

**ENVIRONMENTAL ASSESSMENT OF HUNTING ON
LOST TRAIL NATIONAL WILDLIFE REFUGE**

United States Fish & Wildlife Service
National Bison Range Complex

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Cover Sheet

Proposed Action: Allow hunting on Lost Trail National Wildlife Refuge

Type of Statement: Environmental Assessment

Lead Agency: U.S. Fish & Wildlife Service

Cooperators: Montana Department of Fish, Wildlife & Parks
Montana Department of Natural Resources Conservation
Confederated Salish & Kootenai Tribes

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Acronyms used in this document:

CFR - Code of Federal Regulations
CSKT - Confederated Salish and Kootenai Tribes
DNRC - Montana Department of Natural Resources and Conservation
EA - Environmental Assessment
EMU - MFWP Elk Management Unit
ESA - Endangered Species Act
FWS - U.S. Fish and Wildlife Service
HD - Montana Department of Fish Wildlife and Parks, Hunting District
MFWP - Montana Department of Fish Wildlife and Parks
MPC - Montana Power Company
NEPA - National Environmental Policy Act
NRCS - U.S. Department of Agriculture, Natural Resources Conservation Service
NWR - National Wildlife Refuge
Refuge - Lost Trail National Wildlife Refuge
WPA - U.S. Fish and Wildlife Service, Waterfowl Production Area
WRP - US Department of Agriculture, Wetland Reserve Program

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Amendment to the Lost Trail EA, 2007

In response to a 2003 lawsuit filed by the Fund for Animals, the U.S. Fish and Wildlife Service (Service) has amended or rewritten environmental assessments that describe hunting programs at thirty-seven national wildlife refuges across the nation. The basis for the lawsuit was that the Service failed to comply with the National Environmental Policy Act (NEPA) when establishing these hunting programs without considering the cumulative effects of hunting on wildlife populations. In addition to the thirty-seven refuges, thirty other refuges that have opened, expanded, or proposed new or expanded hunting programs since the 2002-2003 hunting season will also undertake the more thorough cumulative impact analysis. The same documentation will be completed for seven other refuges where the opening of hunting programs was proposed for the 2006-2007 season. In total, the Service will revise cumulative impacts analyses for 74 refuge hunting programs by May 31, 2007. This document addresses the hunting program at Lost Trail National Wildlife Refuge in northwest Montana.

Specifically, the revision includes updated population figures for the species hunted on Lost Trail Refuge and cumulative impacts for the preferred alternative.

PURPOSE FOR THE PROPOSED ACTION

The purpose of this Environmental Assessment (EA) is to evaluate the feasibility of establishing a hunting program on Lost Trail National Wildlife Refuge (Refuge). The Service is required under the National Wildlife Refuge System Improvement Act of 1997 (*16 USC 668dd*) to consider opening refuges to the six priority wildlife-dependent recreational uses, of which hunting is one. The decision to open a refuge to hunting must be consistent with principles of sound wildlife management, applicable wildlife objectives and otherwise be in the public interest (50 Code of Federal Regulations (CFR) 32.1). Hunting must be compatible with the refuge enabling legislation, and consistent with the Refuge Recreation Act of 1962, and the Refuge Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997. Hunting should also be evaluated in regards to the other priority wildlife-dependent recreational uses (fishing, wildlife observation, wildlife photography, environmental education and interpretation) to minimize conflicts while providing opportunities for a premier wildlife experience for all.

NEED FOR THE ACTION

The proposed action is to implement a hunting program on Lost Trail National Wildlife Refuge to provide the public with a high quality recreational experience. A hunting program must be compatible, and should instill positive values and high ethical standards, such as fair chase and sportsmanship, while providing a quality hunt. Policy of the U.S. Fish and Wildlife Service (FWS) Refuge Manual (8 RM 5.5) stipulates that hunting on refuges should be superior to that available on other public or private lands and should provide participants with reasonable harvest opportunities, uncrowded conditions, fewer conflicts between hunters, relatively undisturbed wildlife and limited interference from or dependence on mechanized aspects of the sport. Refuges are encouraged to set aside areas or times to promote hunting by youth to instill in them an appreciation for wildlife and the environment, while providing quality recreation and teaching proper hunting methods in a safe environment. The potential for crippling losses should be minimized and out-of-range shooting discouraged. Finally, hunting access and vehicle control should be planned to retain or improve the quality of the hunt and prevent disturbances to habitat, other hunters and wildlife. Land vehicles should only be used to provide access to the hunting area and not as a technique to make hunting easier, put wildlife at a disadvantage, or increase hunter success.

Refuge managers should offer wildlife-dependant recreation only to the extent that staff and funds are sufficient to develop, operate, and maintain the program to safe, high quality standards (Refuge Recreation Act). Managers should also rely on close cooperation and coordination with State Fish and Wildlife agencies in managing hunting opportunities on refuges and in setting refuge population goals and objectives.

ISSUES

During the development of the Environmental Assessment and conceptual management plan for acquisition of Lost Trail, and a refuge open house, several issues were raised by members of the public, State and Tribal representatives.

Establishment as a Refuge vs a Waterfowl Production Area

The Montana Power Company (MPC) purchased the Lost Trail Ranch in 1996 to partially satisfy a mitigative settlement order. This order was issued by the Federal Energy Regulatory Commission to the MPC, the Department of Interior, and the Confederated Salish and Kootenai Tribes (CSKT) to mitigate for wildlife losses and impacts associated with fluctuating water levels on Flathead Lake. This included damages to the Flathead Waterfowl Production Area (WPA) which is a unit of the National Wildlife Refuge System. MPC conveyed two tracts (3,100 acres) at opposite ends of the ranch to the FWS in 1999 to partially satisfy the settlement order. The future of the remaining ranch acreage between the two mitigation areas was uncertain. The Fish and Wildlife Service in partnership with the Natural Resources Conservation Service (NRCS) worked to protect this important connecting habitat. Under the auspices of the Wetland Reserve Program (WRP), the NRCS purchased a wetland easement from MPC on 1,707 acres within the Ranch. This acreage is located between the two conveyed parcels.

One of the alternatives in the Environmental Assessment and Conceptual Management Plan for acquisition of Lost Trail was to take ownership of the original 3,100 acres and not purchase the remainder of the Ranch. The Preferred Alternative outlined the importance of the remainder of the Ranch to the management and protection of the mitigated lands. In this alternative, the remaining 4,773 acres of the Lost Trail Ranch would be purchased in fee title and Montana Power Company would also turn over the grazing leases it held on 1,440 acres of timber and grazing land owned by the State of Montana within the Refuge acquisition boundary. These state lands and leases are administered by the Montana Department of Natural Resources and Conservation (DNRC). This 4,773 acres includes the NRCS 1,707 acre WRP easement. The use of a conservation easement was explored but was not a viable option for MPC. The partnership with NRCS and the availability of additional funding made the preferred alternative possible and the entire ranch was acquired establishing the 519th National Wildlife Refuge in August of 1999.

Since the mitigation order was to compensate for losses on Flathead WPA, some constituents felt Lost Trail should become a Waterfowl Protection Area. WPAs are added to the Refuge System under the Small Wetlands Acquisition Program. The total acreage proposed in the alternatives of the Acquisition EA for Lost Trail (3,100 acres and 4,773 acres) were too large to qualify under the Small Wetlands Acquisition Program. Therefore, both alternatives were discussed as being established as a National Wildlife Refuge.

Hunting on the Refuge One Year After Purchase

The Conceptual Management Plan in the Acquisition Decision Document for Lost Trail Ranch states, "Hunting will be based on compatibility, wildlife populations stability, administrative staffing, and funding for the operation of hunting programs. A hunting program will be initiated after one year of land purchase, with the availability of funding. During the one year planning phase, the Service will develop a hunting plan and evaluate the environmental effects, with public input, of a hunting program through an Environmental Assessment." The FWS purchased Lost Trail on August 24, 1999. Once purchased, the Refuge is officially open to hunting only after the effective date and final rule publication of refuge specific hunting regulations in the Federal Register. Submission deadline of hunting rules, regulations and seasons are required in January of each year for publication in the Federal Register. To meet the time line proposed in the Acquisition Environmental Assessment (EA), the FWS would have had to complete the required Endangered Species Act (ESA) and National Environmental Policy Act (NEPA) compliance, the hunt plan and compatibility determination, and associated public comment, prior to January 2000. It is not practical for the Service to be able to get a new refuge open to hunting in less than two years due to planning, development and publishing constraints. The statement in the Acquisition EA was an oversight by the Service. The purpose of this EA is to evaluate opening the Refuge to hunting in 2002.

Big Game Hunting

The majority of comments received supported the hunting of big game on the refuge. Hunting suggestions ranged from having the Refuge completely open to hunting following MFWP regulations and seasons to permit only, archery only, or muzzle loader only hunting. Several other comments indicated that people felt that National Wildlife Refuges should not be open to hunting or that hunting should only be permitted if necessary to maintain healthy habitat or wildlife populations. A few comments were received indicating a preference for big game hunting but with the condition that motorized transportation not be allowed. Some people commented that accessibility for special needs hunters should be accommodated.

Access Across the Refuge to Hunt on State and Plum Creek Lands

At a minimum, hunters and Montana Department of Fish Wildlife and Parks (MFWP) expressed a desire for access across the Refuge to hunt adjoining Plum Creek and DNRC lands. Service staff have completed a public use handout based on the Refuge acquisition EA providing limited public uses including access through the Refuge to Plum Creek and DNRC lands beginning September 1, 2001.

Trapping

Some individuals would like to see the Refuge open to trapping. This is a separate issue that will be addressed in the Comprehensive Conservation Plan.

Elk Seeking Refuge

MFWP is concerned that elk will quickly learn to seek sanctuary inside the Refuge if it is closed to hunting. Closure to hunting would lessen opportunities for hunters off the Refuge and may cause the herd to exceed the carrying capacity of available habitat. Limited private hunting occurred on what is now the Refuge prior to acquisition.

Tribal Subsistence

The Confederated Salish and Kootenai Tribes (CSKT) would like to see tribal subsistence hunting rights established at Lost Trail NWR based in part on the Hellgate Treaty and the courts. The Fish and Wildlife Service is currently seeking legal counsel on this issue and anticipates that the issue will be resolved outside of the context of the current proposed public hunting program.

Other Hunting Issues

Forty three people attended an open house at the Refuge on March 1, 2001 specifically in regards to establishing a hunting program. Many provided comments on the management of Lost Trail NWR. Others who did not attend the open house sent written comments over the next couple of weeks. Most of the comments and issues expressed were related to opening the Refuge to hunting. Comments ranged from not allowing hunting on the Refuge to opening the entire Refuge to hunting. Other comments included opening the uplands to hunting but not the bottom lands and allowing for special accessible hunting. A few comments suggested waterfowl hunting only, while others wanted the opportunity to shoot predators and ground squirrels. Concern has been expressed regarding populations of Columbian sharp-tailed grouse. Present MFWP regulations prohibit shooting of sharp-tailed grouse west of the continental divide and there is no known population of sharp-tails on or near the Refuge.

PLANNING PROCESS

The Refuge Improvement Act designated six wildlife dependent recreational uses to be given priority on National Wildlife Refuges if they are determined to be compatible with Refuge purposes and the Refuge system mission. The wildlife dependent recreational uses are wildlife observation, wildlife photography, environmental education, environmental interpretation, hunting and fishing. During the acquisition process and in the Acquisition Environmental Assessment, the FWS stated that hunting would be evaluated and potentially allowed within one year after purchase. The FWS missed that deadline as discussed earlier in this document. The development of a hunting EA and Hunt Plan has been accelerated due to the need for Federal Register publication submission in January of 2002 for any hunting activities which may occur during the 2002 hunting season. Following a review and analysis of public comments on the Hunt EA and the draft Hunt Plan, either a finding of no significant impact or the need for further in-depth analysis in the context of an Environmental Impact Statement will be determined. The approved preferred alternative will serve as the guideline for the development of the refuge

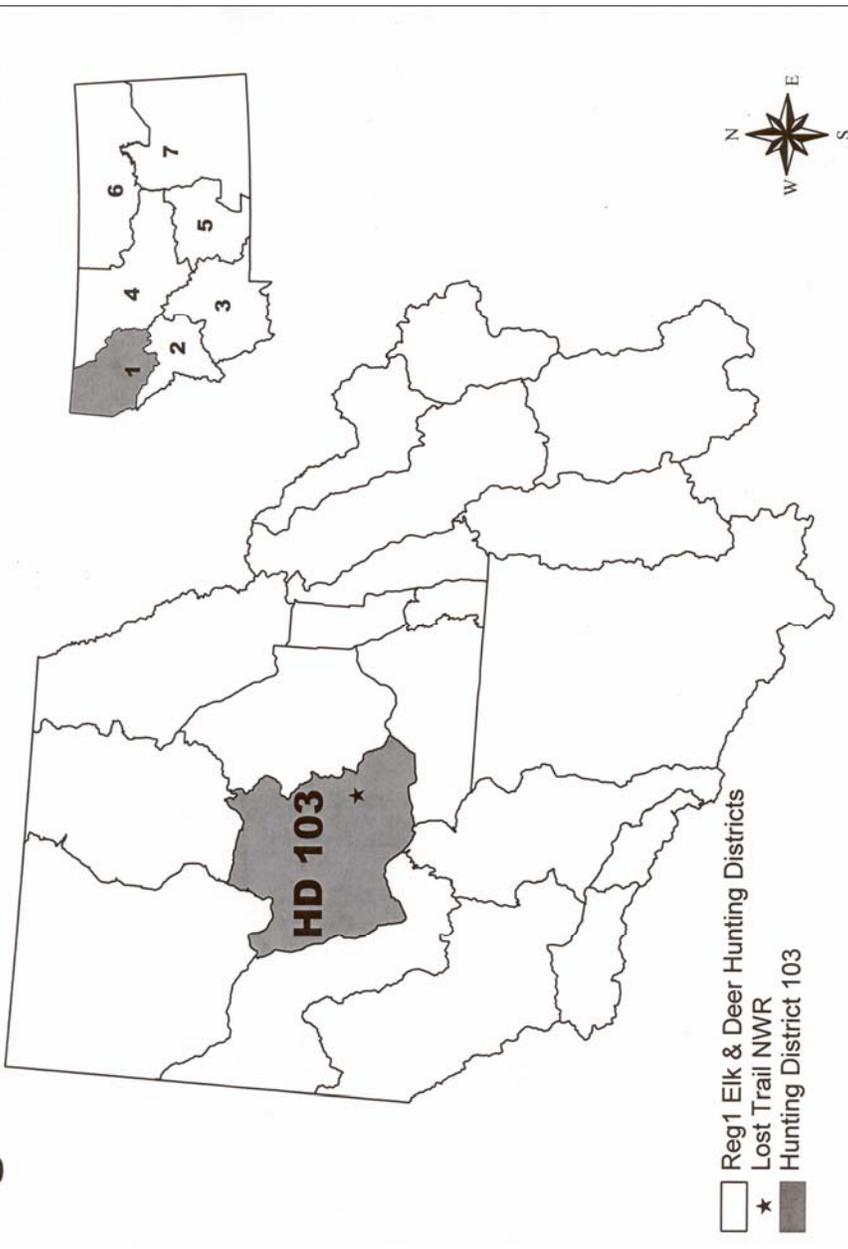
specific Hunt Plan. This plan will outline the specific details of how the hunt program will be carried out. The public will be requested to provide suggestions and input on the draft hunt plan. The hunt plan will be implemented in the Fall of 2002.

Refuge and regional office staff are also currently preparing a Comprehensive Conservation Plan for Lost Trail NWR. The National Wildlife Refuge Administration Act as amended by the National Wildlife Refuge Improvement Act of 1997 requires all National Wildlife Refuges to prepare a Comprehensive Conservation Plan (CCP). Its purpose is to guide refuge management for the subsequent 15 years. The normal time frame for a plan of this magnitude is two years from the “kick off” of the working group. The FWS anticipates releasing the draft Lost Trail CCP for public comment in March of 2002. The CCP will cover all management and public use activities on the Refuge. Since the hunt plan will have been established earlier, with appropriate public involvement already completed, it will be included as a step down management plan in an appendix of the CCP. Additional step-down management plans will be developed after CCP completion to guide activities conducted on refuges such as habitat and wildlife management, and the other priority public uses.

ALTERNATIVES

Six alternatives are being evaluated in this document. For discussion purposes these are titled: A: Limited Hunting, B: Designated Areas Hunting, C: Maximum Allowable Hunting, D: Special Permit Hunting, E: MFWP Alternative, and F: No Action (No Hunting). These alternatives describe hunting programs that incorporate various MFWP regulations. Lost Trail National Wildlife Refuge is located in MFWP Hunting District 103 of Region 1 (Figure 1). These alternatives resulted from input from the public during refuge acquisition comment periods, a Refuge open house, FWS, MFWP, DNRC and the CSKT.

Figure 1. MFWP Administrative Boundaries



Alternative A (Limited Hunting)

Alternative A proposes to open Lost Trail National Wildlife Refuge to limited hunting. Archery only hunting would be allowed for elk and deer during the state archery and general big game seasons. Turkey and ruffed, blue and spruce grouse hunting would be allowed on the Refuge following MFWP regulations and seasons using bow and arrow or shotguns with federally approved non-toxic shotshells only. Waterfowl hunting would not be allowed. Hunting of moose, mountain lion, black bear, ground squirrels, coyotes, and furbearers would be prohibited, unless it becomes necessary as a management tool. Vehicle access to the Refuge would be limited to existing open roads such as the north 1019 road and the county road. Access by foot would be allowed throughout the Refuge during the open hunting seasons. Parking would be in designated areas only. Special Youth hunting and access for hunters with disabilities would be encouraged and accommodated following MFWP regulations. Youth hunting would be further encouraged by limiting the first week of archery deer and elk season to youths 12 -14 years of age accompanied by an adult and/or guardian who is at least 21 years of age. Hunters with disabilities in possession of a MFWP permit to hunt from a vehicle would be provided limited access to refuge management roads and trails.

All or any part of the Refuge may be closed to hunting by the refuge manager whenever necessary to protect the resources of the area or in the event of an emergency endangering life or property. In addition, according to refuge policy (RM 5.436), yearly evaluation and monitoring for impacts from the hunt program will occur to determine if modifications to the hunt plan are necessary.

Alternative B (Designated Areas) **PREFERRED ALTERNATIVE**

This alternative would allow hunting of elk, deer, mountain grouse, and turkey following MFWP regulations and seasons except within designated closed areas of the Refuge (Figure 2). No hunting would be allowed between the county road (Pleasant Valley Road) and the South Pleasant Valley Road. Hunting would be permitted on any Refuge lands south or east of the South Pleasant Valley Road (southeast pond area) and north of the Pleasant Valley (county) road. Shotgun hunting for turkey and mountain grouse would be limited to non-toxic shot on the Refuge. Hunting of moose, mountain lion, black bear, coyote, ground squirrels, furbearers and waterfowl would not be allowed on the Refuge. Vehicle access would be permitted on roads currently open to the public including the north 1019 road and the county road. Hunters would be required to park in designated parking areas to access areas open to hunting.

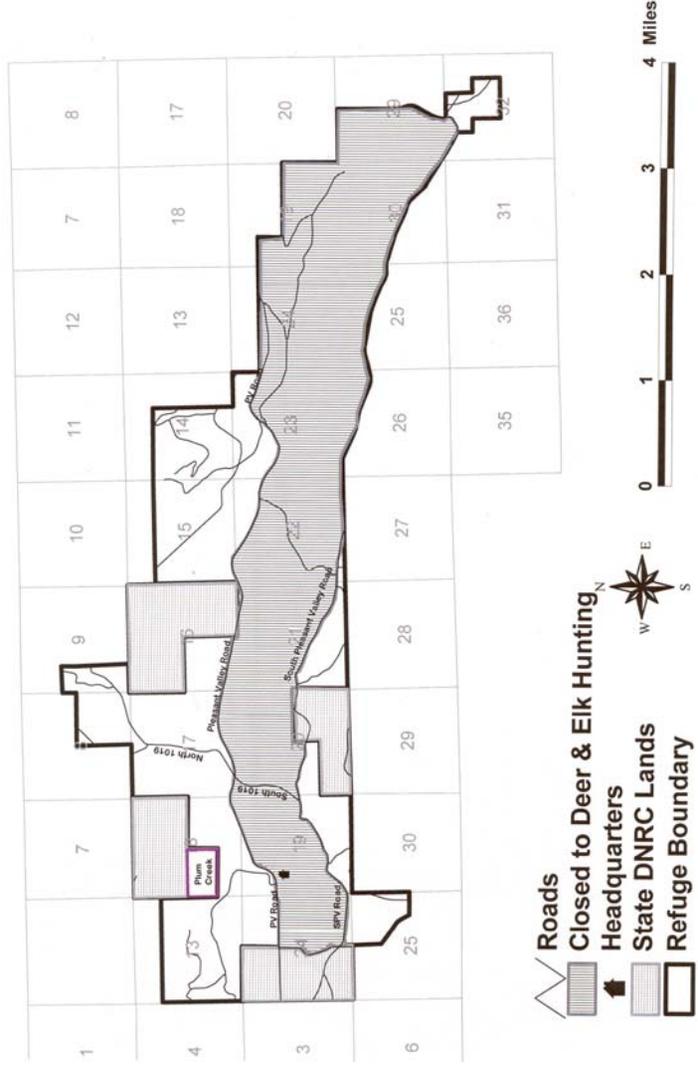
Special Youth hunting and access for hunters with disabilities would be encouraged and accommodated following MFWP regulations. Youth hunting will be further encouraged by limiting the first week of archery deer and elk season and the first week of the general deer and elk season to youths 12 -14 years of age accompanied by an adult and/or guardian who is at least 21 years of age. Hunters with disabilities in possession of a MFWP permit to hunt from a

vehicle will be provided limited access to refuge management roads and trails.

All or any part of the Refuge may be closed to hunting by the refuge manager whenever necessary to protect the resources of the area or in the event of an emergency endangering life or property. In addition, according to refuge policy (8RM 5.3B, 5.3F, & 5.5N), yearly evaluation and monitoring for impacts from the hunt program will occur to determine if modifications to the hunt plan are necessary.

Figure 2. Lost Trail NWR Hunt EA Designated Areas Alternative

**Figure 2. Lost Trail NWR Hunt EA
Designated Areas Alternative**



Alternative C (Maximum Allowable Hunting)

This alternative would allow the maximum amount of hunting within the bounds of the Refuge Administration Act, the enabling legislation, and the purpose of the Refuge. Deer and elk season would be open during archery and general big game season following MFWP regulations and seasons, and all legally permitted weapons would be allowed. There would be no closed areas on the Refuge except for safety zones adjacent to refuge facilities. The first weeks of archery and rifle seasons would be set aside for youth only hunting. The Refuge would also be open to moose, bear, lion, upland game bird and turkey hunting following MFWP seasons and regulations. Waterfowl hunting would be permitted on a designated 40% of the refuge. As in alternatives A and B, vehicle access would be allowed on the county road and the north 1019 road. All other access would be non-motorized. Motorized access on closed roads may be available to hunters with disabilities on a permit basis.

Predator hunting would be permitted, as would ground squirrel shooting. Trapping is not considered a part of hunting and is a separate issue that will be addressed in the Refuge Comprehensive Conservation Plan.

All or any part of the Refuge may be closed to hunting by the refuge manager whenever necessary to protect the resources of the area or in the event of an emergency endangering life or property. In addition, according to refuge policy (RM 5.436), yearly evaluation and monitoring for impacts from the hunt program will occur to determine if modifications to the hunt plan are necessary.

Alternative D (Special Permit Hunting)

Alternative D would open the Refuge for deer, elk, grouse and turkey hunting Refuge-wide following MFWP regulations. Deer and elk hunting would be allowed on a permit basis during the general big game season. Turkey and grouse hunting would follow MFWP seasons and regulations except the only legal "means of take" would be by shotgun with non-toxic shot. Hunting of moose, bear, lion, coyote, waterfowl, and ground squirrels would not be permitted on the Refuge.

There would be five tags issued, for the hunting of deer and elk, each of the five weeks in the general season. An additional tag each week would be reserved for MFWP authorized hunters with disabilities. The drawing for all permits would be held the week before the opening of the general big game season. Hunters would need to be present to participate. All successful hunters would be given an opportunity to choose the week in which they would like to hunt until all six slots for all five weeks were filled. Hunters with disabilities would also be required to attend the drawing and successful applicants would have vehicular access on designated closed roads of the Refuge.

Successful permit holders would be allowed to hunt the entire Refuge excluding safety zones around Refuge homes and facilities. Vehicle access would be permitted on all roads currently open to the public including the north 1019 road and the county road. Hunters would be required to park in designated parking areas to access areas open to hunting.

All or any part of the Refuge may be closed to hunting by the refuge manager whenever necessary to protect the resources of the area or in the event of an emergency endangering life or property. In addition, according to refuge policy (RM 5.436), yearly evaluation and monitoring for impacts from the hunt program will occur to determine if modifications to the hunt plan are necessary.

Alternative E (MFWP Proposal)

MFWP proposed the outline for this alternative during the internal review process of the draft EA. Although it is presented here as a separate alternative, alternatives A and B were also modified to incorporate some of the ideas suggested by MFWP.

Alternative E would allow hunting of elk and deer following MFWP regulations (gun and archery) except within designated closed areas of the Refuge (Figure 2). No elk or deer hunting would be allowed between the county road (Pleasant Valley Road) and the South Pleasant Valley Road. Hunting of elk and deer would be permitted on any Refuge lands south or east of the South Pleasant Valley Road (southeast pond area) and north of the Pleasant Valley (county) Road.

Special Youth hunting and access for hunters with disabilities would be encouraged and accommodated following MFWP regulations. Youth hunting will be further encouraged by limiting the first week of archery deer and elk season and the first week of the general deer and elk season to youths 12 -14 years of age accompanied by an adult and/or guardian who is at least 21 years of age. Hunters with disabilities in possession of a MFWP permit to hunt from a vehicle will be provided limited access to refuge management roads and trails.

Hunting of moose, bear, mountain lion, coyote and ground squirrel would not be permitted on the Refuge.

Waterfowl hunting would be permitted on a designated 40% of the refuge. The Refuge was acquired under authority of the Migratory Bird Conservation Act of 1929 which stipulates a maximum of 40% of total Refuge acreage can be opened to migratory waterfowl hunting.

Hunting for turkey and ruffed, blue and spruce grouse would be permitted following MFWP seasons and regulations except only non-toxic shotgun shot would be permitted on the Refuge. Hunting would be allowed Refuge-wide for these species.

Furbearer hunting would be allowed following MFWP seasons and regulations using rifle or shotgun with non-toxic shot. MFWP hunting regulations stipulate "Bobcat and wolverine are the only animals defined by law as furbearing animals that may be taken by hunting (MCA 87-2-601)". Trapping for other species listed as furbearers by MFWP (beaver, otter, muskrat, mink, marten, fisher, and swift fox) does not fall under the auspices of the Hunt EA and will be addressed in the Comprehensive Conservation Plan.

Vehicle access through the Refuge would be permitted on roads currently open to the public including the north 1019 road and the county road. Hunters would be required to park in designated parking areas to access areas open for hunting.

All or any part of the Refuge may be closed to hunting by the refuge manager whenever necessary to protect the resources of the area or in the event of an emergency endangering life or property. In addition, according to refuge policy (RM 5.436), yearly evaluation and monitoring for impacts from the hunt program will occur to determine if modifications to the hunt plan are necessary.

Alternative F (No Action)

Lost Trail National Wildlife Refuge was established in August of 1999. Refuges are closed to hunting until appropriate NEPA documentation, hunt plan and subsequent compatibility determination are completed. In this alternative, the Refuge would remain closed to hunting. Other wildlife orientated recreation such as viewing and photography would take precedence. Hunting would be re-evaluated if a biological need to reduce game or other wildlife species is documented.

Table 1. Hunting Alternatives

	Alternative A Limited Hunting	Alternative B Designated Areas PREFERRED	Alternative C Maximum Allowable Hunting	Alternative D Special Permitted Hunting	Alternative E* MFWP Proposal	Alternative F No Action
Elk & Deer	Archery only 11 weeks Refuge-wide	Rifle and Archery in designated areas	Rifle and Archery Refuge- wide following state regulations	Rifle and archery Refuge- wide during general season only with permit. Five permits issued per week.	Rifle and Archery in designated areas	Closed
Special Youth Hunt	1st week archery season	1st week archery and 1st week general season	1st week archery and 1st week general season	None	1st week archery and 1st week general season	None
Permits for hunters with disabilities	Yes	Yes	Yes	1 tag per week reserved for hunters with disabilities	Yes	None
Moose	Closed	Closed	Open following State Regulations	Closed	Closed	Closed
Black Bear	Closed	Closed	Open following State Regulations	Closed	Closed	Closed
Mountain Lion	Closed	Closed	Open following State Regulations	Closed	Closed	Closed
Waterfowl	Closed	Closed	Open following State regulations on 40% of Refuge	Closed	Open following State regulations on 40% of Refuge	Closed
Upland Game birds	Open following MFWP regulations except using bow and arrow or shotguns with non-toxic shot only.	Open in designated areas following MFWP regulations except only non-toxic shot allowed for shotgun.	Open following State regulations	Open following MFWP regulations except "means of take" limited to shotguns with non-toxic shot	Open following MFWP regulations except for use of non-toxic shot	Closed
Turkey	Open following MFWP regulations except for use of non-toxic shot	Open in designated areas following MFWP regulations except only non-toxic shot allowed for shotgun.	Open following State Regulations	Open following MFWP regulations except "means of take" limited to shotguns with non-toxic shot	Open following MFWP regulations except for use of non-toxic shot	Closed
Furbearers	Closed	Closed	Allowed	Closed	Open following State Regulations	Closed
Coyote	Closed	Closed	Open following State Regulations	Closed	Closed	Closed
Ground Squirrel	Closed	Closed	Allowed	Closed	Closed	Closed

* Alternatives A,B,C and D were also modified to reflect suggestions provided by MFWP during internal review.

Table 2. Hunting seasons for the state of Montana

Seasons	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
General big game												
Archery												
Turkey												
Upland game bird												
Black bear												
Moose												
Furbearer												
Migratory bird												
Mountain Lion												
*Ground Squirrel												
*Coyote												

* No hunting season designated. Open to taking all year. Designated "seasons" indicate traditional time frame for hunting of ground squirrel and coyote.

AFFECTED ENVIRONMENT

The Lost Trail National Wildlife Refuge is located in the west-central portion of Flathead County approximately 25 air-miles west of Kalispell, Montana. The 7,885 acre Refuge was established in August, 1999 under the authority of the Migratory Bird Conservation Act of 1929 for “...use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” (16 USC 715-715d, 715e, 715f-715r). Mitigation tracts obtained from the Montana Power Company were accepted under the Fish and Wildlife Coordination Act, “for the conservation and enhancement of fish and wildlife” (16 USC 661(1)-662(c)). Montana Power Company purchased the entire Ranch in August of 1996. A total of 3,112 acres of the Ranch were conveyed to the Fish and Wildlife Service as partial mitigation for losses on the Flathead Waterfowl Production Area attributed to past and future operations of Kerr Dam. The purpose of these mitigated properties is to protect and maintain wetland habitat for migratory birds, waterfowl and other species of animals and plants; to restore flood plain acreage to its historic role; and to enhance the survival of endangered and threatened species in the area. The remaining 4,773 acres of ranch property were purchased by the FWS utilizing Migratory Bird Conservation Fund money. The Natural Resources Conservation Service (NRCS) purchased a Wetland Reserve Program easement from Montana Power Company on approximately 1,707 acres within the above 4,773 acreage that is now Refuge. These lands are now owned by the U.S. Fish and Wildlife Service and managed in concert with NRCS. Public access and hunting are not restricted by the easement and are up to the discretion of the FWS. An additional 1,440 acres of DNRC lands within the Refuge acquisition boundary are leased by the FWS or Refuge neighbors.

The Refuge is located in a geographic drainage known locally as Pleasant Valley. The valley was formed during the Pleistocene Period by glacial and sedimentation activity. The glacial deposits sit atop the older belt rock formation, which in turn has faulted over younger Paleozoic rocks which are thought to contain oil and gas. A deep well was drilled a few miles northwest of the Refuge, but no significant mineral deposits were found. Soils consist of loams, silt loams, sandy loams, gravelly loams, and clay loams.

The topography of the Refuge consists of valley floor meadows, and sloping upland terrain areas dominated by timber. The Refuge is located in a long valley in which Pleasant Valley Creek flows south out of the mountains on the north side of the valley and then moves westward. Pleasant Valley Creek joins Meadow Creek, which flows out of Dahl Lake, east of the Horse Ranch Complex. The partially drained 160 acre Dahl Lake lies near the eastern boundary of the Refuge. Wetlands downstream of Dahl Lake have been altered by the channelization of Meadow Creek in an effort to create additional cropland and grazing areas. The channelization enables Dahl Lake and adjacent wetlands to partially drain by allowing flow to move west out of the Lake. Wetland development on the Refuge will likely involve reversing the effects of channelization thus restoring higher water levels in Dahl Lake and surrounding lowlands.

Elevations on the Refuge range from 3,488 feet to 4,600 feet. Habitat types consist of subirrigated wet meadows, grassy uplands and coniferous forests. The sub-irrigated wet meadows are composed primarily of basin wild rye, cattail, rush, sedge and introduced meadow grasses dominated by reed canary grass and timothy. Upland areas are composed of a mosaic of prairie grasslands consisting of cool season native grasses (rough fescue, Idaho fescue, bluebunch wheatgrass, Columbia and Richardson's needlegrass and needle and thread), non native grasses (smooth brome, timothy, redtop and Kentucky bluegrass), noxious weeds (knapweed and tansy ragwort) and a diversity of other forbs. Coniferous forest are dominated by ponderosa pine, Douglas Fir, western larch and lodgepole pine. Other forest species include subalpine fir, grand fir, spruce, and cedar. Small pockets of aspen, birch and cottonwood are located throughout the Refuge.

The primary industry in the valley is agriculture, specifically beef cattle on the valley floor and timber production on the higher slopes. Neighbors to the Refuge include the Montana Department of Natural Resources and Conservation, the US Forest Service Flathead and Kootenai National Forests, Plum Creek Timber Company and two private ranches. Agricultural practices in the Pleasant Valley area are less intense than in other areas of Montana. The majority of lands within the valley consist of timber interspersed with large open hay meadows and pasture for cattle production.

The diverse habitats of the area sustain a wide variety of migratory bird species. Wetland habitats support 15 species of waterfowl including mallard, gadwall, cinnamon teal, blue-winged teal, lesser scaup, bufflehead, wood duck, ruddy duck, common goldeneye, common merganser, northern shoveler, redhead, wigeon, tundra swan and Canada goose. Many of these species nest on the refuge. Species of marsh and shorebirds present during the summer months include various species of grebes, herons, gulls, killdeer, sandhill cranes, dowitchers, sandpipers, snipe, bitterns, and black terns. Many raptor species, including northern harrier, red-tailed hawk, Swainson's hawk, American kestrel, and great-horned owl, have been observed on the refuge.

Resident wildlife that are attracted to the diverse habitats found on the Refuge include white-tailed deer, mule deer, elk and moose. Black bears and mountain lions are also common residents within the Refuge and surrounding Plum Creek timber lands. Upland game birds known to inhabit the area include spruce, blue and ruffed grouse. Eastern turkeys were transplanted to the area in 1999 and have split into four flocks with a total of approximately 150. Ring-necked pheasants have been transplanted into the area but do not survive the winters and have disappeared from the Refuge. The Refuge is also within the historic range of the Columbian sharp-tailed grouse, a U.S. Forest Service listed "sensitive species". Other forest-dependant species known to occur in the area include fisher, pine marten, lynx, wolverine and bobcat. These species are elusive but are thought to use the Refuge at least occasionally. A wolverine was seen on the Refuge in 2000.

Montana Power Company fisheries biologists surveyed Dahl Lake and Meadow and Pleasant Valley Creeks in 2000. Five fish species were found in the creeks; red-sided shiners, northern pike minnow, yellow perch, pumpkinseed and an unidentified sucker. Other species that may have occurred historically but unknown currently are the redband trout and the westslope cutthroat trout.

Several threatened and endangered species and "species of concern" inhabit the surrounding forests and have been known to utilize the Refuge. Species of concern are those known or suspected to be rare, endemic, disjunct, threatened or endangered throughout their range. A pair of bald eagles has nested on the Refuge in an aspen stand on the north shore of Dahl Lake. This pair fledged young for many years. The eagle nest was blown out of the tree in a severe wind storm during the summer of 2000. Two adult eagles constructed a nest in the same vicinity in 2001 but no young were produced.

A pack of wolves naturally recolonized into Pleasant Valley in 1988 from Canada. In 1989, there were 3 adults and 3 pups in the pack. Unfortunately they started to prey on livestock and were controlled both lethally and through relocation. A second pack formed in 1996 and had pups again in 1997 and 1998. Once again they started to prey on livestock and were removed in 1999. Although there was not a pack located in Pleasant Valley in 2000, lone wolves are occasionally observed.

Grizzly bears are becoming more common in the forests surrounding the Refuge. A grizzly was sighted by Plum Creek personnel one half mile south of the Refuge in 1997. Lynx are also known to inhabit forest lands in the area and may be present on the Refuge.

Species of concern or Montana Partners in Flight bird conservation priority species known to utilize the Refuge include black tern, horned grebe, hooded merganser, lesser scaup, ruffed grouse, olive-sided flycatcher, grasshopper sparrow, willow flycatcher and pileated woodpecker. Other species listed on the Montana Partners in Flight priority list that could potentially exist on Lost Trail include: Level 1 - Black-backed woodpecker, Sprague's pipit, and Baird's sparrow; Level 2 - includes many species, e.g., long-billed curlew, Forster's Tern and Lewis' woodpecker. Montana Partners in Flight Level I species are those exhibiting a declining population trend and the areas they are found in are of high importance for conservation (i.e., they are not just of local concern.). Level II species are those for which the state has a responsibility, but there is a lesser threat or they have a stable/increasing population in the state. Montana has a high responsibility to monitor the status of these species, and/or to design conservation actions (MTPIF 2000).

Elk

Elk were not plentiful in the Pleasant Valley and Fisher/Thompson River area until MFWP made consecutive transplants of 27 and 29 elk into the Wolf Creek drainage in 1927 and 1928, and 105 elk into the Fisher River drainage in 1929. The elk from these three transplants thrived

and multiplied into the healthy, self-sustaining herd present today. Some of the transplanted elk came from the National Bison Range. In 1992, an Elk Management Plan was developed by Montana Department of Fish, Wildlife and Parks (MFWP) in which the state was divided into elk management units (EMUs). The Salish EMU covers northwestern Montana from Eureka to the Flathead Indian Reservation and includes Lost Trail NWR. There are three population objectives for this EMU: 1) increase elk numbers by 30%, from 2,300 to 2,990; 2) maintain an observed winter bull:cow ratio of 10 per 100; and 3) maintain a minimum winter calf:cow ratio of 30 per 100. MFWP conducts aerial surveys each spring to obtain population information and has data compiled back to the 1970's. Table 3 shows the comparison of elk sex and age classification for Region 1 and HD 103 completed from spring survey from 1980 to 2000. Total elk observed in 2000 was 2,995. In general, elk populations were relatively low in the 70's then increased in the mid 80's until a high of 3,329 elk were observed on the 1994 count. MFWP biologists believe that beyond this point the population was limited by habitat restraints (personal communication, Jerry Brown - MFWP). The populations remained high until the winter of 1996/97 when severe weather conditions reduced elk and deer herds throughout northwest Montana. All segments of the elk population in northwestern Montana have increased since the hard winter of 1996/97. By far the largest increase has occurred in the antlerless segment of the population with an increase of almost 1,000 elk in the past four years. As of 2000, the population goals for herd numbers in the Salish EMU have been met.

Lost Trail National Wildlife Refuge is located in Hunting District 103 for the MFWP big game regulations. In this district, the calf/cow ratio has consistently been above the management objective in the Salish EMU of 30:100. This is true for all years except 1994, and 1997 and 1998 when the herd was still recovering from the hard winter of 1996/97. The bull/cow ratio has traditionally been low in this hunting district, however, this is more a factor of the time of year of the count and the sightability of bulls in the forests than of a lack of bulls. This is supported by the continued harvest of mature bulls each year and the high calf to cow ratio.

Elk in Hunting District 103 are currently hunted under a brow-tined bull only restriction and a special permit allocation for 50 antlerless elk. The archery only season runs from the first week in September until mid-October, approximately 6 weeks. General Season opens the fifth Sunday preceding Thanksgiving weekend and runs for 5 weeks closing on the Sunday after Thanksgiving.

Elk Update from 2001 to 2007

In 2004, the Montana Department of Fish, Wildlife and Parks (MFWP) updated their 1992 Elk Management Plan. Rather than relying on specific population triggers to set management and harvest objectives, MFWPs converted to an Adaptive Harvest Management (AHM) strategy similar to the one used in mule deer management. AHM relies on four elements; population objectives, a monitoring program, hunting regulation alternatives, and modeling. MFWP established population objectives, and set hunting season alternatives, that could be implemented with significant changes in population status for each Elk Management Unit

(EMU) in the State . Emphasis is placed on a strong monitoring program to measure population objectives such as total number of elk counted, numbers of bulls counted, and calf:100 cows ratios.. Budget, personnel, and time restraints prohibit MFWPs from carrying out the modeling portion of AHM at this time. Copies of The Montana State Elk Management Plan are available from Montana Fish, Wildlife and Parks.

There are 44 Elk Management Units in the revised Elk Management Plan. Lost Trail NWR still lies within the Salish Elk Management Unit. Formal surveys for elk in this EMU are conducted only in Hunting Districts (HD)103 and 120. Lost Trail is located in HD 103. The management goal for the Salish EMU is:..” to manage the elk population in a healthy condition at levels commensurate with available habitat on public and private land, with emphasis on maintaining a diverse bull age structure.” (MFWP 2004).

Table 3. Elk Composition from Spring Survey Data (MFWP)

Year	# Elk Observed on Surveys		Calves per 100 Cows		Bulls per 100 Cows	
	Region 1	HD 103	Region 1	HD 103	Region 1	HD 103
1980	1650	154	24	52	19	19
1981	1801	71	31	42	18	42
1982	1777	132	29	31	19	11
1983	2188	134	26	31	19	22
1984	2038	68	33	40	25	6
1985	1685	251	26	40	11	5
1986	2172	23	43	54	18	23
1987	2507	259	35	34	14	4
1988	2763	72	45	39	17	2
1989	3064	52	35	31	16	14
1990	3278	244	33	43	17	9
1991	2827	203	29	41	15	10
1992	2501	54	32	44	21	56
1993	3239	104	26	44	18	19
1994	3329	99	28	20	18	11
1995	2787	127	32	33	14	17
1996	2025	107	21	50	11	7
1997	2425	89	20	21	8	4
1998	1880	48	18	18	10	5
1999	2841	205	33	40	12	11
2000	2995	218	32	47	13	4
2001		No Data		No Data		No Data
2002		314		40		11
2003		313		24		9
2004		180		27		4
2005		294		32		10
2006		101		41		1

White-tailed Deer

Refuge staff have not conducted population counts on white-tailed deer on the Refuge, however, general observations indicate that white-tailed deer are common at lower elevations. Estimating white-tailed deer populations and composition numbers in the forested habitats of western Montana with any precision is difficult. MFWP uses population indices from specific representative areas and harvest data collected from game check stations to determine population trends for white-tailed deer. This data is used to make management decisions and set hunting seasons. Lost Trail NWR is located within HD 103 of MFWP Region 1 (Figure 1).

A white-tailed deer study conducted in MFWP Region 1 since 1998 shows the following;

- Adult female survival is high - 84%.
- Adult male survival is moderate - 59%.
- Fawn survival from 6 to 12 months is 74%.
- The most consistent mortality factor for adult females through time is hunter related harvest; 2- 8%. (when antlerless hunting permitted.)
- Severe winters appear to be the primary mechanism regulating populations. The 1996-97 winter, combined with high antlerless harvest in the split 1st and 5th week of the general season in 1996 produced a detectable decline in populations the next year.
- Fawn recruitment has exceeded adult female death, and populations expanded from the mid to late 1980's until the winter of 96/97. (Unpublished research - Carolyn Sime - 2000)

The MFWP Region 1 white-tailed deer harvest in 1999 represents a 12.5 percent increase over 1998 and a 20 percent increase from the 1997 low point. Even though the buck harvest trend data increased from 1997 through 1999, it was as low as the levels observed in the early 1980's. Reasons for the recent years low harvest levels include reduced population size from winter related mortality in the 1996-97 biological year, and a "bucks only" hunting season in place since 1998.

The MFWP Region 1 buck harvest was comprised of 60 percent yearlings, which was the highest harvest rate for yearling bucks in at least 15 years. Reasons for the high harvest of yearlings bucks include high recruitment in the spring of 1999 and a change to a bucks only hunting season regulation for the 1998 and 1999 season.

MFWP Region 1 had the highest buck harvest in the state and Hunting District 103 (which includes Lost Trail) ranked third in the Region with 767 bucks harvested. Hunting District 103 had the heaviest hunting pressure in the Region with 22,328 hunter days. On average it took 29

days to harvest a white-tailed deer with an 26 % success rate. Research shows that harvest increases as linear road miles increases and the greatest number of hunters hunt in hunting districts with the greatest linear miles of roads. The highest miles of roads and the highest harvests were in Hunting Districts 100 and 103. (Report to MFWP - Carolyn Sime - 2000). Therefore, Lost Trail NWR is within a hunting district with great potential for hunter recreation in regards to available roads.

MFWP Region 1 spring survey results shows recruitment to be strong for the third year in a row with trend surveys indicating 47 fawns per 100 does from 178 deer tallied. Currently HD 103 allows for a six week, either sex, archery season, and a 5 week general season with the 1st week either sex and the remainder of the season bucks only. Lost Trail NWR is in an area that supports a healthy regional population of white-tailed deer.

White-tailed Deer Update from 2001 to 2007

The state of Montana Fish, Wildlife and Parks has conducted fairly extensive research on white-tailed deer in this region. This data should be published in the summer of 2007. MFWP will use the data from this research to develop an Adaptive Harvest Management Plan for White-tailed deer similar to the plans they have developed for elk and mule deer.

White-tailed Deer Classification Surveys HD 103 (1996 - 2004)

Year	Adults	Fawns	Unclass	Total	Fawn:100 Adults
1996	101	37	10	148	37
1997	198	54	224	476	27
1998	195	34	0	229	17
1999	139	68	0	207	49
2000	196	87	28	311	44
2001	143	57	0	200	40
2002	155	47	0	202	30
2003	206	68	0	274	33
2004	216	44	0	260	20

Mule Deer

Mule deer are occasionally observed on the uplands of Lost Trail National Wildlife Refuge. No formal surveys of mule deer have been conducted by Refuge staff. MFWP monitors mule deer in five survey areas in Region 1. One of these survey areas is the Fisher River which is located approximately 15 miles west of the Refuge. Surveys are conducted in late April or early May and are scheduled to coincide with deer concentrations during green-up. The primary intent of these surveys is to gather information on population trend and fawn:adult ratios.

In the spring of 2000, 2,805 mule deer were observed including 1,318 adults, 660 fawns and 827 unclassified. This number is up considerably from 1998 and 1999 levels with an increase of 17% from 1999 to 2000. The fawn to doe ratio was 50% for 2000. This is identical to the 1999 ratio and represents one of the highest fawn:doe ratios in Region 1 history. The winters of 1997-98, 1998-99 and 1999-2000 were all relatively mild at lower elevations. In contrast, the winter of 1996-97 was one of the most severe in Region 1 history.

In response to statewide concern over mule deer populations, MFWP began adaptive deer management in 1996. Guidelines were developed to recommend standard, restrictive or liberal hunting regulations based on recruitment, the proportion of the buck harvest comprised of yearlings, total buck harvest or the total number of deer observed on spring surveys, and the percent of bucks four-point or greater. (See MFWP Region 1 Mule Deer Report or contact MFWP for further details on the Adaptive Mule Deer Management.) The objective for the Northwest Montana ecosystem is to "Maintain the population within 25% of the long-term average (at least 10 years) as measured by the total number of bucks harvested or the total number of deer observed during spring on areas where aerial surveys are feasible."

Currently, the Region 1 mule deer general season is 5 weeks of antlered only hunting and archers are also restricted to antlered only. Two hundred Youth Permits are available in Region One that allow the holder to take antlerless white-tailed or mule deer.

Hunting District 103 had a maximum harvest in 1992 with 766 mule deer taken (Table 4). Since then, harvest has decreased dramatically with a low of 169 harvested in 1996. In 1999, 1,217 mule deer were harvested in Region 1 with Hunting District 103, which includes Lost Trail NWR, reporting the highest mule deer harvested in the Region with a total of 245. The reason for the overall decline in harvest is not completely understood but may be related to weather, predation, over-hunting, declining habitat quality, change in hunting seasons, decline

in number of hunters or a combination of all these factors.

Mule Deer Update 2001 to 2007

The Montana Department of Fish, Wildlife and Parks continues to manage mule deer harvest under an Adaptive Harvest Management system. A new Draft Harvest Management Mule Deer Plan was completed in 2000. This plan can be accessed through the MFWPs website or by contacting any MFWPs office. As in the elk plan, there are four elements to Adaptive Harvest Management; establish population objectives, develop a reliable monitoring system, adopt hunting regulation alternatives, and develop a modeling program to predict trends in mule deer populations. Research conducted by MFWP (MFWP 2000) shows that the most important factors regulating mule deer populations are; weather, habitat condition, predation and other natural mortality, and hunter harvest. Models have been developed that incorporate these factors into the elements of Adaptive Harvest Management.

Deer population objectives were developed for 5 Population Management Units (PMUs). Each PMU has unique population indicators and a corresponding monitoring program. Lost Trail NWR is located in the Northwest Montane PMU. The objective for mule deer in this PMU is; Maintain the population within 25% of the long-term average (at least 10 years) as measured by the total number of bucks harvested or the total number of deer observed during spring on areas where aerial surveys are feasible.

Adaptive harvest management for mule deer in hunting district 103, which includes Lost Trail NWR can be found on the Montana Fish, Wildlife and Parks Website (<http://fwp.mt.gov/>).

Table 4. Mule Deer Harvest Statistics Hunting District 103 (Montana Department of Fish, Wildlife, and Parks)

Year	Hunters	Total Harvest	Days
1990	4,466	500	24,309
1991	4,914	522	26,813
1992	5,555	766	31,146
1993	5,798	483	31,264
1994	5,416	239	28,756
1995	4,964	441	27,878
1996	no data	169	no data
1997	3,828	217	21,306
1998	3,375	195	20,746
1999	3,796	245	22,328
2000	3,363	251	20,968
2001	3,694	360	20,943
2002	3,089	325	19,078
2003	2,667	205	15,824

Moose

No formal moose survey has been conducted by Refuge staff on Lost Trail National Wildlife Refuge. MFWP conducts several moose survey routes in northwestern Montana. Lost Trail National Wildlife Refuge lies in State moose Hunting District 106. This is not one of the six Hunting Districts surveyed yearly by the state, however, these routes were chosen in major moose habitat to establish moose trend monitoring for the entire region.

Low calf recruitment in northwest Montana has been a problem since the early 1990s. Increased hunting pressure with a 118% increase in the number of moose permits allocated in

Region 1 from 1970 to 1990, low calf recruitment, and the hard winter of 1996 all contributed to a decline in moose numbers. In 1995, MFWP began reducing the number of permits issued and current levels are comparable to the 1970s. Calf recruitment has shown a marked increase in 1998 and 1999. (MFWP Region 1 Annual Moose Report 1999)

A general trend in Region 1, and in Hunting District 106, has been an increased harvest success rate by moose hunters. Although success rates have remained high, it has required more effort from the individual hunter to harvest a moose. In the mid-to late 1980s, hunters averaged seven days to successfully harvest a moose. In the last five years, it has required an average of 15.6 days to harvest a moose (Table 5). The high success rate indicates a willingness of hunters to expend the extra effort required to harvest a moose. Members of the Confederated Salish and Kootenai Tribes are permitted to hunt moose without a permit on open and unclaimed (U. S. Forest Service) lands in northwestern Montana.

Table 5. Hunting District 106, Moose Harvest (MFWP)

Year	# Permits	# Hunters	Harvest	% Success	Hunter Effort (Days)	CSKT Harvest	Total Legal Harvest
1990	20	20	18	90	6	3	21
1991	20	20	20	100	7	4	24
1992	25	25	24	96	7	4	28
1993	25	25	24	96	10	5	29
1994	25	25	25	100	6	3	28
1995	25	25	19	76	21	1	20
1996	25	25	22	88	13	0	22
1997	25	25	23	92	15	1	24
1998	20	20	16	80	14	0	16
1999	15	15	15	100	15	0	15

Information gathered from moose jaw information shows an upward trend in average age for bull and cow moose since 1984. This information only reflects harvest data and may be a result

of hunters selecting for older bulls rather than a true increase in age. However, inspection of the data showing older age class animals in the harvest and increased hunter effort, combined with low calf:cow ratios suggest an aging moose population with poor calf recruitment rates.

Black Bear

Black bear use of Lost Trail National Wildlife Refuge has not been formally surveyed by Refuge staff or MFWP. However, MFWP biologists familiar with the region assess the Pleasant Valley area as having a healthy black bear population (Personal communication, Jim Williams, MFWP, 2001). Black bears have occasionally been observed by Refuge staff during routine duties.

According to Harvest Questionnaire data, since the early 1970s, the number of black bear hunters in Region 1 has tripled, overall harvest has remained relatively constant, hunter effort per harvested black bear has increased and hunter success has declined. Montana requires mandatory check of harvested black bears. Seven hundred and sixteen bears were checked statewide in 1998 which was the highest number recorded since the mandatory harvest report program began in 1985. These numbers are not necessarily a reflection of an increase in black bear population. The spring 1998 season provided ideal conditions for hunting black bears. Warm weather and good forage development along roadsides combined with a poor huckleberry crop in the mountains brought bears down to lower elevations and into contact with hunters. Five hundred and sixty-nine black bears were checked in 1999 which was about six percent above the long-term average of 538. Record harvests were recorded in 1997 (655) and 1998 (716).

Current data from the Region 1 black bear harvest indicates a gradually declining age structure. However, changes in population age structure can be subtle in long lived animals like black bear. Black bear production is dependent on forage availability the previous summer and fall. Survival of yearlings is also heavily tied to the availability of forage during their second summer/fall. Region 1 black bear production and recruitment was moderate in 1995 and 1996 and poor to extremely poor for 1997, 1998, and 1999. Huckleberry production for the summer/fall 1999 was fair, and cub production for 2000 is anticipated to be low to moderate.

The only survey conducted for live bears in Region 1 is conducted on the Kootenai National Forest in the Cabinet Mountains. These flights indicate a density of 4.72 black bears per square mile. Research conducted in the same area show the average age of first reproduction of black bears in western Montana to be 5 or 6 years. Sows usually produce young every two years.

Mountain Lion

MFWP obtains mountain lion population trend data from track surveys and harvest information. Forest carnivore transect routes were established in 1992. These transects were designed to sample lynx, wolverine, and fisher and were not specifically located in areas with high densities of lions. They are also conducted at the latter part of the lion season or immediately after the close of the season. The information that is available from track surveys indicates that lion populations increased from 1992 to 1995, decreased in 1997 and 1998 and hit a low in 1999. Another source of lion population information is the number of problem lions encountered each year. From 1992 to 1994, the total number of lions killed in self-defense or damage control rose from 11 to 35. In 1995, the total number of lion kills dropped to eight but increased steadily for the next three years and reached 24 in 1998. In 1999, the total control/defense kill decreased to six. Increases in problem lions may be related to an increase in the lion population, or an increase in the number of young lions in the population. Younger lions are typically involved in human/lion conflicts. An increase in housing development in traditional lion habitat has also led to an increase in human/lion conflicts.

Population age structure can be obtained from harvest information. Between 1988 and 1992, the age structure reversed from being composed of mostly young and middle-age lions to old and middle-age lions. The average age of harvested lions increased from three years old in 1988 to six years in 1992. From 1992 to 1997, the age structure of the population reversed again. In 1992, lions less than or equal to 2 years old composed 11% of the harvest. In 1997, these age classes represented 50% of the harvest.

Table 6 shows the quota set by the state in Hunting District 103, the number of lions actually harvested, and the number of days the season remained open. Over harvest was a result of several factors; separate quotas for males and females, a 48 hour reporting period, a 48 hour closing period after quotas were reached, and an inability of hunters to report kills on weekends. To alleviate this problem, quotas were changed to either sex, the reporting period and closing period were reduced to 24 hours, and a 24 hour a day automated phone reporting system was initiated. Managers were also permitted to close a Hunting District within 24 hours of when 80% of the quota was reached. Because of these changes, the harvest of lions was less than the quota for the first time in 1999. In 2000, the total quota for lions in Hunting District 103 was nine lions of either sex. The season was opened for four days, closing on December 4 with a total of 16 lions being harvested by the time the harvest closing could be enacted.

Table 6. Mountain Lion Quota and Harvest Data for Hunting District 103 (MFWP)

Year	Quota	Harvest	Days Open
2005	5	6	8
2004	5	4	6
2003	5	5	15
2002	8	6	24
2001	12	14	9
2000	9	16	9
1999	12	10	4
1998	16	28	11
1997	15	19	15
1996	15	24	4
1995	10	16	7
1994	10	16	6

The 2001 mountain lion season is scheduled from Dec. 1, 2001 to April 14, 2002. A harvest quota of 12 lions is set for hunting district 103. Traditionally lion hunting is conducted with the use of dogs. MFWP allows houndsmen to chase lion only from December 1 through April 14 without a permit.

Upland Game Birds

Upland game birds present in the Lost Trail NWR vicinity include ruffed, spruce and blue grouse all commonly referred to as mountain grouse. Mountain Grouse populations have not been surveyed on Lost Trail NWR, however habitat exists for all three species. Ring-necked pheasants and Hungarian partridge are not found in the valley. Ring-necked pheasant were released in the Lost Trail NWR area but did not survive the winters. MFWP monitors all game

bird species through harvest reports. In 1999, Region 1, of seven regions statewide, produced 63% of Montana's harvest of ruffed grouse, 50% of the harvest of spruce grouse and 30% of the harvest of blue grouse for an average of 49% of Montana's mountain grouse harvest. Table 5 shows the harvest data for Flathead county for 1999.

Columbian Sharp-tailed grouse are not present on the refuge and do not have an open season west of the continental divide in Montana (Personal communication, Alan Wood, MFWP, 2001). There is a very small population within Region 1 which has continued to decline despite the ban on hunting and significant habitat restoration effort and management emphasis.

Table 7. Mountain Grouse Harvest Data for Flathead County, 1999 (Montana Department of Fish, Wildlife & Parks)

Species	Hunters	Hunter Days	Harvest	% Success
Ruffed Grouse	1,907	15,042	6,443	70
Spruce Grouse	995	8,433	1302	36
Blue Grouse	1,293	10,306	2,112	41

The ruffed grouse harvest for the last three years in Flathead county has been 6,636 in 1997, 7,111 in 1998 and 6,443 in 1999 with hunter success rates of 74, 76 and 70 percent, respectively. Grouse populations in northwestern Montana appear to be stable with population fluctuations affected by climatic conditions during spring nesting season and winter.

Turkey

Turkey are not a species for which the Refuge was established and are not indigenous to Montana. However, they have been relocated in numerous areas and provide a high quality hunting experience for many sportspersons. MFWP transplanted wild turkeys to the Pleasant Valley area in 1999. These relocated birds have prospered to such a degree that hunting has recently been implemented as a management activity by MFWP. Currently, local populations estimates total approximately 150 birds among four flocks.

ENVIRONMENTAL CONSEQUENCES

Rationale and Impacts - Alternative A - Limited Hunting

This alternative meets FWS policy by providing compatible hunting opportunities on the Refuge for elk, deer, mountain grouse and turkey. An archery only big game hunt will discourage herd shooting and shooting from the road. It will also reduce crippling and loss of animals due to out of-range-shooting. These factors will provide more opportunity for individual quality hunts with reasonable harvest opportunities, with uncrowded conditions and relatively undisturbed wildlife. By the nature of the sport, bow hunters are required to have better target identification and proximity to the animal which promotes better hunting techniques. Bow hunting is potentially less disruptive to non-target species and other priority wildlife-dependent public uses such as wildlife viewing and photography. Because of the nature of the topography and roads, bow hunting will be safer than rifle hunting which could pose risks to other Refuge users. The concern expressed by MFWP that elk and deer will seek protection on the Refuge during the hunting season will be alleviated as bow hunters will disperse elk and deer off the Refuge prior to, and during the general season.

Spring and fall turkey hunting would be allowed under this alternative utilizing non-toxic shotshells or bow and arrow. Turkeys are not indigenous to Montana. They were released by the MFWP to increase hunting opportunities. The fall turkey season runs from September 1 to December 15. Hunting of turkey is not considered detrimental to the biological integrity of the Refuge, is not likely to create conflict with other public uses and is within the wildlife dependent public uses to be given priority consideration. Currently, Flathead County has a permit only season with a total of 300 either-sex permits issued for the fall of 2001. The only legal means of take are shotgun and bow and arrow. Since turkeys are not endemic to this area, they are not a priority species in Refuge management considerations. They are a popular game species though, and the public interest would best be served by allowing this activity on the Refuge. There may be a law enforcement issue with this alternative. Turkey hunters may possess shotguns on the Refuge during deer and elk season which, in this alternative, is open for archery only hunting. This should not become a major issue as turkey hunters should be carrying shotshells only and should not have the shotgun slugs necessary to take big game in their possession. Spring turkey season runs from the first week in April to the first week in May. A total of 200 permits were issued in 2001 by MFWP for spring turkey hunting in Flathead County. Spring turkey hunting may cause minimal disturbance to nesting migratory birds. Spring green-up is late in Pleasant Valley and many species will not have initiated nesting before the end of the spring turkey season.

Mountain grouse hunting with bow and arrow or shotgun using non-toxic shot only will be open on the Refuge. Grouse populations in northwestern Montana are healthy even though nest success fluctuates greatly due to climatic conditions. No surveys have been conducted to evaluate grouse populations on the Refuge. However, approximately 50% of all mountain grouse harvested in Montana are taken in MFWP Region 1 of 7 regions. Refuge purposes do not include these species of resident game birds. Fall hunting of mountain grouse will not have a significant impact on the Refuge's migratory bird purpose since nearly all migratory bird production will have occurred before the season opens. Hunting of mountain grouse is consistent with FWS policy on providing compatible hunting opportunities especially given their lack of viewing opportunities, non-priority status, healthy population level and being resident game.

Moose hunting will not be allowed due to the limited number of individual moose within the Refuge boundary. The Fish and Wildlife Service must consider all priority wildlife-dependent public uses such as wildlife viewing and photography. Moose hunting on the Refuge would further decrease moose numbers through harvest and disturbance which would result in reduced chances of viewing and photography by other refuge visitors. In addition, moose hunting in this district is limited to a permit only season. In 2000, 15 permits were issued in hunting district 106 which includes Lost Trail NWR. The success rate of hunters holding permits is high, suggesting hunting on the Refuge is not needed to meet harvest quotas.

The primary purpose of Lost Trail NWR is for migratory birds (waterfowl, waterbirds, songbirds, etc.). Waterfowl hunting will not be available initially due to a low population of ducks and geese using the Refuge during the hunting season. Opening the Refuge to waterfowl hunting at this time would not provide a quality hunt, nor provide for a reasonable harvest opportunity. Crowded conditions could arise depending upon the number of hunters and the distribution of the limited number of waterfowl. Further, freeze up occurs early in this valley limiting the length of the season. For these reasons, there is little merit to allow a hunt that could detract from other public uses or disturb wildlife and habitat unnecessarily. Human disturbance, whether it be from hunters or birdwatchers, may reduce the overall carrying capacity of a staging area for waterfowl and other waterbirds (Pfister et al. 1992). Better waterfowl hunting opportunities are available on other State and Federal lands in the Flathead Valley. Waterfowl populations and habitats on the Refuge will be evaluated in the future to determine the potential for hunting opportunities. Restoration of Dahl Lake and the restoration and enhancement of other wetlands both on the Natural Resource Conservation Service easement area and on other parts of the Refuge may increase fall waterfowl populations.

Lion hunting and chase will not be permitted on Lost Trail National Wildlife Refuge under this alternative. Mountain lion hunting was changed to a permit only season in hunting district 103 for the 2001 season. There are 12 permits allocated in this hunting district. Prior to 2001, the season had been open until a quota was reached. In 2000, the total quota for lions in hunting district 103 was 9 lions of either sex. The season was opened for four days, closing on December 4 with a total of 16 lions being harvested. Traditionally lion hunting is conducted with the use of dogs. The State allows houndsmen to chase lion from December 1 through April 14 even after harvest quotas are reached. Often these dogs are not species-specific and will harass other wildlife. Lion hunting and chase on the Refuge would be disruptive to other wildlife, is not necessary to meet state quotas, and could have a negative effect on other priority public uses.

Hunting of black bear will not be allowed on the Refuge. Abundant opportunities to harvest black bear exist outside the Refuge. The spring season from April 15 to May 31 could be disruptive to nesting waterfowl and grassland birds, the primary purpose for which the Refuge was established. Black bears are a popular species for the viewing public. The opportunity for observation of black bears by other Refuge users would be reduced with the hunting of bear on the Refuge.

Ground squirrel hunting is not regulated by the MFWP. Previous ranch owners allowed ground squirrel shooting by guests and it has become a tradition to some. Ground squirrel shooting does not meet the guidance from the FWS Refuge Manual to provide a quality hunting experience, and encourage the highest standards of ethical behavior. Harvested animals are not utilized. Taking animals just for the sake of shooting them does not reflect positively on the FWS or National Wildlife Refuge System and does not incorporate a message of stewardship. Ground squirrel shooting would occur during spring and summer when the squirrels are out of hibernation. This could cause disturbance to nesting birds as well as other priority wildlife dependant public uses of the Refuge. At this time, there is no documented population or habitat management need for controlling ground squirrels.

Coyote hunting will not be allowed on the Refuge. Coyote hunting is permitted on Plum Creek Timber Company and State lands adjacent to the Refuge allowing for abundant opportunities to harvest coyotes. Coyote hunting could be disruptive to other resident wildlife and coyotes are a species popular to the wildlife viewing public. Coyotes have also been shown to displace fox which are highly efficient nest predators. Coyotes are less efficient nest predators, thereby their presence could actually help increase nesting success for ground-nesting birds (Sovada et al., 1995).

This alternative would provide for a long deer and elk season (approximately 11 weeks) while minimizing the impacts on other wildlife species and other public uses. It would provide for a quality hunt with maximum safety. There would also be minimum impact to nesting birds by maximizing hunting opportunities in the fall season. This alternative does allow for a spring turkey season which could result in minimal disturbance to nesting birds and fawning and calving of deer and elk through disturbance. This disturbance would be directly related to spring turkey hunter numbers. Disturbance to wildlife by hunters may result in some wildlife being hazed off the Refuge limiting the opportunities for viewing, photography, environmental education and environmental interpretation.

The U.S. Fish and Wildlife Service Refuge Manual (8 RM 5.4) stipulates that the potential for crippling losses should be minimized. Alternative A proposes an archery only season on elk, white-tailed and mule deer. Several studies have been conducted throughout the United States on the rate of crippling losses due to archery hunting versus rifle hunting. Stormer et al. (1979) determined that the per capita wounding rate by archers was 1.5 times that of gun hunters. Proceedings of the 25th Annual Conference of Southeastern Association of Game and Fish commissioners (1971) indicate that crippling loss due to archery was 50%, shotgun hunting with buckshot 26% and shotgun hunting with slugs 7%. Studies in Texas, Boydston and Gore (1987) indicate a 7 percent wounding rate from guns compared to a 50 percent wounding rate for archery hunting. Thus for every deer bagged with a bow and arrow, one was hit but not retrieved.

The state of California was sued over the issue of allowing an archery hunt on black bears in 1990. As a result of this law suit, an extensive review of the literature was completed in 1991. The following is a summary of some of the issues addressed in the literature.

- Bowhunters have a lower success rate than firearms hunters - In California in 1990, archery hunters had a success rate of 7% compared to a general hunter success rate of 10%. Similar results were found by Downing (1971), Fuller (1990), Stormer et al. (1979), Langenau and Aho (1983), Lemke (1990), Benke (1989), and others.
- Broadhead arrows cause less trauma to surrounding tissue than bullets. - Little disagreement exists on this issue. Work by Ludbrook and Tomkinson (1985) shows that, when an arrow fitted with a sharp broadhead strikes a nonvital area, a minimum of surrounding tissue damage occurs. They stated that arrow wounds sustained by animals in nonvital places were most likely to heal completely because of the lack of extensive tissue damage compared to gunshot wounds.

Similar conclusions can be drawn from data collected by the Lonestar Bowhunter Association (1989), where archers experienced “through” shots (total pass through of the arrow) on 46 of 102 deer killed.

- Evidence from necropsy studies indicate that relatively few deer suffer from crippling injuries, whether caused naturally or from hunting. Deer with natural or hunting related wounds appear to recover with little or no external manifestation of the injury (Nettles et al 1976).

The Idaho Department of Fish and Game (1991) conducted a five year study of radio-collared elk mortality factors. Forty-three elk were recorded as rifle kill, two were archery kill, seven were wounded and lost rifle kills, four were wounded and lost archery kills, three were poached and 10 died of other mortality factors. Thus archery hunters wounded less total elk than rifle hunters. However for every successful elk harvested by archery hunters 2 more were lost to wounding while rifle hunters wounded only .16 elk per successful kill. Three reasons are given by Boydston and Gore (1987) for the high wounding rate of archery versus gun hunting; 1) arrows are low velocity, high trajectory projectiles which kill primarily by circulatory hemorrhage. The broadhead must cut major blood vessels, thoracic organs, or neurological centers to cause a quick death. 2) Under most hunting conditions, it is generally difficult to shoot a razor-sharp broadhead arrow into a vital area--an absolute must for bow hunting proficiency. Data from Texas wildlife management areas provide evidence that, on the average, 21 shots are made for every deer killed, or about 10 shots per deer hit. 3) Unless there is a relatively low exit wound in thoracic hits, most bleeding is internal, resulting in poor blood trails.

Finally, Lemke (1990) discusses a study conducted by the Montana Department of Fish, Wildlife and Parks. Biologists monitored 535 radio-collared elk. Over a 6 year period, 11 (1.5 percent) of the elk were killed by bowhunters, while gun hunters killed 262 (36 percent). Bowhunters wounded 4 elk. The author stated that “most of the concerns about bow hunting appear to come from public perception and social preferences rather than available biological information”.

In general the studies outlined above show that per capita crippling losses are greater with archery hunters as compared to rifle hunters. However, the total number of animals crippled may be less with archery hunting due to the reduced number of hunters participating in the sport.

Rationale and impacts - Alternative B - Designated Areas (PREFERRED ALTERNATIVE)

This alternative allows a high percentage of the hunting public to participate. It also protects the bottomlands, including the majority of the wetlands, from most hunting disturbances. Viewing and photography opportunities may be increased in the bottomlands where wildlife is protected from hunting disturbance. Opening the Refuge to rifle hunting during the general season may increase dispersal of elk and deer off the Refuge in the uplands allowing a higher harvest potential off the Refuge which would decrease the chance of an overpopulation of deer and elk. Limiting spring hunting to turkey only, will minimize disturbance to nesting birds which may increase nest establishment and success. Having a closed area in the bottom lands may cause an increase in disturbance on the uplands to wildlife, other hunters, and other Refuge users.

This alternative will require a moderate law enforcement presence due to an unlimited number of hunters, the existence of a closed area, and the use of rifles on the Refuge. Much of this habitat, especially in the lower elevations, is open and provides easy viewing from existing roads. Although there may be a temptation to shoot from the road into the uplands, the existence of the closed area where no big game hunting is allowed should reduce this risk in the bottomlands. Furthermore, Montana law prohibiting shooting from roadways and Refuge Officer and Montana State Game Warden presence should discourage this activity.

In this alternative, much of the wetland restoration project proposed by the Refuge and the NRCS is located in the area closed to hunting. Restoration activities may have an increased chance of success with limited access and less human disturbance.

Deer and elk hunting is an important tradition to a large number of Montanans. Many out-of-state hunters also converge on the State in the fall seeking the opportunity to bag a worthy deer or elk. This alternative maximizes big game hunting by providing for; the longest possible season allowed by State law and, liberal harvest opportunities (by allowing rifle as well as bow and arrow hunting).

In this alternative, Spring and fall turkey hunting would be allowed except in designated closed areas of the Refuge . Turkeys are not indigenous to Montana. They were released by the MFWP to increase hunting opportunities. The fall turkey season runs from September 1 to December 15. Hunting of turkey is not considered detrimental to the biological integrity of the Refuge, is not likely to create conflict with other public uses and is within the wildlife dependent public uses to be given priority consideration. Currently, Flathead County has a

permit only season with a total of 300 either-sex permits issued for the fall of 2001. Since turkeys are not endemic to this area, they are not a priority species in Refuge management considerations. They are a popular game species though, and the public interest would best be served by allowing this activity on the Refuge. Spring turkey season runs from the first week in April to the first week in May. A total of 200 permits were issued in 2001 by MFWP for spring turkey hunting in Flathead County. Spring turkey hunting may cause minimal disturbance to nesting migratory birds. However, the bottomlands around Dahl Lake are closed to hunting, and spring green-up is late in Pleasant Valley so many species may not have initiated nesting before the end of the spring turkey season. The only legal means of harvesting turkey in this area of Flathead County is with shotgun not larger than 10 gauge and bow and arrow. Only non-toxic shot will be allowed on the Refuge.

Mountain grouse hunting is open, except in designated closed areas, on the Refuge in this alternative. Grouse populations in northwestern Montana are healthy (MFWP) though nest success can fluctuate greatly with climatic conditions. No surveys have been conducted to evaluate grouse populations on the Refuge. However, approximately 50% of all mountain grouse harvested in Montana are taken in MFWP Region 1 (where Lost Trail is located). Refuge purposes do not include these species of resident game birds. Fall hunting of mountain grouse will not have a significant impact on the Refuge's migratory bird purpose as nearly all production will have occurred before the season opens. Hunting of mountain grouse is consistent with FWS policy on providing compatible hunting opportunities, especially given their lack of viewing opportunities, non-priority status, healthy population level, and being resident game. All legal means of take will be permitted on the Refuge except that only non-toxic shot will be allowed.

The primary purpose of Lost Trail NWR is for migratory birds (waterfowl, waterbirds, songbirds, etc.). Waterfowl hunting will not be available initially due to a low population of ducks and geese using the Refuge during the hunting season. Opening the Refuge to waterfowl hunting at this time would not provide a quality hunt, nor provide for a reasonable harvest opportunity. Crowded conditions could arise depending upon the number of hunters and the distribution of the limited number of waterfowl. Further, freeze up occurs early in this valley limiting the length of the season. For these reasons, there is little merit to allow a hunt that could detract from other public uses or disturb wildlife and habitat unnecessarily. Human disturbance, whether it be from hunters or birdwatchers, may reduce the overall carrying capacity of a staging area for waterfowl and other waterbirds (Pfister et al. 1992). Better waterfowl hunting opportunities are available on other State and Federal lands in the Flathead Valley. Waterfowl populations and habitats on the Refuge will be evaluated in the future to

determine the potential for hunting opportunities. Restoration of Dahl Lake and the restoration and enhancement of other wetlands both on the Natural Resource Conservation Service easement area and on other parts of the Refuge may increase fall waterfowl populations.

The hunting of all other species is prohibited under this alternative. This will minimize disturbance to wildlife, habitat and other priority uses. The rationale for closing the Refuge to the hunting of other species is the same as in Alternative A.

This alternative would provide an abundance of hunting opportunities while still providing for other public uses and minimum disturbance to those species for which the Refuge was established (waterfowl and other migratory birds). There would also be minimum impact to wildlife by maximizing hunting opportunities in the fall season. This alternative does allow for a spring turkey season which could result in minimal disturbance to nesting birds, or fawning of deer and calving of elk. The level of disturbance would be directly related to the number of spring turkey hunters.

Rationale and impacts - Alternative C - Maximum Allowable Hunting

This alternative follows MFWP hunting regulations and seasons with minimum changes. It would allow for the maximum use of the Refuge by hunters, but would not provide “a quality hunt superior to that on other public and private lands” as required in the FWS policy. Crowded or firing line hunter conditions could arise for big-game and waterfowl hunting depending on game populations and behavior and the popularity of the Refuge. Staff resources and funds may not be sufficient to develop, operate, and maintain the hunt program to satisfy the high quality standards. With close cooperation and coordination with MFWP, this alternative may be possible.

An advantage of maximum allowable hunting may be that game species would be dispersed off the Refuge minimizing the chance of big game populations increasing beyond habitat restraints. However, this is not seen to be an issue. The small size of the Refuge coupled with moderate to heavy hunting pressure outside the Refuge boundary would probably keep populations within carrying capacity even with minimum hunting on the Refuge.

At present, waterfowl hunting opportunities on the Refuge are limited due to a low population of waterfowl using the Refuge in the fall, and the early freeze of Dahl Lake and valley ponds. Wetland restoration and enhancement is planned for much of the bottom lands of the Refuge. Wetland habitat restoration may increase waterfowl production and the number of waterfowl

using the Refuge in the fall for staging, resting and migration thus potentially increasing waterfowl harvest opportunities.

There will be much greater disturbance to wildlife in this alternative than in any of the other five alternatives. There would be some form of hunting on the Refuge most of the year, (Table 2). This may decrease the success of ground nesting birds and even inhibit nest establishment resulting in a loss of diversity. Under the enabling legislation, the Refuge was established as an “inviolate sanctuary, or for any other management purpose, for migratory birds” (16 USC 715-715d, 715e, 715f-715r). As such, no more than 40% of the refuge can be opened to migratory bird hunting. However, the 40% opened to hunting could contain 100% of the migratory bird habitat and still comply with the law. It also imposes no limits on hunting non-migratory birds or other species. The disturbance from year-round hunting would negatively affect migratory birds on the Refuge.

Finally, this alternative would have a much greater potential to conflict with other wildlife-dependent public uses of the Refuge. Wildlife would be hazed from the Refuge decreasing the opportunity for wildlife viewing and photography of many species, especially those with limited populations on the Refuge (e.g., moose, bear, wolf, waterfowl, etc.).

This alternative does not comply with the FWS biological integrity policy. Nearly unlimited hunting opportunities would materially interfere with the Refuge purpose of restoring migratory bird populations and restoring or maintaining a biological balance of predators and prey involving wild ungulates and gray wolves, and predatory birds and their prey such as waterfowl and small mammals. Funding and staff resources are not available at this time to adequately administer an exhaustive hunting program.

Rationale and Impacts - Alternative D - Special Permit Hunting

By limiting the number of hunters, this alternative provides for a quality hunt for big-game hunters as well as people with disabilities. It should also encourage ethical behavior due to the accountability built into a permit system. It allows for enough hunting pressure to prevent elk and deer from congregating on the Refuge during hunting season which will allow for greater opportunities for harvest off the Refuge. This alternative would likely cause less overall conflict with other priority wildlife-dependent public uses or with Refuge operations. The limited number of hunters allowed in this alternative decreases disturbance to wildlife, which will encourage wildlife use of the Refuge and contribute to better wildlife viewing and photography opportunities.

This alternative may require more resources, including additional staff time, law enforcement, and funding to administer than all other alternatives except Alternative C (Maximum Allowable Hunting). Therefore, MFWP collaboration, coordination and assistance would be required to conduct the hunt.

Mountain grouse hunting with shotgun only and utilizing non-toxic shotshells will be open on the Refuge. Grouse populations in northwestern Montana are healthy even though nest success fluctuates greatly due to climatic conditions. No surveys have been conducted to evaluate grouse populations on the Refuge. However, approximately 50% of all mountain grouse harvested in Montana are taken in MFWP Region 1 of 7 regions. Refuge purposes do not include these species of resident game birds. Fall hunting of mountain grouse will not have a significant impact on the Refuge's migratory bird purpose since nearly all production will have occurred before the season opens. Hunting of mountain grouse is consistent with FWS policy on providing compatible hunting opportunities especially given their lack of viewing opportunities, non-priority status, healthy population level and being resident game.

This alternative would also bias the permits toward local hunters and against those hunters unable to make the drawing. It would also greatly limit the number of hunters that would have an opportunity to hunt on the Refuge.

This alternative may provide a high quality hunt with a high degree of safety and low disturbance to other wildlife species, Refuge operations and other public uses.

The rationale for closing the Refuge to the hunting of other species is the same as in Alternative A.

Rationale and Impacts - Alternative E - MFWP

This alternative was developed from comments received from MFWP during the internal review of the draft EA. Some of these comments were incorporated into Alternatives A and B.

Alternative E is now similar to Alternative B with the exception of minor changes to mountain grouse and turkey hunting and the inclusion of waterfowl and furbearer hunting. Deer and elk hunting would be the same as Alternative B allowing for rifle and archery hunting following MFWP regulations and seasons in designated areas of the Refuge. As in Alternative B, the first week of archery and the first week of general season would be reserved for youth only.

Turkey and grouse hunting would be permitted over the entire Refuge including the area closed to big game hunting and means of take would include shotgun, bow and arrow, rifle and handgun. This could increase law enforcement needs by allowing archery equipment and rifles in the area closed to big game hunting. The presence of hunters in this area with rifles and shotguns may also defeat the purpose of a closed area by increasing disturbance to wildlife and other public users.

Furbearer hunting would be allowed following MFWP seasons and regulations using rifle or shotgun with non-toxic shot. MFWP hunting regulations stipulate "Bobcat and wolverine are the only animals defined by law as furbearing animals that may be taken by hunting (MCA 87-2-601)". Montana state bobcat and wolverine hunting seasons are open from December 1 through February 15. The Refuge is a wintering area for a herd of up to 200 elk. Allowing furbearing hunting would extend the hunting season on the Refuge into the winter months which may cause disturbance to wintering deer and elk. Wolverine and bobcat hunting could also conflict with

other priority public uses by extending the hunting season and associated disturbance.

Wolverine and bobcat are rare on the Refuge. Hunting may reduce the number of individuals on the Refuge even further reducing diversity which would negatively impact the biological integrity of the Refuge.

This alternative would open up to 40% of the Refuge to waterfowl hunting. At present, waterfowl hunting opportunities on the Refuge are limited due to a low population of waterfowl using the Refuge in the fall, and the early freeze of Dahl Lake and valley ponds. However, wetland restoration and enhancement is planned for much of the bottom lands of the Refuge. Wetland habitat restoration should increase waterfowl production and potentially the number of waterfowl using the refuge in the fall for staging, resting and migration.

This alternative provides for a wide variety of hunting opportunities for a diversity of constituents. There would be some form of hunting on the Refuge for seven months of the year.

This alternative does not comply with the FWS biological integrity policy. Though this alternative proposes significantly less hunting than does the Maximum Hunting Alternative it would nevertheless materially interfere with the refuge purpose of restoring migratory bird populations. Funding and staff resources are not available at this time to adequately administer an exhaustive hunting program.

Rationale and Impacts - Alternative F - No Action

This alternative would provide more wildlife viewing and photographic opportunities to the public. There may be less disturbance to wildlife and fewer user conflicts than in the other alternatives. This alternative would also require the least amount of time and money to administer by the FWS.

Deer and elk may seek shelter on the Refuge during the hunting season. This would limit the hunting opportunities for areas surrounding the Refuge and could lead to an increase in herd size past the carrying capacity of the Refuge. This alternative would limit recreational opportunities for hunters but there are abundant opportunities for hunting on private, state and federal lands in the vicinity of the Refuge.

Hunting is an appropriate wildlife dependent public use on Refuges as provided in the Refuge Improvement Act of 1997 so long as it is determined compatible with refuge purposes and other priority public uses. Limited hunting opportunities are believed to be appropriate and compatible. This alternative would not meet FWS policy to allow hunting on National Wildlife Refuges, if compatible.

Other Environmental Consequences

Game mammals, migratory birds, resident game birds, biological diversity and wildlife oriented recreation environmental consequences on the Refuge have been addressed in the rationale and impacts sections. There should no significant adverse impact on other environmental factors such as wildlife and habitat on a regional level, water quality, water quantity, air quality, social, or economic factors with the implementation of any of the proposed alternatives. Lost Trail National Wildlife Refuge consists of 7,885 acres. The Pleasant Valley area where the Refuge is located is already one of the most heavily hunted areas in northwest Montana. This is due to its proximity to the cities of Kalispell and Libby, an abundance of federal, state, and private land open to hunting, and a high density of roads in the area. Total hunting pressure for the Pleasant Valley area should change very little whether the Refuge remains closed or is completely opened to hunting.

Endangered Species

The two threatened species known to inhabit the Refuge are the bald eagle and gray wolf. Other threatened species such as the grizzly bear and Canada lynx are known to be present in the area but are not documented on the Refuge.

Bald eagles have traditionally nested in the aspens along Dahl Lake. Unfortunately the nest blew out of the tree in the summer of 2000. The eagles have been seen in the same area at the time of this assessment. Although a new nest has been constructed, renesting has not been documented. In a study of human disturbance effects on bald eagles, Steidl and Anthony (1999) found that human activity near bald eagle nests caused "clear and consistent changes in behaviors of breeding eagles" which could adversely affect nesting and reproductive success. Alternatives A, B, D, E and F should have no significant impact on bald eagles on the Refuge. Alternative F allows no hunting. In Alternatives A, B, D and E provide for fall hunting only with the exception of spring turkey. A no hunting buffer area will be designated for eagle nest areas prior to and during the nesting season. Since nearly all hunting would occur during the fall no significant disturbance from mid-winter through fledging is anticipated. Alternative C could have the most significant impact on nesting eagles since it provides year round hunting opportunities.

Gray wolves have denned within 1/4 mile of the Refuge boundary. In 1989, there were 3 adults and 3 pups in the pack. Unfortunately they started to prey on livestock and were removed from the area. A second pack formed in 1996 and had pups in 1997 and 1998. Once again they

preyed on livestock and were removed in 1999. There is not a pack in the immediate vicinity of the Refuge at this time but lone individuals have been observed. An indirect impact to wolves from hunting would be a reduction in the prey base. Alternative C (Maximum Allowable Hunting) would have the most impact and Alternative F (No Hunting) may have the least impact. Direct impacts would be in the form of human/wolf contact and minimal reduction of prey individuals. Disturbance is directly related to the number of hunters on the Refuge and would again be the highest for Alternative C and the least for Alternative F. Alternatives D,B,A and E, respectively, would have potential impact on wolf use of the refuge in direct relationship to the number of days hunting would be allowed. There would be no significant negative impact on wolves from Alternative F unless it resulted in increased non-hunting public visitation causing increased human/wolf contacts. Federal law and Refuge policy dictate that National Wildlife Refuges should be secure areas for endangered species. If necessary, hunting on the Refuge under any of the alternatives would be restricted or suspended to protect an endangered species.

Table 8. Threatened and Endangered Species Impacts

Species	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Bald Eagle	NLAA	NLAA	MA	NLAA	NLAA	NLAA
Gray Wolf	NLAA	NLAA	MA	NLAA	MA	NLAA
Spauldings Catchfly	NLAA	NLAA	NLAA	NLAA	NLAA	NLAA
Grizzly Bear	NLAA	NLAA	NLAA	NLAA	NLAA	NLAA
Bull Trout	NLAA	NLAA	NLAA	NLAA	NLAA	NLAA
Canada Lynx	NLAA	NLAA	MA	NLAA	MA	NLAA

MA - May affect

NLAA - Not likely to affect

Environmental Justice

Executive Order 12898 of February, 1994 entitled, "Federal Action to Address Environmental Justice in Minority and Low Income Populations," requires Federal agencies to take action to

the extent practicable and permitted by law, to make achieving environmental justice part of its mission by identifying and addressing as appropriate disproportionately high and adverse human health effects of its programs and policies and activities on minority population and low-income populations. This assessment has not identified any adverse or beneficial effects unique to minority or low-income populations in the affected area.

CUMULATIVE IMPACTS ASSOCIATED WITH THE PREFERRED ALTERNATIVE

Cumulative Impact Hunted Big Game Species

Cumulative Impact Hunted Big Game Species

Lost Trail National Wildlife Refuge was established in 1999. Prior to establishment, Lost Trail was a working cattle and horse ranch. It is not known how much hunting occurred on the ranch when it was in private ownership. Local residents relate that ranch owners and their employees hunted the ranch and allowed some additional hunting by the public. Opening the Refuge to hunting under the preferred alternative will not increase the harvest of elk and deer much above historic levels.

Prior to the establishment of the Refuge, the Lost Trail/ Pleasant Valley area had one of the highest game damage complaint records in the state. MFWP had to maintain the elk herd at a low population level to prevent elk damage on private lands. Since establishment of the Refuge, game damage complaints have decreased dramatically and the elk population has been allowed to grow. Any impact to local herd numbers experienced from opening the Refuge to hunting will be mitigated by this increase in population.

A maximum of 15 elk, 10 mule deer and 20 white-tailed deer will be harvested on the refuge under the preferred alternative. This is only a small percentage of the animals harvested in the local area (less than 2% of the white-tailed deer, 3% of the mule deer and 11 % of the elk) and should not affect these populations. Some of these animals would be harvested even if the Refuge was closed to hunting because elk and deer are transient in nature and do not congregate on the Refuge for extended periods of time. If they were not harvested on the Refuge, some of them would still be harvested on surrounding lands open to hunting. Also the cumulative aspect of hunting on the Refuge is partially mitigated by historic hunting prior to Refuge establishment.

In public scoping meetings prior to establishment of the Refuge, MFWP and local hunters requested egress across Refuge lands to access Plum Creek Timber lands open to hunting. This

alternative will allow better access to Plum Creek Timber lands because it opens up non-motorized public access across Refuge uplands. However, on all but the west end of the Refuge, access is shortened by less than half a mile from what was previously available using access across Plum Creek, and State DNRC lands (See Figure 2). Access across the west end of the Refuge may increase hunter pressure on deer and elk on lands adjacent to the Refuge. Off-Refuge harvest in these areas is not expected to increase more than 5 animals a year.

The only hunting permitted in the spring in this proposal is a spring turkey hunt. Turkey have never been recorded on Refuge censuses for duck pairs and neotropical migratory birds in the spring. These censuses cover a majority of the Refuge. Few hunters will come to the Refuge to hunt turkey in the spring so negative cumulative impacts to elk and deer from hunter disturbance in the spring are not expected beyond what would occur with other permitted public uses.

Big game hunting could have a cumulative impact on big game populations if predator populations increase, or changes in predatory/prey relationships occur that favor increased predation. Black bear and mountain lion populations are hunted in Montana. MFWP has plans in place for the management of these species within the constraints of big-game management. If predation is excessive, adjustments to harvest regulations for lions and bears could be made, if considered in an ecological context. Grizzly bears are protected under the Endangered Species Act. The impact of grizzly bear predation on ungulate herds on the local or regional level around Lost Trail NWR are negligible because of the small numbers of bears. Wolves have increased in Northwest Montana in the last two decades. Hunting has the potential to impact ungulate species when combined with predation. A significant negative cumulative impact to big-game species from wolf predation and hunting under the proposed action is not expected for the following reasons. Elk herds in this area have evolved with wolves and have continued to grow even as wolf populations have expanded. The proposed action will result in an undetectable (insignificant) increase in total harvest of ungulates on a regional or local level. Establishment of the Refuge has allowed MFWP to increase local herd numbers. The Refuge uses adaptive management to promote healthy native habitat that should benefit ungulate species. Any observed changes in elk population levels and recruitment (calf:100 cows ratio) will result in restrictive hunting regulations which will reduce the number of big-game species that will be harvested under the proposed action.

Individual analysis of cumulative impacts on elk, mule deer and white-tailed deer is found below.

Elk

Regional Cumulative Impacts

The Montana Department of Fish, Wildlife and Parks divided the State into 35 Elk Management Units (EMU) in 1988. In 2004, MFWP updated their elk management plan with revised elk

management unit boundaries that resulted in 44 Elk Management Units. EMU boundaries were developed to encompass the yearly range of major elk populations within a relatively large geographical area with similar habitat characteristics. Lost Trail NWR lies within the Salish EMU.

The Salish EMU encompasses 3,350 square miles. The majority of the area is suitable elk habitat and elk are scattered throughout the management unit in small herds. Large timber corporations, primarily Plum Creek Land Company, own more than half of the land base in this EMU. The majority of the remainder of the land is split between 3 National Forests (Kootenai, Flathead and Lolo), State Department of Natural Resource (DNRC) lands, and small private ranches. Public hunting is permitted on all three national forests, State DNRC lands and Plum Creek Timber lands. Lost Trail NWR consists of 7,885 acres (12.3 sq. mi.). In the preferred alternative, 4,100 acres of the Refuge are not open to public access during the hunting season. That leaves 3,785 acres or 6 square miles open to elk hunting on the Refuge. Opening the Refuge to elk hunting under the preferred alternative will have very little impact (less than a 1% increase) on the total amount of area open to elk hunting in this EMU.

The average estimated harvest of elk (from archery and general season) in this EMU between 1999 and 2001 was 190 elk with between 122 and 160 antlered bulls and 41 to 56 antlerless elk harvested per year. Lost Trail NWR was open to elk hunting in 2002. Refuge staff estimates that no more than 9 elk (less than 5% of the total number of elk harvested in the Salish EMU) are harvested on Refuge lands each year. The actual cumulative impact to elk from the proposed action would be even more negligible for the following reasons. Lost Trail NWR occupies a long, narrow valley, surrounded by Plum Creek Timber and State DNRC Lands, and elk do not remain on the Refuge for extended periods of time during the hunting season. Some of the elk harvested on the Refuge, would be harvested on private and public land surrounding the Refuge even if the Refuge was closed to hunting. Hunting was permitted on Lost Trail Ranch lands prior to Refuge establishment. Establishment of the Refuge decreased game damage on private lands in the area which allowed MFWP to let the elk population increase. An increase in the local elk population since establishment of the Refuge more than mitigates for any additional harvest that would occur under the preferred alternative.

In 2004, the Montana Department of Fish, Wildlife and Parks adopted Adaptive Harvest Management to manage elk in Montana. Management objectives and strategies specific to local habitat, elk populations, and land ownership characteristics were developed for each Elk Management Unit within the state.

The Montana Department of Fish, Wildlife and Parks determines herd health and sets hunting regulations within a specific EMU by looking at; the number of elk counted on the winter surveys, the ratio of calves per 100 cows, the number of bulls per 100 cows, and the number and age classification of bulls harvested during the previous seasons.

The Standard Hunting Season for this area consists of a 6-week archery season for either brow-

tined bull or antlerless elk and a five-week general season for brow-tined bulls only with a limited number of antlerless elk permits. Youth hunters between the age of 12 and 15 may harvest either an antlerless elk or a brow-tined bull. If population parameters indicate a decreasing population, hunting season regulation will become more restrictive (decreasing cow permits and issuing permits for antlered bulls). Conversely, if elk populations show a substantial increase over several consecutive years, harvest regulations will become more liberal (increase in the number of cow permits).

As explained above, MFWPs analyzes this data every year and any change affecting the health of the herd would result in a change in hunting season parameters. Thus any impacts from the proposed action would be minimized through a change in hunting seasons and there would be no cumulative impact on the Salish EMU elk herd.

Local Cumulative Impacts

As mentioned above, HD 103 in which Lost Trail NWR is located, is one of the areas in the Salish EMU that is surveyed every winter by MFWP. Elk populations in this HD continue to meet population parameters set by the State of Montana. Calves/100 cows ratios are consistently above 20:100. (Table 3). Bull numbers have not fallen below 8% for two consecutive years. Bull count ratios are lower than the true ratio because it is difficult to sight bulls in the heavy timber and bulls are more dispersed than the cow/calf herds. The analysis of hunter check station data shows that 27% of the bull harvest was comprised of bulls with 6 points or more on at least one antler. The fact that calf/cow ratios remain high, the bull harvest has remained steady and mature bulls continue to be harvested indicates that the local elk herd is healthy and has the potential to increase.

Lost Trail NWR is located in an area where hunting pressure is high and nearly all the land surrounding the Refuge is open to hunting. The Refuge is 9 miles in length and 2 miles across at the widest area. Elk use the Refuge but they do not congregate for long periods of time. In the preferred alternative, the bottom lands remain closed to hunting providing a resting area for elk.

When archery season opens in early September, elk are still dispersed in small groups mainly off the Refuge. A small herd of 20 to 30 elk occupy the east end of the Refuge around Dahl Lake. The area in which they are located on the Refuge is not open to hunting under the preferred alternative.

Elk are still dispersed in small groups mainly off the Refuge when the general big-game season opens in late October. By the end of the general season, elk are beginning to use the Refuge more. Over 90% of the elk on the Refuge are cows, calves or spikes. Harvesting spikes is not allowed in this hunting district. Cows and calves can only be taken with a permit or by a youth hunter between 12 and 15 years old. Of the 100 to 200 cows and calves that use the Refuge at this time, it is estimated that less than 10 cows will be harvested yearly on the Refuge.

In 2003, (the last year for which data is available from MFWP) 139 elk were harvested in HD 103. At most 10 elk, or less than 7% of the total elk harvested in the hunting district, were harvested on the Refuge in 2003.

There will be some disturbance and additional harvest to elk by opening part of the Refuge to hunting. However, the impact to the local elk herd will be minimal because: Harvest regulations focus on brow-tined bulls only with limited antlerless permits; Mature bulls spend the majority of their time off the Refuge during hunting season thus increasing the chance that they will be harvested even if the Refuge was closed to hunting; Elk are not congregated on the Refuge until the end of the season; The area of the Refuge open to hunting occupies only a small portion of the land open for hunting in the area (6 square miles out of 909 square miles or 6%); Any additional harvest experienced from implementing the preferred alternative is mitigated by an increase in elk numbers that occurred with establishment of the Refuge and; Adaptive Harvest Management allows the state to be proactive in monitoring elk population parameters and changing harvest strategies to maintain a healthy self-sustaining herd.

Opening the Refuge to hunting under this alternative increases access to Plum Creek Lands surrounding the Refuge. This may have some impact on the local elk herd as it makes it easier to access areas where the elk may be. All of this land is accessible in other ways without crossing the Refuge. This is a heavily roaded area with many access points. The increased access to Plum Creek lands will have not have an appreciable negative impact on the local elk herd. Any major impact would be mitigated by a change in hunting seasons under the MFWP's Elk Management Plan.

Mule Deer

Regional Cumulative Impacts

The Montana Department of Fish, Wildlife and Parks uses Adaptive Harvest Management to manage mule deer populations in the State. This is similar to the system used for elk management where population objectives are set for each management unit and emphasis is placed on monitoring population parameters such as total number of deer observed, buck to doe ratios and fawn to doe ratios. Hunting regulation alternatives had been set that can be implemented when the monitoring program detects significant changes in population status. MFWP has developed modeling programs that can be used to predict future trends in populations by analyzing variables such as population structure, weather, habitat condition, predation and other natural mortality and hunter harvest.

MFWP adopted a deer management policy in 1998 that divided the state into Population Management Units. Each Population Management Unit has unique population indicators and corresponding monitoring programs. The Mule Deer Management Goal is: "Manage for the

long-term welfare of Montana’s deer resource and provide recreational opportunities that reflect the dynamic nature of deer populations”.

From a regional standpoint, Lost Trail NWR is located in the Northwest Montane Management Unit for mule deer. Table 9 shows the indicators of mule deer population status and corresponding regulation categories. This management unit covers 14,659 square miles of predominantly forested habitat in northwest Montana. Over 75% of the land in this unit is publicly owned. Large parcels are also owned by private timber corporations. Hunting is permitted on the majority of public lands and private timber lands in this unit. Implementing the preferred alternative would only open up an additional 6 square miles to hunting and would have a minimal impact on the amount of land open to mule deer hunting.

Table 9. Indicators of mule deer population status and corresponding regulation categories.

NORTHWEST MONTANE	Yearling Buck Harvest	Recruitment Fawn:100 Adults	Total Buck Harvest	Other Comments
Standard Hunting Regulations	±25% of long-term average	Greater than 30	±25% of long-term average	Unlimited buck permits recommended if harvest of 4 pts or greater is less than 25% or buck:doe ratio is less than 10:100 for 2 consecutive years
Restrictive Hunting Regulations	At least 25% below long-term average	Less than 30	At least 25% below long-term average	Unlimited buck permits recommended if harvest of 4 pts or greater is less than 25% or buck:doe ratio is less than 10:100 for 2 consecutive years

Liberal Hunting Regulations	More than 25% above long-term average	Greater than 30	More than 25% above long-term average	Unlimited buck permits recommended if harvest of 4 pts or greater is less than 25% or buck:doe ratio is less than 10:100 for 2 consecutive years
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Lost Trail NWR is located in mule deer Hunting District 103. Harvest and survey data from the Montana Department of Fish, Wildlife and Parks show that mule deer hunting on surrounding open lands around the Refuge have not had a regional or local cumulative adverse effect on the mule deer population.

Local Cumulative Impacts

Not many mule deer are present on the Refuge during the big game hunting season. An average of 277 mule deer per year were harvested from Hunting District 103 between 1999 and 2003. The Refuge estimates that less than 5 mule deer per year will be harvested on the Refuge, representing less than 2% of the local hunting district harvest.

Hunting District 103 consists of 909 square miles. The preferred alternative will open up an additional 3,785 acres or 6 square miles. Opening up the Refuge to mule deer hunting under the preferred alternative would have very little impact on the total acreage open to hunting or the total harvest in this hunting district and; therefore, would not have a cumulative impact on local mule deer populations.

White-tailed Deer Cumulative Impacts

The Montana Department of Fish, Wildlife and Parks has been proactive in researching white-tailed deer dynamics in northwestern Montana. This research titled, “Population Ecology of White-tailed Deer in Northwestern Montana” will be published sometime this summer.

White-tailed deer are the most abundant and accessible game species in Northwest Montana. Deer densities average 15 to 25 deer per square mile. The average fawn/doe ratio is 50% with an average fawn survival to 6 to 12 months of 74% (Sime 2000).

Severe winters appear to be the primary mechanism for regulating white-tailed deer populations. The severe winter of 1996/97 combined with a high antlerless deer harvest in the 1996 hunting season produced a detectable decline in populations. Data collected from hunter

check stations in Region One show that the deer populations are rebounding and improving in age structure.

Hunting statistics for Region 1 show an average harvest of 9,021 deer/year for the last five years.

An estimated 5 to 10 white-tailed deer will be harvested from the Refuge each year under the preferred alternative. This represents only .01% of the regional harvest.

Opening a portion of Lost Trail NWR to hunting should have no affect on regional populations for the following reasons. An insignificant number of deer will be harvested from the Refuge (less than .01%) compared to the number harvested in the hunting district. Refuge hunting will increase the number of huntable acres available in the region by less than 1 percent. Deer home ranges in Western Montana average 166 acres for females and 597 acres for males (Morgan 1993) so hunting would only impact populations on a local level.

White-tailed Deer Local Impacts

A total of 1,227 white-tailed deer were harvested in the 2006 season. Refuge staff estimates less than 10 of these deer (0.8%) were harvested on the Refuge. Little cumulative impact is expected on the local deer herd because harvest rates on the Refuge will average less than 1% of the total harvest for the area.

The Montana Department of Fish, Wildlife and Parks sets hunting limits based on white-tailed deer population dynamics developed from hunter check stations, hunter surveys and spring classification surveys. If herd health starts to decline, hunting seasons are adapted to allow the population to recover.

From 1987 to 1995, the hunting season in Region 1 consisted of 2 weeks either-sex; 3 weeks antlered-only; and B tags allotted for a second deer harvest.

The highest harvest level for white-tailed deer for R1 was observed in 1996. The state implemented a split season where bucks could be harvested for the entire 5 week general season with antlerless deer legal for harvest during the 1st and 5th weeks. Winter conditions developed early in the fall of 1996 and deer were concentrated on winter range during the 5th week of the season. Harvest levels neared 1000 white-tailed deer in many hunting districts with antlerless deer comprising 50 to 60 percent of the kill. Severe weather conditions continued throughout the winter of 96/97 resulting in a record number of deer being winter-killed. The high harvest in the fall of 1996 coupled with the severe winter and subsequent high winter-kill greatly reduced the white-tailed deer population in northwestern Montana.

In 1997, the season went to 1 week either-sex with 4 weeks antlered-only and only 25 B tags. MFWP further reduced the season from 1998 to 2000 implementing a 5 week antlered only season. As populations rebounded and age structure stabilized, the season returned to 1 week either-sex with 4 weeks antlered only and limited B-tags in 2001 and 2002 and; 2 weeks either-

sex with 3 week antlered only and limited B tags in 2003. In 2006 the season consisted of 2 weeks either-sex followed by 2 weeks of antlered-only and 1 week either-sex and 200 B-tags.

Montana Fish, Wildlife and Parks has been studying herd dynamics and mortality factors and is in the process of developing a White-tailed Deer Management Plan. Recent history shows that they have been proactive in setting hunting seasons to maintain healthy deer populations. As research is analyzed and plans are developed, white-tailed deer management will become even more refined and responsive to changes in herd populations and structures. Under these parameters, the proposed action should have little impact on local white-tailed deer populations.

Cumulative Impacts Upland Game Birds

Mountain Grouse

Mountain grouse consist of ruffed, blue and spruce grouse. The most abundant grouse around Lost Trail NWR is the ruffed grouse. Ruffed grouse are non-migratory although seasonal differences in movements, home range and habitat use occur. Blue grouse populations are elevationally migratory, breeding at lower elevations and migrating to higher elevation in the fall and winter. Spruce grouse have been known to migrate up to 11 km but most are non-migratory (Rusch et al. 2000, Boag et al 1992). Refuge hunting will not affect grouse species on a regional level because of their small home ranges and because they do not migrate out of the local area.

Most research shows that hunting of ruffed grouse results in compensatory mortality (without hunting harvest, other mortality agents increase; so fall hunting takes mainly surplus birds that would otherwise die of natural causes) (Rusch et. al. 2000). However; other studies have shown that in areas with heavy hunting pressure with few season or limit restrictions, hunting pressure can be additive.

Rates of band recoveries in blue grouse suggest a light population impact due to hunting in most areas. Blue grouse generally migrate to rugged terrain in the autumn which reduces the impact of hunting.

Spruce grouse are associated with coniferous forests and populations fluctuate primarily in response to the post-fire regeneration and secondly with predation pressure (Boag et. al.1992).

Due to it's remote location, few people come out to Lost Trail to hunt grouse. The Montana

upland grouse season runs from September 1 to December 15 and most grouse harvested on the refuge are taken incidental to big-game hunting. Although exact numbers are not known, Refuge staff believe less than 10 grouse are harvested on Refuge lands each year with the majority being ruffed grouse. Most recent data shows that locally (in Flathead County) 9,857 grouse were harvested in 1999, 11,230 were harvested in 2000 and 10,672 were harvested in 2001.

In the years from 1999 to 2001, grouse harvest numbers increased in the district while hunter numbers remained relatively stable and hunter days decreased resulting in an increase in hunter success rates (MFWP data). An increase in hunter success is indicative of a healthy population. Another indication of a healthy population is the number of hatch year or juvenile birds in the harvest. Data from area check stations show that approximately two-thirds of the harvest is made up of hatch year or juvenile birds.

Minimal impacts to the local grouse population are expected from implementation of the preferred alternative because: Grouse populations in the area are healthy; Few grouse are harvested on the Refuge; The closed area in the preferred alternative has some of the best ruffed grouse habitat on the Refuge and; Surveys, conducted by MFWP have shown that the abundance of grouse affects hunter interest and harvest rates allowing populations to recover.

Turkey

Wild turkey are not migratory and have a small home range so opening the Refuge to turkey hunting will not impact populations on a regional level.

Turkeys are not a species for which the Refuge was established and are not indigenous to Montana. However, they have been relocated in numerous areas and provide a high quality hunting experience for many sports persons. MFWP transplanted wild turkeys to the Pleasant Valley area in 1999. These relocated birds have prospered to such a degree that hunting has recently been implemented as a management activity by MFWP. Currently, local populations estimates total approximately 150 birds among four flocks.

Turkeys do not occupy the Refuge on a regular basis. Occasionally turkeys wander onto the Refuge from surrounding Plum Creek Timber lands. Since the turkey population rarely uses the Refuge and the local off-refuge habitat they prefer is open to hunting, opening the refuge hunting program is not expected to have a significant impact on the turkey population of the area.

Cumulative Impacts Non-hunted Species

Moose

Moose are primarily spring and summer residents on the Refuge. Elk, deer and grouse hunting occurs in the fall when most moose have moved off the Refuge. Spring turkey season may cause some disturbance to moose on the Refuge. Significant local impacts are not likely to occur because turkey are not common on the Refuge in the spring and there will be few hunters. Moose rarely travel out of the local area so there will not be a regional cumulative impact to moose.

Predators

Mountain lion, black bear and coyote are present on the Refuge but hunting will not be permitted for these species under the preferred alternative. Elk, deer, mountain grouse and turkey hunting may increase disturbance to these species but not to a degree where a negative impact will occur. These species evolved with high hunting pressure in Western Montana and populations have increased despite this disturbance.

Waterfowl

Disturbance from fall hunting activities to waterfowl should not result in a negative cumulative impact for the following reasons. All wetlands on the Refuge except Upper Moose Pond (<2 acres) are located in the designated closed area where hunting is not permitted. There may be a slight increase in disturbance to waterfowl using the ponds located along South Pleasant Valley Road. Although this road has traditionally been open to non-motorized hunting access, hunter numbers may increase under the proposed alternative. These ponds are located 7 and 9 miles in on this road so hunter use is not expected to increase significantly. Ponds freeze early in the fall and waterfowl migrate off of Refuge early in the hunting season.

Spring turkey hunting may cause some negative cumulative impacts to waterfowl. These impacts are expected to be minor for the following reasons. Turkeys have never been recorded on the Refuge during yearly spring duck pair counts, and neotropical bird counts. Turkeys are only occasionally present on the Refuge and hunting pressure is expected to be minimal. Spring turkey season runs from early April to the third week in May. Spring green-up is late in Pleasant Valley and many waterfowl species will not initiate nesting before the end of the spring turkey season.

Other Non-hunted Wildlife

Other non-hunted wildlife would include other migratory birds such as songbirds, wading birds, raptors and woodpeckers; small mammals such as voles, moles, mice, shrews, rabbits, squirrels, and bats; reptiles and amphibians such as snakes, turtles, salamanders, frogs and toads; invertebrates such as butterflies, moths, other insects and spiders. Except for migratory birds and some species of migratory bats, butterflies and moths, these species have very limited home ranges and hunting could not affect their populations regionally; thus only local effects will be discussed.

Disturbance by hunting to non-hunted wildlife would be the most likely negative cumulative impact. However, disturbance would be unlikely for the following reasons. Small mammals, including bats, are inactive during winter when hunting season occurs. These species are also nocturnal. Both of these qualities make hunter interactions with small mammals very rare. Hibernation or torpor by cold-blooded reptiles and amphibians also limits their activity during the hunting season when temperatures are low. Hunters would rarely encounter reptiles and amphibians during most of the hunting season. Encounters with reptiles and amphibians in the early fall are few and should not have cumulative negative effects on reptile and amphibian populations. Invertebrates are also not active during cold weather and would have few interactions with hunters during the hunting season. The refuge has estimated current hunter density on peak days to be no more than 1 hunter per 120 acres. During the vast majority of the hunting season, hunter density is much lower (1 hunter/1,000 acres). Refuge regulations further mitigate possible disturbance by hunters to non-hunted wildlife. Vehicles are restricted to public roads and the harassment or taking of any wildlife other than the game species legal for the season is not permitted.

Although ingestion of lead-shot by non-hunted wildlife could be a cumulative impact, it is not relevant to Lost Trail NWR because the use of lead shot would not be permitted on the refuge for any type of hunting.

Disturbance to non-hunted migratory birds could have regional, local, and flyway effects. Regional and flyway effects would not be applicable to species that do not migrate such as most woodpeckers, and some songbirds such as juncos and chickadees. Disturbance by hunting to migratory birds should not result in cumulative negative impacts for the following reasons. Except for spring turkey season, hunting season would not coincide with the nesting season. Long-term future impacts that could occur if reproduction was reduced are not relevant for this reason. Disturbance to the daily wintering activities, such as feeding and resting might occur.

Disturbance to birds by hunters would probably be commensurate with that caused by non-consumptive hunters.

Some species of bats, butterflies and moths are migratory. Cumulative effects to these species at the “flyway” level should be negligible. These species are in torpor during the hunting season.

Endangered Species

Endangered or threatened species that have been known to utilize the refuge are bald eagle, grey wolf, and grizzly bear. An endangered plant, spalding's catchfly (*Silene spaldingii*) is also found on the Refuge. A Section 7 Evaluation was conducted in association with this assessment for opening hunting on Lost Trail NWR. It was determined that the proposed alternative would not likely adversely affect these endangered species.

Bald Eagle

The bald eagle nest is located in an Aspen stand along the shore of Dahl Lake. Bald eagles are sensitive to human disturbance, especially activity after nest initiation and prior to fledging. This activity can result in decreased nestling survival (Steidl and Anthony 1996). In northwest Montana, egg laying and incubation occurs from January through late May. After hatching, eagles are less sensitive to disturbance and less likely to abandon or neglect young. Federal and state recommendations suggest a 1/4 to 1/2 mile buffer around a bald eagle nest during nesting season (MBEWG 1994). Disturbance from fall hunting activities to bald eagles should not result in a negative cumulative impact for the following reasons. All permitted hunting, except spring turkey hunting, will occur in the fall after the eagles have fledged. The Dahl Lake nest site is well within the designated closed area for public access during hunting season. Public hunting will not occur within .5 miles of the eagle nest in the fall.

Some negative cumulative impacts may occur to bald eagle nesting from the spring turkey hunt. These impacts should be minor because: turkeys have not been sighted within 1/2 of the bald eagle nest; very few hunters engage in turkey hunting on the Refuge; and this pair of eagles has not been disturbed by historic ranch operations carried out in the vicinity of the nest in the spring. The bald eagle nest is monitored by Refuge employees and MFWP. Should disturbance start to affect eagle nest success, a closure for all public use will be instated for 1/4 mile around the nest site from February 1 to June 1.

Gray Wolf

Grey wolves are transient across Refuge lands. Wolves twice tried to colonize in Pleasant Valley in the 1980s and 1990s but both times they preyed on cattle and had to be controlled. Wolves from surrounding packs (Wolf Prairie and Fishtrap) occasionally use the Refuge. Coyote hunting is not permitted in the preferred alternative which will eliminate the possibility of an accidental taking of a wolf by a coyote hunter. Implementation of the preferred alternative may cause some negative cumulative impact to wolves through disturbance. These impacts are expected to be minimal because wolf populations have been steadily increasing in Northwest Montana despite disturbance during hunting seasons. Big game and mountain grouse hunting on the Refuge will occur in the fall so there will be no disturbance to den and rendezvous sites where the wolves are most vulnerable to disturbance. There has never been a wolf den on the Refuge so spring turkey hunting should not disturb wolf denning or rendezvous sites.

Hunting success and regulations are directly related to prey populations. One of the greatest concerns the public had with wolf reintroduction was the effect that wolves would have on deer, elk and moose populations. Biologists believe that the primary deterrent of the long-term gray wolf population survival is human attitudes toward wolves (USFWS 2000). The hunting public has made substantial financial investments and sacrifices to restore ungulate populations to Montana (Sime 2002) and hunters can be a strong ally or opponent to wolf survival. Therefore, the Refuge will best gain support for a healthy wolf population by maintaining ungulate populations through improvement in habitat and not restricting hunting unless in direct conflict with the survival of a wolf pack in the Pleasant Valley area.

Grizzly Bear

There will not be a negative cumulative impact to grizzly bears under the preferred alternative for the following reasons. Grizzly bears rarely use the Refuge. There has only been one documented record of a grizzly bear on the Refuge. This was in the spring of 2006 when a bear that was trapped in Marion and relocated to an area west of the Refuge, crossed the Refuge shortly after release. The bear did not stay in the area. There have been scattered reports of grizzly bears on Plum Creek Lands surrounding the Refuge. There have never been grizzly bears reported on or near the Refuge in the fall when the majority of the hunting on the Refuge would take place. Black bear hunting is not permitted on the Refuge which eliminates the chance that grizzly bear could be mistakenly shot for a black bear. Spring turkey hunting is not expected to attract many hunters and should not impact bears. Should a grizzly bear be in the

vicinity during any hunting season, there are provisions in this EA, the Hunt Plan and the Lost Trail Comprehensive Conservation Plan that would allow for Refuge management to close all or part of the Refuge to public use.

Spalding's Catchfly

Spalding's catchfly is an endangered plant associated with healthy, native intermountain and Palouse Prairie. The plant was located on the Refuge in 2001. Three populations with up to 350 plants were documented. Threats to Spalding's catchfly include grazing and trampling. There will be no negative cumulative impact to Spalding's catchfly because the plant will be dormant during all hunting seasons so trampling will not affect regrowth or reproduction of the plant. There might be a slight positive cumulative impact with the removal of ungulates that may cause trampling during the growing season and may graze spalding's plants.

Anticipated Direct and Indirect Impacts of Proposed Action on Refuge Programs, Facilities and Cultural Resources

Wildlife Dependant Recreation

As public use levels expand across time, unanticipated conflicts between user groups may occur. The Refuge's visitor use programs would be adjusted as needed to eliminate or minimize each problem and provide quality wildlife-dependent recreational opportunities. Experience has proven that time and space zoning (e.g., establishment of separate use areas, use periods, and restrictions on the number of users) is an effective tool in eliminating conflicts between user groups. The proposed big game hunting season lasts 11 weeks in the fall. The spring turkey season will not impact other public uses because of low turkey numbers on the Refuge. Other public uses will dominate 41 weeks out of the year.

The preferred alternative allows a high percentage of the hunting public to participate (compared to an archery only season). It also protects the bottomlands, including the majority of the wetlands, from most hunting disturbances. Viewing and photography opportunities may be increased in the bottomlands where wildlife is protected from hunting disturbance.

Refuge Facilities

The Service defines facilities as: “Real property that serves a particular function(s) such as buildings, roads, utilities, water control structures, raceways, etc.” Under the proposed action those facilities most utilized by hunters are: roads, parking lots, and trails. Maintenance or improvement of existing facilities will cause minimal short term impacts to localized soils and waters and may cause some wildlife disturbances and damage to vegetation. The facility maintenance and improvement activities described are periodically conducted to accommodate daily refuge management operations and general public uses such as wildlife observation and photography. These activities will be conducted at times (seasonal and/or daily) to cause the least amount of disturbance to wildlife.

The only roads open to motorized vehicles on the Refuge are the Pleasant Valley Road, the 1019 Road and Orr Road (See Figure 2). Pleasant Valley Road is a county road that bisects and runs the length of the Refuge. Orr Road and 1019 roads are public access roads shared by the U.S. Forest Service, Plum Creek Timber Company and the Refuge. Maintenance of Orr Road and the 1019 Road is shared by Plum Creek Timber Company and the Refuge. All three of these roads receive high pressure in the fall by hunters accessing lands beyond the Refuge. Little additional use is anticipated with this alternative since many hunters using the Refuge traditionally hunted surrounding lands and used these roads to access off Refuge hunting areas.

The only Refuge road that will have additional impacts from this alternative is a small Refuge Road that branches off Orr Road in section 8. This road will be open for motorized use for hunters with disabilities. The road is approximately ½ mile in length. Only one hunter will be allowed access a day and they must pick up a key at the Refuge office. No more than 15 hunter visits per year are expected on this road in the preferred alternative.

All other roads and trails that are open are restricted to non-motorized use which will not have a detrimental affect on the road.

Cultural Resources

Hunting, regardless of method or species targeted, is a consumptive activity that does not pose any threat to historic properties on and/or near the Refuge. In fact, hunting meets only one of the two criteria used to identify an “undertaking” that triggers a federal agency’s need to comply

with Section 106 of the National Historic Preservation Act. These criteria, which are delineated in 36 CFR Part 800, state:

- 1- an undertaking is any project, activity, or program that can alter the character or use of an archaeological or historic site located within the “area of potential effect;” and
- 2- the project, activity, or program must also be either funded, sponsored, performed, licenses, or have received assistance from the agency.

Consultation with the pertinent State Historic Preservation Office and federally recognized Tribes are, therefore, not required.

Anticipated Impacts of Proposed Hunt in Refuge Environment and Community

Minimal adverse impacts from implementation of the proposed action are expected on the refuge environment which consists of soils, vegetation, air quality, water quality and solitude. Some disturbance to surface soils and vegetation would occur in areas selected for hunting; however impacts would be minimal. Hunting would benefit vegetation as it is used to keep many resident wildlife populations in balance with the habitat’s carrying capacity. This helps prevent over grazing and trampling of vegetation which can lead to habitat degradation and helps to maintain healthy native habitat. Over grazing could also lead to the spread of noxious weeds further degradating habitat. The refuge would also control motorized vehicle access to minimize habitat degradation.

The refuge expects impacts to air and water quality to be minimal and only due to refuge visitors’ automobile and run-off on road and trail sides. The effect of these refuge-related activities, as well as other management activities, on overall air and water quality in the region are anticipated to be relatively negligible compared to the contributions non-refuge vehicle traffic. Existing State water quality criteria and use classifications are adequate to achieve desired on-refuge conditions; thus, implementation of the proposed action would not impact adjacent landowners or users beyond the constraints already implemented under existing State standards and laws.

Impacts associated with solitude are expected to be minimal given time and space zone management techniques, such as seasonal access and area closures, used to avoid conflicts among user groups. The refuge would work closely with State, Federal, and private partners to minimize impacts to adjacent lands and its associated natural resources; however, no indirect or direct impacts are anticipated. The proposed action may have a slight positive impact by reducing local ungulate numbers which could reduce damage to private lands near the Refuge.

Several large cattle ranches exist near the Refuge. MFWP uses hunting seasons to reduce private landowner depredation complaints caused by ungulate competition for grazing resources. Much of the Refuge is surrounded by Plum Creek Timberlands. Plum Creek plants acres of trees every year. As ungulate populations rise, damage to planted tree seedlings from browsing increases. This proposed action may help reduce private land damage by keeping ungulate numbers in balance with available habitat.

The newly opened hunts would result in a net gain of public hunting opportunities positively impacting the general public, nearby residents, and refuge visitors. The refuge expects increased visitation and tourism to bring additional revenues to local communities but not a significant increase in overall revenue in any area.

Other Past, Present, Proposed, and Recently Foreseeable Hunts and Anticipated Impacts

Cumulative effects on the environment result from incremental effects of a proposed action when these are added to other past, present, and reasonably foreseeable future actions. While cumulative effects may result from individually minor actions, they may, viewed as a whole, become substantial over time. The proposed hunt plan has been designed so as to be sustainable through time given relatively stable conditions. Changes in refuge conditions, such as a sizeable increases in refuge acreage, or public use, or inclusion of additional hunting seasons or species are likely to change the anticipated impacts of the current plan and would trigger a new hunt planning and assessment process. The Refuge does not foresee any changes to the proposed action in the way of increasing the intensity of hunting in the future.

Anticipated Impacts if Individual Hunts are Allowed to Accumulate

National Wildlife Refuges, including Lost Trail NWR, conduct hunting programs within the framework of State and Federal regulations. Lost Trail NWR is at least as restrictive as the State and generally follows Montana state hunting regulations on those species for which hunting is permitted on the Refuge. By maintaining hunting regulations that are as, or more, restrictive than the State, individual refuges ensure that they are maintaining seasons which are supportive of management on a more regional basis. The proposed hunt plan has been reviewed and is supported by the Montana Department of Fish, Wildlife and Parks. Additionally, the Refuge coordinates with MFWP annually to maintain regulations and programs that are consistent with the State management program.

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Exhibit A - Revisions in Response to Public Comment

Mountain Lion Hunting

The last paragraph in the “Mountain Lion” section under Affected Environment (page 24) was revised to reflect a change in MFWP regulations.

When the EA was written, MFWP had tentatively decided to change mountain lion hunting in district 103 to permit only hunting for the 2001 season. This change was not implemented and mountain lion hunting for 2001 remains under a quota system with a quota of 12 lions in Hunting District 103.

Waterfowl hunting rationale

The rationale for not allowing the hunting of waterfowl was added to the rationale section of Alternative B (Page 31). The same rationale was located in Alternative A and was referenced in Alternative B. However, public comment indicated that many people missed this rationale or it wasn't clear in Alternative B so it has been added in full to Alternative B.

Grouse and Turkey hunting in Alternative B

Many public comments received during the review period favored “No Hunting” or Alternative F. Others indicated that the closed area did not serve it's intended purpose if turkey and grouse hunting was permitted. After careful review of comments and internal debate it was decided under the Preferred Alternative (Alternative B) to limit the hunting of turkey and grouse to those areas designated as open to big game hunting. This will alleviate law enforcement concerns of having hunters in the closed area during big game season, and will lessen disturbance to wildlife in this area. The area between the Pleasant Valley County Road and the South Pleasant Valley Road will be closed to all hunting.

Turkey and grouse hunting was further changed to allow all legal means of take according to state regulations. In the original EA, upland game bird hunting in Alternative B was limited to shotgun only. Safety and law

enforcement issues were greatly reduced by closing the bottomlands to turkey and grouse hunting, as well as big game hunting, so it was decided to allow rifle, handgun and archery hunting of turkey and grouse following state regulations. Shotgun use will still be limited to non-toxic shot only.

Exhibit B - Response to Public Comments

Input: I am opposed to any change in the present hunting rules for Lost Trail Refuge. Alternative F should be followed.

Response: The Service is required under the National Wildlife Refuge System Improvement Act of 1997 (*16 USC 668dd*) to consider opening refuges to the six priority wildlife-dependent recreational uses. The six priority uses are hunting, fishing, wildlife photography, environmental education, observation and interpretation. The decision to open a refuge to hunting must be consistent with principles of sound wildlife management, applicable wildlife objectives and otherwise be in the public interest (50 Code of Federal Regulations (CFR) 32.1). Hunting will be permitted because it is compatible with the refuge enabling legislation, and consistent with the Refuge Recreation Act of 1962, and the National Wildlife Refuge System Improvement Act of 1997 which is an amendment to the Refuge Administration Act of 1966.

Input: Allow retrieval of game in closed area, if legally taken animal is wounded and then dies within a closed area.

Response: This comment suggests the creation of a retrieval policy or zone. Retrieval of game is not consistent with Title 50 of the Code of Federal Regulations. It is the responsibility of sports persons to take reasonable precautions to prevent such occurrences. However, it is within the Refuge Managers authority to assist neighboring sports persons should conditions warrant.

Input: Lead shot should be permitted on upland areas. This is especially needed for .28 gauge and .410 gauge which do not have factory non-toxic loads.

Response: .10, .12, and .20 gauge shotguns all have factory non-toxic loads. In addition, .28 gauge shells can be purchased with non -toxic shot and both .28 gauge and 410 gauge shells can re-loaded with steel shot.

Input: I am not going to “beat around the bush” as I can see no rationale, either quantitative or subjective that convinces me why only one alternative is better than any others so: If Alternative C is “within the bounds of Refuge

Admin. Act, enabling legislation, and the purpose of the Refuge” then that’s the alternative for me and should be for you.

Response: The Service is required to consider all 6 priority public uses as stated under the National Wildlife Refuge System Improvement Act of 1997 (*16 USC 668dd*). The decision must be consistent with principles of sound wildlife management, applicable wildlife objectives and otherwise be in the public interest (50 Code of Federal Regulations (CFR) 32.1). Hunting should be evaluated in regards to the other priority wildlife-dependent recreational uses to minimize conflicts and provide opportunities for everyone to enjoy wildlife and wildlife-dependent recreation. Alternative C is not consistent with these requirements as it has significant potential to materially interfere with other priority public uses and endangered species conservation.

Input: The key is waterfowl hunting and either one hunts Dahl Lake or you don't. It is not logical to close 60% of such a small area and leave 40% open.

Response: The Service is not considering opening just 40% of Dahl Lake, it is 40% of the entire refuge that can be open to migratory bird hunting. If there is a viable waterfowl hunting population then the 40% could include all of Dahl Lake.

Input: Open special youth hunt-1st week of archery and rifle season, but include handicap hunters as well as youth hunters.

Response: Service policy requires public uses to comply with the American with Disabilities Act. Providing hunting for adult hunters with disabilities at the exclusion of other hunters is not consistent with the ADA. The purpose of youth hunts is to provide and promote educational opportunities to instill a conservation ethic to future generations. Including adults would provide enhanced harvest opportunities but not meet the need for conservation awareness education.

Input: I support Alternative B, but would be nice to allow more cow tags to hunt refuge-wide (perhaps 20-25 tags) or not enough elk are getting harvested.

Response: The U.S. Fish and Wildlife Service does not determine the “cow tag” quota for hunt district 103. This quota is determined by the Montana Fish Wildlife and Parks based on the total population of the Elk Management Unit.

Input: Alternative C-hunt the whole refuge all big game season, I suggest a youth hunt 1 week prior to opening.

Response: There is no reasonable justification for providing hunter opportunities outside those seasons set by Montana Fish Wildlife and Parks

Input: Alternative B, with trapping of coyotes, whether it be with a government trapper or 1 or 2 licensed trappers from a draw by the State of Montana.

Response: Trapping is a separate issue that will be addressed in the Comprehensive Conservation Plan.

Input: Duck stamps are paying for this refuge, NOT elk tags, deer tags, upland bird licenses, turkey tags, archery licenses, or the Montana Conservation Licenses. CARA legislation has NOT passed so the watchable wildlife folks do not contribute financially to their sport or the refuge system. In this case waterfowlers are paying for everybody else's hunting and viewing but are, themselves, being eliminated. OPEN but SUSPEND waterfowl hunting until wetland restoration and enhancement construction is initially completed. When open limit it to 3100 acres near streams and impoundments or the allowed 40%. Early freeze up will be a self-limiting control on hunters, will not impact migratory bird populations, and will not alienate a very supportive constituency.

Response: The Refuge was indeed acquired primarily with revenues from the Migratory Bird Hunting and Conservation Stamp Sales. However, approximately 25% of the value of the Refuge Lands were acquired by the government with general tax dollars. Nearly all of the annual operating funds are from general appropriations from Congress. An additional 799 acres (McGregor WPA) was simultaneously acquired which does provide waterfowl hunting opportunities. Waterfowl hunting will not be allowed on Lost Trail NWR at this time due to a lack of waterfowl numbers, lack of restored wetland habitat and concern for quality hunt guidelines.

Input: Open turkey hunting during the Fall season ONLY, area wide; shotgun or archery only, except in safety zones. Reduces nesting and bird watching conflicts.

Response: The selected alternative was modified reducing some turkey hunting opportunity during spring and fall. Turkey and upland game bird hunting is closed in the bottoms and therefore should reduce potential public use conflicts and migratory bird nesting disturbance.

Input: Hunters should not be required to register at the refuge headquarters. If registration is required, then allow self-registration at normal points of entry.

Response: Hunters may be required to register during access to the refuge to provide statistical information on public use and adequacy of accessibility of the Refuge. Self registration at convenient locations is expected to be the preferred method.

Input: Close the non-big game hunting area to all public access when wolves are on the refuge during any fall hunting season.

Response: The preferred alternative was modified to close the non-big game hunting area to all hunting to further prevent a firing line situation. Closure to all public uses must be addressed in the refuge Comprehensive Conservation Plan which is in development. All or any part of the Refuge may be closed to hunting or any public use by the Refuge Manager whenever necessary to protect the resources of the area or for public safety.

Input: Insure protection of the eagle nest site with a seasonal closure during the spring turkey and bird watching season.

Response: The bottoms are now closed during the hunting seasons. Therefore there should be no conflicts between hunters and nesting bald eagles. In addition, buffer zones around the eagles will minimize conflicts with other public uses.

Input: The tribal subsistence hunting issue should be resolved by the government recognizing that all citizens should have equal rights unless very specifically authorized by a treaty or act of congress. The Hellgate Treaty specifically states the tribes relinquish all right, interest and claim outside the reservation and no other treaty article modifies this provision relative to hunting. **Response:** The Confederated Salish and Kootenai Tribes would like to see tribal subsistence hunting rights established on Lost Trail NWR based in part on the Hellgate Treaty and the courts. The Fish and Wildlife

Service is currently seeking legal counsel on this issue and anticipates this issue will be resolved outside of the context of the current proposed public hunting program.

Input: We support Alternative E because it would provide opportunities for waterfowl and furbearer hunting that Alternative B would not provide, and the EA provides no substantial basis for rejecting these additional hunting opportunities. In particular, we are extremely troubled by the discussion in the EA of the rationale and impacts of Alternative E. That discussion states, “[t]his alternative does not comply with the FWS biological integrity policy” and it would “materially interfere with the refuge purpose of restoring migratory bird populations.” We believe that it is completely inappropriate for the EA to characterize a proposal attributed to a state fish and wildlife agency in this manner while providing absolutely no evidence or justification for these statements. How does Alternative E fail to comply with the biological integrity policy? What specific provisions of that policy would be violated? How does allowing any amount of waterfowl hunting materially interfere with the refuge purpose of restoring migratory bird populations? Many other refuges across the nation have as their purpose restoration of migratory bird populations and habitats and allow waterfowl hunting.

Under the discussion of the limited hunting alternative (Alternative A), the EA finds that opening the Refuge to waterfowl hunting at this time would not provide for a quality hunt, nor provide for a reasonable harvest opportunity. It further cites that crowded conditions could arise because of the limited distribution of waterfowl and that early freeze up limits that season and concludes that “there is little merit to allow a hunt that could detract from other public uses or disturb wildlife and habitat unnecessarily.” We view these issues as ones that can be addressed through proper management of a hunt, not ones that bear on compliance with the biological integrity policy or that materially interfere with refuge purposes. In any case, no documentation or even discussion is provided that elaborates on how significant any disturbance to other public uses or wildlife and wildlife habitat would be from waterfowl hunting.

It may be inappropriate to open the Refuge to waterfowl and furbearer hunting at this time, but the EA provides no basis for this conclusion. Absent

any evidence to the contrary, we believe that Alternative E should be adopted. Moreover, we believe that the Service should either substantiate its characterization of the MFWP alternative or withdraw that characterization in the decision document.

Response: Waterfowl and furbearer hunting does not conflict with the flyway or regional objectives. However, the Biological integrity policy stipulates integrity consideration of biological resources at the refuge level also. Refuge level reasons for not hunting waterfowl are, lack of habitat, low bird numbers, and lack of resources to manage the hunt. Furbearer hunting on the Refuge would likely result in undue disturbance to wintering deer and elk. Hunting of Wolverine and bobcat, which are rare within the Refuge, may reduce wildlife diversity of the Refuge. The Montana Fish Wildlife and Parks suggested alternative was based on population management at the hunt district or flyway population level. The rationale description within the environment assessment described the biological integrity concerns as being refuge specific and in no way intended to imply any biological integrity concerns on a population level.

Input: One issue the EA didn't spend much time on: You mentioned that Pleasant Valley Road and Forest Road 1019 will be open at all times. What about the various roads within the former ranch (some shown on the Flathead NF map)? I would hope that you will make ample use of signs, gates, and/or bulldozers and scarifiers to help insure that our ATV/snowmobile friends don't get the idea of turning this area into another of their playgrounds.

Response: There was not much discussion on the issue of motorized access for two reasons. First, we presently have a handout outlining refuge access until additional planning is completed. This process of developing the Refuge Comprehensive Conservation Plan for the Refuge should address all public use and management issues.

Input: Make sure that the Refuge staff addresses the Golden Eagle nest in section 30 just outside the west end of the Refuge and the seasonal conflicts caused by the use of the new, nearby, parking lot. We believe that State guidelines for Bald & Golden Eagles suggest closing areas for a ½ mile radius around a nest site from February to August. The nest is within 20' of the Refuge boundary and the parking lot is within the ½ mile radius. Parking lot use by Spring bear and Turkey hunters as well as bird watchers will cause

undue disturbance to the productive pair of Golden Eagles that use the nest site. Be Proactive on this problem: CLOSE the parking lot in the spring to all users. When more detailed information surfaces about the nesting activities and the disturbance (or lack there of) caused by people, adjust the seasonal usage of this parking lot accordingly. This issue is important to Flathead Audubon. Do NOT address this issue by:"seeing if the Eagles are driven off, ...before taking action." We see no need at this time to close the entire area within the ½ mile radius, which would include some Plum Creek lands, just close the parking area.

Response: Refuge management will close public access by posting signs from February to July within a minimum of 1/4 mile radius of active bald and golden eagle nests according to the Montana Bald Eagle Plan. Designated parking areas greater than 1/4 mile from a nest may also be closed if appropriate.

Input: Access should be simplified as much as possible to make it feasible for recreational people to understand and feasible to enforce. Non-motorized access should be on lands (roads included), where the Refuge is open to the public. If they can hunt there, they can walk, bike, and ride horses there. The road provides a clear boundary for hunting and a natural travel way for non-motorized use by hunters and in other recreational activities.

Response: Reasonable, simplified and enforceable access is an objective of the hunt plan. The access provided via the hunt plan does not include other public use access. Other public use access will be articulated in the Comprehensive Conservation Plan which is under development.

Input: Blue goose signs and orange paint as boundary markers need to be fixed or removed. There are too many mixed signals out in the forest. As a member of the public, I really never feel that I understand what the “allowed” uses are. Maybe just an interpretation of these signs on your access maps. Orange paint has been put around the boundaries and it means “no trespassing” in Montana (as per Montana Fish Wildlife & Parks). This needs to be rectified. It is unfair to other landowners in Montana that want these markings respected to leave them in the forest and tell people to ignore them.

Response: The use of orange paint on the Refuge boundary will be corrected by removal as soon as practical. A new public use handout will interpret the meaning of the Blue Goose Boundary sign and other various refuge signs utilized.

Input: This plan impacts many acres, but the acres that are the most easily accessed by the public will be along the north side of the county road. Historically, this has not had public pressure on it and hunting has had to begin where hiding cover also begins. This provided a good hunt as well as gave the animals some opportunity to get to hiding cover. It also provided some great wildlife watching. Since the areas north of the county road are mostly grasslands, the elk could be hard hit in a heavy snow year when they are out feeding. Can this be sectioned off somehow to give the animals some access to hiding cover before the hunt can begin?

Response: Hunting will begin in early September prior to significant numbers of elk using the refuge. This acclimation period should educate these animals to the presence of hunters which they may not have experienced in the recent past. Should the potential for over harvest in the above mentioned situation occur, the hunt plan stipulates modification or closure to protect wildlife resources.

Input: Dogs aren't used to hunt grouse by many people. If dogs are allowed off leash to hunt grouse, will they also be allowed to go for walks when people are out for a walk? Again, whatever use is allowed in hunting cannot be “special” just for hunting. I am a hunter, but I am also a very avid watcher of wildlife, a strong user of mountain bikes, horses and my feet. I don't want these other recreational uses to become second class citizens to hunting. Keep everything simple and fair to all recreational users.

Response: Due to public response that horses are not needed within the refuge and internal concern for spread of noxious weeds, horses are only permitted on North 1019 road, Bleise road, Lund road and South Pleasant Valley Road from the west end to the Lund road intersection. At that point you must exit the Refuge and hunt adjacent Plum Creek or state land. Upon further inquiry, the Hunt Plan was changed to not allow the use of dogs for grouse hunting due to disturbance and lack of traditional use of dogs by grouse hunters.

Input: In relation to Partnership Goals p. 4, as well as an unclear handicapped hunting program: There is a brief mention of a handicapped hunters program on page 6. No details have been outlined and therefore no concrete comments can be given. If access for handicapped hunting involves roads where use is shared by Plum Creek, we want the opportunity to comment on a more detailed plan before it is implemented. The shared roads are a concern, and the private roads that lead from the shared roads are of greater concern. Again, the soils in this area do not lend themselves to use during wet periods unless you are willing to spend a large amount of money putting on gravel or maintaining the roads on an annual basis. Once behind a gate, the side roads are not closed off and can be destroyed with one entry. Plum Creek owns most of the side roads and is not in a position to pay for recreational activities. Our own activities (pickup use as well as harvesting) are greatly restricted in wet weather. Plum Creek currently has areas set aside for handicapped hunters, but they are not in fragile soils.

Response: Access for hunters with disabilities will be tailored to those special needs to **meet** requirements of the American with Disabilities Act. Any motor vehicle use of refuge roads will be the responsibility of the Service. Any such motor vehicle use will be authorized within the Refuge ONLY and exiting the Refuge at unauthorized locations will be a violation of the Special Use Permit.

Input: Do you allow big game hunting on the Bison Range? Apply the same management logic used in making that decision to Lost Trail NWR and you will have a place where the non hunting public can enjoy viewing elk while allowing hunters an opportunity to bag a trophy elk.

Response: Big game hunting is not permitted on the National Bison Range. The same logic does not apply. The NBR provides visitation for over a quarter of a million non-hunting visitors on refuge roads. Lost Trail NWR on the other hand has a public road traversing the length of the Refuge with very few visitors on refuge roads and low numbers of non-hunting visitors. The goal at Lost Trail NWR is to accommodate both the hunting and relatively low numbers of non -hunting visitors.

Input: Can the handicapped or the elderly use a horse to hunt on Lost Trail NWR?

Response: For accessibility to areas open for hunting on Lost Trail NWR this situation will be addressed on a case by case basis. If it is determined that the use of a horse is necessary to facilitate accessibility, a special use permit can be issued by the Refuge manager.

Input: Did I understand the hunt plan about use of horses? I have to lead my horse on the Refuge?

Response: The hunt plan has been changed and does not allow horses for hunting on Lost Trail NWR. Due to public response that horses are not needed within the refuge and internal concern for spread of noxious weeds, horses are only permitted on access points to neighboring Plum Creek Lands. These access points include, North 1019 road, Bleise road, Lund road and South Pleasant Valley road from the west end parking lot to the Lund road intersection. At that time you must exit the Refuge road and begin hunting on surrounding Plum creek or state land.

Input: We believe it is inappropriate and inconsistent with the 1997 Refuge Improvement Act (hereafter the "Act") for the FWS to development an EA on the appropriateness/inappropriateness of hunting on Lost Trail National Wildlife Refuge before a Comprehensive Conservation Plans (CCP) is in place for the refuge. The Act requires that every refuge develop a CCP. Within this CCP recreational activities currently allowed and activities considered for future use are to be considered and assessed for their compatibility with the purpose of the refuge and mission of the refuge system. In addition, the Act mandates that CCPs include a thorough biological assessment of wildlife populations inhabiting refuges before any recreational use compatibility determinations are made. To institute an entirely new hunting program on the refuge prior to the development of a CCP is premature and may violate the Refuge Improvement Act. We argue that no actions should be taken by the FWS to allow hunting on the LTNWR at least until appropriate NEPA documentation and subsequent compatibility determinations are completed. For these reasons, and others articulated below, we oppose the preferred alternative to allow hunting of deer, elk, mountain grouse, and turkey on the refuge, and support Alternative F, the "No Action" proposal.

Response: Preparation of a Hunt Plan was stipulated in the Lost Trail NWR establishment NEPA document. The Refuge CCP is in development and anticipated to be in effective in the same approximate time frame as the Hunt Plan, I.E. fall of 2002. NEPA documentation and a compatibility determination is being completed with the Hunt Plan.

Input: The Animal Protection institute (API) is very concerned in managing National Wildlife Refuges (NWRs) the U.S. Fish and Wildlife Service (FWS) has strayed far from the conservation mission Congress intended under the Act. Through the FWS' own policy "directs that *wildlife comes first* in the National Wildlife Refuge System." 602 FWS 1.4A (emphasis added), many refuges allow and even encourage activities detrimental to wildlife, including hunting, trapping, motor boating, and jet skiing. In many cases these recreational activities are permitted in the absence of thorough and accurate biological data on the species inhabiting and migrating through the refuge. API opposes the commercial and recreational killing of wildlife on our National Wildlife Refuge System and other public lands established to protect wildlife. A refuge, as defined by Webster's dictionary, is "a place of shelter, protection, or safety." When Lost Trail National Wildlife Refuge was formerly established as a

National Wildlife Refuge in 1999, one of its three stated purposes was “...to enhance the survival prospects of endangered and threatened species in the area.” API contends that the proposed hunting of elk, deer, turkey and mountain grouse is incompatible with the refuge’s designated purpose and with non-consumptive wildlife uses including wildlife viewing and other activities. For example, the proposed hunting plan allows the use of dogs for hunting mountain grouse. However, the use of dogs may hinder recovery efforts for threatened and endangered species inhabiting the refuge including lynx, wolf, grizzly bear, and bald eagles and is incompatible with the designated purpose of the refuge.

Response: The National Wildlife Refuge System Improvement Act of 1997 directs the Service to consider hunting as a priority public use if that use is compatible with the purpose of the Refuge. The Service has determined the Lost Trail NWR hunt plan to be compatible with the purposes of the Refuge.

Input: The EA states that “the hunting program has the potential to conflict with other forms of wildlife-dependent recreation...[including] wildlife observation, wildlife photography, environmental education, and interpretation.” However, the only mitigation offered in the EA is that “hunting is a use that occurs during a limited time of while other uses can occur year-round, providing for a separation of time. Also some areas of the Refuge will be closed to big game hunting during the fall.” However, the proposed hunting season for turkey is spring and fall, with upland game bird hunting throughout the Refuge in the fall. Fall and spring are also high recreational use times for non-consumptive wildlife activities.

Response: The low visitor numbers due to the remoteness of the Refuge will also minimize the potential for non-hunting/hunting conflict. Having multiple types of public use in overlapping geographic areas is a common management practice. Should material conflict of any public uses occur, public use plans will be re-evaluated for alternative solutions.

Input: In spite of the fact that, “During the planning process, the majority of the commenting public have steadfastly recommended hunting as their preferred alternative”, less than 40% of the more than 7,800 acres contained within this project will be open to any kind of hunting and only on a very limited basis. This is Unacceptable in light of the public comment, in light of

Montana Fish, Wildlife & Parks and Department of Natural Resources comment, in light of what we were told by the U.S. Fish and Wildlife.

Response: The purpose of soliciting public comment is to gain as many perspectives on potential alternatives as practical to improve the decision making process. A slim majority of comments received preferred the no action (no hunt) alternative. The Service steadfastly indicated it would abide by NEPA and Service Policy which was anticipated to result in a preferred alternative of a less than maximum allowable hunting program.

Input: We fail to understand how limited seasonal hunting opportunities (six week season) interferes in the slightest with any management goals the remaining 46 weeks of the year. Alternative maximum allowable hunting meets the long-range historical and management objectives of this area. We urge you to so adopt Alternative C. It would serve to sustain actions you indicated to us would be followed. Nothing else is acceptable.

Response: Alternative C would result in year long hunting (52 weeks) rather than 6 weeks as the comment suggested, see Table 2, page 13 of the EA. The Service steadfastly indicated it would abide by NEPA and Service Policy which was anticipated to result in a preferred alternative of a less than maximum allowable hunting program.

Input: What is the limiting factor (if any) of hunter numbers on any given day and if there are no limits how is hunter safety assured if there is potential for overcrowding possibilities. If parking is the limiting factor to controlling numbers (seems like I remember something along these lines) what would prevent locals from dominating the hunt?

Response: Wildlife numbers will help to limit hunter numbers as will the limited number of antler-less tags available within to Montana Fish Wildlife and Parks hunt district. Hunter /public safety is the responsibility of all hunters and visitors as promoted by hunter safety education requirements, courses and compliance with State laws. Should an unsafe condition materialize the refuge manager has authority to suspend any such public use activity as outlined in Title 50 of the Code of Federal Regulations.

Input: We see no reason that coyote hunting can't be open on the North or proposed "hunting side".

Response: Permitting coyote hunting within the Refuge would likely have resulted in a "may adversely affect" determination due to the presence and similar appearance of the Gray Wolf. An alternative which may adversely affect an threatened or endangered species is not viable.

Input: There must be adequate off road parking provided immediately.

Response: Additional public parking will be designated prior to the 2002 fall hunting season.

Input: The waterfowl hunting issue must be resolved very soon. We have commented before that we feel that since much of the money and actually the initiation of the project came from waterfowl mitigation it should not be relegated to the lowest priority. We still contend that the wetland portion should be managed as a WPA.

Response: Waterfowl hunting does not conflict with the flyway or regional levels. However the Biological integrity policy stipulates integrity consideration of biological resources at the refuge level also. Refuge level reasons for not hunting waterfowl are, lack of habitat, low bird numbers, and lack of resources to manage the hunt.

Input: Access across refuge land to legal hunting areas's should be allowed, provided and encouraged. It would appear that your plan in effect makes defacto non-hunting areas surrounding the refuge because of lack of reasonable access and game retrieval from legal areas that were available traditionally. Prior owner permission to cross was almost always granted.

Response: Refuge management does not feel any "defacto non-hunting areas surrounding the refuge" have been created. The Service has been responsive to neighboring land owners to not create vehicle trespass problems for them while providing access through the Refuge on the North side (North 1019 road) and the South side (South Pleasant Valley Road to Lund road as well as S.E. pond) to access private lands.

Input: Hunter registration could be accomplished with simple "self registration". Use the K.I.S.S. system of management.

Response: If implemented, hunter registration will be kept as simple as practical.

Input: We are still very concerned that USFWS has not and evidently does not intend to provide adequate staff to accomplish any type of significant management for Lost Trail (Or the rest of the USFWS managed areas in NW Montana).

Response: The Service recognizes the staff shortage and need to accomplish appropriate management of National Wildlife Refuge System lands in N. W. Montana. An additional 5.5 permanent positions have been submitted in the Refuge Operating Needs system and are waiting authorization and funding.