelerated so that all problematic crossings are eliminated no later than Year 10 of the Permit. We believe this target can be met if DNRC's inventory and analysis in Commitment AQ-FC1 included a larger emphasis on innovation in managing legacy roads. These recommendations also apply to Commitments AQ-SD1 and AQ-SD2, which, as proposed, would only focus on planning and inventory and not on implementation.

Response: The USFWS has noted the commenter's preference for a shorter implementation timeframe for correcting fish connectivity and sedimentation issues. The rationale for the 30-year timeframe for implementation of commitment AQ-FC1 item (8) is described on Draft HCP page 2-106. The timeframe for implementing sediment reduction strategies at legacy roads are contained in commitment AQ-SD2 items (5)

through (12), and the rationale for those strategies and timelines is contained on Draft HCP pages 2-93 and 2-94.

Letter 106, comment 463: AQ-FC1: Right now, you cannot get two hydrologists or fishery biologists or engineers to agree on what qualifies as a fish passage crossing. What are the estimated costs of improving fish passage on all of the proposed crossings? Are there provisions when there is good reason to maintain a fish barrier, such as isolated genetically pure populations that could be contaminated if exposed to non-native populations?

Response: The design standard used in AQ-FC1 essentially tiers to current BMPs for fish passage and language in the Montana Stream Protection Act; therefore, the actual future costs of implementing the design standards per site is expected to be either the same or slightly more than otherwise anticipated costs. Under the Allowances for AQ-FC1, DNRC acknowledges that MFWP may require that, through Montana Stream Protection Act 124 permits, barriers be installed at fish passage sites to achieve special conservation measures.

Letter 120, comment 624: The timeframe proposed for the mitigation activities is too long to effectively address impacts from timber harvesting on ESA species. Under Alternative 3, the DEIS proposes to address 3,000 miles of high risk legacy roads and correcting fish passage barriers (such as the 106 culverts identified within the project area) within 15 years for bull trout bearing streams and within 25 years for westslope cutthroat bearing streams. These mitigation actions need to be expedited to address the negative impacts to trout habitat and migratory corridors from roads and barriers if there's to be any benefit to the species this HCP aims to conserve. The HCP must be more stringent in requiring DNRC to make substantive commitments to address the adverse effects attributed to its land management activities, and set more suitable deadlines of 5 to 10 years to undertake actions that mitigate "take" of the fish species.

Response: The USFWS has noted the commenter's preference for shorter timeframes for addressing "legacy" roads and correcting fish passage barriers. For the rationale for the proposed timelines, please see the response to Letter 94, comment 376, above.

Letter 169, comment 685: We did not have time to research the methods cited for assessing road crossing for fish passage and connectivity, but recommend that stream processes such as passing of bedload and wood be considered as well. In this light, we are also concerned about culverts on non-fish or non-HCP fish bearing streams that are undersized and risk failure and excessive sediment contribution.

Response: The methods for assessing fish passage and connectivity at existing road-stream crossing sites involve (1) technical surveys of structure profile, channel cross-section, substrate, and multiple flow scenarios; and (2) data analysis using fish passage models (e.g., FishXing), flow models (e.g., NFF and HY-8), and multiple regional measures of fish swim performances. Assessment tools typically incorporate existing substrates at a survey site, but the assessment of fish passage would not necessarily include the technical analysis of sediment budget, sediment transport processes, or the ability of a structure to pass large debris. All road-stream crossings in the project area, including those on non-fish and non-HCP fish-bearing streams, would be inventoried and assessed for risk of sediment delivery (see commitment AQ-SD2 on Draft HCP page 2-91). All road-stream crossing sites identified to have high risks of failure or sedimentation would be improved to meet BMPs under the timelines described in commitment AQ-SD2.

2.1.12 BMPs and Sedimentation

Letter 9, comment 68: We are pleased that AQ-SD4 includes commitments for reducing sediment delivery from timber harvest, site preparation, and slash treatments (Volume II, page 2-97). Erosion and production and transport of sediment to bull trout, westslope cutthroat trout, and/or Columbia redband trout waters should be minimized. It is important that timber harvest methods and BMPs are used that consider site-specific conditions at harvest sites. We generally recommend avoidance of timber harvest and road construction in areas with high risk of sediment production or erosion potential and areas highly susceptible

to mass failure, landslides or high risk of debris flows or high erosion risk (erosive soils, steep slopes, etc.). We believe such areas should either be avoided or at least designated for less disturbing logging methods to reduce erosion potential and better assure soil and water quality protection. It is important that mitigation measures used during logging effectively protect soils and avoid sediment production and transport. We encourage use of harvest/yarding methods that reduce ground disturbance and sediment production and transport risks when harvesting timber on erosive soils or steep slopes to reduce adverse effects to soil and water quality (e.g., skyline, helicopter, and logging during winter on snow or frozen ground). We suggest consideration of additional measures during summer tractor logging to reduce erosion and compaction and restore soils.

Response: All of the concerns and practices recommended in this comment are addressed in the Montana Forestry BMPs and/or have been included in the proposed HCP commitments, including AQ-SD3 and AQ-SD4. DNRC has conducted detailed soil monitoring since 1988 to evaluate the effectiveness of BMPs associated with various yarding methods in reducing soil erosion, displacement, and compaction. The results of this monitoring have been used as feedback for adaptive management in the selection of site-specific BMPs. Auditing and adaptation of BMPs would continue under the proposed HCP.

Letter 9, comment 79: We did not see many commitments for restoration activities directed at restoring aquatic degradation from adverse effects caused by prior management (i.e., legacy restoration), other than commitments to address fish passage problems at road stream crossings in the HCP. Since adverse effects to HCP species resulted from past management activities, it would appear appropriate to include additional restoration activities to address adverse effects from past activities. We are most concerned about restoration of watersheds, particularly through reduction in effects from roads, but also evaluation of the potential for restoring fish habitat, addressing any past stream channelization, stabilization of eroding streambanks, re-establishment of riparian vegetation through corridor fencing or rest from grazing, cumulative watershed effects, etc.

Response: In addition to the road-stream crossing commitments, the proposed HCP includes commitments for inventorying all existing DNRC roads located in watersheds supporting HCP fish species and implementing project-level, site-specific corrective actions within specified timelines (commitment AQ-SD2). The proposed HCP also includes commitments for DNRC to evaluate levels of streambank erosion and impacts to riparian vegetation on grazing licensed parcels at renewal and midterm inspections (commitment AQ-GR1). The grazing commitments also require DNRC to develop site-specific corrective actions that address parcels with grazing-caused riparian and streambank impacts. These commitments are intended to address existing impacts resulting from adverse effects of prior management activities.

Letter 84, comment 292: State water quality plans describe BMPs as a primary and often sufficient management step for new projects in achieving water quality standards (HCP page 2-80). In cases of historic water quality effects, additional management measures (reasonable land, soil, and water conservation practices, i.e., restoration BMPs) often may be necessary to meet water quality standards. The TMDL process is an initial assessment of the relative magnitude of BMPs and restoration BMP activities that are appropriate to achieve standards. The HCP presumes that proper installation, operation, and maintenance of HCP BMPs are sufficient to achieve compliance with water quality standards (HCP page 2-80). Forestry and grazing BMPs are often sufficient to achieve standards in areas with currently resilient vegetative and stream channel conditions.

Response: We have noted your comments.

Letter 84, comment 293: Please expand line 13 on HCP page 2-80 to include "reasonable land, soil, and water conservation practices, i.e., restoration BMPs" as appropriate BMPs in stream sections where historic activities and conditions are causing notably degraded vegetative and stream channel conditions.

Response: The Final HCP has been revised to incorporate "reasonable land, soil, and water conservation practices" in the discussion of the role of BMPs in achieving water quality standards.

Letter 90, comment 338: "Appropriate BMPs can reduce sediment yield from 40 to 85 percent" (EIS page 4-92). Will all appropriate BMPs be mandated or will economics and inappropriate BMPs be used when expedient or cheaper?

Response: Both the existing DNRC Forest Management ARMs (ARM 36.11.422) and the proposed HCP require DNRC to (1) select appropriate BMPs to incorporate into project designs and all forest management activities to maintain high-quality water that meets or exceeds state water quality standards and protects beneficial uses, and (2) correct problem sediment sites.

Given DNRC's record of BMP implementation and effectiveness, as documented by internal BMP audits and statewide audits conducted by independent parties since 1990 (see Draft HCP page 2-88), the USFWS believes DNRC would select appropriate BMPs and adopt measures to achieve water quality standards and sediment thresholds.

Letter 105, comment 427: Land surface damage and disruption must be minimized. The State should use the same standard of surface disruption (15% of the project area) as the USFS uses in the state of Montana.

Response: The current recommendation under the SFLMP is that detrimental soil disturbance within any harvest unit be minimized to 15 percent or less of the area. Mitigation and BMPs implemented during harvest activities have been found to be effective in maintaining this recommendation.

Letter 105, comment 428: The State of Montana needs to develop rigorous criteria for protecting the soil and surface of logging projects.

Response: Recommendations to protect soil quality and productivity within the SFLMP were developed in 1997. As described in Draft EIS Section 4.5.1.3 (Effects of Forest Management Activities on Soils), DNRC has monitored soil conditions in harvest units since 1988 as required by the SFLMP and Forest Management ARMs and would continue to do so during HCP implementation. As described in subsection Existing DNRC Sediment Delivery Reduction Practices in Final HCP Section 2.2.3.2 (Sediment Delivery Reduction Conservation Strategy), the findings from these monitoring efforts are adaptively incorporated into future projects to continually improve soil resource protection.

2.1.13 Cumulative Watershed Effects

Letter 9, comment 69: We are pleased the HCP includes cumulative watershed effects analysis commitments (AQ-CW1, Volume II, page 2-117). However, EPA supports Alternative 3 over the preferred alternative since Alternative 3 would reduce cumulative watershed effects by imposing more restrictive thresholds and more oversight (Volume II, page 5-5). We acknowledge that in many watersheds, management of state forest trust lands may play a comparatively small role in overall cumulative watershed/water quality effects, since forest trust lands are often dispersed and intermingled with other land ownerships within watersheds, and may comprise a relatively low percentage of lands within the watershed. Nevertheless, we believe all forest landowners need to make efforts to evaluate and reduce cumulative watershed effects.

Response: The USFWS has noted the commenter's preference for the Alternative 3 CWE commitments. The proposed HCP (Alternative 2) includes a comprehensive approach to evaluate and reduce the risk of CWE resulting from DNRC forest management activities. Both the USFWS and DNRC support the analysis and methodology framework for developing the CWE thresholds (see commitment AQ-CW1, Draft HCP page 2-117) and believe these thresholds are appropriate for the type and scope of activities that would be covered by the proposed HCP.

Letter 9, comment 70: The DEIS discussion of the relationship between increased peak flows and streams appears to downplay the potential effect timber harvest may have on peak flows, channel stability, channel scour, and fisheries (page 4-125). References are quoted in the DEIS that indicate little or no apparent correlation between the magnitude of peak flows and the amount of forest harvest. While we acknowledge

that the relationship between timber harvest and the magnitude of peak flows can be complex, there are research findings that vegetation removal results in increased water yield, and that a large amount of timber harvest in a watershed can increase peak flows, which can have adverse effects on channel stability, scour, and fisheries.

Response: The Draft EIS analysis thoroughly considered the potential effects of vegetation removal on peak flows, channel stability, and fisheries. Draft EIS page 4-125 acknowledges that timber harvest can have a direct effect on peak flows, but the pool of current scientific literature indicates that the relationship between timber harvest and consequent flow regime is actually highly uncertain and variable. Even greater uncertainty exists in the evaluation of potential indirect effects to channel features and biological systems, especially with respect to the range of naturally occurring conditions and disturbances found throughout the HCP project area landscape (see Draft EIS page 4-125). Please refer to the response to Letter 9, comment 71 (below), which states that the CWE analysis process would ensure that any increased peak flows resulting from covered activities will have a low level of risk for channel degradation and scour and adverse effects on HCP fish habitat.

Letter 9, comment 71: We are pleased that AQ-CW1 (Volume II, page 2-117) commits to carrying out cumulative watershed effects analysis. It is not clear if this analysis will assure that timber harvests will avoid increased peak flows that have adverse effects on channel stability and scour, and thus, potential adverse effects to HCP aquatic species. It is important that the cumulative watershed effects analysis process assures that increased peak flows will not cause channel degradation and scour and adverse effects to HCP fish habitat, particularly in the northwestern Montana areas more subject to rain-on-snow events, and/or where there are channel types more sensitive to channel degradation and scour. We recommend that this be discussed further in the FEIS.

Response: Commitment AQ-CW1 (Draft HCP page 2-117) includes measures to evaluate (where appropriate and using the best available science) existing watershed conditions and any expected departures from historical conditions, and to develop hypothetical thresholds that could indicate a condition that leads to potential adverse effects. While it is impossible for DNRC to guarantee that timber harvest will avoid increased peak flows that may have adverse impacts on channel processes, the process proposed is designed to ensure that appropriate levels of analysis would be completed and that forest management activities would be implemented in a manner that results in low levels of risk for impacts due to CWE. However, departures from this commitment, if they occur, would be reviewed annually by the USFWS to ensure that resource protection is occurring at acceptable levels and appropriate mitigation measures are being implemented. If monitoring indicates that the existing measures are not protective, the adaptive management process would be implemented, and additional measures, as outlined in HCP Chapter 4 (Monitoring and Adaptive Management), would be considered. The use of CWE to minimize the risk of increased peak flows is discussed in Draft EIS Section 4.8 (Fish and Fish Habitat), and further discussion is not warranted.

Letter 9, comment 105: It is not clear how effects of increased water yield from timber harvest will be assessed (i.e., effects on hydrology, runoff patterns, peak flow, channel stability, etc.). Are any channel measurements proposed in relation to timber harvests to evaluate increased water yield and peak flow increases (e.g., channel cross-sections, bank stability, width/depth ratios, riffle stability index, pool frequency, etc.)?

Response: The methods typically used to analyze CWE are determined on a case-by-case basis and often include a suite of variables such as those described by the commenter. Ultimately, the methods and variables considered depend on the type of proposed activity, existing watershed conditions, and foreseeable risk of adverse impacts. Effects on water yield and peak flow increases will generally be assessed by (1) modeling using one or more of the methodologies described in AQ-CW1 items (1b) and (1c) (see Draft HCP pages 2-117 and 2-121), (2) newer methodologies as they become available during the course of the potential Permit term (see Draft HCP Section 4.2.3, Adjusting for New Research), as well as (3) field assessments

potentially including channel cross-sections, bank stability, width/depth ratios, riffle stability index, pool frequency, etc.).

Letter 75, comment 248: We have seen little coordination between agencies in burned areas and areas of intensive logging on to mitigate the impacts on springs, streams, and creeks.

Response: While DNRC is a collaborator and signatory to the Montana Cumulative Watershed Effects Cooperative Memorandum of Understanding (Young 1989), DNRC land management responsibilities, goals, timelines, and mandates may be different than those of adjacent private and public landowners. In many cases, DNRC is and will be able to collaborate with other landowners to meet CWE objectives; however, DNRC cannot commit to always coordinate activities with adjacent landowners due to the varying responsibilities described above.

Letter 169, comment 687: The methods for measuring cumulated watershed effects (CWEs) and the long-term monitoring of CWEs both seem quite vague throughout the document. This may be because CWEs are very difficult to monitor and assess, but it seems that the methods used to measure and monitor these effects should be established before the HCP is implemented, not during implementation.

Response: We concur with the commenter's statement that CWEs are very difficult to monitor and assess; however, the HCP provides sufficient detail for measuring and monitoring CWE. The proposed CWE conservation strategy was designed to provide a framework for assessing the highly variable conditions that may contribute to CWE. Under this framework, the strategy provides the flexibility to use the most appropriate analysis tools and methods for different regions, watersheds, and site-specific conditions. Therefore, the strategy does not limit DNRC to pre-set models or methodologies. The CWE strategy does include a coarse-filter form or set method that would be used to screen all forest management activities specified in the strategy. In addition, the CWE strategy references several existing analysis procedures as examples of methods that would be used during more detailed watershed analysis.

In accordance with the HCP, the USFWS and DNRC would meet to evaluate the effectiveness of the CWE process every 5 years. At these meetings, both agencies would review the CWE analyses completed and mitigations implemented to ensure that the rationale for decisions are well-founded and CWE analyses are consistent with the appropriate levels of information and technology. DNRC would also review emerging science for its applicability to monitoring the effectiveness of the CWE strategy. If relevant new information becomes available, the adaptive management process described in Draft HCP Chapter 4 (Monitoring and Adaptive Management) would be used to modify the strategy.

2.1.14 RMZ Harvest Design

Letter 9, comment 58: The HCP proposes to allow timber harvest greater than 50 percent of the large trees in riparian areas where there have been wildfires (Volume II, page 2-75). The HCP does not adequately consider the lack of evidence of scientific support for salvage logging in riparian zones of streams used by threatened and endangered species. While the HCP commits to retaining all trees within the narrow 25-foot no-harvest buffer, there is not commitment to retain other trees within the riparian area that may be needed for aquatic ecological functioning and protection of threatened and endangered species. Capturing the economic value of trees impacted by wildfire appears to be given priority over protection of aquatic ecological functions such as LWD recruitment, and thus, protection of threatened and endangered fish species.

Response: The literature considered in the decision to include salvage harvest in riparian areas as a component of the HCP is presented in the rationale on Draft HCP page 2-76. Riparian function and diversity in western Montana depends on several different disturbance regimes, including wind, disease, mass wasting, and especially periodic, variable-intensity fire. Western Montana has undergone extensive fire suppression during the last century, and levels of streamside harvest have been relatively low on forested trust lands. Therefore, existing ranges of LWD recruitment and stream shading found throughout forested trust lands are

likely higher than those that would otherwise occur naturally (see Draft HCP pages 2-76 through 2-77 for more details).

We believe the HCP commitments would retain adequate trees to maintain ecological functions and protection of listed species (Draft EIS, pages 4-225 and 4-246 through 4-247). For larger-scale disturbances, including fire, DNRC would be required to conduct a project-level assessment of the post-disturbance conditions in the affected watershed, including an evaluation of RMZ conditions, roads, stream crossing structures, and hillslope stability (see Draft HCP page 6-8 for more details regarding changed circumstances). Following site assessment, DNRC would coordinate with the USFWS to identify problem areas and develop, prioritize, and propose a schedule for the mitigation measures addressing the problems. Site-specific BMPs, corrective actions, or harvest prescriptions would then be developed to address the problems identified.

Additionally, in the Final HCP, the allowances for riparian harvest in Class 1 RMZs (commitment AQ-RM1) have been revised to include specific limits on the amount of RMZ area that may be harvested. While the types of allowances would remain the same as those described on Draft HCP pages 2-74 and 2-76, DNRC has committed to capping the use of these allowances at 20 percent of the DNRC Class I RMZ acres for any EIS aquatic analysis unit. This allowance cap includes both stands harvested under allowances and those stands subject to natural disturbances that reduce the RMZ to non-stocked and seedling/sapling size classes or low stocking densities of poletimber and sawtimber size classes (as determined using standard DNRC stand level inventory procedures). Furthermore, under the salvage allowance included in the proposed HCP, DNRC would still be required to meet the minimum retention requirements contained within the SMZ Law. Lastly, in the vast majority of riparian harvest scenarios (where harvest occurs outside the allowance conditions), the HCP has been revised to include a 50-foot no-harvest buffer that would apply to all Class 1 (fish-bearing) streams.

Letter 94, comment 373: We disagree that DNRC needs to include additional harvest allowances inside RMZs to deal with insect infestations. This allows too much discretion and it is biologically unjustified. The size of DNRC's buffer and RMZ (as well as those we propose) is simply too small to have a realistic affect on insect spread. Control of insect infestations with timber harvest, if it can even be achieved, can be done upslope outside the RMZ. There is nothing wrong from a fishery and water quality perspective of having dead or dying trees along a stream. In fact, it is preferable to having no trees.

Response: DNRC considers the allowances for additional harvest within an RMZ to address disease or insect infestations an important tool to carry out both its trust mandate and its biodiversity and forest health management objectives. These allowances are not intended as a means of removing every salvageable tree within an RMZ, but as a legitimate option to control the spread of insects and disease while capturing some otherwise lost value. Each situation would be specifically evaluated to determine the silvicultural merits and the potential adverse effects to riparian functions prior to invoking the allowance. In the Final HCP, the allowances for riparian harvest in Class 1 RMZs (commitment AQ-RM1) have been revised to include specific limits on the amount of RMZ area that may be harvested.

Letter 94, comment 374: We disagree with the allowances (HCP page 2-75) in which harvest of burned trees can occur within Tier 1 RMZs but outside the buffer. Again, DNRC's buffer of 25 feet is already too small even when it's comprised of green trees. And thus, logging burned trees right up to a 25-foot buffer on similarly burned trees will compromise future woody debris recruitment, as well as the shade benefits that trees, including burned trees equal to or greater than 1.5 times (as we recommend for an RMZ) the SPTH can have. It makes eminent sense from a woody debris, sediment interception and shade perspective, that when severe, stand-replacement fires occur within an RMZ, the maximum number of standing burned trees be left onsite.

Response: The USFWS has noted the comment. We also note that in the Final HCP, DNRC has expanded the no-harvest buffer to 50 feet on all Class 1 streams (as defined by the SMZ Law and ARM 36.11.312). Additionally, under the proposed HCP, DNRC would continue to extend equipment restriction zones beyond

those required under the SMZ Law for sites with high erosion risk (as defined in ARM 36.11.403 (82)), including severely burned areas where bare mineral soil is exposed or hydrophobic conditions occur.

The revised approach would still retain the allowances included on Draft HCP page 2-75. However, in the Final HCP, the amount of Class I RMZ harvested under all three of the allowances when combined with natural disturbance events would not exceed 20 percent of the Class 1 RMZ acres within any of the individual EIS aquatic analysis units. In cases where a severe, stand-replacement fire has affected a considerable portion of the RMZ, a changed circumstance would be triggered. In these cases, DNRC would develop site-specific mitigation measures, buffers, and retention tree requirements, and the USFWS would have input on those measures. For the Final HCP, DNRC has also included additional rationale for fire-salvage harvest in Class 1 RMZs for commitment AQ-RM1.

Letter 94, comment 375: Commitments for Tier 1 streams without HCP species, as well as those for Tier 2 and Tier 3 streams, are not new commitments. DNRC merely says it will follow existing practices, which are tied to existing regulatory obligations. DNRC should enhance its riparian protection strategies for these streams for three reasons: (1) these channels deliver water that is critical in quantity and quality to Tier 1 streams that support HCP fish species, (2) some of these streams might indeed seasonally support certain life-stages of HCP native species, and (3) some of these streams might be crucial as potential habitat for HCP native fish species in order to facilitate population security. We therefore recommend these RMZs. (1) For Tier 1 streams without HCP species and which either deliver water to reaches occupied by bull trout, cutthroats, or redbands, or which are important for population expansion, the RMZ should be equal to that of the RMZ for the occupied reach. (2) For Tier 2 and Tier 3 streams that potentially can deliver sediment to Tier 1 streams with native fish species, the RMZ should be one SPTH wide, with a no-cut buffer of 25 feet and tree retention in the rest of the RMZ to include at least 50% or ten trees on class one streams, whichever is greater, or 50% or five trees on class two streams, whichever is greater, of the trees exceeding 8 inches dbh. This would reduce the potential for sediment delivery while providing ample cover for temperature regulation.

Response: The USFWS and DNRC revised the riparian timber harvest conservation strategy in the Final HCP. Please refer to Section 2.1.1 for the general responses to comments concerning riparian buffer width under the proposed HCP. Under these revisions, even streams that do not support HCP fish species, but have the greatest potential to affect downstream temperatures in streams supporting HCP fish species, would be provided the highest levels of protection and ample cover for temperature regulation. Compared to the SMZ Law, the Forest Management ARMs provide extended equipment restriction zones for sites with high erosion risk (as defined in ARM 36.11.403 (82)) and also provide greater levels of protection for SMZs, which are extended to include adjacent wetlands (ARM 36.11.426). The additional levels of protection provided to Class 2 and Class 3 streams by the SMZ Law and Forest Management ARMs are adequate to prevent excessive levels of ground disturbance and erosion, and thereby reduce the potential for downstream sediment delivery to streams supporting HCP fish species.

Letter 116, comment 533: Fire is part of the landscape in Montana and by limiting the silviculture options in Alternative 2's RMZs and CMZs are we going to cause a fire to burn hotter in the riparian area?

Response: The Draft HCP recognizes the role of fire on forested landscapes in Montana by providing silvicultural options within RMZs and CMZs. These options include the allowance to manage a portion of the total RMZ acreage, including CMZs, using prescriptions designed to meet the minimum retention tree requirements of the SMZ Law (ARM 36.11.305) (see allowance D on Draft HCP page 2-75). This allowance is designed to provide DNRC with an opportunity to continue implementing its overall forest management philosophy adopted under the SFLMP of emulating natural disturbance regimes to maintain a healthy and biologically diverse forest. The Draft HCP also recognizes that wildfire is the predominant natural disturbance agent affecting the riparian ecosystems within the HCP project area. Stands targeted to be managed in this manner would be those stand types where shade-tolerant species exist and regeneration or maintenance of shade-intolerant tree species is necessary to achieve or maintain desired stand types and to

provide long-term riparian functions. The factors that determine fire frequency and intensity in riparian stands are quite complex and extremely variable. By emulating natural disturbance regimes in both uplands and riparian areas, DNRC manages forested trust lands in a manner that mimics the range of forest types, age classes, and structures that would have occurred prior to European settlement.

2.1.15 RMZ Harvest and Multiple Entries

Letter 9, comment 44: We understand that the 50 percent timber harvest currently allowed in SMZs may be applied repeatedly, with no waiting period for the longevity of the residual buffer. It is not clear if repeated harvest would be allowed outside the 25-foot no-harvest zone under the HCP. This should be clarified.

Response: Multiple harvest entries were not specifically addressed in the Draft EIS/HCP. However, under the existing SMZ Law, retention of a minimum of 10 trees per 100 feet of stream (or 88 trees per acre) for all Class 1 streams would still be required even in the event of multiple harvest entries. In response to your comment, the Final HCP has been revised to include a commitment for addressing multiple harvest entries into an RMZ during the Permit term. Under this new commitment, multiple entries would only occur as long as (1) the original harvest retains a medium- to well-stocked stand of trees in the poletimber or sawtimber size classes, or (2) the subsequent regeneration results in medium- to well-stocked trees in the sawtimber size class. All re-entries would be required to meet the SMZ Law minimum tree retention requirements. Stocking levels and size classes would be determined using standard DNRC stand level inventory procedures.

Letter 90, comment 334: The DNRC manages the same lands multiple times. How many times can the riparian areas be entered over the HCP timeframe? If 50% of the trees are cut during one entry, can DNRC reenter this area again and cut 50% more?

Response: Please refer to the response to Letter 9, comment 44, above.

2.1.16 Channel Migration Zones

Letter 9, comment 46: AQ-RM1 does state that DNRC will extend RMZs in situations where channel migration is likely to influence riparian functions that are potentially affected by a timber harvest (Volume II, page 2-73). However, the extent to which LWD (as well as forest canopy for shade protection) would be retained in RMZs and CMZs, along with the potential exceptions are unclear. We do not see a clear indication that adequate LWD would be retained in RMZs or CMZs.

Response: LWD retention prescriptions for Type 1 and 2 CMZs are described in AQ-RM1 item (8) on Draft HCP page 2-74. Exceptions to this conservation strategy have been modified in the Final HCP and are described in Allowances for Class 1 RMZ Commitments, items (1 and 2). Regarding the adequacy of the HCP to provide aquatic habitat functions, please refer to Section 2.1.1 for the general responses to comments concerning riparian buffer width.

Letter 90, comment 331: Regarding streamside setbacks and CMZs, it looks like CMZs are only included in Alternative 3. This is a shame.

Response: The situations in which an RMZ would be extended to include CMZs are identical under both Alternative 3 and the proposed HCP (Alternative 2); see Draft HCP pages 2-73 and 2-74.

Letter 106, comment 460: AQ-RM1 #8: How can you analyze the impact of this commitment? How many acres would be encompassed in the Type 2 CMZ when no harvest is permitted within the CMZ plus 25 feet?

Response: DNRC has not inventoried the amount of Type 2 CMZ across the HCP project area. CMZ delineation would be completed by DNRC during project-level assessment and design. However, DNRC has completed limited surveys to assess the extent of Type 2 CMZs and found them to be uncommon. Therefore, the USFWS and DNRC do not expect that implementation of this commitment would have a substantial effect on foregone timber harvest at a programmatic scale.

Letter 120, comment 613: The Coalition applauds the DNRC for committing to map channel migration zones (CMZ) at the landscape-level for the Swan and Stillwater blocks when determining appropriate timber harvest and land management activities within the RMZ. The CMZ maps will allow more adaptive management over the length of the HCP permit, and enable a site-specific approach to conserving aquatic resources. Most rivers and streams in the proposed area do not have a FEMA-mapped floodplain, so CMZ maps will provide the necessary information to create riparian buffers that: an appropriate margin of error for unanticipated channel movement, hillslope and soil stability, blowdown, wildfire, operator error, disease, and certain other For those reasons, the Coalition recommends finishing the CMZ inventory as early as possible, well before any planned timber harvesting. In addition we recommend using CMZ maps and other adaptive management tools to inform all activities along streams across DNRC Forested State Trust Lands, not just the Swan and Stillwater blocks.

Response: For all HCP project area lands, CMZ delineation would be completed during project-level assessment and design. In the Draft HCP, the criteria for CMZ delineation are described in commitment AQ-RM 1 items (6) through (8) (pages 2-73 and 2-74). In response to your comment, this commitment has been revised in the Final HCP for clarity.

2.1.17 Westslope Cutthroat Trout Plans

Letter 94, comment 366: We recommend that the final document demonstrate more clearly how DNRC and the USFWS will contribute to the objectives of the cutthroat plan, which both agencies (and Montana Trout Unlimited) helped devise and sign. We acknowledge that the HCP need not address all these objectives. However, Objective #1 (maintain and secure, and/or enhance all cutthroat trout populations designated as conservation populations, especially genetically pure components), which directly implicates existing conditions on the ground, is important. It is unclear to us how an HCP and Permit that allows incidental take, and which is not required to restore and enhance populations, squares with both DNRC's and the USFWS' commitments to "maintain, secure and/or enhance" cutthroat populations. We also don't understand how the HCP can help meet Objective #1 when there may be unsurveyed "conservation" populations on DNRC lands. The legal obligation of an HCP, according to DNRC and the USFWS, is basically to maintain the status quo, that is, ensure the amount of approved take is incidental and doesn't contribute further to the diminishment of a species. The status quo does not square with the state agreement, nor does it necessarily meet the agencies' stated standard for HCPs.

Response: Objective 1 of the Cutthroat Trout Plan would be met under DNRC's proposed HCP aquatic conservation strategies. The proposed HCP aquatic conservation strategies are focused on minimizing and mitigating the effect of incidental take on HCP fish species should it occur. The main premise is to avoid or minimize impacts to important riparian functions by providing suitable in-stream habitat for these fish populations to remain viable and secure—in other words, lessen the risk of adverse impacts to the habitat of these species. The HCP would not diminish cutthroat trout populations; however, there may be isolated situations where incidental take may occur, but those would likely be infrequent, small in scale and effect, and temporary (i.e., of short duration). Please see Draft HCP page 7-3 for an explanation of these determinations. The approach DNRC would use to determine HCP fish species presence is described on Draft HCP page 2-71. Whenever survey data are unavailable, and it is reasonable to believe that an HCP fish species is likely present, DNRC would apply the measures in commitment AQ-RM1. Therefore, this approach would in all likelihood conserve and maintain "unsurveyed" cutthroat populations that have yet to be surveyed on HCP project area lands.

Another example of how the cutthroat trout plan is compatible with the HCP is the fish connectivity conservation strategy (commitment AQ-FC1). Where a culvert barrier may be restricting the distribution of a cutthroat trout population, the HCP would require DNRC to prioritize fixing the culvert problem, which would likely enhance the population by expanding its range. This commitment also acknowledges that there may be situations where a culvert barrier may be the only protection of a genetically pure cutthroat trout

population upstream from invasion of exotic species downstream of the culvert. In those cases, DNRC would coordinate with MFWP to determine if the barrier should remain in place.

As discussed in the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1), there is no explicit provision of the ESA or its implementing regulations specifying that an HCP must result in a "net benefit" to the species or "no take" of affected species. However, DNRC and the USFWS expect implementation of the HCP would either maintain or improve baseline conditions for the HCP fish species (Draft HCP page 7-9).

Letter 94, comment 367: We recommend that DNRC craft conservation commitments to identify and then secure all existing conservation populations of westslope cutthroats through habitat protection and activities designed to expand populations (expanding small, isolate populations is sometimes the most important activity that can occur to secure populations). In order to expand populations to secure them, it will require protection and restoration activities on previously occupied--but connected--habitat. And thus, DNRC should identify critical "future" habitat for expanded populations and accord it Tier 1 native fish protections.

Response: Please see response to Letter 94, comment 366, above. Additionally, the Final HCP has been revised to clarify that DNRC would apply commitments AQ-RM1 to all Class 1 streams. Therefore, any streams with potential habitat that are connected to streams with existing populations of westslope cutthroat trout would receive the same level of conservation for RMZ harvest prescriptions as described in the Draft HCP for Tier 1 streams. The sediment delivery reduction commitments and CWE commitments are applied at the sixth-order hydrologic unit code (HUC) such that the streams described in the comment are addressed in these strategies. Through the fish connectivity conservation strategy, DNRC has identified 106 fish passage barriers that would be replaced over the Permit term, thereby expanding available habitat for populations of westslope cutthroat trout. While the connectivity and grazing commitments are applied only to streams supporting HCP fish species, we note that the inventory of these streams would be ongoing for the Permit term such that, if streams become occupied, the commitments would apply at that time.

Letter 94, comment 368: We recommend that DNRC craft conservation commitments to demonstrate more clearly that the "take" is genuinely incidental and will not impair the agency's ability to stabilize and, where essential to prevent loss of a population, its ability to increase cutthroat numbers and habitat. It is difficult to determine exactly what activities DNRC plan during the permit period and where they will be in relation to existing populations of native fish.

Response: The USFWS anticipates that, during the Permit term, risk of incidental take of an HCP species could occur, either directly or indirectly, at some point in time. The risk would vary across the landscape and across watersheds, depending on the baseline conditions of the affected populations and habitat, as well as the extent and duration of the impact from the covered activity. Issuance of the Permit would authorize "take" under the ESA if the USFWS determines, among other things, the taking would be incidental, the impacts of the taking have been minimized and mitigated to the maximum extent practicable, and the taking would not appreciably reduce the likelihood of survival and recovery in the wild. The aquatic conservation strategies in the proposed HCP focus on the habitat attributes most important to the HCP fish species and that are at greatest risk to be influenced by DNRC's covered activities. Because it is difficult to precisely ascertain where, when, and how much take may occur to HCP fish species, a programmatic approach that focused on reducing the effects of the taking, where and whenever it may occur, was developed. Therefore, HCP minimization and mitigation measures are incorporated into all project designs for covered activities that occur on HCP project area lands. Because all project designs must incorporate the HCP minimization and mitigation measures, the potential for adverse impacts that have the potential to constitute take would be either avoided or reduced during project implementation. Through our involvement in the development of the HCP, we believe that DNRC has demonstrated that the proposed take is incidental.

Regarding the statement that the proposed HCP should not affect DNRC's ability to stabilize and increase cutthroat trout numbers and habitat, please refer to the general responses to comments concerning recovery of the HCP species (Section 2.3.1.2). The activities DNRC plans to carry out are described in Draft HCP

Chapter 1 (Introduction). Under the proposed HCP, the USFWS knows what covered activities would be planned that could affect a core area population of an HCP fish species. We also know the amount of existing roads, new road construction planned, known stream crossings, future planned stream crossings, and the predicted amount of sediment expected during the 50-year Permit term in each of the 14 aquatic analysis units (AAUs) (Draft EIS Tables 4.8-7, 4.8-8, 4.8-9, 4.8-19, and 4.8-20). The Draft EIS analysis indicates the AAUs that can be expected to be the most affected by sediment delivery during the Permit term. Furthermore, on blocked lands (the Stillwater and Swan River State Forests), we know the existing road network and the planned transportation plans and anticipated road restrictions under the proposed HCP (Draft HCP Figures C-4A, C-4B, C-6A, and C-6B in EIS Appendix C). Monitoring and reporting by DNRC and the USFWS would disclose specific watersheds and the associated local populations of HCP fish species that potentially could be affected by a specific timber sale. The USFWS would likely concentrate compliance monitoring in those AAUs likely to be affected the most by DNRC's planned activities.

2.1.18 Gravel Pits

Letter 9, comment 85: We are pleased that AQ-SD5 (Volume II, page 2-100) includes a commitment not to develop gravel pits within SMZs. Gravel operation planning and design should avoid and minimize impacts to waters of the U.S., including wetlands, as much as possible. It is recommended that projects that involve significant dredging and filling activities be coordinated with the U.S. Army Corps of Engineers and other agencies involved in the 404 regulatory process. Unavoidable impacts to wetlands or other aquatic areas during gravel mining operations may need to be authorized through 404 permits.

Response: As stated in HCP commitment AQ-SD5, gravel pits would not be developed within SMZs. Under the SMZ Law, the SMZ is extended to include wetlands where the normal SMZ boundary intercepts a wetland. Gravel operations located near isolated wetlands that are not associated with a stream or SMZ are not specifically addressed in the HCP because they do not provide habitat for HCP fish species. However, DNRC is aware that gravel operations affecting isolated wetlands may fall under the jurisdiction of the 404 regulations and would seek appropriate authorization and permits where applicable.

Letter 120, comment 616: Current language in the DEIS preferred alternative states that DNRC should "avoid" putting gravel pits (used mainly for road construction) within Tier 1 streams' riparian areas. Gravel pits should be strictly prohibited within RMZs across the project area, based on their potential to seriously impact streams through sedimentation and dewatering.

Response: Under the proposed HCP, gravel pits would not normally be developed within RMZs. Some site-specific minor levels of borrowing and stockpiling of material may occur in an RMZ where necessary to construct, reconstruct, improve, or maintain roads and stream crossings. If borrow sites were to occur within an RMZ, measures to minimize the risk of sediment delivery would be developed by a DNRC water resource specialist and integrated into the development of contract specifications or permits (see Draft HCP commitment AQ-SD5 item (4) on page 2-100).

The proposed HCP includes an allowance on the Stillwater Block and the Swan Unit for one medium size gravel pit (1 to 4.9 acres of disturbed area) within that portion of an RMZ that extends beyond the SMZ. This allowance recognizes that some headwater areas within the Stillwater and Swan have high drainage densities that typically result in overlapping RMZs, and these areas have legacy road systems that may have not been upgraded to meet minimum BMPs. Therefore, it is likely that occasional development of a pit within the RMZ would be necessary to address legacy road issues. In these cases, the gravel pits would be located outside of SMZs.

2.2 Wildlife

2.2.1 Grizzly Bear

Letter 2, comment 7: You use road density for the grizzly bear analysis, so why not mention open road density, total road density, and core for subunit objectives or commitment to achieve up front?

Response: The USFWS and DNRC considered this approach. However, conservation approaches that contain subunit objectives are well suited for large blocks of land in fairly contiguous ownership, and a considerable amount of HCP project area land occurs in scattered ownership or in grizzly bear subunits with mixed ownership. In no case does DNRC ownership encompass an entire bear management unit (BMU), and DNRC blocked lands fall within only 13 BMU subunits. Of these 13 subunits, DNRC ownership ranges from 0.7 to 84 percent, and seven contain less than 20 percent DNRC ownership (see Draft EIS page 4-92 and Table 4.9-11 on page 4-289). Also, updating digital road data on a regular basis across multiple landowners of varying patterns throughout western Montana is prohibitive for DNRC given current budgets and staff. Given the differing mission, mandate, and ownership pattern of DNRC lands, the standards referenced in the comment were not used in the grizzly bear conservation strategy. Draft EIS Section 4.9 (Wildlife and Wildlife Habitat) does use road density and security core areas to characterize the effects of the HCP on grizzly bears. Draft HCP Chapter 7 (DNRC's Identification of Impacts that Have the Potential to Constitute Take under the HCP), also uses road densities to characterize incidental take of grizzly bears under the proposed HCP.

Letter 12, comment 126: The plan would exacerbate already existing problems of excessive roading in grizzly habitat and further shrink the small, scattered, and isolated pockets of core habitat for grizzlies.

Response: Please refer to the response to Letter 12, comment 127, below.

Letter 12, comment 127: In all alternatives, DNRC abandons tried and true bear conservation approaches, such as protecting fixed core areas, without biologically sound reasoning. Even though the core area protection approach has proven to be effective, DNRC has replaced it in favor of a new system of rotating and temporarily protecting "quiet areas." Research has demonstrated that grizzly bears, especially females with cubs, are particularly cautious and less likely to use areas that have been recently filled with the din of human activity, including chainsaws and trucks.

Response: Several strategies to provide secure habitat for bears were explored and recommended in the 1990s, including the Core Area approach (IGBC 1998) and the Seasonally Secure Areas approach (NCDE Access Task Group 1998). The Core Area approach defined areas that were secure from motorized use, prohibited motorized features, and provided seasonal habitat in proportion to that available in the subunit for a period of 10 years, after which time the areas could be moved. The Seasonally Secure Areas approach provided secure areas of high-quality habitat that would be highly available to bears for the season of use. The Core Area strategy was adopted by the USFS and other land managers, including DNRC, as the simplest solution to managing human access and grizzly bear security on multiple-use lands. In the case of DNRC lands, the unintended consequence of implementing core areas in the Stillwater State Forest was permanent dedication of static core areas, because DNRC did not have the latitude (in land area or road network) to shift dedicated core areas every decade or so. During development of the HCP, DNRC chose to reexamine its approach to providing grizzly bear security habitat and proposed a "quiet areas" approach, which included implementing 4 years of management followed by 8 years of rest, which is similar to the approach implemented under the Swan Valley Grizzly Bear Conservation Agreement (Swan Agreement) (USFWS et al. 1995, amended 1997). DNRC's HCP would also restrict commercial activities in important seasonal habitats, which is similar to the seasonally secure areas approach described above.

Draft EIS Section 4.9.3.2 (Grizzly Bears – Environmental Consequences) includes subsections titled Road-related Effects and Risk of Bear-human Conflicts, which acknowledge that DNRC's proposed approach may

result in potential effects on grizzly bears, including disturbance and displacement and risk of conflict. However, these effects are minimized and mitigated by several HCP commitments. The Draft EIS (page 4-300, lines 29 through 33) concludes that the rotation of commercial harvest activities in combination with restricting commercial activities in spring habitat in the spring period and committing to no net increases in open road densities on rested subzones would reduce the risk of displacement and and bear-human conflicts such that potential adverse effects would be sufficiently minimized to allow bears to successfully meet their habitat requirements.

We note that in the Stillwater Core, where existing security core would be replaced with the implementation of quiet areas, the proposed transportation plan proposes reconstruction of existing roads or use of temporary roads to access timber stands and would construct only 2 miles of permanent road in this area over the Permit term, further minimizing the effects of roads in the "core area." In the Swan River State Forest, if the Swan Agreement is terminated, DNRC would also implement the quiet areas approach for bears along with seasonal restrictions on roads in important habitats for bears. This program is an extension of the measures implemented under the Swan Agreement and would maintain the existing road system that is currently supporting grizzly bear populations. We note that the Swan Agreement has been in place since 1995 and that recent monitoring associated with the Swan Agreement indicates that a number of bears spend significant portions of their time in the valley bottom in the presence of extensive road systems.

The USFWS will examine the adequacy of this approach in its ESA Section 7 biological opinion and Section 10 statement of findings.

Letter 13, comment 130: Grizzly bear status may change again at the federal level. Yet, DNRC proposed to endanger grizzlies by eliminating core habitat. "Quiet areas" are no substitute for stringent core habitat protection.

Response: Please refer to the response to Letter 12, comment 127, above. Additionally, if the status of grizzly bears changes over the Permit term, the USFWS and DNRC would address that issue as a changed circumstance, as described in Draft HCP Chapter 6 (Changed Circumstances).

Letter 18, comment 143: The plan seems to have overlooked recent findings on the effects on food supply for grizzlies due to global warming (reducing whitebark pine nut production).

Response: The USFWS has considered differing views associated with climate change and whitebark pine availability with the recent delisting and re-listing of grizzly bears in the Greater Yellowstone Ecosystem (GYE). The USFWS considered these issues in detail using all available science before grizzly bears were delisted in the GYE in 2007 (Servheen 2010, personal communication). When developing the HCP and EIS, the USFWS and DNRC considered the importance and relevance of whitebark pine in developing and analyzing appropriate mitigation measures for grizzly bears on HCP project area lands (DNRC 2005, updated 2009). Whitebark pine seeds are just one of the many nutritious foods available to grizzlies in the GYE, and grizzly bears do not depend on whitebark pine cones for survival. Whitebark pine trees do not produce cones every year and the seeds are not eaten by bears every year. The decline of whitebark pine trees is not a new issue; it has been occurring for decades in Yellowstone and western Montana due to blister rust disease and pine beetles (Servheen 2010, personal communication). Grizzly bears are food generalists that exploit seasonally and locally abundant food sources when they are available. Whitebark pine nuts can periodically be an important seasonal food source for some bears using dry habitats along the east front of the Rocky Mountains or the GYE (Mace 1987a; Mattson et al. 1991). Within the HCP project area, very few DNRC parcels occur near the GYE or on the east front of the Rocky Mountains. In the NCDE, whitebark pine nuts do not comprise a major proportion of grizzly bear diets (DNRC 2005, updated 2009). Further, despite declining populations of whitebark pine and decreasing nut production (Kendall 2008), grizzly bear populations in the Northern Continental Divide Ecosystem (NCDE) and the GYE have continued to increase (Kendall et al. 2009; Servheen 2010, personal communication). Given the relatively limited occurrence of whitebark pine on HCP project area lands, the limited ability of DNRC's covered activities to appreciably influence whitebark pine as a food source for bears, and the relatively low proportion of pine nuts in bear

diets in the NCDE, this issue was not considered a predominant risk factor for bears within the HCP project area warranting detailed analysis or specific mitigation measures. Any future vegetative habitat changes over time attributable to climate change that are factually supported would be addressed by both DNRC and the USFWS through changed circumstances as described on Draft HCP pages 6-11 and 6-12. Please also refer to the general responses to comments concerning climate change (Section 2.7.1).

Letter 32, comment 170: The grizzly bear management requirements proposed in the plan for the Stillwater Block is a much more workable plan that allows other resources to be managed while protecting the bear. Closures of areas during seasons of use by the bear allows protection of the bear but also recognizes other forest uses. This same policy should be adopted for all areas, including the Swan River State Forest. Now that Plum Creek lands have been sold to conservation groups and/or transferred to USFS ownership, seasonal closures would benefit the grizzly bear, other wildlife, and other uses of the forest.

Response: The strategy for the Stillwater Block was derived from the multi-party agreement implemented to conserve bears in the Swan River Valley (Swan Agreement), which is described briefly on Draft EIS page 3-5. The Swan Agreement will remain in effect until such time that it is terminated by one of the signatories. If it is terminated, DNRC would implement the proposed HCP in the Swan River State Forest. The proposed HCP commitments for the Swan River State Forest are similar to those proposed for the Stillwater Block. Both strategies contain fixed transportation plans and identify large blocks that would receive required periods of rest following commercial activities. If, in the future, DNRC acquires The Nature Conservancy (TNC) lands in the Swan, and those lands are added to the HCP project area, the USFWS and DNRC would develop a similar plan to address access considerations and important habitat areas during seasons of use by bears.

Letter 44, comment 191: The proposed alternative creates the potential for core grizzly bear habitat to be fragmented or at least disturbed. Core grizzly habitat would be called "quiet areas" that do not provide the same level of protection, which is unacceptable. Similar comments apply to "mitigation" within lynx denning habitat.

Response: Please refer to the response to Letter 12, comment 127, above. Regarding mitigation in lynx denning habitat, please refer to the response to Letter 119, comment 596 (Section 2.2.2).

Letter 45, comment 198: The Grizzly Bear Recovery Plan and the preponderance of research, including Mace and Waller's South Fork Grizzly Bear Study, demonstrate that female grizzly bears need substantial areas free of open and even gated roads to successfully rear their young. Core, essentially roadless, grizzly bear habitat is essential and cannot be replaced with roaded "quiet areas."

Response: Please refer to the responses to Letter 12, comment 127, above, and Letter 109, comment 495, below.

Letter 72, comment 233: On page 4-297, the DEIS states that road closures are ineffective. On page 4-316, the DEIS describes that bears will be at increased risk as a result of roads and road building. On page 4-75, all alternatives will allow building of more miles of roads in the HCP area. After making these statements, the DEIS concludes on page 4-140 that increased access and road standards will somehow benefit grizzly bears. This makes no sense. The preferred alternative needs to contain road densities and road closures that benefit grizzly bear populations.

Response: The USFWS believes the Draft EIS adequately describes the effects of roads on grizzly bears (see subsections Road-related Effects and Risk of Bear-human Conflicts in Draft EIS Section 4.9.3.2, Grizzly Bears – Environmental Consequences). We also believe the Draft EIS provides an adequate assessment of DNRC's road closure program, including its effectiveness in some areas and shortcomings in others. DNRC has attempted to address these issues in the proposed HCP by committing to increase its inspection and repair program for closure devices (see Draft HCP page 2-17). Regarding the reference to the conclusion on Draft EIS page 4-140 that bears would somehow benefit from increased access and reliance on closure devices, we failed to find this statement or draw this conclusion from the text. This section of the Draft EIS evaluates

how the proposed conservation measures might affect plant species of concern in the HCP project area. On lines 5 through 8, the document states that improving the maintenance of road closures (under grizzly bear commitment GB-RZ3) may slow the spread of weeds by reducing off-road vehicle traffic in these areas. The Draft EIS does not draw a conclusion that increased access will benefit bears. Draft EIS pages 4-296 and 4-297 conclude that improving DNRC's road closure program would benefit bears. HCP applicants are required to minimize and mitigate the impacts of incidental take resulting from their covered activities to the maximum extent practicable. While measures that offer benefits to a covered species are desirable, they are not specifically required. DNRC acknowledges that its road building activities have the potential to cause incidental take of grizzly bears. Therefore, its HCP includes minimization and mitigation measures to address the impacts of that take. Briefly, those measures include restricting the time of year when DNRC and the public use those roads, making sure that closed roads are not being illegally accessed, and closing areas to management of some lands for 8 years. These and other measures offset the effects of roads on the landscape by reducing the risk of bear-human conflicts and providing bears security to meet habitat needs.

Letter 73, comment 241: We don't have much left in the way of grizzly bear habitat--only 1% of their former range. So it seems rather incomprehensible that we would risk this vital and valuable species to further exploitation.

Response: Regarding grizzly bear habitat, the range and numbers of grizzlies were reduced to less than 2 percent of their former range and numbers by the 1930s, approximately 125 years after first contact (USFWS 1993, p. 9; Mattson et al. 1995, p. 103; Servheen 1999, p. 51). Since that time, we do know that grizzly bears have been expanding their numbers (Kendall 2009) and range in Montana (Wittinger et al. 2002). Contrary to the commenter's statement that the proposed HCP would further exploit grizzly bears, the DNRC HCP would add conservation measures for grizzly bears not only within their recovery zones but also outside of recovery zones, in anticipation of occupancy and eventual delisting.

Letter 90, comment 341: The rotation system has too many loop holes for the DNRC to keep entering closed rest lands for too many reasons. This does not provide true security. After the area is closed, there will be habitat cover changes as well as reduced food sources. This decision to constantly change quiet areas, with reasons to enter, will only create human-bear conflicts as well as bear-bear conflicts as bears are forced to constantly move and find new and different food sources. Bears are territorial and this will create constant bear-bear conflict.

Response: Please refer to the response to Letter 169, comment 699 (Section 2.2.4) regarding allowances within the HCP commitments. The anticipated effects of these interruptions in rested zones on bears are disclosed on Draft EIS pages 4-300 and 4-301. The EIS adequately indentifies the causes of bear-human conflicts and describes the HCP measures to mitigate those conflicts (see Draft EIS subsections Risk Factors, pages 4-272 through 4-274; Open Road Densities, pages 4-292 through 4-297; Secure Habitat and Quiet Areas, pages 4-299 through 4-302; Risk of Direct Conflict, pages 4-308 to 4-308; and Visual Screening, pages 4-410 through 4-412). Regarding bear-bear conflicts, Draft EIS page 4-279 acknowledges that shrub and tree cover, as well as topographic landscape features, may commonly be used as security from other bears, and dispersing subadult bears may be forced to choose poor home ranges that may be equally dangerous to their survival. In the Final EIS, this discussion has been updated to clarify that the data are insufficient to fully assess the effects of predation on younger bears by adult bears when considering potential indirect effects of various human activities that may displace subadult bears into the home range of an aggressive adult bear. We are unaware of any published studies that have documented bears being displaced by human activity that are subsequently killed by other bears. Interactions of all kinds between bears are likely to occur daily even in areas little influenced by humans, particularly parks with very high bear densities, such as Glacier and Yellowstone National Parks. These populations continue to thrive, in spite of their extremely high potential for bear-bear conflict.

Anticipated impacts of all alternatives related to potential displacement of grizzly bears into habitat poorly suited for feeding, breeding, and sheltering were discussed extensively on Draft EIS pages 4-285

through 4-304. The Final EIS has been revised to describe grizzly bear use and interactions in association with availability of foods (see subsection Habitat Requirements in 4.9.3.1, Affected Environment). Reports in the literature are mixed regarding the impacts of logging activities on bear foods; however, the majority of vegetative food items preferred by grizzly bears occur in early seral plant communities where forest cover is absent or relatively sparse (Draft EIS pages 4-273 through 4-277). Thus, given the available information and the fact that quiet areas may be interrupted or moved on the landscape under the DNRC HCP, we do not believe that bear-bear conflicts between adult and juvenile bears that may possibly result would occur at a level that would adversely affect bears beyond what would occur naturally. We also do not believe that DNRC forest management activities would appreciably reduce bear foods on the landscape and acknowledge that some improvement and/or maintenance of some foods over time is possible. Potential effects of allowances and interruptions may result in some adverse effects, specifically when DNRC interrupts a rested subzone to complete a salvage harvest requiring more than 30 days to complete. However, additional mitigation would be required to offset those effects, including restarting the rest period and developing a mitigation plan. Interruptions would also be tracked and reported as described in Draft HCP Chapter 4 (Monitoring and Adaptive Management) and addressed through adaptive management if issues arise.

Letter 90, comment 340: Support federal grizzly bear conservation by providing quality seasonal habitat or minimizing human-bear conflict. Building 1,400 miles of road will not conserve habitat and minimize human-bear conflict, but instead do just the opposite. Roads are the biggest reason for the decline of grizzly bears. Roads reduce use of habitat by grizzly bears. Roads are responsible for habitat fragmentation. Roads are also a major vector for grizzly bear and human contact, which is a primary source of grizzly bear mortality. Constructing 1,400 miles of new roads will only reduce, not maintain, grizzly bear populations.

Response: Please refer to the general response to comments concerning adequacy of the HCP (Section 2.3.1.1). Regarding the issue of known causes of bear mortality, refer to the response to Letter 109, comment 493, below.

Letter 90, comment 342: What is a better food source for grizzly bears, logged roaded lands or unmanaged lands?

Response: The type and quality of grizzly bear foods is highly variable and influenced by the geographic area in question, local site productivity, aspect, elevation, soil type, season of the year, and food type being considered (i.e., cutworm moths vs. huckleberries vs. chokecherries vs. buffalo berries vs. whitebark pine seeds vs. herbaceous forage vs. carrion, etc.). However, as a general indicator of habitat quality for grizzly bears, Mace et al. (1998) found that bears in western Montana strongly selected for areas with high levels of deciduous green vegetation (i.e., productive wet areas, such as wetlands and avalanche chutes) that could be identified using satellite imagery. Areas consisting of dry forest types with little deciduous green vegetation were generally considered lower quality habitat in their effort to model cumulative effects, regardless of whether they were managed, wilderness, or other unmanaged lands. Some researchers have documented increases in bear food production after forest disturbances such as logging (Zager et al. 1983; Bratkovich 1986), while others have suggested that bears avoid young clearcuts (McLellan 1989, 1990b, 1992; Waller 1992; Anderson 1994; Waller and Mace 1997b). Roads, however, were considered by Mace et al. (1998) as a detriment to habitat quality for grizzly bears due to their potential to displace them and increase risk of contact with humans resulting in death of the bear. Depending on their location, condition, and level of use, roads can increase risk for grizzly bears. Findings in the literature are mixed regarding effects of logging on bear foods. For a complete discussion of grizzly bear foods see the DNRC HCP Grizzly Bear Species Account (2005, updated 2009).

Letter 90, comment 347: Is "relatively" quiet good enough for grizzly bears in the rotation plan that is a change from present core management actions (ES-7)?

Response: Please refer to the response to Letter 12, comment 127, above.

Letter 99, comment 401: The presence of roads is the single most important factor affecting habitat quality and habitat selection by endangered grizzly bears, Canada lynx, and other wildlife species. All four of the alternatives in the DEIS, including the "Increased Conservation HCP" (Alternative 3), result in an increase in the miles and density of roads on HCP lands (ES-9). The proportion of trust lands where total road densities exceed 2 miles per square mile would also increase under each of the alternatives. This is above the threshold for suitable grizzly bear habitat requirements. There is not a single alternative that will result in decreased road densities or miles of roads. The DEIS and PHCP should include an adequate conservation alternative that decreases total roads and road densities on PHCP lands.

Response: Please refer to the responses to Letter 119, comment 575, below, as well as the general response to comments concerning the EIS alternatives (Section 2.5). Additionally, please refer to the general responses to comments concerning take minimization and mitigation (Section 2.3.1.3) and the jeopardy standard (Section 2.3.1.4).

Letter 101, comment 413: We support the assertion by DNRC that practices currently underway in the SVGBCA will continue under the HCP (HCP Section 2.1.1.7).

Response: The comment is noted.

Letter 106, comment 438: DNRC apparently has done a good job of grizzly bear habitat management so far, as is evident in the recent population studies conducted in northwestern Montana. The potential for unintended consequences resulting from the complexity of the proposed management scheme is great.

Response: The USFWS and DNRC are aware of difficulties that can arise when managing under various plans, rules, and policies. As such, many of the HCP commitments were adopted based on policies DNRC already follows, or were revised while carefully considering measures already in place. Other commitments are new. DNRC and the USFWS also expect to cooperate if any unforeseen situations arise to address those situations and make any necessary adjustments to the HCP. The USFWS and DNRC are confident that the HCP as written is achievable and workable.

Letter 109, comment 492: The HCP ignores the body of scientific research that grizzly bears need secure habitat with low road densities. Road densities are already very high on trust lands on the Stillwater, Coal Creek, and Swan River State Forests. Rather than reducing road densities, all alternatives actually increase them resulting in decreased secure habitat.

Response: Please refer to the responses to Letter 12, comment 127, above, and Letter 109, comment 495, below.

Letter 109, comment 493: Mace and Waller (1998) reported a statistically significant decline in numbers of their South Fork study area grizzly bears that exceeded 2% per year between 1987 and 1996. This decline resulted from a high human-caused mortality of female grizzly bears. Very high mortalities among the NCDE grizzly bears in recent years indicate that the declines documented above continue and may well apply to other, as yet unstudied, portions of the ecosystem. Known, human-caused female mortalities have exceeded recovery criteria since 1997 and, in 2004, the 31 known human-caused mortalities were greater than in any year since 1974. The DEIS and HCP fail to factor the increase in road densities, decrease in secure habitat and its relationship to excessive grizzly bear mortality.

Response: The USFWS believes the Draft EIS adequately describes the risk of mortality to grizzly bears associated with DNRC's proposed HCP transportation plans and approach to providing security for bears. In the Draft EIS, please refer to page 4-291, lines 29 through 36; page 4-292, lines 1 through 8; page 4-297, lines 23 through 26; page 4-300, lines 30 through 31; and page 4-302, lines 20 through 25. Further, DNRC describes anticipated take for grizzly bears in Draft HCP Chapter 7 (DNRC's Identification of Impacts that Have the Potential to Constitute Take under the HCP). As demonstrated by the grizzly bear species account (DNRC 2005, updated 2009) and HCP commitments, we believe that the factors contributing to the human-caused mortality of female bears have been thoroughly addressed.

Letter 109, comment 494: The DEIS fails to correlate the HCP to the NCDE recovery criteria. A decade ago, the USFS noted that all but one recovery criterion had been met in the NCDE. As of 2003, none of the five demographic recovery criteria were met. How many recovery criteria are currently met? How does this HCP offer a contribution to recovery?

Response: Section 10 of the ESA does not require HCPs to recover listed species. However, the USFWS encourages applicants to incorporate actions that will contribute toward recovery. DNRC's HCP would contribute to recovery by providing certainty that grizzly bear habitat would be maintained on state trust lands over time and space.

Recovery progress is monitored and reported semi-annually by the USFWS Grizzly Bear Recovery Coordinator. Mortality events are tracked on an ecosystem scale and may or may not have any relationship to a proposed project. The USFWS' ESA Section 7 biological opinion will consider the status of the species when evaluating the effects of the proposed action.

Letter 109, comment 495: Roads have negative impacts on grizzly bears. The grizzly bear strategy relies on closing roads with gates seasonally as a mitigation measure. The IGBC's NCDE subcommittee proposed these same measures several years ago. A peer review of the Motorized Access Management Strategies for Grizzly Bear Habitat in the Northern Continental Divide Ecosystem addressed this question (McLellan et al. 2000). This review assumed that gated roads will function as closed roads at best or at least as low-use roads (< one vehicle per day). The review states, "It appears that these bears avoid areas with high densities of low use roads, but don't avoid these individual roads when they are encountered in their seasonal range. If densities of gated roads are excessive, SSAs may not be as secure as hoped. In addition, it is not clear that areas with networks of roads that are only closed seasonally will be regarded by bears the same as permanently closed roads. Once a bear is within a network of closed roads, the roads may have little effect on the bears use, however, bears may not use areas with seasonally closed roads because of previous experience during seasons when the roads are open. There appears to be no data on the effectiveness of seasonally closed roads."

Response: The referenced reports focus on the displacement effects of seasonal road closures. However, based on recent monitoring in the Swan River Valley associated with the Swan Agreement, we know that a number of bears spend significant portions of their time in the valley bottom in the presence of extensive road systems. As stated on Draft EIS page 4-272, we believe the primary effect of roads on bears is the risk of bear-human conflicts. Based on NCDE data, the primary cause of bear mortality over the past 10 years has been associated with bear-human conflicts. In the Swan River Valley, Swan Agreement signatories formally recognized the ongoing bear-human conflicts in the valley and agreed to redirect some conservation efforts to more directly address this concern (including funding for a bear ranger). These effects are addressed in DNRC's HCP through numerous commitments to minimize and mitigate the potential for bear-human conflicts.

Letter 109, comment 496: The HCP does not have habitat-based criteria to make sure that good bear habitat is always available. Are bears being relegated to unsuitable habitat to allow for activities? There needs to be a provision to make sure that bears are not being displaced into habitat that is not able to meet their dietary needs or worse, into developed areas.

Response: DNRC modeled grizzly bear habitat based on elevational and seasonal distribution of habitats on the landscape using methods similar to those used in other management strategies (IGBC 1998; Mace et al. 1999). Where seasonally important habitat is mapped through modeled criteria, such as spring habitat, DNRC would limit its activities. During the remainder of the non-denning period, on blocked lands, DNRC activities under the HCP would be managed by incorporating periods of rest that would only affect a portion of a grizzly bear home range at any given time. Likewise, on scattered lands, DNRC would manage only a fraction of a home range at any given time. Furthermore, in the preponderance of cases, DNRC lands exist in a landscape dominated by federal forestlands. Therefore, as discussed on Draft EIS pages 4-302 through 4-305, DNRC and the USFWS expect that bears would have adequate suitable habitat available. If

better models are developed that could be readily implemented by DNRC, such changes would be discussed as described in Draft HCP Chapter 4 (Monitoring and Adaptive Management).

Letter 109, comment 497: It defies logic that if the Swan Agreement is terminated then the HCP's transportation plan for the Swan River State Forest would increase open road densities. The HCP must be at least as stringent as the Swan Agreement or even more so.

Response: Regarding the portrayal of open roads in the Draft EIS, if the Swan Agreement is terminated, the USFWS and DNRC prudently chose to portray the worst-case scenario, which the document acknowledges is not likely to happen. Since DNRC has not yet acquired the Plum Creek in-holdings in the Swan River State Forest, the agencies also prudently chose to evaluate the potential for an increase in roads considered "open" if parties other than DNRC acquired the lands.

Letter 109, comment 498: The HCP should require visual screening adjacent to all roads since gated roads could be opened at any time. The HCP should also require retention of target amounts of hiding cover. None of the alternatives do this.

Response: Whether a gated road could be opened and used by DNRC personnel or contractors would depend on the location of the road, the season of proposed use, and the type of activity to be conducted. Thus, all roads could actually *not* be opened at any time. Also, gated roads in grizzly bear recovery zones would not be open to general public motorized access; doing so would violate DNRC commitments to transportation plans and open road management on scattered lands. DNRC personnel and contractors would also be prohibited from carrying firearms while conducting forest management activities, which would reduce risk for bears and lower any additional need for visual screening along restricted roads. By applying the visual screening commitment to open roads only, the USFWS and DNRC consider the commitment is being placed where it is most needed and likely to be useful, while balancing DNRC's silvicultural needs for forest management. The USFWS considers this commitment adequate as written for minimizing risk to grizzly bears associated with DNRC's forest management activities. The necessity of retaining hiding cover for grizzly bears was given careful consideration by both agencies during development of the HCP. Ultimately, hiding cover needs for bears were considered by the USFWS to be adequately met through three commitments: (1) retain visual screening along open roads (GB-RZ2), (2) maintain cover within 600 feet of any point in a harvest unit (GB-NR4), and (3) retain visual screening in riparian areas and wetland management zones (GB-PR6). Other important supporting information used to evaluate the need for an additional commitment to a specific hiding cover threshold included: (1) DNRC manages under a sustainable yield approach, (2) ample forest cover is likely to vary little on DNRC lands over the Permit term (see Draft EIS Table 4.9-17, page 4-310), and (3) threshold requirements have easily been met on DNRC lands under the Swan Agreement during the last 10 years.

Letter 109, comment 499: The HCP does not minimize and mitigate "take" if secure habitat decreases under all alternatives over the 50-year period (DEIS, page 4-302).

Response: Please refer to the response to Letter 12, comment 127, above.

Letter 110, comment 515: Road use and access is another serious flaw in the plan. This applies to the lynx but even more so to the grizzly bear. In fact, there is a wealth of data from studies regarding the effect of road usage upon grizzly bears. This data exists on the federal level and state. A lot of it refers to such items as road density, bear use, bear mortality, conflicts with bear, and much is interconnected with logging and roads.

Response: Regarding the flaws of the plan, please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1). The Draft EIS adequately describes the effects on grizzly bears of DNRC's road building and access under the proposed HCP (see Draft EIS pages 4-285 through 4-298). In fact, the very data mentioned in this comment was used to disclose and compare the effects. The Draft EIS also describes how DNRC's commitments would minimize, mitigate, or offset the anticipated effects. Lastly, in Draft HCP Chapter 7 (DNRC's Identification of Impacts that Have the Potential to Constitute Take under the HCP), DNRC identifies potential "take" associated with roads under the proposed HCP.

Letter 111, comment 521: The DEIS fails to analyze the impacts of temporary roads. Building roads, even temporary ones, in occupied grizzly bear habitat will adversely impact bears. The impacts from disturbance during construction and use of the roads for accessing timber sales and hauling logs will displace bears for several years. The impacts of building them are the same as building permanent roads, given the fact that grizzlies are likely to avoid disturbed areas for several generations.

Response: The grizzly bear analysis in the Draft EIS provides a detailed analysis of the various roads and types of uses likely to be associated with impacts to grizzly bears (see Draft EIS pages 4-272, 4-273, and 4-285 through 4-299). The analysis approach used in the Draft EIS was based on accepted interagency methods to evaluate open and total road densities, and consideration of the fact that the allowable proposed amount of temporary road in the Stillwater and Swan transportation plans would not vary under any of the action alternatives considered (i.e., 8 miles and 5 miles, respectively). The effects of temporary roads were not singled out for discussion because they would typically be built and used in conjunction with commercial forest management activities, such as logging, yarding, hauling, and site preparation activities. Thus, any additional impacts to grizzly bears associated with the construction and use of temporary roads at the landscape scale were considered immeasurable when considered in conjunction with the other commercial project-related activities. The USFWS considers permanent open and permanent restricted roads to have much greater risk potential for grizzly bears than temporary roads. The analysis of *persistent* open and total road densities was considered the most relevant analysis approach for the purpose of comparing the alternatives in the context of risk to grizzly bears at the landscape scale. We are unaware of any published studies suggesting that bears would avoid areas with temporary roads for several generations following their construction and use. Furthermore, a radio-collared sample of 10 grizzly bears (six males and four females) in the Swan Valley from 2001 to 2005 demonstrated broad use of the valley and tolerance of high road densities (Hicks et al. 2010).

Letter 111, comment 525: The HCP DEIS fails to address the impacts of long-term displacement from secure habitat on grizzly bears.

Response: Please refer to the response to Letter 12, comment 127, above.

Letter 111, comment 527: The HCP grizzly bear strategy relies on closing roads with gates seasonally as a mitigation measure. This strategy's effectiveness in providing adequate security for bears is highly questionable. First, the effectiveness of road closures that are in place only during a certain season, i.e., temporary, is highly likely to be ineffective. Gates are typically utilized as temporary, seasonal road closure devices. Gates have been shown to be ineffective closures on National Forest lands, where both citizen and USFWS road closure monitoring have revealed the inadequacy of gates as road closure devices.

Response: Closing roads with gates is only one form of mitigation that would be required under the HCP. Other measures include: (1) limits on the amounts of road allowed under proposed transportation plans, (2) requirements to make temporary roads impassible following their use, (3) incorporation of other more restrictive closure devices in areas where frequent administrative use is not necessary, (4) implementation of the 4-year active/ 8-year rest commitment, and (5) annual closure monitoring and prompt repair in areas where problems occur. We anticipate that implementing such measures would be adequate to restrict motorized public access and provide for security needs of grizzly bears; however, we recognize that instances of illegal access use will occur. These occurrences would be addressed on a case-by-case basis through annual closure checks and repairs. Different types of closure devices or methods would be incorporated as needed to address problem locations.

Letter 117, comment 540: DNRC fails to justify planned increases in open road densities, which will adversely affect bears. On EIS pages 2-272 and 2-273, DNRC admits that increased roads will cause in increase in harm to bears. DNRC includes a fairly good summary of the problem that roads pose to bears and provides appropriate citations to show how roads harm bears. Then DNRC simply dismisses this information in its plan to increase roads and timber harvest. This dismissal is arbitrary, irrational, and contrary to the best available science about road impacts on bears. Further, human population expansion and increased human

use in these areas will likely make these problems worse. On HCP page 7-16, DNRC demonstrates significant violations of allowable road standards on the scale of BMUs. In response, DNRC should: (1) close more roads, rather than fewer, and (2) expand and connect core security habitat through strategically planned road closures and obliterations.

Response: None of the relevant information in the analysis was dismissed. Regarding roads, please refer to the general responses to comments concerning proposed road building under the HCP (Section 2.8). Road density data presented in Draft HCP Tables 7-1 through 7-4 disclose amounts of DNRC land area by administrative unit and grizzly bear subunit that exceed an open road density (ORD) of 1 mi/mi^2 or a total road density (TRD) of 2 mi/mi^2. In a number of cases on DNRC lands, road densities exceed thresholds for the Flathead National Forest under Amendment 19 (i.e., 19 percent ORD or 19 percent TRD in a BMU subunit). The densities reported are heavily influenced by DNRC's limited ownership, differing mandate to generate revenue from managed forest landscapes, and different requirements under the ESA as compared to federal lands managed by the USFS. As indicated by these data on road densities and information cooperatively reported annually in the Swan Monitoring Report, the 19/19 federal road density thresholds are difficult to meet on managed forest landscapes where revenue generation is an important goal. These types of considerations are, in part, what motivated DNRC to explore developing an HCP. HCPs allow for some adverse impacts, as long as the applicant demonstrates they are following their plan to minimize and mitigate the impacts of take to the maximum extent practicable. The USFWS will assess the sufficiency of the HCP to protect grizzly bears in its ESA Section 7 biological opinion and Section 10 statement of findings.

Letter 117, comment 541: DNRC's proposal to replace core security habitat with so-called "quiet" areas (rotating temporary areas of no timber activity) runs counter to the significant body of scientific evidence that shows that bears need permanent core secure habitat away from high densities of people. Without justification, and contrary to the scientific information it cites, DNRC proposes a plan that would remove requirements for core security habitat, replacing them with rotating, temporary "quiet areas" of no activity. DNRC and the USFWS have not demonstrated that such an approach will work; and the weight of scientific evidence is on the side of protecting core areas on a permanent basis. The plan must be revised to reflect the best available science as required by the ESA, which would mean giving secure core areas permanent protection.

Response: Please refer to the response to Letter 12, comment 127, above.

Letter 117, comment 542: DNRC fails to evaluate road access issues in light of existing data on bear home ranges, bear use, mortality, density, conflicts, and habitat quality. In evaluating roads and road densities, DNRC treats the roads/density issue as a simple mathematical exercise (EIS page 4-387), which could result in harm rather than benefit to bears, if DNRC chooses to close the wrong roads in the wrong places to achieve the density standards. DNRC should also use existing geographically explicit federal and state data on bear use, home ranges, densities, mortalities, conflicts, and habitat to: (1) analyze the effects of proposed road standards and timber harvest on habitat for bears, and (2) prioritize the best roads to close to protect bear foraging opportunities and to expand and create new secure habitat areas.

Response: The grizzly bear analysis in the Draft EIS provides a comprehensive analysis of the variety of roads and types of uses likely to be associated with impacts to grizzly bears (see Draft EIS pages 4-272, 4-273, and 4-285 through 4-299). The analysis approach selected was based on accepted interagency methods to evaluate open and total road densities. When developing the transportation plan for the Stillwater Block, a habitat quality "greenness" map by season was generated following the methods of Mace et al. (1999) to help identify areas of seasonal importance for grizzly bears. Also, at the early stages of developing that transportation plan, DNRC and USFWS biologists consulted with the local area MFWP biologist to help identify areas on the forest possessing the best habitat during the spring, summer, and fall seasons. This information was used to identify where road closures would likely be most effective and provide the greatest measure of security for bears during important periods. Similar maps were created for the Swan River State Forest. For the Swan, important habitat for bears was identified in the valley bottom

below 5,200 feet. Broad-scale spring restrictions were built into the Swan Transportation Plan based on these considerations. While it would have been desirable for this purpose, there is not an adequate sample of radio-collared grizzly bear use of DRNC lands for the Swan River or Stillwater State Forests. Regarding the commenter's reference to Draft EIS page 4-387, that discussion pertains to road management effects on big game species such as deer and elk.

Letter 117, comment 543: DNRC recognizes the harmful impacts of roads on bears, the ineffectiveness of road closures, and the lag effects of road closures on bear use, but irrationally proceeds to increase its reliance on a flawed road closure program. On EIS page 4-297, DNRC admits that road closures are not an effective means of protecting bears. On EIS page 4-316, DNRC admits to the increased risk to bears as a result of roads and road building. On EIS page 4-74, DNRC demonstrates that all alternatives will allow building of more miles of roads in the HCP area. Then DNRC irrationally claims on EIS page 4-140 that benefits will accrue to bears as a result of increased access and roads and increased reliance on road closures. This conclusion does not follow from the DNRC information on the harmful impacts of roads on bears detailed on EIS page 4-272.

Response: Please see the response to Letter 72, comment 233, above.

Letter 117, comment 544: In its analysis of its roading and timbering program, DNRC fails to incorporate data on the recent years of excessive mortality on grizzlies. There have been chronic, excessive mortalities, especially of females, in all the grizzly bear ecosystems affected by this HCP. Roads are a contributing factor to grizzly mortality, as recognized by DNRC. In its revised plan, DNRC should evaluate the impacts of its increased road building program on grizzly mortalities in each ecosystem, and take steps to mitigate mortalities by protecting and expanding core secure habitat, and reducing roading.

Response: The USFWS has closely tracked grizzly bear mortality and causes for the past 30 years (USFWS 2009)**.** The Draft EIS adequately describes the potential effects of increased roads on DNRC lands on potential bear-human conflicts and resulting mortality of bears, as well as the measures DNRC would implement under the HCP to offset those effects (see Draft EIS page 4-291, lines 29 through 36; page 4-292, lines 1 through 8; page 4-297, lines 23 through 26; page 4-300, lines 30 through 31; and page 4-302, lines 20 through 25). The USFWS' ESA Section 7 biological opinion will examine mortality rates in the various grizzly bear recovery zones that would be affected by the proposed HCP. The USFWS cannot issue the Permit if it concludes that DNRC's road building would jeopardize the continued existence of grizzly bears. Regarding the issue of known causes of bear mortality, refer to the response to Letter 109, comment 493, above.

Letter 117, comment 545: DNRC fails to address the potential increase in weeds spread and the effects on bear vegetation through proposed increases in road building. Nowhere in the EIS or HCP does DNRC address the effects on grizzly bears of weed spread caused by roads. Weeds, such as knapweed and spurge, which are spread by disturbance activities such as road building, provide no food value for grizzly bears. DNRC needs to evaluate these impacts before expanding a road-building program that will exacerbate the spread of non-nutritious weeds.

Response: Pages 4-142 through 4-148 of the Draft EIS describe DNRC's noxious weed program and the effects of HCP implementation on noxious weeds. It is expected that DNRC would continue to implement responsible weed management measures on state trust lands into the future. During development of the HCP conservation commitments, loss of grizzly bear habitat due to the spread of noxious weeds was not identified as a risk factor for bears. Further, the grizzly bear species account (DNRC 2005, updated 2009) states that "No sensitivity to weed control activities was found in the literature reviewed for the grizzly bear." Lastly, other bear plans, including the *Grizzly Bear Management Plan for Western Montana* (Dood et al. 2006) and the *Final Conservation Strategy for the Grizzly Bear in the Yellowstone Ecosystem* (ICST 2003), do not address weeds as an issue of concern. Therefore, no conservation commitments have been developed at this time. However, if new research determines that noxious weed spread is an issue for grizzly bear

conservation, the USFWS and DNRC would address the issue as described in Draft HCP Section 4.2.3 (Adjusting for New Research).

Letter 117, comment 546: DNRC fails to evaluate the significant implications of projected human population increases in the affected area on grizzlies. In numerous places in the document, DNRC concedes that human population and human use will greatly increase (e.g., EIS page 5-10), but it fails to evaluate the cumulative impacts of these population changes and increased human use of grizzly habitat on bears. Despite the ample body of science, some of which was cited in the HCP, nowhere in the document did DNRC attempt to evaluate these impacts either on an area basis or cumulatively. If DNRC did so, it would recognize the need to close more roads and provide more secure habitat to protect bears, to offset the impacts associated with a dramatic increase in human presence on the landscape.

Response: The USFWS and DNRC recognize the sensitivity of grizzly bears to human activity and have addressed all known potential effects of the proposed HCP on grizzly bears in the Draft EIS. The Draft EIS describes the anticipated effects on grizzly bears of proposed roads and changes in public access under the proposed HCP for DNRC's covered activities on forested trust lands. Please refer to Draft EIS page 4-291, lines 4 through 23 and 29 through 36; page 4-292, lines 1 through 8; page 4-294, lines 16 through 20; page 4-295, lines 19 through 21; page 4-296, lines 33 through 39; and page 4-297, lines 23 through 26. Additionally, the cumulative effects analysis describes the trend in the planning area toward increasing human populations and potential conflicts with grizzly bears associated with this trend. This analysis has been revised in Final EIS Chapter 5 (Cumulative Effects) to clarify that the proposed HCP would potentially contribute to cumulative effects of increasing human populations on grizzly bears in the planning area, particularly within its scattered parcels and in areas that are currently not accessible, where roads are constructed and increases in access for dispersed recreation may occur.

The commenter also suggests that DNRC, as the HCP applicant, is required to offset the impacts of increasing human populations in the planning area; that is incorrect. DNRC is required to minimize and mitigate to the extent practicable the impacts of take resulting from the covered activities, which are DNRC's forest management activities. The Council on Environmental Quality (CEQ) guidance on the consideration of cumulative effects (CEQ 1997) states that, where it is determined that significant cumulative effects would occur as a result of a proposed action, the action agency should avoid, minimize, or mitigate adverse effects. The cumulative effects analysis in Final EIS Chapter 5 has been revised to clarify how the potential cumulative effects to grizzly bears from the HCP would be at least partially offset by management on adjacent private and federal lands.

Letter 117, comment 554: DNRC fails to take into account the importance of its lands to connect grizzly habitat within and between ecosystems. The lands affected by this HCP, especially the blocks of land in the Swan, Coal Creek, and Stillwater Forest areas, are essential to maintain connectivity within the NCDE and between the NCDE and the Cabinet-Yaak ecosystems. Advances in conservation science have provided an improved understanding of the importance of inter-population connectivity for long-term viability of species (Breitenmoser et al. 2001). There have been several significant studies on habitat that is suitable and available to connect grizzly ecosystems (Carroll 2005; Merrill 2005). These studies show that these HCP lands and other nearby lands are essential to connecting grizzly ecosystems. In its revised plan, DNRC must reevaluate protection strategies in light of this new information, which would mean providing stronger, rather than weaker, protections for state lands.

Response: Please refer to the response to Letter 110, comment 516 (Section 2.2.2).

Letter 118, comment 559: Under the preferred alternatives, up to 1 year is allowed to repair non-functional road closures after they are discovered. This is far too long as the non-functional closures adversely affect grizzly bear security. For the road closures to function as intended and to provide the level of security claimed in the analysis in the EIS, the non-functioning road closures must be detected and repaired quickly.

Response: Both the USFWS and DNRC recognize the importance of detecting and repairing defective closures as promptly as possible. Given staffing and budgetary constraints, the 1-year timeline was considered the most prompt and reasonable commitment that could be adhered to year after year over the entire HCP project area by DNRC. DNRC's intent for addressing defective closures is to apply corrective measures as soon as possible following detection.

Letter 119, comment 571: We are concerned about reduced habitat security for grizzly bears and lynx, and reduced habitat quality for the HCP fish species due to the proposed opening of the Stillwater Core. Allowing public access on any new roads greatly exacerbates the impacts due to these roads, so DNRC should consider closing all new roads to public access.

Response: All permanent roads needed, but not yet constructed (19.3 miles), would be closed to the public year-round under the Stillwater Block Transportation Plan. However, 47.6 miles of existing road would be open seasonally for public use to access several popular destination points (see Draft HCP page 2-21). Draft EIS pages 4-288 through 4-302 include an analysis of the effects of roads and secure areas within the Stillwater Block.

Letter 119, comment 572: Why will DNRC automatically reduce habitat security for grizzly bears in the Swan River State Forest if the Swan Agreement terminates? Since the current Swan Agreement restrictions that DNRC follows are clearly practicable, this HCP should ensure that DNRC maintains or increases these restrictions should the Swan Agreement terminate. This HCP appears to undercut this objective, for example by pledging that whether the Swan Agreement remains in place or not, "no new restrictions would be placed on any roads currently classified as open to public access" (DEIS, p. 4-72).

Response: See the response to Letter 109, comment 497 (below).

Letter 119, comment 574: The U.S. Fish and Wildlife Service Grizzly Bear Recovery Plan goes into great detail on the harm to bears posed by roads into their habitat (see Grizzly Bear Recovery Plan, pp. 21, 145, 149). The DEIS echoes many of these concerns as well (see DEIS, page 4-272). Research into thresholds for road density in grizzly bear habitat have resulted in standards that allow no new roads in currently unroaded areas of grizzly bear habitat, and within roaded areas no more than 1.0 mile of open road per square mile, and no more than 2.0 miles of total road per square mile. The proposed HCP fails to incorporate or comply with any of these standards, by opening up the unroaded Stillwater Block to new roads for example, and by exceeding both open and total road density thresholds in areas of grizzly bear habitat that are already roaded.

Response: Please refer to the response to Letter 117, comment 540, above.

Letter 119, comment 575: We appreciate the detailed analysis in the body of the DEIS that documents the problem of excessive roads within grizzly bear habitat in the project area. The percent of HCP lands that exceed the total road density threshold of 2.0 miles of road per square mile of habitat is more than 50% in five BMUs, including more than 85% in one BMU and more than 95% in another (DEIS Table 4.9-11, page 4-289). These road densities are not significantly different under any of the proposed alternatives, even the "No Action" alternative. Within scattered parcels of state land occupied by grizzly bears, total road densities are more than double the 2.0 mi/mi^2 threshold (DEIS Table 4.9-12, page 4-291). Again, there is no difference between all of the proposed alternatives, except that Alternative 3 appears to cap total road densities within grizzly bear recovery zone habitat at existing conditions (which still exceeds the 2.0 miles of road per square mile of habitat threshold in two of the three DNRC units).

Response: The comment's interpretation is correct; there is little difference in the amount of road constructed under each of the alternatives. It is also correct that Alternative 3 caps total road densities on scattered parcels in grizzly bear recovery zones. This similarity among action alternatives regarding access management reflects DNRC's need to have adequate access to lands in its timber base for management over the 50-year Permit term. Under the HCP, DNRC would manage blocked lands based on a fixed transportation plan. It was not feasible for DNRC to make the same commitment on scattered parcels due to data limitations. Rather, DNRC estimated the miles of road they would need to harvest timber on those lands in

the 50-year Permit term for the EIS analysis. The miles of road estimated are considered a worse-case scenario. Because DNRC has not yet acquired TNC's in-holdings in the Swan River State Forest, the agencies felt it was prudent to evaluate the potential for an increase in roads considered "open" if parties other than DNRC acquired the lands. Through project implementation and monitoring, DNRC would be required to demonstrate that it is prohibiting creation of open roads and minimizing the amount of restricted roads needed on HCP project area lands. The monitoring and adaptive management program outlined in Draft HCP Chapter 4 (Monitoring and Adaptive Management) is structured such that the USFWS can monitor DNRC's road commitments and initiate management actions and responses if DNRC is not adequately demonstrating that it is minimizing roads. Also, please refer to the general responses to comments concerning the EIS alternatives (Section 2.5).

Letter 119, comment 576: The "No Action" alternative retains significantly lower open road densities than the Proposed Action (Alternative 2) in all five BMUs, which indicates that the proposed HCP will actually decrease habitat security for grizzly bears compared to current regulations. The proposed HCP will decrease rather than increase habitat security for grizzly bears compared to current regulations, and cause additional harm from open roads to the other HCP species as well. Failure to at least maintain current levels of impacts to the HCP species due to open roads is a failure to minimize and mitigate the impacts of its program to the maximum extent practicable, in violation of the ESA. Failure to maintain open road densities at or below current levels in the Swan River State Forest in any of its alternatives is a failure to analyze a full range of alternatives, in violation of NEPA and MEPA. Furthermore, within the scattered parcels of state land occupied by grizzly bears, open road densities are more than double the 1.0 mile of road per square mile of habitat threshold (DEIS Table 4.9-14, page 4-299). Once again, there is no difference between all of the action alternatives, and the improvement in these compared to the "No Action" alternative is barely measurable.

Response: Please refer to the general responses to comments concerning take minimization and mitigation (Section 2.3.1.1) and the jeopardy standard (Section 2.3.1.4). Regarding the requirement to consider a reasonable range of alternatives, please see the general responses to comments concerning the EIS alternatives (Section 2.5).

Letter 119, comment 578: The proposed HCP also fails to maintain grizzly bear security during the critical "post-denning" spring season for grizzly bears. Failure of the HCP to extend its spring season dates to conform with the best available science is a failure to minimize and mitigate the impacts of its program to the maximum extent practicable, in violation of the Endangered Species Act. Failure to even include the appropriate season dates in any of its alternatives is a failure to analyze a full range of alternatives, in violation of NEPA and MEPA.

Response: The USFWS believes commitment GB-RZ5 provides adequate protection for bears emerging from dens. Another commitment that substantially complements this commitment and would provide conservation for grizzly bears is GB-NR3, which includes protections for spring habitat through June 15 (on scattered lands and the Swan River State Forest) or June 30 (on the Stillwater Block). Many of DNRC's lands occurring above 6,300 feet (i.e., within the likely denning zone of grizzly bears) may only be accessed through spring habitat and would receive additional protection through this commitment. Commitments GB-ST2 item (3a), GB-SW3 item (2a), and GB-SC2 item (2a) would further restrict any DNRC motorized activities above 6,300 feet each winter (November 16 through March 31). Also, under recovery zone commitments for blocked and scattered lands, parcels in rest at these elevations would be rested for 8 years at a time from commercial activities following 4-year active periods for management. For a full discussion of how spring dates were considered and discussion of the relevant scientific publications and rationale, see the rationale for commitment GB-NR3 (Draft HCP page 2-11, lines 10 through 25). Regarding the failure to analyze a reasonable range of alternatives, please see the general response to comments concerning the EIS alternatives (Section 2.5).

Letter 131, comment 647: Keep the roads out of grizzly territory.

Response: Please refer to the response to Letter 119, comment 575, above, and the general responses to comments concerning proposed road building under the HCP (Section 2.8).

Letter 136, comment 649: Core habitat should be increased through road closures - targeting sites where current road densities exceed biologically sound levels and areas that will provide the best quality habitat additions to existing cores. Road closures should be permanent, and the roads should be restored to avoid the frequent incidence of trespass so common at seasonal road closures.

Response: Please refer to the response to Letter 117, comment 540, above.

Letter 117, comment 551: DNRC staff should be required to carry bear spray in all areas affected by the HCP. Black and grizzly bears occur in the HCP areas, and both species can be dangerous. Carrying bear spray is bear country is a commonsense safety practice, and the use of bear spray has been proven far more effective than guns (Herrero 2002; Smith el al. 2008).

Response: DNRC employees are encouraged, and will continue to be encouraged to carry bear spray, particularly in areas where grizzly bears are likely to be present. Both the USFWS and DNRC believe that it is appropriate and adequate to allow individual employees and DNRC contractors discretion in determining when and where they carry bear spray. The HCP commitments include training of employees working in bear country.

Letter 136, comment 648: The grizzlies are facing enough other problems with food sources that we must not allow the extent of their core habitats to be reduced. DNRC has left out the proven bear conservation method of protecting fixed core areas with no scientific explanation. Instead, DNRC proposes a new system of rotating and temporarily protected "quiet areas." Research has demonstrated that grizzly bears, especially females with cubs, are particularly cautious and less likely to use areas that have recently been occupied by noisy human activities.

Response: Please refer to the response to Letter 12, comment 127, above.

Letter 143, comment 654: I am especially concerned with the plan's impact on Montana's remaining grizzly bear populations. We need to conserve grizzly bear habitat and work to expand it as well as to provide connectivity between the small, scattered, and isolated pockets of core habitat for grizzlies.

Response: See the conclusions of the analyses on Draft EIS page 4-316, which state that, overall, the HCP would improve habitat conditions for bears and adequately offset potential impacts of HCP implementation. Additionally, Draft EIS page 4-316 concludes that the action alternatives would provide greater certainty that linkage in important areas would be maintained on HCP project area lands. Regarding the commenter's concerns about the effects of the plan on Montana's grizzly bear populations, please refer to the general response to comments concerning adequacy of the HCP (Section 2.3.1.1).

Letter 145, comment 656: My family and I live in the Yaak Valley, a place where this bill would affect the already dwindling grizzly population in a very negative way. The Yaak is a small town with under 100 residents, and it is a refuge for grizzly bears and other endangered wildlife species. The HCP and DEIS would allow logging and access through the mountains where the grizzly bears live, and would destroy the homes of thousands of animals.

Response: Both the USFWS and DNRC recognize the importance of the Cabinet-Yaak Ecosystem (CYE) to grizzly bears and the numerous challenges to grizzly bear recovery in that ecosystem. Therefore, the HCP includes a set of commitments (GB-CY1 through GB-CY4 on Draft HCP pages 2-40 through 2-43) specifically designed for the CYE to avoid potential take of bears from DNRC's forest management activities in that area.

Letter 169, comment 697: Overall, R2 FWP bear managers support the grizzly bear conservation strategies outlined in Alternatives 2 and 3. We generally recognize the commitments in Alternatives 2 and 3 as being adequate to mitigate take consistent with the intent of the HCP. However, we would prefer the adoption of Alternative 3 over the Preferred (HCP) Alternative 2, as we believe Alternative 3 will provide important

additional protections for bears and their habitat while retaining adequate DNRC forest management flexibility. If Alternative 2 is ultimately selected, R2 bear managers strongly recommend that it be modified to include a provision requiring a department-wide Food Storage/Sanitation regulation applicable to all DNRC activities within RZ and NROH, regardless of a parcel's HCP status (this provision would be similar to that outlined in Alt. 3).

Response: The USFWS notes the commenter's preference for Alternative 3. The proposed HCP covers DNRC's forest management activities. A department-wide Food Storage/Sanitation regulation was not deemed warranted at this time.

2.2.2 Canada Lynx

Letter 7, comment 31: Your plan fails to adequately protect threatened and endangered species, such as grizzly bears, Canada lynx, and bull trout, by allowing increased timber harvesting in areas that are critical to the species' survival. For lynx, as an example, the HCP requires your office to maintain areas for lynx to hunt in just 20% of their habitat, to maintain only 65% of their habitat as generally suitable, and has no requirement to maintain denning habitat other than leaving two (2) slash piles per square mile.

Response: The USFWS will make the determination of the HCP's adequacy in accordance with Section 10(a)(2)(B) of the ESA in its statement of findings, which will be prepared at the time of the Record of Decision. Concerns about lynx foraging habitat are addressed in the response to Letter 72, comment 234. Concerns about suitable lynx habitat are addressed in the response to Letter 119, comment 593. Concerns about lynx denning habitat are addressed in the response to Letter 119, comment 595. Please refer to the responses to these and other concerns about lynx, below.

Letter 13, comment 131: By changing lynx denning habitat to allow two slash piles per square mile, DNRC's preferred alternative would seriously reduce and fragment needed lynx habitat, required to rear young lynx.

Response: Commitment LY-HB2, Den Site Attributes, in the Draft HCP was one component of a larger strategy to retain denning opportunities for lynx. Following recent discussions with John Squires (Squires 2009, personal communication), the USFWS and DNRC eliminated the conservation commitment to maintain two slash piles per square mile in lynx habitat due to its expected low effectiveness to contribute meaningfully to habitat quality for lynx. Instead, as part of the Final HCP, DNRC would adopt specific monitoring commitments to ensure that ample amounts of coarse woody debris (CWD) and structure are retained post-treatment in harvest units (see Final HCP Chapter 4, Monitoring and Adaptive Management). Several recent studies provide strong evidence that lynx prefer to travel, hunt, and den where there is an abundance of forested cover (Koehler et al. 2008; Squires et al. 2008; Squires 2008). To meet this requirement for lynx, DNRC would be required to maintain 65 percent of total potential lynx habitat in a suitable habitat condition (LY-HB7 in the Draft HCP, LY-HB6 in the Final HCP). Additionally, under commitment LY-HB6 (LY-HB5 in the Final HCP), DNRC would be required to design timber sales that provide a connected network of suitable habitat in lynx movement areas, which include riparian areas, ridge tops, and saddles. These are just two of the measures contained in the HCP to address habitat connectivity. As stated on Draft EIS page 4-335, implementation of the HCP and DNRC's forest practices would provide adequate connectivity of habitat for lynx.

Letter 32, comment 171: Lynx management must be very proactive if we are to maintain a healthy forest ecosystem. Large burn areas will only lead to the demise of the lynx. Through rotation of thinning and harvest blocks, a continued supply of suitable habitat can be maintained. Selective harvest and thinning of non-merchantable stands will be the greatest benefit to the lynx. Why has this not been recognized in the proposed HCP?

Response: We agree that it is useful to proactively manage habitat for lynx and maintain healthy forest ecosystems. We also agree that large, intense burns have the potential to cause short-term adverse impacts on

local lynx populations and that rotation of harvest blocks on a landscape can provide for various stand structures and age classes, which can benefit lynx and many other species. However, the preponderance of scientific literature on the ecology of lynx and snowshoe hares in western Montana suggests that both species show strong preferences for mature and young stands with dense, non-thinned undergrowth (Squires 2009, personal communication; Squires et al. 2008; Squires and Ruggiero 2007; Griffin and Mills 2007; Griffin 2004; Hodges 1999). This body of literature drove the development of the conservation commitments for the various HCP alternatives. We are not aware of any published studies suggesting that broad-scale thinning of non-merchantable stands would provide great benefit for lynx or snowshoe hares.

Letter 45, comment 199: Lynx habitat cannot be essentially reduced to two slash piles per square mile.

Response: See the response to Letter 119, comment 595, below.

Letter 72, comment 234: The HCP does not contain clear, science-based standards to maintain understory cover in lynx habitat for snowshoe hares, the lynx's main prey. As a result, the HCP will be difficult, if not impossible, to enforce. The HCP also states that DNRC will maintain small, shade-tolerant trees, but does not say how this standard will be measured. Additionally, the HCP contains a loophole, allowing DNRC to remove shade-tolerant trees whenever they compete with crop trees. And finally, the HCP proposes to retain just 65% of its lynx habitat in suitable condition, when comparable plans (Washington DNR, USFS) require retaining 70% suitable habitat.

Response: Horizontal cover is an important component of lynx den sites and foraging habitat. We disagree that the HCP does not contain science-based standards to maintain understory cover in lynx habitat. Under the proposed HCP, DNRC would be required to retain 20 percent of lynx management areas (LMAs) as winter foraging habitat. For stands to be categorized as lynx foraging habitat, they must meet certain conditions, including a certain level of horizontal cover, which is provided primarily by conifer saplings. These parameters would be monitored as described on Draft HCP page 4-32 and outlined in Draft EIS Appendix B, HCP Documents, Document B-12 – Monitoring Methods to Assess Accuracy of DNRC Stand Level Inventory Data and HCP Habitat Mapping Protocols for Describing Lynx Habitat. An important component of horizontal cover in lynx habitat would also be retained by DNRC through the implementation of ARMs 36.11.411 for snags and snag recruits and 36.11.414 for CWD, on all DNRC projects. Under the HCP, the CWD ARMs would be adopted and would follow the recommended ranges specified in Graham et al. (1994) or other literature mutually agreed upon by DNRC and the USFWS. Woody debris amounts recommended by Graham et al. (1994) in lynx habitat types found in Montana range from 7 to 25 tons per acre. Both commercial green tree and salvage logging operations would be required to provide for minimum snag and CWD recruitment levels. Additionally, in the Final HCP, DNRC has included a commitment to retain 20 percent of pre-commercial thinning units in lynx habitat within LMAs in an unthinned condition. This new commitment provides assurances that dense sapling stands important for snowshoe hares would be available on DNRC lands within landscapes known to be important for lynx (i.e., LMAs).

Regarding the second point that the HCP does not say how DNRC will measure the standard to retain shade-tolerant trees, Draft HCP Chapter 4 (Monitoring and Adaptive Management) describes DNRC's monitoring and adaptive management requirements under the HCP. Draft HCP Table 4-4 outlines DNRC's reporting requirements relative to this commitment and identifies the threshold against which compliance would be measured. While DNRC would be allowed to cut shade-tolerant trees when they compete with crop trees, they would have to demonstrate that reasonable efforts have been made to retain these important tree species.

Regarding other plans requiring 70 percent retention of lynx suitable habitat, please see the response to Letter 119, comment 593, below.

Letter 106, comment 453: It will be expensive and difficult to develop and maintain a good habitat mapping system that is of the detail needed to implement these commitments. How will lynx be monitored? Is there a radio collaring-tracking program anticipated? This section has committed to maintaining so many different percentages for different habitat types that we are not sure you can do anything anywhere.

Response: DNRC has maintained a forest inventory-based habitat map for Canada lynx since 2002 to identify and manage important habitat elements for lynx (for examples, see Figures 18 through 31 in Draft EIS Appendix C, HCP Figures). DNRC has considered these efforts important for minimizing risk to this species attributable to habitat alteration, which is consistent with direction contained in DNRC's SFLMP and Forest Management ARMs. The maps have been used by field staff for project development and environmental analysis since 2002. The majority of costs incurred by DNRC in developing the habitat map was associated with staff time needed to review relevant literature and develop the mapping procedures; additional costs have been incurred to revise the mapping protocols as DNRC's understanding of habitat needs of lynx have evolved and expanded. DNRC estimated the cost of policy development and implementation across the lynx habitat mapping program from 2000 to 2008 to be $244,450. The costs associated with maintaining and revising the lynx mapping protocols are included in the estimated HCP implementation costs shown in Draft HCP Chapter 8 (HCP Implementation). Individual lynx would not be monitored by DNRC as a part of the HCP; however, DNRC expects to continue cooperating with local researchers to support ongoing study efforts and improve understanding of habitat needs for lynx. DNRC believes that the percentage requirements for habitat retention contained in the HCP are comparable to those that have been implemented under existing Forest Management ARMs since 2003, and will be manageable under normal forest management operations.

Letter 106, comment 454: LY-HB1: How will the lynx habitat map be generated? Any such map will require extensive on-the-ground verification of data and should not rely solely on forest inventory data that may be incomplete or not of the detail needed for the mapping exercise.

Response: See the response for Letter 106, comment 453. Additionally, as a part of HCP effectiveness monitoring, DNRC has developed a monitoring strategy for map validation and error checking (see Draft EIS Appendix B, HCP Documents, Document B-12 – Monitoring Methods to Assess Accuracy of DNRC Stand Level Inventory Data and HCP Habitat Mapping Protocols for Describing Lynx Habitat). DNRC would continue to make refinements to habitat mapping procedures with cooperative oversight from the USFWS to ensure parameters are mapped as accurately as possible.

Letter 106, comment 455: LY-HB4: How are you going to verify active den sites? Radio collars or people in the field? Either will add substantial workload and costs.

Response: When detection does occur, the USFWS and DNRC believe it would typically involve projects situated in or near study areas where lynx research is being conducted by other agencies or a university. The USFWS and DNRC anticipate that verification of active den sites will seldom occur due to the fact that lynx are rare and the inherent limitations in our ability to detect unmarked lynx, particularly during the spring and summer months. Knowledge of particular active lynx sites would most likely occur through cooperative interaction with DNRC field biologists and other agency or university researchers during the project development phase of a timber sale. DNRC does not anticipate any measurable increase in workloads or costs associated with this commitment.

Letter 106, comment 456: LY-HB5 #1: What does this mean? You may need to quantify what "small" is (e.g., sub-canopy trees?). Otherwise, this could be a difficult objective to meet.

Response: The term was intentionally not quantified to allow DNRC field foresters discretion to use professional judgment in assessing which trees would be most likely to compete substantially with desirable crop trees. The commitment states that retained trees would be smaller than target crop trees, and, as stated in the rationale for this commitment, would be "...typically those less than approximately one-quarter the size of retained crop trees" (see Draft HCP page 2-48).

Letter 109, comment 501: The HCP project area does not have any LMAs in the CLO. Why not?

Response: The HCP defines LMAs on DNRC lands in western Montana as those land areas that either currently support existing populations of lynx or are likely to periodically provide important habitat for dispersing lynx, and that are likely to remain high-priority areas to promote lynx conservation into the future

(Squires 2005a, personal communication) (see Draft HCP page 2-51 for more details). Such areas of notable importance were not identified for any geographic area on DNRC's Central Land Office, which includes the Helena, Bozeman, and Dillon administrative units.

Letter 109, comment 503: The HCP states that lynx denning sites are not believed to be a limiting factor for lynx because denning habitat is found in a variety of forest conditions and suitable den site attributes occur in small pockets scattered throughout the landscape. The HCP considers two slash piles per square mile as adequate denning habitat. However, Squires et al. (2008) found that lynx only denned in slash piles 6% of the time and overwhelmingly prefer preexisting sheltered spaces created by downed logs in mature forests. Squires et al. (2008) also found that lynx generally denned in mature spruce-fir forests with high horizontal cover and abundant CWD. The HCP contains no provision for maintaining mature forests that provide the high-quality denning habitat which is preferred by lynx. DNRC's sustained yield calculation's 100-year planning horizon results in a 31% reduction in old-growth forest habitat down to only 8%. The DEIS does not analyze the effects of the timber program and its bias toward seral species and how that affects lynx.

Response: Regarding the commenter's concerns about lynx denning habitat, please refer to the response to Letter 119, comment 595, below.

Regarding the anticipated reduction in old-growth on DNRC's landscape during the Permit term, lynx are not an old-growth dependent species. While they den and forage in winter in mature stands with high horizontal cover, these attributes can be met by stands that would not be considered old growth. As stated on Draft EIS page 4-326, lynx require a mosaic of early-, mature-, and late-successional forests. The Draft EIS concludes on page 4-328 that under all the action alternatives, DNRC's program would provide enough suitable lynx habitat to conserve lynx on HCP project area lands. Regarding DNRC's program bias toward late-seral species, the Draft EIS analyzes impacts of the various alternatives on the covered species, including lynx, at a landscape scale. DNRC's timber management philosophy to manage for biodiversity and desired future conditions provides a primary premise for the analysis contained in the Draft EIS (see Draft EIS pages 2-8 and 2-9). Further, specific effects of harvesting timber and the influence on seral cover types can be found on Draft EIS pages 4-37 through 4-39. As depicted in Figures 4.2-10 and 4.2-11 (Draft EIS pages 4-38 and 4-39), none of the alternatives would differ appreciably in the expected volume of ponderosa pine and western larch, respectively, that would be produced on DNRC lands over the next 100 years. The effects of timber harvesting on lynx and lynx habitat are disclosed on Draft EIS pages 4-326 through 4-335. DNRC's mapping protocol is based on both agencies' current understanding of lynx ecology—that seral tree species can contribute to suitable habitat and foraging habitat conditions—while recognizing the importance of subalpine fir, spruce, and grand fir in providing horizontal cover. Therefore, DNRC's habitat mapping protocols require the presence of subalpine, spruce, and grand fir and moderate to high tree densities in stands within suitable lynx types for stands to be classified as lynx habitat. This premise reflects our understanding of the best available information on habitat quality for lynx. The lynx analysis in the Draft EIS correctly emphasizes the anticipated differences in forest structure within Pfister (1977) habitat types preferred by lynx, which would be expected to occur under the various alternatives considered in the retention of the "suitable" and "foraging" habitat conditions. Further, the Draft EIS analysis and the analysis of "take" in Draft HCP Chapter 7 (DNRC's Identification of Impacts that Have the Potential to Constitute Take under the HCP) sufficiently consider the effects of habitat conversion on foraging habitat elements, given what is currently known about lynx habitat requirements and the interplay between stand structural attributes and tree species composition.

Letter 110, comment 514: There is no standard for limiting forest roads in lynx habitat. The state of Washington does. It is already obvious that roads affect grizzly bears and even bull trout. In regard to bull trout, it can be avoided by setting high standards for road construction and maintenance of such things as culverts and runoff. Montana seems extremely lax in setting such standards. Nevertheless the creation of unlimited forest roads would have a deleterious effect on lynx and grizzly bear. You need to limit roads. I urge the plan to put in provisions limiting the number of roads and also provisions providing for the closing of more roads which already exist in the areas.

Response: Please refer to the general responses to comments regarding proposed road building under the HCP (Section 2.8). Additionally, in contrast to grizzly bears, the preponderance of studies on lynx suggest that forest road systems with relatively low traffic minimally influence lynx (68 Federal Register [FR] 40076-40101, July 3, 2003, p. 40083). DNRC's HCP commitments address access needs over the 50-year Permit term and place limits on the amount of open roads and restricted roads allowable in the Stillwater Block and Swan River State Forest. No further increase would be allowed in amounts of open road on DNRC scattered lands in grizzly bear recovery zones. The Draft HCP and Draft EIS analysis acknowledge the impacts and measures necessary for mitigating impacts of DNRC's covered activities, which are required for acquiring a Permit from the USFWS. It is important to note that impacts can occur under HCPs, but the impacts of take must be minimized and mitigated by the applicant to the maximum extent practicable.

Letter 110, comment 516: Corridors for the lynx and grizzly is another concern which needs positive addressing in the HCP. Your plan actually provides exceptions to this vital need (e.g., cable usage for logging, fiduciary concerns). That is too broad a loophole. It needs to prohibit any exception to maintaining and requiring corridors.

Response: The Draft HCP and EIS adequately address linkage and habitat connectivity for lynx and grizzly bears. For grizzly bears, the HCP contains numerous commitments that amply support habitat connectivity and linkage, specifically: access management commitments, visual screening requirements, patch size requirements, riparian cover requirements, spring habitat restrictions, and 4-year active/8-year rest commitments. All these commitments promote conditions that allow grizzly bears to occupy and live in a particular landscape and are consistent with recommendations made by the Interagency Grizzly Bear Committee (IGBC) Public Lands Linkage Task Force (2004). Linkage for grizzly bears is discussed on Draft EIS pages 4-281 and 4-313; the analysis concludes that for all action alternatives, linkage would be adequately maintained for bears in important areas over the Permit term. Under the lynx strategy, commitment LY-HB6 (LY-HB5 in the Final HCP) specifically addresses connectivity of suitable lynx habitat wherever lynx habitat persists on HCP project area lands (Draft HCP page 2-49). Allowances are included because, in some situations on any particular landscape, it can be very difficult or impossible to maintain connected habitat patches. Causes could include natural patch shapes, occurrence of grassland inclusions and meadows, natural disturbances such as fire and insect outbreaks, dry open-grown forest types, and compatibility with some timber harvest systems such as cable yarding, which requires periodic narrow clearings and landings for corridors. If allowances are invoked, DNRC must document and report the circumstances to the USFWS, providing the USFWS with the ability to ensure that the intent of the commitment is being met over the Permit term. Linkage for Canada lynx is discussed on Draft EIS pages 4-325 and 4-332; the analysis concludes that the action alternatives would improve the amount and quality of linkage areas in the HCP project area over the Permit term.

Letter 110, comment 513: The HCP lacks protection for the Canada lynx. It has loopholes and low standards which serve as wide open doors for severe adverse effects on the lynx. (1) It manages a mere 20% of the lynx habitat for foraging but allows more than 2,000 additional acres to be logged in certain areas. That is too severe. I urge you to remove that provision. (2) It refers to two slash piles per square mile as habitat for lynx denning. This is insufficient. Other states--Washington, for example--provide for much more (i.e., 10% of its lynx habitat in patches of 5 acres or more). You should adopt the standard set in the state of Washington. (3) The percent of lynx habitat to be maintained is also too low. Your plan aims for 65%, but the state of Washington sets it as 70%, as does the USFS. Montana should seek 70% as the minimum.

Response: While the USFWS believes DNRC's commitments would conserve lynx habitat in the HCP project area, we will assess the sufficiency of the HCP to protect the lynx in our ESA Section 7 biological opinion and Section 10 statement of findings. Regarding the commenter's concern regarding "loopholes" in the lynx strategy, please refer to the response to Letter 169, comment 699 (Section 2.2.4). Regarding the allowance for 2,000 additional acres of foraging habitat removal under changed circumstances, we agree this may have adverse effects on lynx. We expect, however, that DNRC would rarely invoke this allowance. Under the HCP process, both agencies must plan for events that could occur over the 50-year Permit term.

This allowance requires preparation of a mitigation plan to be approved by the USFWS to ensure that any further effects on lynx would be minimized. A preliminary list of measures to be considered in the preparation of the mitigation plan is included in Draft EIS Appendix B, HCP Documents, Document B-14 - Acres of Mature Foraging Habitat Available for Harvest under Changed Circumstances and an Example of the Process. Regarding the statement about denning habitat for lynx, please refer to the response to Letter 119, comment 595, below. Regarding concerns about suitable habitat for lynx, please see the response to Letter 119, comment 593, below.

Letter 119, comment 580: The HCP fails to ensure no adverse modification to state trust lands designated as lynx critical habitat. Lands designated by the USFWS as "critical habitat" for lynx are subject to a higher standard of review: they must not be "adversely modified." The DEIS lacks a map of the critical habitat boundary and should be amended to include one. Yet the DEIS relates that 175,000 acres of lynx critical habitat are included in the HCP project area (DEIS Table 4.9-23, page 4-325).

Response: The USFWS will prepare a biological opinion under Section 7 of the ESA. That biological opinion will identify whether issuing the Permit would lead to destruction or adverse modification of federally designated lynx (or bull trout) critical habitat. One advantage of DNRC coordinating with the USFWS early in the HCP process is that the USFWS is able to ensure that HCP conservation strategies are adequate so that the Section 7 criteria would likely be met. A map of lynx critical habitat in the HCP project area has been included in the Final EIS (see Figure D-23 in Appendix D, EIS Figures).

Letter 119, comment 581: Lynx habitat will decline from existing conditions under the proposed HCP. By maintaining 65% of potential lynx habitat within the project area in suitable condition, the HCP would decrease the amount of suitable habitat currently in the project area (85%, DEIS Table 4.9-22, page 4-324) by about 20%, which is approximately 40,000 acres. The proposed action would reduce foraging habitat down to 20% of the total potential lynx habitat within six LMAs, which currently have levels at about 64% (DEIS Table 4.9-20, page 4-322), resulting in a decrease of 44% or nearly 50,000 acres. We are concerned that there is no minimum requirement for maintaining lynx foraging habitat on scattered parcels outside of the LMAs. The Proposed Action has no standards to maintain denning habitat for lynx, other than leaving behind two slash piles per square mile. The DEIS documents more than 70,000 acres of lynx denning habitat occurs within the project area that the HCP fails to protect. The HCP requires DNRC to maintain a connected network of suitable lynx habitat across natural lynx travel routes, except in cases where it is "not practicable" due to reasons that include preferred logging methods and fiduciary objectives. Unless these discretionary allowances are closed, lynx connectivity can be expected to decline under the HCP.

Response: Draft EIS Table 4.9-22 does show that 85 percent of the total potential lynx habitat in the HCP project area currently provides suitable habitat for lynx. Under all alternatives, DNRC could decrease suitable habitat across the HCP project area over the Permit term. However, it is not entirely accurate to state that the proposed HCP would decrease suitable habitat by 20 percent. DNRC treats an average of 7,000 acres per year, and this is not a static landscape. While timber harvest may temporarily convert some stands to nonsuitable lynx habitat, other stands would grow into suitable habitat. Further, due to commitment LY-LM2, which requires that no more than 15 percent of suitable habitat can be converted per decade in LMAs, it is very unlikely that all LMAs would ever be at 65 percent at the same time. It is difficult to say precisely how much suitable habitat would be available in the HCP project area from year to year; however, DNRC has committed to ensure that, at a minimum, 65 percent of total potential habitat would be retained as suitable lynx habitat. The commenter is correct that, under the HCP, DNRC could reduce lynx foraging habitat below existing levels. Both the Draft EIS and HCP acknowledge that, under current conditions, an average of 57 percent of total potential habitat is lynx foraging habitat across all six LMAs (Draft EIS Table 4.9-20; Draft HCP Table 7-9). However, in the Final HCP, DNRC has adjusted its foraging habitat commitments. DNRC has committed to retain 20 percent of total potential habitat in LMAs as winter foraging habitat and 20 percent of pre-commercial thinning units in an unthinned condition. Therefore, we expect that the amount of foraging habitat that would be retained under the HCP commitments (winter or summer) would be greater than originally estimated in the Draft EIS and HCP. The Draft HCP also states that

foraging habitat could be reduced to 20 percent of total potential habitat and that such a reduction would potentially constitute incidental take of lynx (see Draft HCP pages 7-27 through 7-29). This assessment has not changed in the Final HCP. Regarding the lack of foraging commitments on scattered parcels, as stated on Draft EIS page 4-328, it is difficult to achieve conservation objectives for lynx on small parcels of land. The HCP approach to lynx conservation applies the greatest measure of conservation in LMAs, where existing populations of lynx are known or are likely to occur in the foreseeable future. In this manner, the HCP would accomplish a greater measure of conservation in areas known to be of high importance for lynx. It was not feasible to establish a minimum acreage of foraging habitat on scattered parcels because some scattered parcels with potential lynx habitat may not now or ever be characterized as foraging habitat. This may be true at the administrative unit or land office scale. Regarding the 65 percent suitable habitat commitment for scattered lands, please refer to the response to Letter 119, comment 593, below. Regarding concerns about denning habitat, please see the response to Letter 119, comment 595, below. Regarding concerns about connectivity, please see the response to Letter 119, comment 598, below. While the USFWS believes that DNRC's HCP would retain adequate lynx habitat connectivity, we will assess the sufficiency of the HCP to protect the lynx in our ESA Section 7 biological opinion and Section 10 statement of findings.

Letter 119, comment 582: Regarding the statement, "Because there is no agreement among lynx biologists on the minimum amount of lynx foraging habitat required within a female lynx's home range for her to successfully reproduce and rear her young..." (DEIS on page 4-332), We dispute DNRC's claim that there is "no agreement" on how much foraging habitat is needed to sustain a female lynx and her young. Data relevant to answering this question have been collected right here in western Montana (http://www.fs.fed.us/rm/wildlife/forest_carnivores/lynx/research/), and should be used to inform this HCP. We are very concerned about DNRC's failure to actively solicit feedback from the researchers who have studied this issue beyond the early stages of this HCP process.

Response: The USFWS reviewed the link provided in this comment to Montana research on lynx and found no studies indicating how much of a female lynx's home range should be foraging habitat. The USFWS has communicated the need for this information to researchers at the Rocky Mountain Research Station. When such a study is completed, the USFWS would review the findings and management implications to determine whether a modification of DNRC's commitment is warranted. At that time, we would use the "Adjusting for New Research" process outlined in Draft HCP Chapter 4 (Monitoring and Adaptive Management) to initiate this conversation with DNRC. Regarding the second concern that DNRC failed to actively solicit feedback beyond the early stages of the HCP process, the USFWS and DNRC have used the best available science and researcher input on the development of the HCP commitments (see Draft HCP Section 1.3.3.3, Use of Best Available Information; Draft HCP Chapter 10, References; Draft EIS Section 6.3, External Review of Draft Conservation Strategies; and Draft EIS Chapter 7, References). As recently as December 22, 2009, the USFWS and DNRC again met with local USFS lynx researcher John Squires to review the findings in his paper that was recently accepted for publication by the Journal of Wildlife Management (Squires et al. 2010 *in press*). DNRC subsequently adjusted its commitments to address the findings in this paper.

Letter 119, comment 583: Current DNRC regulations prohibit thinning young foraging stands (ARM 36.11.435(5)). The Proposed Action has no such temporary ban of precommercial thinning, and even exempts thinning from its standard to maintain 20% of lynx habitat as foraging habitat (DEIS, page 4-330; HCP page 7-28). Current DNRC regulations require maintaining 5% of total lynx habitat in the Stillwater, Swan River, and Coal Creek State Forests as lynx denning habitat (ARM 36.11.435(7)(a)), and at least 5 acres of denning habitat on all parcels with appreciable amounts of lynx habitat (ARM 36.11.435(8)(a)). The Proposed Action protects no denning habitat for lynx, other than requiring that two slash piles per square mile be left behind as potential lynx den sites (except within blowdown salvage cutting units where 1% of the blowdown will be left for lynx den sites instead).

Response: In December 2009, the USFWS and DNRC met with local USFS lynx researcher, John Squires, to discuss his manuscript that has been accepted for publication in the Journal of Wildlife Management (Squires et al. 2010 *in press*). In light of that meeting, the Final HCP was revised to include a commitment in

LMAs to retain 20 percent of pre-commercial thinning units in an unthinned condition (commitment LY-LM3, item (2)). This commitment was adopted by DNRC to fill a mitigation gap related to impacts associated with pre-commercial thinning and aid in the structural development and retention of stands likely to be preferred by lynx in summer (Squires 2009, personal communication). Given the limited acres subject to pre-commercial thinning on an annual basis in the HCP project area (1,500 acres), the new commitment to retain 20 percent in an unthinned condition, and the requirement to retain 20 percent of LMAs as winter foraging habitat, the USFWS believes implementation of the HCP would maintain sufficient foraging habitat for lynx in the context of DNRC's land base. Regarding comments on denning habitat, please see the response to Letter 119, comment 595, below.

Letter 119, comment 584: The HCP fails to incorporate standard operating procedures used in comparable plans in the Northern Rockies and Northwest to effectively minimize and mitigate impacts from its operations on lynx to the maximum extent practicable.

Response: Existing relevant federal guidance and plans that DNRC and the USFWS considered during development of the HCP include the *Lynx Recovery Outline* (USFWS 2005), *Lynx Conservation and Assessment Strategy* (LCAS) (Ruediger et al. 2000), the *Lynx Habitat Management Plan for Washington DNR-managed Land*s (WADNR 2005), and the *Northern Rockies Lynx Management Direction* (NRLMD) (USFS 2007). It is not always appropriate to adopt into an HCP the commitments made in guidance documents or existing plans. Any plan developed to address the effects of covered activities on listed species should be written based on the needs of the species while acknowledging the action agency, its mandate, operational needs, program goals, and ESA obligations. The development of a new plan is also an opportunity to review new research findings to tailor commitments to best meet the needs of the species. Therefore, each plan may differ from year to year and agency to agency. In part, modifications to some of the commitments made in the LCAS were made when subsequent research determined they were unnecessary for the conservation of lynx. While DNRC has adopted the conceptual approach proposed in these plans for lynx—guaranteeing a portion of the landscape in suitable condition for lynx—the specific measures proposed by DNRC reflect its mandate, management philosophy, and operational needs under which trust lands are managed. DNRC also considered new findings in lynx research in developing its conservation commitments, which is why several commitments in the HCP vary from those proposed in earlier plans.

Letter 119, comment 593: Standards to maintain a sufficient amount of suitable lynx habitat across the landscape: Montana DNRC should change its standard to maintain at least 70% of total potential lynx habitat as suitable lynx habitat, and no more than 30 percent as temporary non-suitable habitat. This is particularly important for its lands within the identified LMAs. The scale at which the 70/30 percent habitat ratio should be calculated is at the LMA or LAU level: to apply this standard at the DNRC land office scale makes no sense, because this scale is irrelevant from the standpoint of a lynx. Montana DNRC tries to justify its deviation from the 70/30 percent habitat ratio with the claim that 65/35 represents a truer representation of the natural disturbance regimes. To strictly adhere to the natural disturbance regimes may not be sufficient to provide for lynx needs today, since roads, private land developments, livestock grazing, motorized recreation that were absent historically significantly reduce the area that would otherwise be suitable habitat for lynx today. DNRC also claims that the 65/35 ratio is necessary to meet its operational needs. If DNRC's operations preclude the use of its lands by lynx, then its operations are illegal. Regarding DNRC's proposed exemption, failure to meet timber targets is no justification to abandon its commitments to maintain lynx habitat. If so, why bother drafting an HCP in the first place? DNRC acknowledges that this exemption "may result in further reduction of suitable habitat…" but claims "the effects are not expected to result in take" because they are short-term and other mitigations will apply (HCP page 7-30). DNRC has no basis to support this claim, and this proposed exemption from the suitable habitat standard should be denied.

Response: The USFWS believes that DNRC's commitment to retain 65 percent suitable habitat within LMAs and on scattered parcels would adequately conserve lynx habitat in the HCP project area as stated on Draft EIS page 4-328. When the LCAS was drafted, there were no clear guidelines or methods for assessing

natural vegetation patterns and processes. For the proposed HCP, DNRC developed a methodology to establish the ratios for this commitment (see Draft HCP pages 2-51 through 2-55). To clarify, the 65 percent suitable habitat commitment is applied at the LMA scale *and* at the land office scale. The approach to lynx conservation developed under the HCP by the USFWS and DNRC was to apply the greatest measure of conservation in LMAs, where existing populations of lynx are known or are likely to occur in the foreseeable future. In this manner, the USFWS and DNRC believe they will accomplish a greater measure of conservation in areas known to be of high importance for lynx. The Draft EIS (page 4-328) states that the requirement for retaining suitable habitat on scattered parcels within an administrative unit is expected to have limited benefit for lynx. However, the 65 percent commitment for scattered lands is intended to provide assurances that suitable lynx habitat will be present on DNRC lands throughout the various landscapes it manages. Where DNRC owns scattered parcels adjacent to federal lands, providing habitat for lynx in these areas would contribute to broader habitat conditions and complement conservation efforts occurring on those federal lands. Regarding concerns about DNRC's proposed exemption (reduction of suitable habitat through a changed circumstance), the HCP process requires the applicant and the USFWS to plan for and address events that can be reasonably expected to occur during the Permit term. DNRC has concluded in its HCP that the effects of these actions would not result in take of lynx. The USFWS will evaluate the Permit based on the ESA Section 7 biological opinion, as well as the issuance criteria outlined in ESA Section 10(a)(2)(B), at which time we will quantify the level of take to be permitted to DNRC and determine if the Permit application meets issuance criteria.

Letter 119, comment 594: Standards to maintain understory cover and browse for snowshoe hares (lynx foraging habitat): Montana DNRC should adopt either the NRLMD standards or the WDNR standards, without the two proposed exceptions that would exempt thinning from these standards and allow reduction of mature foraging habitat below the 20% threshold. DNRC's pledge to retain shade tolerant trees in its thinning operations does not ensure that snowshoe hare habitat will be maintained in these areas, especially considering the allowance that shade trees that compete with crop trees will be destroyed. Similarly, DNRC's pledge to retain advanced regeneration in older stands is not sufficient to ensure snowshoe hares will be maintained, especially given these patches will not exceed 10 percent of these stand areas. DNRC justifies exempting thinning from the foraging habitat standard by stating, "thinned stands will retain a subcomponent of shade-tolerant tree species…" and "DNRC typically will not precommercial thin more than 1,500 acres per year in potential lynx habitat…" (HCP, page 7-28). As mentioned above, DNRC does not specify how much of the shade-tolerant tree species will be retained, so we have no assurance that this habitat will continue to support snowshoe hares. Regarding the second point, if DNRC plans to thin relatively few acres each year, it should have no problem meeting the standard to maintain 20% foraging habitat from all of its operations, including thinning. DNRC justifies its need to reduce winter foraging habitat below the 20% standard in the event of a large disturbance. This is a case where DNRC must prioritize the needs of HCP species over generating revenue, or else lynx may disappear from these areas. In the event of a large disturbance, DNRC must retain as much lynx foraging habitat as possible in the affected areas, and focus in other areas for harvesting timber.

Response: Please refer to the response to Letter 72, comment 234, above.

Letter 119, comment 595: Standards to maintain vegetative structure for lynx denning habitat: Montana DNRC should adopt either the WDNR standard to retain 10% of the LMA or LAU as lynx denning habitat, in patches of at least 5 acres. Similar to the LCAS standard, blowdown salvage units should not be exempted except where the 10% threshold has been mapped, verified, and exceeds the 10% threshold, well-distributed across the area. We concur with DNRC's analysis that denning habitat has not been found to be a limiting factor for lynx across much of its range in the Northern Rockies (Squires et al. 200_). For this reason, adhering to maintaining lynx denning habitat across 10% of its lands should not significantly change or constrain DNRC's operations. This standard simply ensures that current conditions will continue within DNRC lands. DNRC's proposal to leave behind two piles of slash every square mile is clearly less beneficial to lynx than leaving patches of denning habitat five acres or larger. Furthermore, the DEIS notes that

maintaining coarse woody debris in lynx denning habitat as proposed in Alternative 3 may improve soil productivity in these area, since it "could result in higher levels of nutrient retention in these areas" (DEIS, page 4-107).

Response: Several commenters stated that the HCP should adopt the measures for conservation of denning habitat incorporated in other plans. Regarding this concern, please refer to the response to Letter 119, comment 584, above. We note that the Lynx Conservation Assessment and Strategy (LCAS) and Washington Department of Natural Resources (WADNR) plans are 9 and 4 years old, respectively. Since their publication, several studies have demonstrated that lynx use a variety of conditions for den sites (Squires et al. 2006; Merrill and Shenk 2006; Merrill 2005). While Squires et al. (2008) found that lynx generally den in mature spruce-fir forests, they expressed doubt that lynx are constrained at the landscape scale by a lack of suitable den sites because of the abundance of CWD in mature and regenerating forests across the landscape. We believe that the HCP requirements to (1) retain snags, snag recruits, and CWD; (2) retain 20 percent of total potential habitat within LMAs as winter foraging habitat (stands that provide high horizontal cover); and (3) retain 20 percent of pre-commercial thinning units in lynx habitat in an unthinned condition that would provide conservation and habitat elements needed by denning lynx. This is consistent with the Northern Rockies Lynx Management Direction (NRLMD) (USFS 2007), which does not require the USFS to retain a certain percentage of denning habitat within their lynx analysis units (LAUs). Adequate horizontal cover and CWD appear to be the most critical components of lynx den sites (Squires et al. 2008; Mowat et al. 1999). Therefore, in the Final HCP, DNRC eliminated the commitment to retain two den sites per square mile in lynx habitat across the HCP project area. Rather, DNRC would continue to retain 1 percent of blowdown in salvage areas and enhance its monitoring to demonstrate that the existing ARMs for retention of snags and snag recruits and retention of CWD provide ample denning substrate for lynx. In the Final HCP, see commitment LY-HB2 in Chapter 2 (Conservation Strategies), Section 4.5 (Lynx Monitoring and Adaptive Management), and Table 4-4.

Letter 119, comment 596: Standards to maintain security within lynx denning habitat: Montana DNRC should maintain its standard that den sites must be 300 feet from a road, but add that the WDNR language that its goal is at least 0.25 mile (0.4 km) from a road. DNRC should also eliminate an allowance that vacated den sites can be entered before July 15. For DNRC to allow early entry into a vacated den site creates a perverse incentive for people to disturb active den sites in order to displace lynx from the area.

Response: In a recent study conducted in Montana, Squires et al. (2008) found that lynx did not den farther than expected from forest roads open to traffic during denning season. The researchers concluded that disturbance associated with traffic on forest roads during denning season did not affect den site selection by lynx, nor did the study provide any management recommendations regarding den site position relative to roads. Because most DNRC roads are closed to motorized use, adoption of the WADNR standard was deemed unnecessary. Regarding the second part of the comment, the USFWS disagrees that an incentive would be created to displace lynx. The USFWS does not believe DNRC or its contractors would engage in malicious, illegal actions to circumvent commitments.

Letter 119, comment 597: Standards to retain coarse woody debris: No clear discrepancies with WDNR, reconciliation needed specific to maintaining coarse woody debris, other than already mentioned in the denning habitat section above. Yet DNRC should clarify the impracticability of implementing this commitment as a percentage of its lynx habitat area, not its projects.

Response: This comment pertains to Draft HCP commitment LY-HB3 item (2), where there is a stated allowance threshold limit of 10 percent of the number of projects occurring in lynx habitat where CWD requirements may be superseded in special management situations. The USFWS and DNRC have identified this threshold value and other similarly stated threshold values as confusing and revised them in the Final HCP.

Letter 119, comment 598: Standards to restore and maintain lynx connectivity across the landscape: Montana DNRC should drop its allowance to deviate from this standard due to artificial needs. Where natural

openings occur along ridgetops and saddles, these areas may still be safely used by lynx provided sufficient areas of forest cover are maintained adjacent to them. Logging methods (cable systems) or fiduciary objectives are not grounds to deviate from managing its lands to provide for lynx movements.

Response: Draft HCP commitment LY-HB6 (LY-HB5 in the Final HCP) requires DNRC to provide a network of connected, suitable habitat for lynx along riparian areas, ridge tops, and saddles; there are no circumstances when DNRC could simply ignore the commitment. The language in the commitment has been revised in the Final HCP to clarify that connectivity may not be maintained only in instances of natural or operational impracticability or fiduciary considerations (for example, large expanses of beetle-killed lodgepole pine, that if left behind would be subject to blowdown and loss to the trust beneficiaries). These instances of impracticability would be summarized and reported to USFWS every 5 years in accordance with the monitoring and adaptive management program described in Draft HCP Table 4-4. Regarding fiduciary objectives, please see the general response to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 119, comment 599: Standards to protect lynx habitat from over-the-snow routes and snowmobile activity: Montana DNRC should adopt either the NRLMD standards or the WDNR standards.

Response: The LCAS (Ruediger et al. 2000) included a commitment regarding forest roads that focused on snow compaction because researchers at the time questioned whether snow compaction could allow lynx competitors into deep snow habitats where lynx forage in winter. However, research has provided no conclusive evidence that snow-compacted routes adversely affect lynx or their habitats (USFWS 2007). Subsequently, the NRLMD (USFS 2007) changed this standard to a guideline, meaning its implementation is discretionary and not required. Recently, Kolbe et al. (2007), found little evidence that coyotes more efficiently compete with lynx in the presence of packed snowmobile trails. Kolbe et al. (2007) also observed that snowshoe hares made up a small portion of coyote feeding sites (3 percent) in winter and that coyotes primarily depended on scavenged ungulate carrion. Squires et al. (2010 in press) also reported no evidence that lynx were sensitive to forest roads, including those used by snowmobiles in winter. Therefore, the USFWS and DNRC mutually concluded that conservation commitments to address this concern were not necessary.

Letter 119, comment 600: Standards to protect lynx habitat from forest roads: Montana DNRC should adopt either the NRLMD standards or the WDNR standards.

Response: There is no evidence that forest road systems adversely affect lynx (68 FR 40076-40101, July 3, 2003, p. 40083), and neither the LCAS (Ruediger et al. 2000) nor the NRLMD (USFS 2007) included road density commitments for lynx. Both plans do include a series of guidelines (discretionary actions) aimed at reducing public access or the likelihood that people would see lynx near roads. Similar measures are included in DNRC's HCP: DNRC closes all forest roads to motorized public access, and the HCP includes a commitment to provide vegetative screening along open roads in grizzly bear recovery zones. Squires et al. (2010 *in press*) also reported no evidence that lynx were sensitive to forest roads, including those used by snowmobiles in winter. Therefore, the USFWS and DNRC mutually concluded that conservation commitments to address this concern were not necessary.

Letter 119, comment 601: Standards to protect lynx habitat from impacts due to livestock grazing: Montana DNRC should adopt the NRLMD standards.

Response: In its final listing rule, the USFWS found no evidence that grazing was a factor threatening lynx (65 FR 16052-16086, March 24, 2000). Therefore, the standards (commitments) to address potential effects of grazing on lynx identified in the LCAS (Ruediger et al. 2000) were adopted as guidelines (discretionary actions) in the NRLMD (USFS 2007). Because there is no evidence that grazing affects lynx, the USFWS and DNRC mutually concluded that conservation commitments to address this concern were not necessary.

Letter 169, comment 700: No mention is made of the formal designation of Lynx Critical Habitat in Montana. Lands within Lynx Critical Habitat should be given special consideration for inclusion in the HCP Project.

Response: The Draft EIS describes lynx critical habitat in the HCP project area on pages 4-321 and 4-336; however, the commenter is correct that the HCP does not. The Final HCP has been revised to include a discussion of lynx critical habitat (Section 1.4.2, HCP Project Area). Most of the state trust lands located within the lynx critical habitat designation were included in the HCP project area (see Draft EIS Table 4.9-23).

Letter 169, comment 698: Alternative 3 offers little meaningful additional lynx habitat protection above that of the Preferred Alternative because: 1) denning structures are not limiting on the landscape, and adequate sites naturally occur in the decadent mature stands lynx prefer for denning; 2) active den sites will rarely (if ever) be located by field crews; and 3) the remaining provisions are either identical across the two alternatives or vary only slightly (e.g., a 5% difference in retained Suitable Habitat and the provision of only soft commitments for additional patch retention within harvest units). FWP supports the adoption of Alternative 3 because of the marginal, increased lynx habitat conservation it affords, specifically: 1) the minimal additional vegetation retention within pre-commercial thinning units, and 2) this alternative's greater similarity to existing Federal lynx recovery provisions. However, we qualify this recommendation by noting Alternative 3's broad similarity to the Preferred Alternative. We suggest that additional modifications and conservation provisions be considered for the final HCP as outlined in following comments on the draft HCP (Alternative 2).

Response: The USFWS notes the commenter's preference for Alternative 3. We also note that, as described in the Final EIS, additional conservation measures were added to the proposed HCP (Alternative 2) for all HCP species.

Letter 169, comment 701: DNRC should consider additional reductions of pre-commercial thinning activities/ acreage within mapped lynx habitat. Oddly, both Alternative 3 (Increased Conservation) and 4 (Increased Management Flexibility) seem to require retaining greater un-thinned acreage at the project level than the Preferred Alternative. Pre-commercial thinning within regenerating lynx habitat can severely affect its short and long-term suitability and use. The marginal benefit of this activity to fiber production should be formally weighed against its impacts to limited lynx habitat in the HCP. At minimum, increased retention standards should be considered for the final HCP.

Response: Please see our responses to Letter 119, comment 583, above.

Letter 169, comment 702: We strongly disagree with the *a priori* use of FWP-mapped big game winter range (BGWR) as a filter for excluding lands from mapped lynx habitat. Such maps were only intended to be a *general and large-scale* depiction of that biologist's knowledge of BGWR locations. It is inappropriate to use the existing maps to determine the fine-scale application of habitat protections as was done here. In addition, the reasoning for making BGWR and lynx habitat mutually exclusive in the EIS and HCP is not supported by the research literature. There is scant direct field evidence for interference competition between coyotes and lynx. Recent research also indicates that the two species' winter food habits are highly segregated on the HCP project area (Kolbe 2007). Lions are the lynx's primary natural predator, but this predation almost always occurs during the snow-free months when ungulates (and their predators) are dispersed on their summer ranges (Squires, pers. comm.). Potential lynx habitat should simply be mapped based on the habitat types occurring on (or proximate to) subject lands as outlined in Appendix B. Although we expect that there may be a strong correlation between current FWP BGWR maps and habitat types identified as non-lynx habitat by DNRC, an *a priori* exclusion of these lands almost certainly removes important HCP Project Area lynx habitat protections from lands that do or can support lynx. Lynx telemetry data indicate that FWP-mapped BGWR is used by lynx in northwest Montana. In addition, large portions of the Swan Lynx Management Area (LMA) are excluded from lynx habitat designation based solely on the

BGWR map--stands directly adjacent and similar to those within the BGWR boundary key out as lynx habitat.

Response: Upon further review of the issues raised by the commenter, USFWS and DNRC determined there was little evidence in the literature substantiating competition between coyotes and lynx. Therefore, DNRC has adjusted its lynx mapping protocol to include big game winter range and as a result potential lynx habitat in the HCP project area was increased by 58,000 acres. The lynx analysis tables in the Final EIS have been revised to reflect these additional acres.

Letter 169, comment 703: Mapped potential lynx habitat in the western Garnet mountains, outside of the Garnet LMA, should be included in that--or a distinct--LMA. There is documented historic and recent lynx occupancy of this mapped lynx habitat, and the Garnet lynx population is important to lynx dispersal and ultimate recovery. Establishing or extending an LMA in/to this area (and managing it under HCP provisions) will be increasingly important as DNRC prepares for additional near-term large-scale land acquisitions adjacent to these parcels.

Response: DNRC met with Dr. John Squires on Dec. 24, 2009 to acquire additional information about lynx use in the Garnet area. DNRC then submitted that information to USFWS. Based on the results of that meeting, both USFWS and DNRC determined that the current boundary for the Garnet LMA adequately captures important lynx habitat on DNRC lands. Both agencies would review the LMA boundary for possible adjustments once DNRC completes its acquisition of the Chamberlain Creek and Potomac parcels and decides whether to add those lands to the HCP.

Letter 169, comment 709: [In the Nov. 3 meeting ,] FWP also brought to light its awareness of submission for peer review and publication the latest research results on habitat selection by lynx within the HCP project area. FWP and DNRC have since worked collaboratively with the lead author, Dr. John Squires, to obtain these results, and biologists from both agencies, as well as the USFWS, are collaborating on evaluating these results with regard to the current proposed HCP. FWP encourages DNRC to consider potential revisions to the HCP that reflect the findings of this and other recent research.

Response: On December 22, 2009, USFWS and DNRC met with Dr. John Squires to review the findings in his paper that was recently accepted for publication by the Journal of Wildlife Management (Squires et al. 2010 *in press*). DNRC subsequently adjusted its commitments to address the findings in this paper.

2.2.3 Specific Conservation Commitments

Letter 2, comment 2: GB-PR2 Firearms: Can you prohibit a contractor from carrying a firearm or can you prohibit a contractor from using a firearm to hunt when the general public is unable to? This issue is both a private rights issue and an unfair hunting advantage from the general public issue. What is the correct or legal wording and how can this be enforced? The Forest Service contract provision is **C: Purchaser's Operations in areas otherwise closed to motorized vehicles.** During the period XXXXX to XXXXX when Purchaser's Operations are in areas otherwise closed to motorized vehicles, Purchaser shall not be permitted to hunt, transport hunters, discharge firearms or transport big game animals with vehicles within the closed areas.

Response: The wording of commitment GB-PR2 was selected and agreed to, in large part, because it is very similar to existing commitments already in place in DNRC's Forest Management ARMs and the Swan Agreement (USFWS 1995, amended 1997). The USFWS and DNRC are comfortable with the language as worded and DNRC is not aware of any related conflicts since these other policies were adopted. State legal staff reviewed the language in this commitment on several occasions, and DNRC believes it is within the department's legal authority to make this commitment.

Letter 2, comment 3: GB-PR4 New Open Road Construction in Riparian Zones and Avalanche Chutes: Provide a reason why a new "open road" is needed in a riparian zone or avalanche chute? Define and describe "minimize."

Response: The USFWS anticipates that DNRC would rarely need to construct new open roads in either a riparian zone or avalanche chute. However, over a 50-year Permit term, such construction is possible, particularly for stream crossings associated with riparian areas. The need for an open road crossing these two types of features would most likely occur in association with a new or existing easement where DNRC could not control the level of motorized use of a particular road. This commitment provides assurances that these important areas would receive special consideration and scrutiny during project planning and development on all HCP project area lands. Minimization of new open road construction would be accomplished by exploring other routes and options in conjunction with project development and planning, and the circumstances would be documented in the accompanying Montana Environmental Policy Act (MEPA) analysis for the project.

Letter 2, comment 4: You should mention that minimizing roads is for the sake of costs -- it costs money to maintain and monitor open roads, reduce liability, erosion, etc., and not just because more bears die close to roads.

Response: The USFWS agrees that building and maintaining roads on the landscape have costs, which are important considerations for any land management entity, such as DNRC. Minimizing roads has the dual benefit of reducing costs and reducing the potential impacts to grizzly bears. Both objectives have been part of DNRC's ongoing approach to road management, as reflected in the SFLMP and Forest Management ARMs.

Letter 2, comment 5: GB-NR3 Spring Management Restrictions: This commitment prohibits commercial forest management activities during spring period in spring habitat, but it's okay to have low-intensity forest management activities within 100 feet of an open road during spring period in spring habitat? Is this in conflict? Is there any conflict with GB-RZ2 Visual Screening, which requires up to 100 feet of vegetation be left between open roads and clearcut and seed tree harvest units, with some allowances?

Response: Low-intensity forest management activities, as described in commitment GB-NR3, would be allowed anywhere within spring habitat, not just near open roads, except as specified in item (4) of this commitment (Draft HCP page 2-10). Commitment GB-NR3 item (5) states that commercial removal of trees is also allowed along open roads in the spring period in spring habitat (Draft HCP page 2-12). This allowance was not considered to be in conflict, because DNRC activities occurring within 100 feet of an open road would not be expected to displace bears beyond the existing levels associated with legal public activities along existing open roads (see the rationale on Draft HCP page 2-12). The allowance also enables DNRC to capture value from dead and dying trees that might otherwise be cut as firewood or lost to road clearing. Some commercial trees can be removed occasionally from visual screening buffers with little impact on the screening capabilities of the undergrowth vegetation; however, when this allowance is applied in grizzly bear recovery zones, visual screening must be retained consistent with commitment GB-RZ2 (see the rationale on Draft HCP page 2-12).

Letter 2, comment 6: GB-RZ3 Road Closure Maintenance: Describe "ineffective" and to what class of motorized vehicle this applies. Is this for motorized vehicle closure? Use terms to describe what is meant by device broken. You're stopping 4 wheel drive vehicles, but what if ATVs or motorcycles are going around the device?

Response: In the Glossary (Draft HCP page 11-11), restricted roads are defined as those that "...restrict the general use of motorized vehicles." Closure devices with evidence of all-terrain vehicles (ATVs) or motorcycles going around them would be considered ineffective and would require further maintenance or installation of a more appropriate closure device to prevent illegal use.

Letter 2, comment 8: GB-SW3 Active Management Followed by Rest: The USFWS used a 3:7 rule in some past biological opinions and 3:3 in the Swan. Explain why the 3:7 rule wasn't used.

Response: The "3:7 rule" mentioned in this comment pertains to an allowable period of active forest management in a particular drainage or grizzly bear subunit (3 years) followed by a rest period of 7 years. This 3:7 rule has been used by the USFWS to evaluate the potential for impacts to grizzly bears in Montana

under the ESA Section 7 consultation processes for federal agencies. It is presumed that incorporating the 3:7 rule allows a reasonable time period for timber management (3 years) in a subject drainage that, when coupled with 7 years of rest, minimizes displacement of a female grizzly bear. This approach is intended to provide assurances that the displaced adult female can pass on her knowledge of habitats and foods to at least two female cubs before being displaced from the area a second time. Biological assumptions under which this ratio is based presume that ample females could be produced that would support a stable or increasing bear population (USFWS 1990). The similar 3:3 rule contained in the Swan Agreement, the 3:7 rule, and the 4:8 rule included in the proposed HCP were all discussed in detail by the USFWS and DNRC during development of the HCP. The 4:8 rule was incorporated into HCP commitments, because these active and rest periods were considered to have a low likelihood of appreciably altering any of the biological assumptions associated with the 3:7 rule. Further, a 4-year active period provided a better fit for DNRC's project planning process. To mitigate this extension to 4 years of allowable activity, DNRC agreed to provide an additional year of rest (i.e., 8 years instead of 7).

Letter 2, comment 9: GB-ST4 Class B Lands, item B: For the 39.6 miles of road identified in the transportation plan, are commercial forest management and motorized activities prohibited on the road or a distance adjacent to the road?

Response: DNRC commercial activities and motorized low-intensity forest management activities would both be prohibited seasonally on these 39.6 miles of road (see commitment GB-ST4 item (3) on Draft HCP pages 2-26 and 2-27). The purpose of this commitment is to reduce the chance of disturbance and displacement of grizzly bears. Allowing commercial activities on or in the vicinity of this subset of roads would elevate the potential to disturb grizzly bears, violating the intent of the commitment; thus, it would not be allowed.

Letter 2, comment 10: GB-SW5 Gravel Operations: What is "large?"

Response: As defined in the Glossary (Draft HCP page 11-7), large gravel pits are those that range from 5 to 40 acres in size.

Letter 2, comment 11: Fifty-nine mortalities were represented from DNRC lands, but the discussion is weak on exact circumstances. What part of grazing commitments will reduce the risks? There's plenty of discussion on how to avoid or minimize effects as a result of roads or logging but very weak on how to do this for grazing. The commitments deal with weed grazing and carcass removal, what about reducing direct conflict? Volume 1, page 4-274: DNRC "has very few grazing licenses on very limited ownership in grizzly bear recovery zones (Table 4.9-3)." Then where are all the mortalities showing up? You can't tell how many AUMs are present - is it densely stocked with livestock or not? Can't tell from where the 29 mortality from Volume 2, Table 7-6 has occurred. Those should be the areas where maximum efforts should be applied to reduce human-caused mortality to grizzly bears.

Response: The 59 mortalities mentioned in this comment actually refer to the total mortalities in the entire NCDE associated with livestock and human self-defense from 1980 to 2008 (28 years). No actual mortalities of these types are known to have occurred on DNRC ownership during that time. The heading and content for Table 7-6 have been revised in the Final HCP to make it clear that the 59 mortalities were for the entire NCDE, not DNRC lands alone.

Letter 2, comment 12: Appendix A, page 2-2, states that unless the Swan Agreement is terminated, DNRC would stick with the Swan Agreement. This should be added as part of the proposed action. Do you need to identify The Nature Conservancy as a cooperator?

Response: Under all four alternatives analyzed in the Draft EIS, including the proposed HCP (Alternative 2), DNRC would remain a cooperator in the Swan Agreement unless the agreement is terminated (see Draft EIS pages 3-1 through 3-10 and Draft HCP pages 2-28 and 2-29). The USFWS and TNC have initiated discussions regarding TNC's participation as a cooperator in the Swan Agreement; however, those discussions and any decision made by the USFWS and TNC are outside the scope of this project.

Letter 2, comment 13: Page E-6 of Appendix E (Table E3-1): GB-SW1.C (should be D). How can use be "low use" if less than one vehicle per day? Wouldn't that be "0?"

Response: As noted in commitment GB-SW1 item (4c) (Draft HCP page 2-32), the definition of "low use" was adopted from the methods of Mace et al. (1999), who averaged the number of vehicle trips across a particular bear season (e.g., spring, summer, or fall) from vehicle trips tallied using vehicle counters placed on road systems. Thus, numbers between zero and one are possible using this definition. The typographical error noted in this comment has been corrected in the Final EIS.

Letter 32, comment 173: There are proposed restrictions regarding firearms in certain management areas and timber sale contracting. These restrictions may have benefit, but care must be taken they do not conflict with other "laws." Contract holders must not be put in the middle of a legal dispute.

Response: See the response to Letter 2, comment 2.

Letter 101, comment 415: Commitment LY-HB6 related to project-level connectivity practices for lynx poses some concern for Plum Creek as an adjacent landowner (HCP Section 2.1.2.3). It should be clarified that implementation of these measures will consider and incorporate land uses and conditions on ownerships adjacent to DNRC's LMAs.

Response: Note that commitment LY-HB6 is now LY-HB5 in the Final HCP. In designing and managing for connected forest cover patches across landscapes of various sizes, the land uses, patch configurations, and cover availability on all adjacent and nearby ownerships must be considered. Such assessments would be necessary under the HCP on all projects containing lynx habitat regardless of whether they fell within an LMA. Language was added to the rationale for this commitment in the Final HCP to clarify this point. DNRC does not anticipate any adverse effects on lands or forest resources of neighboring ownerships under this commitment.

Letter 101, comment 416: Commitment LY-HB7 related to targets for habitat suitability on scattered DNRC parcels outside the LMAs seems to be unnecessary and ineffective. Not only does this commitment seek to be applied to highly variable land ownership conditions, but it will also be very dependent on land uses and conditions on ownerships adjacent to these scattered DNRC parcels. From a biological perspective, it seems DNRC's efforts would be better allocated to ownership blocks that have more meaningful contributions to lynx conservation.

Response: Please see our response to Letter 119, comment 593 (Section 2.2.2).

Letter 101, comment 414: Commitments GB-NR2 and GB-RZ6 (#5) covering the granting of road easements should recognize that easement rights are currently in place and DNRC must honor the rights of existing easements. The wording stated in these commitments give DNRC some flexibility, but the rights in the existing easements "trump" these commitments unless the current easement holder is willing to address the change. The rationale for these commitments should state that cooperators will be contacted prior to DNRC "determining" the cooperator's access needs.

Response: See the response to Letter 106, comment 444.

Letter 106, comment 440: GB-PR2: There has never been a single documented case where an employee or contractor has unjustifiably killed a grizzly bear with a firearm while on legitimate work-related duties in Montana. Prohibiting employees and contractors from possessing firearms is unjustified and unnecessary. Prohibiting of transport of game, hunting, or recreational shooting may be warranted for other policy reasons. Employees and contractors have a right to self defense just like any other member of the public. Bear spray is not 100% effective. The general public recreating in the area is not prohibited from carrying firearms for self defense purposes. There is no greater risk from employees or contractors to bears, and this commitment is more about gun control than grizzly bear populations and does not belong in the HCP.

Response: We are aware that there has not been an incidence of a DNRC employee or contractor unjustifiably killing a grizzly bear with a firearm. The USFWS views the commitment to prohibit DNRC and

its contractors from carrying guns in grizzly bear habitat as a measure that would reduce the probability of a lethal outcome in the event of a bear-human encounter. As stated in the response to Letter 2, comment 2, DNRC already has similar policies in place and we encouraged them to incorporate them into the HCP. We agree that bear spray is not 100 percent effective, but neither are guns. In fact, recent evidence suggests that bear spray is more effective than guns in defusing a bear attack (USFWS 2010; Herrero and Higgins 1998; Smith et al. 2008).

Letter 106, comment 441: GB-PR4 and GB-RZ1: How will the 10% of projects value be figured? Is it 10% of the number of projects statewide, by administrative block, or what? Does it refer to 10% of total miles of road constructed? What qualifies as a project? These types of "percentage of projects" commitments occur throughout the HCP and need to be clarified.

Response: A project is a proposed timber sale, road construction, or timber permit. Commitment GB-PR4 has been revised in the Final HCP to state that the allowance would occur on no more than 10 percent of DNRC projects within a 5-year period in the HCP project area. Referring to Draft HCP Table 4-2, this allowance would be reported annually so that DNRC can detect a potential exceedance before it occurs. Commitment GB-RZ1 clearly states that this commitment would be impracticable or infeasible to implement on "no more than 10 percent of DNRC projects within a 5-year period in the HCP project area within grizzly bear recovery zones." So, if over a 5-year period, DNRC implements 40 projects in the HCP project area in grizzly bear recovery zones, a maximum of four projects would not implement this commitment. For both commitments, DNRC would have to document the circumstances in the project's MEPA documentation. Regarding the "percentage of projects" commitments, the USFWS and DNRC reviewed all occurrences in the Draft HCP and resolved confusing language in the Final HCP.

Letter 106, comment 442: GB-PR5: How will den sites be monitored? Will DNRC actively be seeking den sites throughout the denning season? Will there be provisions in contracts for contract extensions or compensation to the contract holder if operations are halted?

Response: Under this commitment, DNRC is not proposing to survey the HCP project area for grizzly bears in dens. Both the USFWS and DNRC understand that discovery of an active den would most often occur opportunistically, and no consistent, formal survey efforts are being proposed by DNRC (see rationale for commitment GB-PR5 in Draft HCP page 2-7). The USFWS and DNRC anticipate that, due to the denning season (starting in November) and elevations (> 6,300 feet) that grizzly bears normally den in within western Montana, locating an active den would rarely occur. Further, should an active den be found, it would be unlikely to appreciably affect projects near those elevations in spring, when activity restrictions would be required due to persistent snow. Should such an event occur, DNRC would work with the contract holder on a case-by-case basis, considering the circumstances for that specific situation.

Letter 106, comment 443: GB-PR7: This requirement is not related to bears at all. We are at a loss as to why gravel pit operation is addressed in the detail it is throughout the HCP. If other regulatory agencies already dictate operational issues such as weed spraying, why are they in the HCP? DEQ permits already require all of the activities addressed in this commitment with the exception of the 40 acres limit, which is an apparently arbitrary number. Unnecessary commitments raise the risk level to the effectiveness of the HCP.

Response: DNRC and the USFWS believe that management and control of noxious weeds is important for maintaining quality natural foods on the landscape for grizzly bears. As a part of its 50-year HCP, DNRC chose to adopt existing measures contained in the Forest Management ARMs. It is possible that future legislative actions could change these measures. Including them in the HCP provides greater assurances for both agencies that these measures would be implemented through time and would benefit grizzly bears. The 40-acre size limit on gravel pits provides DNRC with areas of ample size to conduct gravel operations needed for forest management and limited gravel sales. The 40-acre limit was also deemed desirable by both agencies, because pits larger than 40 acres require more extensive permitting and mitigation requirements, which would not be necessary or beneficial to DNRC's Forest Management Program given traditional management needs.

Letter 106, comment 444: GB-NR2: This policy stance could dramatically affect DNRC's ability to obtain easements as well. The beneficial impacts of shared road systems resulting in overall lower road densities across the landscape generally outweigh the potential impacts of additional road use on shared systems. Would travel restrictions apply to easement grantees as well? Further on in the Aquatic Strategies, shared road systems that will require granting of easements across DNRC are encouraged.

Response: Commitments GB-NR2 and GB-RZ5 would only apply to new easements and granting processes. Existing agreements would not be affected, and DNRC concurs that those agreements are legally binding for all parties named in them. These commitments were modified in the Final HCP to clarify this point. It is also useful to note that these commitments would only apply to DNRC HCP project area lands within grizzly bear non-recovery occupied habitat and within grizzly bear recovery zones, which are a limited subset of DNRC lands. The USFWS and DNRC agree that shared road systems are preferred in many situations to minimize the amount of needed road on the landscape. DNRC also understands and agrees that access and future cooperation with neighboring landowners to acquire access are important considerations. As such, as indicated in commitment GB-RZ6 items (3) and (5), DNRC would encourage cooperation with prospective grantees to mitigate potential impacts to grizzly bears for each new access proposal in these key areas. DNRC understands its limited legal ability to impose constraints on other cooperators without their agreement, but would attempt to work with existing and future grantees to minimize impacts to grizzly bears. DNRC understands that the needs of both parties and the practical nature of any mitigation measures proposed in future agreements are important considerations. Conservation measures would be discussed and implemented on a case-by-case basis as considered agreeable by both parties. Depending on the terms agreed to in each situation, a grantee may or may not be required to follow a particular travel restriction.

Letter 106, comment 445: GB-NR3: 10 days per administrative unit may not be sufficient on larger Stillwater or Swan blocks. Emergency road repair, spring runoff events, etc., may require additional time. We need to increase flexibility here.

Response: This 10-day restriction would not apply to activities necessary to address emergency situations because emergency actions are not a covered activity under the proposed HCP. Thus, to rectify problems associated with emergencies, sufficient time would be allowed to accomplish necessary repairs.

Letter 106, comment 446: GB-NR6: If these operations are not covered under the permit, then why are there restrictions implemented?

Response: Third-party gravel pit operators and permit holders are not technically DNRC employees or contractors for DNRC; thus, their operations would not specifically be covered under the Permit. However, noise and disturbance associated with their activities would occur on DNRC HCP project area lands, and could have associated adverse disturbance and displacement effects on grizzly bears. Thus, DNRC has included restrictions limiting the number of active pits allowed in operation by anyone in occupied grizzly bear habitat and recovery zones on its HCP project area lands.

Letter 106, comment 447: GB-RZ2: What is the total cumulative acreage associated with the 100-foot buffer? Is this a no-activity zone? Can some vegetation be managed in this strip? How does this correspond to wildfire hazard reduction guidelines that require fuel mitigation along open roads for ignition prevention and firefighter safety?

Response: Table 4.9-2 on Draft EIS page 4-270 shows that an estimated 154,201 acres of DNRC HCP project area lands are in grizzly bear recovery zones in western Montana. On these lands under current conditions, DNRC estimates there are 227 miles of open road, which would equate to approximately 5,503 acres associated with 100-foot visual screening buffers. Under the HCP at year 50, DNRC estimates there would be 255 miles of open road, equating to approximately 6,181 acres associated with the 100-foot buffers. The actual amount would likely be less due to various situations where retaining a buffer is not possible. Within the buffer areas, some select tree removal would be possible, as long as adequate visual screening can be provided by saplings and shrub cover. MCA 76-13-407 states that a party clearing a right-

of-way must reduce the hazard resulting from the clearing or from the cutting of material unless exempted by DNRC. Hazard reduction guidelines for treatments within 100 feet of open roads specify reduction of residual fuel amounts such that flame heights would not exceed 4 feet. Commitment GB-RZ2 (Draft HCP page 2-16) acknowledges that this measure may be impracticable in fuel reduction areas and that this issue would be addressed on a project-by-project basis.

Letter 106, comment 448: GB-RZ5: How are you going to enforce this restriction? Does this only apply to forest management related to motorized activities? Recreational use is the real issue of concern here, but is not covered by this HCP?

Response: The HCP commitments only apply to the forest management activities and HCP project area described in Draft HCP Section 1.4 (Basic Elements of the DNRC HCP). Consequently, recreational use would not be affected by this commitment. Employee and contractor compliance would be enforced through normal agency supervision and monitoring of contracted work.

Letter 106, comment 449: GB-RZ6 #5: Reassigning existing easements does not allow DNRC to change the terms of the original easement. The assignment process is merely record keeping and the entire legal basis for the process is questionable. Addition of new restrictions upon the subsequent easement holder that reduce the uses and rights granted under the original easement is not appropriate and likely not legally defensible. The extent and uses allowed by the original easement must be allowed to continue after reassignment. This commitment is probably not attainable.

Response: Please refer to our response to Letter 106, comment 444, above**.**

Letter 106, comment 450: GB-ST1: The current transportation plan is inadequate for the three subzone areas where no new permanent roads are identified. Many of these areas contain extremely steep and rugged terrain. The construction, use, and obliteration of temporary roads in these locations will result in greater long-term impacts to the environment than would the construction and maintenance of a permanent, yet restricted-use, road system. Undoubtedly, the extreme costs associated with relying on temporary road systems or non-road-based harvest systems will be used as a rationale to forego any type of forest management in these areas due to poor economic feasibility. Therefore, to say these areas will be available for management is disingenuous and will not result in the attainment of the higher sustained yield figures purported in the analysis. It is imperative that at least a primary trunk permanent road system be designed and designated in each of the four subzones to allow for long-term management of these areas.

Response: DNRC believes that the 8 miles of temporary road allowed under the plan are sufficient to accomplish long-term management objectives within the Stillwater Block. While full obliteration and recontouring of road prisms would not be prohibited under commitment GB-ST1, <u>it is not required,</u> and DNRC considers this practice economically prohibitive in most situations. Management of areas in difficult terrain and access would be addressed through DNRC's normal timber sale planning process and project design. There are a number of existing roads in portions of the Stillwater Core that are currently restricted by barriers, gates, brush, etc., that could be re-opened for management under the conditions of the HCP commitments. This is in contrast to the current condition, in which lands accessible by these existing roads are currently restricted as security core and off limits for normal forest management. Helicopter yarding systems would likely be required in some areas. However, DNRC considers commitment GB-ST1 a reasonable and achievable approach for meeting long-term management objectives and conservation objectives for grizzly bears, and believes the Stillwater Block Transportation Plan is adequate to meet management objectives for the 50-year term of the HCP.

Letter 106, comment 451: GB-ST1: Limiting to 8 miles of temporary road in any one year will likely not be sufficient to manage some of the subzones due to the large size and difficult terrain. While the definition of Temporary Road provides for maintenance of the road prism, recent DNRC actions trend toward complete obliteration, including re-contour of road prisms. This is a dangerous precedent and provides a different perception of "Temporary Road." If the current trend toward complete obliteration is contemplated for the

subzone areas, this is an even less useful tool and makes it more unlikely that any management of these subzones will be possible.

Response: See the response to Letter 106, comment 450.

Letter 106, comment 452: GB-ST2 #1: The no new permanent road clause will effectively continue the current condition and eliminate the ability to manage these lands. Undoubtedly, the State will regret this commitment as they will see it is wholly inconsistent with meeting the Trust Land Mandate. Topography and extent of temporary road construction will be economically prohibitive. This clause will perpetuate the status quo where helicopter yarding systems will be the only viable alternative for management of these areas. The transportation plan for the Stillwater block is not adequate looking toward the 50-year term of the HCP.

Response: See the response to Letter 106, comment 450.

Letter 116, comment 535: Another concern is the additional use of temporary roads and how that will be carried out on the ground. Temporary roads are very effective and serve a purpose for timber harvest activities, but in places where there is the possibility of multiple stand entries, we support keeping the road prism in place as this will keep timber sale costs down, move less dirt, and make future projects more feasible. By pulling pipes, applying BMPs, and either gating or installing vehicle buffers, the DNRC can achieve both the additional wildlife security but also keep the infrastructure in place for future operations.

Response: Completely obliterating and recontouring roads can be costly and uneconomical, particularly in areas where future access will be necessary. Thus, the temporary road definition under the HCP (Draft HCP page 11-13) states that the road prism may be maintained as long as the surface is not passable by motorized vehicles.

Letter 116, comment 536: The language on HCP, page 2-5, "firearms restriction reduces the likelihood that a grizzly bear would be shot by anyone conducting forest management activities on trust lands" points the finger directly at the logging contractor. I have worked in the woods in one fashion or another for my entire career and have never heard of a logging contractor shooting a grizzly bear. This language denotes the logging contractor as the one to be worried about for shooting grizzly bears.

Response: See the response to Letter 106, comment 440.

Letter 117, comment 539: The plan does not adhere to its stated standard of protecting species "to the maximum extent practicable." The plan commits to the standard of protecting threatened species "to the maximum extent practicable" (ES-1), but fails to apply this standard in the case of the threatened grizzly. If the plan were to adhere to its stated commitment to protect grizzly bears to the maximum extent practicable, using the best available science as required by the ESA, the preferred alternative would: (a) increase core areas, rather than allow them to decline in the preferred (and all) alternatives; (b) decrease open and total road densities; (c) rely more heavily on road obliteration, rather than seasonal closures; (d) further reduce road densities in the BMU subunits, where overall road densities greatly exceed biologically based thresholds; (e) take into account existing data on bear use, conflicts, and mortalities in a geographically explicit manner, in order to develop appropriately protective road and habitat standards; and (f) require that DNRC field staff carry bear pepper spray. These protections are reasonable measures that should be applied to minimize and mitigate the effects of the proposed actions on grizzly bears. The absence of these measures shows that DNRC is not protecting grizzly bears to the maximum extent practicable.

Response: Please refer to the general responses to comments concerning take minimization and mitigation (Section 2.3.1.3) and the jeopardy standard (Section 2.3.1.4). Regarding the commenter's concerns about applying standards to the protection of grizzly bears, adopting habitat standards and parameters that provide the highest quality habitat for grizzly bears (e.g., landscapes with no roads, minimal human presence, etc.) can be at odds with maintaining an economically viable forest management program over the long term in western Montana, particularly considering the size and distribution of DNRC's land base. This is largely why DNRC opted to enter into an HCP and obtain a Permit. Each of the concerns listed in the comment

letter pertaining to habitat for grizzly bears was considered when the USFWS and DNRC developed the HCP commitments. Each was also addressed in the Draft EIS analysis (pages 4-284 through 4-317). See the response to Letter 117, comment 551 (Section 2.2.1) for concerns regarding bear spray.

2.2.4 General Wildlife

Letter 5, comment 24: There are enough grizzly bears. There are too many black bear, mountain lions, and especially wolves.

Response: The USFWS has noted the comment.

Letter 5, comment 25: I don't see much on winter range for wildlife. Remember the Multiple Use Law.

Response: The Draft EIS analyzes the effects of implementing the HCP on various resources in the HCP project area. Draft EIS pages 4-384 through 4-389 include an analysis of the effects of the HCP on big game. In general, no adverse effects on big game were identified at the programmatic level analyzed in the Draft EIS. Note that DNRC conducts a MEPA analysis for each of its proposed timber sales. During that process, DNRC works with MFWP to develop measures to minimize potential effects on big game winter range at the project level.

Letter 9, comment 117: We support the goals and objectives of the proposed grizzly bear and lynx conservation strategies (Volume II, pages 2-2, 2-43). Our recommendation to reduce road densities to reduce risks to HCP fish would also likely improve wildlife habitat and security, and reduce risks to the grizzly bear and Canada lynx.

Response: The USFWS believes that DNRC's conservation commitments would benefit fish as well as grizzly bears despite proposed increases in road densities. The conservation commitments contained in the HCP were designed to minimize road increases over the next 50 years while balancing the need for DNRC to maintain a viable forestry program. Where increases are expected, the HCP contains measures to minimize and mitigate the impacts of roads on the covered species. Regarding the adequacy of conservation and recovery of the species, please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1).

Letter 90, comment 349: There are too many "allowances" that allow for actions that dilute commitments (e.g., draft HCP pages 2-44, 2-47, and 2-49).

Response: Please refer to the response to Letter 169, comment 699, below. Additionally, the allowance discussed on Draft HCP page 2-44 actually identifies a greater level of restriction that requires more woody material be retained in association with blowdown events and resulting timber salvage than would otherwise be required by retaining den site slash piles. The other allowances mentioned on Draft HCP pages 2-47 and 2-49 provide a measure of management flexibility and discretion for DNRC to address likely situations where it may be impracticable to apply the particular commitment. When such allowances are invoked, they are bound by limits and/or require documentation and monitoring, as stated in their corresponding commitments.

Letter 105, comment 424: The HCP should include provisions that meet the needs of grizzly bears, Canada lynx, Northern goshawks, and other birds and animals that make their home in the forest ecosystem.

Response: The proposed HCP includes extensive conservation strategies for both grizzly bear and Canada lynx. Regarding other non-ESA listed species, DNRC would continue to address those species through the MEPA interdisciplinary process and through implementation of the DNRC Forest Management ARMs.

Letter 106, comment 439: On occasion, it seems as if some of the restrictions are aimed not at forest management activities, but recreational use. Yet this HCP is specific to forest management and does not include recreational use as a covered activity. Can you explain how these restrictions will apply to non-covered activities?

Response: The conservation commitments apply only to DNRC forest management activities on HCP project area lands. As such, incidental take protection would only be afforded to DNRC under the 50-year Permit for those activities conducted under its Forest Management Program. Recreational use and other uses and activities managed and administered under other DNRC programs would not receive incidental take protection under this HCP. However, DNRC projects developed under other programs would still have to comply with the ESA. The conservation commitments proposed under the HCP, such as those restricting access on roads and maintaining road closures, would serve to restrict some recreational uses such as off-road vehicle use; however, non-motorized use, such as foot travel and travel on horseback, would be allowed.

Letter 109, comment 502: The DEIS/HCP does not adequately address the issue of connectivity between suitable habitat.

Response: Commitment LY-HB6 (LY-HB5 in the Final HCP) specifically addresses habitat connectivity of suitable lynx habitat wherever lynx habitat persists on HCP project area lands (see Draft HCP page 2-49), and detailed discussions of habitat connectivity and linkage for lynx are provided on Draft EIS pages 4-325 and 4-332 through 4-335.

Letter 110, comment 517: There is a serious need for numerous revisions in the plan. Most of them are based on fact and conclusions determined from previous studies, and standards on the federal and state level. Neither does the plan, in several instances, adhere to the common practices regarding lynx and grizzly in some states and in some federal agencies. If the HCP contends that it seeks to protect species "to the maximum extent practicable," then it should heed standards and practices and also studies by other states, federal agencies, and scientific sources.

Response: It is not always appropriate to adopt into an HCP the commitments made in guidance documents or existing plans. Any plan developed to address the effects of covered activities on listed species should be written based on the needs of the species while acknowledging the action agency, its mandate, operational needs, program goals, and ESA obligations. The development of a new plan is also an opportunity to review new research findings to tailor commitments to best meet the needs of the species. Therefore, each plan may differ from year to year and agency to agency. DNRC and the USFWS considered available plans and guidance during development of the HCP, and these are listed as references in the Species Accounts and HCP. Additionally, please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1), take minimization and mitigation (Section 2.3.1.3), and the jeopardy standard (Section 2.3.1.4).

Letter 111, comment 522: The HCP DEIS fails to meet the requirements set forth in 16 U.S.C. 1539 (a)(2)(A)(i) and (iii) by failing to adequately describe the impacts to grizzly bears and other listed species from the "take" that would occur as a result of implementing the alternatives in the DEIS, and by not including an alternative that would improve conditions, i.e., reduce, rather than increase road densities, and explaining why such an alternative is not being utilized.

Response: The proposed HCP includes an analysis of take for several of the covered activities in HCP Chapter 7 (DNRC's Identification of Impacts that Have the Potential to Constitute Take under the HCP): for impacts of take on aquatic species due to sedimentation, see page 7-2, lines 24 through 28 and page 7-3, lines 33 and 34; for impacts of take on aquatic species due to lack of habitat connectivity, see page 7-5, lines 8 through 10; for impacts of take on bears attributable to roads, see page 7-11, lines 10 through 14; for impacts of take on lynx attributable to reduced foraging habitat, see page 7-28, line 22 and page 7-29, lines 11 through 13. In response to the comment, Chapter 7 of the Final HCP has been revised to include a statement regarding impacts of take on bears resulting from mortality due to bear-human conflicts. Ultimately, it is the USFWS' responsibility to analyze and quantify the anticipated take under the proposed HCP and determine the impacts of that take on the populations of covered species. That analysis will be included in USFWS' ESA Section 7 biological opinion. Regarding the comment concerning the alternatives, please refer to the general response to comments concerning the EIS alternatives (Section 2.5).

Letter 118, comment 557: It seems that most of the DNRC commitments contain allowances or exceptions with the end result that there is little or no real commitment required. DNRC commitments need to be strengthened to the point they actually meet the stated intent of the "commitment." This applies to all species.

Response: Please refer to the response to Letter 169, comment 699, below.

Letter 119, comment 566: DNRC lands include significant portions of the last remaining strongholds for the HCP species in western Montana. The DEIS downplays the importance of its lands to support the five HCP species compared to the much larger areas of their habitat managed by the U.S. Forest Service, for example, yet state trust lands comprise a significant portion of the existing range of these species, and the management of these lands will significantly affect these species, especially if considered over the next fifty years.

Response: We agree that DNRC lands are important to the HCP species, and rather than downplay the importance of DNRC lands, the Draft EIS places the HCP project area lands in context to other land ownerships in western Montana.

Letters 128 and 129, comment 639: Corridors are identified in the document as wildlife linkages. The yellow overlay includes state lands identified as HCP, non-HCP, and other private and public lands. A discussion of the strategies regarding the linkages should be included, as their functioning seems important and incorporates a variety of ownerships.

Response: Consideration of habitat linkage is an important issue that must be addressed when evaluating proposals that might influence threatened or endangered species. Consequently, the USFWS and DNRC analyzed DNRC's HCP project area lands in relation to important linkage areas already identified by others, such as the Northern Rockies Lynx Management Direction (USFS 2007), Servheen et al. (2003), and the Swan Agreement (USFWS et al. 1995, amended 2007). To address the possibility of HCP project area lands falling within other possible linkage areas in the state, a linkage model similar to that used by Servheen et al. (2003) was developed for the Draft EIS to quantify the amount of HCP project area lands that might occur in such areas. The yellow-highlighted lands depicted in Figures 18A through 18C (Draft EIS Appendix D, EIS Figures) serve this purpose, but it is important to point out that this analysis has not been peer reviewed or accepted for use by any agency or interagency group for other purposes that were not intended. HCP commitments would apply to all DNRC HCP project area lands regardless of whether they lie within a yellow-highlighted linkage area depicted in Figures 18A through 18C; however, no other commitments would apply or are implied for neighboring non-DNRC lands.

Letter 169, comment 699: Soft commitments are included throughout the document--terms such as "discourage," "minimize," "where practicable," and the many "Allowances" for violation of the commitments, limit their value as conservation measures. It seems that specific targets, caps, or processes for determining exceptions need to be explicitly and uniformly identified. These decision processes and criteria are explicit for some commitments (App. B, Document B-2) but lacking for many others--especially for those commitments for projects outside GBRZs. Simply making note of the reason for divergence from the commitments in MEPA documents, seems inadequate given the explicit sanction this HCP gives such exceptions. Although it has been argued that providing narrative descriptions of intent in the Rationale, use of ID Teams, and active HCP monitoring processes are adequate to ensure the commitments' intents are being met, we would prefer that the process for allowing anticipated commitment violations be made uniformly explicit, and that exceptions be actively mitigated and/or reviewed through consultation with the USFWS.

Response: During public review of the draft conservation strategies in 2005, the USFWS and DNRC received several comments about the use of "soft language" in the commitments. In response, both agencies reviewed allowances included in the commitments and attempted to limit their use. This is reflected in the conservation commitments presented in Draft HCP Chapter 2 (Conservation Strategies). In the Final HCP, the USFWS and DNRC again reviewed the allowances and clarified instances when a commitment cannot be

met due to impracticability versus instances where DNRC may elect to not implement a commitment through an allowance. In a few cases, DNRC may not be able to implement a commitment through no fault of its own. For instance, DNRC may not be able to maintain lynx habitat connectivity in areas where adjacent habitat consists of open meadows. These instances of impracticability are included in the commitments and require disclosure in DNRC MEPA documents, with 5-year summaries reported to the USFWS so that we can ensure that these cases of impracticability are occurring in situations and at a frequency characterized by DNRC during HCP development. Where the effects could be greater if an allowance is used more often than initially characterized by DNRC, caps were added or monitoring commitments were made. In the Final HCP, all allowances include a limit on their use (HCP Chapter 2) and/or require annual reporting to the USFWS so that both agencies can minimize the risk that an allowance may be exceeded (HCP Chapter 4, Monitoring and Adaptive Management).

2.3 Function of the HCP

2.3.1 General Responses

2.3.1.1 Adequacy of the HCP

Numerous commenters stated that the HCP (1) fails to protect or conserve the habitat of listed species, and (2) is inadequate.

DNRC coordinated with the USFWS to develop an HCP so that its conservation strategies would protect and conserve the habitats of listed species within the context of the ESA Section 10 process. As described in the foreword to the HCP Handbook (USFWS and NMFS 1996), this permitting process is designed to establish a "creative partnership" as envisioned by Congress to achieve the dual purpose and need, as stated in the Draft EIS (Section 1.4, Purpose and Need). The purpose and need is to provide broad protection and conservation for listed species while balancing DNRC's need for long-term regulatory certainty in managing its forested trust lands and meeting its trust mandate.

While several commenters felt the HCP was inadequate, we note that DNRC is not required to implement greater conservation measures beyond those needed to meet the statutory requirements of the ESA. In other words, if the USFWS determines that the HCP meets ESA Section 10 issuance criteria, the Permit would be issued. We also note that, as described in the Final EIS, additional conservation measures were added to the proposed HCP (Alternative 2) for all the HCP species. Additionally, we point out that the proposed HCP includes monitoring and adaptive management measures to reduce uncertainties regarding effects on HCP species as they may arise over time, including effects from climate change. The USFWS will evaluate and base its decision on whether the HCP provides adequate conservation, as well as other measures, necessary to satisfy the Permit issuance criteria under the ESA.

2.3.1.2 Recovery of the HCP Species

Several commenters stated that the HCP fails to maintain populations of the HCP species and would not result in the recovery of species. We note that HCPs are not explicitly required to recover a listed species, nor is an HCP required to benefit the covered species. Under Section 7 of the ESA, federal agencies have a statutory obligation to support recovery of threatened and endangered species on federal lands. While the USFWS encourages HCPs to be consistent with recovery, Section 10 of the ESA does not establish a recovery standard (HCP Handbook, page 3-20, USFWS and NMFS 1996). The USFWS considers recovery an important consideration in any HCP and strives to have applicants develop HCPs that contribute to recovery and are consistent with federal recovery efforts. The DNRC HCP was developed to complement federal agency recovery efforts (see Final HCP Chapter 2, Conservation Strategies, for discussions of the biological goals and objectives for the terrestrial and aquatic conservation strategies). Consequently, the commitments for grizzly bears, Canada lynx, and bull trout are similar to measures implemented by federal

agencies managing forested landscapes.The intent of the proposed DNRC HCP is to contribute to recovery of all the HCP species. This is demonstrated on Draft EIS page 4-265, which states that overall, the action alternatives would generally be effective in maintaining the key habitat components at a level that provides for healthy fish populations, including the HCP fish species. Additionally, Draft EIS page 4-316 states that, compared to Alternative 1, all three action alternatives would potentially reduce the risk of effects on grizzly bears due to the presence of roads in key habitat areas, would increase the total amount of land area managed to reduce the risk of bear-human conflicts, and would reduce the risk of displacement from important habitats during crucial periods through restrictions in spring habitat, post-denning habitat, and near den sites. Lastly, Draft EIS page 4-338 states that all action alternatives provide a greater measure of lynx conservation on trust lands than under current practices by providing greater commitments to maintain suitable habitat and foraging habitat in key areas of known importance for the species in western Montana over the next 50 years.

2.3.1.3 Take Minimization and Mitigation

Two commenters asked for clarification of the standards for determining "maximum extent practicable." Several commenters expressed their opinion that the HCP would not minimize or mitigate the impacts of incidental take to the "maximum extent practicable." The standards for determining "maximum extent practicable" are not exact or absolute. Rather, the determination involves a number of considerations—biological, logistical, technical, and economic. Practicability in an HCP depends, in part, on an agreement by all sides that all biological, technical, and economic factors have been balanced. The ESA provides three requirements concerning the adequacy and reliability of mitigation: (1) the maximum extent practicable requirement under Section 10(a)(2)(B)(ii); (2) the no jeopardy requirement under Section 7(a)(2) and Section 10(a)(2)(B)(iv); and (3) the funding requirement under Section 10(a)(2)(B)(iii). Arguably, the most important standard of all is the "no jeopardy standard," under which issuance of the Permit will not appreciably reduce the likelihood of the survival and recovery of listed species in the wild.

Guidance on the maximum extent practicable finding is provided by the HCP Handbook (page 7-3, USFWS and NMFS 1996), which states that "[The maximum extent practicable] finding typically requires consideration of two factors: adequacy of the minimization and mitigation program, and whether it is the maximum that can be practically implemented by the applicant. To the extent that the minimization and mitigation program can be demonstrated to provide substantial benefits to the species, less emphasis can be placed on the second factor." In other words, if an HCP provides "substantial benefits" to the species, it is not explicitly necessary to demonstrate that the applicant has provided the absolute maximum in mitigation that can be implemented.

Regarding the adequacy of the minimization and mitigation program of the DNRC HCP, the USFWS believes the plan would provide substantial benefits for the aquatic species and lynx and for the grizzly bear in certain circumstances. For the aquatic species we note that the HCP includes commitments to fix legacy roads and culverts that have degraded conditions for decades and contributed to the listing of species like the bull trout. Over time, we expect these commitments along with the commitments to maintain key riparian habitat functions would result in improvements in baseline habitat conditions for the HCP aquatic species. For lynx, the HCP commitments provide greater assurances that suitable habitat and foraging habitat in key areas of known importance for lynx in western Montana would be maintained over the Permit term than under current practices. Overall, the HCP commitments would also benefit the grizzly bear by reducing the risk of effects on bears due to the presence of roads in key habitat areas; increasing the total amount of land area managed to reduce the risk of bear-human conflicts; and reducing the risk of displacement from important habitats during crucial periods through restrictions in spring habitat, in post-denning habitat, and near den sites. However, the HCP includes two substantive departures from federal standards for grizzly bear conservation: road densities and security core. For an explanation of the effects on bears related to these two issues, please refer to the responses to Letter 109, comment 495 and Letter 12, comment 127 (Section 2.2.1). We note that while road densities would increase and security core would decrease in the HCP project area, DNRC has proposed a different approach to providing secure habitat for bears as well as numerous

commitments to reduce the potential for take associated with loss of secure habitat and increased road densities.

For the grizzly bear, where the commitments may not result in a substantial benefit to the species, the USFWS must consider the second factor: whether it is the maximum that can be practically implemented by the applicant. In addressing this factor, we will consider the DNRC trust land mandate described in EIS Section 2.2.2.1 (Legal Framework for the Management of Trust Lands), as well as the discussion in Draft HCP Section 1.3.2.3 (DNRC Practicability Considerations), which describes the factors DNRC considered in its selection of mitigation and minimization measures for inclusion in the HCP. Also, we note that in the Stillwater Core, where existing security core would be replaced with the implementation of quiet areas, the HCP would rely on reconstruction of existing roads or use of temporary roads to access timber stands and would construct only 2 miles of permanent road in this area over the Permit term. In the Swan River State Forest if the Swan Agreement is terminated, DNRC would also implement the quiet areas approach for bears and would implement numerous seasonal restrictions on roads in important habitats for bears. This program is an extension of the measures implemented under the Swan Agreement and would maintain the existing program that is currently supporting grizzly bear populations. We note that the EIS does not determine if the HCP would minimize or mitigate the impacts of incidental take to the "maximum extent practicable." That determination will be made after completion of the EIS and Record of Decision and will be based on the issuance criteria and completion of other internal responsibilities including an ESA Section 7 evaluation.

2.3.1.4 The Jeopardy Standard

Some commenters expressed concern that the proposed HCP would jeopardize the HCP species. Under Section 10 of the ESA, one of the criteria for Permit issuance is that issuing the Permit would not appreciably reduce the likelihood of the survival and recovery of the species. To issue a Permit, the USFWS must also conduct intra-USFWS consultation to ensure compliance with ESA Section 7 provisions. ESA Section 7 requires that Permit issuance does not "jeopardize the continued existence of" a federally listed species (commonly referred to as the jeopardy standard). The implementing regulations define jeopardy as "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." The determination of jeopardy is based on the effects of the action on the continued existence of the entire population of the listed species or on a listed population and may be based on an assessment of impacts to distinct population segments.

As described in the Draft HCP, 1.3 Development of the DNRC HCP, the USFWS provided guidance and technical assistance to DNRC during development of the HCP. Because consultation under Section 7 of the ESA is our responsibility, we considered the Section 7 requirements throughout the HCP development phase and guided DNRC accordingly. Because of our involvement in development of the HCP, at this time, we do not believe that implementation of the HCP would jeopardize the HCP species. However, the USFWS will evaluate and base its decision on whether the HCP provides adequate conservation and other measures necessary to satisfy Permit issuance criteria under the ESA.

2.3.2 Responses to Individual Comments

Letter 6, comment 29: Not one tree should be cut if it would jeopardize (increase) stream temperatures or adulterate lynx habitat.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1), take minimization and mitigation (Section 2.3.1.3), the jeopardy standard (Section 2.3.1.4), and the compatibility of revenue generation and species conservation (Section 2.4.1.3). We recognize the potential for timber harvest in the riparian buffer to affect stream temperature. Please refer to the response to Letter 9, comments 52 and 103 (Section 2.1.4) for an explanation of the revised commitments for temperature

monitoring and adaptive management in the Final HCP. Regarding lynx habitat, refer to the response to Letter 119, comment 581 (Section 2.2.2).

Letter 7, comment 34: Montana is one of the few states left with renowned qualities that make it special to us all. I urge you to continue to protect and sufficiently preserve the habitat necessary for the survival of all threatened and endangered species.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1), general responses to comments concerning the alternatives (Section 2.5), and general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 9, comment 113: The DEIS indicates that the HCP hopes "to minimize and mitigate to the maximum extent practicable" any impact to threatened and endangered species while conducting lawful activities such as harvesting timber on state trust lands (page 1-1). There appears to be some subjectivity in regard to the determination of whether mitigation efforts are implemented "to minimize and mitigate to the maximum extent practicable." The USFWS should clarify the standards by which this "maximum extent practicable" determination is made. We are concerned that needed mitigation actions (i.e., actions that would avoid, minimize, and compensate for impacts to HCP fish) may be rejected primarily due to revenue production or cost considerations. We recognize DNRC's mission is to manage state trust lands to produce revenues for the trust beneficiaries, but have concerns that revenue concerns may override environmental or biological concerns in such determinations. It is not clear how biological or conservation goals or considerations will be balanced with DNRC's revenue considerations when determining appropriate management responses. How does the USFWS assure proper balance between conservation and DNRC revenue considerations in regard to determination that mitigation has occurred "to minimize and mitigate to the maximum extent practicable?" How are conservation goals considered relative to economic or revenue production goals in determining management response to monitoring results? How are determinations made that more protective management prescriptions may not be considered "practicable?"

Response: The commenter should note that the referenced statement on Draft EIS page 1-1 was misstated. The sentence has been revised in the final EIS to state, "Section 10 of the ESA authorizes a landowner to develop a conservation plan to minimize and mitigate, to the maximum extent practicable, the impacts of incidental take of threatened and endangered species while conducting lawful activities, such as harvesting timber on state trust lands." The distinction is that the HCP applicant is required to minimize and mitigate the impacts of incidental take rather than any impacts they may have on a listed species. However, we note that DNRC's HCP would also minimize impacts that would not otherwise result in take. Regarding the comment about clarifying the standard for determining "maximum extent practicable," please refer to the general response to comments concerning take minimization and mitigation (Section 2.3.1.3). Regarding your concerns about revenue over conservation, please refer to the general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 10, comment 121: According to state law DNRC is obligated to manage its lands in such a way as to provide the greatest income possible for trust beneficiaries. However, we are concerned with how the proposal may have long-term impacts to sustaining, protecting, and/or the future for the HCP species, including the restoration of endangered species.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1), general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3), and general responses to comments concerning recovery of the HCP species (Section 2.3.1.2).

Letter 12, comment 128: Please reconsider DNRC's stated standard to protect endangered species "to the maximum extent practicable." In the case of the grizzly bear, this means that DNRC should: (1) Increase protections for core areas, rather than allow them to shrink in all alternatives. (2) Decrease total and open road

densities through strategic road restoration efforts that target the best remaining habitat and would expand the size of core secure areas. (3) Rely more heavily on road obliteration, rather than seasonal closures, which are often ineffective. (4) Redouble efforts to reduce road densities in the bear management areas where overall road densities greatly exceed biologically sound thresholds. (5) Require that DNRC field staff carry bear pepper spray, which has proven effective in deterring grizzlies in conflict situations. (6) Reduce the timeframe of the plan from 50 years to 10 to 15 years, which is more realistic and practical. It is not possible to reasonably project the future of grizzlies 50 years from now, given the pace of human development and the radical climate change underway.

Response: Please refer to the general responses to take minimization and mitigation (Section 2.3.1.3) and the jeopardy standard (Section 2.3.1.4). Regarding concerns about climate change and the Permit term, please refer to the general responses to comments concerning the Permit term (Section 2.6).

Letter 22, comment 146: I am concerned over the proposed degradation of bull trout, lynx, and grizzly bear habitat on state lands. The department should be managing for the survival and sustainability of these threatened species first and foremost.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1) and general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 26, comment 157: We need to preserve habitat for grizzlies, lynx, and other imperiled species. By increasing timber harvest and creating so many miles of new roads, we are definitely going to infringe on important habitat for those and other species.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1), proposed road building under the HCP (Section 2.8), and timber harvest and alternative markets on state trust lands (Section 2.4.1.1).

Letter 28, comment 163: The conservation alternative should, at a minimum, offer the same protection for grizzly bear and lynx habitat that currently exists today. Any measures that reduce or fragments habitat should be avoided.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1).

Letter 31, comment 165: In the 21st century, we need more than ever to increase protections for highly endangered species. Please adopt a wiser vision of stewardship.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1).

Letter 36, comment 180: An HCP is supposed to guarantee the long-term survival of threatened and endangered species, but Montana's new draft plan seems to be doing just the opposite instead: putting timber targets above the needs of threatened and endangered species.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1) and the general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 41, comment 185: The plan to take State land which is habitat for endangered species is short-sighted and hurtful to the survival prospects for rare wildlife and its enjoyment for future generations. The plan for this land should eliminate all unnecessary road development and protect habitat with true conservation in mind. Management of public lands should be responsible for the preservation of wildlife and its habitat over short-range revenue goals.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1), general responses to comments regarding the compatibility of revenue generation and

species conservation (Section 2.4.1.3), and general responses to comments concerning proposed road building under the HCP (Section 2.8).

Letter 44, comment 188: DNRC justifies not selecting Alternative 3 because is would "reduce the potential return to the trust beneficiaries" and require "additional funding" that DNRC isn't sure it can obtain (page 5-4). Alternative 3 would reduce potential return and cost more, but DNRC could pass on the costs of doing business to the industry paying to cut timber. All the mitigations applied to Alternative 2 would also reduce potential return and cost more; it appears DNRC has decided there is some undisclosed threshold that will not be passed (in terms of how much extra cost is too much to pass on to the permittee). DNRC provides poor justification for proposing an alternative that clearly does not avoid or minimize impacts to the minimum extent practicable.

Response: The trust mandate requires DNRC to generate revenue for the trust beneficiaries (see Draft EIS Section 2.2.2.1, Legal Framework for the Management of Trust Lands). Additionally, the Permit issuance criteria require an applicant to provide assurances that it can fund the proposed HCP. Therefore, both justifications for not selecting Alternative 3 are valid concerns to consider.

To maximize trust revenues and to maintain the viability of the state's timber program, DNRC attempted to develop an HCP that would have minimal effects on bids offered for timber sales. As noted in our response to Letter 106, comment 434, DNRC does not expect a measurable reduction in stumpage rates due to implementation of the proposed HCP.

Under the proposed HCP, some increased project-level planning costs would be absorbed by DNRC forest management staff. Similarly, DNRC would absorb some new HCP training costs, as well as some tracking, monitoring, and reporting costs associated with implementation of the HCP. Those costs are reflected in the implementation cost estimate described in Final HCP Chapter 8 (HCP Implementation). The more restrictive commitments proposed under Alternative 3 are not costs that can be passed onto timber sale purchasers; rather, they are primarily costs associated with foregone timber harvest, which would result in lost revenue to the trusts.

Letter 44, comment 189: The proposed alternative's mitigating measures (conservation measures) are woefully inadequate, and Alternative 3, Increased Conservation HCP, is inadequate.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1) and general responses to comments concerning the alternatives (Section 2.5).

Letter 44, comment 193: DNRC's proposed action is, contrary to the EIS and HCP conclusions, actually jeopardizing opportunities for recovery and sustainable populations of listed species such as grizzly bear, Canada lynx, bull trout, gray wolf, and other protected species, including wolverine and migratory birds.

Response: Please refer to the general responses to comments concerning recovery of the HCP species (Section 2.3.1.2) and the general responses to comments concerning the jeopardy standard (Section 2.3.1.4).

Letter 45, comment 196: In general, we find the DEIS to be a lot of paper and pretzel logic attempting to rationalize increased logging, road building, and motorized access to DNRC lands as somehow good for fish and wildlife. Nothing could be further from the truth and science.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1), general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3), general responses to comments concerning proposed road building under the HCP (Section 2.8), and general responses to comments regarding timber harvest and alternative markets on state trust lands (Section 2.4.1.1).

Letter 50, comment 211: Increased road miles and motorized access, 25-foot stream buffers, and replacement of grizzly bear protected areas with weak "quiet areas" are all major steps backward, away from a "conservation alternative" toward an old-fashioned, out-of-date, maximum-use policy that will result in permanent habitat loss and species decline, forest and stream degradation, and massive increases in motorized

disturbances to these lands. In 50 years, the plan will leave the forests unrecognizable, a shadow of their current selves.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1), general responses to comments concerning the alternatives (Section 2.5), general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3), and general responses to comments concerning proposed road building under the HCP (Section 2.8).

Letter 52, comment 213: You are Department of Conservation, so please view that stewardship as a sacred trust, doing everything possible to interact with the natural environment in a manner that is the least harmful.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1), general responses to comments concerning the alternatives (Section 2.5), and general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 63, comment 219: You, as employees of DNRC have been selected to protect Montana's great forest resources for future generations. This bill does nothing to protect the land and the animals. Please reconsider.

Response: We presume the commenter is, through use of the word "bill," confusing this project with Montana Senator Jon Tester's recently proposed bill entitled "Forest Jobs and Restoration Act of 2009." This project involves the implementation of an HCP by DNRC on forested state trust lands and the issuance of a Permit by the USFWS and is not proposed federal legislation. The HCP addresses the effects on the HCP species, both beneficial and adverse, and they are described in Draft EIS Section 4.8 (Fish and Fish Habitat) and Section 4.9 (Wildlife and Wildlife Habitat). However, we must still evaluate the proposed HCP in light of the requirements of Sections 7 and 10 of the ESA. If we determine that the HCP complies with Section 7 of the ESA and the ESA Section 10 issuance criteria have been met, we would issue the Permit.

Letter 68, comment 223: Change the plan to protect grizzly bear, lynx, bull trout habitats.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1) and general responses to comments concerning the EIS alternatives (Section 2.5).

Letter 70, comment 228: I am concerned that the logging proposals on state lands do not have the same protective guidelines as we have on National Forest lands. I would urge you to adopt appropriate measures to ensure the quality of water in streams, as well as critical wildlife habitat needs.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1).

Letter 72, comment 230: The DEIS states that the goal of the HCP is to protect threatened species "to the maximum extent practicable" (ES-1). However, we do not feel that the selected "preferred alternative" achieves that goal. However, a strengthened Alternative 3 could reach this goal if it was designed properly. The preferred alternative needs to: (a) increase core areas, rather than allow them to decline; (b) decrease open and total road densities; (c) rely more heavily on road obliteration, rather than seasonal closures; and (d) increase riparian corridors.

Response: We did not find the exact language included in the comment on Draft EIS page ES-1. We note that the ESA requires an applicant to minimize and mitigate the impacts of incidental take to the maximum extent practicable. Regarding the concern that the HCP does not protect threatened species to the maximum extent practicable, please refer to the general responses to comments concerning take minimization and mitigation (Section 2.3.1.3). Regarding the comment about the preferred alternative, please refer to the general responses to comments concerning the alternatives (Section 2.5).

Letter 73, comment 237: Please follow sound conservation practices that conserve and protect endangered wildlife species. Tread lightly on all the habitat of these species.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1).

Letter 74, comment 243: Protecting the habitat for grizzlies, lynx, and all endangered species also needs to be of high priority. These and all wildlife are being crowded out of their homes in all directions. Soon there will be no wildlife in Montana--some of the very things that make it so special are being destroyed.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1), general responses to comments concerning the alternatives (Section 2.5), and general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 75, comment 249: Under the DNRC alternative, there is no real conservation plan to protect core grizzly bear habitat, protections for lynx, martin, fisher, and others. Nor is there sufficient protections for fisheries.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1), general responses to comments concerning the alternatives (Section 2.5), and general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3). Regarding non-ESA listed species, while implementing the HCP, DNRC would also continue to implement the DNRC Forest Management ARMs for other sensitive species including fisher, marten, and others.

Letter 76, comment 253: The habitat you are conserving for endangered species is inadequate.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1) and general responses to comments concerning the EIS alternatives (Section 2.5).

Letter 79, comment 256: While we understand that timber harvesting can be a part of a sustainable ecosystem, this plan will threaten some of our greatest natural resources--the habitats of grizzly bear, lynx, and fish. My family recently enjoyed the Ken Burns Documentary on the National Parks, which emphasized the importance of our nation's natural resources. Please have similar foresight and reconsider the impact your proposal will have.

Response: Contrary to the commenter's statement, the Draft EIS page 4-265 concludes that overall, the action alternatives would be generally effective in maintaining the key habitat components at a level that provides for healthy fish populations, including the HCP fish species.

For bears, Draft EIS page 4-316 states that, compared to Alternative 1, all three action alternatives would potentially reduce the risk of effects on bears due to the presence of roads in key habitat areas; would increase the total amount of land area managed to reduce the risk of bear-human conflicts; and would reduce the risk of displacement from important habitats during crucial periods through restrictions in spring habitat, in post-denning habitat, and near den sites.

For lynx, Draft EIS page 4-338 states that all action alternatives would provide a greater measure of conservation on trust lands than under current practices by providing greater commitments to maintain suitable habitat and foraging habitat in key areas of known importance for lynx in western Montana over the next 50 years.

Letter 85, comment 309: Save as much grizzly bear, lynx, and fisheries as you can.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1).

Letter 90, comment 317: I feel that the intent of the HCP has been redirected away from conservation of habitat to rubberstamping industrial logging that degrades habitat, water quality, and soils on State lands.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1) and general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 90, comment 320: The grizzly bear, bull trout, redband trout, westslope cutthroat trout, and Canada lynx protections are not protective enough to maintain populations as is, I hope, an important function of the HCP.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1).

Letter 90, comment 325: "DNRC is also providing assurances that it can maximize the legitimate return to the trust while still responsibly managing the habitats of HCP species" (ES-7). Is removing habitat and building 1,400 miles of new roads responsible for managing HCP species? Is there an HCP species that will benefit in any manner from this increase in logging and road building? Are two slash piles per section a benefit for lynx denning? Will logging at over 50 MMBF per year be beneficial to the bull trout or other covered species? These are all indicator species of a functioning system. This HCP reduces the carrying capacity of the listed species.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1), general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3), general responses to comments regarding timber harvest and alternative markets on state trust lands (Section 2.4.1.1), and general responses to comments concerning proposed road building under the HCP (Section 2.8). Regarding lynx denning, please refer to our response to Letter 119, comment 595 (Section 2.2.2).

Letter 90, comment 326: Wildlife in Montana is owned by the citizens of Montana. It does not look like the DNRC is maintaining this important resource.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1).

Letter 90, comment 350: To truly protect listed species, a philosophical shift in DNRC is needed. What are the costs of recovering listed species? What are the costs of degraded water quality, degraded soils, weed spread? The HCP lands are functioning at present. There are populations of covered species present on public DNRC managed lands. This HCP does little to maintain these populations. As Brian Manning said on a field tour, "it takes years for lands to recover from logging." It looks like if this HCP is implemented, it will take years for these lands to recover from the HCP. Is this really a true HCP or a forest-wide conversion of old growth through logging and road building?

Response: The USFWS believes that DNRC's dual purposes for pursuing an HCP—to provide protection and conservation of listed species while providing for long-term management of forest resources—are compatible. In fact, a key underlying assumption of the entire HCP program is that landowners can manage their lands to meet their business needs while protecting public resources. This is not to say that forest management would not have adverse effects on the HCP species. The Draft HCP and EIS acknowledge the adverse effects of forest management on the HCP species and the potential take that may result from those effects (Draft HCP Chapter 7, DNRC's Identification of Impacts that Have the Potential to Constitute Take under the HCP). The documents also outline the measures DNRC would take to minimize and mitigate the effects of take on the species. Regarding the commenter's concerns about old growth, the Draft EIS describes the anticipated effects of the no-action and action alternatives on old growth. Because DNRC would not change its old-growth policy under the proposed action alternatives, the anticipated effects would likely be similar to those anticipated under the no-action alternative.

Letter 94, comment 362: DNRC and the USFWS maintain that the standard for HCPs and Permits does not include a legal obligation to take steps that lead to recovery. The agencies maintain that HCPs are primarily

meant to allow landowners to go about their business while posing only *de minimis* risk to imperiled species – risk that is deemed "incidental," and thereby does not appreciably reduce the odds of recovery or add to extinction risk. This position basically means HCPs are not geared toward improving the status of imperiled species, but instead meant to preserve the status quo. Therefore, to achieve the higher and more desirable objective of recovery – a level that ensures long-term persistence, de-listing, and state management for listed species – most of the burden for recovery will fall to landowners without HCPs, primarily federal land managers who must consult with the USFWS under section 7 of the ESA. In effect, when multiple HCPs are implemented over large landscapes, it means the conservation burden for recovery is being shifted to an increasingly smaller portion of the historical range. This means activities on federal lands could and probably will be constrained further, and it means that some recovery will have to occur in less than ideal habitats. We find this problematic. The USFWS and DNRC must disclose in the EIS how recovery can still be successful when affirmative steps toward recovery keep getting shifted to a smaller part of the landscape because of the accumulated effects of additional HCPs.

Response: The USFWS believes that contributions from private and state landowners are needed to support threatened and endangered species recovery efforts. HCPs are not explicitly required to recover a listed species (i.e., an HCP is not a recovery plan), nor is an HCP required to benefit an affected species. However, the USFWS considers recovery an important consideration in any HCP and strives to have applicants develop HCPs that contribute to recovery and are consistent with federal recovery efforts. Furthermore, the USFWS encourages the development of a conservation program in an HCP that results in a "net benefit" to the HCP species. The intent of the proposed DNRC HCP is to contribute to recovery of all the HCP species by focusing the minimization and mitigation measures directly on potential effects of the take should take occur. In general, the mitigation measures in HCPs should result in improvement of degraded habitat baselines, which, in turn, would help support recovery of the affected species.

It is true that all federal agencies are required to ensure that their programs support recovery efforts and that they implement recovery actions identified in the USFWS' recovery plans. However, the USFWS believes that HCPs, especially those for state and private lands located adjacent to federal lands, would complement recovery efforts on federal lands. In fact, the USFWS is very aware that HCPs should avoid adversely affecting the recovery efforts that are occurring on federal lands by designing HCPs that, to the extent practicable, tier off federal agency recovery efforts, including the USFWS' recovery plans. The DNRC HCP was designed with that in mind, and the mitigation measures for grizzly bears, Canada lynx, and bull trout were developed with the same or similar conservation measures as federal agencies because, in general, the threats on state lands are ostensibly the same when considering the similar forest management activities.

Nevertheless, HCPs that address similar activities and cover the same species will have differences because of the particular ways private or state lands are managed. The USFWS believes that having coordinated, well-designed HCPs over a larger landscape would likely result in an overall improvement in baseline habitat conditions for the covered species. For example, in Montana, we have observed improvements in fish passage under private HCPs through replacement of culvert barriers with larger ones that simulate stream channel size and dimensions. The HCPs in place today, and potential future ones like the proposed DNRC HCP if approved, contain commitments to fix legacy situations that have degraded conditions for decades and contributed to the listing of species like the bull trout. In addition, the proposed HCP includes commitments to avoid creating adverse conditions for the HCP species. Generally, forest land management agencies are managing their lands with more conservation today based on a better understanding of potential effects and armed with newer techniques for both conserving fish and wildlife species and meeting their business goals more efficiently and effectively.

Letter 94, comment 369: DNRC's "practicability considerations" (HCP page 1-7) states that, "DNRC can only invest in conservation if there is reasonable scientific certainty of a conservation benefit," and "…DNRC can only consider those conservation measures where there are clear and certain conservation benefits." We don't argue with these points and generally agree with them. However, the same considerations should apply when the science is uncertain as to whether harvesting timber in a certain fashion, or in a certain sensitive

area, or construction roads in a sensitive drainage, will be harmful to an HCP species. That is, if the science is uncertain about the potential to do harm, DNRC should employ the precautionary principle of doing no harm. There should be no guess work related to whether the take will exceed that which is "incidental."

Response: Draft HCP Section 1.3.3.3 (Use of Best Available Information), explains the status of the science for each species. This section has been expanded in the Final HCP. The HCP states that, in general, the science regarding the effects on the HCP species relative to timber harvest is well-established. That is, the conditions that contribute to adverse effects on a species are well-known, and it is these effects the HCP attempts to minimize and mitigate. We note that we did apply a "precautionary principal" in the CYE, where enhanced commitments would avoid take of bears in this sensitive ecosystem. DNRC conducted a preliminary assessment of take in Draft HCP Chapter 7 (DNRC's Identification of Impacts that Have the Potential to Constitute Take under the HCP). The USFWS will conduct its assessment of take in its ESA Section 7 biological opinion. The Permit, if issued by the USFWS, would identify the amount of take DNRC would be authorized under the Permit.

Letter 96, comment 390: The USFWS may not issue a Permit based upon the proposed HCP because it does not mitigate the impact of DNRC's proposed logging, roading, and grazing activities "to the maximum extent practicable," as required by the ESA. See 50 C.F.R. § 17.22(b)(2)(i)(B): 16 U.S.C. § 1539(a)(2). "If FWS finds that the HCP fails to mitigate and minimize harm to the species 'to the maximum extent practicable'--because the applicant rejected another alternative that would have provided more mitigation or caused less harm to the endangered species and FWS determined in its expert judgment that the rejected alternative was in fact feasible--then FWS cannot approve the application for an [incidental take permit] using that less protective proposal." Southwest Ctr. for Biological Diversity v. Bartel, 470 F.Supp.2d 1118, 1158 (S.D. Cal. 2006). DNRC has not identified compelling reasons demonstrating that Alternative 3, or any alternative containing greater conservation commitments than those proposed, is not practicable. The mere fact that conservation measures would reduce the financial return of logging activities does not render the measures infeasible. DNRC provides no analysis to support its claims that additional conservation measures are impracticable. Absent such analysis, the USFWS cannot accept DNRC's assertions. Because the proposed HCP does not mitigate impacts to the covered species to the maximum extent practicable, it may not form the basis for a Permit.

Response: Please refer to the general responses to comments concerning take minimization and mitigation (Section 2.3.1.3). Regarding the comment that DNRC has not identified compelling reasons to demonstrate that Alternative 3 is not practicable, please refer to the general responses to comments concerning the alternatives (Section 2.5).

Letter 96, comment 391: The USFWS may not issue a Permit because DNRC's proposed HCP "will…appreciably reduce the likelihood of the survival and recovery of the [covered] species in the wild." 50 C.F.R. § 17.22(b)(2)(i)(D); 16 U.S.C. § 1539(a)(2). "The proper baseline analysis is not the proportional share of responsibility the federal agency [action] bears for the decline in the species, but what jeopardy might result from the agency's proposed actions in the present and future human and natural contexts." Pac. Coast Fed'n of Fishermen's Ass'n v. U.S. Bureau of Reclamation, 426 F.3d 1082, 1093 (9th Cir. 2005). For all of the reasons detailed in the separately submitted comments of Montana Environmental Information Center, Friends of the Wild Swan, Natural Resources Defense Council, and Defenders of Wildlife, the HCP jeopardizes the survival and recovery of the covered species. (Among other things, the USFWS's own calculations indicate a 75 percent likelihood that the 30- to 40-year Cabinet-Yaak grizzly population is already in decline under current conditions. See Wakkinen and Kasworm (2004) at 71. The proposed HCP would significantly contribute to this already perilous situation for Cabinet-Yaak bears by increasing road density and decreasing core secure habitat. In so doing, the HCP will reduce the likelihood of survival and recovery for Cabinet-Yaak bears.)

Response: Please refer to the general responses to comments concerning recovery of the HCP species (Section 2.3.1.2) and the jeopardy standard (Section 2.3.1.4). In response to the comment about impacts to

bears in the CYE, we note that the draft HCP includes enhanced commitments for the portion of the HCP project area within that ecosystem. As described in Draft HCP Chapter 7 (DNRC's Identification of Impacts that Have the Potential to Constitute Take under the HCP), DNRC believes this approach would result in no "take" for Cabinet-Yaak bears. The USFWS will make its determination of the HCP's likelihood to jeopardize survival and recovery of the Cabinet-Yaak bears in its ESA Section 7 biological opinion.

Letter 98, comment 396: This plan is wrong, wrong, wrong. It lacks vision and accountability and surely will not protect the species that DNRC is mandated to protect.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1).

Letter 99, comment 397: Both the DEIS and PHCP clearly imply that DNRC's management of wildlife and wildlife habitat is subordinate to its trust obligation. However, DNRC's trust mandate is not solely driven by the economic potential of trust lands. State law discusses the multiple-use purpose of school trust lands (MCA 77-1-203, Multiple-use management). The State's duty to manage its land sustainably includes an obligation to ensure that wildlife, like Canada lynx, grizzly bear, and bull trout, are preserved in perpetuity on state lands (see State v. Boyer, 2002 MT 33, ¶ 22). A different constitutional provision requires the state to "maintain and improve a clean and healthful environment in Montana for present and future generations" (MONT. CONST. Art. 1X § 1). This provision implicates a fundamental right that cannot be infringed upon without surviving a strict scrutiny test which "requires that the state demonstrate a compelling state interest and that its action is both closely tailored to effectuate that interest and the least onerous path that can be taken to achieve the State's objective" (Montana Environmental Information Center v. Mont. DEQ, 1999 MT 248, 296 Mont. 207). The State's constitutional obligation to maintain and improve a clean and healthful environment is not limited to pollution-related issues. In two different cases (State v. Boyer, Hagener v. Wallace, 2002 MT 109), the court found that the State had the right and the obligation to protect wildlife and fish species from degradation. Ignoring that obligation for legally threatened species cannot be justified. Throughout both documents, the State indicates its obligation is simply to maintain the listed species. But maintaining the status quo for these threatened wildlife species is simply insufficient for the State to comply with its constitutional obligation. The State must "improve" the environmental conditions as well as maintain them. The state has a difficult task of proving that there is a compelling state interest for decreasing and impairing habitat for these threatened species. DNRC may claim that its task of funding education is a compelling state interest. There are two responses to this. First, the money from this land is not directly tied to an increase in funding for education. The legislature determines funding for education but does not increase or decrease that funding proportional to State land revenues. Second, and more importantly, even if funding education is a compelling state interest, there are two other components to the strict scrutiny test. DNRC must show that the action is closely tailored to effectuate that interest and the proposal is the least onerous path to meeting the State's objective. None of the current alternatives proposed by DNRC fulfill these standards. There are myriad options available to DNRC to generate revenue for schools and better protect these threatened State wildlife resources. Neither the DEIS or PHCP address these options.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1) and general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3). Regarding other options for generating revenue that better protect threatened resources, the HCP does not preclude DNRC from generating revenue on trust lands through other options. Please refer to the general responses to comments regarding timber harvest and alternative markets on state trust lands (Section 2.4.1.1).

Letter 99, comment 402: Under all four alternatives, the percentage of lands in secure habitat would decrease from existing levels. Under the designated "Increased Conservation Alternative," the percent decrease ranges from 5.2 to 15.2 on PHCP BMUs (DEIS Table 4.9-15, page 4-303). Under Alternative 3, increased conservation for grizzly bears is achieved by retaining the existing secure habitat for grizzly bears in the Stillwater Unit. How does maintaining baseline secure habitat increase conservation from existing

levels? In its analysis, DNRC should include an alternative that increases security for grizzly bears on PCHP lands.

Response: Please refer to the response to letter 119, comment 577 (below).

Letter 99, comment 405: The fish species covered by the PHCP and the DEIS are in decline. While the decline may be attributable in part to invasive species, it is a decline none-the-less, and must be accounted for. Further decline in habitat is acknowledged and expected as a result of global warming. It is the overall loss that is currently occurring that must be considered when formulating a plan to ensure that the HCP is "a long-term program for addressing and improving habitat needs across the landscape." DEIS, ES-2. To ignore the current decline and its myriad causes when formulating a plan to improve habitat needs is to ensure failure.

Response: As stated in the response to Letter 120, comment 619 (Section 2.1.10), the USFWS will assess baseline conditions for HCP fish species in its ESA Section 7 biological opinion. Regarding the commenter's concerns about climate change, please refer to the general responses to comments concerning climate change (Section 2.7.1).

Letter 104, comment 422: I do not agree with your conservation alternative that would allow more logging and especially more roads being built. Doing more activities in grizzly bear areas will only harm them and lead to more deaths. The lynx also need our protection to stop wiping out their range to hunt and raise their young.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1), general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3), and general responses to comments concerning proposed road building under the HCP (Section 2.8).

Letter 107, comment 467: This plan poses imminent and potential threats to the variety of threatened and endangered wildlife that reside in those 600,000 acres. DNRC is also charged with protecting these very tangible and irreplaceable natural resources. In the plan you are now drafting please consider in your cost-benefit analysis the incalculable benefit of protecting for this and all future generations the irreplaceable resources you hold in your hands.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1) and the general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 109, comment 471: As noted in our comments on the draft conservation strategies, we have serious concerns about whether this HCP minimizes "take" of listed species. The inadequacy of existing regulatory mechanisms is a key reason why bull trout, lynx, and grizzly bear were given ESA protection, yet this HCP offers business as usual. We fail to see how the status quo is minimizing impacts to listed species when the status quo was inadequate to ensure their survival.

Response: Please refer to the general responses to comments concerning take minimization and mitigation (Section 2.3.1.3) and recovery of the HCP species (Section 2.3.1.2). Regarding the commenter's statement that the status quo is inadequate to ensure the survival of the HCP species, please refer to the response to Letter 94, comment 362 (Section 2.3.1.2).

Letter 109, comment 491: To minimize and mitigate "take" the HCP must consider reducing road densities through decommissioning. Road decommissioning provides more secure habitat for terrestrial wildlife and reduces sediment to streams. Numerous studies have concluded that roads contribute sediment to streams and negatively impact spawning habitat.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (Section 2.8), take minimization and mitigation (Section 2.3.1.3), and the jeopardy standard

(Section 2.3.1.4). The effects of roads on aquatic species are described on Draft EIS pages 4-165 through 4-169, 4-183 through 4-186, 4-220 through 4-226, 4-228 through 4-233, and 4-255 through 4-259.

Letter 110, comment 511: The HCP will have a serious effect on too many endangered animals. Of special interest in Montana are the effects on the bull trout, grizzly bear, and Canada lynx.

Response: The effects of the proposed HCP on the HCP species are described in Draft EIS Section 4.8 (Fish and Fish Habitat) and Section 4.9 (Wildlife and Wildlife Habitat). While the HCP would likely have some adverse effects on the HCP species, the USFWS believes the plan would benefit the HCP species overall.

Letter 111, comment 518: None of the alternatives included in the HCP DEIS will satisfy the requirements of the ESA mandate to conserve listed species in the HCP area. Furthermore, all alternatives will result in illegal "take" of listed species.

Response: We believe the HCP would conserve listed species in the HCP project area and point to the conclusions of the Draft EIS summarized in our response to Letter 79, comment 256 (Section 2.3). Regarding the comment that all alternatives would result in illegal "take," the purpose of the HCP process is to support the issuance of a Permit that specifies the type and extent of take authorized for each HCP species. As long as the HCP meets all the Permit issuance criteria of ESA Section 10(a)(1)(B) and the permittee fully complies with the HCP, such take would not be illegal. Our analyses of the alternatives factored in the ability of the HCP to meet the issuance criteria and assumes full compliance by DNRC.

Letter 111, comment 523: Sections (a)(2)(B)(ii) and (iv) of 16 U.S.C 1539 indicate that in order to issue a Permit, the USFWS must find that the "applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking." and that "the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild..." The HCP alternatives fail to minimize and/or mitigate for the impacts of the road construction and logging that DNRC proposes. The DEIS also fails to demonstrate that the proposed level of disturbance in grizzly bear habitat will not reduce the "likelihood of the survival and recovery" of the grizzly bear.

Response: Please refer to the general responses to take minimization and mitigation (Section 2.3.1.3) and the jeopardy standard (Section 2.3.1.4), as well as the general responses to comments concerning proposed road building under the proposed HCP (Section 2.8).

Letter 111, comment 526: To minimize and adequately minimize "take" the DNRC must consider reducing road densities and increasing secure habitat for grizzly bears through road decommissioning. Road decommissioning increases secure habitat for grizzly bears and other terrestrial wildlife, and also reduces sediment to aquatic habitats. An alternative that would reduce the fragmentation of habitat by reducing the miles of roads on the landscape should be developed and considered.

Response: Please refer to the general responses to comments concerning take minimization and mitigation (Section 2.3.1.3). Please also refer to the general responses to comments concerning road building under the proposed HCP (Section 2.8).

Letter 119, comment 567: The HCP fails to sufficiently protect habitat for listed species as required by the ESA. Our chief concern with all of the HCP, and the "Proposed HCP" alternative in particular, is its failure to sufficiently protect habitat for the five HCP species. We understand that DNRC is under different mandates than other land management agencies, such as the U.S. Forest Service, and is not obliged to actively "recover" listed species. Yet what troubles us is that the Proposed HCP significantly degrades habitat for all five HCP species during its lifetime, as acknowledged in the DEIS and excerpted in these comments below. As a major landowner in some key remaining strongholds for the HCP species, these declines in their habitat may significantly harm the HCP species.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1).

Letter 119, comment 568: One objective of this HCP should be to maintain habitat for the HCP species at or above current levels. Harm to listed species due to an HCP is only acceptable if the level of take is quantified, and deemed compatible with recovery of the species overall. Yet it is exceedingly difficult to quantify this level of take, and even if it could be done, the grizzly bear is the only HCP species with a recovery plan that contains specific recovery goals, where the level of take can be measured in the context of the ability to achieve those goals. In the Cabinet-Yaak Ecosystem, there is known to be little if any ability of that population to experience any declines from the status quo, since its survival is already very much at risk. In cases like this where the level of take is so difficult to define, and thresholds for harm to each species may be very low, an HCP should seek to at least maintain the status quo.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1) and general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3). Regarding the comment about impacts to bears in the CYE, please refer to the response to Letter 96, comment 391 (Section 2.3.1.4), and to the general responses to comments concerning take minimization and mitigation (Section 2.3.1.3) and the jeopardy standard (Section 2.3.1.4).

Letter 119, comment 569: Another objective of this HCP should be to minimize and mitigate the effects of its operations on HCP species to the maximum extent practicable, which means the "Increased Conservation" Alternative should be the "Proposed HCP" Alternative. DNRC indicates in this DEIS that each of the alternatives it has developed are feasible, or practicable. Alternative 3 is expected to generate less timber volume than the other alternatives, but just slightly less than the current, "No Action" alternative (from 53.2 mmbf to 50.6 mmbf equals a 5% reduction, see Table ES-1). Alternative 3 clearly minimizes and mitigates impacts to the HCP species more than the other alternatives, and thus should be the proposed action or starting point in this analysis to determine mitigations to "the maximum extent practicable." We would like to see adoption of a modified Alternative 3 that includes additional mitigation measures based on the best available science and best management practices in place elsewhere in the range of the HCP species, such as improved protection of understory cover within lynx habitat, for example.

Response: Please refer to the general responses to comments concerning take minimization and mitigation (Section 2.3.1.3) and the general responses to comments concerning the alternatives (Section 2.5).

Letter 119, comment 577: The percent of HCP lands in secure habitat for grizzly bears declines from existing conditions in four out of six affected BMUs (DEIS Table 4.9-15, p. 4-303). Failure to at least maintain current levels of secure habitat for grizzly bears in this HCP is a failure to minimize and mitigate the impacts of its program to the maximum extent practicable, in violation of the Endangered Species Act. Failure to maintain or improve current levels of secure grizzly bear habitat in the Swan River State Forest in any of the HCP alternatives is a failure to analyze a full range of alternatives, in violation of NEPA and MEPA.

Response: While the HCP would result in a decrease in grizzly bear secure habitat (as defined by the IGBC 1998), DNRC would implement a "quiet areas" approach to providing secure habitat under the HCP. For an explanation of this approach, please refer to the response to Letter 12, comment 127 (Section 2.2.1). Regarding the comment that failure to maintain secure habitat is a failure to minimize and mitigate to the maximum extent practicable, we note that not only has DNRC proposed a different approach to providing secure habitat, but also, it has proposed numerous commitments to reduce the potential for take associated with loss of secure habitat, as well as to minimize and mitigate the effects of potential take. For additional information, please refer to the general responses to comments concerning take minimization and mitigation (Section 2.3.1.3). Regarding the concern about the alternatives, please refer to the general responses to comments concerning the alternatives (Section 2.5).

Letter 119, comment 588: DNRC has failed to actively solicit feedback on the effectiveness of the Proposed HCP to provide for the HCP species. We urge DNRC to remedy this failure and solicit expert information on all five HCP species in the preparation of its Final EIS.

Response: The best available science and review process used in development of the HCP commitments is described in Draft HCP Section 1.3.3 (Development of the Conservation Strategies). Both the USFWS and DNRC consulted with subject experts throughout the process. The USFWS and DNRC sought input from USFS lynx research biologist, Dr. John Squires, during development of the lynx conservation commitments. Dr. Squires is a research wildlife biologist with the Rocky Mountain Research Station's Wildlife and Terrestrial Ecosystem Program in Missoula, Montana. Dr. Squires leads the research team responsible for discovering and synthesizing information needed to conserve threatened, endangered, and sensitive forest carnivores.

MFWP wildlife and fisheries biologists conducted a third-party review of the conservation strategies in 2005. A USFWS Region 1 senior biologist reviewed the proposed HCP in April 2007, and local USFWS biologists provided an assessment of adverse effects and take for the project in 2008.

As recently as December 2009, both agencies met with John Squires to review the findings in his paper that was recently accepted for publication in the Journal of Wildlife Management (Squires et al. 2010 *in press*). In response to this meeting and Squires' findings, DNRC subsequently adjusted its lynx conservation commitments.

Letter 120, comment 602: We appreciate the agencies' work preparing this HCP for the DNRC Forested State Trust Lands, including the analysis of the proposed land management activities' adverse impacts on listed or potentially listed species under the ESA. However, the DEIS and HCP fall well short of addressing these impacts under the proposed alternatives. This disconnect between the science and the proposed actions create an HCP that will not reach its goal as defined by the USFWS—namely, to protect and facilitate the recovery of threatened and endangered species.

Response: Please refer to the general responses to comments concerning recovery of the HCP Species (Section 2.3.1.2).

Letter 120, comment 603: The Coalition has concerns about whether this HCP will actually minimize the "take" of ESA-listed species, and questions whether the DNRC's commitments to mitigate impacts to the threatened and endangered species are truly significant and measurable. The Coalition does not believe that the proposed HCP project area will conserve the threatened bull trout, much less encourage DNRC to take the actions necessary to bring this species to the point where the safeguards provided under the ESA are no longer necessary. This HCP appears to set a very low standard by only requiring the DNRC to avoid activities that will increase the risk of extinction of HCP-covered species, rather than committing to actions that will actually facilitate the species' recovery.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1). Regarding recovery of the HCP species, please refer to the general responses to comments concerning the recovery of the HCP species (Section 2.3.1.2).

Letter 124, comment 628: How can DNRC conceive of something like this plan and think it will do anything except exterminate species of wildlife that in many cases are already on the brink? Is this an attempt to just eliminate certain species that are dependent on the habitat that they have at the moment by pushing them even further into a corner where they have no chance to survive?

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1).

Letter 125, comment 631: No long-term commitment.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1) and general responses to comments concerning the Permit term (Section 2.6).

Letter 125, comment 632: Protect the wildlife. They have so little space left.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1) and general responses to comments concerning the alternatives (Section 2.5).

Letter 127, comment 635: As a long time conservationist, I'm very concerned about loss of necessary habitat for critters. We need to be concerned about the long-term effect on threatened animal populations and make certain that those populations and their habitat are protected when making such long-term plans.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1), general responses to comments concerning the alternatives (Section 2.5), and general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 130, comment 646: Considering research has demonstrated that grizzly bears, especially females with cubs, are particularly cautious and less likely to use areas that have been recently used by humans - even hikers, I am disappointted with the DNRC's Habitat Conservation Plan and Draft Environmental Impact Statement for state trust lands, particularly in how it will impact Montana's remaining grizzly bear populations.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1) and to the response to Letter 12, comment 127 (Section 2.2.1).

Letter 138, comment 651: Montana is one of the few states that can still pride itself on its remarkable natural resource assets, and it has many people who live here that believe in protecting those assets. Among the things that need protecting is the precious Grizzly habitat, but this appears to be questioned.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1), general responses to comments concerning the EIS alternatives (Section 2.5), and general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 142, comment 652: Protecting grizzly bears and their remaining habitat is very important today for many species, including people of the State of Montana and the future citizens of the United States. Please make every effort to preserve and protect wildlife habitat and endangered species, including the magnificent grizzly bear--if not in Montana, then where?

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1), general responses to comments concerning the alternatives (Section 2.5), and general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 142, comment 653: Please take all possible positive actions to conserve and protect our natural resources, including wild lands and wildlife for a healthy and prosperous future for all life in Montana.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1), general responses to comments concerning the alternatives (Section 2.5), and general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 152, comment 658: As a Montanan, I am horrified that this draft plan seems to be designed to assist the timber industry at the cost of imperiling the future survival of our threatened and endangered species. Instead of protecting habitat (for lynx, grizzlies, and trout) on our State lands, this plan works to destroy/reduce it by increasing the timber harvest.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1), general responses to comments concerning the alternatives (Section 2.5), and general

responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 152, comment 660: How can our state officials claim to be protecting rare wildlife or have its best interest in mind by willfully destroying the habitat it needs to survive? I urge you to modify this plan so that it will truly protect our vulnerable wildlife, and make this the priority, as it should be.

Response: Please refer to the general responses to comments concerning the adequacy of the HCP (Section 2.3.1.1) and to the response to Letter 36, comment 183 (Section 2.5).

Letter 152, comment 661: We are blessed here in Montana to have the wildlife we still have, and I want to insure that we pass this on to future generations. I hope you will do right by future generations of Montanans by strengthening protections in this HCP for imperiled wildlife and the places it needs to survive.

Response: Please refer to the general responses to comments concerning the adequacy of the HCP (Section 2.3.1.1) and to the response to Letter 36, comment 183 (Section 2.5).

Letter 163, comment 668: I am very upset that the draft HCP does not protect wildlife habitat as it should, but further endangers it.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1) and general response to comments concerning the alternatives (Section 2.5).

Letter 166, comment 677: I urge you to write a plan that will ensure effective protection of all habitats for all threatened, rare, endangered, and secluded wildlife.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1) and general response to comments concerning the alternatives (Section 2.5).

Letter 166, comment 679: Future generations deserve the same rich wildlife legacy that this generation of Montanans inherited. Please do right by future generations of Montanans by strengthening protections for all threatened, rare, endangered, and secluded wildlife in this HCP.

Response: Please refer to the general responses to comments concerning the adequacy of the HCP (Section 2.3.1.1) and to the response to Letter 36, comment 183 (Section 2.5).

Letter 168, comment 680: I strongly oppose this plan. We need to protect our wildlife and forests, rather than see them only as commerce.

Response: Please refer to the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1).

2.4 Timber Harvest

2.4.1 General Responses

2.4.1.1 Timber Harvest and Alternative Markets on State Trust Lands

Some of the commenters expressed a general opposition to timber harvesting on state trust lands. Some commenters were opposed to generating revenue from state trust lands, while still others encouraged DNRC to pursue revenue sources other than timber.

This EIS analyzes the potential effects on the environment of the USFWS issuing a Permit and compares differences in potential effects from the state conducting forest management under its current rules for conserving threatened and endangered species, versus managing under an HCP. That is, the EIS compares potential effects from the HCP alternatives to those under the no-action alternative. Note that the no-action alternative is not a no-management alternative; rather, it is DNRC's current forest management program in

the absence of an HCP. This EIS is not designed to determine whether the state should (1) harvest timber and build roads on state trust lands, (2) manage state trust lands for revenue generation, or (3) pursue revenue generation on state trust lands through other markets. These issues are outside the scope of this National Enviornmental Policy Act (NEPA)/MEPA EIS analysis. We note that implementation of an HCP does not preclude DNRC from generating revenue on state trust lands through other markets.

2.4.1.2 Sustainable Yield

Some commenters expressed concerns regarding an increase in the sustainable yield of timber under Alternatives 2 and 4. The increase in the sustainable yield would result from 40,000 acres being made available for active management in the Stillwater State Forest due to changes in how DNRC would provide secure habitat for grizzly bears.

In its application for a Permit, DNRC can propose changes to its current program as long as the associated HCP meets the ESA Section 10 issuance criteria. Under Alternatives 2 and 4, DNRC would change its approach to providing secure habitat for grizzly bears in the Stillwater State Forest. Under its current rules (no-action alternative), DNRC established the Stillwater Core to provide grizzly bear secure habitat in the Stillwater and Coal Creek State Forests (Stillwater Block). Secure habitat is an area that is at least 0.3 mile from open roads, where bear-human conflicts and displacement of bears by humans is expected to be minimal. DNRC originally adopted this practice to mimic federal standards in support of federal recovery efforts. The Forest Management ARMs do not permanently set aside security core as a no-management zone. That is, security core can be moved on the landscape by closing and opening different roads after a period of approximately 10 years. In practice, however, DNRC found that it had already closed as many roads as it reasonably could and did not have enough open roads to close to allow the security core to be moved around the landscape. This lack of flexibility hampered DNRC's ability to manage the entire forested land base in the Stillwater Block. This is explained in the rationale for commitment GB-ST1 on Draft HCP page 2-21.

A different approach to the concept of "security" in the grizzly bear recovery zones was developed for the HCP. Under Alternatives 2 and 4, security would be provided by establishing areas with 8-year rest periods free from road use and commercial activities and by implementing the transportation plan with seasonal restrictions on road use and commercial activities in important bear habitats. While more acres would be available for management under Alternatives 2 and 4, management of those acres would be subject to the HCP conservation strategies for grizzly bears, lynx, and the HCP fish species.

2.4.1.3 Compatibility of Revenue Generation and Species Conservation

Several commenters expressed concern that DNRC's HCP prioritizes revenue generation over species conservation. Other commenters reminded DNRC of its obligation to not only generate revenue but also ensure that state trust lands are managed in a manner such that they continue to provide value to future generations.

DNRC's overall approach to forest management would not change with implementation of an HCP. The agency's approach is to harvest a sustainable yield of timber while abiding by the SFLMP and numerous applicable laws and rules enacted to ensure the long-term conservation of natural resources. DNRC has developed an HCP that it believes is in harmony with the agency's ongoing balance of revenue generation and long-term conservation.

Further, the USFWS believes that business goals and conservation goals can be compatible. In fact, a key underlying assumption of the entire HCP program is that landowners can manage their lands to meet their business needs while protecting listed species. From the standpoint of an HCP applicant, economic considerations are very important. Virtually all HCP applicants are concerned about limiting costs and ensuring that the financial burden of developing and implementing an HCP are within their economic resources. The fact that DNRC has expressed its fiduciary obligations to the trust beneficiaries at length in

the HCP is appropriate. The fact that such obligations are expressed does not mean that the USFWS has implicitly or explicitly adopted the same obligations. The USFWS and DNRC have developed a plan that balances the needs of both agencies: for DNRC to conduct timber harvest on state trust lands and comply with the ESA and for the USFWS to issue a Permit if the proposed HCP complies with Section 10 of the ESA. The USFWS' determinations in the HCP process will be explained in its final decision documents when it decides whether to issue a Permit under Section 10 of the ESA. Additionally, the USFWS will fulfill its responsibilities under Section 7 of the ESA prior to making a decision on Permit issuance. If the Permit application does not meet ESA Section 10 issuance criteria or if issuing the Permit to DNRC would likely jeopardize the continued existence of listed species, the USFWS would not issue the Permit.

2.4.2 Responses to Individual Comments

Letter 6, comment 27: The Draft HCP is way too weak in protecting habitat and seems devised to protect (enlarge) schools.

Response: The USFWS has noted the comment. Please refer to the general responses to comments concerning the EIS alternatives (Section 2.5) and the general response to comments regarding the compatibility of revenue generation and species conservation (above).

Letter 6, comment 30: Wildlife and fishing are huge financial virtues in the state of Montana.

Response: The USFWS acknowledges that wildlife and fishing are important sources of revenue to the State of Montana and contribute to the quality of life enjoyed by its residents. We believe the HCP would not adversely affect these important resources or the state's ability to generate revenue from these resources.

Letter 9, comment 47: We are concerned that the HCP may give greater priority to revenue production and/or silvicultural needs than to maintenance of aquatic ecological functions (e.g., harvest to address fire, insect, disease, etc., can exceed 50 percent of large trees in RMZs).

Response: Please refer to our general responses to comments regarding the compatibility of revenue and species conservation (above).

Letter 9, comment 72: The preferred alternative includes approximately 8 percent more timber harvest than Alternative 1, and 14.6 percent more timber harvest than Alternative 3 (Table 4.2-14, page 4-37). In fact, Alternative 2 includes the same timber harvest level as Alternative 4, intended to provide Greater Management Flexibility. This suggests that the preferred alternative prioritizes maintenance of timber harvest levels over aquatic protection to HCP species.

Response: Please refer to the general responses to comments regarding sustainable yield and general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3). While more acres would be available for management under Alternatives 2 and 4, the stronger Alternative 2 conservation commitments designed to protect aquatic resources would still apply.

Letter 17, comment 141: For the small change that you will receive for the 585,500 acres of State land that is home to grizzly bears, lynx, and bull trout, you are losing wildlife habitat that is far more valuable.

Response: The USFWS has noted the comment. Please refer to the general responses to comments regarding the compatibility of revenue generation and species conservation (above). We note that the HCP would not result in a substantial loss in wildlife habitat. Rather, DNRC would manage a mosaic of habitat types across the HCP project area such that the habitat needs of the species would be met throughout the permit term.

Letter 16, comment 140: Destroying habitats of threatened, imperiled, and endangered species for 50 years for short-term profit and long-term kill is ignorant and selfish. This doesn't even mention the destruction of world heritage spectacular, unique wild areas for human health and sanity, and long-term economy. You work for citizens, not industry. Do your job--protect our public lands, waters, health, and wildlife.

Response: The USFWS has noted the comment. Please refer to the general responses to comments regarding the compatibility of revenue generation and species conservation (above).

Letter 18, comment 142: The next 50 years of timber management on state lands must be reviewed and evaluated in light of the small dollar returns for wood products and the large losses of habitat.

Response: Please refer to the general responses to comments regarding timber harvest and alternative markets on state trust lands, above, and to the general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 20, comment 144: I would like to see the new management plan for state lands take better account of animal habitat and riparian zones. Currently, there is some excitement about more cuts, but, from what I read, there is little revenue in it for the state and the potential loss of very valuable habitats. These habitats benefit hunters, both in and out of the state, the small businesses (and most are) that cater to hunters and tourists. For that, the state pays nothing, except by executing sensible plans to preserve these invaluable assets. So, let's consider the bear, the lynx, the tourist, the small business, and the entire way of life that makes Montana the jewel that it is.

Response: The HCP is a suite of measures DNRC would implement to minimize and mitigate effects on ESA-listed species from its forest management activities. While the plan would increase the amount of timber harvested on state lands on an annual basis, it would also increase the land base from which those trees are harvested. Additionally, the plan would increase tree retention in riparian zones supporting HCP species. Public access would increase in the Stillwater State Forest, providing more recreational opportunities, including hunting, in this portion of the HCP project area. The potential effects of implementing the proposed HCP on all the resources identified by the commenter (hunting, economics, bears, lynx, etc.) are analyzed in Draft EIS Chapter 4 (Affected Environment and Environmental Consequences).

Letter 22, comment 147: Increased roads and motorized use and all the other impacts associated with logging are unacceptable in light of the habitat requirements of these sensitive species.

Response: Please refer to the general responses to comments regarding timber harvest and alternative markets on state trust lands (above) and the general responses to comments concerning proposed road building under the HCP (Section 2.5).

Letter 22, comment 149: Please return to the drawing board and come up with a plan that decreases roads and motors and protects more--not less--habitat and connective corridors. Please put the long-term survival and health of species above marginal economic gain from timber harvest.

Response: Please refer to the general responses to comments regarding timber harvest and alternative markets on state trust lands (above) and the general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 24, comment 151: This appears to be a plan to generate profit for someone instead of ensuring the survival of the species you are supposed to protect: grizzlies, lynx, and bull trout among others.

Response: Please refer to our general responses to comments regarding the compatibility of revenue generation and species conservation (above).

Letter 26, comment 160: Scale back your proposed timber harvests, leave roadless areas as status quo, and develop a plan that will be much more conservative and address the interests and future of all Montanans.

Response: Please refer to the general responses to comments regarding timber harvest and alternative markets on state trust lands (above) and the general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 33, comment 175: The draft plan in its current form is badly out of balance in favoring increased timber harvest at the expense of continued protection for threatened and endangered species such as the grizzly bear, Canada lynx, and bull trout.

Response: Please refer to the general responses to comments regarding sustainable yield and general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 35, comment 179: It appears to me that your plan focuses on marginal revenue generation rather than ensuring the survival of the species it is intended to protect.

Response: Please refer to the general responses to comments regarding the compatibility of revenue generation and species conservation (above).

Letter 44, comment 186: DNRC is abrogating environmental trust responsibilities and the USFWS and, if necessary, federal courts will find the analysis deficient and inconsistent with NEPA and the ESA.

Response: The DNRC, with the technical assistance of the USFWS, developed an HCP that is consistent with Section 10 of the ESA, MEPA, and NEPA. Please also refer to the general responses to comments regarding the compatibility of revenue generation and species conservation (above).

Letter 48, comment 207: Your plan seems inconceivable and all wrong, certainly indefensible. The preferred alternative appears to be entirely contrary to the sensible use of our heritage of wildlands from the standpoint of increased road building, logging, impacts on wildlife, stream access, and for much too long. Please back off on such an inappropriate use of land stewardship and come up with something more acceptable from a supposed environmental attuned administration.

Response: Please refer to the general responses to comments regarding timber harvest and alternative markets on state trust lands (above), the general responses to comments regarding timber harvest and alternative markets on state trust lands, the general responses to comments concerning the Permit term (Section 2.6), and the general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 50, comment 212: I urge you to completely rethink your approach to timber management on State lands. These 585,000 acres are an important state resource, and important for all Americans and your recreation industry, not just for your timber industry. These lands should still be populated with grizzlies, lynx, and other wildlife 50 years from now. Your plan must be redesigned to allow these lands to remain viable over the next 50 years. Please protect the future of Montana wild lands, not just for logging, but for wildlife and hikers and non-motorized recreationalists.

Response: Please refer to the response to Letter 100, comment 411, below.

Letter 54, comment 214: I am concerned that the plan works contrary to DNRC's purported conservation goal. Montana is privileged to be one of the few last refuges for our natural world. I strongly support conservation of these values in our public lands rather than letting comodification prevail.

Response: The purpose of DNRC's HCP is to provide protection and conservation of listed species while providing for long-term management of forest resources. Please refer to the general responses to comments regarding the compatibility of revenue generation and species conservation (above).

Letter 55, comment 215: We own some really great land, and it should be managed for conservation and the long term.

Response: Please refer to the general responses to comments regarding timber harvest and alternative markets on state trust lands (above) and the general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 57, comment 216: The proposed logging and road densities in particular are too high and seem to disregard the intrinsic and recreational value of Montana's wildlife.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (Section 2.5), the general responses to comments regarding timber harvest and alternative markets on state trust lands (above), and the general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 62, comment 218: Our wildlife and natural beauty are a valuable and renewable asset and must be protected. Too often I have followed my topo map to state sections, only to see them overgrazed and overharvested, devalued for short-term gain and long-term loss.

Response: The USFWS notes the comment.

Letter 68, comment 221: I feel very strongly in opposition to the proposed increasing of more roads, threatening habitat of grizzly bears, lynx, bull trout on state lands. The timber does not need to be harvested.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (Section 2.5) and the general responses to comments regarding timber harvest and alternative markets on state trust lands (above), and the general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 68, comment 224: No to increasing roads, increasing timber harvest.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (Section 2.5) and the general responses to comments regarding timber harvest and alternative markets on state trust lands (above).

Letter 73, comment 238: Less logging, not more.

Response: Please refer to the general responses to comments regarding timber harvest and alternative markets on state trust lands (above).

Letter 75, comment 244: We feel that the plan as proposed has many dangerous and ill-advised alternatives. The history of state lands in Montana is one of use and abuse. Now is a time of restoration, a time to analyze what we can do to restore and not continue to reap the harvest. We fear for the future of those lands and all they have given to us, not only in terms of funds for schools, but other amenities. We hope you will start all over again with a vision of restoration, conservation, and one of how we can preserve state lands and their resources for future generations.

Response: The USFWS notes the comment. Please also refer to the general responses to comments regarding the compatibility of revenue generation and species conservation (above).

Letter 75, comment 247: Increased plans for timber harvesting is a bad way to go.

Response: Please refer to the general responses to comments regarding timber harvest and alternative markets on state trust lands (above).

Letter 76, comment 254: The gist of the plan seems to indicate that more emphasis has been given to the revenue that be gotten from logging the timber. I believe the revenue that can be gained by adequately protecting our environment will be far greater. The tourist industry in the state provides far more tax revenue that the timber industry, and has the ability to keep growing if we protect those things that people want to see – denuded hills are not the answer.

Response: The USFWS notes the comment. Please also refer to the general responses to comments regarding the compatibility of revenue generation and species conservation (above).

Letter 76, comment 255: The timber industry can coexist with good stewardship, but that is not indicated in this current plan.

Response: Please refer to the general responses to comments regarding the compatibility of revenue generation and species conservation (above).

Letter 87, comment 314: DNRC has the responsibility to manage wisely, not just for maximum profit. None of the alternatives discussed result in wise management; all of them put profits above wise long-term management.

Response: Please refer to our general responses to comments regarding the compatibility of revenue generation and species conservation (above).

Letter 90, comment 348: I do not think this plan does much to mitigate and maintain covered species population and habitat. Alternative 3 does the most to protect needed habitat, though I do not think that this alternative does enough. I find it troubling that maximizing revenue to the trust trumps habitat conservation. The DNRC is managed by philosophy, not science. If this plan incorporates newer science and a new alternative is added, it may be suitable to allow for continued wildlife population maintenance. It is important to remember that the covered species do not have a choice on where to live.

Response: As described in the Final EIS, additional conservation measures were added to the proposed HCP (Alternative 2) for all the HCP species. Additionally, refer to our general responses to comments regarding the compatibility of revenue generation and species conservation (above) and our general responses to comments regarding the EIS alternatives (Section 2.5).

Letter 96, comment 384: DNRC's failure to acknowledge a purpose and need that is consistent with its trust responsibility unreasonably constrained the agency's consideration of alternatives. See Native Ecosystems Council v. U.S. Forest Serv., 428 F.3d 1233, 1246-47 (9th Cir. 2005) (The reasonableness of the range of alternatives is evaluated in light of the purpose and need for the agency action.). By assuming that it may only fulfill its trust obligations by increasing logging on state lands, DNRC has illegitimately foreclosed consideration of alternatives that may serve the public interest by increasing conservation of forested state trust lands. See Natural Res. Def. Council v. U.S. Forest Serv., 421 F.3d 797, 812 (9th Cir. 2005) (finding NEPA violation where Forest Service inaccurately doubled timber market demand, which prejudiced the assessment of logging alternatives for National Forest).

Response: Please refer to the general responses to comments regarding timber harvest and alternative markets on state trust lands (above), the general responses to comments concerning the EIS alternatives (Section 2.5), and the general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 96, comment 385: DNRC's rejection of alternatives that provide for less intensive logging, roading, and grazing on forested state trust lands stems from the agency's misconception of its trust responsibility under Montana law. Consistent with its public trust duty, DNRC must consider whether state trust lands have value, other than purely economic value, that is "helpful to the well-being of the people" of Montana. See Section 77-1-202 MCA. Specifically, DNRC failed to consider the value of leaving forested state trust lands intact. Abundant research demonstrates that mature forests may help mitigate the effects of climate change. In particular, forest cover aids snow retention, thus aiding stream hydrographs. Management along streamsides is very important to retain cover for thermal relief and related evaporation. Furthermore, as the DEIS acknowledges, forest thinning and logging diminish habitat suitability for sensitive species, including those covered by the HCP. Although these factors are within the scope of DNRC's public trust obligation, DNRC failed to consider them in proposing forest management activities to be covered by the HCP.

Response: Please refer to the general responses to comments regarding timber harvest and alternative markets on state trust lands (above) and the general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3). Regarding the concern that the Draft EIS

failed to consider the effects of thinning and logging on habitat suitability in the HCP, we disagree. These activities are described as covered activities in Draft HCP Section 1.4.4 (Covered Activities). Several commitments were developed to address the temporary effects of forest conversion on the HCP species, and the Draft EIS analyzes the effects of these changes, in combination with the implementation of the minimization measures, on the covered species. For example, please refer to the discussion of lynx habitat suitability on Draft EIS pages 4-326 through 4-328.

Letter 100, comment 411: The state's HCP should provide for long-term management of all existing resources. Timber harvest should be managed to maintain and promote all native and desired resources. I realize that State lands are mandated to provide revenue, but all state resources have the potential to be managed for revenue.

Response: The agencies do not anticipate that implementing the HCP would diminish the quality or quantity of other uses on forested state trust lands. Rather, the long-term habitat commitments and limits on development included in the HCP would help ensure the long-term availability of forested state trust lands for uses other than timber production. Under the proposed HCP, DNRC would continue to generate revenue from other resource uses on state trust lands, such as gravel excavation, recreational use, and cabin site leasing. Please also refer to the general responses to comments regarding the compatibility of revenue generation and species conservation (above).

Letter 105, comment 429: This past summer, we have had first-hand experience with how the State of Montana, through DNRC, allows its lands to be trashed by irresponsible logging practices right on our southern boundary. DNRC needs to earn the trust of Montanans before embarking on such a long-term project involving habitat and conservation. After all, tourism and travel are the number one impact on the state economy. People travel here and spend dollars in our state to see the natural beauty, not the devastation caused by the extraction industries.

Response: The USFWS acknowledges that tourism is an important component of Montana's economy. We believe DNRC's forested trust lands contribute to the unique character of Montana and that DNRC can implement a successful forest management program on state trust lands while conserving the habitat of listed species.

Letter 108, comment 468: Grizzly bear habitat and fisheries are essential to Montana's economy and natural beauty. As Montana DNRC, we see your mission as one to enhance these resources.

Response: Please refer to the general responses to comments regarding the compatibility of revenue generation and species conservation (above). Further, the USFWS believes the HCP would result in a net benefit to the HCP species.

Letter 110, comment 509: The HCP excessively increases road and logging densities on over 500,000 acres of state land in Montana.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (Section 2.5) and the general responses to comments regarding timber harvest and alternative markets on state trust lands (above).

Letter 110, comment 510: The HCP excessively increases "timber harvest" for too many years.

Response: Please refer to the general responses to comments regarding timber harvest and alternative markets on state trust lands (above).

Letter 113, comment 528: I oppose the alternatives that DNRC proposed for logging in state lands. They are proposing thousands of miles of new roads, negatively impacting grizzly and lynx habitat, logging too close to waterways, and ignoring global warming. This is a short-term plan for profits and destroying wildlife habitat, clean water for humans, and ruining our beautiful "Last Best Place." Our constitution says that our citizens get a clean and healthful environment.

Response: Please refer to the general responses to comments regarding timber harvest and alternative markets on state trust lands (above); the general responses concerning proposed road building under the HCP (Section 2.5); the general responses to comments concerning the adequacy of the proposed HCP (Section 2.3.1.1); and the general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 114, comment 529: It seems that your alternative choice doesn't fulfill your mandate to protect State lands and wildlife for the long-term future. Wildlife needs more than short-term protection, and logging, increasing motorized use, and more roads will do just the opposite. It seems money is the driving force, not forest and wildlife protection.

Response: Please refer to our general responses to comments regarding the compatibility of revenue generation and species conservation (above).

Letter 115, comment 530: Although we strongly support funding for public education, we feel that it is shortsighted, irresponsible, illegal, and immoral to wring money out of state lands at the expense of critical habitat for endangered species. We have previously appealed to DNRC on this issue, and it is extremely disappointing to again see such a lack of commitment to responsible conservation measures, especially given the recent surge in grizzly bear mortality and the growing adverse impacts of climate change on public lands.

Response: Please refer to the general responses to comments regarding the compatibility of revenue generation and species conservation (above).

Letter 119, comment 563: The HCP is written as if DNRC's highest priority is achieving its annual timber target, instead of reflecting is true mandate to first ensure that its operations will maintain sufficient habitat for the HCP species, other wildlife, and will provide for healthy and diverse forests overall. An effective HCP would significantly reduce new road construction, especially in areas important to grizzly bears and the aquatic species. An effective HCP should contain standards to ensure open and total road densities are compatible with maintaining secure, high-quality habitat for the HCP species.

Response: Please refer to the general responses to comments regarding the compatibility of revenue generation and species conservation (above). Regarding road densities under the HCP, please refer to the general responses to comments concerning proposed road building under the HCP (Section 2.5).

Letter 119, comment 564: The DEIS wrongly implies that DNRC's timber target trumps all other obligations. We acknowledge and support the mandate for the state trust lands to generate revenue for state schools. To do so, DNRC is required to cut a sustainable level of timber from the school trust lands. Yet we remind DNRC that "sustainable" means maintaining the overall health and vigor of the forest ecosystem, which includes its wildlife. Also a timber volume "target" is not a legal mandate, and if this target cannot be met without compromising DNRC's ability to uphold other laws, such as the ESA, it should not achieve that target. DNRC's SFLMP makes this explicit, as recorded in the DEIS. DNRC's and the Land Board's legal mandate is not simply to maximize revenue from the school trust lands, but to "secure the largest measure of legitimate and reasonable advantage" when managing these lands (DEIS, page ES-5). It is clear that DNRC's activities must first be legitimate (abide by the federal ESA and other laws), before generating revenue from trust lands, and that decisions between generating revenue and providing for other values should be reasonable or balanced. In this HCP, revenue generation appears to take precedence over protecting habitat for the HCP species, in violation of DNRC's true legal mandate. The HCP needs to be significantly strengthened to address this problem, starting with eliminating exceptions, allowances, and loopholes contained throughout the document.

Response: Timber harvest does not take precedent—the HCP is a balance between the conservation needs of the species and DNRC's need to manage state lands. Regarding the comment that DNRC's activities first be legitimate, as described on Draft EIS page 4-18, the current level of timber harvest is that necessary to maintain healthy and diverse forests, adhere to the trust mandate to generate revenue, as well as meet other important ecological and legal commitments, including state and federal laws. As discussed on Draft EIS

page 4-18, a timber program unconstrained by requirements to maintain healthy and diverse forests and sustain wildlife and aquatic populations and other important resources could generate 94.6 million board feet annually. However, by complying with such constraints, DNRC currently harvests only 53.2 million board feet annually and under the proposed HCP could harvest 58.0 million board feet annually. Because DNRC would like to make changes to its existing program, such as accessing the Stillwater Core, DNRC has entered into the HCP process so that it can receive assurances that its program complies with the ESA.

Regarding the commenter's concerns about revenue generation over species protection, please refer to the general responses to comments regarding the compatibility of revenue generation and species conservation (above). Regarding the commenter's request that exceptions, allowances, and loopholes be eliminated from the HCP, please refer to the response to Letter 169, comment 699 (Section 2.2.4).

Letter 120, comment 605: The Coalition also encourages the DNRC to better balance the goals of generating a financial return from our Forested State Trust Lands while also ensuring these public resources provide value to future generations, including the values associated with healthy watersheds and functioning forest ecosystems.

Response: Please refer to our general responses to comments regarding the compatibility of revenue generation and species conservation (above).

Letter 120, comment 621: The DNRC doesn't adequately balance the short-term financial gains of logging these Trust Lands with the long-term value of these forests for future generations of Montanans. The stated purpose of the DNRC is to "manage the State of Montana's trust land resources to produce revenue for the trust beneficiaries while considering environmental factors and protecting the future income-generating capacity of the land." Yet the proposed alternatives in the DEIS do not protect the investments for future generations, The DEIS does not consider how to safeguard the ecosystem services, such as water quality and thriving fish and wildlife species, that will provide and enhance income-generation from our public natural resources for centuries to come.

Response: Please refer to the general responses to comments regarding timber harvest and alternative markets on state trust lands (above). Additionally, the HCP is a long-term plan for conservation of the ecosystem services identified in the comment. Please refer to the general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 125, comment 630: No increased roads and logging in Montana.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (Section 2.5) and the general responses to comments regarding timber harvest and alternative markets on state trust lands (above).

Letter 127, comment 637: I do not believe that your current proposals are in the long-term best interest of the people who, ultimately, own the lands you manage. You guys really need to review what you are doing and make sure that you will have viable and productive lands to continue to manage. Please "manage," don't abuse.

Response: DNRC's forest management program is governed by a suite of environmental laws, rules, and policies, and is based on harvesting a yield of timber that is sustainable over the long term. This is discussed on Draft EIS page 4-18.

Letter 143, comment 655: Montana is a unique state in that we are still blessed by open spaces and wild lands. We need to work to preserve and protect those qualities to ensure our economic future as well as being good stewards of our children's healthy productive futures. Protect grizzly bears for us all.

Response: We believe DNRC's forested trust lands contribute to this unique character of Montana. DNRC intends to continue forest management on lands covered by the HCP while conserving the habitat of grizzly bears and other listed species. Please also refer to the general responses to comments regarding the compatibility of revenue generation and species conservation (above).

Letter 151, comment 657: The plan you propose is inefficient for saving habitat, clean water and keeping wildlife out of harm's way.

Response: The USFWS notes the comment. Please also refer to the general responses to comments regarding the compatibility of revenue generation and species conservation (above).

Letter 162, comment 665: The draft plan actually increases the timber harvest on our state forests. We are already losing so much of our forests to pine bark beetles and fires. We can't afford to purposely destroy them.

Response: Please refer to the general responses to comments regarding sustainable yield, above.

Letter 163, comment 669: This plan puts timber targets above the needs of Montana's threatened and endangered species, even when the market for timber is nearing an all-time low.

Response: Please refer to the general responses to comments regarding the compatibility of revenue generation and species conservation (above).

Letter 163, comment 670: This draft plan actually increases the timber harvest on our state forests and thus endangers these species even more than they are already endangered.

Response: Please refer to the general responses to comments regarding sustainable yield (above) and general responses to comments concerning adequacy of the HCP (Section 2.3.1.1).

Letter 164, comment 674: I wish sincerely we would continue to put what is best for Montana ahead of the needs of companies like Plum Creek.

Response: The USFWS notes the comment.

Letter 166, comment 675: DNRC was charged with developing an HCP to protect habitat for lynx, grizzly bears, wolverine, and three species of imperiled trout on State lands. They drafted a plan to dramatically increase the timber harvest on our state forests and severely affect our threatened, endangered, rare, and secluded species.

Response: Please refer to the general responses to comments regarding sustainable yield (above) and general responses to comments concerning adequacy of the HCP (Section 2.3.1.1). The wolverine is not a federally listed species or an HCP species. DNRC would continue to implement its existing Forest Management ARMs to help conserve wolverines and other sensitive species.

2.5 Alternatives

2.5.1 General Responses

Several commenters stated that the EIS did not present a reasonable range of alternatives. Alternatives in the EIS comprise a range of reasonable and practicable alternatives based on the USFWS' and DNRC's purpose and need for action. NEPA and MEPA do not require that alternatives necessarily provide a range of effects for a specific resource or activity, such as grizzly bear habitat conditions or road building. For this EIS, the purpose and need is to provide broad protection and conservation for listed species while balancing DNRC's need for long-term regulatory certainty in managing its forested trust lands and meeting its trust mandate (Draft EIS Section 1.4, Purpose and Need).

In NEPA/MEPA analyses, such as this EIS, the effects of the action alternatives are compared to the effects of the no-action alternative, which describe the expected consequences without the federal action ("status quo"). In this case, the no-action alternative is continued management without the HCP and Permit but under the laws, rules, and policies that currently govern DNRCs' forest management program. Each action alternative includes minimization, mitigation, and adaptive management measures to balance potential

impacts from covered activities and provides broad protection and conservation for HCP species. Also, several Alternative 2 commitments were revised based on comments on the Draft EIS/HCP to provide additional protections. Analyses of these changes are included in the Final EIS.

An applicant's economic limitations and desire for regulatory stability are legitimate objectives for framing the purpose and need for an action to occur. The alternatives were, therefore, framed with consideration of these objectives. DNRC has a legitimate economic interest in forest management activities given its legal mandate to generate revenue to the trust beneficiaries. Alternative 3 was included to present information about mitigation measures beyond those included in DNRC's application (Alternative 2). The USFWS believes that Alternative 3 contributes to the important comparison of effects among the alternatives. The alternatives were developed to fully disclose the effects of an action on the broad human environment. The EIS uses the alternatives to expose effects and to provide information (but not decisions) about whether those effects can reasonably be avoided or minimized. Whether the proposal to obtain incidental take authorization provides sufficient protection to HCP species will be determined under the requirements of the ESA and documented in a statement of findings and a biological opinion by the USFWS.

Several commenters stated that there was a lack of reasonable alternatives specific to proposed road building and retention of grizzly bear security core. In response to comments on the Draft EIS/HCP, the USFWS and DNRC discussed whether an alternative that reduced roads could be considered in the Final EIS. However, DNRC reiterated their need for roads for forest management activities and stressed that it does not have access to all timber stands they plan to manage over the Permit term. Hence the proposed level of road building in the action alternatives does not vary substantially. Please refer to the general responses to comments concerning road building under the proposed HCP (Section 2.5) for additional information. Because roads are critical to the management of forested landscapes, but may also result in take or adverse effects to the HCP species, both agencies focused on developing a strategy to minimize the effects of those roads on the HCP species.

We note that the EIS did include a range of alternatives for providing grizzly bear security core. Both Alternatives 1 and 3 would retain the existing security core in the Stillwater Block, whereas Alternatives 2 and 4 proposed elimination of the security core and implementation of quiet areas for the Stillwater.

Several commenters stated that Alternative 3 should be the preferred alternative, or an enhanced Alternative 3 should be selected, or that DNRC or the EIS failed to demonstrate that Alternative 3 is not practicable. The rationale for the selection of Alternative 2 as the Preferred Alternative by both the USFWS and DNRC is provided in Draft EIS Section 3.6 (Preferred Alternative) and HCP Section 5.3 (Alternative 2 – Proposed HCP). Additionally, we note that Alternative 2 has been revised in the Final EIS/HCP based on Draft EIS comments to provide additional protections.

Although all alternatives were designed as viable alternatives for selection, at this time Alternative 2 appears to surpass all alternatives in seeking a balance between conservation and management flexibility—a balance that complies with requirements under the ESA and DNRC's trust mandate. Under Alternative 2, the USFWS would be provided assurances that DNRC would implement appropriate minimization and mitigation measures that conserve and support the recovery of HCP species. DNRC has determined that it can implement Alternative 2 and meet its trust mandate, as well as secure the funding necessary to implement the commitments and achieve the timelines identified in this HCP. Further, this level of commitment would provide the USFWS assurances that the conservation strategies can be successfully implemented and monitored and thus conserve and support the recovery of HCP species. DNRC would be provided assurances that future management activities can be sustained over time on lands where management activities might affect HCP species. DNRC would also be provided assurances that it can maximize the legitimate return to the trust beneficiaries while still responsibly managing the habitats of HCP species. As stated in Draft HCP Section 5.4 (Alternative 3 – Increased Conservation HCP), DNRC would provide enhanced mitigation measures for HCP species. However, it would not surpass Alternative 2 in providing a balance between conservation and management flexibility. This is attributed to the reduction in the potential return to the trust

beneficiaries and additional funding required to implement the alternative that DNRC is unsure it could secure. Additionally, DNRC is concerned that it would not be able to meet the timelines proposed under this alternative and would find itself in violation of the Permit. The Final HCP Chapter 5 (Alternatives) has been revised to reflect these key differences between the two alternatives.

2.5.2 Responses to Individual Comments

Letter 9, comment 39: EPA supports Alternative 3 over Alternative 2, the preferred alternative, since we believe Alternative 3 provides a level of protection to aquatic ecological functioning, water quality, and habitat for HCP fish species, that is more consistent with the conservation and recovery of HCP fish species. We believe the preferred alternative in the proposed HCP would be an improvement over current management, and provide a higher level of protection to aquatic species and water quality than DNRC's current forest and streamside management. However, we also believe additional protections beyond those prescribed in Alternative 2 would provide more comprehensive protection to aquatic species and water quality.

Response: The USFWS notes the commenter's preference for Alternative 3 or an enhanced Alternative 2. As described in the Final EIS, additional conservation measures have been added to the proposed HCP (Alternative 2), including a wider no-harvest buffer under the riparian timber harvest strategy (AQ-RM1 item (2)), expansion of the RMZ harvest commitments to all Class 1 streams (AQ-RM1 item (1)), the addition of a commitment to retain a portion of pre-commercial thinning units in an unthinned condition in lynx habitat (LY-LM3 item (2)), and a shift in the commitment to retain lynx foraging habitat (LY-LM3 item (1)) to focus on retention of winter foraging habitat, which is more limiting for lynx.

Letter 9, comment 73: We support Alternative 3 over the preferred alternative since it would reduce risks of cumulative watershed effects by imposing more restrictive thresholds and more oversight (Volume II, page 5-5).

Response: The USFWS notes the commenter's preference for Alternative 3.

Letter 9, comment 119: It appears that DNRC retention of old growth, and for that matter other rare or unique natural habitat elements, are only retained to the extent consistent with fiduciary duties owed to the beneficiary (ARM 36.11.407). DNRC's forest management rules also state that where state ownership contains forest conditions made rare on adjacent lands by the management activities of others (e.g., old growth), the department may not necessarily maintain those conditions in amounts sufficient to compensate for their loss when assessed over the broader landscape, except as it coincides with other agency objectives. It does not appear that DNRC management will protect and maintain old-growth habitat if such protection conflicts with resource development and economic considerations. Under Alternative 3, the decrease in the amount of old growth is likely to be less than other alternatives, at least within riparian areas. We support the additional protections to old-growth habitat provided by Alternative 3.

Response: The USFWS acknowledges the commenter's observations regarding old growth. Please refer to the response to Letter 99, comment 403 (Section 2.12). The commenter's support for Alternative 3 is noted.

Letter 10, comment 122: The forest management proposals, including roading, motorized activities, and grazing will impact all of the HCP species. The DNRC should protect, conserve, and enhance populations of the endangered species and provide habitat protection and at the same time public recreation access opportunities based on species sustainability. Of greatest concern are (1) allowances for timber harvesting too near to streams (setbacks) and inadequate buffer zones that will impact water quality and temperature, (2) motorized activities in or near grizzly bear and lynx denning habitat, (3) inadequate habitat connectivity for grizzly bear and lynx, (4) inadequate maintenance of core security areas for grizzly bear and lynx, (5) shorter timeframes to complete road inventories and recovery, and (6) adequate monitoring and minimizing mechanical impacts. Alternative 3, the conservation alternative, will provide, at minimum, the most appropriate approach for long-term species sustainability while also providing public recreation opportunities.

This alternative should not interfere with DNRC's school trust financial obligations, recognizing the long-term economic benefits realized by healthy habitats, species sustainability and enhancement.

Response: The USFWS notes the commenter's preference for Alternative 3. Overall, we believe the HCP would benefit the covered species and all of the concerns raised in the comment were considered in the EIS analysis. Regarding the first concern, we note that the Final HCP has been revised to include a 50-foot no-harvest buffer along all Class 1 streams. Regarding the second concern, the Draft HCP included commitments to address these risks, and these commitments are analyzed on Draft EIS page 4-304 for bears and page 4-335 for lynx. Regarding the third concern, this issue is addressed on Draft EIS page 4-313 for bears and page 4-333 for lynx. Regarding the fourth concern, this issue is analyzed on Draft EIS pages 4-220 through 4-302. Regarding the fifth concern, Draft EIS Section 4.8 (Fish and Fish Habitat) analyzes the effects on fish and fish habitat of the differences in timeframes for completing corrective actions under the various alternatives. Regarding the sixth comment, we presume this concern refers to the operation of mechanical equipment during timber harvest, which was raised as a potential issue for grizzly bears in spring habitat and is analyzed on Draft EIS page 4-302.

Letter MEIC, comment 134: I oppose your proposed alternative plans to increase timber harvesting on 585,500 acres of State land. All of your proposed alternatives would increase roads, decrease habitat for threatened and endangered species, and increase motorized access.

Response: The USFWS notes the commenter's opposition to the proposed HCP alternatives. It is true that all alternatives would increase roads in the HCP project area. Please refer to the general responses to comments concerning road building under the HCP (Section 2.5) for additional information.

The proposed alternatives would not decrease habitat for the HCP species. Under the aquatic conservation strategies, replacement of barrier culverts (commitment AQ-FC1) could provide increased access for HCP fish to approximately 150 miles of stream (Draft EIS Table 4.8-12 on page 4-186). Additionally, the remaining commitments are expected to improve fish habitat conditions for the HCP fish species.

While habitat for bears would not increase under the proposed HCP, the number of acres managed for bears would increase. Currently, DNRC's conservation efforts for bears apply within grizzly bear recovery zones. Under the proposed HCP, the amount of acres actively managed to reduce bear-human conflicts would increase by 95,000 acres (Draft EIS page 4-316). Additionally, the proposed HCP would impose greater restrictions on activities in grizzly bear habitat including within spring habitat, post-denning habitat, and near den sites not only in grizzly bear recovery zones, but also in non-recovery occupied habitat (Draft EIS page 4-316).

For lynx, under the proposed HCP, DNRC would be required to retain more suitable habitat and foraging habitat across the HCP project area than required under the Forest Management ARMs. Therefore, suitable habitat retention requirements would increase from 11,000 acres under the ARMs to 83,200 acres under the HCP, and foraging habitat would increase from 10 percent of total potential habitat on the blocked lands to 20 percent retention of winter foraging habitat and 20 percent retention of pre-commercially thinned units (see subsections Habitat Suitability and Foraging Habitat in Final EIS Section 4.9.4.2 (Canada Lynx – Environmental Consequences).

We do not expect an increase in motorized access across the HCP project area, with the exception of the Stillwater State Forest, where roads currently closed to motorized public access would be open, but seasonal restrictions would apply. The seasonal restrictions (29.8 miles closed in spring and 24.2 miles closed in spring and fall) would be imposed to provide bears access to important seasonal habitats.

Letter MEIC, comment 135: Include a real conservation alternative that will better protect core grizzly habitat, lynx denning habitat, and fisheries.

Response: Please refer to the general responses to comments concerning the EIS alternatives (above).

Letter 21, comment 145: I couldn't be more opposed to your "preferred alternative" for the forest land and am not that impressed by any of the three plans. There is absolutely no regard for clean water, animal habitat, quite enjoyment of the land, or global warming. I have visions of land destruction due to timber harvest and new roads. New roads which would no doubt get a great deal of use by off-roaders. DNRC should read Senator Tester's bill, which includes timber harvest, wilderness, and off-roaders.

Response: The USFWS notes the commenter's opposition to the proposed HCP alternative. The concerns raised regarding clean water are addressed in Draft EIS Section 4.6 (Water Quality). Concerns regarding habitat, impacts of harvest and new roads, and illegal use of roads are analyzed in Draft EIS Section 4.8 (Fish and Fish Habitat) and Section 4.9 (Wildlife and Wildlife Habitat). Recreational use is addressed in Draft EIS Section 4.10 (Recreation). We note that the Final EIS includes a new Section 4.1 (Climate). The USFWS will consider all of these and other issues as it determines whether DNRC's application for a Permit meets the ESA Section 10 issuance criteria. Additionally, as described in the Final EIS, additional conservation measures were added to the proposed HCP (Alternative 2) for all the HCP species.

Letter 36, comment 183: I want to leave future generations the same rich wildlife legacy that I inherited. I hope you will do right by future generations of Montanans by strengthening protections in this HCP for imperiled wildlife and the places it needs to survive.

Response: The USFWS notes the commenter's preference for a strengthened conservation alternative. As described in the Final EIS, additional conservation measures were added to the proposed HCP (Alternative 2) for all the HCP species. Please also refer to the general responses to comments concerning the EIS alternatives (above) and the adequacy of the HCP (Section 2.3.1.1).

Letter 40, comment 184: I am writing this letter to respectfully state my opposition to DNRC's proposed timber management alternatives.

Response: The USFWS has noted the commenter's opposition to the proposed HCP alternatives.

Letter 44, comment 187: DNRC's rationale for proposing Alternative 2 is absurd. How can DNRC claim impact avoidance or (adverse) impact minimization is maximized to the extent practicable in this alternative when at least one other alternative would provide "…enhanced mitigation for HCP species...?" (page 5-4). Is DNRC relying on a definition of "practicable" that in inconsistent with how federal agencies, such as ACOE and including the USFWS, have applied (and courts have affirmed) the term?

Response: Please refer to the general responses to comments concerning the EIS alternatives (above), and the general responses to comments concerning take minimization and mitigation (Section 2.3.1.3) and the jeopardy standard (Section 2.3.1.4).

Letter 47, comment 206: Please design a true conservation alternative that truly protects our State lands. 585,000 acres of State lands are truly a responsibility and require protection of fish, wildlife, and soils.

Response: Please refer to the general responses to comments concerning the EIS alternatives (above).

Letters 83 and 121, comment 258: We agree that the proposed action (Alternative 2) should be the preferred alternative, as it seems to provide the best balance between providing the necessary species conservation called for under the ESA, and still providing for the management flexibility needed for DNRC to fulfill its Land Trust mandate under Montana law.

Response: The USFWS has noted the commenter's preference for Alternative 2.

Letters 83 and 121, comment 259: Since effects on forest stand attributes would not be discernable among the alternatives, and since all alternatives progress toward DFCs, then Alternative 2, which provides a higher sustained yield (increased economic opportunities) and treats more area (reduced wildfire/insect/disease on managed stands), is preferred.

Response: The USFWS has noted the commenter's preference for Alternative 2.

Letters 83 and 121, comment 260: Since, at the landscape scale, there would be "no appreciable differences" in air quality among the four alternatives, there is no reason to deviate from the preferred alternative.

Response: The USFWS has noted the commenter's preference for Alternative 2.

Letters 83 and 121, comment 261: It appears that the differences in new road miles among the alternatives are fairly insignificant, and that public access to roads, at least on a seasonal basis, would increase under Alternative 2 (public access is good).

Response: The USFWS has noted the commenter's preference for Alternative 2.

Letters 83 and 121, comment 262: Although Alternative 3 provides the lease potential for adverse effects from management activities and provides the most reductions in sediment delivery to streams, its constraints would adversely affect DNRC's ability to fulfill its legally mandated mission. Of the three alternatives, it appears that Alternative 2 provides the most protective measures and the least risk of adverse effects on water quality.

Response: The USFWS has noted the commenter's preference for Alternative 2.

Letters 83 and 121, comment 263: Since none of the alternatives is expected to result in substantial changes in the distribution or amount of wildlife habitat in the HCP project areas, and since Alternative 2 includes conservation commitments to reduce risk for both grizzly and lynx similar to the other action alternatives, again, no reason to deviate from preferred alternative. In addition, increased areas of harvest treatments just may provide improved vegetative habitat conducive to better satisfying the food needs of the grizzlies (increased berry production, etc.).

Response: The USFWS has noted the commenter's preference for Alternative 2.

Letters 83 and 121, comment 264: We note that Alternative 2 would provide for increased opportunities for motorized public access, particularly in the Stillwater Block, and this in conjunction with increased areas of timber harvest, will potentially provide more opportunities for hunting, berry-picking, and other activities associated with a younger, more open forest.

Response: The USFWS has noted the commenter's preference for Alternative 2.

Letters 83 and 121, comment 265: We prefer Alternative 2 because of the potential for more forestry sector economic opportunities, and the additional spin-off of service and support jobs. As well, Alternative 2 provides for high net revenues for trust beneficiaries (schools); since the majority of county tax revenue goes to our local schools, we are always in favor of increased state funds dedicated for this purpose.

Response: The USFWS has noted the commenter's preference for Alternative 2.

Letter 90, comment 318: The four alternatives are not a true range of choices, but instead one choice with minor changes. The conservation Alternative 3 does little more to conserve resources than the preferred alternative, when looking at miles of roads built. The forest conversion from old growth to seral state old growth is basically the same.

Response: Please refer to the general responses to comments concerning the alternatives (above) and the general responses to comments concerning proposed road building under the proposed HCP (Section 2.5).

Letter 90, comment 329: It seems that the two purposes and needs are conflicting.

Response: Both agencies believe the needs of the HCP species can be met while conducting responsible forest management, and the USFWS and DNRC developed a plan that balances the needs of both agencies: for DNRC to conduct timber harvest on state trust lands and comply with the ESA and for the USFWS to issue an incidental take permit if the proposed HCP complies with Section 10 of the ESA.

Letter 94, comment 361: The DEIS errs (ES-11) when it concludes that the No-action alternative provides the smallest amount of conservation available during the proposed Permit term. That conclusion is speculative. "No action" only means there will be no HCP. No HCP means there will be no authorized incidental take. Thus, the only take that could occur would be unauthorized. There is nothing that prevents DNRC from unilaterally imposing conservation requirements on itself, or in partnership with other, that prevent incidental take. There is also nothing that prevents the USFWS from exercising its authority to prevent illegal take. "No action" in this DEIS does not necessarily mean implementation of an HCP, which authorizes a level of incidental take, provides superior conservation. We believe most of the management enhancements in this HCP targeted for native fish can be implemented without an HCP and Permit, and it can occur without DNRC abrogating its obligations to generate revenue for the trust beneficiaries.

Response: Under NEPA, the no-action alternative describes the expected consequences without the federal action and serves as a baseline from which to compare the action alternatives. In fact, the USFWS did discuss a no-take strategy with DNRC, but ultimately DNRC decided to pursue an HCP. This discussion has been added to the Final EIS, Alternatives Considered but Eliminated from Detailed Analysis.

Letter 96, comment 382: The DEIS does not comply with NEPA and MEPA because it fails to analyze a reasonable range of alternatives to the proposed action. The DEIS studies four alternatives, including the no-action alternative and the preferred alternative. Notably, "all four alternatives would result in more roads on trust lands within the HCP project area" (ES-9). While Alternative 3 poses the lowest threat to the HCP-covered species of all the alternatives studied in the DEIS, it still diminishes, rather than improves, habitat conditions for HCP-covered species. Absent from the environmental analysis is any alternative establishing conservation measures and habitat standards more protective of the HCP species than the status quo. Because project alternatives must "derive from an EIS's Purpose and Need section," U, 376 F.3d 853 (9th Cir. 2004) (quotations, alteration, and citation omitted), DNRC and the USFWS are required to analyze at least one alternative that would result in a conservation benefit to the HCP-covered species. The agencies' determination not to do so represents a violation of NEPA's and MEPA's requirement to analyze a reasonable range of alternatives.

Response: Please refer to the general responses to comments concerning the EIS alternatives (above) and the general responses to comments concerning proposed road building under the HCP (Section 2.5).

Letter 106, comment 431: In general, Stoltze is in support of Alternative 2 of the EIS, adoption of the HCP, if that is what DNRC determines to be in the best interest of meeting the Trust Land Mandate and SFLMP.

Response: The USFWS notes the commenter's preference for Alternative 2.

Letter 109, comment 473: The draft HCP and alternatives do not meet the USFWS Purpose and Need.

Response: We analyzed only those alternatives that would meet our purpose and need. In this case, we are responding to an application for an incidental take permit. Therefore, while trying to achieve the conservation benefits intended by the ESA Section 10 program, we must also respond to alternatives that not only meet the requirements of the ESA, but also meet DNRC's need to provide long-term management of forest resources.

Letter 109, comment 474: The draft HCP and alternatives do not meet the DNRC Purpose and Need.

Response: To the contrary, DNRC has determined that the alternatives meet its purpose and need.

Letter 111, comment 519: The draft HCP and alternatives do not meet the USFWS Purpose and Need.

Response: Please refer to our response to Letter 109, comment 473, above.

Letter 111, comment 520: The HCP alternatives call for construction of between 1,322 and 1,408 miles of new roads and an unquantified number of miles of temporary roads in addition to the already high road densities on school trust lands. The HCP offers no alternative that would minimize road densities in order to provide more secure habitat for grizzlies. In order to fulfill the HCP's Purpose and Need, DNRC should

establish maximum total and open road density standards and include requirements that would reduce, rather than increase open and total road densities.

Response: Please refer to the general responses to comments concerning the EIS alternatives (above), as well as the general responses to road building (Section 2.5) and the response to Letter 109, comment 488 (Section 2.5). Note that the amount of temporary roads included in new road miles is disclosed in the EIS, and is limited for blocked lands per commitments GB-ST1 and GB-SW1.

Letter 111, comment 524: Implementation of the HCP DEIS alternatives would harm bears by displacing them, which constitutes take. The implementation of any alternative in the HCP DEIS would result in take of grizzly bears. The DEIS alternatives constitute "business as usual" regarding logging and road building on state lands and does not offer an alternative that would minimize the take or "conserve" the grizzly bear, or other covered species.

Response: Please refer to the general responses to comments concerning the EIS alternatives (above).

Letter 116, comment 531: The DNRC's timber program is a very important part of Montana's timber industry, and this proposed HCP will definitely affect that program in both positive and negative ways as well. I champion the efforts DNRC has put into this plan and feel that it is good to be proactive with these issues than reactive. The Montana Logging Association for the most part endorses the preferred Alternative 2; however, there are some things that have us concerned.

Response: The USFWS notes the comment and support for Alternative 2. Responses to the commenter's general and specific concerns are provided separately for the commenter's individual comments.

Letter 116, comment 537: In general we support Alternative 2 with the hope that DNRC can be proactive in dealing with the species listed in this HCP. It is also our hope that DNRC will accomplish this and still maintain an economically feasible timber program in the HCP areas.

Response: The USFWS has noted the comment and support for Alternative 2.

Letter 117, comment 538: NRDC writes to oppose the preferred alternative in the DEIS and to request the development of a conservation alternative much stronger and more protective of grizzlies and their habitat than the proposed Alternative 3.

Response: The USFWS has noted the commenter's opposition to the preferred alternative. Regarding the request to develop a stronger conservation alternative, please refer to the general responses to comments concerning the alternatives (above).

Letter 117, comment 553: The EIS should include an alternative that would improve habitat conditions for grizzly bears. All alternatives reduce core habitat for bears and increase roads and related harms to grizzly bears. DNRC has not developed an alternative that would improve conditions for grizzly bears. Under MEPA and NEPA, DNRC should provide an alternative that would improve prospects for the grizzly, even if it means that less logging and road-building would occur. This is especially important as bears are likely to need more habitat in the future to adjust to the changes in foods related to global warming, as well as the expansion of human population in the region.

Response: We have included and analyzed an alternative (Alternative 3) that does not reduce security core habitat for grizzly bears. Further, the action alternatives would improve conditions for bears because of the expanded number of commitments and geographic area subject to the commitments. While Alternatives 2 and 4 would reduce core habitat and increase roads, the additional commitments under these alternatives are designed to offset the impacts of the change in the approach to security and the impacts of roads. Additional commitments that improve conditions include but are not limited to: (1) adhering to fixed transportation plans for blocked lands that minimize road building and apply seasonal travel restrictions, (2) capping open road densities in recovery zones at the administrative unit level, (3) applying the rest/rotation concept to blocked lands and to scattered lands in recovery zones, and (4) broadening the application of minimization and mitigation measures beyond blocked lands in recovery zones to lands in non-recovery occupied habitat,

as well as scattered lands in recovery zones. For a complete discussion of the effects of the commitments on bears, please see subsections Road Related Effects and Risks of Human-bear Conflicts in Draft EIS Section 4.9.3.2 (Grizzly Bears – Environmental Consequences).

Letter 118, comment 561: Alternative 3 is identified as the most environmentally preferred and it is stated on page ES-5 that all alternatives meet DNRC's mandate. Therefore, there appears to be no reason not to adopt Alternative 3. We could support Alternative 3 if the concerns described in our other comments are adequately addressed.

Response: Section 1505.2(b) of the NEPA implementing regulations requires a federal agency's Record of Decision (ROD) to identify all alternatives that were considered, "…specifying the alternative which was considered to be environmentally preferable." This analysis is also often included in the EIS. The Department of Interior NEPA implementing regulations (43 Code of Federal Regulations [CFR] § 46.450) require the USFWS to identify the environmentally preferable alternative(s) in the ROD but to state that it is not necessary that the environmentally preferable alternative(s) be selected. Under MEPA, the ROD "may" include a discussion of the environmentally preferred alternative (MEPA Model Rules, Section XVIII (3)). DNRC is also not required to adopt the environmentally preferred alternative as the proposed action or the preferred alternative. Draft EIS Chapter 3 (Alternatives) describes the development of the EIS alternatives. From the permit applicant's perspective, which is described in Draft HCP Chapter 5 (Alternatives), Alternative 2 provides the best balance between providing protection and conservation of listed species while providing for long-term management of forest resources. The USFWS has noted the commenter's preference for a strengthened Alternative 3. USFWS also points out that in response to public comments on the Draft EIS, additional conservation measures were added to the proposed HCP (Alternative 2) for all the HCP species.

Letter 119, comment 562: We suggest DNRC adopt a much-strengthened Alternative 3.

Response: The USFWS has noted the commenter's preference for a strengthened Alternative 3.

Letter 119, comment 579: Other natural and human resources on state lands would benefit from selection of a modified Conservation Alternative with significantly reduced roads.

Response: The USFWS has noted the comment.

Letter 119, comment 585: The DEIS erred in containing a preferred alternative for both DNRC and USFWS during this early stage of the NEPA analysis, since a preferred alternative should be identified within the Final EIS. The DEIS states, "The Final EIS will be used by each agency to select a preferred alternative" (DEIS, page 1-7), yet this Draft EIS prematurely identifies a preferred alternative for both DNRC and the USFWS (page ES-14).

Response: The Department of Interior NEPA implementing regulations (43 CFR § 46.425) require the identification of a preferred alternative (if the agency has one) in the Draft EIS. MEPA also requires the identification of a preferred alternative (if the agency has one) in the Draft EIS. The statement quoted in the comment has been revised in the Final EIS to state: "This Final EIS responds to public comments on the Draft EIS and makes necessary changes to the Draft EIS analysis, as described in the Preface. Based on this Final EIS, each agency will prepare its own Record of Decision (ROD), which will identify the alternative selected, provide the rationale for the decision, and outline the process for implementing the alternative."

Letter 119, comment 586: Alternative 3 should be the Proposed HCP in this DEIS, and a greatly strengthened Alternative 3 should be selected as the Preferred Alternative in the FEIS. USFWS Preferred Alternative. The USFWS preferred alternative should be the alternative that fulfills the requirements of an HCP: "minimize and mitigate, to the maximum extent practicable, any impact to threatened and endangered species" (page ES-1). A much-strengthened version of Alternative 3 would best fit this requirement, and thus should be the USFWS preferred alternative in the FEIS. DNRC Preferred Alternative. This DEIS statement (page ES-14) is simply not justified: "DNRC believes that Alternative 2 best represents the methods and

processes for avoiding, minimizing, and mitigating the impacts of forest management activities on HCP species to the maximum extent practicable." Alternative 3 contains additional mitigation measures to protect the HCP species with only a slight reduction in the volume of timber from current levels (5%), which is clearly not only sufficient to meet DNRC's mandate, but a better alternative to meet its mandate that also includes maintaining healthy and biologically diverse forests. Thus, a strengthened Alternative 3 should ultimately be DNRC's preferred alternative as well.

Response: The statement referenced in the comment that appears on page ES-1 in the Draft EIS was revised in the Final EIS to state: "Section 10 of the ESA authorizes a landowner to develop a conservation plan to minimize and mitigate, to the maximum extent practicable, the impacts of incidental take of threatened and endangered species while conducting lawful activities, such as harvesting timber on state trust lands." Also, please refer to the general responses to comments concerning the EIS alternatives (above).

Letter 119, comment 587: The DEIS violates NEPA and MEPA by failing to include a reasonable range of alternatives with respect to the DNRC transportation system. This is particularly important given the significant impact of roads and road construction on all five HCP species, especially grizzly bears and the three aquatic species. Given the significant impacts of roads on all five HCP species, and the significant increases in miles of roads proposed within the project area in this HCP, these very slight differences in miles of roads do not represent an adequate range of alternatives.

Response: Please refer to the general responses to comments concerning the EIS alternatives (above) and the general responses to comments concerning proposed road building under the HCP (Section 2.5).

Letter 120, comment 604: The Coalition requests revisions to the DEIS that require stronger conservation commitments than the proposed alternatives. Although the preferred alternative (#3) poses slightly less harm to the sensitive species, it does not provide any significant contribution to the recovery of the HCP-covered species or long-term conservation of these species' crucial habitat.

Response: Please refer to the general responses to comments concerning the alternatives (above). Regarding recovery of the species, please refer to the general responses to comments concerning the adequacy of the HCP (Section 2.3.1.1).

2.6 Permit Term

2.6.1 General Responses

Many commenters were concerned about the proposed 50-year term of the DNRC HCP. Most were concerned about uncertainties surrounding climate change, but others expressed concerns about the influence of increased population growth, increased beetle kill and fire risk, and changing market conditions and social values. Other commenters stated the effects on the HCP species were uncertain over a 50-year term. Some commenters stated the HCP term should be shortened to 10 or 20 years which is similar to USFS forest plans, or that it should at least be revisited in 10 years.

Determination of the Permit term is based on the needs of the applicant, as well as the USFWS. DNRC has proposed that the Permit be issued for a period of 50 years in order to realize both the biological and economic benefits of the HCP. DNRC views the HCP as a long-term program for addressing and improving habitat needs across the landscape. This Permit term was selected by DNRC to ensure that it would have sufficient time and funding to implement the conservation strategies and make adjustments through adaptive management where needed. Securing an adequate amount of time to implement the HCP is expected to maximize the HCP's contribution to the recovery of the HCP species. The proposed Permit term also helps ensure that the costs and the effort of developing an HCP, obtaining the Permit, and implementing an HCP are spread over multiple years and balanced by the long-term assuances that ESA regulatory requirements are met for the HCP species. ESA regulatory certainty will help DNRC plan forest management activities with

the reassurance that those activities will not be subject to additional ESA regulatory restrictions due to the presence of an HCP covered species.

In determining the Permit term, the USFWS refers to the Addendum to the HCP Handbook, also known as the 5 Points Policy (USFWS and NMFS 2000), which identifies four factors considered in the determination of the Permit term: (1) the duration of the applicant's proposed activities and expected positive or negative effects on the HCP species, (2) the extent of information underlying the HCP, (3) the length of time necessary to implement and achieve the benefits of the operating conservation program, and (4) the extent to which the program incorporates adaptive management strategies.

Regarding the first factor, the 5 Points Policy explains that "if the permittee's action or the implementation of the conservation measures continually occur over a long period of time, such as with timber harvest management, the permit would need to encompass that time period." In the context of the DNRC HCP, DNRC expects to conduct forest management on the covered lands for the foreseeable future. Hence, a longer permit term is appropriate as long as ongoing implementation of the conservation commitments is expected to continue to provide a conservation benefit to the species for the Permit term. Two examples of such conservation commitments include: (1) maintaining the mosaic of forest successional stages necessary to support lynx, and (2) providing quiet areas where bears can meet their habitat needs free from human disturbance.

Regarding the second factor, the USFWS has been issuing permits and monitoring HCP programs for forest management in excess of 15 years, and the species covered by this HCP are well-studied with established conservation standards and guidelines. We recognize that while much is known, new information will emerge over time, and that habitat conditions for the covered species are likely to change over time. To that end, the HCP includes a process for the two agencies to cooperatively respond to new science that is applicable to the HCP species (see Draft HCP Section 4.2.3, Adjusting for New Research). For uncertainties within the HCP commitments themselves, a monitoring and adaptive management program is prescribed in HCP Chapter 4 (Monitoring and Adaptive Management). While some trends related to climate change are becoming clearer, it is not fully known how the HCP species or the vegetation communities supporting habitat for the HCP species will respond to these changes. Therefore, the HCP stipulates that DNRC would address concerns relative to climate change through the range of responses identified in Final HCP Section 6.2.4 (Climate Change). We also note that several of the commitments are adaptable to changing conditions in light of climate change as described in our general responses to concerns about climate change (Section 2.7.1). Such measures in the HCP contribute to the USFWS' ability to issue a permit for a longer term.

For the third factor, many of the measures in the HCP would have immediate benefits on the species, such as timing restrictions on certain activities, retaining habitat connectivity in timber sale designs, and road closures to limit human disturbance; the benefits of other commitments may take time to realize. For example, under the HCP, DNRC has 15 years to replace culvert barriers and 25 years to correct ongoing sediment problem sites. For habitats that are inaccessible due to barriers or highly degraded due to sedimentation issues, it may require two or three generations of fish (8 to 12 years) to repopulate the affected system. The grizzly bear subzones on the Swan River State Forest and the Stillwater Block require DNRC to implement 8-year rest periods between management periods. The 50-year Permit would allow at least one period of active management followed by a period of rest to occur at least once in each subzone, whereas a shortened term would not. For these reasons, a longer permit term is warranted and beneficial for the covered species.

The fourth factor is the extent to which the HCP incorporates adaptive management strategies. The 5 Points Policy explains that "Significant biological uncertainty may necessitate an adaptive management strategy. The gathering of new information through the monitoring program requires the appropriate period of time for interpretation of new information and subsequent changes in management; this could necessitate a Permit with a longer duration." In the context of the DNRC HCP, an appropriate adaptive management process would be in place and provide necessary assurances for the USFWS that the HCP would remain adaptable in

the face of changing environmental conditions and new information. As stated in the adaptive management section of the HCP, status of each covered species will be considered and discussed as needed at each annual meeting between DNRC and the USFWS for the 50-year term. Further, the aquatic strategy specifically requires monitoring of some commitments for up to 25 years with an adaptive management program planned if desired outcomes are not achieved. To that end, additional time beyond the 25 years may be necessary to ensure the management responses implemented in lieu of the original commitments are effective. By cooperating and collaborating in a close partnership with DNRC for a 50-year Permit term, the USFWS is provided greater assurances that important new information would be considered, conservation measures would be implemented, and monitoring would take place involving all HCP species.

If the Permit is issued for the desired 50-year Permit term, changes could be made collaboratively by the two agencies given appreciable amounts of new information and/or an elevated risk to one or more covered species. If after permit issuance, the USFWS determines that conditions have changed such that ongoing implementation of the HCP would jeopardize the continued existence of an HCP covered species, the USFWS must revisit the Permit to renegotiate the strategies to avoid jeopardy or suspend or revoke the Permit. The USFWS will make its final determination of the Permit term in its statement of findings completed at the time of Permit issuance.

2.6.2 Responses to Individual Comments

Letter 9, comment 114: Since there are concerns regarding the adequacy of some of the commitments to promote adequate conservation of HCP fish species and protection of aquatic ecological functions (riparian buffers, riparian management prescriptions, lack of road density commitment, etc.), we believe it would be prudent for the USFWS to consider a duration of time shorter than 50 years for the Permit. We recommend that the Services consider issuing a Permit for a shorter period (e.g., 25 years), perhaps with an option to extend the Permit if monitoring reports provide adequate monitoring results and documentation that prescriptions are successful in improving water quality and aquatic habitat adequate to restore and protect bull trout and other HCP fish species.

Response: Please refer to the general responses to comments concerning the Permit term (above) and the general responses to comments concerning riparian buffer width (Section 2.1.1).

Letter 13, comment 132: The dangers and impacts of global warming are real and difficult to quantify, but must not be ignored. These dangers will grow as more objective studies develop. Because changes occur faster than predicted, the long-term adverse impacts should impel DNRC to propose no timber plan lasting longer than 10 years. The 50 years proposed could promote more damage than may now be predicted.

Response: Please refer to the general responses to comments concerning the Permit term (above).

Letter MEIC, comment 139: Reduce the timeframe for the HCP from 50 to 10 years so that the DNRC is not locked into an irresponsible management plan.

Response: Please refer to the general responses to comments concerning the Permit term (above).

Letter 22, comment 148: A 50-year plan is ludicrous at a time when the very real impacts of global warming are just beginning to manifest themselves.

Response: Please refer to the general responses to comments concerning the Permit term (above).

Letter 26, comment 159: A long-term plan expanding over a 50-year period is way too long to make adjustments in the future to address the issues facing us that we cannot currently anticipate.

Response: Please refer to the general responses to comments concerning the Permit term (above).

Letter 28, comment 161: The plan length is too long of a planning timeframe. Typically, the planning horizon for any type of plan is 10 to 20 years with interim updates. There are too many unforeseen

circumstances to adopt any alternative for a period of 50 years. Please reduce the planning timeframe to a more realistic 10- to 20-year span.

Response: Please refer to the general responses to comments concerning the Permit term (above). HCP Chapter 6 (Changed Circumstances) discusses changed and unforeseen circumstances and how these would be addressed over the course of the Permit term. By planning for reasonably anticipated events, including climate change, as changed circumstances in the HCP, the USFWS and DNRC would provide a level of conservation certainty associated with these circumstances. DNRC may consider additional or alternative measures in response to unforeseen circumstances commensurate with its landownership and relative to the circumstance and the constraints of its program mission and mandate. Additionally, the HCP sets forth an adaptive management program that provides for modifying HCP commitments where monitoring and research indicate that changes are necessary to achieve the HCP goals. Section 9 of the implementing agreement (Appendix F, Implementing Agreement) makes it clear that the "No Surprises" assurances would not exempt landowners from providing additional mitigation that may be found necessary through adaptive management. It states: "DNRC and the USFWS will implement the adaptive management provisions in HCP Chapter 4 (Monitoring and Adaptive Management). Such changes are provided for in the HCP, and hence do not constitute unforeseen circumstances or require amendment to the Permit or HCP, except as provided for in this section."

Letter 34, comment 176: 50 years is way too long a period, especially with timber prices and market almost non-existent. For the changing times, 10 years is a more realistic timeframe.

Response: Please refer to the general responses to comments concerning the Permit term (above).

Letter 45, comment 203: DNRC must revisit and renew its HCP in 10 years, not 50.

Response: Please refer to the general responses to comments concerning the Permit term (above).

Letter 58, comment 217: 50 years is entirely too long a time to be locked into a plan. In view of all the changes predicted for our world--rapid climate change, the economy affecting the need for such a large amount of timber taken from an area of essential habitat for endangered species--I would recommend no more than 10 years as more suitable.

Response: Please refer to the general responses to comments concerning the Permit term (above).

Letter 68, comment 222: Make the plan for 10 years, rather than 50 years--changes in the environment, global warming.

Response: Please refer to the general responses to comments concerning the Permit term (above).

Letter 69, comment 227: The plan should last for 10 years, not 50, given the dynamic world we now inhabit.

Response: Please refer to the general responses to comments concerning the Permit term (above).

Letter 72, comment 231: The 50-year timeframe for the HCP is too long. Instead the plan should apply only for 10 years. Although we understand that a 50-year timeframe has been a common timeframe for HCPs, that fact is not a good enough reason to continue this practice. With Montana – and school trust lands – influenced more and more by climate change issues, including extensive beetle kills in forests, beetle kills reaching higher elevation forests such as white-bark pine, increased fire, and more, it makes no sense to agree to a plan that is supposed to protect threatened species for such a long timeframe. There is a significant chance that the forest landscape on school trust land is going to change dramatically even in the next decade. Consequently, it does not make sense to agree to a plan that will be in effect in 5 decades--things are changing too rapidly now.

Response: Please refer to the general responses to comments concerning the Permit term (above) and the general response to comments concerning climate change (Section 2.7.1).

Letter 76, comment 252: Given how rapidly the climate is changing, locking into a 50-year plan does not give us the flexibility to adapt. Additionally, if the concern that you have given to climate change, as indicated to your research into the Governor's Climate Task Force, who is no longer meeting, you have problems. The plan is totally unacceptable, and will likely be litigated.

Response: Please refer to the general responses to comments concerning the Permit term (above) and the general response to comments concerning climate change (Section 2.7.1).

Letter 84, comment 308: Both the existing and proposed HCP road densities in bull trout streams would far exceed road densities scientifically considered to be protective of bull trout habitat. Because of substantial uncertainties regarding the effectiveness of these BMP commitments to achieve HCP fish species conservation and aquatic functions (riparian buffers, riparian management prescriptions, road density and road sediment reductions, etc.), we suggest it would be appropriate to use a short duration for the Permit, with a conditional provision for an extension. We recommend that the USFWS issues a Conditional Take Permit for a short period, with an option to extend the Permit for some additional period conditioned upon monitoring reports supporting adequate habitat conditions and fish monitoring results demonstrating effective and improved aquatic habitat and water quality for bull trout and other HCP fish species.

Response: Please refer to the general responses to comments concerning the Permit term (above). Additionally, we do not believe there are substantial uncertainties regarding the effectiveness of the HCP commitments. The Draft EIS analysis, including modeling of future conditions, indicates that the proposed HCP commitments will be effective in preventing degradation of aquatic habitat functions and will provide substantial improvement as compared to existing conditions (see summaries on pages 4-233, 4-246 and 4-247, 4-255, 4-259, and 4-263 and 4-264). Furthermore, the incorporation of monitoring in the HCP as described in Draft HCP Chapter 4 (Monitoring and Adaptive Management) will help ensure that specific commitments are resulting in habitat functions performing at an acceptable level. The adaptive management program will allow DNRC and the USFWS to incorporate alternative or additional conservation measures if monitoring indicates the commitments are not meeting their stated goals or targets, or as specific BMPs evolve and improve.

Letter 86, comment 311: We need a shorter-term plan so as to evaluate effects down the road (2020).

Response: Please refer to the general responses to comments concerning the Permit term (above).

Letter 92, comment 359: While we applaud DNRC for thinking on a large scale by proposing a 50-year plan, we believe that the effects of climate change over this period will necessitate periodic revisions of the plan: this is of particular concern given the absence of planning and mitigation measures for climate change effects on DNRC lands and HCP species in the draft HCP proposal. For these reasons, we strongly suggest that the HCP undergo a mandatory review every 10 years.

Response: Please refer to the general responses to comments concerning the Permit term (above) and climate change (Section 2.7.1).

Letter 96, comment 383: Further, the DEIS fails to provide in-depth consideration of any alternatives that would adopt a Permit term shorter than 50 years. While the DEIS states that any Permit term less than 50 years would not provide the "long-term regulatory certainty" that DNRC desires, the agencies fail to acknowledge that regulatory certainty may still be gained from a shorter timeframe of 15 to 20 years. Accordingly, DNRC and the USFWS should evaluate an alternative that provides for a Permit lasting 15 to 20, rather than the proposed 50 years.

Response: Please refer to the general responses to comments concerning the Permit term (above).

Letter 100, comment 412: I would recommend that the length of direction be shortened or that adequate safeguards are included to provide flexibility in case of new scientific information or unforeseeable changes.

Response: Please refer to the general responses to comments concerning the Permit term (above). Regarding unforeseeable changes, please refer to the response to Letter 28, comment 161, above.

Letter 102, comment 419: The 50-year permit term seems unreasonable--even irresponsible from the USFWS' perspective.

Response: Please refer to the general responses to comments concerning the Permit term (above).

Letter 104, comment 423: Having your plan last for 50 years is pretty silly--the way things are changing now, you must be adaptable to global warming and not be held to some standards that will remain in place for 50 years. How about 5 years and see what changes have happened around here? We are going to get more and more people moving into the western regions, so protections must be set in place to save what beautiful nature is around here.

Response: Please refer to the general responses to comments concerning the Permit term (above).

Letter 107, comment 466: An immutable 50-year plan would be imprudent at best, completely irresponsible to the majority of stakeholders at worst. It can in no way anticipate the future impacts of an increasing Montana population, global climate change, and the national and state economies over the next 50 years. A 10-year plan seems far more reasonable in these very uncertain times.

Response: Please refer to the general responses to comments concerning the Permit term (above).

Letter 117, comment 552: The 50-year timeframe for the HCP defies rationality. The HCP's protections and requirements are essentially guaranteed for 50 years. This lengthy guarantee is unjustified because the threats to grizzly bears over the next 50 years are highly uncertain. Given the rapid changes underway with climate change disruption, as well as the escalating development of the human population in the HCP area, a 50-year timeline in unreasonable. This excessively long timeframe, combined with the plan's weak adaptive management approach, will likely lead to the failure of the plan by any standard. We recommend that DNRC adopt a timeframe of 10 to 15 years, similar to the timeframes used by USFS in its forest plans.

Response: Please refer to the general responses to comments concerning the Permit term (above).

Letter 118, comment 556: All alternatives proposed a 50-year term. This is far too long. Experience with grizzly bears and other species has shown that many significant changes in habitat, populations, and scientific knowledge occur in a much shorter period. The effects of climate change are not discussed at all in the document, and these effects will also contribute to needed reevaluation of the HCP in a much shorter timeframe than proposed. A 20-year Permit term is more realistic.

Response: Contrary to the commenters' remarks, we are not aware of significant changes in habitat conditions and species populations occurring in short periods of time. Additionally, we point out that the HCP is an adaptable plan that is written to respond to changes acknowledged by the scientific community. Please refer to the general responses to comments concerning the Permit term (above) and the general responses to comments concerning climate change (Section 2.7.1).

Letter 120, comment 623: The 50-year timeline for this permit should be shortened given the pace of landscape changes underway in the HCP area. Fifty years ago, the DNRC could not have predicted how rapid population growth, climate change, or external regulations and social values impact how we manage Montana's natural resources today. Therefore, it's irrational to think that 50 years from now this HCP will still be an effective means of conserving habitat on the Forested State Trust Lands. This timeframe also does not allow for adaptive management given the constantly evolving pressures on the project landscape. Plus, the DNRC does not have the technical ability to forecast a half-century into the future to foresee land-use needs or changing values associated with these natural resources and HCP species. The Coalition recommends that the USFWS and DNRC adopt a shorter timeframe of 10 to 15 years, concurrent with other federal land planning timeframes.

Response: Please refer to the general responses to comments concerning the Permit term (above). We note that the HCP is not a land management plan. DNRC manages its lands under the direction of the Forest Management ARMs (36.11.401 through 36.11.450) and under the management philosophy and approach of the SFLMP (DNRC 1996). The HCP is a suite of measures to conserve listed species that follows the

philosophy and approach of the SFLMP. If DNRC's management philosophy and approach changes in the future, then that would be reflected in a new or revised SFLMP, which may or may not also warrant a re-evaluation of the HCP.

Letter 122, comment 627: The new plan should last 10 to 20 years.

Response: Please refer to the general responses to comments concerning the Permit term (above).

Letter 124, comment 629: A 50-year term for this type of plan is ridiculous.

Response: Please refer to the general responses to comments concerning the Permit term (above).

Letter 127, comment 633: No reasonable plan should be set up for 50 years. Any plan should be set up in such a way that a periodic review is an automatic part of the process, 5 or 10 years.

Response: Please refer to the general responses to comments concerning the Permit term (above).

Letter 136, comment 650: The plan should not cover 50 years, as this is far too long for management of a threatened species to go without a review. Ten years would be a more sensible length of time.

Response: Please refer to the general responses to comments concerning the Permit term (above).

2.7 Climate Change

2.7.1 General Responses

We received numerous comments on the subject of climate change. Some commenters stated that the Draft EIS failed to evaluate the effects of the project on climate change. We note that in response to these comments, the Final EIS has been revised to include an analysis of the effects of the proposed action on climate change in Section 4.1 (Climate). Additionally, the Final EIS has been revised to include discussions of how climate change is affecting the individual resources analyzed in the EIS, such as forest vegetation, water quantity, and visual quality. These analyses are found in the respective resource sections of Final EIS Chapter 4 (Affected Environment and Environmental Consequences). Many commenters stated that the Draft HCP and EIS failed to address the impacts of climate change on the HCP species. In response to these comments, the Final EIS has been revised to include a discussion of the anticipated effects of climate change on the HCP species and the relationship of those effects to the proposed action (see Final EIS Section 4.8, Fish and Fish Habitat, and Section 4.9, Wildlife and Wildlife Habitat).

Some commenters stated that the USFWS and DNRC failed to consider numerous studies available on the issue of climate change. Between publication of the Draft and Final EIS, the USFWS conducted an extensive literature review on climate change including all the citations mentioned in or included with the comment letters. The Final EIS was subsequently revised accordingly. For additional information on how the USFWS is approaching issues related to climate change, please see Final EIS Section 4.1 (Climate).

Several commenters stated that, while the Draft EIS identified the effects of climate change, it failed to address these effects or proposed to do nothing about them. Some commenters suggested we include provisions to modify the HCP in the future in light of climate change. A few commenters suggested the HCP incorporate adaptive management to address climate change in the future or shorten the Permit term. Still another commenter stated the HCP fails to identify specific adaptive management measures that could be used to mitigate the effects of climate change.

We believe the HCP does address the potential effects of climate change on the HCP species. To clarify, through the ESA Section 10 process, DNRC is not responsible for mitigating the effects of climate change nor are they required to mitigate the effects of climate change on the HCP species. Rather, the intent of the HCP is to minimize and mitigate the effects of incidental take resulting from DNRC's forest management program. If over time, new research shows that the effects of incidental take have increased due to climate

change or the species are changing their habitat use, food base, or other biological needs in response to climate change such that DNRC's actions are affecting these new conditions, DNRC would address these concerns through the range of responses identified in Final HCP Section 6.2.4 (Climate Change). While some of the anticipated effects of climate change on the natural environment are known at this time, how the species will respond to these effects is largely unknown. As one commenter stated, "It is impossible to know what mitigations may be necessary for the five species…. especially given the uncertain impacts of climate change during this time." Therefore, the process we included in Final HCP Chapter 6 (Changed Circumstances), which now includes some potential responses that could be implemented by DNRC, is the most prudent at this time. Additionally, we note that several of the HCP commitments in the aquatic strategy, where effects of climate change are already being realized, are adaptable in light of anticipated changes in conditions due to climate change. These include:

- Riparian Harvest: AQ-RM1 would require DNRC to include additional measures for species protection in temperature-sensitive stream reaches.
- Sedimentation: If DNRC BMP effectiveness falls below 90 percent, the adaptive management process would be initiated. Through this process, DNRC may adapt its BMPs to changing conditions resulting from climate change.
- Grazing: DNRC would evaluate the effectiveness of corrective actions at grazing sites. Through this process, corrective actions may be modified over time to address changing conditions resulting from climate change.
- CWE: DNRC would set water quality thresholds at levels that ensure compliance with water quality standards and protection of beneficial water uses. As conditions change in response to climate change, meeting these thresholds may require DNRC to adapt several aspects of their timber harvest practices, including BMPs, harvest design, roads, and access.

The changed circumstance process, adaptability of the aquatic commitments, as well as the HCP monitoring and adaptive management program, are all provisions of the HCP that would allow it to to be adapted over time as the effects and appropriate responses to climate change become known.

2.7.2 Responses to Individual Comments

Letter 7, comment 32: The HCP fails to include any proposals for addressing the impacts that global warming will have on habitat in the next 50 years. Even though the HCP acknowledges that those impacts will occur, it proposes to do nothing to address those impacts. Instead, the HCP states that your office will deal with the problem of global warming by participating in the Governor's Climate Change Advisory Committee. The HCP neglects to mention that the Committee finished its work almost 2 years ago and that the Governor has failed to adopt even a single recommendation contained in the Committee's report.

Response: Please refer to our general responses to comments concerning climate change (above). We agree that the discussion of the Governor's Climate Change Advisory Committee in the Draft EIS was not relevant to the analysis of climate change. Therefore, this discussion has been removed from the Final EIS.

Letter MEIC, comment 138: Account for the existing and predicted impacts from global warming.

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 25, comment 152: Please reconsider your plan to increase timber harvesting and road building into present habitat for grizzly bear, Canada lynx, and other endangered species. The effects of global warming have already, and will continue to take their tole on these species and the forests themselves. More roads open to motorized vehicles means an increased loss of these habitats.

Response: Regarding the commenter's concerns about increased timber harvest, please refer to the general responses to comments regarding sustainable yield (Section 2.4.1.2). Regarding the commenter's concerns

about increased road building and more roads open to motorized vehicles, please refer to the general responses to comments concerning proposed road building under the HCP (Section 2.8). Regarding the commenter's concerns about climate change, please refer to our general responses to comments concerning climate change (above).

Letter 29, comment 164: The DNRC must start taking into account the impact of climate change on the land that it supervises. Endangered species, like grizzly bears, Canada lynx, and bull trout are, no doubt, especially vulnerable to climate change. Decreasing their habitat just when things are getting worse is an especially bad idea. Please start considering the impact of climate change when permitting timber harvesting.

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 34, comment 178: With the warming of our planet, 1,300 to 1,400 miles of road and timber cutting is really questionable. We need that canopy to support water yields, very important, and threatened wildlife.

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 36, comment 182: Despite the fact that climate change is already taking a heavy toll on Montana's lynx and other forest wildlife--and will put growing stress on their ability to survive in the future – the state's HCP fails to address its impacts or ensure it will remain effective under changing habitat conditions. How can a plan that is intended to conserve the habitats for imperiled species over the next 50 years fail to address the growing threat of climate change? Include mechanisms that will help ensure the plan effectively protects wildlife in the face of climate change, or simply shorten the plan's duration to 10 years.

Response: Please refer to our general responses to comments concerning climate change (above) and the Permit term (Section 2.6).

Letter 45, comment 204: DNRC must give full and fair consideration to the effects of its actions on global warming.

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 67, comment 220: A 50-year management plan cannot have the flexibility to respond to environmental changes over time, especially the unforeseen effects of global warming. In these times of climate change, a 5-year review, allowing changes as necessary, must be built into the plan.

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 72, comment 232: Although the DEIS discusses the potential implications of climate change, it then dismisses the matter, essentially saying there is nothing DNRC can do. If DNRC cannot agree on what to do about climate change when trying to protect five species in 2009, how will the agency manage this issue in 10, 20, or 50 years? The HCP needs to more directly address this issue and how it will specifically be addressed in management decisions.

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 75, comment 246: You have not taken into account that our climate is changing. Runoff patterns are different and we have had years of drought in many areas. The document has not included plans for mitigating those impacts.

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 90, comment 330: Climate change is upon us and the federal government and the state have taken steps to address this. How will building 1,400 miles of road reduce CO2 emissions? How will opening up many miles of new roads conserve energy? What are estimates of CO2 emissions per mile of new road? Is recreation (motorized) really a desired future condition? Do clearcutting and shelterwood treatments reduce temperatures in the opened forest? Does logging reduce or increase CO2 emissions? Why were carbon credits not looked at in maintaining critical habitat? Will new science be integrated into the HCP?

Response: Regarding the commenter's first six questions, please refer to our general response to comments concerning climate change (above). Regarding the seventh question, we note that implementation of an HCP does not preclude DNRC from generating revenue on state trust lands through other markets. Regarding the eighth question, the Draft HCP describes the process for integrating new science into the HCP (see Draft HCP Section 4.2.3, Adjusting for New Research). New science specific to climate change may also be considered through the changed circumstances process, as described in Final HCP Section 6.2.4 (Climate Change).

Letter 92, comment 352: The HCP ignores current and predicted impacts of climate change in Montana (despite acknowledging a subset of these impacts in the DEIS). Despite an acknowledgement of these predicted impacts, DNRC in no way considers the potential ramifications of these impacts on the forests and imperiled species residing on DNRC lands over the course of the next 50 years. Scores of peer-reviewed scientific publications about the current impacts of climate change in the northern Rockies are readily available to DNRC for use in the planning process. Well-documented impacts from the literature include increased in air temperature, declining water resources, more frequent and severe wildfires, declining forest health, and severe pine bark beetle outbreaks.

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 92, comment 353: Given that the current impacts of climate change within Montana's forests are already significant and well-documented, management plans for forests and HCP species on DNRC lands must consider these impacts thoroughly in any EIS and HCP before targets for lumber extraction are developed. Without identifying specific mitigation measures for climate change in the Draft HCP, DNRC cannot assert that other impacts (such as timber activities) on forest health, crucial watersheds, and HCP species have been evaluated adequately. As DNRC notes in the draft HCP (Section 1.3.2.3): "Conservation strategies that promote only a short-term management focus are not practicable for a long-term business operation, such as forest management on trust lands." Unfortunately, detailed planning for climate change impacts on DNRC lands is necessary to successfully achieve the goal of long-term sustainability in Montana's forests.

Response: Please refer to our general responses to comments concerning climate change (above). We note that as climate change affects conditions on the landscape, those changes will be reflected in the DNRC stand-level inventory database. Subsequent sustained yield calculations (required every 10 years) using updated forest inventory data would capture those effects and their resulting influence on sustainable yield from forested state trust lands. The effects of individual future actions on the long-term sustainability of forest management in Montana will be addressed through the MEPA analysis processes for those actions.

Letter 92, comment 354: The HCP fails to identify specific adaptive management measures that could be utilized to mitigate the effects of climate change. Numerous peer-reviewed scientific publications use modeling as a tool to predict the expected spectrum of climate change impacts on endangered and threatened wildlife species in the West, creating a range of possibilities available for DNRC's use in developing their HCP. An example of the type of relevant information that we believe should be utilized in revising DNRC's draft EIS and HCP include publications about cold-water fisheries in general, and bull trout in particular. (1) Rieman et al. (2007) review the profound effects that a warming climate could have on the distribution and abundance of bull trout, given their requirement for cold water temperatures during spawning and early rearing. (2) Ficke et al. (2007) model a variety of scenarios for freshwater fisheries possible under continuing climate change. (3) Williams et al. (2007) review the unprecedented environmental challenges facing cold-water dependent fishes as the climate continues to change. (4) Preston (2006) conducts a probabilistic risk assessment of the effects of future climate change on current cold-water fish habitat in the Rocky Mountains. (5) Kinsella et al. (2008) provide a detailed review of the challenges climate change poses for trout, impacts on trout and their habitat, a model for conservation of trout in Montana (i.e., the Blackfoot River), and specific recommendations for conserving trout populations successfully in the face of this added stressor.

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 92, comment 355: Scores of peer-reviewed papers also suggest ways of developing specific strategies and plans to ameliorate the effects of climate change on public lands and endangered and threatened wildlife species. Recommendations (e.g., Brennan 2008; Mawdsley et al. 2009) include: (1) incorporating predicted climate change impacts into species and land management plants and activities, (2) reducing non-climate stressors on species at risk, (3) evaluating and enhancing monitoring programs for wildlife and ecosystems, (4) improving management to facilitate resilience (e.g., riparian plantings to shade streams to offset localized warming), (5) protecting movement corridors and refugia, and (6) defining key indicators of ecosystem function prior to undertaking activities designed to keep those variables within acceptable parameters. Of particular importance among these recommendations is the crucial role of adaptive monitoring (Lindenayer and Likens 2009). Scientific publications that examine the effectiveness of a variety of approaches to multi-species conservation are also available for use in planning processes such as those being undertaken by DNRC (e.g., Carroll et al. 2009).

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 92, comment 356: DNRC is in an excellent position to implement several of the above recommendations given the extremely large stand-level inventory (SLI) that they have maintained for many years. Hence the DNRC has already created a system and infrastructure for monitoring forest health, which allows staff to comprehensively evaluate the effects of climate change on forest health on a subset of these plots. We recommend that the DNRC analyze this large, long-term dataset to provide the quality and quantity of information needed for the suggested revision of the draft HCP.

Response: Please refer to our general responses to comments concerning climate change (above). Requiring DNRC to initiate a long-term study on the effects of climate change on forest health is outside the scope of this HCP process. We note that several climate studies are underway in Montana (USGS - Northern Rocky Mountain Science Center, USFS - Rocky Mountain Research Station, The University of Montana, and Montana State University) and that the Draft HCP describes the process for integrating new science into the HCP (Section 4.2.3, Adjusting for New Research). New science specific to climate change may also be considered through the changed circumstances process for climate change described in Draft HCP Section 6.2.4 (Climate Change).

Letter 92, comment 357: We would like to point out that our expectations for DNRC's planning processes are no different that those for other agencies. That is, other state and federal agencies are already well into the process of developing plans to mitigate the effects of climate change on the forests, watersheds, and imperiled species entrusted to their care.

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 92, comment 358: The absence of plans to mitigate the adverse effects of climate change on the five HCP species listed does not comply with the ESA requirement that any take of the HCP species be "minimized and mitigated to the maximum extent practicable." This is particularly critical for the five HCP species, especially in light of reports in the scientific literature verifying the fact that climate change hastens wildlife population extinctions (McLaughlin et al. 2002).

Response: Please refer to our general responses to comments concerning climate change (above) and to the general responses to comments concerning take minimization and mitigation (Section 2.3.1.3).

Letter 96, comment 386: The DEIS states that "DNRC and the USFWS lack sufficient site-specific information to plan for and manage the effects of climate change at this time." Id., p. 4-346. To the contrary, abundant information is available to help the agencies plan for the certain environmental changes that will accompany global warming, including those identified in the DEIS. See, e.g., Warwell, M. et al. 2007; Rehfeldt, Gerald E. 2004; Rehfeldt, Gerald E. 2006. Further, the USFS Rocky Mountain Research Station is currently developing a detailed projection of site-specific global warming impacts in Montana. The study, which will be complete in 2010, is designed to allow wildlife and land managers to assess potential effects on Montana's wolverine population, but the predictions will be more widely applicable to all species in the study

area. DNRC and the USFWS should incorporate the results of this study in their environmental analysis, and use the information it provides to assess whether additional conservation measures are necessary to ensure that recovery of HCP-covered species is not jeopardized by DNRC's proposed logging, roading, and grazing activities. This analysis must take place before the USFWS issues a Permit.

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 96, comment 387: The DEIS fails entirely to evaluate the impacts of the various alternatives against the changing baseline or to identify additional conservation measures to mitigate the effect of DNRC's proposed timber harvesting, roading, and grazing activities in light of the declining habitat conditions. Instead, the DEIS identifies a "changed circumstances process" to address the effects of global warming, "which would involve notifying the USFWS of the change, assessing site conditions, and preparing a response plan." DEIS, p. 4-346. Such deferral of analysis and mitigation of significant and foreseeable changes to the environmental baseline violates NEPA's and MEPA's directive to analyze foreseeable environmental impacts.

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 96, comment 388: DNRC and the USFWS fail to meaningfully assess the cumulative impacts of its forest management activities and global warming. The DEIS cumulative impacts section contains a cursory discussion of potential consequences of global warming in Montana, but fails to evaluate how DNRC's forest management and global warming will cumulatively affect the HCP-covered species, as required by NEPA. See 40 C.F.R. § 1508.7 ("'Cumulative impact' is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions.").

Response: Please refer to our general responses to comments concerning climate change (above). In the Final EIS, the analysis of climate change in Chapter 5 (Cumulative Effects) has been removed and replaced with its own section and within the individual resources sections of the Final EIS Chapter 4 (Affected Environment and Environmental Consequences).

Letter 99, comment 398: It is impossible for the State to protect these threatened species if its plan fails to account for the most devastating threat already impacting these resources--global warming. The recognition of these impact is insufficient to withstand the strict scrutiny test, which requires more than just a mere mention of a few of the impacts that are occurring or are reasonably foreseeable.

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 99, comment 399: DNRC has failed to develop an alternative to address any of the climate change impacts it has identified. The documents fail to address many of the impacts that are already acknowledged in the scientific literature. And the documents fail to address those impacts that have been identified by the scientific community as reasonably foreseeable. Instead the DEIS and PHCP rely on some undetermined future "adaptive management" process to mitigate these impacts should they become significant. Yet the document has identified a number of studies that show that these impacts are already taking a significant toll on wildlife habitat and resources. To ignore these current and foreseeable impacts is to ignore current scientific evidence and trends. Failure to address these impacts results in the failure of the State to comply with the second and third components of the strict scrutiny test, let alone the requirements of MEPA, NEPA, and the ESA.

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 99, comment 400: Many studies indicate that climate change is, or will alter, vegetation, soils, precipitation patterns, stream flows, water availability, aquatic and terrestrial habitat, and much more. These DEIS and PHCP identify a number of studies indicating that these impacts are anticipated, but both documents fail to consider numerous other relevant studies. In addition, the DEIS and PHCP utterly fail to account for existing or anticipated global warming impacts in the proposed alternatives and plan. DNRC and

the USFWS must analyze at least one alternative that accounts for the dramatic changes that are already occurring or are anticipated to occur in species habitat as a result of climate change. In addition, the State should consider that there is an existing and emerging carbon offset market that may help the State protect species habitat and earn income by doing so. The state must analyze an alternative that includes this potential in order to address global warming and consider the range of reasonable alternatives.

Response: Please refer to our general responses to comments concerning climate change (above). Regarding the commenter's statement that the state should consider the emerging carbon market and must analyze an alternative that includes this potential to address global warming, please refer to the general responses to comments regarding timber harvest and alternative markets on state trust lands (Section 2.4.1.1).

Letter 109, comment 475: The DEIS/HCP do not analyze the effects of climate change on listed species. Climate change is not directly addressed but is considered "an event or process that may be addressed as a changed circumstance" (DEIS, page 4-5). This is contrary to the best available science as well as the USFWS announcement of a Strategic Plan for Climate Change with one of the three elements being to reduce the impact of climate change on wildlife. It is critically important for native fish, grizzly bear, and lynx that climate change is addressed now.

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 109, comment 480: The shade modeling should take into consideration climate change. What may have been adequate shade to maintain cold waters will more than likely not be adequate due to climate change. The DEIS does not address the issue of evapo-transpiration from decreased shade and increased temperatures leading to dewatering of streams.

Response: The Final EIS has been revised to include discussions of how climate change is affecting the individual resources analyzed in the EIS, such as forest vegetation and water quantity. Please see the response to Letter 120, comment 617, below, regarding the relationship between shade modeling and climate change.

Letter 109, comment 481: The effects of climate change on native fish needs to be addressed now, not at some undisclosed future time. A recent study on the effects of climate change on bull trout concluded that "climate does strongly influence regional and local bull trout distributions, and we estimated bull trout habitat response to a range of predicted climate warming effects. Warming over the range predicted could result in losses of 18 to 92% of thermally suitable natal habitat area and 27 to 99% of large (10,000 hectare) habitat patches, which suggests that population impacts may be disproportionate to the simple loss of habitat area" (Rieman et al. 2007).

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 109, comment 483: As climate warms, the incidence of rain-on-snow events may increase. A study looked at the magnitude of peak flow increases in basins larger than 10 square kilometers and the geomorphic and biological consequences of these changes. They concluded: "Predictions indicate that timber harvest caused a 25% increase in the peak flow of the modeled event and increased the frequency of events of this magnitude from a 9-year recurrence interval to a 3.6-year event. These changes in hydrologic regime, with larger discharges at shorter recurrence intervals, are predicted to increase the depth and frequency of streambed scour, causing up to 15% added mortality of bull trout (*Salvelinus confluentus*) embryos" (Tonina et al. 2008). The HCP must address the issue of precipitation as rain rather than snow as the climate changes.

Response: We acknowledge the changes to snow accumulation and ablation processes following certain forest management activities in snowmelt-dominated watersheds. Final EIS Section 4.8.2.7 (Fish and Fish Habitat – Affected Environment - Key Aquatic Habitat Factors – Effects of and Trends in Climate Change) includes a discussion of how the combined effects of climate change and timber harvest may influence hydrologic regimes. At this time, no definitive answers have been adopted by scientists and land managers as to the effect of global climate change on snow accumulation and ablation in western Montana. The

probability of rain-on-snow events may increase or decrease relative to our historical record. The degree of uncertainty is large at a regional scale.

The proposed HCP includes a CWE strategy designed to address the highly variable conditions that affect individual watersheds. The proposed CWE strategy does not limit DNRC to pre-set models, methods, or fixed thresholds, or assumptions regarding climate. This flexibility would allow DNRC to use the most appropriate analysis tools and methods for different watersheds and situations, and to adapt analysis to changing conditions over time. Under the proposed HCP, DNRC would also review emerging science for its applicability to the CWE strategy (see Draft HCP Section 4.2.3, Adjusting for New Research). If new relevant information becomes available, the adaptive management process would be used to consider modifications to the strategy.

Letter 109, comment 500: The DEIS acknowledges the issue of climate change and the stability of local populations of lynx (DEIS, page 4-317), but fails to address the issue in the HCP.

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 110, comment 512: The plan, when coupled with the rather obvious forthcoming results upon these species from global warming, are too extreme.

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 117, comment 547: DNRC failed to take practical steps to incorporate existing knowledge about effects of climate change on the HCP area. There are regionally explicit global warming models and other data available, which could be used to assess important issues like habitat suitability for beetles, the implications for fire, water supply, habitat/vegetation, etc. (USFS and USGS have considerable data, as do several Montana universities.) Global warming disruption is a real issue affecting Montana forests in real-time, right now. To delay assessment of this important issue, which is dramatically changing the nature and content of Montana's forests right now, is irresponsible and irrational. The revised EIS must take reasonable steps to evaluate the impacts of various global warming scenarios on habitat of the grizzly bear, and mitigate any anticipated adverse effects.

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 119, comment 590: The HCP should include a provision that allows for modifications due to unforeseen effects of climate change on any of the five HCP species within the project area during the lifetime of the HCP, since climate change could significantly reduce the effectiveness of this plan during its 50-year lifetime. We appreciate that USFWS will "evaluate the proposed Permit term to ensure that it is an adequate timeframe in which to fully mitigate for the expected incidental take of listed species" (page ES-2). It is impossible to know what mitigations may be necessary for the five species included in this HCP during the next 50 years, especially given the uncertain impacts of climate change during this time. We urge DNRC and USFWS to agree to a "safety valve" in this HCP, allowing for additional adaptive management in response to climate change as needed during the lifetime of this HCP. This "safety valve" is necessary because the potentially dire impacts of climate change between now and 2060 are outside of our ability to predict. If such an agreement cannot be made, we urge the HCP lifetime to be shortened to a length of time that can be reasonably predicted, which we suggest should be ten years, the typical life of a land management plan by the USFS, for example. While this may be perceived to defeat the purpose of this HCP as far as providing regulatory certainty to DNRC sufficient to justify its costs in preparing the plan, we suggest that the plan may be ratified again after ten years without significant new analysis and changes, unless climate change or other factors require significant changes to be made. To simply ratify this plan for the next 50 years and find that it is no longer sufficient during this timeframe to protect habitat for listed species would violate DNRC's mandate to maintain healthy and biologically diverse forests (see TLMD mission above).

Response: Please refer to our general responses to comments concerning climate change (above) and Permit term (Section 2.6).

Letter 119, comment 591: The HCP fails to provide any effective mitigation of the projected effects of climate change on the HCP species. With this HCP, DNRC has an opportunity and an obligation to ensure it will maintain habitat for the HCP species to the maximum extent practicable. As baseline conditions change for the HCP species across Montana's state forests due to climate change, DNRC must adapt its management to help the HCP species adapt to these changes. Rather than provide for this in this HCP, the DEIS vaguely refers to a climate change committee established by the governor of Montana that has only tangential effects on the HCP species at best. The failure to provide assurances that this HCP will be effective under changed conditions due to climate change represents a failure to consider reasonably foreseeable scenarios as required under NEPA and MEPA, and underscores the need to shorten the lifetime of this plan to just 10 years.

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 120, comment 617: Maintaining cold water temperatures for bull trout is critical now more than ever, particularly in the face of climate change and a warming watershed. Recent studies in the Columbia River Basin estimate that: "warming over the range predicted could result in losses of … 27–99% of large habitat patches" for bull trout (http://www.clarkfork.org/climate-action-in-the-clark-fork/low-flows-hot-trout.html). The shade modeling used in the DEIS should therefore take into consideration climate change, as the riparian buffers currently needed to maintain cold instream water will likely not be adequate in a few decades based on temperature modeling in the region. Decreasing shade by removing riparian trees also increases evapo-transpiration, which can lead to dewatering of the stream and further stream temperature increases.

Response: The Final HCP and EIS recognize the potential for future climate change to alter the distribution of HCP listed species, as well as the habitat functions that support these species. The shade modeling presented in the Final EIS is based on the general relationship between percent shade and stream temperature maintenance. In order to capture the natural variability of landscape conditions within the HCP project area, five representative stand types were used for the modeling exercise. These stand types represent the diversity of riparian stand types and the range of forest conditions within the HCP project area.

Although climate change may ultimately result in changes in local climatic conditions, these changes would affect stream shading primarily through corresponding changes in riparian vegetation communities (e.g., a hotter, drier climate could result in a forested component consisting of fewer and smaller trees, with less dense canopy closure). The modeling results indicate that, for each of the five stand types, all action alternatives (including the HCP alternative) would result in substantially greater shade levels than target levels (which were assumed adequate to maintain acceptable stream temperatures for salmonids and were established based on measured relationships between percent shade and stream temperature relationships in the Pacific Northwest). Even if climate change were to result in a different distribution of stand types within the HCP project area, the modeling indicates that any of the action alternatives would likely be sufficient to provide shading levels at or above pre-harvest levels during the HCP permit period. In addition, these levels would be substantially greater than those provided under Alternative 1.

Accurately predicting the response of HCP fish species to future global climate change is difficult, particularly with regard to specific habitat functions such as stream temperature regulation, which are controlled by a complex set of variables including local and regional climatic variables, as well as the type, size, and density of riparian vegetation, and groundwater inputs.

Letter 120, comment 620: The DEIS and HCP do not analyze the effects of climate change on listed species, nor does the HCP include adaptations that address climate-related threats to habitat and species within the HCP project area. The Coalition analyzed several scientific studies on how the impacts of climate change may affect natural resources in the Clark Fork Watershed in our 2008 report, "Low Flows, Hot Trout" (http://www.clarkfork.org/climate-action-in-the-clark-fork/low-flows-hot-trout.html). This report compiled information from several precipitation and temperature modeling studies conducted in the region, and describes the very real implications associated with a warming watershed, including: changes in water availability and the hydrologic cycle, native trout strongholds, fire severity, and shifts in vegetation and habitat type. Climate change is already affecting Montana's forests, and will only continue to influence the

DNRC's Forested State Trust Lands over the course of this 50-year proposed HCP. It is simply irresponsible for the DEIS not to evaluate existing climate models to assess the impacts of climate change on the HCP-covered species and their habitats. The revised EIS should also detail adaptive management and mitigation actions that will address adverse effects associated with a warming West.

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 163, comment 672: Please rewrite your plan to include measures that protect endangered species from the effects of a warming climate here in Montana.

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 163, comment 673: I urge you to include mechanisms that will help ensure the plan effectively protects wildlife in the face of climate change. If you can't do that, I suggest you shorten the plan's duration to 10 years and see what happens before planning for the next 10 years, and the years after that.

Response: Please refer to our general responses to comments concerning climate change (above) and Permit term (Section 2.6).

Letter 166, comment 676: Despite the fact that climate change is already taking a heavy toll on Montana's lynx, wolverine, and other forest wildlife, and will put growing stress on their ability to survive in the future, the state's HCP fails to address its impacts. We need a solid plan that will give our threatened, endangered, rare, and secluded species the protection they so richly deserve, even under the changing habitat conditions prompted by global climate change.

Response: Please refer to our general responses to comments concerning climate change (above).

Letter 166, comment 678: I urge you to provide an HCP that realistically addresses the needs and demands of all threatened, rare, endangered, and secluded wildlife in the face of climate change.

Response: Please refer to our general responses to comments concerning climate change (above).

2.8 Proposed Road Building under the HCP

2.8.1 General Responses

2.8.1.1 Total Road Miles

Numerous commenters expressed concerns that the proposed HCP would construct more than 1,300 miles of new roads over the Permit term. We note that Final EIS Section 4.4 (Transportation) has been revised to clarify the miles of road to be constructed over the Permit term for all alternatives. The Final EIS clarifies that under Alternatives 2 and 4, the HCP would construct 1,100.2 miles of road, Alternative 1 would construct 1,120.7 miles of road, and Alternative 3 would construct 1,034.8 miles of road. In the original estimate, roads that would be reclaimed were errantly included in the estimate of new roads to be built. Several comments expressed opposition to building any new roads. One commenter asked DNRC to find another way to sustainably harvest without relying on roads.

The use of roads to access timber stands for the management and transport of wood products is an integral part of any forest management program. Currently, DNRC does use limited helicopter harvest and alternative yarding systems that require less roads, where economically feasible and operationally practicable. DNRC points out that over time, technological advances in road building and logging systems have lessened the amount of roads needed to manage forests. Further, DNRC anticipates that new technological advancements will continue to reduce the amount of roads needed. Forested trust lands, like all managed forests, will benefit from these types of technological advances. However, in the meantime, roads are still a necessary part of the managed forest landscape and will be for the foreseeable future.

Many commenters questioned why none of the alternatives decreased roads. In response to comments on the Draft EIS/HCP, the USFWS and DNRC discussed whether an alternative that would construct fewer roads over the Permit term could be considered in the Final EIS. However, DNRC reiterated their need for roads for forest management activities and stressed that it does not have access to all timber stands they plan to manage over the Permit term. An alternative that substantially reduced road building would not meet DNRC's purpose and need; hence, the proposed level of road building in the action alternatives does not vary substantially. This is now reflected in Final EIS Chapter 3 (Alternatives Considered but Eliminated from Detailed Analysis). Instead, the HCP strategies were designed to minimize the amount of roads on the landscape and minimize the impact of roads on the HCP species.

Some commenters asked why DNRC did not cap roads or commit to more obliteration or road decommissioning. In the HCP, DNRC does implement a cap on road densities on the Stillwater, Coal, and Swan River State Forests, where it has primary ownership of most roads and the most complete road data. DNRC is proposing to manage these lands on a fixed transportation plan (see commitments GB-ST1 and GB-SW1 on Draft HCP pages 2-19 and 2-20, respectively). It was not feasible for DNRC to cap total roads on scattered parcels due to data limitations (e.g., incomplete road data on adjacent non-DNRC lands) and the complexity of managing roads on scattered lands, where adjacent land owners would not be subject to the same limitations and co-management of roads may prevent implementation of caps. The HCP does include a cap on open road densities for scattered parcels, which would be implemented at the administrative unit level. DNRC estimated the miles of road it would need to harvest timber on those lands in the 50-year Permit term for the EIS analysis. Regarding the consideration of road obliteration or road decommissioning, the proposed HCP includes commitments for DNRC to reclaim roads that are non-essential to near-term future use. At a minimum, reclaimed roads would be made impassable and drainage structures removed so they no longer require ongoing maintenance. However, DNRC reclamation may also include road obliteration, particularly to ensure closure of the road. Draft EIS Table 4.6-6 includes an estimate of miles of road to be reclaimed or abandoned under the proposed HCP. We note that in the Final EIS, DNRC has revised its commitment AQ-SD1 item (6) from "abandoning" roads to "reclaiming" roads, which requires that roads are left in a more stable condition compared to abandoned roads.

2.8.1.2 Roads and HCP Species Conservation

Several commenters questioned how an HCP that constructs roads can conserve the HCP species given the known effects of roads on those species. We note that HCPs allow for adverse impacts as long as the applicant demonstrates it is following its plan to minimize and mitigate the impacts of take to the maximum extent practicable and that its activities are otherwise lawful. For more information on this topic, please refer to the general responses to comments concerning the adequacy of the HCP (Section 2.3.1.1).

Road building is an activity that is addressed in the HCP. Because DNRC has a limited ability to decrease road building under the HCP and roads are critical to the management of forested landscapes, but also may result in take or adverse effects to the HCP species, both agencies focused on developing a strategy to minimize the effects of those roads on the HCP species. In the HCP, DNRC has demonstrated how it minimizes road construction and minimizes the impacts of roads on the HCP species. These efforts are further described in the subsections below.

Current Measures for Minimizing the Effects of Roads

DNRC describes its road minimization program on pages 2-79 through 2-89 in Draft HCP Section 2.2.3.2 (Sediment Delivery Reduction Conservation Strategy). Under its existing Forest Management ARMs (ARM 36.11.421), DNRC is required to plan transportation systems for the minimum number of road miles. To comply with this rule, DNRC conducts comprehensive road management planning, including determining which roads to build, improve, maintain, close, abandon, or obliterate, during project-level analysis. For each local area being managed, DNRC considers many factors when designing road systems, including:

- Existing and future management needs and opportunities
- Logging system capabilities, including alternative yarding systems that do not require roads
- Fisheries and wildlife habitat conservation
- Coordination with adjacent land owners
- Use of existing roads, unless use of such roads would cause or aggravate an erosion problem or threaten water quality and associated beneficial uses
- Opportunities to use temporary roads that are obliterated after project completion

These practices would also be implemented under the proposed HCP. We also note that as trust land managers, DNRC has financial incentives to build the minimum number of roads required to conduct current and near-term management. Road building costs are included in the minimum bid price for timber sales. Constructing more roads than needed would increase the project development costs for potential bidders and lower the market value of the logs. The result would be less revenue for the trusts. Roads are a capital investment; once built, they have monitoring and maintenance costs, which is another financial incentive to build the minimum amount of roads needed.

On pages 2-79 through 2-89 in Draft HCP Section 2.2.3.2 (Sediment Delivery Reduction Conservation Strategy), DNRC describes the numerous Forest Management ARMs (ARMs 36.11.421 through 427), Montana Forestry BMPs, and the SMZ Law implemented on trust lands to reduce the effects of roads on aquatic species. Draft HCP Section 2.2.3.3 (Fish Connectivity Conservation Strategy), describes DNRC's Fish Passage Assessment Project, which involves the inventory and analysis of all road-stream crossings to identify where native fisheries connectivity is an issue on its trust lands so that culverts can be replaced.

To reiterate the points made in the HCP, when roads are required, DNRC implements the existing forest management practices (ARM 36.11.421), which are designed to minimize impacts that roads may cause on aquatic systems. These measures include:

1. Prohibiting road construction in SMZs, except for stream crossings
2. Closing most forest roads to public motorized use
3. Using temporary roads, which are reclaimed after project completion
4. Replacing culverts for fish passage project-by-project in accordance with the Montana Stream Protection Act
5. Completing road and stream crossing inventories to assess the potential for sediment delivery as part of timber sale planning
6. Implementing BMPs to minimize sediment delivery from new and existing roads and stream crossings

Draft EIS Chapter 3 (Alternatives) describes the measures DNRC implements on trust lands to reduce the effects of roads on grizzly bears (see Section 3.4.1.1, Alternative 1 – No Action, Commitments in the Existing Rules and Regulations). These measures include:

1. Closing or abandoning roads that are non-essential to near-term management plans or where unrestricted access would cause excessive resource damage
2. Closing most forest roads to public motorized use
3. Retaining vegetation for visual screening along open roads in grizzly bear recovery zones

4. Closing roads seasonally (from public and DNRC use) in the Stillwater and Swan River State Forests
5. Inspecting road closures annually on blocked lands and every 5 years on scattered parcels in grizzly bear recovery zones, and repairing road closures as time and budgets allow
6. Implementing "quiet areas" (management/rest approach) for bears in the Swan River State Forest
7. Maintaining grizzly bear security core in the Stillwater State Forest

Proposed New Measures for Minimizing the Effects of Roads

For the HCP fish species, the proposed HCP incorporates or improves upon the measures described above and includes additional measures to further minimize the effects of roads on those species. These measures include:

- Implementing minimization measures 1 through 3 described above for aquatic species
- Implementing a comprehensive process for inventorying and addressing road and stream crossing sediment delivery problem sites, and implementing corrective actions in a shorter timeframe than under current practices
- Providing connectivity at stream crossings supporting HCP fish species in a shorter timeframe than under current practices
- Requiring involvement of a water resource professional for road building and maintenance that could affect HCP fish species as defined in commitment AQ-SD3 item (1)
- Relocating roads away from HCP fish-bearing streams

For grizzly bears, the proposed HCP largely improves upon the measures described above and includes additional measures to further minimize the effects of roads on that species. These measures include:

- Implementing minimization measures 1 through 3 for grizzly bears described above
- Focusing road minimization on open roads, which are deemed to have the greatest effect on bears, by:
    - Expanding restrictions on road use by DNRC and/or the public on blocked lands as reflected in the transportation plans
    - Evaluating open road segments on scattered parcels in grizzly bear recovery zones (and non-recovery occupied habitat [NROH] in the CYE) in the first 5 years of HCP implementation for opportunities to further restrict access
    - Committing to no net increase in open roads on scattered lands in recovery zones at the administrative unit level
- Inspecting road closures annually in grizzly bear recovery zones (not just blocked lands) and <u>making repairs in the same year</u>
- Installing bear presence signs on main roads into the Swan River and Stillwater State Forests
- Implementing management restrictions within 0.6 mile of an occupied grizzly bear den
- Implementing management restrictions in potential denning habitat areas (> 45 percent slope, > 6,300 feet elevation)

- Expanding "quiet areas" (management/rest approach) for grizzly bears into the Stillwater State Forest and across all scattered lands in recovery zones

The Draft EIS presents an analysis of the anticipated effects of roads on the HCP species in Section 4.8.4.2 (Fish and Fish Habitat – Environmental Consequences – Direct and Indirect Effects), subsection Sediment Production and Delivery to Streams (pages 4-220 through 4-233) and subsection Connectivity (pages 4-255 through 4-259), and in Section 4.9.3.2 (Grizzly Bears – Environmental Consequences), subsection Road-related Effects (pages 4-285 through 4-297) and subsection Risks of Bear-human Conflicts (pages 4-299 through 4-302). The HCP would provide more protection for the HCP species than the no-action alternative with regard to minimizing roads. The monitoring and adaptive management program outlined in Draft HCP Chapter 4 (Monitoring and Adaptive Management) is structured such that the USFWS can monitor DNRC's road commitments and initiate management actions and responses if the commitments are not adequately minimizing the effects of roads.

2.8.1.3 Increased Motorized Access

Some comments referred to a ten-fold increase in motorized use of roads. While a ten-fold increase in motorized public access is mentioned on Draft EIS page 4-294, that increase is specific to the Stillwater State Forest; it is not program-wide. The ten-fold increase (6.4 miles to 54 miles) would occur where roads currently closed to motorized public access would be open, but seasonal restrictions would apply. The seasonal restrictions (29.8 miles closed in spring and 24.2 miles closed in spring and fall) would minimize impacts to grizzly bears by providing secure access to important seasonal habitats. Additionally, seasonal closures would benefit the HCP fish species by limiting use of road surfaces and potential damage to road drainage features, thereby reducing risk of sediment delivery to streams.

2.8.2 Responses to Individual Comments

Letter 9, comment 60: The HCP road mileage for Alternative 2 of 4,032.5 miles, and the road density of 4.7 miles per square mile is the same as that for Alternative 4, the Increased Management Flexibility Alternative. This suggests little reduction in roads or modification from current practices to protect the HCP aquatic species with the preferred alternatives.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above).

Letter 13, comment 129: I oppose the planned creation of 1,300 to 1,400 miles of new roads, without a requirement to close many existing roads. Roads open to motorized use could increase ten-fold. Such roads always spread noxious weeds, which harm Montana farmers, and deprive animals of useful vegetation and forage. More roads fragment habitat for many species which need space to survive.

Response: The USFWS has noted the commenter's opposition to the proposed new roads. Please refer to the general responses to comments concerning proposed road building under the HCP (above).

Letter MEIC, comment 137: Decrease roads. Building new roads without closing old ones will increase fragmentation of critical habitat and lead to a 10-fold increase in motorized access.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above).

Letter 22, comment 147: Increased roads and motorized use and all the other impacts associated with logging are unacceptable in light of the habitat requirements of these sensitive species.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above) and the general responses to comments regarding timber harvest and alternative markets on state trust lands (Section 2.4.1.1).

Letter 25, comment 155: There has to be a sustainable way to harvest our trees besides building more roads into these areas. Please figure out another way to do this.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above).

Letter 26, comment 156: I oppose creation of 1,300 to 1,400 miles of new roads. It is super important to preserve habitat and roadless lands if we are to maintain our Montana way of life. The invasion of habitat in Colorado and Idaho are so rampant that the hunting season is divided into small 3- or 4-day seasons for which citizens must apply. That would not be acceptable in Montana, and your proposals seem to be heading in that direction.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above).

Letter 26, comment 157: We need to preserve habitat for grizzlies, lynx, and other imperiled species. By increasing timber harvest and creating so many miles of new roads, we are definitely going to infringe on important habitat for those and other species.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above) and the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1).

Letter 36, comment 181: How can our state officials claim to be protecting rare wildlife or have its best interest in mind by destroying the habitat it needs to survive? Even though Montana was charged with developing an HCP to protect habitat for lynx, grizzly bears, and three species of imperiled trout on State lands, the draft plan actually increases the timber harvest on our state forests. Even though road construction is one of the biggest threats to these rare species, the state's HCP calls for up to 1,400 miles of new roads on state lands--that's a 50% increase.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above). Regarding the commenter's statement that the HCP would destroy habitat, please refer to the response to Letter 69, comment 225, below.

Letter 45, comment 197: This is no HCP because all DEIS alternatives, including the "conservation alternative," increase miles of roads on DNRC lands, increase motorized access, and decrease fish and wildlife habitat and its security. Moreover, the preferred alternative would build another 1,300 to 1,400 miles of road without requiring any existing roads to be closed. Roads open to motorized use would increase 10-fold.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above) and general responses to comments concerning the EIS alternatives (Section 2.5).

Letter 49, comment 208: I believe that a plan that increases roads and motorized access at the expense of habitat for animals such as grizzly bear, lynx, and bull trout, is not a viable plan.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above).

Letter 50, comment 209: All of the proposed alternatives are damaging to the habitat and environment of these lands. They all increase motorized access and road miles across State lands. I do not see a 10-fold increase in roads open to motorized vehicular access as a "conservation alternative." There are already too many roads cutting through these forests, and adding 1,400 miles more will only further fragment the habitat for many wildlife dependent on these lands.

Response: Contrary to the commenter's statement, the USFWS expects that the proposed HCP would benefit the HCP species. Regarding the commenter's concerns about roads, please refer to the general responses to comments concerning proposed road building under the HCP (above).

Letter 57, comment 216: The proposed logging and road densities in particular are too high and seem to disregard the intrinsic and recreational value of Montana's wildlife.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above), the general responses to comments regarding sustainable yield (Section 2.4.1.2), and the general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 68, comment 221: I feel very strongly in opposition to the proposed increasing of more roads, threatening habitat of grizzly bears, lynx, bull trout on state lands. The timber does not need to be harvested.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above), the general responses to comments regarding timber harvest and alternative markets on state trust lands (Section 2.4.1.1), and the general responses to comments regarding the compatibility of revenue generation over species conservation (Section 2.4.1.3).

Letter 68, comment 224: No to increasing roads, increasing timber harvest.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above) and the general responses to comments regarding sustainable yield (Section 2.4.1.2).

Letter 69, comment 225: I understand the state mandate to generate timber funds from school trust land. I am absolutely in favor of commercial timber harvesting for profit, for fuels reduction, and for habitat improvement. I do not agree, however, with your proposed plans to increase road use and build over 1,300 miles of new roads in critical endangered species habitat. Grizzly bears and Canada lynx need roadless, core habitat in order to survive. Recreating habitat is nearly impossible, not to mention costly. We need to protect the fragments of valuable grizzly and lynx habitat that remain in Montana's trust. We need to begin closing unnecessary roads, not building new ones.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above). We point out that in the context of this HCP, we are not proposing the "re-creation of habitat," nor is it warranted. Timber management is considered a temporary impact on habitat. Under the HCP, DNRC would manage a mosaic of habitat types across the HCP project area such that the habitat needs of the species would be met throughout the Permit term.

Letter 71, comment 229: Why build more roads in sensitive areas where there are already too many? Please rethink this matter and let the wildlife enjoy their habitats.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above).

Letter 73, comment 239: Less road building, not more.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above).

Letter 81, comment 257: The DNRC has listed three alternatives which none are satisfactory to protect wildlife since you are planning to increase roads which would increase motorized access for the next 50 years.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above) and general responses to comments concerning the EIS alternatives (above).

Letter 87, comment 312: By DNRC's own analysis, the proposed alternatives, including its "Increased Conservation" alternative, will increase road densities to levels which will most likely result in deaths of grizzly bears. This is unacceptable. Any further road-building on DNRC lands should be preceded by decommissioning, removing, and restoring at a minimum the same amount of roads on a permanent basis.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above), take minimization and mitigation (Section 2.3.1.3), and the jeopardy standard (Section 2.3.1.4).

Letter 87, comment 313: DNRC's commitment is simply to not exceed the recommended road densities on any lands not owned by DNRC. They are requesting an exemption for all of their lands. This is no conservation strategy at all (Ch. 7, page 13, lines 15-19 and 31-38).

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above).

Letter 88, comment 315: I am a passionate advocate for keeping Montana's forests wild and providing habitat for big game and other species that make Montana Montana. The current proposals do not support this goal. I am realistic, however, and think that DNRC should find a compromise position, but it should have more to support conservation than any of the current alternatives or the proposed DNRC route.

Response: Please refer to the general responses to comments concerning the adequacy of the HCP (Section 2.3.1.1) and to the response to Letter 36, comment 183 (Section 2.5).

Letter 94, comment 360: We believe the proposal falls short of what the agency could do for fish and wildlife conservation while still accommodating its obligations to generate revenue for the trust beneficiaries.

Response: Please refer to the general responses to comments concerning the adequacy of the HCP (Section 2.3.1.1) and to the response to Letter 36, comment 183 (Section 2.5).

Letter 105, comment 426: There should be no net increase in roads.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above).

Letter 109, comment 488: It is well-documented in scientific literature that roads have adverse impacts on wildlife, fish habitat, and water quality. Currently, the ARM standard is to "minimize number of road miles." However, current DNRC timber sales and this HCP increase rather "minimize" road densities. All HCP alternatives construct between 1,322 and 1,408 miles of new roads and an unquantified amount of temporary roads in addition to the already high road densities on school trust lands.

Response: We agree that the effects of roads on wildlife, fish, and water quality are well documented in the scientific literature. Regarding the fact that the proposed HCP would construct approximately 1,400 miles of road, please refer to the general responses to comments concerning proposed road building under the HCP (above). We also note that the estimate of road miles on scattered parcels under the HCP alternatives includes temporary roads. We have updated the footnotes in Tables 4.4-6 and 4.4-7 in the Final EIS to clarify that the analysis includes temporary roads. We also note that the effects of roads on the HCP species are adequately described in the Draft EIS. For aquatic species, refer to Draft EIS pages 4-165 through 4-169, 4-183 through 4-186, 4-220 through 4-226, 4-228 through 4-233, and 4-255 through 4-259. For grizzly bears, refer to Draft EIS pages 4-272, 4-285 through 4-297, and 4-299 through 4-302.

Letter 109, comment 489: The HCP must cap total road densities.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above).

Letter 110, comment 509: The HCP excessively increases road and logging densities on over 500,000 acres of state land in Montana.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above) and general responses to comments regarding sustainable yield (Section 2.4.1.2).

Letter 119, comment 563: The HCP is written as if DNRC's highest priority is achieving its annual timber target, instead of reflecting is true mandate to first ensure that its operations will maintain sufficient habitat for the HCP species, other wildlife, and will provide for healthy and diverse forests overall. An effective

HCP would significantly reduce new road construction, especially in areas important to grizzly bears and the aquatic species. An effective HCP should contain standards to ensure open and total road densities are compatible with maintaining secure, high-quality habitat for the HCP species.

Response: Please refer to the general responses to comments regarding the compatibility of revenue generation and conservation (Section 2.4.1.3) and proposed road building under the HCP (above).

Letter 119, comment 570: We are concerned about the significant increase in miles of roads on trust lands in all alternatives (~1300-1400 miles)—a 50% increase over existing conditions (DEIS, p. 4-65)—because of the potential harm to all five HCP species due to roads. Has DNRC considered closing and obliterating current roads to reduce the impacts of any new roads? At least within the grizzly bear recovery zone and areas that may affect bull trout and the other HCP fish species, DNRC should analyze a "no net increase" regulation for its transportation system. Details provided in the body of the DEIS give even more cause for concern. Total road densities would increase from 3.1 to 4.7 mi/mi^2 within the HCP project area overall, and from 3.6 to 6.6 mi/mi^2 within all scattered parcels. These road densities are among the highest recorded on any public lands in Montana. Elk habitat effectiveness declines to 80% at 0.5 mi/mi^2, and to 60% at 1.0 mi/mi^2, for example (see Gallatin National Forest Land Management Plan, 1982). HCP species are clearly more vulnerable to roads than elk.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above).

Letter 125, comment 630: No increased roads and logging in Montana.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above) and the general responses to comments regarding sustainable yield (Section 2.4.1.2).

Letter 152, comment 659: While it is well known that road construction is one of the biggest threats to these rare species, your HCP calls for up to 1,400 miles of new roads on state lands, which represents a 50% increase. The proposal to build more roads when it is known that they are harmful for imperiled species is appalling.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above).

Letter 157, comment 662: No more road construction in Montana wilderness. We need to protect what little area is left for lynx and bears and other native animals of Montana.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above). Additionally, we point out that the HCP project area is not located within any designated wilderness areas.

Letter 160, comment 663: Please do not put even more roads into areas that we don't have them. We have enough.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above).

Letter 162, comment 666: Even though road construction is one of the biggest threats to these rare species, the state's HCP calls for up to 1,400 miles of new roads on state lands. That's a 50% increase. These roads are not necessary, and are hardly helpful, to the financial viability of Montana.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above).

Letter 163, comment 671: We don't need more roads. We need to more protection for irreplaceable natural resources, such as our precious wildlife.

Response: Please refer to the general responses to comments concerning proposed road building under the HCP (above).

Letter 163, comment 671: We don't need more roads. We need to more protection for irreplaceable natural resources, such as our precious wildlife.

Response: The USFWS has noted the commenter's opposition to the proposed new roads. Please refer to the general responses to comments concerning proposed road building under the HCP (above) and the general responses to comments concerning adequacy of the HCP (Section 2.3.1.1).

2.9 Plants, Weeds, and Wetlands

Letter 2, comment 14: Why wouldn't Spalding's campion and water howellia that occur in the HCP project area be addressed in this HCP?

Response: We assume that by "addressed" the commenter means "covered" by the Permit. The take prohibition for federally listed plants under the ESA is more limited than for listed animals. Section 9(a)(2)(B) prohibits the removal of listed plants or the malicious damage of such plants on areas under federal jurisdiction, or the destruction of listed plants on non-federal lands in violation of state law or regulation. Thus, the ESA does not prohibit the incidental take of plants on private lands *unless* the take or the action resulting in the take is a violation of state law (USFWS and NMFS 1996, HCP Handbook page 3-17). However, the Section 7(a)(2) prohibition against jeopardy applies to plant as well as wildlife species, and if the Section 7 consultation on a Section 10 permit concludes that issuance of the permit for wildlife species would jeopardize the existence of a listed plant species, the permit will not be issued. To avoid this outcome, under the HCP, DNRC would continue to address listed plants at the project level through the MEPA process, as described on Draft EIS page 4-135. Given the coordination of DNRC and the USFWS throughout the HCP development process, we do not anticipate a jeopardy determination for listed plants. However, that final analysis will be documented in our ESA Section 7 biological opinion.

Letter 8, comment 35: The EIS states that "Forest management activities can alter habitats essential to species listed under the ESA," but there is no mention of *Howellia aquatilis*, a plant listed under the Federal ESA and occurring on some state lands in the Swan Valley. Timber harvest and road construction will have an effect on Howellia habitat, and these effects are likely to be negative. Considering only vertebrate species for the HCP is unacceptable. We are aware that plants can be taken on non-federal lands. However, State lands in the Swan Valley are embedded in federal lands and private lands that are likely to become federal lands in the near future. Actions on state lands could negatively affect Howellia populations on federal lands. This possibility needs to be addressed in the HCP.

Response: Project effects on threatened plants, including *Howellia aquatilis*, are discussed on Draft EIS pages 4-135 through 4-142. The analysis acknowledges that timber harvest and associated road construction can affect plant species of concern. The analysis also describes the existing rules that apply to proposed timber sales for protecting sensitive plants and animals (primarily ARMs 36.11.428 and 36.11.436). The process DNRC follows to avoid, minimize, and mitigate impacts on plant species of concern is also described on Draft EIS pages 4-135 through 4-142. Regarding actions on state lands affecting plant populations on federal lands, please refer to the response to Letter 8, comment 36, below. We note that Final EIS Section 4.7 (Plant Species of Concern, Noxious Weeds, and Wetlands) has been revised to clarify the occurrence of federally listed plants in the HCP project area and describe the anticipated effects on known populations of listed plants.

Letter 8, comment 36: Chapter 4 of the EIS states "DNRC manages for threatened and endangered plant species under ARM 36.11.428 and for sensitive plant species under ARM 36.11.436. Both of these rules

direct DNRC to give consideration to these species during project design, conduct surveys if needed to determine specific locations of plant SOC populations, and develop mitigation measures designed to avoid or minimize risk to populations present in areas where management is planned. ARM 36.11.428 also gives DNRC the discretion to participate in interagency working groups established to manage the recovery effort of listed species and requires DNRC to report sightings of listed species to respective working groups or the MNHP." Although these rules may reduce the Howellia habitat degradation, they do not account for actions on state lands that may adversely affect threatened plants on adjacent federal lands.

Response: DNRC's rules do account for actions on state lands that may adversely affect threatened plants on adjacent lands. When DNRC proposes a timber sale, it examines a broad project area encompassing all forested stands to be considered for harvest. While Draft EIS page 4-135 states that DNRC reviews information on plant populations within the proposed harvest area, DNRC actually reviews information for the entire project area including a 1-mile buffer surrounding the project area, which is the extent of information provided through the Montana Natural Heritage Program (MNHP) database. This has been clarified in the Final EIS. If populations are located on adjacent lands, DNRC considers the location of the population, timing of harvest, and harvest method to determine whether adverse effects are likely. If adverse effects are determined to be likely, measures would be developed to avoid or minimize potential impacts resulting from harvest activities.

Letter 8, comment 37: Two studies have examined the possibility for degradation of Howellia by forest management activities (Shapley, M. and P. Lesica. 1997. *Howellia aquatilis* (water howellia) ponds of the Swan Valley: conceptual hydrologic models and ecological implications. Report to the USFWS, Denver, CO; Reeves, D.M. 2001. Hydrologic controls on the survival of water howellia (*Howellia aquatilis*) and implications for land management, Swan Valley. M.S. Thesis, University of Montana, Missoula) but neither was referenced in the EIS, suggesting that protecting this Federally listed species in the Swan Valley was not taken seriously.

Response: The USFWS will consider these two documents, as well as other relevant publications, in its biological opinion, which will include an analysis of the likelihood of HCP implementation to jeopardize the continued existence of any listed plants in the HCP project area. Please refer to the response to Letter 8, comment 36, above, regarding the measures DNRC takes to minimize effects on sensitive plants. We note that Final EIS Section 4.7 (Plant Species of Concern, Noxious Weeds, and Wetlands) has been revised to clarify the occurrence of federally listed plants in the HCP project area and describe the anticipated effects on known populations of listed plants.

Letter 8, comment 38: The Federal ESA states: "Except as provided in sections 6(g)(2) and 10 of this Act, with respect to any endangered species of plants listed pursuant to section 4 of this Act, it is unlawful for any person subject to the jurisdiction of the United States to remove and reduce to possession any such species from areas under Federal jurisdiction; maliciously damage or destroy any such species on any such area; or remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any law or regulation of any state or in the course of any violation of a state criminal trespass law." MNPS believes that the Montana Forested Trust Lands HCP should more specifically address management for *Howellia aquatilis* through analysis of activities that could harm populations and by outlining practices designed to protect this threatened species.

Response: Please refer to the responses to Letter 2, comment 14 (above) and Letter 8, comment 36 (above).

Letter 9, comment 86: While AQ-RM1 in the HCP would extend SMZs to include adjacent wetlands (Volume II, page 2-73), it is our understanding that wetlands must fall within or touch the boundary of the SMZ to be given SMZ protection. If the wetland delineation boundary is near but does not touch the SMZ boundary, it is our understanding that no protection is given, and wetlands may be adversely impacted. This should be clarified.

Response: Under the existing Forest Management ARMs (ARM 36.11.426), DNRC establishes wetland management zones (WMZs) on both adjacent wetlands included within SMZs and isolated wetlands not associated with SMZs. For isolated wetlands greater than 0.25 acre, a WMZ boundary is extended and delineated 50 feet from the edge of the wetland. For isolated wetlands smaller than 0.25 acre, the WMZ includes only the wetland itself. The criteria used to identify wetlands are based on plant species composition, soil characteristics, and depth of the water table. Please refer to subsection Regulatory Framework inDraft EIS Section 4.7.3.1 (Wetlands – Affected Environment) for information regarding measures DNRC takes to protect wetlands and comply with Section 404 of the Clean Water Act.

Letter 9, comment 87: The DEIS states that construction of roads in wetlands is avoided (page 4-149), and operations of ground-based equipment in wetlands are limited to periods of low soil moisture, snow, or frozen soil, however, we are concerned that the allowance of harvest of 50% of the large trees in SMZs may result in adverse impacts to wetlands in the SMZ. We recommend that timber harvest, road construction, or operation of heavy equipment in wetland areas be avoided, and that the HCP clearly prohibit ground-based equipment operation in wetlands. We also recommend that a commitment be provided to review timber harvest units in the field to identify the presence of wetlands, and to identify wetland locations on the Sale Area Map, and to flag wetlands on the ground so that timber contractors will be able to avoid them.

Response: The proposed HCP provides protection for both adjacent wetlands, which are included in SMZs, and isolated wetlands not associated with SMZs. The proposed HCP incorporates both the existing Forest Management ARMs and the SMZ Law. Under the SMZ Law, new road construction is not allowed within an SMZ, including that portion of the SMZ extended to include an adjacent wetland, unless it is necessary to cross a wetland or stream. Construction of stream crossings on DNRC-administered lands is subject to state regulations under the Montana Stream Protection Act (124 Permit) administered by MFWP. In addition, these activities may be subject to federal regulations under Section 404 of the Clean Water Act. In such cases, proposed road construction activities would be subject to requirements and restrictions specified in permits administered by the U.S. Army Corps of Engineers and EPA.

The existing Forest Management ARMs require DNRC to avoid the use of existing roads and the construction of roads in wetlands and WMZs. These rules also require DNRC to only use existing roads or construct new roads in a WMZ if potential impacts to water quality are adequately mitigated and where wetland functions are maintained. Timber harvest and equipment operations are limited to low-impact systems that do not cause excessive compaction, displacement, or erosion of the soil.

The existing Forest Management ARMs require DNRC to delineate a WMZ when forest management activities are proposed within or adjacent to an isolated wetland, as well as a wetland associated with an SMZ. Both types of wetlands are normally identified and delineated by a DNRC water resource specialist during field reviews. Under the proposed HCP, a DNRC water resource specialist would review all substantial road and timber harvest activities (see AQ-SD3-1 and AQ-SD4-1 for specific criteria). Under these commitments the water resource specialist would make recommendations for integration into the development of design standards, contract specifications, site-specific BMPs, and other mitigation measures designed to protect wetlands. The USFWS and DNRC believe the measures described above and applied through DNRC's Forest Management ARMs and the SMZ Law are adequate to protect wetlands in proposed timber sales.

Letter 9, comment 90: We are pleased that the DEIS analyzes and discusses noxious weed issues (pages 4-142 to 4-148), including weed control and mitigation measures. We encourage tracking of weed infestations, control actions, and effectiveness of control actions in a central weed database, and are pleased that DNRC documents noxious weed occurrences on trust lands and records information in a central database.

Response: Centralized tracking of weed infestations and treatments would be integrated into DNRC's road management and grazing evaluation databases to facilitate implementation and effectiveness monitoring of our weed control methods and procedures.

Letter 9, comment 91: It is stated that DNRC regularly conducts weed spraying and herbicide applications, typically on road rights-of-way, skid trails, and log landings. While we support use of weed control chemicals where needed, we encourage prioritization of management techniques that focus on non-chemical treatments first, with reliance on chemicals being the last resort, since weed control chemicals can be toxic and have the potential to be transported to surface or ground water following application. Herbicide drift into streams and wetlands could adversely affect aquatic life and wetland functions such as food chain support and habitat for wetland species. The Montana Water Quality Standards include a general narrative standard requiring surface waters to be free from substances that create concentrations which are toxic or harmful to aquatic life.

Response: DNRC's primary weed control methods include limiting site disturbance, mitigating weed introduction by washing equipment and machinery prior to transportation to the site, and pre-project weed inventory and avoidance. If weed infestation is observed through post-project monitoring, chemical treatments are then considered. The USFWS and DNRC acknowledge the potential impacts of chemical treatments to aquatic systems if not properly mitigated. It should be noted that herbicide application is not a covered activity under the HCP. DNRC applies all pesticides and herbicides in accordance with applicable regulations of the EPA and laws of the State of Montana (Draft HCP page 1-20, lines 25 through 27). The application of herbicides and pesticides is addressed through ESA Section 7 consultations between the USFWS and EPA. Regarding the Montana water quality standards requiring waters to be free of toxic substances, please refer to the response to Letter 9, comment 93 (below).

Letter 9, comment 92: Weed prevention is the most cost-effective way to manage and control weeds by avoiding new infestations and spread of weeds, and thus, avoiding the need for subsequent weed treatments. EPA recommends that no herbicide spraying occur in streams and wetlands or other aquatic areas (seeps, springs, etc.). Herbicides should be applied at the lowest rate effective in meeting weed control objectives and according to guidelines for protecting public health and the environment. Please also note that there may be additional pesticide use limitations that set forth geographically specific requirements for the protection of endangered or threatened species and their designated critical habitat. This information can be found at http://www.epa.gov/espp/bulletins.htm.

Response: As stated in Draft HCP Chapter 1 (Introduction), the application of pesticides and herbicides is not an activity covered under the proposed HCP. Nevertheless, the USFWS and DNRC acknowledge that weed prevention is the most cost-effective way to manage and control weeds. DNRC embraces this idea by avoiding new infestations and spread of weeds for all forest management activities. Limiting site disturbance is also a primary method employed by DNRC to limit weed infestation. The herbicide application measures recommended within this comment are incorporated into all DNRC timber sale projects and weed treatment contracts. DNRC applies all pesticides and herbicides in accordance with applicable regulations of the EPA and applicable laws of the State of Montana (Draft HCP page 1-20, lines 25 through 27).

Letter 9, comment 93: We suggest that mitigation measures be used to reduce potential water quality and fisheries effects during herbicide spraying, such as (1) applicators apply herbicides according to the label; (2) streams and wetlands in any area to be sprayed be identified and flagged on the ground to assure that herbicide applicators are aware of and can avoid spraying in or near streams and wetlands (we commend use of 50-feet no-spray buffer zones adjacent to streams and wetlands); (3) applicators should take precautions during spraying (e.g., applying herbicide only after careful review of weather reports to ensure minimal likelihood of rainfall within 24 hours of spraying; (4) use treatment methods that target individual noxious weed plants in riparian and wetland areas (depending on the targeted weed species, manual control or hand pulling may be one of the best options for weed control within riparian/wetland areas or close to water); and (5) applicators should be certified and fully trained and equipped with appropriate personal protective equipment.

Response: Herbicide application is not an activity covered under the proposed HCP. However, it should be noted that all measures recommended within this comment are incorporated into DNRC weed treatment

contracts. Minimal riparian or wetland weed treatments are applied on DNRC lands, with most of these sites found at road-stream crossing locations. Provisions are typically placed in weed treatment contracts that explicitly outline specific treatments around these sensitive sites. These treatments can range from no-treatment buffers to requiring products specifically designed for use around aquatic ecosystems.

Letter 9, comment 94: We do not see much in the HCP in regard to use of chemicals (e.g., fertilizers, fire retardants, fuels, lubricants, etc.), other than use of herbicides for weed control. Chemical usage can affect water quality and fisheries. We believe DNRC's use of chemicals should be better addressed in the HCP. In addition, the monitoring and adaptive management program should allow for detection of chemicals used by DNRC in carrying out their management actions (i.e., water quality and biological impacts from chemical usage). Will any aquatic effects from chemical usage be monitored (i.e., pesticides, herbicides, fertilizers, fire retardants, fuels, lubricants, etc.)?

Response: Draft HCP Section 1.4.4.2 (Other Forest Management Activities) describes DNRC's use of fertilizers and herbicides under its forest management program. The use of these chemicals is also discussed in Draft EIS Section 4.6.2.1 (Water Resources – Environmental Consequences -- Introduction and Evaluation Criteria) and Section 4.7.2 (Noxious Weeds). However, under the proposed HCP, the use of pesticides, herbicides, fertilizers, and fire retardants are not covered activities, and the effects of DNRC's use of these chemicals were not analyzed in the Draft EIS.

Letter 45, comment 205: The negative impacts of logging, roads, and motorized access include weed infestation. For example, DNRC's recent Foothills Timber Sale has spread infestations of weeds, including thistle, mullien, spotted knapweed, orange hawkweed, and yellow hawkweed. These weeds have spread throughout the logging units, essentially rendering them worthless as wildlife habitat or as a pleasant place for people to hike or walk.

Response: The relationship between logging, roads, and motorized access on roads and the spread of noxious weeds is described on Draft EIS pages 4-145 through 4-148. The effects of noxious weeds on the displacement of native plant species are also discussed in this section. Noxious weeds have not been identified as a risk factor for any of the HCP species. Therefore, no additional measures to address the spread of noxious weeds were incorporated into the HCP beyond those already implemented by DNRC under ARMs 36.1.445 and 36.25.159 and MCA 7-22-2151. These measures are described on Draft EIS pages 4-142 and 4-143. Subsection Regulatory Framework in Final EIS Section 4.7.2.1 (Noxious Weeds – Affected Environment) has been revised to provide more information on the measures DNRC implements to curtail and prevent the spread of weeds and provides more information on post-project monitoring requirements for noxious weed spread.

Letter 90, comment 343: What effect will weeds have on habitat?

Response: We presume the commenter is concerned about the effects of weeds on the habitats of HCP species. Please refer to the response to Letter 45, comment 205, above.

Letter 103, comment 421: There is a glaring absence of meaningful rules and regulations to protect wetlands and aquatic resources in Montana (including state-owned lands). Every effort should be made to put in place setbacks, buffers, and other protective measures wherever aquatic resources occur.

Response: Please refer to the response to Letter 9, comment 86, above, concerning wetland protection. The substance of the HCP is a set of commitments aimed at protecting aquatic resources (lakes and streams) supporting HCP fish species in the HCP project area. The protective measures listed in the comment are included in the HCP aquatic conservation strategies. See commitments AQ-RM1, AQ-SD1 through SD5, AQ-GR1, AQ-FC1, and AQ-CW1 in Draft HCP Chapter 2 (Conservation Strategies).

Letter 109, comment 505: The DEIS does not correlate its analysis of noxious weeds with sensitive plant species. The proliferation of noxious weeds on roads and in cutting units has an effect on native plant species that is not analyzed in the DEIS.

Response: The Draft EIS acknowledges the relationship between sensitive plans and noxious weeds on page 4-139, lines 5 through 7, where it states: "New road miles may introduce noxious weeds into areas, thereby potentially increasing risk of adverse effects to plant SOC [species of concern] populations or habitat." The effects of noxious weeds on the displacement of native plant species are also discussed in this section. Because the HCP is a programmatic plan applied across a broad landscape, the Draft EIS also provided a programmatic analysis. As described on Draft EIS page 4-135, when DNRC implements a project, it conducts a plant SOC analysis through the MEPA process to identify and avoid impacts to any plant SOC populations in or adjacent to the project area.

Letter 109, comment 506: The DEIS assumes that DNRC's noxious weed program is working to curtail and prevent the spread of weeds on roads and in cutting units. This is not the case.

Response: The USFWS acknowledges that all landowners in Montana, both small and large, struggle with the introduction, containment, and/or spread of noxious weeds on their lands; DNRC is no different. Final EIS Section 4.7.2 (Noxious Weeds) has been revised to provide more information on the measures DNRC implements to curtail and prevent the spread of weeds. The Final EIS also provides more information on post-project monitoring requirements for noxious weed spread.

Letter 109, comment 507: The DEIS does not present a current condition or valid summary of wetlands on state lands in Montana. Instead it uses data from the SFLMP that is 14 years old.

Response: Please see the response to Letter 120, comment 618, below.

Letter 120, comment 618: The DEIS does not present a current summary of wetland conditions and locations on state lands in Montana, relying instead on 14-year-old data. The EIS should include updated wetland maps for all available parcels from the Montana Natural Heritage Program to implement best management practices that protect these critical water resources.

Response: The USFWS believes the Draft EIS adequately characterizes the types of wetlands found on state lands and the process DNRC uses to avoid, minimize, and mitigate its impacts on those resources (see Draft EIS Section 4.7.3.1, Wetlands – Affected Environment). Measures implemented to minimize impacts on wetlands are described on Draft EIS page 4-149, and the resulting effects are analyzed on pages 4-152 and 4-153. The Draft HCP and EIS are programmatic documents, meaning they describe a program implemented across a broad landscape. In that context, it is not reasonable or necessary to identify and map each wetland on state lands; therefore, the broadscale mapping mentioned in the comment is appropriate for this analysis. Identification of individual wetlands is conducted at the project level in accordance with the ARMs (36.11.426), and potential effects on wetlands are evaluated and mitigated during the MEPA analysis.

2.10 Transition Lands and DNRC's Acquisition of Former Plum Creek Lands

Letter 9, comment 115: There appears to be little protection provided by the transition lands strategy in the HCP. The DNRC may remove lands from the HCP project area through disposal or leasing solely at their discretion (Volume II, page 3-2). DNRC at its sole discretion can apply deed restrictions with enforceable terms or binding conservation measures as long as the value of the land is not reduced. It appears that economic interests and costs override conservation needs. We are concerned that transfer of state trust lands to other ownerships is likely to result in reduced habitat conservation, and this may result in adverse impacts to HCP species. We encourage DNRC and the USFWS to put a greater value on the habitat conservation use of state trust land, and to use conservation easements, deed restrictions, and similar mechanisms to protect aquatic and other habitat when state trust lands are transferred to other ownerships, even if the monetary value of the land may be reduced. We believe conservation and habitat values should receive greater consideration during land disposal and leasing, and conservation concerns be better balanced with economic concerns.

Response: Please refer to Draft EIS Section 4.9.5 (Effects of the Transition Lands Strategy) for a description of how the transition lands strategy offers protection to listed species. This section describes the process DNRC follows when it disposes of state trust lands. The disposition process is rigorous, values conservation as a plausible use of trust land, and includes limits on the type and amount of trust land that can be disposed under the HCP. There are several stages within the disposal process where the needs of listed species are addressed, including (1) through the MEPA analysis, (2) through addition of measures to a proposed disposal (such as a conservation easement or restrictive deeds) to limit potential effects on listed species, and (3) when the Land Board reviews and approves or disapproves the disposal. All of these measures occur for any disposal of any DNRC lands, regardless of whether an HCP program is in place. HCP project area parcels would also be subject to the provisions of HCP Chapter 3 (Transition Lands Strategy), which has been revised in the Final EIS to reflect the potential changes in DNRC's land base attributable to adding former Plum Creek lands, as well as forestlands from other ownerships (e.g., the USFS). Under the transition lands strategy, a 5 percent cap would allow 10,880 acres from 217,600 acres of habitats supporting NCDE and CYE grizzly bear recovery zones, CYE grizzly bear NROH, LMAs, and bull trout core habitat areas to be removed from the HCP project area. A 10/15 percent cap would apply to the remainder of the original baseline acres of the HCP project area. The 10 percent cap would remain in effect unless and until DNRC acquires large amounts of former Plum Creek lands, as well as forestlands from other ownerships, and adds at least 15,000 acres to the HCP project area. At that time, the cap would increase to 15 percent.

Letter 96, comment 389: The DEIS fails to evaluate the implications of the likely future acquisition by DNRC of land in the Swan Valley currently owned by Plum Creek. Rather than evaluate the effect of this potential acquisition on the HCP-covered species and incorporate these lands into the proposed mitigation plan, potential acquisition of Plum Creek lands is not specifically addressed in the DEIS at all. Instead, the DEIS discusses generally the "effects of adding lands to the HCP project area" as a changed circumstance. See DEIS, p. 4-341. The DEIS states that DNRC "would consider" adding newly acquired parcels to the HCP project area. See id. If the lands are added, DNRC would then apply the HCP management prescriptions in the new parcels. Because acquisition of Plum Creek lands in the Swan Valley is reasonably foreseeable, the DEIS may not defer analysis of the effects of the potential inclusion of those lands in the HCP project area.

Response: We note that the Draft EIS discusses the "effects of adding lands to the HCP project area" as an element of the transition lands strategy described in HCP Chapter 3, not as a changed circumstance as stated by the commenter. Regarding the commenter's concerns about the lack of analysis of the potential acquisition of Plum Creek lands, please refer to the response to Letter 120, comment 622, below.

Letter 109, comment 504: The DEIS does not acknowledge that Plum Creek no longer owns land in the Swan Valley. Nor does it contain any analysis of DNRC possibly acquiring Plum Creek lands in the Swan River State Forest checkerboard.

Response: Please refer to the response to Letter 120, comment 622, below.

Letter 119, comment 573: Also, entirely missing from this DEIS is any discussion of the reasonably foreseeable scenario that DNRC acquires the Plum Creek holdings in the Swan Valley. We understand this to be not only reasonably foreseeable, but in fact the most likely outcome of the Montana Legacy Project. For DNRC to be able to acquire and manage these lands under one consolidated ownership presents a tremendous new opportunity to maintain, restore and improve habitat security and quality for the HCP species and other wildlife in this area, while increasing revenues to the trust beneficiaries. While it may be premature to specifically plan for the management of these lands within this HCP, DNRC should at least discuss this in the DEIS as a likely scenario, and should not assume that termination of the Swan Valley will result in increased miles of open roads.

Response: Please refer to the response to Letter 120, comment 622, below. Regarding the portrayal of open roads in the Draft EIS, if the Swan Agreement is terminated, the USFWS and DNRC prudently chose to portray the worst-case scenario, which the document acknowledges may be less likely to happen. Since the

acquisition of the Plum Creek in-holdings in the Swan River State Forest by the state has not yet occurred, the agencies also prudently chose to evaluate the potential for an increase in roads considered "open" if parties other than DNRC acquired those lands.

Letter 120, comment 622: This HCP should also be applied to previously owned Plum Creek land that will be acquired by DNRC, such as the 26,000 acres south of Potomac Valley. The existing Plum Creek HCP covers 1.4 million acres, although 310,000 acres of this was purchased in 2008 through the Montana Legacy Project. Plum Creek's HCP is not as inclusive as DNRC's proposed HCP, and side-steps commitments to recovering native trout species. This take permit still applies to Plum Creek's recently sold lands, many of which will transfer to State DNRC ownership, including 26,000 acres south of the Potomac Valley (as authorized by the 2009 Montana Legislature). The DEIS does not acknowledge that Plum Creek no longer owns the land in the Swan Valley, nor does it contain any analysis of whether DNRC will acquire Plum Creek lands in the Swan River State Forest checkerboard. The Coalition recommends extending DNRC's HCP to all Forested State Trust Lands, and replacing the existing Plum Creek HCP on recently acquired Montana Legacy Project land.

Response: Final EIS Chapter 5 (Cumulative Effects) has been revised to reflect that TNC and the USFS now own many of the former Plum Creek lands in the Swan Valley. We agree that the State's potential acquisition of lands formerly owned by Plum Creek is reasonably foreseeable. However, there are several unknown factors surrounding the acquisition of these lands, including funding sources, timing of acquisition, and whether the Swan Agreement would continue to be in existence. Several commenters stated that the EIS and HCP should discuss DNRC's acquision of lands in the Swan Valley as a likely scenario. We point out that both the Draft EIS and HCP acknowledge the possibility that DNRC may acquire lands formerly owned by Plum Creek. Draft HCP pages 3-2 through 3-4 describe the process that would be used to add these lands to the HCP project area. Draft EIS pages 4-341 and 4-342 provide an analysis of the effects of adding lands to the HCP project area based on what is known at this time. Additionally, in Final HCP Chapter 3 (Transistion Lands Strategy), has been revised to provide DNRC additional flexibility in response to potential changes in its land base attributable to large acquisitions. The USFWS has informed DNRC of its support for adding lands formerly owned by Plum Creek to the HCP project area and Permit. Ultimately, the decision to add these lands to the HCP project area is DNRC's. If DNRC proposes the addition of lands to the HCP project area and Permit, the USFWS would work closely with DNRC to ensure that it can be done in an efficient manner.

Letters 128 and 129, comment 644: The HCP recognizes a state and federal need for action regarding certain species. Public expectations face some uncertainty in that species of concern may change in the coming years, actions to address that under the revised plan are not explained. Land status may also change as state lands are bought or sold, and as adjacent lands become wilderness or non-wilderness, and these events also effect the current HCP and any needed revisions.

Response: Draft HCP pages 6-12 and 6-13 describe what happens if a species experiences a change in status during the Permit term. HCP Chapter 3 (Transition Lands Strategy) acknowledges the changing ownership of the landscape in Montana. To the extent possible, this chapter describes the process that would be used to add or remove lands from the HCP project area as DNRC's land ownership changes.

Letter 163, comment 667: I live on the borders of forests that recently belonged to Plum Creek and will soon pass on to the State. Therefore, I am particularly concerned that the DNRC should make sure to protect this habitat, and all of its lands, to help protect our vital wildlife, rather than to help to destroy it as Plum Creek did.

Response: Please refer to the response to Letter 120, comment 622, above.

Letter 169, comment 689: HCP lands should come with deed restrictions consistent with the HCP if the lands are sold.

Response: While deed restrictions would not be required for lands disposed from the HCP project area, there are several provisions within the transition lands strategy where deed restrictions could be added to the lands. Specifically, this option would be available as described on Draft HCP page 3-2. Deed restrictions could also be added as a condition of disposal through the MEPA review process.

Letter 169, comment 694: By excluding important forested DNRC-managed lands within grizzly RZ/NROH from coverage, and thus increasing the likelihood that this habitat will ultimately be developed, the value of the conservation commitments on covered lands are critically diminished. Rescission of existing development leases within GBRZ/NROH is not mentioned as a potential conservation tool, but should be.

Response: Please refer to the response to Letter 169, comment 695, below.

Letter 169, comment 695: Lynx are habitat specialists, and their contiguous US range is much more limited than even that of grizzlies. Any significant loss of remaining mapped suitable or designated Lynx Critical Habitat threatens species recovery; the risk of development of these scarce habitats should be minimized by including them in the HCP, precluding development leasing as a term of the HCP, and applying conservative Transition Lands Strategy removal caps.

Response: While the USFWS seeks inclusion of as much important listed species habitat in proposed HCPs as possible, it is ultimately the applicants' decision on which lands to include and exclude from the HCP project area and ultimately coverage under the ESA. We believe DNRC's disposal process, which is described in Draft EIS Section 4.9.5.1 (Effects of the Transition Lands Strategy – Affected Environment), provides several avenues to address concerns about ESA-listed species and other species of concern. The USFWS and DNRC explored numerous ideas during development of the transition lands strategy. The strategy described in the Draft HCP includes provisions for conservation buyers to purchase properties outright and allows the USFWS to propose deed restrictions on key parcels. Further, important habitat areas would be subject to a 5 percent cap on removal from the HCP project area, and this threshold would not change during the Permit term, even if DNRC were to add more land to the HCP project area. In response to the comment, the Final HCP has been revised to subject LMAs to the 5 percent cap on lands removed from the HCP. We also note that in the Final HCP, the 10 percent cap proposed in the Draft HCP has been revised to a 10/15 percent cap to reflect the potential changes in DNRC's land base attributable to the Montana Working Forests Project. Lastly, we note that the proposed strategy would not preclude conservation organizations from negotiating conservation easements or development leases with potential purchasers.

Letter 169, comment 696: Even though development and residential/commercial leasing activities may not be specifically covered by the HCP, these activities materially and permanently affect habitat suitability for covered species. It is not clear whether leasing parcels for development automatically triggers their removal from the HCP. If not, we suggest that HCP lands developed or leased for development (including a 0.6 mile buffer around the boundaries of such leases and developments) be counted against the Transition Lands Strategy caps, as if they were removed from the HCP.

Response: If DNRC proposed leasing a parcel for development, the parcel would be removed from the HCP project area and those acres would be counted against any applicable caps on land disposal from the HCP project area. The USFWS and DNRC considered applying a buffer to disposed properties that would count against the cap, but determined it was not necessary or warranted. The primary reason for not counting such a buffer is that a leased or sold parcel typically encompasses a much greater area than is ultimately subject to development. The disposal of the entire parcel is counted against the cap, not just the area subject to development, which essentially accounts for at least a partial buffer in most instances.

Letter 169, comment 704: We recognize that development and residential/commercial leasing activities are not covered by the HCP. However, these activities permanently degrade habitat suitability for covered species. Therefore, we suggest that HCP lands developed or leased for development during the permit term (even though DNRC may retain fee ownership) be counted against the Transition Lands Strategy caps as if they were removed from the HCP. Calculated acreage should include a 0.6-mile buffer around the

boundaries of such leases and developments to account for the collateral impacts such development has on covered species habitat suitability.

Response: Please refer to the response to Letter 169, comment 696, above.

Letter 169, comment 705: Chapter 3.2 (Removal of Lands from the HCP, line 13+). Similar notice should be given to government or conservation agencies for proposed disposition of lands within Lynx Critical Habitat and within designated LMAs. The notification process should be explicitly stated here—who (besides the USFWS) will be notified and how? The annual scheduled meetings occur too infrequently given the 60-day response requirement.

Response: Under the Draft HCP, most of the acres in LMAs would have been subject to the 5 percent cap on removal of lands within grizzly bear recovery zones or bull trout core areas because they are also located within grizzly bear recovery zones. In response to the comment, in the Final HCP, DNRC has agreed to apply the 5 percent cap to all LMA lands. We note that in the Final HCP the 10 percent cap proposed in the Draft HCP has been revised to a 10/15 percent cap to reflect the potential changes in DNRC's land base attributable to the Montana Working Forests Project. Additionally, in response to the comment, the notification process has been clarified in Final HCP Chapter 3 (Transition Lands Strategy). This clarification states that DNRC will notify interested parties of the proposed dispositions of lands from the HCP project area using established mailing lists for notifying interested parties of potential real estate activities. It also states that any interested party may request to be included on the mailing list, and notices will include information regarding potential land conservation opportunities as outlined by the HCP's transition lands strategy.

Letter 169, comment 706: Chapter 3.2 (line 31+). It is reasonable to expect any binding deed restriction will affect appraised land value. Stating that deed restrictions may be placed on disposition parcels unless they negatively affect land value, effectively precludes their use as a conservation tool or commitment.

Response: Deed restrictions do not necessarily affect appraised land value. For some buyers, deed restrictions that enhance the conservation value of the land or protect the natural features of that land (such as streams) may be an incentive to acquire the land. This point has been incorporated in subsection Effects of Removing Lands from the HCP Project Area in Final HCP Section 4.9.5.2 (Effects of the Transition Lands Strategy – Environmental Consequences).

Letter 167, comment 707: Chapter 3.2.1 (5 Percent Cap on Removal of Lands from the HCP). Lynx are habitat specialists; their Montana distribution is more limited, and populations likely smaller, than either grizzlies or bull trout. We strongly believe that the 5% disposition cap should, at minimum, be applied to lands within LMAs and, more logically, to HCP lands designated USFWS Lynx Critical Habitat.

Response: Please refer to the response to Letter 169, comment 705, above.

2.11 Socioeconomics

Letter 10, comment 123: Across America, rural economies are changing. Tourism, recreation, hunting, fishing, and the natural amenities that flow from healthy landscapes and sustainable wildlife populations are now powerful economic drivers in many rural areas. Hunting, angling, and wildlife viewing generate more than $1 billion annually in Montana with sportsmen and sportswomen outspending the cash receipts from wheat, the state's largest agricultural crop. The health of our public lands and our wildlife are significant factors to the value of our school trust lands.

Response: The purpose of the DNRC HCP process is to identify a workable forest management alternative within the HCP project area that offers an efficient, flexible solution to managing state trust lands for revenue generation while minimizing and mitigating for environmental impacts to ESA-listed species and other

natural resources. Draft EIS pages 4-397 through 4-404 show that the no-action and action alternatives would have similar effects on recreation use values. The USFWS believes that implementing an HCP on state trust lands would not have a negative effect on the economic drivers mentioned in the comment.

Letter 26, comment 158: Timber harvest will result in very little income. Look north to Canada and you see a flurry of beetle killed trees. From the information I've received, there is a glut of Canadian timber on the market with which the U.S. timber companies cannot compete. Let's conserve our timber and harvest at a very sustainable rate at a time when the market value is best for Montana.

Response: DNRC's forest management program is based on a sustainable, even flow of timber to provide stable income for trust beneficiaries. It is not designed to respond substantially to fluctuating market conditions. How DNRC should proceed under current or future market conditions is outside the scope of this EIS.

Letter 32, comment 174: With regard to the lynx management, the acreage included has increased from 28,538 to 72,318 for habitat and for forage from 11,125 to 22,252. What is the reduction in ASQ because of this change, and what will the dollar-cost be to the school trust fund for the next 50 years?

Response: As shown in Draft EIS Tables 4.9-20 and 4.9-21, the amount of total potential lynx habitat on the landscape for the LMAs and scattered parcels is the same for all alternatives. The alternatives do vary in the amount of acreage retained in a certain condition to provide habitat for lynx (see Table 4.9-20 for scattered lands and Table E4-9 for LMAs). As stated on Draft EIS page 4-327, lines 22 through 27, the annual sustainable yield calculated for each alternative demonstrated that DNRC could meet the lynx commitments while generating a sustainable yield and the associated annual revenue. The estimated revenue associated with each alternative is disclosed in Draft EIS Table 4.13-14. These values are updated in the Final EIS to reflect the lower annual sustainable yield for Alternative 2 due to modifications to the proposed HCP. The net decrease under Alternative 3 is attributed to wider riparian no-harvest buffers, retaining grizzly bear security core in the Stillwater State Forest, greater restrictions on springtime activities for grizzly bears, limits on road densities for grizzly bears, and requirements for retaining lynx denning habitat.

Letter 44, comment 195: Prepare supplemental documentation and develop a true conservation alternative that places as much emphasis on environmental trust responsibilities as revenue generation, and consider the constitutional guarantees of Montana citizens to a clean and healthy environment. DNRC's statewide plans and objectives should protect the natural resources, not the pocketbooks of an industry failing due to forces outside of the public's control.

Response: Both agencies believe that none of the alternatives proposed in the Draft EIS would diminish Montana's citizens' constitutional guarantees to a clean and healthy environment. Please also refer to the general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3). Regarding the need for an alternative with greater emphasis on species conservation, please refer to the general responses to comments concerning the EIS alternatives (Section 2.5). Also please note that, as described in the Final EIS, additional conservation measures were added to the proposed HCP (Alternative 2) for all the HCP species.

Letter 89, comment 316: My concern is that this plan commits the State of Montana to selling a lot of extra timber for almost no value. The market is low now, and is expected to be low for the next years, so the timber will not be worth as much now as it will when there is a reason for the economy to pick up again. Contrary to public spin, this economic crash is far from the bottom; the timber market will not even start improving for quite some time. Business as usual has failed us and should not be encouraged with public resources. The proposed timber sale increase at this time only locks us in a position of selling our valuable assets for pennies on the dollar, it creates very few jobs and does nothing to increase tax revenue. I suggest keeping the Annual Sustainable Yield in place, with just enough of an increase to manage the forest for health rather than managing it for the health of some timber company's profit margin. I believe that we would be

very glad that we waited a few years to increase the Annual Sustainable Yield when the market improves and we have more high-quality product to sell at a much better price.

Response: Please refer to the response to Letter 26, comment 158, above.

Letter 90, comment 346: Building 1,400 miles of new roads will create an economic drain for the trustees through construction and maintenance. What are the costs of 1,400 miles of new roads? Present market conditions are not favorable for timber prices. Does the DNRC really believe that the expenditures for roads benefit the trust?

Response: With or without an HCP, the state would continue to need roads to access timber stands for management and for the transport of wood products. That is why the amount of road miles built in the action alternatives is similar to the amount built under the no-action alternative. Road building is a "covered activity" that would be included in the Permit. DNRC's current philosophy regarding roads is to minimize the number of road miles built and maintained on the landscape. This philosophy would continue with or without an HCP. Therefore, the cost of road construction is an accepted, operational cost of forest management and remains relatively unchanged between alternatives.

Letter 106, comment 432: The economic analysis portion of the EIS is woefully inadequate. The economic analysis focuses primarily on the economic return generated from changes in the Sustained Yield projections of each alternative, which is only one side of the equation when analyzing the overall impact of the HCP. How many new Water Resource Specialists, Wildlife Biologists, mapping, field data gathering and technical support personnel are you anticipating needing to implement this HCP? The requirements for baseline studies, ongoing habitat and individual animal monitoring, follow up analysis and reporting are financially onerous! While all of this information and study is immensely helpful in managing our landscape, it comes at a very real and significant cost that must be considered. We suggest you discuss implementation costs with other HCP holders in the area.

Response: The Draft EIS analysis adequately demonstrates the measurable economic impacts of the no-action and action alternatives and how they relate to opportunities from increased harvest. Revenue streams related to DNRC's forest management program operations depend on market conditions and harvest schedules and are not predetermined by alternatives within the Draft EIS. Additional costs related to implementing the HCP were calculated and analyzed in the Draft EIS. Most of these costs within the forest management program would be internalized; that is, they would be covered by changes in time use and management efforts by existing program staff.

Letter 106, comment 434: The economic analysis does not include any significant analysis of increased management costs and increased project costs, such as fish passage structures, temporary road construction/obliteration, etc. Especially when specific time lines are established (such as 10 years to complete road inventories), it will be difficult if not impossible to meet these commitments while continuing the current project-level workload without significant additional staff and expertise. Nor does it take into account the potential for reduced stumpage due to increased and more restrictive contract requirements. Increased uncertainty for purchasers due to multiple situations that could require interruption of activities, limited operating periods, and uncertain sale volumes will result in reduced stumpage costs (compare DNRC stumpage rates to USFS stumpage rates for an indication of the impacts of restrictions, regulations, and uncertainty).

Response: The estimated costs of the proposed HCP are disclosed in Draft HCP, Chapter 8 (HCP Implementation). These costs generally represent additional DNRC staff hours necessary to implement the alternative management strategies. The effects of the various alternatives in terms of the number of acres available for timber harvest and the resulting net revenue are analyzed in Draft EIS Section 4.13 (Socioeconomics). DNRC acknowledges there are some extra requirements for purchasers implementing timber sales on HCP project area parcels; however, DNRC is not predicting a measurable reduction in stumpage rates due to implementation of HCP commitments. DNRC does not see the potential for activity

interruptions or uncertain sale volumes. Conversely, the regulatory assurances provided by an HCP would help *increase* certainty of a steady supply of timber from forested trust lands for the long term.

Letter 107, comment 465: The marginal income derived from these sales will not benefit Montana's timber industry nor aid suffering local economies.

Response: The USFWS notes the comment.

Letter 119, comment 592: The socioeconomic analysis in the DEIS is overly narrow and incomplete. If this DEIS is going to analyze the effects of its alternatives on forestry sector jobs and associated wages, it should also analyze the effects of all jobs and wages affected by its alternatives. Also, these effects should be quantified to help the public and decision makers understand the true economic costs and benefits of the various alternatives. Similarly, this DEIS should include "whole cost" accounting before reaching conclusions about net revenues from its alternatives. For example, the significant costs of new road construction, analyzing and administering timber sales, restoration and mitigation measures should be included in this analysis and carefully weighed against the projected timber revenue in a lumber market where prices are low and may persist that way for some time. Furthermore, these costs and benefits should be quantified to help the public and decision makers understand the true economic costs and benefits of the various alternatives.

Response: The Draft EIS adequately addresses the socioeconomic impacts of issuing the Permit and implementing the HCP. Indirect jobs shown in Draft EIS Table 4.13-14 represent jobs in the labor market that would be affected by the generation of more or fewer forestry sector jobs. Impacts to the labor market are measured this way in what is referred to as a "multiplier" effect. A multiplier effect does not affect all jobs and all wages in the economy, but it can trickle down from salaries and jobs in the direct line of work of a particular event and sector of the market to reach the supporting jobs and community jobs around the affected area. These indirect job and salary impacts are documented in Draft EIS Table 4.13-14. Economic costs are similar for each of the alternatives. With or without an HCP, DNRC would continue to operate where markets are available. Forest management under current operations requires road construction and administration of timber sales. Additionally, restoration work is already a common practice within the DNRC. These expenses are unique for each timber sale, but are generally an associated cost of selling timber, with or without an HCP. Further, DNRC does not anticipate a measurable reduction in stumpage rates due to HCP implementation.

Letters 128 and 129, comment 643: Local governments understand the impacts on local citizens and other users. For example, fencing lands to allow only limited seasonal grazing is very expensive, and may make grazing leases non-viable. These considerations are significant when looking at the multiple use nature of much of the landscape, regardless of ownership. A discussion of monitoring of and mitigation of these impacts is also desirable as this impacts the revenue from these lands significantly.

Response: The Draft EIS analyzes the effects of issuing a Permit (by the USFWS) and implementing an HCP on forested trust lands (by DNRC). The costs associated with implementing the HCP are described in Draft HCP Chapter 8 (HCP Implementation) and would be incurred by DNRC. The HCP commitments that apply to grazing licenses on forested trust lands do not include provisions for additional fencing. Potential effects of implementing the HCP on other programs are analyzed in Draft EIS Chapter 4 (Affected Environment and Environmental Consequences). For example, see the analysis of potential effects on recreation resources in Section 4.10 (Recreation).

Letter 162, comment 664: Although I recognize the need to be flexible in order to meet the needs of many parties, I believe that this plan is giving far too much weight to an already subsidized minority business interest, and will cost far too much in the future that it is worth.

Response: The comment is noted.

2.12 Forest Vegetation

Letter 9, comment 63: There is often a relationship between higher road density and increased forest use and increased human-caused fire occurrences. Reduction in road density, therefore, may also reduce risks of human-caused fires, which could be important in an area with high fuels/fire risk and/or wildland urban interface issues. In addition, lower road densities are also often associated with improved wildlife habitat and security, and would likely benefit the threatened grizzly bear and Canada lynx.

Response: The relationship between road densities and human-caused fire occurrences is disclosed on Draft EIS page 4-42. This is also disclosed in the analysis of potential effects of the HCP on HCP species in Draft EIS Chapter 4 (Affected Environment and Environmental Consequences). Regarding the commenter's desire for lower road densities, please refer to the general responses to comments concerning proposed road building under the HCP (Section 2.8).

Letter 9, comment 118: We note that private lands have often not been managed for the late-seral or old-growth component, so public lands may need to contribute more to the late-seral component to compensate for the loss of this component on private land ownership within an ecoregion. We recommend that vegetation succession regimes (early, mid, late-seral) relative to historical ranges at the broad landscape scale be considered more in the development of the HCP.

Response: The USFWS provided technical support to the DNRC in the context of their purpose and need, agency mission, rules, and what meets the habitat needs of the HCP species. The Forest Management ARMs for both blocked and scattered state lands (ARMs 36.11.407 and 36.11.416, respectively) state that DNRC may not necessarily compensate for conditions made rare on adjacent lands, except as they coincide with department objectives. The USFWS believes DNRC already addresses vegetation succession regimes relative to historical ranges of the HCP species through its coarse-filter approach to promoting biodiversity on state trust lands. Please refer to Draft EIS Section 2.3.1.1 (State Forest Land Management Plan), for additional information on the coarse-filter approach and the SFLMP. Additionally, historical ranges of the HCP species were used to support several of the commitments contained in the HCP (see commitment LY-LM1 on Draft HCP page 2-52 and the rationale for commitment AQ-RM1 on Draft HCP page 2-76).

Letter 25, comment 153: What about the pine bark beetle that is hatching twice a year now?

Response: We assume that the commenter is expressing concern about the effect of mountain pine beetles on forested state trust lands. We agree the mountain pine beetle is having a significant, though not unprecedented, impact on Montana's forests and under the no-action or any of the HCP alternatives will continue to affect Montana's forests into the future. The Final EIS includes a discussion of effects of and trends in climate change, including mountain pine beetle infestation. Under the proposed HCP, DNRC would not change its strategy for managing forests already affected by or at risk of a mountain pine beetle outbreak. Salvage harvest is a covered activity under the HCP, and as long as the current outbreak persists, the USFWS anticipates that DNRC would continue to salvage as much beetle-killed timber as reasonably possible to meet its fiduciary obligation to the trusts and begin the process of regenerating new forests to take the place of those lost to the beetle. DNRC's management would also strive to sustain unaffected stands in a healthy condition so they are less susceptible to beetle outbreaks. For more information about the mountain pine beetle and management options for homeowners and landowners, please visit DNRC's mountain pine beetle information website, http://beetles.mt.gov.

Letter 90, comment 351: DNRC should lengthen rotations to protect covered species and protect habitat and unmanaged old growth.

Response: DNRC does increase rotation length consistent with the coarse-filter approach to biodiversity as described by ARM 36.11.404. While none of the HCP species addressed are old-growth-dependent, we note that characteristics associated with old-growth forests can also be provided by mature stands that do not meet

DNRC's old-growth definition. Furthermore, Montana law prohibits DNRC from preservation or non-use of state lands classified as old-growth without receiving full market value of the resource (MCA 77-5-116).

Letter 99, comment 403: Old growth is an essential habitat component on PCHP lands. Therefore, DNRC should consider an alternative that maintains old-growth percentages at or above existing levels. The SFLMP says DNRC will maintain 50% of the old growth that was historically present on the landscape. Once again DNRC is ignoring this requirement. The amount of old growth historically present on the landscape was far more than 16% (Jane Adams, Montana Old Growth Project, 6/20/01). DNRC does not have a plan to recruit old growth to replace the old growth it is destroying. It admits to only recruiting approximately 50 acres per year of new old growth, yet continues to harvest in significant excess of that figure. DNRC cannot continue to harvest old growth at its current rate and maintain old growth on the landscape unless it has an active program to replace what is being lost. The FEIS and the PHCP should not ignore the previous commitments in the SFLMP. DNRC's current rate of harvesting in old growth habitat is unsustainable. DNRC cannot maintain 8% of old growth on the landscape, let alone 50%, it if continues to harvest in its current mode in areas like the Swan River State Forest. Yet DNRC is proposing to increase harvesting in this area, not decrease it, and it has no plan for recruiting replacement stands.

Response: The USFWS does not consider the HCP species to be old-growth-dependent. Therefore, DNRC did not include old-growth habitat commitments in the HCP, and DNRC is not proposing any changes to its existing approach to managing old-growth stands (ARM 36.11.418) under the HCP. The sustained yield calculation for each alternative was constrained to meet the landscape-level biodiversity objectives in the SFLMP and Forest Management ARMs pertaining to old-growth habitat, and the EIS discloses the likely effects on old-growth under all alternatives (see Draft EIS page 4-41).

Letter 99, comment 404: These documents cannot ignore DNRC's actual implementation of the annual sustained yield. When DNRC increases the sustained yield figure it determines what areas of the state have the highest growth potential. It then requires each area to harvest timber based upon its percentage of the state's overall growth potential. Old growth is the loser in this methodology. It receives a higher percentage of the sustained yield increase because its growth potential is higher than non-old-growth areas. This will result in the impairment of habitat for old-growth-dependent species like those covered by the PHCP. To ignore this management technique is to allow DNRC to significantly increase harvesting in old growth and further impair habitat necessary for the survival of these species. That accounting system must be analyzed and factored into a decision to allow increased road building and harvesting on school trust lands.

Response: The USFWS does not consider the HCP species to be old-growth-dependent. Therefore, DNRC did not include retention of a certain amount of old-growth habitat as a commitment under the HCP. Rather, old-growth management would continue to be dictated by DNRC's existing ARM (36.11.418) and landscape-level biodiversity objectives in the SFLMP. Regarding the commenter's statement that areas are subject to harvest based on their percentage of the state's overall growth potential, old-growth forests occur across all classes of potential productivity. Their development is not limited to certain productivity classes. A site's potential productivity is not determined by the cover type or age of a forest growing on that site, but instead by the environmental factors influencing the site, such as slope, aspect, elevation, soil, climate, and hydrology. Therefore, it is not possible to increase a site's potential productivity by harvesting timber. However, timber harvest does create an opportunity to better capture a site's potential productivity to grow trees. Harvest levels increase under Alternatives 2 and 4, not because of harvesting old-growth, but because of a proposed shift in the approach to managing grizzly bear habitat under those alternatives. Approximately 39,000 acres were deferred from management in the 2004 sustainable yield calculation to maintain what is termed "grizzly bear security core" in the Stillwater Block. Those acres would become available for management under Alternatives 2 and 4.

Letter 100, comment 409: I question the ability to manage some State lands for timber production because of steep slopes, moist environments, and higher elevation habitat. Please review the feasibility of

management of these lands in light of long-term values. You can always extract timber, but timber production on some of these lands is low and can cost more than the value of the extracted timber.

Response: Draft EIS Section 2.3.2 (The Forested Land Base and Land Ownership Patterns) describes DNRC's land base considered for forest management. It identifies the amount of acres of non-commercial forestland, as well as those acres deferred from management. DNRC typically defers timber management on land where environmental constraints (such as those described in the comment), policy or law, or accessibility preclude the current ability to manage for timber production. These acres were not included in the calculation of the sustainable yield described in Draft EIS Section 4.2.2.2 (Forest Vegetation – Sustainable Yield).

Letter 100, comment 410: I also have an issue with how some State land is managed for fire protection of private land. I believe we should only manage State lands to minimize risk to adjacent private land and place more burden of fire protection on the public sector. A lot of fuel reduction projects are developing homogeneous tree/stand structures that provide habitat for select wildlife species which are generally abundant naturally. Other wildlife species associated with multi-structure forests are losing habitat. Therefore we need to balance management for all resources.

Response: This HCP and, if issued, the associated Permit, do not address fire protection on private or public lands adjacent to state lands. We suggest the commenter contact the chief of the DNRC Fire & Aviation Management Bureau at (406) 542-4300.

Letter 106, comment 435: Many of the HCP commitments will result in acres that will go unmanaged (grizzly bear visual screens, lynx leave islands, RMZ/CMZ no-harvest zones, etc.). We were not able to find a good analysis of the cumulative acres that would be precluded from management under the HCP and compare that to those acres that are precluded from management under the no-action alternative. We understand that significant acres within the Stillwater block would potentially be opened up for management, but when the commitments for lynx, fish, and grizzly bear are implemented, what will be the available net acres for management?

Response: In the sustainable yield calculation for the no-action alternative and Alternative 3, a statewide total of 531,100 acres was available for management. This number was derived from a statewide total of 726,600 acres minus 195,500 acres that were unavailable for management. Acres were unavailable for management due to inoperable topography, access, other land uses, restrictions in the Stillwater Core, and very low potential productivity (also known as non-commercial forest land). Under Alternatives 2 and 4, a statewide total of 570,000 acres would be available, because 38,900 acres would become available for active management in the Stillwater Core. For the sustainable yield calculations for the action alternatives, silvicultural constraints were applied to acres where RMZ, lynx, and grizzly bear commitments would be applied, but the acres were not deferred from management.

Letter 117, comment 548: DNRC recognizes that fire frequency and beetle infestations are likely to increase, but their citations are very outdated. Most of the citations on disease and fires date back to 2006 or earlier. USFS and USGS have considerable new data modeling on fire frequency and disease spread as a result of global warming, and DNRC should be using these new data. Further, these new data have implications in terms of sustainable harvest. The analysis for sustainable harvest was done in 2004 (EIS page 4-9). Given the rapid known increase of the beetle epidemic over the last 5 years, DNRC should reevaluate and revise the sustainable harvest and revise the plan. In doing so, it should also incorporate new available information on climate change, predicted fire frequencies, and disease spread.

Response: We have incorporated information from recent literature on climate change throughout the Final EIS. With regard to incorporating such data into the sustainable yield calculation, DNRC is required to complete a sustainable yield calculation every 10 years, or sooner if circumstances requiring a new analysis arise. The sustainable yield calculation associated with the HCP alternatives was completed in 2007 in support of the Draft EIS analysis, and the results of that analysis are presented on Draft EIS page 4-37. We

note that the sustainable yield was re-calculated in 2010 in response to changes in the Final HCP commitments. In subsequent sustainable yield calculations, DNRC will incorporate changes to the standing inventory from fire, insects, and diseases on state-managed lands. As pointed out by the commenter, the mountain pine beetle outbreak has expanded rapidly in recent years; however, at this time, the full extent of the outbreak is unknown, and subsequent calculations using updated forest inventory data would capture those effects and their resulting influence on sustainable yield from forested state trust lands. In the interim, salvage harvest may comprise a higher proportion of the total harvest on all ownerships, including state-managed lands.

Letter 117, comment 549: DNRC claims, without credible scientific justification, that logging can reduce beetle outbreaks, and fire risk. DNRC says that its management philosophy is to "move forest lands toward a DFC resulting in a healthier, more fire-resistant forest" (EIS page 4-50). Timber harvest as planned is not consistent with this philosophy, because logging will not make forests more fire-resistant. Moreover, there is little empirical evidence to support the assumption that forest thinning reduces the severity of fires, and, in fact, there is increasing evidence that thinning may even increase fire severity in many types of forest. DNRC's statements (EIS page 4-34) that logging will reduce beetle problems are also not scientifically justified.

Response: We have revised Final EIS Section 4.3.2.2 (Air Quality – Comparison of Alternatives) to state that healthier forests are "better adapted to surviving fires." However, we disagree that forest management activities, particularly forest thinning, do not reduce fire severity or insect infestations. When properly applied, forest thinning reduces the amount of fuel available to burn and can alter vertical and horizontal structure of a stand that would decrease the ability of a fire to move into and through the crown layer of a forest. Regarding the reduction of fire hazard in Montana's low-elevation forest types, Fiedler et al. (2004) found that comprehensive treatments that restored ecological structure and function not only had the greatest effect in reducing fire hazard but also had the greatest long-term effect. Furthermore, the EIS analysis of fire incidents and insect outbreaks over the past 20 years by ownership class revealed an inverse relationship between the proportion of acres affected by fire and the level of management applied on each ownership (see Draft EIS pages 4-31 through 4-32). Intensively managed industrial timberlands had the least proportionate amount of acreage affected by fire and insects, while lands with little or no active management had the highest proportionate amount of acreage affected. Additionally, Amman and Logan (1998) describe several cases demonstrating the beneficial effects of thinning in reducing mortality due to mountain pine beetle infestations. We have added this citation to the analysis in the Final EIS (see Section 4.2.2.8, Forest Vegetation – Forest Insects and Disease). Although thinning has been shown to reduce mortality in stands affected by the mountain pine beetle, extreme outbreaks may result in mortality even in thinned stands.

2.13 Motorized Access and Road Management

Letter 11, comment 124: I want to ensure that the road to Marston Lookout, on the Stillwater State Forest, remains open at least July through September. It is our only motorized access to the lookout. The Lookout is a critical component of our fire suppression efforts. This road is also a popular recreation road, so the longer it can remain open, the better.

Response: Under the HCP, DNRC's road to Marston Lookout would continue to be managed as a year-round open road.

Letter 11, comment 125: I am also concerned that roads will be built or opened on Stillwater State Forest that make it easier to gain illegal motorized access into areas we currently have closed to motorized access, such as the Whitefish Divide trail and many portions of the Whitefish Mountain range. Please do what you can to minimize these opportunities. Because these areas are inventoried roadless areas and also grizzly bear core habitat, maintaining their non-motorized status is very important to us.

Response: Under the HCP, the areas referred to in this comment would be classified as a Class A grizzly bear subzone, and access in these areas would be restricted (see commitment GB-ST2 on Draft HCP pages 2-22 through 2-24). No new roads would be constructed, although temporary roads and use of existing roads would be allowed with seasonal restrictions.

Letter 25, comment 154: Roads open in wilderness areas invite 4-wheelers to devastate the surrounding areas, notwithstanding the damage done by logging trucks.

Response: Regarding the commenter's concerns about four-wheelers, please see the response to Letter 122, comment 626, below. The effects of logging trucks in a harvest unit are addressed in the Montana Forestry BMPs (DNRC 2004a), which are implemented on all DNRC projects.

Letter 44, comment 192: The impacts from road building and habitat fragmentation resulting from significant timber harvest increases are severely underestimated. As an example, the new roads (and hundreds of miles of roads not closed or otherwise reclaimed) will dramatically increase motorized access to public lands. We've witnessed the long-lasting adverse impacts of 4-wheelers, motorcycles, and snowmobiles on public lands across Montana. DNRC is apparently intent on perpetuating this unhealthy, resource-consumptive industry wherever possible without regard for ecological sustainability, habitat connectivity, or watershed protection.

Response: The Draft EIS adequately describes the effects of road building and habitat fragmentation on the HCP species (see pages 4-220 through 4-333, 4-255 through 4-259, 4-288 through 4-302, 4-313 through 4-316, and 4-332 through 4-335). This comment does not provide information on the impacts we did not consider. It is important to clarify that the majority of new roads would be closed to motorized public access after completion of timber harvest activities. Therefore, we do not expect a substantial increase in motorized access to public lands. Draft EIS pages 4-296 and 4-297 and 4-399 through 4-403 acknowledge that, while ARM 36.25.149 restricts off-road vehicles from leaving approved road surfaces on state lands, some illegal motorized use of its roads and landscape still occurs. Since 2008, DNRC has provided funding for two MFWP "recreational use" wardens in the Northwestern Land Office (NWLO) and Central Land Office (CLO) who are primarily responsible for enforcement of DNRC rules and regulations on state trust lands, including illegal use of roads. DNRC further addresses this concern in the HCP within grizzly bear habitat by increasing the frequency it inspects road closure devices and shortening the timeframe for completing repairs (see Draft HCP page 2-17).

Letter 45, comment 202: DNRC must recognize that once roads and skid trails are built, adequate law enforcement is not available to prevent unlawful motorized use in the areas DNRC does decide to close. For example, illegal off-road vehicle use occurs within DNRC's recent Foothills Timber Sale, even though the DEIS and FEIS for that project promised it would not.

Response: Please see the response to Letter 44, comment 192, above.

Letter 75, comment 250: Off-road vehicles are a continuing and destructive force on our public lands. Wherever there is the possibility of a road that isn't closed, they will be there, enlarging the track, wallowing in it, damaging streams and springs and destroying the ecological systems. With 1,400 miles of new roads, without the requirement to close those or existing roads, it will be open season for ORVs. Not only will that destroy the use for others, but it will destroy the land.

Response: The comments regarding off-road vehicles are noted. For information on the state's policy on motorized use of DNRC roads, please see the response to Letter 122, comment 626, below.

Letter 90, comment 345: "DNRC closes and abandons all roads that are non-essential for near-term management activities" (EIS page 4-146). What determines non-essential? It seems that many roads should be abandoned under this criterion.

Response: If DNRC plans to return to an area within a 15- to 20-year period, then a road is typically essential to maintain on the landscape unless there is an alternative access route available. During the period between entries in a harvest unit, DNRC typically closes the associated road.

Letter 100, comment 408: My experience with State land is that even though the State tries to manage road access through road restrictions, these roads experience a substantial amount of unauthorized use by the public. Therefore, I strongly believe that the State needs to be very cautious about how much new roads they need for the management of their land. And the State needs to consider the future cost of maintaining these roads even though they may be restricted to public use. The State also needs to acknowledge that certain TES species lose habitat availability through road construction, and some species may also be negatively impacted through increased mortality risk.

Response: All of the commenter's concerns regarding roads, including unauthorized use, habitat loss, and mortality risks, are acknowledged on Draft EIS pages 4-220 through 4-333, 4-285 through 4-294, and 4-399 through 4-403. The cost of road construction and maintenance is one of the primary reasons DNRC minimizes road construction and restricts public use of roads.

Letter 108, comment 469: Motorized access, especially any off-road usage such as ATVs or snowmobiles, destroy these resources, especially wildlife that require undisturbed habitat. Please decrease roads.

Response: The HCP does not address the use of ATVs for hunting and recreation as a covered activity, because this HCP was designed to address the effects of DNRC's forest management activities. For information on the state's policy on motorized use of DNRC roads, please see the response to Letter 122, comment 626, below. Please also see the general responses to comments concerning proposed road building under the HCP (Section 2.8).

Letter 122, comment 626: The new logged areas should continue to be off limits to motorized traffic (ATVs).

Response: Within its forest management program, through ARM 36.11.421 (10), DNRC considers closures on all roads that are non-essential to near-term future management or where unrestricted access would cause excessive resource damage. In general, DNRC closes most roads to public motorized use, and this would continue under the HCP. For the HCP, DNRC has developed transportation plans for its blocked ownership in the Stillwater, Coal Creek, and Swan River State Forests. These plans identify the type of use and season of use for each road on DNRC's ownership. Regarding illegal motorized use of roads, refer to the response to Letter 44, comment 192, above.

Letter 127, comment 634: Any roads that are opened for timber harvesting should be shut down and effectively blocked after the timber has been harvested. Without closure of roads, that very small but vocal part of our citizenry who use motorized vehicles for recreation, rather than getting out on foot, become the inheritors of land that belongs to all of us. Close the roads after harvesting.

Response: Please see the response to Letter 122, comment 626, above.

2.14 Monitoring and Adaptive Management

Letter 9, comment 107: As described in previous comments, we have questions and concerns regarding DNRC's proposed monitoring/adaptive management program, particularly regarding the detail and specificity to assure that all effects from DNRC's management activities will be identified and mitigated. It will be important that the monitoring and adaptive management program be improved and/or further explanations provided to assure that all significant effects of DNRC's activities are identified and properly mitigated.

Response: When DNRC and the USFWS started this HCP process, DNRC prepared a list of its forest management activities. For each activity, potential effects on the HCP species were identified and measures

were developed to reduce the potential effects on the species. Where the USFWS felt there was still potential for take to occur, additional measures were developed to minimize and mitigate the effects of that take. Therefore, we believe that the process requested in the comment has already been completed. The purpose of DNRC's monitoring and adaptive management program is to make sure that the commitments would be implemented as designed and to make sure they would have the intended benefits to the species. The program is described in detail in Draft HCP Chapter 4 (Monitoring and Adaptive Management).

Letter 9, comment 108: It is important that monitoring reports and information be available for review by the public and interested agencies. Further explanations and more detailed and specific information regarding DNRC's adaptive management and monitoring program should be provided. Without more detailed monitoring information and public access to monitoring reports, we do not believe the EIS will include adequate information to fully assess effects of the management actions.

Response: DNRC's proposed monitoring and adaptive management program is described in Draft HCP Chapter 4 (Monitoring and Adaptive Management). DNRC would continue to maintain the HCP project website, and all monitoring reports would be public documents made available through that website or by request. Final HCP Section 4.3 (Reporting Requirements) has been revised to state that annual and 5-year monitoring report and meeting notes will be posted to the project website. The monitoring and adaptive management program is adequately described in the Draft HCP Chapter 4 and is similar to that of other forestry HCPs. The program outlines mechanisms for cooperatively adapting the HCP (Section 4.2, Modifying the HCP), specifies DNRC's reporting requirements (Section 4.3), and describes the monitoring requirements (Sections 4.4, Grizzly Bear Monitoring and Adaptive Management, 4.5, Lynx Monitoring and Adaptive Management, and 4.6, Aquatic Monitoring and Adaptive Management, as well as Tables 4-2, 4-4, 4-6, and 4-7). The monitoring requirements identify triggers for adaptive management and the actions that would be implemented. Therefore, we do not anticipate substantive changes to the monitoring and adaptive management program in the Final HCP.

Letter 9, comment 109: The Implementing Agreement in Appendix F indicates that DNRC will submit monitoring reports describing its activities and monitoring results to the USFWS, and the USFWS may conduct inspections and monitoring. We are concerned that the USFWS lacks adequate resources to properly monitor and oversee implementation of this 50-year Permit and HCP, and to conduct inspections and monitoring on 548,500 acres of state trust land in addition to all their other activities. The resources that the USFWS will have available to inspect, monitor, and oversee Permit and HCP implementation should be described in the FEIS. Will adequate resources be available to the USFWS to provide needed monitoring, inspection, and oversight of the Permit and HCP?

Response: The USFWS intends to conduct implementation and compliance monitoring of the terms and conditions of the Permit, should the Permit be issued, as the budget allows. We note that the USFWS actively monitors the Plum Creek Native Fish HCP in Montana and we intend to do the same for this HCP.

Letter 9, comment 110: We recommend that monitoring reports and results of inspections and monitoring by the USFWS should be made available to the public and interested agencies. We recommend that the Implementing Agreement describe where and when these reports can be obtained by the public and interested agencies.

Response: Please refer to the response to Letter 9, comment 108, above. The USFWS does not anticipate modifying the Implementing Agreement to incorporate this information.

Letter 90, comment 322: What agency will be overseeing the HCP to make sure the commitments are followed?

Response: The USFWS would be the regulatory agency responsible for ensuring the HCP commitments are implemented. At DNRC, the Forest Management Bureau would be responsible for ensuring the HCP is implemented in the field and would coordinate all reporting to the USFWS. However, the USFWS would also conduct field reviews and meet with DNRC annually and on a 5-year schedule to review all monitoring

and reporting commitments as outlined in HCP Chapters 4 (Monitoring and Adaptive Management) and 8 (HCP Implementation).

Letter 94, comment 381: The adaptive management and response formulas in this HCP have two significant weaknesses. (1) they do not include any field auditing or field compliance monitoring by an independent source. The adaptive management system is thus captive to an honor system. The USFWS' role should include random field monitoring and tests so that it can better evaluate DNRC's implementation. (2) Neither DNRC or the USFWS commit in the plan to specific funding and staffing levels to ensure the monitoring, reporting, and management responses are implemented, or implemented in a timely fashion. The plan should include triggers at 5-year intervals that if certain key tasks, such as measurable commitments that provide for riparian protection, road improvements, road and culvert replacements, etc., are not performed, that a process be implemented to cancel the Permit. Further, if the USFWS does not adequately perform its pivotal monitoring role, triggers should be tripped that lead to cancellation of the Permit.

Response: When the HCP is implemented, the USFWS would conduct field reviews and monitoring and may include random field monitoring, as the commenter suggests, if it is deemed necessary and resources allow. Regarding the commenter's second point, DNRC's funding commitments are outlined in Draft HCP Chapter 8 (HCP Implementation). This chapter includes a description of DNRC's costs for implementing the HCP, which includes costs associated with staffing needs for monitoring, reporting, and responding to changed circumstances. Draft HCP Chapter 8 also identifies the timelines for implementing the various commitments made by DNRC. Draft HCP Chapter 4 (Monitoring and Adaptive Management) clearly spells out the thresholds for compliance for each commitment, reporting requirements and intervals, and appropriate management responses in the event that issues arise. Failure on DNRC's part to properly implement the HCP may be terms for Permit suspension or revocation. The USFWS would account for its obligations to monitor for compliance with the HCP.

Letter 96, comment 393: Similarly, DNRC outlines an "adaptive management" process to address new information affecting the covered species that fails to provide assurances that the HCP will not appreciably reduce the likelihood of the survival and recovery of the covered species. See DHCP, Ch. 4. However, the HCP does not provide for "upfront, mutually agreed upon changes in the operating conservation program that may be necessary in light of subsequently developed biological information," as required by the ESA. 63 Fed. Reg. 8,859, 8,863 (Feb. 23, 1998). Instead, DNRC describes only a vague process for responding to new information and no concrete responses.

Response: Regarding the commenter's concerns that the HCP does not provide assurances for the survival and recovery of the HCP species, please refer to the general responses to comments concerning take minimization and mitigation (Section 2.3.1.3) and the jeopardy standard (Section 2.3.1.4). Regarding the comment that the HCP does not provide for changes in light of new biological information, we note that the HCP includes a process for the two agencies to cooperatively respond to new science that is applicable to the HCP species (see Draft HCP Section 4.2.3, Adjusting for New Research). Additionally, DNRC would address concerns relative to climate change through the range of responses identified in Final HCP Section 6.2.4 (Climate Change).

Letter 101, comment 418: We noted that the monitoring and adaptive management strategy for the HCP is primarily focused on implementation monitoring rather than effectiveness monitoring (HCP Section 4.1.2). By restricting the scope of monitoring on implementation, DNRC misses the opportunity to determine if "missing" implementation targets has any significant impacts on the covered species (biological relevance) or if the disparity is due to the HCP or some other externality (causal linkage analysis). The opportunity for "synergy" with landscape plans like the NFHCP rests in the coordinated investigation on the cumulative benefits of these plans on biological resources. Research projects targeting key biological questions and threshold "triggers" in the HCP using BACI (Before/After and Control/Impact) designs offers the opportunity to contribute meaningful scientific knowledge while involving other organizations and agencies in the effort. Landscape plans such as HCPs, while designed to provide landowners like DNRC with regulatory

predictability, can also be viewed as long-term landscape scale experiments with opportunities for observational and manipulative methodology. We encourage DNRC to expand the discussion of research (HCP Section 4.1.3) to include key biological questions and methods to investigate them within the context of the HCP. It would be advantageous for DNRC and Plum Creek as large HCP managers to meet on the topic of coordinated research and monitoring when the HCP is approved.

Response: The HCP incorporates effectiveness monitoring that is appropriate for the types of minimization and mitigation measures proposed in the HCP. The rationale for this approach is described in Draft HCP Chapter 4 (Monitoring and Adaptive Management). Draft HCP Chapter 4 also outlines a process for the two agencies to cooperatively respond to new science that is applicable to the HCP. DNRC is open to coordinated research with Plum Creek or other neighboring landowners, public or private, as needs arise and as resources allow. We note that the USFWS meets with Plum Creek and is aware of its activities and can be of assistance for coordinated research efforts.

Letter 117, comment 550: DNRC's approach to adaptive management violates the fundamental principles of adaptive management, as originally developed. In revising the HCP and EIS, DNRC should learn what adaptive management is, how it should work, where it has failed or succeeded and learn from these lessons. In doing so, DNRC should take into consideration the extensive critiques of adaptive management by Walters (1997), Lee (1999), and Gunderson and Light (2006).

Response: Regarding the adaptive management program in the proposed HCP, the DNRC followed the HCP Handbook on adaptive management (pages 3-24 through 3-26) and the Adaptive Management Technical Guide (U.S. DOI 2009) in developing this portion of the HCP. Both parties are aware of the findings in the papers cited in the comment. We point out that adaptive management is often employed as an approach to "learning by doing." However, we believe that the mitigation package for all the HCP species would be effective because it is based on current science and proven mitigation measures. Therefore, an intensive adaptive management program with questions and practices to be tested and adapted is not warranted.

Letter 118, comment 560: The 5-year interval for a monitoring report is too long, and the USFWS should be a partner in the actual monitoring.

Response: See Tables 4-2, 4-4, 4-6, and 4-7 in Draft HCP Chapter 4 (Monitoring and Adaptive Management) for the list of commitments and their reporting interval. As the tables depict, many commitments are subject to annual reporting with a comprehensive report due every 5 years. During the first 5 years of HCP implementation, the USFWS expects to be actively involved in monitoring and implementation activities. We note that throughout the Permit term, the USFWS would conduct periodic monitoring and permit evaluations as resources allow.

Letter 169, comment 708: The greatest overall concern FWP has about the draft EIS/HCP is the lack of non-DNRC oversight concerning grazing and especially road building particularly in or around secure areas, and or the lack of density limitations on roads. FWP believes that in order to accomplish the goal of the EIS/HCP to ensure the long-term survival of the covered species through protection and management by DNRC, practices will require greater oversight by the United States Fish and Wildlife Service (USFWS) and or density limits on roads. Specifically, FWP believes that the USFWS should have approval authority for permits and practices, at a minimum in secure areas, but most likely in some adjacent areas as well and should be supported by more aggressive road density limits.

Response: The USFWS' role in the oversight of DNRC's HCP is described in Draft HCP Chapter 4 (Monitoring and Adaptive Management) and Chapter 8 (HCP Implementation). These chapters describe the monitoring and reporting DNRC would be required to submit to the USFWS throughout the Permit term, including annual updates and meetings and 5-year reports and meetings. Additionally, the USFWS would be engaged any time it is aware of non-compliance with Permit conditions, as well as when changed circumstances or land transactions arise. As noted in Draft HCP Chapter 2 (Conservation Strategies) and

Chapter 6 (Changed Circumstances), the USFWS would have approval authority in several instances regarding the HCP commitments and changed circumstances. The USFWS' role in oversight of the HCP would be governed by its resources, the DNRC's commitments in the HCP, and our level of certainty in DNRC's ability to effectively implement those commitments and communicate when commitments are not yielding expected results. We note that the changes in DNRC's grazing strategy (commitment AQ-GR1) are aimed at increased inspection, identification, and resolution of problem sites with appropriate implementation and effectiveness monitoring. Concerning the commenter's statements about the lack of limits on road densities, DNRC has committed to a specific number of roads, and therefore a road density, on its blocked lands. DNRC also committed to no net increase in open roads at the administrative unit level for its scattered parcels and therefore has capped its open road densities on scattered parcels. Also, see the general responses to comments concerning proposed road building under the HCP (Section 2.8). Because total roads on scattered parcels would not be capped, the HCP would require additional tracking and reporting so that USFWS could carefully monitor this aspect of the HCP.

2.15 Changed Circumstances

Letter 1, comment 1: Section 6-11, Threshold for Unforeseen Circumstances: How will working forest land additions be folded into HCP? This would be a major amendment.

Response: Draft HCP Chapter 3 (Transition Lands Strategy) describes the process for adding newly acquired lands to the HCP project area. Depending on the timing of the request and the character of the lands proposed for addition, an addition may be processed as a minor or major amendment to the Permit.

Letter 9, comment 89: While the proposed changed circumstances process appears reasonable, it is not clear if needed mitigation actions (i.e., actions that would avoid, minimize, and compensate for impacts to fisheries) would be implemented if they would be too costly. There are instances in the HCP where it appears that production of revenue for the trust beneficiaries is given priority over biological or conservation needs. Given this emphasis in the DNRC forest management program and HCP, we are concerned that the changed circumstances process may be implemented in a manner that emphasizes revenue production over conservation and protection of HCP species. We recommend that trade-offs between revenue production and conservation and protection of HCP species be discussed further in the FEIS.

Response: Please refer to the response to Letter 96, comment 392, below. Please also refer to the general responses to comments regarding the compatibility of revenue generation and species conservation (Section 2.4.1.3).

Letter 90, comment 328: MEPA has been weakened through the years by the state legislature. If the legislature changes MEPA again, will it affect the HCP?

Response: The USFWS believes the MEPA process is an important component of the HCP, and there is an assumption in the HCP that the current MEPA processes will remain in existence for the Permit term. Draft HCP Section 6.3.5 (Changes in DNRC's Forest Management ARMs) identifies the process to be followed by the two agencies if there were a change to MEPA that could potentially affect the HCP. In response to the comment, we revised the title of Section 6.3.5 in the Final EIS to read "Changes in DNRC's Rules, Laws, or Policies," and we added a discussion of how the agencies would address changes in MEPA.

Letter 94, comment 380: We believe additional changed circumstances (HCP page 6-8) should include changes in the population status of any of the three species, perhaps when measured at the 4th-level HUC. Significant declines or increases of HCP fish species--irrespective of suspected cause – is a circumstance that should trigger USFWS and DNRC review and adaptive management triggers. Those triggers could result in strengthening or even relaxing of HCP commitments.

Response: A change in the population status of an HCP fish species at the fourth-level HUC or higher, within the HCP project area, or within the EIS planning area, would concern the USFWS. Such issues would

be discussed by the USFWS and DNRC at their annual meeting or through the adaptive management process, where either party can develop a proposal to address the issue to determine if a change in the HCP is warranted. Although a change in status at the fourth-level HUC level is unlikely to be attributable solely to DNRC management under the HCP, if the USFWS determines through its monitoring and/or information from other sources that DNRC's HCP was a factor in the change, the USFWS would raise this as a concern immediately and explore remedies through a cooperative management response (i.e., adaptive management process). Examples of remedies could include timing restrictions for projects, road closures in HCP fish species watersheds, deferral of projects to non-HCP fish species watersheds, and deferral or non-renewal of grazing allotments. The Final HCP has been revised to describe this scenario in Section 6.3.1.2 (Change in Status of an HCP Species).

Letter 96, comment 392: The proposed HCP cannot form the basis for a Permit because it fails to develop measures to address adverse impacts to HCP species due to foreseeable "changed circumstances." See DHCP at 6-1-15; see also DEIS at 4-343-46. Nonetheless, DNRC fails to plan for any of the potential changed circumstances it identifies, and instead defers the formation of any conservation measures to address the impacts of such changes to a later, undefined time period. For example, DNRC identifies climate change as a "changed circumstance," and concedes that many of its effects are foreseeable and inevitable. See DHCP, p. 6-11-12. Yet DNRC's sole proposal for addressing climate change involves working with the USFWS "to develop appropriate responses to new research or guidance materials regarding the impacts of climate change on forest management and/or potential mitigation and minimization measures for HCP species." Id., p. 6-12. "The ESA requires useful mitigation," not illusory promises. Southwest Ctr. for Biological Diversity, 470 F.Supp.2d at 1146 (citing Fed'n of Fly Fishers v. Daley, 131 F.Supp.2d 1158, 1163 (N.D. Call. 2000)).

Response: The HCP does contain conservation measures to address the impacts of a changed circumstance. First, we point out that the proposed HCP covers timber harvest activities, including salvage, which is DNRC's primary response to natural disturbance events (changed circumstances). Therefore, the commitments would apply to salvage harvest in response to natural disturbance events. Additionally, DNRC recognized that in some cases, modified commitments would be necessary to address salvage harvest and those measures are included in the HCP as well (see Draft HCP Chapter 2, Conservation Strategies, commitments GB-ST3, GB-SW4, GB-SC3, GB-CY2, and AQ-RM 1 Allowances within Class 1 RMZs). Where it was not feasible to define a specific response to a changed circumstance, Draft HCP Chapter 6 (Changed Circumstances), outlines the process for addressing changed circumstances and provides examples of the types of measures DNRC would consider implementing to conserve the HCP species in the event of a changed circumstance. The Final HCP has been revised to include examples of measures DNRC would consider implementing to address effects on HCP fish species. Because the process for addressing changed circumstances and development of the mitigation plan requires input and approval from the USFWS, and based on DNRC's past performance following natural disturbance events, the USFWS believes that DNRC would implement appropriate mitigation measures in response to a changed circumstance. Additionally, Final HCP Chapter 8 (HCP Implementation) describes funding assurances associated with changed circumstances. Regarding the commenter's concerns about climate change, please refer to the general responses to comments regarding climate change (Section 2.7.1). We note that the cited litigation is a court case concerning mitigation proposed due to impacts on vernal pools. The conservation approach in the case of vernal pools is substantially different from that of the species addressed by this HCP. Vernal pool conservation in the cited litigation is a young science with greater uncertainty in the context of appropriate mitigation measures. In contrast, the USFWS has been issuing permits and monitoring HCP programs for forest management in excess of 15 years, and the species covered by this HCP are well-studied species with established conservation standards and guidelines (refer to Draft HCP Section 1.3, Development of the DNRC HCP).

Letter 96, comment 394: The need for procedures to respond to changed circumstances is essential, since the USFWS may "not require the commitment of additional land, water, or financial compensation or additional restrictions on the use of land, water, or other natural resources beyond the level otherwise agreed

upon for the species covered by the conservation plan without the consent of the permittee." 50 C.F.R § 17.22(b)(5)(iii). Thus, "[b]ecause FWS is bound...not to require additional mitigation measures-even if over time, biologists learn new and better ways to protect the species or conversely, if time shows certain restoration methods fail-FWS would not be able to require [DNRC] to accommodate these new scientific advances into the mitigation measures because the Assurances have frozen the state of knowledge to that known as of [today]." Southwest Ctr. for Biological Diversity, 470 F.Supp.2d at 1142. The failure to include concrete mitigation measures for changed circumstances is fatal to the validity of the HCP. See id. at 1146 (finding that conservation assurances "violate the ESA because they lock-in ineffective, unstudied, and inadequate mitigation for the vernal pool species for fifty years").

Response: Please refer to the response to Letter 96, comment 392, above.

Letter 102, comment 420: I didn't see anything addressing the 'changed circumstance' of declining populations of HCP species, or of shifts in the location of their occupied habitat. My concern is you may be following all of the permit requirements and conservation commitments, yet still be failing to conserve the species. So what would happen then?

Response: If an HCP species' population decline was attributed to DNRC's forest management activities covered under the HCP, and the activities were leading to a jeopardy situation, the USFWS would discuss its concerns with DNRC and require DNRC to develop mitigation measures to reduce or eliminate the effects contributing to potential jeopardy of the species. If DNRC has been properly implementing the HCP and its activities were not contributing to the decline of the species, USFWS would not require DNRC to implement additional mitigation measures. However, the USFWS would work with DNRC to determine what measures could be voluntarily implemented to help address the decline. If one of the two unlisted HCP species becomes listed due to declining populations, the Permit would automatically cover these species without requiring additional mitigation measures by DNRC. This is because the HCP treats these species as though they were already listed and the aquatic conservation strategy includes minimization and mitigation for impacts on these species to be implemented by DNRC. If a declining population were to trigger an ESA status change for an HCP species, it would be addressed through HCP Section 6.3.1.2 (Change in Status of an HCP Species).

Regarding shifts in occupied habitat, this issue is addressed in the Draft HCP Chapter 2 (Conservation Strategies). The aquatic conservation strategy commitments follow the occupation of habitat by HCP fish species. For lynx, the commitments apply based on the presence of potential lynx habitat, not the presence of populations of lynx; therefore, if lynx populations shift, USFWS and DNRC would collaboratively address the issue. For grizzly bears, the program-wide commitments apply on all HCP project area parcels regardless of whether bears are present. The application of commitments based on recovery zone and NROH boundaries for bears would remain the same over the Permit term (i.e., the application of commitments would remain fixed to the current boundaries and would not change if the boundaries changed). However, if circumstances like the ones described in the comment materialize, DNRC and the USFWS would bring up the matter for discussion at the annual or 5-year meetings.

Letters 128 and 129, comment 645: A discussion of the process of revision, modification, or changes in the HCP, as needs change would be helpful. The need for HCP changes may result from monitoring demonstrating a need for adjustments. How this will occur would be a meaningful discussion.

Response: The process DNRC and the USFWS would use to revise, modify, or change the HCP is described in HCP Chapter 4 (Monitoring and Adaptive Management). The process DNRC and the USFWS would follow if a changed circumstance occurs is described in HCP Chapter 6 (Changed Circumstances). The Implementing Agreement (Draft EIS Appendix F) also describes the process for making adjustments to the HCP.

2.16 General Comments

Letter 32, comment 166: As someone who has spent 45-plus years managing the forests of western Montana and have been very involved, I feel past management for "single" species has been a failure. Having a set of rules for grizzly bear, Canada lynx, and aquatic species while ignoring all of the other plants and animals in the forest will only lead to the demise of other species. Our forests require some type of management; i.e., some acres may need planting, thinning, status quo, and yes removal of larger trees for use by our communities and to improve health of the forest.

Response: DNRC's management philosophy is described in Draft EIS Section 2.3.1.1 (State Forest Land Management Plan). This philosophy and approach would continue under the HCP. That is, DNRC would continue to take a coarse-filter approach to biodiversity and a fine-filter approach to address the needs of sensitive species. Implementation of conservation measures for the covered species would also benefit other aquatic and wildlife species and does not preclude other species from consideration in the planning and design of timber sales. DNRC's fisheries, sensitive species, and big game ARMs would continue to be implemented under the HCP.

Letter 45, comment 201: DNRC needs to develop an HCP that acknowledges the significant negative impacts that logging, roads, and motorized access have on fish and wildlife, including threatened and endangered species such as grizzly bear, lynx, and bull trout.

Response: Draft EIS Chapter 4 (Affected Environment and Environmental Consequences) discloses the effects of logging, roads, and motorized access on the HCP species. It also describes how the HCP alternatives would be expected to improve, maintain, or potentially worsen these conditions compared to the no-action alternative.

Letter 90, comment 337: When will the goal of protecting covered fish and habitat not be appropriate (ES-7, line 13)?

Response: The phrase "as appropriate" has been deleted from the Executive Summary in the Final EIS.

Letter 97, comment 395: I'm against your HCP.

Response: The USFWS has noted the commenter's opposition to the HCP.

Letter 107, comment 464: I object to DNRC's plan.

Response: The USFWS has noted the commenter's opposition to the HCP.

Letter 109, comment 508: Many of the concerns we expressed in our comments for the draft conservation strategies were not addressed in the DEIS or incorporated into the HCP.

Response: Please refer to Draft EIS Section 6.3 (External Review of Draft Conservation Strategies) for an explanation of how comments on the draft conservation strategies were incorporated into the Draft HCP. It is possible that some of the commenter's suggestions included measures that went beyond what DNRC was legally required to do under the ESA Section 10 process. For clarification on the requirements of Section 10, please refer to the general responses to comment concerning the adequacy of the HCP (Section 2.3.1.1).

Letter 118, comment 555: It is very difficult to understand what is actually proposed and where all the details are located for given species and subjects. An effort is needed to rewrite and reorganize the documents to be more easily understood so that informed and relevant comments can be prepared.

Response: Both agencies attempted to organize their respective documents to facilitate understanding by the reader. Both documents contain a Table of Contents and follow standard formats for similar type documents. Additionally, we tried to make effective use of summaries, tables, and figures to illustrate points. We have no plans to rewrite or reorganize the final documents, except where we believe additional clarity is warranted.

Letter 119, comment 565: The DEIS understates its mandate to manage for healthy and diverse forests, including wildlife. The DEIS states: "The mission of the TLMD is to manage trust land resources to produce revenues for the trust beneficiaries while considering environmental factors…" (p. ES-1). The following TLMD direction more specific to the conservation of wildlife and their habitat should be added to the DEIS/HCP executive summary, right up front. More specifically, the State Forest Land Management Plan describes DNRC's obligation to maintain the natural values of the state trust lands when making decisions concerning their management (SFLMP, p. ROD-2). "Our premise is that the best way to produce long-term income for the trust is to manage intensively for healthy and biologically diverse forests. Our understanding is that a diverse forest is a stable forest that will produce the most reliable and highest long-term revenue stream… By promoting biodiversity we will protect the future income-generating capacity of the land by maintaining or restoring healthy and productive ecosystems." The HCP should explain that DNRC's Management Plan further defines "promoting biodiversity," explaining that DNRC will use a "coarse filter" approach to provide forest conditions suitable to support a diversity of species. In addition, the Plan says DNRC will also consider the needs of individual species in its management decisions (SFLMP, p. ROD-2): "Because we cannot ensure that the course filter approach will adequately address the full range of biodiversity, we would also employ a "fine filter" approach for threatened, endangered, and sensitive species. The fine filter approach focuses on single species' habitat requirements." Here, DNRC should acknowledge that the HCP will build off of its fine filter approach developed thus far for grizzly bears, lynx and other species of concern, as a continuation of DNRC's obligation to help restore threatened and endangered species on its lands described as follows in its State Management Plan (SFLMP, p. ROD-31): "DNRC would participate in recovery efforts of threatened and endangered plant and animal species. We would confer with the U.S. Fish and Wildlife Service to develop habitat mitigation measures." We appreciate words to this effect later in the DEIS in its discussion of the State Forest Land Management Plan (pp. 1-14-15): "The HCP would be a continuation of the approach for threatened and endangered species management that DNRC currently follows under its Forest Management ARMs." Yet we believe this component of DNRC's mandate should be much better explained up front when introducing and explaining the HCP, and DNRC's commitment to the HCP species. We also believe the ARMs relevant to the HCP species2 should be reproduced in the DEIS, at least in an appendix, to provide better context for the regulatory baseline that the HCP is built upon.

Response: The Executive Summary makes the point quoted in the comment on Draft EIS page ES-1, lines 13 and 14, that the ARMs "direct DNRC to confer with the USFWS… to address the needs of listed species." We have also revised the last sentence in that paragraph as requested to note that the HCP is a continuation of the direction contained in the SFLMP and Forest Management ARMs. We believe the commenter's points are now sufficiently summarized in the Final EIS (see the edits on page ES-1). The ARMs relevant to the HCP species are summarized throughout the Draft EIS and are available in detail in the species accounts provided on the HCP project website. However, in response to this comment, we have added the state website addresses containing the MCA and ARMs to the Final EIS in Section 4.8.1 (Fish and Fish Habitat – Regulatory Framework) for aquatic species and Section 4.9.2 (Wildlife and Wildlife Habitat -- Regulatory Framework) for terrestrial species.

Letter 119, comment 589: The HCP covers the needs of only the five HCP species, and DNRC may be faced with additional regulatory obligations from other species not addressed by the HCP that may be listed during the lifetime of the HCP. The DEIS states (page ES-1): "The DNRC HCP covers forest management activities on forested trust lands that provide habitat for species currently listed or having the potential to be listed under the ESA (HCP species)." DNRC should qualify this statement as follows: "The DNRC HCP covers forest management activities on forested trust lands that provide habitat for five species currently listed or having the potential to be listed under the ESA (HCP species)." It is impossible to predict which species may be listed under the Endangered Species Act ("ESA"), especially over the course of 50 years. This suggested edit is important to prevent the public and decision makers from having the wrong expectation that this HCP will cover the needs of all listed or potentially listed species during its lifetime. For example, USFWS will reconsider listing both the wolverine and the fisher in 2010, both of which range within the

geographic scope of this HCP. To clarify that this plan does not provide regulatory certainty for species outside of the plan, the last statement in the first paragraph under heading "DNRC Purpose and Need for Action" (page ES-5) should be edited as follows: "The Permit would thus provide long-term regulatory certainty for DNRC for the species included in this HCP."

Response: The Executive Summary and Chapter 1 (Purpose and Need for Action) of the Final EIS were revised to address the commenter's concerns.

2.17 Cumulative Effects

Letter 44, comment 194: Limited attention was paid to long-term cumulative effects of human-induced activities, including global warming.

Response: Draft EIS Chapter 5 (Cumulative Effects) does include a discussion of human activities where those activities are contributing to cumulative effects that may be further affected by the project, for example grizzly bears. Please refer to Final EIS Chapter 5 (Cumulative Effects) for a revised discussion of the relationship of the project and the cumulative effects of human-induced activities. Please also see the general response to comments regarding climate change (Section 2.7.1).

Letter 72, comment 236: The HCP/DEIS does not adequately address cumulative impacts on the five species that are supposed to be protected by the HCP. It is difficult to address cumulative impacts on isolated parcels of school trust land. However, in areas with larger blocks, including the Swan River State Forest, Stillwater State Forest, and school trust lands intermixed with large blocks of land already under a weaker HCP negotiated with Plum Creek Timber, the DEIS needs to analyze and address the cumulative impacts of so much of the watershed being tied up in HCP management. To protect threatened species, the standards developed for these larger blocks of land may need to be more restrictive than those developed for isolated tracts of school trust land (isolated tracts in this context mean sections of school trust land that are not contiguous with other sections of school trust land [and not contiguous with land formerly or currently owned by Plum Creek Timber]).

Response: We have revisited the cumulative effects analysis in the Final EIS and have made several changes to the analysis (please see the new text in Final EIS Section 5.6, Fish and Fish Habitat). The Draft EIS did include an analysis of the cumulative effects on scattered parcels versus blocked lands for both aquatic and terrestrial HCP species. However, this analysis has been revisited in the Final EIS. We would like to point out that, as the commenter suggested, the HCP commitments on blocked lands are in fact greater than on scattered parcels.

Letter 86, comment 310: We need to protect our wildlife heritage with foresight to larger populations of people, demands on natural resources, spread of motorized travel, increased road building, warming temperatures, and more timber harvesting in areas needed for the survival of mammals, birds, and fish, etc.

Response: HCPs are intended to advance long-term conservation efforts for ESA-listed species while providing long-term assurances to landowners who participate in such efforts. We recognize that many factors influence the amount and quality of wildlife habitat and believe we have adequately addressed those factors in the environmental consequences sections of Draft EIS Chapter 4 (Affected Environment and Environmental Consequences). Please also see the response to Letters 128 and 129, comment 638 (below) and the general responses to comments regarding climate change (Section 2.7.1).

Letter 94, comment 363: We find the DEIS evaluation of cumulative effects deficient in that it does not analyze in any meaningful fashion the role invasive species have on native fish.

Response: The effects of invasive species on native fish have been added to the discussion in Final EIS Section 4.8 (Fish and Fish Habitat). The USFWS will also address the role of invasive species in bull trout recovery in its assessment of the environmental baseline and cumulative effects for its ESA Section 7 biological opinion.

Letter 106, comment 436: How can the cumulative effect of all the commitments in the HCP be analyzed? For example, on the Stillwater block, it is not uncommon to have all three species of concern within the same project area and often times within the same management unit. Have the corresponding cumulative effects of meeting all of the various commitments within one area at the same time been analyzed? We are concerned that the additive "protections" will result in projects that are either economically marginal or do not meet silvicultural and productivity goals.

Response: As described on Draft EIS page 4-36, the additive or cumulative constraints of the various HCP commitments were incorporated into the annual sustainable yield calculation completed for each alternative. The yields identified for each alternative reflect the amount of timber that can be harvested using appropriate silvicultural prescriptions while still implementing the HCP. Because the sustainable yield model is an optimizing model that maximizes the net present value, economics are also incorporated into the calculation. Additionally, DNRC field staff were consulted extensively during HCP development to ensure that the commitments made were operationally feasible.

Letter 109, comment 486: The DEIS does not adequately analyze cumulative effects on fish habitat. There is one paragraph on page 4-264 that states "no significant adverse effects are anticipated under any of the alternatives." This is not consistent with other USFWS documents that show bull trout habitat has generally not improved since 2000 on federal lands under an aquatic strategy that is more stringent that what is proposed in the HCP.

Response: Draft EIS Section 5.6 (Fish and Fish Habitat) addresses cumulative effects on fish and fish habitat of each alternative. This analysis has been updated in the Final EIS to acknowledge the findings of the latest 5-year status review for bull trout. Despite the findings of the 5-year status review, we anticipate baseline conditions for bull trout to generally improve on federal lands; however, it takes time for a biological response to occur from improved habitat conditions. Unlike HCPs, federal land management agencies are responsible for recovery of listed native fish, and therefore require a more robust conservation strategy. Note that not all bull trout core area populations are limited by habitat conditions on federal lands or state lands. Other factors, such as introduced species (lake trout and brook trout), may be the controlling factor. In some of these cases, habitat conditions may be functioning appropriately on federal lands, but due to hybridization and/or competition, bull trout population persistence is limited.

Each bull trout core area population may have different threats, including habitat conditions on federal, state, and private lands. The USFWS has worked with both federal agencies and large landowners so that conservation programs complement each other and improve those core areas known to have poor baseline habitat conditions. Nevertheless, there are many uncontrolled factors influencing habitat quality, and the variable conditions that exist across the EIS planning area due to land use changes make it very difficult to clearly ascertain cumulative effects. No significant adverse cumulative effects are anticipated because DNRC's proposed HCP is expected to maintain or improve baseline habitat conditions.

Letters 128 and 129, comment 642: The impact of other land decisions on the HCP and planned lands is needed to determine the overall impacts on all users, including wildlife. NREPA or the Tester Bill for wilderness change the status of many lands and many resources, and the results may greatly change the HCPs significance and impacts.

Response: Draft EIS Chapter 5 (Cumulative Effects) considers the effects of the HCP in light of past, ongoing, and reasonably foreseeable future projects. Montana Senator Jon Tester's proposed bill entitled "Forest Jobs and Restoration Act of 2009" would manage and restore National Forests and designate additional wilderness in Montana. The Tester Bill was not considered in this analysis, because it had not been proposed at the time this discussion was developed. Additionally, it is not clear whether the legislation will pass. We do not expect passage of the Tester Bill to change the impacts and significance of the DNRC HCP. Given federal agencies' responsibilities under ESA, we expect that implementation of the Tester Bill would be consistent with conservation and recovery efforts for the HCP species such that it would not result in changes in the trends described in Draft EIS Chapter 5.

Letters 128 and 129, comment 638: No discussion of the effect of other plans or actions taken is included in the alternatives. The references mention several county plans, and some specific plans but does not reference or incorporate plans like MT Fish and Wildlife Conservation Strategy, MLP, SCORP, or local government plans. The impact on HCP lands caused by actions on lands surrounding HCP lands should be monitored and mitigation steps implemented. A discussion of monitoring upon and mitigation upon surrounding lands should be included.

Response: The effects of ongoing, existing plans in combination with the effects of implementing the HCP are considered in the cumulative effects analysis in Draft EIS Chapter 5 (Cumulative Effects). Chapter 5 in the Final EIS was clarified to describe how the relevant plans identified in this comment were considered in the cumulative effects analysis.

2.18 HCP Project Area

Letter 10, comment 120: Please note that the Stillwater and Coal Creek State Forests, the Swan River Forest, Cabinet-Yaak, and scattered parcels nearby are areas of critical habitat for the HCP species and that these areas also overlap other critical habitats that support these species.

Response: Based on the context of the commenter's letter, we presume the use of the term "critical habitat" is synonymous with the term "important habitat" and does not refer to the ESA definition of critical habitat. That being said, both the USFWS and DNRC are aware of the value and importance of state lands to the HCP species. We believe their importance is adequately stated in the HCP and shown in the Draft EIS analysis in Chapter 4 (Affected Environment and Environmental Consequences). The HCP project area also supports "critical habitat" as defined by the ESA for the lynx and bull trout, and these areas are also described in the Draft HCP, pages 4-200 and 4-321.

Letter 90, comment 327: Why were all lands in the Stillwater and Swan State Forests not included in the HCP?

Response: In general, all forested trust lands associated with blocked lands were included in the HCP project area. Regarding the Stillwater State Forest, DNRC did not include approximately 10,800 acres in the Whitefish Neighborhood Plan in the HCP project area. This was due to the fact that the Whitefish Neighborhood Plan was not completed at the time HCP planning began, and the management direction of those lands was not determined at the time. Additionally, some scattered parcels on the southwestern side of Highway 93 were not included, based on the likelihood of those parcels being sold or developed rather than being managed for timber over the long term. Within the Swan River State Forest, only two parcels were not included in the HCP project area. The parcel across from the Swan Unit office is typically leased for uses other than forest management. The single parcel along Highway 2 was also not included, based on the likelihood of that parcel being sold or developed rather than being managed for timber over the long term. DNRC has revised Final HCP Section 1.4.2 (HCP Project Area) to include a discussion of the lands that were not included in the HCP project area.

Letters 128 and 129, comment 641: Pages 4-430 and 4-431 identify planning area acres and project area acres. A clear discussion of how they relate to each other, public or other uses of the lands, and how the HCP impacts all the other areas would be helpful. In addition, the linkage maps, like page D-63 show areas in the counties that are not state owned that are in the planning areas. A clear understanding of these would be helpful and would better define the impacts of the HCP on the landscape.

Response: The relationship of the planning area and HCP project area is described on Draft EIS pages 1-4 through 1-6. Briefly, the HCP project area is a subset of state trust lands in the three DNRC land offices of western Montana. The EIS planning area encompasses all lands within the boundaries of the DNRC land offices and includes private, federal, and other state lands. The HCP commitments would only apply to state trust lands that are in the HCP project area; they would not apply to any neighboring lands, regardless of ownership. The linkage areas referenced in the comment encompass a series of linkage areas (over multiple

ownerships) identified by Servheen (USFWS) and others (2001, 2003). These areas are considered important habitat where animals can find the security needed to move between other larger blocks of habitat and also between populations of animals. The linkage areas on the referenced map also include areas identified by DNRC using methods similar to those described by Servheen. The linkage analysis was conducted to identify whether actions proposed in the HCP would affect the functionality of those areas as linkage areas.

Letter 169, comment 681: A section of DNRC land in the lower portion of East Fork Rock Creek is not included in the HCP. This parcel should be considered HCP lands as both bull trout and westslope cutthroat trout are found in the East Fork Rock Creek drainage and both species were sampled about 0.5 miles upstream of this parcel during a 2007 sampling effort. Both bull trout and westslope cutthroat trout are also abundant in Middle Fork Rock Creek below the confluence of East Fork Rock Creek (about 0.5 mile downstream from this parcel).

Response: The parcel described by the commenter is not included in the HCP project area because it is classified as agriculture and grazing and does not include any forested stands. The proposed HCP covers forest management activities, including grazing licenses issued on classified forest parcels. No grazing license and no foreseeable forest management activities are expected to occur on this parcel. The grazing and agricultural activities occurring on this parcel are conducted under a grazing and agricultural lease and therefore would not be covered by the HCP or Permit.

Letter 169, comment 692: We are concerned with the exclusion of critical DNRC-administered fish and wildlife habitat, especially those forested lands within recognized grizzly bear Recovery Zone (RZ)/ Non-Recovery Occupied Habitat (NROH) and mapped lynx habitat. An explicit and transparent discussion of the criteria used by DNRC and USFWS in deciding which lands were included in, and more importantly excluded from the HCP is needed. This discussion should explicitly identify current leases or uses that prevent inclusion as well as those excluded lands within mapped lynx habitat/ GB (grizzly bear) RZ/ GBNROH that DNRC has identified as having future "higher or better uses". Residential, recreational, or commercial development (resulting from either disposition or DNRC leasing activities) in occupied or potential grizzly bear and lynx habitat is the single greatest threat to these species' recovery and persistence. Selective exclusion of parcels, and the resulting increased probability that they will be disposed of or developed outside of the HCP Transition Lands Strategy caps, significantly compromises the conservation commitments applied on HCP lands.

Response: The Final HCP was revised to expand the discussion of lands excluded from the HCP (see Section 1.4.2, HCP Project Area).

Letter 169, comment 693: We suggest that the criteria used to evaluate whether lands were included in the HCP Project be explicitly listed and that DNRC reconsider inclusion of those forested but currently non-HCP Project lands within recognized GBRZ/GBNROH, and those containing DNRC-mapped or designated Lynx Critical habitat. Given the nature and intent of this process, the cumulative effects of impacts to these excluded lands on proposed HCP Project parcels should be clearly weighed against other current and prospective uses, including disposition, new or continued leases, and development. Although we can identify excluded lands within GBRZ/GBNROH, it is more difficult for us to evaluate the amount of DNRC-administered lynx habitat on excluded lands given the maps provided.

Response: The Final HCP was revised to expand the discussion of lands excluded from the HCP project area (see Section 1.4.2, HCP Project Area). While the USFWS seeks inclusion of important listed species habitat in proposed HCPs, it is ultimately the applicants' decision on which lands to include and exclude from the HCP project area and ultimately coverage under the ESA. DNRC is aware that lands excluded from the HCP project area would continue to be subject to the provisions of Section 9 of the ESA and other federal and state laws aimed at species protection. We note that DNRC has an extensive disposal process, as described in Draft EIS Section 4.9.5.1 (Effects of the Transition Lands Strategy -- Affected Environment), which provides several avenues to address concerns about ESA-listed species and other species of concern.

2.19 Funding and Costs

Letter 32, comment 168: The success of the HCP will be in part determined by the budgets provided and having trained personnel. Under Section 8.1, there is a discussion of budgets and training. I feel you have greatly underestimated the costs. It is mentioned that other sources of funds may be used. It is good to use these dollars; however, they will not be adequate. Several questions come to mind: (1) What will happen to annual harvest if these non-compliant features are not corrected? (2) Where will additional funds come from to do the work? (3) What if the stumpage rates received for State timber sales will not cover the additional costs of the HCP-required work? (4) What if litigation occurs that stops a timber sale, yet there is work needed to comply with the HCP?

Response: The cost included in Draft HCP Section 8.1 (Funding) represents DNRC's best estimate of the total cost of implementing the HCP as proposed and analyzed in the Draft EIS. The estimated costs include all foreseeable expenses related to the proposed HCP's commitments, including training, implementation, and monitoring. We note that the cost estimate has been updated in the Final HCP to reflect changes made to the Final HCP commitments.

Regarding the commenter's first question, the USFWS anticipates that DNRC would implement all the HCP requirements throughout the Permit term. The Permit issuance criteria require DNRC to provide funding assurances. The USFWS and DNRC have no reason to believe DNRC would have difficulty meeting its funding commitment (see Final HCP Section 8.1.3, How DNRC Will Fund the HCP). If the Permit is issued and DNRC cannot fully implement the HCP due to lack of funding, the Permit may be subject to suspension or revocation.

Regarding the commenter's second question, DNRC timber sale contracts would continue to be the primary mechanism to implement site-specific corrective actions for addressing problems associated with existing roads and stream crossing structures. Therefore, it is expected that the corrective actions needed to meet the HCP commitments would be largely accomplished under the existing DNRC forest management program. Alternative funds may be used to assist with corrective actions in areas where no timber sale projects are planned. These funds would include the road maintenance portion of the forest improvement funds, cooperative agreements, and special grants.

Regarding the commenter's third question, DNRC acknowledges there are some extra requirements for purchasers implementing timber sales on HCP project area lands; however, DNRC does not expect a measurable reduction in stumpage rates due to implementation of HCP commitments because DNRC developed an HCP that it believes would have minimal effects on bids offered for timber sales to maximize trust revenues and maintain the viability of the state's timber program (Final HCP Section 5.3, Alternative 2 – Proposed HCP).

Regarding the commenter's fourth question, much of the HCP minimization program is designed so that minimization measures are incorporated into the timber sale and would be implemented either prior to or during the timber sale activity. If litigation stopped a timber sale, the mitigation measures already in place would continue to be effective. The USFWS assumes that DNRC would be prepared for such actions (i.e., preliminary injunction to stop a timber sale) because of the time required to file a legal action and for the subsequent legal review and decision. During this period, DNRC should have adequate time to prepare for an eventual stoppage and ensure that any required mitigation measures are completed or alternative mechanisms to implement the corrective action are identified.

Letter 90, comment 324: What funding sources are secured to make sure all commitments are followed? "The DNRC has determined that it can implement Alternative 2 and meet its trust mandate, as well as secure the funding necessary to implement the commitments…"

Response: See Draft HCP Chapter 8 (HCP Implementation) for a description of HCP funding. As described in this chapter, DNRC would fund the HCP through its forest management program, which is funded from a

portion of the revenues generated by land management activities. DNRC would submit an annual budget adequate to fulfill its HCP obligations. Additionally, DNRC would continue to seek funds through grant programs that have been successfully used under the existing program.

Letter 106, comment 433: How many new Water Resource Specialists, Wildlife Biologists, mapping, field data gathering, and technical support personnel are you anticipating needing to implement this HCP? The requirements for baseline studies, ongoing habitat and individual animal monitoring, follow-up analysis, and reporting are financially onerous. While all of this information and study is immensely helpful in managing our landscape, it comes at a very real and significant cost that must be considered. We suggest you discuss implementation costs with other HCP holders in the area.

Response: One of the criteria DNRC must meet to receive the Permit is to ensure that adequate funding is available to implement the HCP. Therefore, DNRC has completed an analysis of the costs of the HCP, which is disclosed in Draft HCP Chapter 8 (HCP Implementation). This analysis considered all needs associated with the HCP, including staffing, training, monitoring, etc. As described in Draft HCP Chapter 8, DNRC strived to develop an HCP that could largely be implemented and monitored within its existing program and budget. DNRC has the staff to implement the HCP.

Letters 128 and 129, comment 640: A discussion of the costs of implementation, monitoring, and mitigation for users of HCP lands would help as would a discussion of funding sources.

Response: The costs and funding sources for the HCP are described in the Draft HCP, Chapter 8 (HCP Implementation). The forest management program is funded from a portion of the revenues generated by land management activities conducted on trust lands, as well as interest. While users of HCP project area lands may be subject to recreational license fees, these fees and funds are part of a different DNRC program and would not be affected by implementation of the HCP or contribute to the costs of implementing the HCP.

Letter 169, comment 691: The funding commitment and process should be made clear.

Response: The funding commitment and process is described on Draft HCP pages 8-1 through 8-3.

2.20 Recreation

Letter 5, comment 22: Section 4.10.1.2, Recreational Access: DNRC is not correct. Check with the Attorney General who has just determined there is not law that says stepping across section corners for access is illegal. If something is not illegal, then it's legal. Please correct this.

Response: The referenced text (Draft EIS page 4-391, lines 34 through 38 and page 4-392, lines 1 through 4) does not say it is illegal to step across section corners. The text is accurate as written.

Letter 5, comment 23: Increase access to all public lands except in security areas. MFWP should know this, DNRC would not.

Response: In accordance with ARM 36.11.421 (10), DNRC considers closures to motorized access on all roads that are non-essential to near-term future management or where unrestricted access would cause excessive resource damage. In general, DNRC closes most roads to public motorized use. However, non-motorized public access is typically not restricted on any roads unless special circumstances warrant a closure (e.g., public safety or nesting animals). The proposed HCP would not change these practices.

Letter 32, comment 169: The HCP has been prepared to cover timber management, road management, and grazing management, leaving out recreational activities. Recreation is a "use" of the forest as much as timber, roads, and grazing. They cannot be logically separated. What is your justification for not including recreation in the HCP? How will recreational use of roads be handled in the HCP? Simply closing roads will not benefit recreational uses nor management of the resource.

Response: DNRC requested USFWS assistance to develop an HCP on its forested trust lands and generally focused on covered activities associated with its forest management program. The conservation commitments apply to DNRC forest management activities. As such, incidental take protection would only be afforded to DNRC under the 50-year Permit term for those activities conducted under the forest management program. We note that proposed road restrictions under the HCP would apply to all users, including recreational users. Recreational use was a consideration in the development of the HCP and resulted in the permanent opening of several roads in the Stillwater State Forest that are currently closed to motorized use. An additional suite of roads in the Stillwater State Forest would be open for seasonal motorized use. Recreational use of DNRC lands and other uses and activities managed and administered under other DNRC programs are not covered activities under the proposed permit; however, DNRC projects developed in other programs would still have to comply with the ESA.

Letter 169, comment 690: Cabin leases should be monitored for compliance with laws for water use and streambed and bank disturbance. Further development at these sites should follow setback criteria with buffers and allowable vegetation disturbance similar to those allowed for timber harvest.

Response: Cabin leases are not a covered activity under this HCP. Any concerns about other programs within DNRC's Trust Lands Management Division may be directed to the respective Bureau Chief.

2.21 Compliance with Federal and State Laws

Letter 5, comment 18: There is no input from MFWP. Please explain.

Response: It is unclear what input from MFWP the commenter is seeking. We note that, as described in Draft EIS Chapter 6 (Scoping and Public Involvement), MFWP completed a scientific review of the draft conservation strategies in 2005 just prior to the release of the draft strategies to the public. The conservation strategies contained in Draft HCP Chapter 2 (Conservation Strategies) reflect the comments and recommendations of both the public and MFWP during that 2005 review. MFWP has also reviewed the Draft EIS and HCP.

Letter 5, comment 20: Executive Order 13443 is Federal law and I don't see where State public land is excluded in the EO.

Response: Executive Order 13443, Facilitation of Hunting Heritage and Wildlife Conservation, applies to federal agencies and in general requires them to evaluate the effect of agency actions on trends in hunting participation and, where appropriate, to address declining trends and implement actions that expand and enhance hunting opportunities for the public. If issued, the Permit and implementation of the HCP would not affect hunting participation; therefore, this order is not applicable to this federal action.

Letter 5, comment 21: The Montana State Supreme Court says DNRC's first obligation is to comply with State and Federal law, and the DNRC is not required to collect full market value if it conflicts with the law. See Ravalli Co v. DSL 273 Mont. 371. See #10-19.

Response: The statements made on Draft EIS page 2-4 and Draft HCP page 3-2 regarding full market value are correct as stated.

Letter 170, comment 710: It was clarified and agreed that implementation of an HCP on DNRC lands would not release other DNRC lands from the protections currently afforded under the ESA or other existing and future federal and state law or policies. DNRC should consider clarifying [in the HCP and EIS] the protections afforded the covered species where they occur on lands not included in this HCP.

Response: This point has been clarified in the Final HCP (see Section 1.4.2, HCP Project Area).

2.22 Implementing Agreement

Letter 9, comment 111: It is not clear in the draft Implementing Agreement what will happen if DNRC HCP prescriptions do not allow attainment of the biological conservation goals. We note that adaptive management has not been fully realized as a success in many cases (Walters, C. 1997. Challenges in adaptive management of riparian and coastal ecosystems. Conservation Ecology [online] 1(2). http://www.ecologyandsociety.org/vol1/iss2/art1/). This article points out that one of the biggest failures of the approach is a general lack of ambitious and innovative commitment on the part of agencies and industry. What will happen if the biological conservation goals are not attained?

Response: The goals, objectives, and adaptive management triggers are designed to be as specific as needed to measure the adequacy of the HCP for conserving all HCP species across the HCP project area. Every 5 years, there would be a detailed evaluation and reporting of the HCP provisions regarding attainment of the biological goals. Additionally, there would be sufficient annual monitoring and reporting to determine whether the minimization and mitigation measures are meeting their intended conservation objectives. If not, under the adaptive management provisions, either party could propose a change to the HCP to improve the effectiveness of the mitigation measures. The USFWS is reasonably confident that the HCP provisions for all the HCP species are sufficient to ensure appropriate levels of conservation and allow for sufficient flexibility for adaptive management provisions to address attainment of the biological goals of the HCP over the 50-year Permit term.

The referenced publication discusses issues surrounding adaptive management, suggesting that the idea of treating management as experimentation has been very difficult to put into practice because of the expense of large-scale experiments, doubts about the quality of modeling efforts, and concerns about ecological side-effects and risks of experimental policies. However, none of those practices are being used in the DNRC HCP, and the USFWS is confident that the adaptive management prescribed will aid DNRC in attaining the biological goals and objectives of the HCP if the primary commitments fail.

We also note that, if the biological goals are not being met and there is disagreement among the parties regarding adaptive management provisions required to address these issues, then Implementing Agreement Section 12.3 (Dispute Resolution) in Draft EIS Appendix F may be invoked. The USFWS retains the ability to suspend or revoke the Permit if it determines that an HCP species is being jeopardized by implementation of the HCP. Furthermore, Implementing Agreement Section 12.4 (Responsibility of the United States), does not limit the ability of the USFWS to seek civil or criminal penalties or otherwise fulfill its enforcement responsibilities under the ESA.

Letter 9, comment 112: The proposed Implementing Agreement does not appear to include strong language regarding Permit and HCP compliance or enforcement. There appear to be no provisions for penalties or monetary damages for non-compliance. The consequences for Permit and HCP non-compliance appears to be entering into a dispute resolution process. It is not clear if such a remedy for non-compliance is strong enough to deter violations and assure adequate conservation and protection of HCP species. Can the USFWS terminate the Permit if land management prescriptions are found to provide inadequate protection for the HCP species?

Response: The terms and conditions under which the USFWS may revoke the Permit are spelled out in the regulations that implement the ESA and in Implementing Agreement Section 6.2 (Permit Suspension or Revocation) in Draft EIS Appendix F. In general, the USFWS may revoke the Permit if it finds DNRC is not in compliance with Permit conditions or with other applicable laws and regulations governing the permitted activity. Additionally, the USFWS may revoke the Permit if continuation of the permitted activity would likely jeopardize the continued existence of the HCP species, but only if the USFWS has not been successful in remedying the situation in a timely fashion through other means, as provided in the No Surprises regulations at 50 CFR 17.22.

Letter 90, comment 323: What recourse is available to require that the HCP is followed?

Response: Both the Permit and the implementing agreement (Draft EIS Appendix F) provide assurances that the HCP would be implemented. Because compliance with the HCP is a condition of the Permit, failure to meet the terms of the HCP is grounds for revoking the Permit. If the USFWS revokes the Permit, DNRC would no longer have the exemption from incidental take provided by the Permit.

Letter 106, comment 437: We suggest you consider stronger language in the implementation agreement regarding how disputes, litigation, and changes will be handled to ensure the greatest benefit is obtained from the Permit and HCP.

Response: The language of the implementing agreement is strong with respect to changes (Section 10.0, Unforeseen Circumstances and "No Surprises") and disputes (Section 12.0, Remedies, Enforcement, and Dispute Resolution). It is unclear how the commenter desired to be addressed. All parties to the HCP retain the right to initiate litigation if and when necessary. Both agencies worked together to develop the implementing agreement and are satisfied with its content.

2.23 Take Analysis

Letter 9, comment 54: The DEIS states that depletion of LWD due to riparian timber harvest will not be considered "take" under ESA (Volume II, page 7-6). It is not clear how adverse effects to an important aquatic ecological function such as LWD recruitment are not considered "take" in relation to the HCP fish species. The FEIS should more clearly explain how reduction in this important aquatic ecological function will not adversely affect aquatic habitat, and will not result in "take" under ESA.

Response: To clarify, adverse effects do not necessarily result in "take" of a listed species. The commenter's reference to "take" in the Draft HCP refers to DNRC's analysis of the potential for take in the HCP. The USFWS will conduct its take analysis in its ESA Section 7 biological opinion on permit issuance.

We note that the Draft EIS analysis for LWD recruitment (pages 4-233 through 4-247) indicates that, compared to the no-action alternative, the RMZ prescription for the proposed HCP (Alternative 2) would generally result in a greater frequency of LWD recruitment throughout most of the 100-year period modeled for HCP fish-bearing streams. LWD levels show a generally increasing trend or stable in-stream LWD level by the end of the 100-year modeling period and that increased LWD recruitment is expected to increase in-stream fish habitat and/or improve existing habitat by increasing its capacity (see Draft EIS Figures 4.8-11 and 4.8-12). In general, the LWD modeling results indicate that all the alternatives are effective at maintaining the LWD recruitment function, even though there are periods in some stand types where a slight decline below target levels would occur before an increasing trend is observed. In the Final HCP, the no-harvest buffer has been expanded to 50 feet and applies to all Class 1 streams. We anticipate an increase in the recruitment potential for LWD levels in HCP fish-bearing streams with this commitment as indicated in subsection Habitat Complexity in Final EIS Section 4.8.4.2 (Fish and Fish Habitat – Environmental Consquences – Direct and Indirect Effects). In addition, the proposed HCP includes an adaptive management process to measure whether expected LWD target levels are being met and, if not, allow appropriate changes in management. At a minimum, 80 percent of the RMZ acres harvested would have to meet the anticipated LWD target levels, which would be reported annually and analyzed in detail every 5 years.

The USFWS agrees with DNRC's assessment on Draft HCP page 7-7, lines 9 through 14, that even if all 20 percent of the allowable RMZ harvest acres do not meet LWD targets, the implementation of commitment AQ-RM1 would still maintain high levels of riparian function, including LWD recruitment, such that impacts would not significantly impair the HCP aquatic species' ability to breed, feed, and shelter and therefore would not result in take.

Letter 90, comment 321: This Permit is for allowing take. How many animals and fish will this Permit allow to be harmed or killed? I did not see this quantified in any of the alternatives.

Response: After the USFWS completes all analyses in the EIS and ESA Section 7 biological opinion, and determines whether the HCP would meet all ESA Section 10(a)1(B) issuance criteria, we will determine whether to issue a Permit allowing DNRC to incidentally "take" listed species while lawfully conducting covered activities. DNRC provided a preliminary estimate of take in Draft HCP Chapter 7 (DNRC's Identification of Impacts that Have the Potential to Constitute Take under the HCP). The USFWS will estimate the amount of take likely under the HCP and analyze the effects of that taking in an incidental take statement in its Section 7 biological opinion to determine whether such effects would result in jeopardy of the HCP species. If we issue the Permit, it will specify the amount of authorized incidental take.

Letter 109, comment 472: The HCP must quantify the amount of "take" that is being granted to DNRC. This calculation should include quantification of existing Permits and incidental take statements for threatened and endangered species in this HCP area. There should also be a calculation of the cumulative take that is occurring from all these Permits and incidental take statements in the HCP area. This information needs to be analyzed in the context of how many bears, bull trout, and lynx are actually "growing" on this landscape in order to get a clear picture of whether take is exceeding survival.

Response: In accordance with ESA Section 10(a)(2)(A), an HCP is required to specify "(i) the impact that will likely result from such taking." DNRC has met this requirement in Draft HCP Chapter 7 (DNRC's Identification of Impacts that Have the Potential to Constitute Take under the HCP). The USFWS will consider exempted take (existing permits and incidental take statements) for the HCP species in its Section 7 ESA biological opinion. In its biological opinion, the USFWS will also analyze the aggregate effects of everything that has led to the species' current status and, for non-federal activities, those activities likely to affect the species in the future, to determine whether the anticipated take would result in jeopardy of the HCP species. The USFWS will not issue the Permit to DNRC if the final analysis determines that, given the aggregate effects, the species would be jeopardized.

2.24 Process

Letter 23, comment 150: Please slow the process and re-evaluate with all factors on the table.

Response: USFWS and DNRC initiated the HCP process in 2003. It has taken a considerable amount of time to evaluate all the factors and develop a plan agreeable to both agencies. Therefore, while we appreciate the commenter's concern, we believe we have considered all the factors before us in a thoughtful manner, and we do not propose or anticipate further substantive delays.

Letter 106, comment 430: We are somewhat dismayed that there has been no additional public involvement from 2005 to mid 2009. Obviously, much has changed since the 2005 draft to the document currently out for review.

Response: Both agencies solicited public input at key points in the development of the HCP and EIS. Since the public review of the draft conservation strategies in 2005, we revised the HCP based on public comments and conducted the Draft EIS analysis. Key comments we received on the strategies and the responses are provided in Draft EIS Chapter 6 (Scoping and Public Involvement). Both agencies felt it was appropriate to compile the completed Draft HCP and EIS prior to seeking additional public review. During this period, project updates were posted on the project website (http://dnrc.mt.gov/HCP/).

2.25 Cultural Resources

Letter 9, comment 116: The Flathead Indian Reservation and Blackfeet Indian Reservation are located within the planning area (page 4-420), and the HCP project area includes some Tribal Trust Lands. As you know, the U.S. has a unique relationship with Tribal governments which requires that Federal agencies assess and disclose the impacts of their actions on Tribal Trust resources. Trust resources are located both within the boundaries of the reservations and outside the reservations in Usual and Accustomed fishing and hunting

areas. The environmental documentation should fully disclose the potential environmental impacts, both negative and positive, on Tribal Trust resources. We are pleased that under all alternatives land management activities in the planning area would be subject to the same federal, state, and local regulations for documentation, protection, preservation, and conservation of cultural and ethnographic resources (page 5-13).

Response: Draft EIS pages 4-423 through 4-427 describe the effects of implementing the HCP on tribal trust resources. However, in the Final EIS, we have included an additional discussion (Section 4.12.2.6, Effects on Tribal Trust Resources) to disclose the potential effects of the HCP and planned mitigation measures to offset those effects.

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