

**COMPILATION OF HCP EXCLUSION ANALYSES FOR THE
DESIGNATION OF BULL TROUT CRITICAL HABITAT
(Including exclusion analysis for certain areas managed under the
Lewis River Hydroelectric Projects)**

- Cedar River Watershed HCP
- Green Diamond HCP
- Washington Department of Natural Resources HCP
- Washington Forest Practices HCP
- Plum Creek Central Cascades HCP
- Plum Creek and Stimson Lumber Native Fish HCPs

- Lewis River Hydroelectric Projects

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U.S. Fish & Wildlife Service
Region 1 and 6

CEDAR RIVER WATERSHED HCP

Part A: Plan/Program Description and Analysis

1) Brief Overview of the City of Seattle Cedar River Watershed HCP:

In April 2000, The Cedar River Watershed HCP was completed and an incidental take permit was issued to the City of Seattle for water withdrawal and water supply activities affecting flows in the lower Cedar River and reservoir levels in Chester Morse Lake. In addition, the plan provides for forestry restoration activities including riparian thinning, road abandonment, and timber stand improvement on over 91,000 acres in the upper Cedar River Watershed in King County. The HCP is designed to provide adequate fish flows in the lower Cedar River for the spawning and rearing of several salmonid species, to manage water levels in Chester Morse Lake and Masonry Dam Reservoir to benefit instream flows in the lower river and bull trout spawning access to lake tributaries, and to manage 91,000 acres in the upper Cedar River as an ecological reserve. Several research actions are directed at understanding how all life stages of bull trout use Chester Morse Lake and Masonry Pool and how adult bull trout use tributaries to the lake for spawning. The HCP covers 83 species of fish and wildlife including bull trout and six other listed species.

2) Describe the area covered by the plan/program and the specific habitats affected/protected/improved: (with emphasis on the areas proposed as CH):

The HCP covers over 91,000 acres of City-owned land in the upper Cedar River Watershed and the Seattle's water withdrawal activities on the lower Cedar River. Seattle owns and manages over 99 percent of the lands in the upper Cedar River Watershed. These lands are managed as an ecological reserve to protect water quality and to preserve the remaining old growth timber. Other timber lands in the watershed are actively managed to accelerate the development of old growth characteristics mainly through riparian and upland thinning. Roads are also being abandoned at the rate of approximately 10 miles per year to reduce erosion rates into the lake and its tributaries and to minimize disturbance and fragmentation in the upper watershed. A total of 20 culverts that block fish passage are being replaced in the upper watershed.

The Chester Morse Lake Critical Habitat Sub-unit (CHSU) is located in the upper Cedar River watershed above a natural migration barrier, lower Cedar River Falls. The Chester Morse Lake CHSU includes Chester Morse Lake, the upper Cedar River and its tributaries, Rex River and its tributaries, Shotgun Creek, and Rack Creek. All four streams are major tributaries flowing into Chester Morse Lake.

3) What PCEs are covered by the plan and how effective is the plan at meeting the specific PCE criteria?

See Attachment 1 (PCE analysis).

4) Describe specific restoration and improvement goals, actions, or standards included as part of the plan:

The Cedar River HCP is expected to contribute significantly toward bull trout recovery. The

watershed mitigation management and conservation strategies laid out in the HCP are intended to manage the 91,000-acre watershed as an ecological reserve by providing: comprehensive, long-term protection for the watershed ecosystem encompassing commitments not to harvest timber for commercial purposes, placing forests outside limited development areas in a reserve status; measures to protect and restore streams, riparian, and upland forest habitats; removal of a large part (approx. 40%) of the existing road network; protective guidelines for watershed operations designed to minimize and mitigate impacts of those operations; and specific measures to protect species of greatest concern and their habitats (7 listed species including bull trout).

5) Identify the entity responsible for implementing the plan/program and the implementing mechanism (i.e., management plan, MOU/MOA etc):

City of Seattle is responsible for implementing the HCP and the implementing mechanisms are the HCP, IA, Incidental Take Permit, and biological opinion.

6) Identify specific provisions of the program that provide habitat protections or improvements (not just for the listed species, although those should be identified particularly with other habitat based benefits described more generally):

Primary measures are discussed generally under the response to question 4 above. For details, refer to Chapter 4.2 Watershed Management in the Habitat Conservation Plan. In summary, conservation measures are designed to protect and restore important components of the watershed's ecosystem. These include: late-successional and old growth forest communities; riparian and aquatic ecosystems; and special habitats. Conservation measures were also designed to minimize and mitigate for the affects of Seattle's municipal water supply operations in the watershed.

7) Identify instruments memorializing the program and its requirements which may be agreements, standards, management plans, biological opinions, and guidance:

The Cedar River Watershed Habitat Conservation Plan dated April 2000
 The Implementing Agreement dated April 21, 2000
 Permit TE 020907-0 dated 04/21/00
 The section 7 Biological Opinion
 The section 10 Findings
 The final EA and Record of Decision

8) Describe the basis for the standards, and whether the Service participated in their design.

The Habitat Conservation Plan was developed by City of Seattle in coordination with the U.S. Fish and Wildlife Service (Service) and National Marine Fisheries Service staff who participated in plan development and review. In preparing this HCP, Seattle conducted and sponsored specific scientific studies, analyses, and a series of workshops with regional scientists to discuss conservation strategies. Numerous agencies, tribes, and organizations participated during the development and review of the HCP. The plan also underwent a public comment period during which time several public meetings were held.

The basis of the HCP is to provide for water quality and quantity in the Cedar River and to protect and preserve the upper watershed to meet the needs of the Endangered Species Act. The Service continues to participate in implementation of this HCP directly with Seattle and as a participating member of the Instream Flow Commission, the Anadromous Fish Committee, and the Oversight Committee and as a Party to the Agreement.

9) What are the requirements for implementation? (Is it required through regulation, is it required through formalized terms and conditions, is it voluntary, is it optional, are some actions required only if a certain predicate is met (if so, be specific)?)

For the incidental take coverage to be in effect, the permittee must comply with the permit terms and conditions; conservation, research, and monitoring measures in the HCP; and the implementing agreement. The permittee must also comply with permit regulations found at 50 CFR 13, 17.32, and 17.22. Key terms of the permit include: protection of streamside riparian habitat; upland forest retention; road removal and remediation; and aquatic restoration (fish passage, riparian enhancement and restoration, and placement of woody debris), all which contribute to the protection and enhancement of required PCEs for bull trout.

10) What is the consequence of non-compliance? What are the monitoring provisions?

Non-compliance would place the permittee at risk of a permit suspension, revocation, and a take violation if the permittee carried out actions that resulted in unauthorized take of a listed species. Seattle HCP is based on the “pay as you go” strategy meaning that at any time during the term of the HCP no mitigation debt is owed if Seattle was to opt out of the ITP and HCP. This type of strategy works for the Seattle HCP, because of Seattle’s commitment to manage the entire watershed as an ecological reserve and because the terms and conditions of the HCP have been integrated into their daily management practices. Section 4.5 and 5 of the HCP covers implementation, compliance, research, and monitoring. Regular reporting to the Service is required.

11) What is the expectation for continued compliance? (If voluntary (compliance not governed by statute or regulations) this should include the length of time that a voluntary program has been implemented since past performance is an indicator of future performance.)

The permit is in effect through April 21, 2050. It is anticipated that City of Seattle will continue to implement the terms and conditions of their incidental take permit. Provisions of the HCP allow for sale or exchange of lands as follows. The disposition of land may occur without consequences with this agreement, provided that: (1) Seattle has given the Service 60 days advance notice prior to the disposition of the land; (2) the parcel disposed is not in excess of 640 acres (250 ha); and (3) the cumulative total of all transactions does not exceed 1,920 acres (777 ha) per township or a total of 6,338 acres (2,565 ha). In all other land transactions, Seattle shall consult with the Service at least 180 days prior to the disposition of land. If the Service determines that such disposition will compromise the effectiveness of the HCP, then prior to the property transfer Seattle and the Service shall negotiate conditions of the property transfer, or alternative mitigation, sufficient to avoid compromising the HCP.

To date, the City of Seattle has met its obligations under the HCP. Information on the continued

implementation of the Cedar River Watershed HCP and the conservation progress they have made to date can be found at the following website:
http://www.cityofseattle.net/util/About_SPU/Water_System/Habitat_Conservation_Plan/index.asp

Part B: Benefits Analysis

Benefits of the Cedar River Watershed HCP:

The Cedar River Watershed HCP, approved in 2000, allows for water withdrawal activities on the lower Cedar River and forest and watershed restoration actions on over 91,000 acres of City-owned lands in the upper Cedar River Watershed.

The watershed mitigation, management, and conservation strategies laid out in the HCP are intended to manage the watershed as an ecological reserve by providing: comprehensive, long-term protection for the watershed ecosystem encompassing commitments not to harvest timber for commercial purposes placing forests outside limited development areas in a reserve status; measures to protect and restore streams, riparian, and upland forest habitats; removal of a large part of the existing road network; guidelines for watershed operations designed to minimize and mitigate impacts of those operations; and specific measures to protect species of greatest concern and their habitats (7 listed species including bull trout). One bull trout specific action under the HCP is the ecological riparian thinning adjacent to bull trout spawning streams intended to accelerate the growth of the remaining standing timber and supply the streams with an immediate source of large woody debris (PCE 1-9).

The HCP provides a comprehensive approach to the management of existing road network with emphasis on abandoning approximately 10 miles of roads per year for the first 20 years. This will result in the abandonment of approximately 236 miles of road or about 38 percent of the total road network in the watershed. Other actions that will be taken to minimize the impacts of roads in the watershed include: minimizing sediment delivery from all roads; improve drainage patterns that have been altered by roads; restore fish passage where connections have been interrupted by roads (addresses PCEs 1-9); undertake bull trout research in the upper Cedar River Watershed and in Chester Morse Lake to understand how bull trout utilize the habitats available to them, to monitor population trends, and to minimize the water supply operations on bull trout and bull trout habitat (\$1.3 million); maintain and improve water quality for water supply purposes and for aquatic and riparian habitats; and commit not to harvest timber for commercial purposes effectively establishing forests in the watershed as an ecological reserve that will protect existing old-growth forests and recruit a significant amount of mature and late-successional forests over the 50-year term of the permit.

The Cedar River HCP and associated biological opinion and findings highlighted the areas which are important to bull trout on the HCP landscape. Through their development of the HCP, City of Seattle has displayed that it is well-aware of the value of various stream reaches in their watershed and the importance of the stream reaches for the conservation of bull trout. In addition, this HCP involves the development and accumulation of important biological information about bull trout that would otherwise be unavailable.

The Cedar River HCP provides conservation benefits that address and benefit multiple species and address environmental concerns across a broad landscape, regardless of occupancy by bull trout. The HCP addresses 7 listed species and 76 other species. The HCP provides conservation beyond what could be achieved through parcel-by-parcel avoidance of take, or through multiple section 7 consultations. The HCP results in more benefit than sections 7 and 9 due to a diversity of actions undertaken through the HCP, including the protection of the watershed as an ecological reserve and the comprehensive road management plan that includes the decommissioning of 38 percent of the watershed's road network.

The HCP serves as an example of landscape conservation planning for an entire watershed and CHSU which would benefit a significant population of bull trout. The HCP, in effect, exceeds the functional equivalency of critical habitat, which would only limit adverse impacts to habitat, rather than move toward improvement of habitat.

Benefits provided by the proposed critical habitat designation in areas currently covered by the Cedar River HCP:

Given the existence of the Cedar River HCP, to what degree are the benefits of including the area in the final designation still relevant?

The HCP has added additional protections to a watershed that is already managed as a closed municipal watershed. By entering into the HCP agreement, the City of Seattle and the Service have committed to a long-term partnership with the over-arching goal of managing the entire watershed as an ecological reserve focused on protecting and restoring habitat for covered species including bull trout. This partnership will have the added effect of limiting Federal actions that might otherwise cause destruction or adverse modification of critical habitat. In light of this, and the limitations on the benefits of designation (the need for a Federal nexus; the fact that critical habitat designation can at most prohibit effects to habitat that adversely affect bull trout conservation, but not require habitat restoration; and the overlap with the protection provided by the jeopardy prohibition), the Service analyzed the following issues with respect to the regulatory benefits of designation.

First, what Federal actions would be (a) covered by the terms of the HCP, (b) consistent with the HCPs requirements, and (c) still destroy or adversely modify critical habitat?

Only limited Federal actions (permits) are covered by the terms of the HCP and would be consistent with the requirements of the HCP to manage the watershed as an ecological reserve. Actions taken by the City to restore habitat, remove roads, or manage the water supply may require one or more approvals by a Federal agency. In these situations, the HCP has analyzed the effects these actions would have on bull trout and bull trout habitat, but it may still be necessary to conduct additional section 7 analysis at the time individual permits are applied for. Based on the terms of the HCP, discussed above, and the Service's current understanding of the habitat needs of bull trout, the Service has determined that it is highly unlikely that such a Federal action would adversely modify bull trout critical habitat if it were designated. This is our assessment because these HCP-covered actions, which may require a Federal consultation, have been designed to promote bull trout recovery in the HCP area.

Second, what Federal actions might take place that are not addressed by the HCP?

It is possible that some Federal actions could take place on lands covered by the Cedar River HCP. The Bonneville Power Administration owns and maintains a utility corridor that bisects

the lower one-third of HCP lands; regular maintenance activities are certain to continue in this right-of-way, and its expansion is possible the next 50 years as the greater-Seattle area continues to grow in population. It is also possible that Seattle City Light, which owns a small generating facility on covered lands, could petition the Federal Energy Regulatory Commission to expand the facility's generating capacity. This facility already uses water diverted from a reservoir on the upper Cedar River to generate power. Increasing the generating capacity of this facility would require that more water be diverted from the reservoir and, in turn, the upper Cedar River. Also possible, but less likely because of the environmental impacts, is the modification of existing dams by the Army Corps of Engineers to improve flood storage capabilities. To some extent, the reservoir in the upper Cedar River watershed is drawn down each winter to increase its storage capacity to prevent downstream flooding. To the extent feasible, an increase in the capacity of the reservoir could provide additional flood protection for an increasingly urbanizing lower Cedar River. Finally, it is theoretically possible, but unlikely that the Federal Highway Administration would fund a new highway across HCP lands, because its close proximity to an existing highway and the watershed's steep topography.

Although it is not possible for us to predict with any confidence what Federal actions are likely to occur over the next fifty years (the life of this HCP), we do know that, with the exception of maintenance of the BPA right-of-way, we are unaware of any current plans to take the actions described above, and we think it unlikely that any of will occur over the medium term (within the next 10 to 15 years). Maintenance of the BPA right-of-way is highly unlikely to result in adverse modification of bull trout habitat. Therefore, we conclude at this time that designation of this area as critical habitat is unlikely to provide any significant conservation benefit with respect to Federal actions not covered by the HCP. If it appears later in the life of the HCP that conclusion in this respect may change, we can consider revising critical habitat at that time.

Third, what assurances are there that the protections of the HCP will be maintained?

Not unlike most HCPs, The Cedar River HCP anticipates that over the 50-year permit term there are aspects of the HCP that could be subject to modification at the request of the permittee or Service. With regard to the Cedar River HCP, specific provisions in the implementing agreement (IA) spell out specifically under what circumstances any modification to the HCP can occur. The IA draws a distinction between minor modifications to the HCP and amendments to the permit. A minor modification would require approval of the parties to the HCP. A permit amendment could only be done in accordance with all applicable legal requirements including ESA, NEPA, and Service permit regulations. As discussed above, this HCP has a term of 50 years. Given that timeframe, it is not inconceivable that it could be modified, terminated, or relinquished before that time. Each of these options is discussed in the IA and specific steps are required to invoke any of these options. Finally, by its own terms, particular lands can be removed from coverage by the HCP. Limits to removal of lands are governed by the IA and specific limits are placed on the amount of lands that can be disposed of. The mitigation strategy in the Seattle HCP is based on the "pay as you go" concept which means at any time during the permit term no mitigation debt will be owed by Seattle. This is possible because of the types of conservation measures agreed to in the HCP and the fact that many of the major conservation investments like the \$12 million dollar fish passage facility have already been constructed. Another example would be Seattle commitment over the permit term not to engage in any commercial harvest of timber. The only timber management that will be approved will be those operations that improve riparian and upland habitats for species covered by the permit. Any proceeds from these ecological thinning must be spent in the watershed to further the

commitments in the HCP.

Given the nature of the land at issue (municipal watershed), we do not anticipate that Seattle will exercise its option to remove lands from coverage by the HCP, and, although modification or termination during the term of the HCP is possible, we currently have no reason to believe that such a change will happen. Finally, the Service will have adequate time prior to the stated expiration date of the HCP to consider adding to relevant areas to critical habitat before expiration.

Other benefits of designation:

Little additional educational benefit is expected to be derived from designating the upper Cedar River, Rex River, Rack Creek, and Shotgun Creek within the Cedar River HCP area as critical habitat. First, the HCP commits Seattle to an extensive bull trout research program targeted at better understanding the life history, distribution, and spawning success of bull trout in the watershed, as well as understanding the potential effects of reservoir management on bull trout and bull trout habitat. The designation of critical habitat could not compel Seattle to undertake the research that they have committed to under the HCP. Second, although the watershed is managed as a closed municipal watershed, Seattle provides opportunities for educational tours on a regular basis and involves outside researchers and volunteers to participate in watershed studies and restoration programs required by the HCP. Maps showing bull trout habitat occupancy and use within the watershed are also available on their public website at: http://www.seattle.gov/util/About_SPU/Water_System/Water_Sources_&_Treatment/CedarRiverBiodiversity/Fish/SPU01_003064.asp#P26_4684

Benefits of excluding affected areas from critical habitat:

We identified a number of possible benefits of excluding the area covered by the Cedar River HCP from critical habitat designation. First, to the extent designation would provide any additional protection of bull trout habitat, costs associated with that protection would be avoided. Second, exclusion would reduce largely redundant administrative costs of section 7 consultation. As discussed above, these costs are unlikely to lead to additional actual protection for bull trout habitat. Third, exclusion would provide an incentive for participation in the development of new HCPs. Fourth, exclusion would help to foster an atmosphere of cooperation in the conservation of endangered species.

As discussed in the benefits of inclusion section, above, the primary effect of designation of critical habitat is the application of section 7. As we have concluded that there is little likelihood of a significant Federal action causing adverse modification of the HCP lands, subject to the qualifications and limitations discussed above, exclusion of the HCP lands from critical habitat is unlikely to provide a benefit in terms of avoiding the costs of additional conservation measures. However, designation of the HCP lands would impose the technical requirement of consultation under the adverse modification standard, requiring reinitiation of consultation on the Service's issuance of the incidental take permit associated with the HCP, as well as additional analysis in consultations on any future Federal actions. Therefore, avoiding the additional expense (on the part of the Service, the action agency, and the applicant) associated with those consultations is a

benefit of exclusion.

Although the additional out-of-pocket costs required to comply with section 7 with respect to designation of critical habitat on these lands would likely be minor, delays could result. Delays can be significant concern, both in terms of direct costs and opportunity costs. Even though the City of Seattle is the only landowner with respect to the HCP lands, delays that prevent Seattle from providing drinking water to 1.3 million people during periods of extended drought would be a significant human health and safety concern. Addressing such situations in the HCP has lessened the concerns of Seattle and its customers and the chance that an interruption in municipal water supply would occur.

Because Seattle owns and manages over 99 percent of lands in the watershed and they are unlikely to sell these lands during and beyond the term of the HCP, there are probably no stigma costs associated with designating areas in the upper Cedar River watershed as critical habitat. We do not anticipate that designating critical habitat on HCP lands will lead to diminishing the real or perceived economic value of the HCP lands.

In addition to the direct regulatory effect of critical habitat designation, there are very important indirect effects of designation (or the decision not to designate). The exclusion of HCP lands from critical habitat designations is an important incentive for participation in the HCP program; on the other hand, failure to exclude HCP lands could undermine the conservation benefits provided by the HCP program, and, more generally, the partnerships required to conserve most listed species.

Partnerships with non-Federal parties are crucial to the conservation of many listed species. One of the key vehicles for such conservation partnerships is the HCP program, in part because of the potential breadth of its scope. There is no limitation on the geographic scope or breadth of activities for potential conservation measures in HCPs. A robust and comprehensive HCP can provide more conservation than is required to avoid adverse modification of critical habitat in a section 7 consultation. Many HCPs provide research and education programs that provide benefits beyond the habitat protection or management provisions of the HCP. In contrast, although it is an important component of the ESA, section 7 consultation is more limited. It only applies to Federal actions; therefore, its application is concentrated on, although not limited to, Federal lands, as many activities on private lands do not involve Federal action.

Moreover, HCPs can address habitat conservation on a very large scale, addressing entire ecosystems and a wide variety of the species in them, whether listed or not. The Service's experience suggests that large-scale HCPs provide more comprehensive, and therefore more effective, protection to listed species as well as species that might otherwise require listing in the future. In this particular case, Seattle is committed under its HCP to manage its entire 91,000 acres as an ecological reserve that protects and restores habitat for 83 covered species. Large-scale HCPs in effect become regional conservation plans that are consistent with the recovery objectives for listed species that are covered within the plan area. Large-scale HCPs can also provide an important forum for exchanging information and developing relationships with additional entities that can affect the conservation of species. For example, we participate in three scientific advisory teams that oversee the HCP; this allows for the sharing of information and development of relationships with a number of other entities, including three state agencies, a university, local conservation groups, national recognized conservation organizations, and

Tribes. These educational opportunities build community support for HCPs and helps convey to the public the requirements of bull trout and their conservation needs.

HCPs can provide other important conservation benefits, including the development of important biological information needed to guide conservation efforts and assist in species conservation outside the HCP planning area, and the creation of innovative solutions to conserve species that can be applied wherever similar needs exist, irrespective of land ownership.

Finally, HCPs provide a more cooperative framework for engaging the broader public in endangered species conservation. For example, the Cedar River HCP also facilitates cooperative activities with other similarly situated landowners. The completion of the Cedar River HCP served as a model for a similar HCP currently being developed with the City of Kent in the adjacent watershed. Continued cooperative relations with the City of Seattle are expected to influence other future partners and lead to greater conservation than would be achieved through multiple section 7 consultations.

The conservation benefits resulting from this collaborative approach are built upon a foundation of mutual trust and understanding. It takes considerable time and effort to establish this foundation, which is one reason it often takes several years to develop a successful HCP. Thus, HCPs both depend on and foster an atmosphere of cooperation with respect to species conservation.

Non-Federal landowners are motivated to work with the Service collaboratively to develop voluntary HCPs because of the regulatory certainty provided by an incidental take permit under section 10(a)(1)(B) of the Act with the No Surprises Assurances. Although the HCP process can be complex and time-consuming, the perceived benefit to landowners in undertaking this extensive process is the resulting regulatory certainty, which translates into real savings for private land owners, savings in both opportunity costs as well as direct savings and avoided costs.

Designation of critical habitat on HCP lands undermines the certainty that the HCP proponents are seeking. A failure to exclude HCP lands could be viewed as the Service retreating from its previous position as to the adequacy of the conservation measures in the HCP, undermining the Service's credibility in future interactions with potential partners. Designation of critical habitat within the boundaries of already approved HCPs is also viewed as a disincentive by other entities currently developing HCPs or contemplating them in the future because it implies potential additional regulation after conservation measures needed for the species have already been agreed to. In discussions with the Service, HCP permittees have indicated they view critical habitat designation as an unnecessary additional intrusion on their property, and an erosion of the regulatory certainty provided by their incidental take permit and the No Surprises Assurances. Because the Service would be required to reinitiate Section 7 consultation with itself if critical habitat is designated on our action of issuing a Section 10(a)(1)(B) permit, the permittees are concerned that the Service could use this as an excuse to request new conservation measures for the bull trout even though we have existing agreements already in place.

Although parties whose actions may take listed species may still desire incidental take permits to avoid liability under section 9, failure to exclude HCP lands from critical habitat could reduce the conservation value of the HCP program in several ways. First, parties may be less willing to

participate in large, regional HCPs, preferring instead to address any possible take on a project-by-project basis. Second, in any given HCP, applicants may reduce the amount of protection to which they are willing to agree, in effect holding some additional protective measures “in reserve” for use in any future discussions to address critical habitat. Third, without the incentive of exclusion from critical habitat, some potential applicants, particularly (1) those whose actions may, but are not certain to take listed species, and (2) those against whom enforcement for any take that does occur may be difficult, may decide not to seek an incidental take permit at all. Although the reality of section 9 liability will prevent the HCP program from being devitalized by a failure to exclude HCP lands from critical habitat designations, the HCP program is such an important tool in endangered species conservation that any decrease in its efficacy could have profound effects.

Excluding HCP lands from critical habitat provides permittees with the greatest possible certainty, thereby helping foster the cooperation necessary to allow the HCP program to achieve the greatest possible conservation benefit. Thus, excluding the lands covered by the Cedar River HCP improves the Service’s ability to enter into new partnerships. Permittees who trust and benefit from the HCP process discuss the benefits with others who may become future HCP participants, such as States, counties, local jurisdictions, conservation organizations, and private landowners. New HCPs will result in implementation of conservation actions that we would be unable to accomplish otherwise.

Cedar River HCP balancing

As discussed above, it is possible, although unlikely, that any Federal action will be proposed that would be likely to destroy or adversely modify the habitat proposed as critical within the area governed by the Cedar River HCP. If such a project was proposed, due to the specific way in which jeopardy and adverse modification are analyzed for bull trout, it would likely also jeopardize the continued existence of the species. In addition, as discussed above, we expect that the benefit of informing the public of the importance of this area to bull trout conservation would be slight. Therefore, we assign relatively little weight to the benefits of designating this area as critical habitat.

In contrast, although the benefits of encouraging participation in HCPs, particularly large-scale HCPs, and, more broadly, helping to foster cooperative conservation are indirect, enthusiastic HCP participation and an atmosphere of cooperation are crucial to the long-term effectiveness of the endangered species program. Therefore, we assign great weight to these benefits of exclusion. To the extent that there are regulatory benefits of including, there would be associated costs that could be avoided by excluding the area from designation. However, as we expect the regulatory benefits to be low, we likewise give little weight to avoidance of those associated costs, as well as the additional transaction costs related to section 7 compliance.

Therefore, we have determined that the benefits of inclusion of the areas covered by this HCP are small, while the benefits of exclusion are more significant. Therefore, the benefits of exclusion outweigh the benefits of inclusion. Because we anticipate that little if any conservation benefit to the bull trout will be foregone as a result of excluding these lands, the exclusion will not result in the extinction of the bull trout. The Secretary exercises his discretion under section 4(b)(2) to exclude these areas from the designation (see comprehensive discussion in “Exclusions” section in the proposed rule).

Attachment 1 (PCE Analysis for Cedar River Watershed HCP)

PCE #1: “Springs, seeps, groundwater sources, and subsurface water connectivity (hyporheic flows) to contribute to water quality and quantity and provide thermal refugia.”

The HCP includes provisions to manage almost the entire watershed as an ecological reserve maintaining forest cover where it currently exists and allowing for only ecological thinning to occur in selected locations in the watershed. This “no commercial harvest” approach ensures that all springs, seeps, surface waters, groundwater sources, and subsurface waters function in a natural state that maintains water connectivity and contributes to water quality and quantity.

PCE #2: “Migration habitats with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and freshwater and marine foraging habitats, including but not limited to permanent, partial, intermittent, or seasonal barriers.”

All fish blockages identified on HCP lands have been or will be corrected ensuring migratory corridors with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and foraging habitats.

PCE #3: “An abundant food base including terrestrial organisms of riparian origin, aquatic macro-invertebrates, and/or forage fish.”

The ecological reserve the HCP creates maintains the natural hydrology and riparian functions of large wood input, shade, bank stability, detrital inputs, as well as natural functions of flood plains and unstable slopes. It is expected to fully address the aquatic environment necessary to provide a healthy food base within the constraints of the natural system.

PCE #4: “Complex river, stream, lake, reservoir, and marine shoreline, and processes that establish and maintain these aquatic environments, with features such as large wood, side channels, pools, undercut banks and substrates, to provide a variety of depths, gradients, velocities, and structure.”

The HCP addresses the need for complex habitat by eliminating commercial timber harvest in the watershed. Outside of selected ecological thinning in some riparian areas and upland forest, no harvest of trees is allowed under the HCP. Ecological thinning in some riparian areas has the advantage of accelerating the growth of the remaining riparian trees and increasing the amount of large woody debris in the stream. Twenty identified fish passage barriers are being or will be replaced, resulting in access to additional habitat and more naturally maintained stream hydraulics, including bedload movement, sediment transport, and passage of moderately-sized woody debris, leading to more natural stream dynamics and stream geometry.

PCE #5: “Water temperatures ranging from 2 to 15 °C (36 to 59 °F), with adequate thermal refugia available for temperatures that exceed the upper end of this range. Specific temperatures within this range will depend on bull trout life-history stage and form; geography; elevation; diurnal and seasonal variation; shading, such as that provided by riparian habitat; streamflow; and local groundwater influence.”

Stream temperature will be maintained in this HCP through a number of measures including no commercial harvest in the watershed, road-management practices that avoid sedimentation, and maintenance of natural hydrologic regimes that contribute cool water to streams.

No commercial harvest in the watershed is expected to protect levels of shade to avoid increasing sunlight which could result in stream warming. Some ecological riparian thinning will be conducted along select streams to accelerate growth in remaining trees along the stream and to provide an immediate source of large woody debris to the stream channel. Outside of ecological thinning along some streams and in select upland areas, no harvest will be conducted in the watershed so no loss of riparian shading is expected under the HCP except due to natural causes (wind throw, fire, etc.) Road prescriptions including abandonment of roads at the rate of 10 miles per year during the first 20 years are expected to maintain a natural hydrological regime so that streams are not abnormally dry during periods of the year when this could exacerbate warming.

PCE #6: “In spawning and rearing areas, substrate of sufficient amount, size, and composition to ensure success of egg and embryo overwinter survival, fry emergence, and young-of-the-year and juvenile survival. A minimal amount of fine sediment, generally ranging in size from silt to coarse sand, embedded in larger substrates are characteristic of these conditions. The size and amounts of fines suitable to bull trout will likely vary from system to system.”

The HCP addresses the need for natural substrates in a wide variety of ways. Reducing the influences and scope of roads in the upper Cedar River Watershed is a major focus of the HCP. Most harmful sediments that impact aquatic habitats can be tracked back to poor road construction and maintenance. The Cedar River watershed is no exception to this rule. Logging roads in the watershed have impaired bull trout habitat by contributing coarse and fine sediments to the stream network. Considerable focus is placed on road maintenance, road repair, improved road construction standards, fish barrier removal, and road abandonment. In addition, road remediation of existing road-related problems is a major component of the HCP. Approximately, 236 miles of roads or 38 percent of the watershed road network will be decommissioned.

PCE #7: “A natural hydrograph, including peak, high, low, and base flows within historic and seasonal ranges or, if flows are controlled, they minimize departures from a natural hydrograph”

The streams in the upper Cedar River watershed are free flowing water course that currently provide high quality habitat for bull trout. The goal is to protect the quality and quantity of this habitat and take steps to improve and restore other habitat. The HCP includes provisions to manage almost the entire watershed as an ecological reserve maintaining forest cover where it currently exists and allowing for only ecological thinning to occur in selected locations in the watershed. The HCP is expected to maintain floodplains and wetlands in a manner that retains the functions of the hyporheic zone and off-channel habitats. Road management is designed to disconnect ditches (and ground water intercepted by roads) from the stream system to reduce delivery of sediment, but also to slow the delivery of storm-related run-off and reduce the contribution to peak flows. Road abandonment is designed to put-to-bed many roads that would

otherwise contribute sediment to streams via runoff or mass failure. Conservation measure in the HCP should result in more naturally maintained stream hydraulics, including bedload movement, sediment transport, and passage of small and large woody debris.

PCE #8: “Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.”

As discussed above, both water quality and quantity are addressed through a variety of mechanisms. In addition to protecting the natural hydrograph and addressing sediment and temperature, no chemical applications in the watershed are allowed in order to maintain the quality of the public drinking water supply.

PCE #9: “Nonnative predatory (e.g., lake trout, walleye, northern pike, smallmouth bass); interbreeding (e.g., brook trout); or competing (e.g., brown trout) species that, if present, are at sufficiently low levels of occurrence or adequately temporally and spatially isolated.”

The HCP is not expected to contribute to the spread of deleterious aquatic species. Provisions of the HCP that protect the natural environment should assist native fish in maintaining a competitive advantage when that is possible. The fact that this is a closed watershed, not open to the public, and will remain so under the HCP will help considerably to ensure non-native species are not introduced into the site.

SUMMARY

We assessed The Cedar River Watershed HCP with respect to the primary constituent elements for bull trout critical habitat. HCP actions should not result in contaminated waters that inhibit reproduction, growth, or survival; instead, they are expected to maintain a high-level of water quality. They are expected to maintain the thermal regime of streams within the range of normal variation, and contribute to the maintenance of complex stream channels, appropriate substrates, a natural hydrologic regime, ground-water sources and subsurface connectivity, migratory corridors, and an abundant food base. HCP actions are not expected to introduce or favor nonnative competitors or predators. The Cedar River HCP exceeds the functional equivalency of critical habitat.

GREEN DIAMOND HCP

Part A: Plan/Program Description and Analysis

1) Brief Overview of the Green Diamond HCP:

In October 2000, an HCP (formerly referred to as the Simpson Timber HCP and currently referred to as the Green Diamond HCP) was completed and an incidental take permit was issued for forestry operations on over 261,000 acres of the company's Washington timberlands located on or adjacent to the Olympic Peninsula in Mason, Thurston, and Grays Harbor Counties. The HCP is designed to conserve riparian forests, improve water quality, prevent management-related hill-slope instability, and address hydrological maturity of small sub-basins. The plan addresses five listed species including bull trout and 46 other species.

2) Describe the area covered by the plan/program and the specific habitats affected/protected/improved: (with emphasis on the areas proposed as CH):

The HCP covers the land owned by Green Diamond along the lower reaches of the North Fork and South Fork Skokomish Rivers, the upper South Fork Skokomish River, West Fork Satsop River, and Canyon River.

The Skokomish Area includes the Skokomish River up to the confluence of the North Fork and the South Fork. It includes the Lower North Fork (up to Cushman Dam), Lake Cushman (Reservoir), and the Upper North Fork (above Cushman Reservoir) and two small tributaries to the Upper North Fork. The bed of Lake Cushman is owned by the Department of Natural Resources Aquatic Lands Program (DNR Aquatic Lands Program). Green Diamond does not own land in the upper North Fork local bull trout population area -- this is primarily Federal land. Green Diamond has minor amounts of ownership along the shores of Lake Cushman, including the western shore of the lower reservoir and other small isolated parcels. Green Diamond also has ownership along the lower North Fork and lower South Fork. Green Diamond owns very little land within the local population area of the upper South Fork and none within the local population of Browns Creek (a Tributary to the South Fork) -- these are also primarily Federal land.

The two areas where Green Diamond has significant amounts of land that can influence the proposed critical habitat and owns some of the proposed critical habitat are along the lower reaches of the North Fork and the South Fork within the Skokomish Core Area but outside of the local population areas. These portions of the Core Area are proposed as critical habitat for the purposes of protecting feeding, migrating, and overwintering (FMO) habitat. In a third area, a very minor amount of HCP land within the upper South Fork is adjacent to waters proposed as critical habitat to protect spawning and rearing habitat.

The Satsop Area was proposed as FMO habitat. Ownership of West Fork Satsop and Canyon River (upstream of confluence with Middle Fork Satsop) is primarily Green Diamond with only minor in-holdings. The extreme upper end of the proposed designation is on U.S. Forest Service lands, as is the most northerly lands within the Satsop Area. Below the junction of the West Fork and Canyon Rivers, the River is considered navigable and ownership of the river is controlled by the WDNR Aquatic Program downstream through the junction with the Middle

Fork and on until the River meets the Chehalis at the southern end of this Area. Land below the junction of the West Fork and the Middle Fork are private lands in mixed land use (private forests, agriculture, and rural residential).

There is no proposed critical habitat on Green Diamond Resource HCP lands within the Wynoochee, Wishkah, or Chehalis FMO areas.

3) What PCEs are covered by the plan and how effective is the plan at meeting the specific PCE criteria?

See Attachment 1 (PCE analysis).

4) Describe specific restoration and improvement goals, actions, or standards included as part of the plan:

The Green Diamond HCP is expected to contribute effectively toward bull trout recovery. Riparian buffers and road system management are key components in this HCP. A landscape stratification formed the basis for a stream classification system that allowed plan developers to tailor prescriptions to the needs of a multitude of stream types. First, the plan area was stratified by lithology and topography. Second, stream segments were classified by a hydrological process-based perspective using factors such as channel width, degree of channel confinement, and channel-bed morphology. Road system management is addressed through a combination of road inventory; road remediation; road maintenance; managed road use; and new road location, design, and construction.

The HCP is designed to conserve riparian forests, improve water quality, prevent management-related hill-slope instability, and address hydrological maturity of small sub-basins. The HCP prescriptions for riparian and wetland areas focus on the following functions: recruitment of woody debris to streams and the forest floor; shade and control of stream-side air temperature; stream-bank stability; detrital inputs; capture and storage of sediment and organic matter on the floodplain; maintenance and augmentation of nutrient dynamics and processing; provision of nurse logs; groundwater discharge; base-flow support in streams; and flood amelioration. The HCP road program addresses legacy, current, and future roads. Prescriptions and standards address the chronic production and movement of fine sediment, and the catastrophic failure of road fills and sidecast that generate and propagate hillslope and channel failures. Prescriptions for unstable slopes are to identify these areas and avoid management activities that could trigger mass-wasting processes. In subbasins within the Rain-on-Snow zone, prescriptions address the maintenance of sufficient mature forest canopy to avoid peak flow damage and road-related prescriptions will address the diffuse shunting of water and reducing the potential for roads to accelerate the delivery of water and exacerbate peak flow problems.

HCP actions are not expected to result in contaminated waters that inhibit reproduction, growth, or survival; instead, they are expected to maintain a high-level of water quality. They are expected to maintain the thermal regime of streams within the range of normal variation and contribute to the maintenance of complex stream channels, appropriate substrates, a natural hydrologic regime, ground-water sources and subsurface connectivity, migratory corridors, and an abundant food base. HCP actions are not expected to introduce or favor nonnative competitors or predators.

In addition, the HCP also served to address the aspects of the Clean Water Act. The HCP includes a Total Maximum Daily Load (TMDL) for temperature and sediment. Although neither the HCP nor TMDL are dependent on the other, implementation of both are closely linked. For instance, the TMDL uses targets to guide monitoring and adaptive management.

5) Identify the entity responsible for implementing the plan/program and the implementing mechanism (i.e., management plan, MOU/MOA etc.):

An incidental take permit was issued to Simpson Timber Company on October 13, 2000, (TE 032463-0). The implementing agreement is executed by Simpson Timber Company, National Marine Fisheries Service and the U.S. Fish and Wildlife Service (Service). On July 8, 2002, an assumption agreement was signed and the permit was transferred to Simpson Resource Company who assumed remaining obligations. On May 1, 2004, an administrative name change was processed changing the name from Simpson Resource Company to Green Diamond Resource Company. All permit terms and conditions remain in effect.

6) Identify specific provisions of the program that provide habitat protections or improvements (not just for the listed species, although those should be identified particularly with other habitat based benefits described more generally):

Primary measures are discussed generally under the response to question 4 above. For details, refer to Chapter 5 in the Habitat Conservation Plan (Attachment 2)

7) Identify instruments memorializing the program and its requirements which may be agreements, standards, management plans, biological opinions, and guidance:

The Habitat Conservation Plan "Simpson Timber Company, Northwest Operations, Habitat Conservation Plan, Shelton, Washington Timberlands" dated July 2000
 The Implementing Agreement dated October 13, 2000
 Permit TE 032463-0 dated 10/13/00 as amended on 7/8/02 and 5/1/04
 The Assumption Agreement dated July 8, 2002
 The Section 7 Biological Opinion
 The Section 10 Findings
 The FEIS and Record of Decision

8) Describe the basis for the standards, and whether the Service participated in their design:

The Habitat Conservation Plan was developed by Simpson Timber Company in coordination with Service and National Marine Fisheries Service staff who participated in plan development and review. Numerous agencies, tribes, and organizations participated in at least 46 meetings during development of the HCP. The plan also underwent a public comment period.

The basis of the HCP is to provide for water quality to address the needs of the Clean Water Act and the Endangered Species Act, and provide instream salmonid habitat to address the needs of the Endangered Species Act. The Service continues to participate in implementation of this HCP directly with the Company, as well as through involvement in the Scientific Advisory Team.

The Service also conducts compliance monitoring.

9) What are the requirements for implementation? (Is it required through regulation, is it required through formalized terms and conditions, is it voluntary, and is it optional? Are some actions required only if a certain predicate is met (if so, be specific)?)

For the incidental take coverage to be in effect, the permittee must comply with the permit terms and conditions, HCP, and implementing agreement. The permittee must also comply with permit regulations found at 50 CFR 13, 17.32, and 17.22. Key conservation measures required by the HCP include: recruitment of woody debris to streams; shade control along streams; stream bank stability; detrital inputs; capture and storage of sediment and organic matter on the floodplain; ground water discharge; base-flow support in streams; road maintenance and removal; and identification and care of unstable slopes.

10) What is the consequence of non-compliance? What are the monitoring provisions?

Non-compliance would place the permittee at risk of a permit suspension, revocation, and a take violation if the permittee carried out actions that resulted in unauthorized take of a listed species. Section 8 of the HCP covers implementation monitoring and requires an annual report. Section 9 requires resource monitoring and an annual report. Requirements for make-up mitigation should Green Diamond terminate or revoke its permit include: provide post-terminal mitigation for covered species and habitat until the fiftieth anniversary; 1) refrain from harvesting timber left in order to comply with the obligations of prescriptions established in the HCP (timber left in riparian reserves, wetland buffers, upland leave trees, trees left in mineral springs two acre no harvest buffers; and 2) apply herbicide use restrictions of all the HCP to all operating timber harvest units during the term of the Incidental Take Permit.

11) What is the expectation for continued compliance? (If voluntary (compliance not governed by statute or regulations) this should include the length of time that a voluntary program has been implemented since past performance is an indicator of future performance.)

The permit is in effect through October 13, 2050. It is anticipated that Green Diamond will continue to implement the terms and conditions of their incidental take permit. Provisions of the HCP allow for sale or exchange of lands with the following provisions: (1) sale or exchange does not involve Core Areas (as defined in the HCP and the total acreage of all lands sold or exchanged will not exceed 39,200 ac (15,864 ha); or (2) the lands are transferred to a Comparable Transferee, such as an agency of the Federal government; or (3) the HCP and Incidental Take Permit are modified to delete such lands in accordance with the modification procedures as described in the Incidental Take Permit. Terms of the HCP require that the Service be notified and approve of any modification of the permit.

To date, Green Diamond has met its obligations under the HCP. The Green Diamond HCP submits annual reports that are available at the Service's Washington Fish and Wildlife Office. The Service conducts compliance monitoring of activities carried out under this HCP. Green Diamond has been conducting effectiveness monitoring and research and includes the results of those efforts within the annual reports.

Part B: Benefits Analysis

Benefits of the Green Diamond Resources HCP:

The Green Diamond Resources HCP, approved in 2000, addresses forest management and timber harvest across approximately 261,000 ac (105,626 ha) of the company's Washington timberlands located on or adjacent to the Olympic Peninsula in Mason, Grays Harbor and Thurston Counties. Green Diamond owns land along the lower reaches of the North Fork and South Fork Skokomish Rivers, the upper South Fork Skokomish River, West Fork Satsop River, and Canyon River.

The HCP provides conservation for riparian and wetland areas, and unstable slopes. It addresses ongoing and past road-related problems. Impacts of timber harvest and associated roads are fully minimized and mitigated and overall the HCP provides for recovery of the covered species. The Green Diamond HCP addresses forestry and is expected to protect all of the PCEs to some extent in all streams, and not just the PCEs which apply to bull trout FMO habitat in designated reaches. PCEs need not be present for the protective measures of the HCP to apply. Specifically the HCP provides appropriate management for PCEs through:

- Riparian buffers for bull trout are designed to address large-woody-debris recruitment, bank stability, shade, and detrital inputs;
- Management of existing and future roads, and addressing on-going and past road-related problems, will provide fish passage, minimize hydrologic disruption, and will reduce delivery of fine sediment;
- Unstable hillslopes will be identified and activities that would increase the frequency or severity of slope failure or would alter the natural input of large woody debris, gravel, or fine sediment would be avoided;
- Wetlands protection and hydrological maturity will maintain natural water flow and vegetation, and protect surface and subsurface connectivity.

The Green Diamond HCP and associated biological opinion and findings highlighted the areas which are important to bull trout on the HCP landscape. Through their development of the HCP, Green Diamond displayed it was well-aware of the value of various stream reaches for the conservation of bull trout. In addition, this HCP involved the development and accumulation of important biological information that would otherwise be unavailable. The information being generated by this HCP applies to many others species, not just bull trout. This HCP has educated many people regarding the role of geology and topography in meeting the needs of stream habitats by understanding the ecological processes that develop, maintain, or degrade these habitats. This HCP has been a pioneer effort in this learning process.

The Green Diamond HCP provides conservation benefits that address and benefit multiple species and address environmental concerns across broad landscapes, regardless of occupancy by bull trout. The HCP addresses 5 listed species and 46 other species. The HCP provides conservation beyond what could be achieved through parcel-by-parcel avoidance of take, or

through multiple section 7 consultations. The HCP results in more benefit than those provided under sections 7 and 9 of the Endangered Species Act due to a diversity of actions undertaken through the HCP, including proactive restoration and remediation of existing road-related problem areas.

The Green Diamond HCP, and its associated biological opinion and findings, involved the development and accumulation of important biological information that would otherwise be unavailable. The information being generated by this HCP applies to many others species, not just bull trout, such as the role of geology and topography in meeting the needs of stream habitats, and understanding the ecological processes that develop, maintain, or degrade these habitats. This HCP also provides conservation benefits that address and benefit multiple species and environmental concerns across broad landscapes, regardless of occupancy by bull trout. The HCP provides conservation beyond what could be achieved through parcel-by-parcel avoidance of take, or through multiple section 7 consultations due to a diversity of actions undertaken through the HCP, including proactive restoration and remediation of existing road-related problem areas. The HCP serves as a foundation for landscape conservation planning on adjacent lands and allow longer-range planning, all of which would benefit bull trout.

Benefits provided by the proposed critical habitat designation in areas currently covered by the Green Diamond HCP:

Given the existence of the Green Diamond, to what degree are the benefits of including the area in the final designation still relevant?

The HCP provides additional protections to stream and wetland systems adjacent to or that flow through Green Diamond covered lands. By entering into the HCP agreement, Green Diamond and Service have committed to long-term partnership with the goal of managing aquatic systems for species covered by the Green Diamond HCP including bull trout. The HCP is designed to conserve riparian forests, improve water quality, prevent management-related hill-slope instability, and address hydrological maturity of small sub-basins. This partnership will have the added effect of limiting Federal actions that might otherwise cause destruction or adverse modification of critical habitat. In light of this, and the limitations on the benefits of designation (the need for a Federal nexus; the fact that critical habitat designation can at most prohibit effects to habitat that adversely affect bull trout conservation, but not require habitat restoration; and the overlap with the protection provided by the jeopardy prohibition), the Service analyzed the following issues with respect to the regulatory benefits of designation.

First, what Federal actions would be (a) covered by the terms of the HCP, (b) consistent with HCP requirements, and (c) still destroy or adversely modify critical habitat?

Only limited Federal actions (permits) are covered by the terms of the HCP and would be consistent with the requirements of the HCP to manage HCP lands to conserve riparian forests, improve water quality, prevent management-related hill-slope instability, and address hydrological maturity of small sub-basins. Actions taken by Green Diamond on prescriptions for streams and wetlands may require one or more approvals by a Federal agency. In these situations, the HCP has analyzed the effects these actions would have on bull trout and bull trout habitat, but it may still be necessary to conduct additional section 7 analysis at the time individual permits are applied for. Based on the terms of the HCP, discussed above, and the Service's current understanding of the habitat needs of bull trout, the Service has determined that it is highly unlikely that such a Federal action would adversely modify bull trout critical habitat

if it were designated. This is our assessment because these HCP-covered actions, which may require a Federal consultation, have been designed to promote bull trout recovery in the HCP area.

Second, what Federal actions might take place that are not addressed by the HCP?

It is possible that there are some Federal actions that could take place on lands covered by the HCP. In some instances, Green Diamond lands are adjacent to or intermingled with U.S. Forest Service lands. Future Federal restoration projects, timber management actions, and road building, decommissioning, maintenance, and repair projects could be proposed by the Forest Service over the term of Green Diamond's HCP. These projects could affect Green Diamond lands or Green Diamond could be a partner to such actions especially restoration activities or road-related projects.

HCP lands are bordered by several main highways and mainline access roads, and it is likely that these roads will undergo some level of construction, widening, or realignment funded by Federal dollars over the 50-year HCP term. In areas where these roads are immediately adjacent to HCP lands, these lands and associated waters could be affected by construction activities. It is our experience that such projects (i.e., Federal Highway Administration projects) can be conducted poorly and in a manner inconsistent with normal road construction and repair standards. Such Federal projects may not follow the Washington State procedures which generally require fish passage be maintained, and may not work cooperatively with Tribes and other stakeholders to ensure proper hydrological accommodation at crossings. Such projects can affect bull trout directly, or can affect bull trout indirectly by negatively affecting their food sources. To properly address the needs of bull trout, road crossings on fish-bearing tributaries should accommodate 100-year flow events, pass large wood, and be able to maintain the integrity of the road infrastructure through time. The benefits of designating Green Diamond lands as critical habitat are minimal from an education standpoint. National Forest lands in these areas are currently proposed for critical habitat. Additionally, the focus on the aquatic conservation strategy on Federal lands and the focus on various efforts targeting salmonids in Washington State are already placing a large emphasis on education regarding healthy aquatic systems. More effective forums are available to help educate Federal Highways Administration regarding proper procedures regarding road crossings and stream-adjacent parallel roads. Additional Section 7 analyses will not likely be effective where consultation would already occur on the species due to bull trout presence or assumed presence.

Although it is not possible for us to predict with any confidence what Federal actions are likely to occur over the next 50 years, we are aware of some ongoing activities that lead us to be concerned about potential future activities. However, upon detailed analysis, we conclude that designation will not address our concerns and more effective means to address these concerns already exist. Therefore, we conclude at this time that designation as critical habitat of Green Diamond lands near roads that could be subject to future Federal actions is not likely to provide conservation benefits with respect to such Federal actions not covered by the HCP.

Third, what assurances are there that the protection of will be maintained?

The permit is in effect through October 13, 2050. It is anticipated that Green Diamond will continue to implement the terms and conditions of their incidental take permit, since they want to manage their otherwise legal timber operations and receive assurances that they remain in compliance with section 9 of the Act. If the permit is terminated or revoked, Green Diamond

agrees to provided post-termination mitigation according to the Implementing Agreement (IA) Provisions of the HCP also allow for sale or exchange of lands with the following provisions: (1) sale or exchange does not involve Core Areas (as defined in the HCP and the total acreage of all lands sold or exchanged will not exceed 39,200 ac (15,864 ha); or (2) the lands are transferred to a Comparable Transferee, such as an agency of the Federal government; or (3) the HCP and Incidental Take Permit are modified to delete such lands in accordance with the modification procedures as described in the Incidental Take Permit.

Other benefits of designation:

Additional educational benefit is not expected to be derived from designating the Skokomish and Satsop portions of the Green Diamond HCP as critical habitat. Even though the HCP is required to monitor and report on the effectiveness of the Plan, which is available to the public, it would not serve to educate other Federal agencies. The Service's experience indicates that additional education may be warranted in certain areas especially with regard to Federal projects. However, designation of Federal lands will help serve to educate Federal agencies and no additional education benefit would be expected from designation of Green Diamond lands. In order to increase public understanding of critical habitat, we will show all waterbodies determined to be essential habitat for bull trout in the final critical habitat designation. To display narrative exclusions, we will show the boundaries of those land ownerships or entities that are excluded from the critical habitat regulations, relative to these waterbodies. However, additional education of some Federal agencies may be necessary and other forums already exist and will likely be more effective.

Benefits of excluding affected areas from critical habitat:

We identified a number of possible benefits of excluding the area covered by the Green Diamond HCP from critical habitat designation. First, to the extent designation would provide any additional protection of bull trout habitat, costs associated with that protection would be avoided. Second, exclusion would reduce largely redundant administrative costs of section 7 consultation; as discussed, these costs are unlikely to lead to additional actual protection for bull trout habitat. Third, exclusion would provide an incentive for participation in the development of new HCPs. Fourth, exclusion would help to foster an atmosphere of cooperation in the conservation of endangered species.

As discussed in the benefits of inclusion section, above, the primary effect of designation of critical habitat is the application of section 7. As we have concluded that there is little likelihood of a significant Federal action causing adverse modification of the HCP lands, subject to the qualifications and limitations discussed above, exclusion of the HCP lands from critical habitat is unlikely to provide a benefit in terms of avoiding the costs of additional conservation measures. However, designation of the HCP lands would impose the technical requirement of consultation under the adverse modification standard, requiring reinitiation of consultation on the Service's issuance of the incidental take permit associated with the HCP, as well as additional analysis in consultations on any future Federal actions. Therefore, avoiding the additional expense (on the part of the Service, the action agency, and the applicant) associated with those consultations is a benefit of exclusion.

A benefit of excluding the Green Diamond Resources HCP from critical habitat designation includes relieving landowners, communities, and counties from any additional regulatory burden and costs associated with the preparation of section 7 documents related to critical habitat.

While the costs of these additional documents to the Service is minor, there may be resulting delays which generate very real costs to private landowners in the form of opportunity costs as well as direct costs. There would be increased costs and staffing requirements as consultations would be more extensive with a critical habitat designation thereby increasing costs associated with producing biological assessments and biological opinions. Since critical habitat is only proposed for occupied areas, already subject to a jeopardy analysis for the species, it is anticipated this increase would be minimal. The HCP provides substantial protection to the ecosystem as a whole, which may contribute to the conservation of a number of species, including bull trout. By providing conservation measures in habitat not currently occupied by bull trout, the HCP includes streams and habitats outside of critical habitat that contribute to bull trout recovery, including habitats suitable for future occupancy by bull trout and other species.

Because Green Diamond HCP lands are adjacent to other commercial timberlands, there may be stigma costs associated with designating areas as critical habitat. We do anticipate that designating critical habitat on HCP lands may lead to diminishing the real or perceived economic value of the HCP lands.

In addition to the direct regulatory effect of critical habitat designation, there are very important indirect effects of designation (or the decision not to designate). The exclusion of HCP lands from critical habitat designations is an important incentive for participation in the HCP program; on the other hand, failure to exclude HCP lands could undermine the conservation benefits provided by the HCP program, and, more generally, the partnerships required to conserve most listed species.

Partnerships with non-Federal parties are crucial to the conservation of many listed species. One of the key vehicles for such conservation partnerships is the HCP program, in part because of the potential breadth of its scope. There is no limitation on the geographic scope or breadth of activities for potential conservation measures in HCPs. A robust and comprehensive HCP can provide more conservation than is required to avoid adverse modification of critical habitat in a section 7 consultation. Many HCPs provide research and education programs that provide benefits beyond the habitat protection or management provisions of the HCP. In contrast, although it is an important component of the ESA, section 7 consultation is more limited. It only applies to Federal actions; therefore, its application is concentrated on, although not limited to, Federal lands, as many activities on private lands do not involve Federal action.

Moreover, HCPs can address habitat conservation on a very large scale, addressing entire ecosystems and a wide variety of the species in them, whether listed or not. The Service's experience suggests that large-scale HCPs provide more comprehensive, and therefore more effective, protection to listed species as well as species that might otherwise require listing in the future. In this particular case, Green Diamond is committed under its HCP to manage its entire 261,575 acres as an even flow timber resource while meeting the habitat needs of 51 covered species. Large-scale HCPs in effect become regional conservation plans that are consistent with the recovery objectives for listed species that are covered within the plan area. Large-scale HCPs can also provide an important forum for exchanging information and developing relationships with additional entities that can affect the conservation of species. For example, we participate in three scientific advisory teams that oversee the HCP; this allows for the sharing of information and development of relationships with a number of other entities, including three state agencies, a university, local conservation groups, national recognized conservation

organizations, and Tribes. These educational opportunities build community support for HCPs and helps convey to the public the requirements of bull trout and their conservation needs.

HCPs can provide other important conservation benefits, including the development of important biological information needed to guide conservation efforts and assist in species conservation outside the HCP planning area, and the creation of innovative solutions to conserve species that can be applied wherever similar needs exist, irrespective of land ownership.

Finally, HCPs provide a more cooperative framework for engaging the broader public in endangered species conservation. For example, the Green Diamond HCP also facilitates cooperative activities with other similarly situated forest landowners. The completion of the Green Diamond HCP served as a model for a similar HCP currently being developed with forest landowners. Continued cooperative relations with the Green Diamond are expected to influence other future partners and lead to greater conservation than would be achieved through multiple section 7 consultations.

The conservation benefits resulting from this collaborative approach are built upon a foundation of mutual trust and understanding. It takes considerable time and effort to establish this foundation, which is one reason it often takes several years to develop a successful HCP. Thus, HCPs both depend on and foster an atmosphere of cooperation with respect to species conservation.

Non-Federal landowners are motivated to work with the Service collaboratively to develop voluntary HCPs because of the regulatory certainty provided by an incidental take permit under section 10(a)(1)(B) of the Act with the No Surprises Assurances. Although the HCP process can be complex and time-consuming, the perceived benefit to landowners in undertaking this extensive process is the resulting regulatory certainty, which translates into real savings for private land owners, savings in both opportunity costs as well as direct savings and avoided costs.

Designation of critical habitat on HCP lands undermines the certainty that the HCP proponents are seeking. A failure to exclude HCP lands could be viewed as the Service retreating from its previous position as to the adequacy of the conservation measures in the HCP, undermining the Service's credibility in future interactions with potential partners. Designation of critical habitat within the boundaries of already approved HCPs is also viewed as a disincentive by other entities currently developing HCPs or contemplating them in the future because it implies potential additional regulation after conservation measures needed for the species have already been agreed to. In discussions with the Service, HCP permittees have indicated they view critical habitat designation as an unnecessary additional intrusion on their property, and an erosion of the regulatory certainty provided by their incidental take permit and the No Surprises Assurances. Because the Service would be required to reinitiate Section 7 consultation with itself if critical habitat is designated on our action of issuing a Section 10(a)(1)(B) permit, the permittees are concerned that the Service could use this as an excuse to request new conservation measures for the bull trout even though we have existing agreements already in place.

Although parties whose actions may take listed species may still desire incidental take permits to avoid liability under section 9, failure to exclude HCP lands from critical habitat could reduce the conservation value of the HCP program in several ways. First, parties may be less willing to

participate in large, regional HCPs, preferring instead to address any possible take on a project-by-project basis. Second, in any given HCP, applicants may reduce the amount of protection to which they are willing to agree, in effect holding some additional protective measures “in reserve” for use in any future discussions to address critical habitat. Third, without the incentive of exclusion from critical habitat, some potential applicants, particularly (1) those whose actions may, but are not certain to take listed species, and (2) those against whom enforcement for any take that does occur may be difficult, may decide not to seek an incidental take permit at all. Although the reality of section 9 liability will prevent the HCP program from being devitalized by a failure to exclude HCP lands from critical habitat designations, the HCP program is such an important tool in endangered species conservation that any decrease in its efficacy could have profound effects.

Excluding HCP lands from critical habitat provides permittees with the greatest possible certainty, thereby helping foster the cooperation necessary to allow the HCP program to achieve the greatest possible conservation benefit. Thus, excluding the lands covered by the Green Diamond HCP improves the Service’s ability to enter into new partnerships. Permittees who trust and benefit from the HCP process discuss the benefits with others who may become future HCP participants, such as States, counties, local jurisdictions, conservation organizations, and private landowners. New HCPs will result in implementation of conservation actions that we would be unable to accomplish otherwise.

Green Diamond HCP balancing

As discussed above, it is possible, although unlikely, that any Federal action will be proposed that would be likely to destroy or adversely modify the habitat proposed as critical within the area governed by the Green Diamond HCP. If such a project was proposed, due to the specific way in which jeopardy and adverse modification are analyzed for bull trout, it would likely also jeopardize the continued existence of the species. In addition, as discussed above, we expect that the benefit of informing the public of the importance of this area to bull trout conservation would be slight given we will be displaying essential habitat that is excluded. Therefore, we assign relatively little weight to the benefits of designating this area as critical habitat.

In contrast, although the benefits of encouraging participation in HCPs, particularly large-scale HCPs, and, more broadly, helping to foster cooperative conservation are indirect, enthusiastic HCP participation and an atmosphere of cooperation are crucial to the long-term effectiveness of the endangered species program. Therefore, we assign great weight to these benefits of exclusion. To the extent that there are regulatory benefits of including, there would be associated costs that could be avoided by excluding the area from designation. However, as we expect the regulatory benefits to be low, we likewise give little weight to avoidance of those associated costs, as well as the additional transaction costs related to section 7 compliance.

Therefore, we have determined that the benefits of inclusion of the areas covered by this HCP are small, while the benefits of exclusion are more significant. Therefore, the benefits of exclusion outweigh the benefits of inclusion. Because we anticipate that little if any conservation benefit to the bull trout will be foregone as a result of excluding these lands, the exclusion will not result in the extinction of the bull trout. The Secretary exercises his discretion under section 4(b)(2) to exclude these areas from the designation (see comprehensive discussion

in “Exclusions” section in the proposed rule).

Attachment 1 (PCE Analysis for Green Diamond HCP)

PCE #1: “Springs, seeps, groundwater sources, and subsurface water connectivity (hyporheic flows) to contribute to water quality and quantity and provide thermal refugia.”

The HCP protects surface and subsurface water connectivity through a variety of diverse mechanisms. Springs and seeps that result in perennial or intermittent channels may be addressed through those conservation provisions. All perennial streams are protected with riparian buffers. In addition, the riparian strategy specifically addresses Break-in-Slope gorges, Channel Migration Zones, and Channelized Debris-flow or Disturbance Zones. Even intermittent streams receive protection in a manner that will optimize functional needs of that specific channel class.

The HCP addresses wetlands and hydrological integrity and connectivity. The HCP addresses forested and nonforested wetlands. All riverine and all unstable-slope-associated wetlands are buffered. The HCP also provides protection for depressional wetlands, stable-slope wetlands, and those on flat terrain above certain sizes (generally above 0.5 to 1.0 acre, depending on wetland type). Wetland prescriptions (and prescriptions for management of wetland complexes) throughout the HCP area will protect water quality and hydrologic integrity and connectivity. Roads will avoid disrupting surface and ground-water flows. Specific road remediation is directed at restoring wetlands.

PCE #2: “Migration habitats with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and freshwater and marine foraging habitats, including but not limited to permanent, partial, intermittent, or seasonal barriers.”

The Green Diamond HCP contains measures to ensure water quality and quantity that would address a barrier-free environment for bull trout. Roads will be managed in a manner that does not contribute to the formation of barriers and remediation will address existing barriers.

PCE #3: “An abundant food base including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and/or forage fish.”

The HCP maintains the natural hydrology and riparian functions of large wood input, shade, bank stability, detrital inputs, as well as natural functions of flood plains and unstable slopes. It is expected to fully address the aquatic environment necessary to provide a healthy food base within the constraints of the natural system.

PCE #4: “Complex river, stream, lake, reservoir, and marine shoreline, and processes that establish and maintain these aquatic environments, with features such as large wood, side channels, pools, undercut banks and substrates, to provide a variety of depths, gradients, velocities, and structure.”

The Green Diamond HCP addresses the need for complex habitat by providing buffers along streams and wetlands that are expected to contribute to large woody debris recruitment and maintain stream bank integrity. The HCP and TMDL also address sediment which has the

potential to simplify and degrade instream habitat conditions. The HCP also focuses on maintaining mass-wasting and erosional processes within natural regimes. The HCP includes provisions to manage forest cover in the rain-on-snow subbasins to reduce the frequency of major storm flows that are capable of shifting instream habitat structure, and it also is expected to substantially reduce the amount of coarse and fine sediments transported downstream that could further simplify and degrade habitat conditions.

PCE #5: “Water temperatures ranging from 2 to 15 °C (36 to 59 °F), with adequate thermal refugia available for temperatures that exceed the upper end of this range. Specific temperatures within this range will depend on bull trout life-history stage and form; geography; elevation; diurnal and seasonal variation; shading, such as that provided by riparian habitat; streamflow; and local groundwater influence.”

Stream temperature is a complicated issue and is addressed in the Green Diamond HCP through a number of avenues including buffers that provide shade, road-management practices that avoid sedimentation, and maintenance of natural hydrologic regimes that contribute cool water to streams. In addition, stream temperature is directly addressed by the total maximum daily load (TMDL).

The buffers on streams and wetlands are expected to provide natural levels of shade to avoid increasing sunlight which could result in stream warming. Road and wetland prescriptions are expected to maintain natural hydrological regime so that streams are not abnormally dry during periods of the year when this could exacerbate warming problems. Stream buffers and road standards (as well as the TMDL) also address sediment delivery, which in turn will avoid artificial filling of pools which could lead to increased stream warming.

PCE #6: “In spawning and rearing areas, substrate of sufficient amount, size, and composition to ensure success of egg and embryo overwinter survival, fry emergence, and young-of-the-year and juvenile survival. A minimal amount of fine sediment, generally ranging in size from silt to coarse sand, embedded in larger substrates are characteristic of these conditions. The size and amounts of fines suitable to bull trout will likely vary from system to system.”

The HCP addresses the need for natural substrates in a wide variety of ways. Reducing road-generated, fine sediment is a major focus of both the HCP and the TMDL. Considerable focus is placed on road maintenance, repair, and improved construction standards. In addition, road remediation of existing road-related problems is a major component of the HCP and TMDL. The HCP strives to keep slope failures at natural levels, which serves to reduce the delivery of fine sediments, but also recognizes the contribution of these processes to supplying gravel needed for substrates. Once material has been delivered to the stream, it depends on large woody debris and other channel features to sort substrate by particle size. The HCP addresses bank stability and large wood recruitment which should help store fine sediment and provide for suitable substrates for bull trout spawning. The HCP includes provisions to manage forest cover in the rain-on-snow subbasins to reduce the frequency of major storm flows that are capable of shifting instream habitat structure that contributes to sorting and development of suitable substrates, and it also is expected to substantially reduce the amount of coarse and fine sediments transported downstream.

PCE #7: “A natural hydrograph, including peak, high, low, and base flows within historic and seasonal ranges or, if flows are controlled, they minimize departures from a natural hydrograph.”

The HCP includes provisions to manage forest cover in the rain-on-snow subbasins to reduce the frequency of major storm flows. The HCP is expected to maintain floodplains and wetlands in a manner that retains the functions of the hyporheic zone and off-channel habitats. Road management is designed to disconnect ditches (and ground water intercepted by roads) from the stream system to reduce delivery of sediment, but also to slow the delivery of storm-related run-off and reduce the contribution to peak flows. Ditch water and road run-off is diffusely shunted onto the forest floor.

PCE #8: “Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.”

As discussed above, both water quality and quantity are addressed through a variety of mechanisms. In addition to protecting the natural hydrograph and addressing sediment and temperature, the HCP will result in a minimal amount of chemical introduction into surface waters.

PCE #9: “Nonnative predatory (e.g., lake trout, walleye, northern pike, smallmouth bass); interbreeding (e.g., brook trout); or competing (e.g., brown trout) species that, if present, are at sufficiently low levels of occurrence or adequately temporally and spatially isolated.”

The HCP is not expected to contribute to the spread of deleterious aquatic species. Provisions of the HCP that protect the natural environment should assist native fish in maintaining a competitive advantage when that is possible. The Service maintains the ability to request Green Diamond not address passage blockages where such projects would negatively affect bull trout by making additional habitat available to deleterious species.

SUMMARY

We assessed Green Diamonds HCP with respect to the primary constituent elements for bull trout critical habitat. HCP actions should not result in contaminated waters that inhibit reproduction, growth, or survival; instead, they are expected to maintain a high-level of water quality. They are expected to maintain the thermal regime of streams within the range of normal variation, contribute to the maintenance of complex stream channels, appropriate substrates, a natural hydrologic regime, ground-water sources and subsurface connectivity, migratory corridors, and an abundant food base. HCP actions are not expected to introduce or favor nonnative competitors or predators.

WASHINGTON DEPARTMENT OF NATURAL RESOURCES HCP

Part A: Plan/Program Description and Analysis

1) Brief Overview of the Washington Department of Natural Resources Habitat Conservation Plan.

In 1997, the U.S. Fish and Wildlife Service (Service) issued an incidental take permit based upon the Washington Department of Natural Resources (WDNR) HCP which covers about 1.6 million acres of State forest trust lands within the range of the northern spotted owl in the state of Washington. The majority of the HCP (approximately 1.3 million acres) occurs west of the Cascade Crest and includes the Olympic Peninsula and Southwest Washington. The remainder of the HCP occurs on the east side of the Cascade Mountains within the range of the northern spotted owl. The HCP covers activities primarily associated with commercial forest management.

It is an “all-species” HCP west of the Cascade Crest, which includes bull trout and other salmonids. On the east side of the Cascade Crest, bull trout and other aquatic species are not covered under the HCP and WDNR is therefore required to follow State Forest Practice Rules for riparian management and other forestry activities. The WDNR HCP lands on the west side of the Olympic Peninsula are managed as the Olympic Experimental State Forest. Conservation approaches here are similar to other areas of the HCP west of the Cascade Crest, but with a larger emphasis on research.

The multi-species portion of the HCP depends upon several broad-scale conservation approaches: spotted owl conservation, marbled murrelet conservation, riparian conservation, certain species-specific protection measures, protection of uncommon habitats, and provisions to maintain a range of forest types across the HCP landscape.

2) Describe the area covered by the program and the specific habitats affected/protected/improved (with emphasis on the areas proposed as CH):

See Attachment Part A

3) What PCEs are covered by the plan and how effective is the plan at meeting the specific PCE criteria?

See Attachment Part B (PCE analysis).

4) Describe specific restoration and improvement goals, actions, or standards included as part of the plan:

The WDNR HCP is expected to provide conservation benefits to bull trout that will contribute to recovery. The HCP has a landscape conservation strategy specifically designed for multiple species. Although the primary benefits to bull trout will occur from the riparian strategy, the other aspects of the landscape conservation strategy will provide contributions to bull trout as well. The spotted owl and marbled murrelet strategies, in conjunction with the range of forest

types across the landscape, will contribute to bull trout habitat primarily through improved watershed conditions. The protections afforded uncommon habitats will provide overall ecosystem benefits, including protection of hydrology through protection of wetlands and seeps.

The riparian conservation strategy will be the primary mechanism that provides restoration of bull trout habitat. This strategy, as outlined in the HCP for the 5 west side planning units (IV. 55), has two objectives: (1) to maintain or restore salmonid freshwater habitat on WDNR managed lands; and (2) to contribute to the conservation of other aquatic and riparian obligate species. As required in the HCP (HCP IV.61), the WDNR provided the Service their Implementation Procedures for the Riparian Forest Restoration Strategy (August 2005) that detail site specific methods for riparian management. Implementation of these procedures is expected to contribute to bull trout recovery by accelerating development of mature forests sooner along streams and wetlands. Other provisions of the HCP are also expected to contribute to recovery of bull trout: unstable hillslope protection; properly managing forest roads; managing forests to minimize rain-on-snow floods; and protecting wetlands.

The August 2005 Implementation Procedures for the Forest Restoration Strategy are expected to provide the necessary elements for bull trout: appropriate volume and density of in-stream large woody debris; high degree of stream shading; ability to intercept harmful sediments; stream bank stability; reduction of excessive windthrow; and ability to contribute detrital nutrients. Buffer widths for fish bearing streams go out to a site potential tree height, which often is approximately 140 feet, depending on site potential. Forest management can occur beyond a 25 foot no cut buffer, provided it improves the riparian ecosystem. All fish bearing streams, and many non-fish bearing streams, will have forested buffers left along them.

Unstable hillslopes will be identified through reconnaissance or slope models. Timber harvest is avoided that could increase the frequency or severity of slope failure or would alter the natural input of large woody debris, gravel, or fine sediment. Maintaining slope stability is key to maintaining complex in-stream habitats, suitable substrates, as well as migratory connectivity. It also contributes to maintaining cool stream temperatures and an abundant food base. By maintaining natural rates of slope failure and erosion, and therefore habitat-forming processes, the HCP will avoid conditions that would degrade habitats upon which bull trout rely.

Comprehensive road management according to BMPs provides fish passage, minimizes hydrologic disruption, reduces delivery of fine sediments, while allowing large woody debris to route downstream. Comprehensive road management is important to maintaining cool stream temperatures, complex in-stream habitats, suitable substrates, migratory connectivity, and an abundant food base. It also contributes to maintaining hydrologic regimes and groundwater sources. Proper road management helps avoid conditions that would favor deleterious species or would degrade water quality.

Wetlands protection and hydrological maturity maintains natural water flow, vegetation, and protects surface and subsurface connectivity. The wetland and hydrological components of the HCP are key factors in maintaining natural stream flows. These components of the HCP also contribute to maintaining cool stream temperatures, complex habitats and suitable substrates (by avoiding excessive peak flows), and help provide an abundant food base. Maintaining these components of bull trout habitat will also avoid favoring deleterious species.

5) Identify the entity responsible for implementing the plan/program and the implementing mechanism (i.e., management plan, MOU/MOA etc.):

The Washington State Department of Natural Resources is responsible for implementing this HCP. The Implementation Agreement for the HCP is signed by the Washington Department of Natural Resources, Service and the National Marine Fisheries Service. The State Lands Commissioner chairs the Board of Natural Resources, and this Board is ultimately responsible for actions taken under the HCP. The Department of Natural Resources, through their State lands program, administers the responsibilities on a day-to-day basis and reports to the Board.

6) Identify specific provisions of the program that provide habitat protections or improvements (not just for the listed species, although those should be identified particularly with other habitat-based benefits described more generally):

Primary measures are discussed generally under the response to question 4 above. For details, refer to Chapter 4 in the Washington Department of Natural Resources Habitat Conservation Plan, September 1997.

7) Identify instruments memorializing the program and its requirements which may be agreements, standards, management plans, biological opinions, and guidance:

- The 1997 Habitat Conservation Plan
- The Incidental Take Permit (PRT – 812521)
- The Implementation Agreement
- The section 7 Biological Opinion
- The section 10 Findings
- The FEIS and Record of Decision

8) Describe the basis for the standards, and whether the Service participated in their design.

The Service was an active participant in the development of the HCP and continues to be very involved in its implementation. During the development of the HCP, the Tribes, State agencies, other Federal agencies, environmental organizations, business representatives, and educational institutions were involved in commenting or participating in committees that developed the HCP.

9) What are the requirements for implementation? (Is it required through regulation, is it required through formalized terms and conditions, is it voluntary, is it optional, are some actions required only if a certain predicate is met (if so, be specific)?)

The WDNR must comply with the Habitat Conservation Plan (HCP), Implementation Agreement (IA), and the Incidental Take Permit (ITP). Where there is any contradiction between terms of the HCP and IA, the IA shall control the interpretation (IA 12.0)

The WDNR and the Services are required by the IA to conduct periodic comprehensive reviews of HCP implementation (IA 21.0). In addition, the IA requires annual meetings between the Services and WDNR to review proposed and completed land transactions involving permit lands (IA 17.2). The WDNR is also required to report annually on all monitoring activities carried out

during the preceding calendar year (HCP V. 4).

The WDNR has been providing the Service annual reports on timber and non-timber management activities. Data germane to actions that influence bull trout habitat (i.e., miles of road decommissioned, replacement of culverts that block fish passage, acres of timber harvest, etc.) are documented in these reports. The August 2005 Implementation Procedures for the Forest Restoration Strategy specifies that annual reporting to the Services will occur on site specific riparian restoration activities. These reports will provide information on riparian forest management activities, some of which will be pertinent to bull trout habitat.

10) What is the consequence of non-compliance? What are the monitoring provisions?

The WDNR, Service, and NOAA Fisheries agree to be bound by and subject to the commitments of the HCP, the ITP and the IA, subject to amendment, renewal or termination (I A14.0). The Service will not revoke or suspend the ITP, provided WDNR is in compliance with the ITP, HCP and IA. In the event of non-compliance, the Service maintains the right to suspend or revoke the ITP in accordance with Federal law and the IA (IA 26.0). If in the event of a possible violation of the HCP, IA, or ITP, the Service will provide written notice to the WDNR detailing what provisions may have been violated and the mitigation that may be necessary to correct the violation (IA 29.2).

The WDNR performs implementation and effectiveness monitoring across the five west side planning units, and also validation monitoring on the Olympic Experimental Forest. WDNR submits an annual report and in 2003 submitted a 5-year comprehensive review. Additional details of the monitoring requirements are contained in Chapter 5 of the HCP. The Service also performs compliance inspections of WDNR activities.

11) What is the expectation for continued compliance? (If voluntary (compliance not governed by statute or regulations) this should include the length of time that a voluntary program has been implemented since past performance is an indicator of future performance.)

The WDNR has been substantially complying with the ITP, IA, and HCP and the expectation is for that to continue. The WDNR has been successfully implementing their HCP and they maintain an open and constructive dialog with the Service. See response to question 10. If the WDNR wishes to change management strategies, there is a specified process described in the IA. The incidental take permit is in effect for 70 years, with the option of extending it to 100 years.

To date, WDNR has met its obligations under the HCP. Information on the continued implementation of the WDNR HCP and the conservation progress they have made to date can be found at the following website:

http://www.dnr.wa.gov/ResearchScience/Topics/TrustLandsHCP/Pages/trust_land_hcp.aspx

Part B: Benefits Analysis

Benefits of WDNR HCP:

The HCP provides a comprehensive, landscape approach for terrestrial and aquatic species, including bull trout. Bull trout receive benefits from focused riparian management, unstable slope protection, comprehensive road management strategies, and wetlands protection.

The HCP includes a substantial amount of relatively contiguous ownership in places which is conducive to ecosystem management. The HCP is expected to protect all of the PCEs to some extent in all streams. PCEs need not be present for the protective measures of the WDNR HCP to apply. Specifically, the HCP provides credible management for PCEs through:

- Riparian buffers designed to address large-woody-debris recruitment, bank stability, shade, and detrital inputs (addresses PCEs 1-9).
- Management of existing and future roads, and addressing on-going and past road-related problems, to provide fish passage, minimize hydrologic disruption, and reduce delivery of fine sediment, while allowing woody debris to route (addresses PCEs 1-9).
- Unstable hillslopes are identified and activities that would increase the frequency or severity of slope failure or would alter the natural input of large woody debris, gravel, or fine sediment are avoided (addresses PCEs 2-4, 3, 6, 8, 9).
- Wetlands protection and hydrological maturity maintain natural water flow and vegetation, and protect surface and subsurface connectivity (addresses PCEs 1-5, 7, 8).

Because certain proposed watersheds are so heavily influenced by the WDNR HCP, continuation of the HCP will provide substantial ecosystem benefits and make major contributions toward the recovery of bull trout.

The WDNR HCP and associated biological opinion and section 10 findings highlighted the areas which are important to bull trout on the WDNR HCP landscape. Through the development of the HCP, WDNR displayed it was already well-aware of the value of various stream reaches for the conservation of bull trout. In addition, the WDNR HCP involves the development and accumulation of important biological information that would otherwise be unavailable. The information being generated by the WDNR HCP applies to many other species, not just bull trout. The information generated through the adaptive-management program is significant. In addition, some of the proposed WDNR HCP lands are within the Olympic Experimental State Forest, and, as such, education and research are large components of the mission for these lands.

The HCP provides conservation benefits that address and benefit multiple species and address environmental concerns across broad landscapes, regardless of occupancy by bull trout. The HCP provides conservation beyond what could be achieved through parcel-by-parcel avoidance of take, or through multiple section 7 consultations. The HCP results in far more benefit than sections 7 and 9 due to a diversity of actions undertaken through the HCP, including proactive restoration and remediation of existing road-related problem areas. In addition, the portions of the WDNR HCP within the Olympic Experimental State Forest are to be managed in a manner that would provide benefits of late seral forests and healthy riparian systems.

The WDNR HCP facilitates other cooperative activities with WDNR, other cooperating

agencies, and adjacent landowners that would benefit bull trout. Continued cooperative relations are expected to influence future partners and should lead to greater conservation than would be achieved through multiple section 7 consultations and section 9. The Service also participates in a scientific advisory team with respect to the HCP which allows a sharing of information and development of relationships with a number of other entities, including the Tribes.

Benefits provided by the proposed critical habitat designation in areas currently covered by the WDNR HCP:

Given the existence of the WDNR HCP, to what degree are the benefits of including the area in the final designation still relevant?

The WDNR has entered into a 70 year HCP with the Service, which provides enhanced ecosystem benefits over the critical habitat designation. Many of the conservation strategies associated with the HCP, while not necessarily focused on bull trout, will provide enhanced conservation for that species.

First, what Federal actions would be (a) covered by the terms of the HCP, (b) consistent with the HCPs requirements, and (c) still destroy or adversely modify critical habitat?

This forestry HCP covers the following activities: forest practices, forest product sales, other valuable material sales, licenses, permits, leases, right-of-ways and public uses (IA 16.1). Only limited Federal actions (permits) that are consistent with these activities and that are within the range described in HCP would not require a section 7. As such, any Federal action would need to fall within the scope of the HCP to not necessitate section 7. Based on the terms of the HCP, discussed above, and the Service's current understanding of the habitat needs of bull trout, the Service has determined that it is highly unlikely that Federal actions that are consistent with the HCP and ITP would adversely modify bull trout critical habitat if it were designated. For actions that are not consistent with the HCP, or actions that exceed in scope the approved forestry activities, section 7 analysis would be required.

Second, what Federal actions might take place that are not addressed by the HCP?

Because this HCP occurs on state forest lands, typically in remote areas, Federal actions are not common. However, it is possible that some Federal actions could be proposed that are not consistent with the HCP. For instance, hydro-electrical power projects are not covered by the HCP but are governed by the Federal Regulatory Energy Commission and as such would require separate analysis through section 7.

It is not possible for us to predict what Federal actions are likely to occur over the next seventy years (the life of this HCP). Presently, we are unaware of any Federal projects that might take place that would require separate section 7 analysis. Therefore, we conclude at this time, that designation of this area as critical habitat is unlikely to provide any significant conservation benefit with respect to Federal actions not covered by the HCP. If it appears later in the life of the HCP that conclusion in this respect may change, we can consider revising critical habitat at that time.

Third, what assurances are there that the protections of the HCP will be maintained?

The Implementation Agreement specifies criteria for maintaining the obligations of the HCP. If a potential forestry activity will increase the level of incidental take authorized on bull trout by

the ITP, WDNR will initiate the amendment process (IA 25.0). The IA draws a distinction between minor amendment to the HCP and amendments to the ITP. A minor amendment would require approval of the parties to the HCP and would not increase the level of incidental take authorized by the ITP. An amendment that would increase the level of incidental take would require an amendment of the ITP and could only be done in accordance with all applicable legal requirements including ESA, NEPA, and Service permit regulations.

This HCP has a term of 70 years, with the option of extending to 100 years. Given that timeframe, it is not inconceivable that it could be amended, terminated, or revoked before that time. Each of these options is discussed in the IA and specific steps are required to invoke any of these options. Finally, by its own terms, particular lands can be removed (or added) from coverage by the HCP.

Other benefits of designation:

Little additional informational or educational benefit is expected to be derived from designating the WDNR HCP lands as critical habitat. The WDNR has a research and monitoring program for several aspects of the HCP, including stream and riparian research. This ongoing and future research is anticipated to have multiple aquatic benefits, including bull trout. The designation of critical habitat could not compel WDNR to undertake the research that they have committed to under the HCP. In addition, in order to increase public understanding of critical habitat, we will show all waterbodies determined to be essential habitat for bull trout in the final critical habitat designation. To display narrative exclusions, we will show the boundaries of those land ownerships or entities that are excluded from the critical habitat regulations, relative to these waterbodies.

Critical habitat protects the applicable PCEs in designated areas and protects those streams from actions with a Federal nexus. Designation of critical habitat would benefit bull trout beyond that derived through section 7 jeopardy analysis and section 9. However, with respect to forestry-related activities, it may not exceed the protections of the WDNR HCP.

Critical habitat designation will result in some environmental protection that would exceed the protection garnered from other environmental regulations (e.g., Clean Water Act) associated with cleaner water and better stream conditions that may translate into economic benefits such as those which may possibly result from increased tourism. Recreational fishing and river floating are common activities in western Washington. Critical habitat may provide an increment of benefit beyond the variety of existing laws to protect water and fish habitat.

Designation of critical habitat will address a variety of threats from non-forestry-related Federal projects that cannot be addressed by the HCP. Designation may also provide some increment of benefit beyond that derived from section 7 requirements on the species alone. However, consultation on critical habitat will only address those activities associated with a Federal nexus that may affect the PCEs. Federal projects are somewhat unpredictable. Larger Federal projects with significant impacts to the aquatic environment are unlikely to occur on WDNR HCP forest lands unless they are: (1) as a result of modification of the HCP to fully address and minimize and mitigate impacts to the maximum extent practicable; (2) as a result of HCP termination; (3) removal of certain lands from the HCP; or (4) as a result of condemnation. In the first case, there would be little if any benefit of critical habitat designation; in the latter cases, should the Federal

project occur on the areas proposed for exclusion, the exclusion would no longer apply and benefits of critical habitat would still be realized. Should the Federal project occur adjacent to but not on the proposed exclusion, consultation on such Federal projects would not need to consider the impacts to the excluded areas, but may need to consider impacts to designated critical habitat in adjacent areas.

Designation of critical habitat may assist state and local regulatory agencies in taking further protective measures where critical habitat is designated. This may also result in additional land- and water-use restrictions for forest landowners, including WDNR. In fact, State law requires consideration of additional rules and areas for protection upon designation of critical habitat. Designation could potentially result in changes to Federal projects when the projects otherwise would have resulted in the destruction or adverse modification of critical habitat, thereby theoretically resulting in better environmental conditions, and possibly resulting in economic benefits associated with clean water and good stream conditions. Although designating critical habitat may activate state or local environmental laws (Washington Growth Management Act, Shoreline Protection Act or State Environmental Policy Act), the protection and enhancement of aquatic and riparian habitat under the HCP far exceeds any increased protection provided under state and local regulations.

Benefits of excluding affected areas from critical habitat:

We identified a number of possible benefits of excluding the area covered by the WDNR state trust lands HCP from critical habitat designation. First, to the extent designation would provide any additional protection of bull trout habitat, costs associated with that protection would be avoided. Second, exclusion would reduce largely redundant administrative costs of section 7 consultation. As discussed above, these costs are unlikely to lead to additional actual protection for bull trout habitat. Third, exclusion would provide an incentive for participation in the development of new HCPs. Fourth, exclusion would help to foster an atmosphere of cooperation in the conservation of endangered species.

As discussed in the benefits of inclusion section, above, the primary effect of designation of critical habitat is the application of section 7. As we have concluded there is little likelihood of significant Federal actions causing adverse modification of the HCP lands. However, designation of the HCP lands would impose the technical requirement of consultation under the adverse modification standard, requiring reinitiation of consultation on the Service's issuance of the incidental take permit associated with the HCP, as well as additional analysis in consultations on any future Federal actions. Therefore, avoiding the additional expense (on the part of Service, the action agency, and the applicant) associated with those consultations is a benefit of exclusion.

In addition to the direct regulatory effect of critical habitat designation, there are very important indirect effects of designation (or the decision not to designate). The exclusion of HCP lands from critical habitat designations is an important incentive for participation in the HCP program; on the other hand, failure to exclude HCP lands could undermine the conservation benefits provided by the HCP program, and, more generally, the partnerships required to conserve most listed species.

Partnerships with non-Federal parties are crucial to the conservation of many listed species. One of the key vehicles for such conservation partnerships is the HCP program, in part because of the

potential breadth of its scope. There is no limitation on the geographic scope or breadth of activities for potential conservation measures in HCPs. A robust and comprehensive HCP can provide more conservation than is required to avoid adverse modification of critical habitat in a section 7 consultation. Many HCPs provide research and education programs that provide benefits beyond the habitat protection or management provisions of the HCP. In contrast, although it is an important component of the ESA, section 7 consultation is more limited. It only applies to Federal actions; therefore, its application is concentrated on, although not limited to, Federal lands, as many activities on private lands do not involve Federal action.

Moreover, HCPs can address habitat conservation on a very large scale, addressing entire ecosystems and a wide variety of the species in them, whether listed or not. The Service's experience suggests that large-scale HCPs provide more comprehensive, and therefore more effective, protection to listed species as well as species that might otherwise require listing in the future. Large-scale HCPs can also provide an important forum for exchanging information and developing relationships with additional entities that can affect the conservation of species.

HCPs can provide other important conservation benefits, including the development of important biological information needed to guide conservation efforts and assist in species conservation outside the HCP planning area, and the creation of innovative solutions to conserve species that can be applied wherever similar needs exist, irrespective of land ownership.

The conservation benefits resulting from this collaborative approach are built upon a foundation of mutual trust and understanding. It takes considerable time and effort to establish this foundation, which is one reason it often takes several years to develop a successful HCP. Thus, HCPs both depend on and foster an atmosphere of cooperation with respect to species conservation.

Non-Federal landowners are motivated to work with the Service collaboratively to develop voluntary HCPs because of the regulatory certainty provided by an incidental take permit under section 10(a)(1)(B) of the Act with the No Surprises Assurances. Although the HCP process can be complex and time-consuming, the perceived benefit to landowners in undertaking this extensive process is the resulting regulatory certainty, which translates into real savings for private land owners, savings in both opportunity costs as well as direct savings and avoided costs.

Designation of critical habitat on HCP lands undermines the certainty that the HCP proponents are seeking. A failure to exclude HCP lands could be viewed as the Service retreating from its previous position as to the adequacy of the conservation measures in the HCP, undermining the Service's credibility in future interactions with potential partners. Designation of critical habitat within the boundaries of already approved HCPs is also viewed as a disincentive by other entities currently developing HCPs or contemplating them in the future because it implies potential additional regulation after conservation measures needed for the species have already been agreed to. In discussions with the Service, HCP permittees have indicated they view critical habitat designation as an unnecessary additional intrusion on their property, and an erosion of the regulatory certainty provided by their incidental take permit and the No Surprises Assurances. Because the Service would be required to reinitiate Section 7 consultation with itself if critical habitat is designated on our action of issuing a Section 10(a)(1)(B) permit, the permittees are concerned that the Service could use this as an excuse to request new conservation measures for

the bull trout even though we have existing agreements already in place.

Although parties whose actions may take listed species may still desire incidental take permits to avoid liability under section 9, failure to exclude HCP lands from critical habitat could reduce the conservation value of the HCP program in several ways. First, parties may be less willing to participate in large, regional HCPs, preferring instead to address any possible take on a project-by-project basis. Second, in any given HCP, applicants may reduce the amount of protection to which they are willing to agree, in effect holding some additional protective measures “in reserve” for use in any future discussions to address critical habitat. Third, without the incentive of exclusion from critical habitat, some potential applicants, particularly (1) those whose actions may, but are not certain to take listed species, and (2) those against whom enforcement for any take that does occur may be difficult, may decide not to seek an incidental take permit at all. Although the reality of section 9 liability will prevent the HCP program from being devitalized by a failure to exclude HCP lands from critical habitat designations, the HCP program is such an important tool in endangered species conservation that any decrease in its efficacy could have profound effects.

Excluding HCP lands from critical habitat provides permittees with the greatest possible certainty, thereby helping foster the cooperation necessary to allow the HCP program to achieve the greatest possible conservation benefit. Thus, excluding the lands covered by the WDNR HCP improves the Service’s ability to enter into new partnerships. Permittees who trust and benefit from the HCP process discuss the benefits with others who may become future HCP participants, such as States, counties, local jurisdictions, conservation organizations, and private landowners. New HCPs will result in implementation of conservation actions that we would be unable to accomplish otherwise.

WDNR HCP Balancing:

As discussed above, it is possible, although unlikely, that any Federal action will be proposed that would be likely to destroy or adversely modify the habitat proposed as critical within the area governed by the WDNR HCP. If such a project was proposed, due to the specific way in which jeopardy and adverse modification are analyzed for bull trout, it would likely also jeopardize the continued existence of the species. In addition, as discussed above, we expect that the benefit of informing the public of the importance of this area to bull trout conservation would be slight. Therefore, we assign relatively little weight to the benefits of designating this area as critical habitat.

In contrast, although the benefits of encouraging participation in HCPs, particularly large-scale HCPs, and, more broadly, helping to foster cooperative conservation are indirect, enthusiastic HCP participation and an atmosphere of cooperation are crucial to the long-term effectiveness of the endangered species program. Therefore, we assign great weight to these benefits of exclusion. To the extent that there are regulatory benefits of including, there would be associated costs that could be avoided by excluding the area from designation. However, as we expect the regulatory benefits to be low, we likewise give little weight to avoidance of those associated costs, as well as the additional transaction costs related to section 7 compliance.

Therefore, we have determined that the benefits of inclusion of the areas covered by this HCP are small, while the benefits of exclusion are more significant. Therefore, the benefits of

exclusion outweigh the benefits of inclusion. Because we anticipate that little if any conservation benefit to the bull trout will be foregone as a result of excluding these lands, the exclusion will not result in the extinction of the bull trout. The Secretary exercises his discretion under section 4(b)(2) to exclude these areas from the designation (see comprehensive discussion in “Exclusions” section in the proposed rule).

Attachment (Part A)

The WDNR HCP covers over 1.6 million acres in total. Much of this is on the west side of the Cascades (about 1.3 million acres) and substantial portions of this are located within the Coastal-Puget Sound Population Segment of bull trout including the Olympic Peninsula. Most of the WDNR HCP lands on the west side of the Olympic Peninsula are within the Olympic Experimental State Forest. WDNR HCP ownership in these areas includes a mixture of large contiguous blocks, large blocks with less contiguousness, and smaller scattered ownerships.

Some bull trout Core areas have significant overlap between proposed critical habitat and streams owned by WDNR and managed under the HCP. These core areas include the Nooksack, Stillaguamish, Snohomish/Skykomish, Hoh, Queets, and Lower Skagit. While the amount of overlap may be locally significant, it remains very minor in the overall context of both the proposed critical habitat, as well as the actual ownership of WDNR lands. The amount of WDNR lands that could be affected in section 7 consultations on designated critical habitat is proportionally somewhat larger.

Some bull trout core areas and foraging, migration, and overwintering (FMO) areas have little overlap between proposed critical habitat and streams owned by WDNR and managed under the HCP. These areas include the Skokomish Core (also addressed in its own assessment), Lower Green FMO, Samish FMO, Elwha Core, Dungeness Core, Ennis/Morris/Siebert FMO, Goodman/Mosquito FMO, Kalaloch FMO, and the Moclips FMO areas. The amount of overlap between WDNR HCP lands and proposed critical habitat is small at best where it occurs. Areas of overlap tend to be small and would only occur for short distances of streams with areas of no overlap at either end of such reaches.

Several areas included WDNR lands within the outer boundary of the Core or FMO area, but had no overlap between the proposed critical habitat and WDNR-managed lands. These include the Nisqually FMO, Puyallup Core, Lake Washington FMO, Chehalis FMO, Wishkah FMO, Humptulips FMO, and the Chilliwack Core areas.

Several Core areas and FMO areas have no WDNR ownership within the area. These include Satsop FMO, Wynoochee FMO, Raft FMO, Upper Skagit Core, Chester Morse Lake Core, Gray's Harbor FMO, Quinault Core, and Hood Canal FMO areas.

Attachment (Part B)

Relationship of PCEs to HCP protection.

The HCP addressed riparian management zones, unstable hill-slopes, management of the road network, and hydrological and wetland protection.

Riparian buffers will address PCEs 1-9.

Riparian buffers are designed to address large-woody-debris recruitment, bank stability, shade, and detrital inputs. Riparian buffers are key in maintaining cool stream temperatures, complex in-stream habitat, and keeping contaminants removed from the water. They also contribute to

the maintenance of suitable spawning and rearing substrates, hydrologic regimes, groundwater sources, migratory corridors and a food base. By maintaining these natural conditions they avoid conditions that would favor deleterious species.

Road management will address PCEs 1-9.

Proper road management will provide fish passage, minimize hydrologic disruption, and will reduce delivery of fine sediment. Proper road management is key to maintaining cool stream temperatures, complex in-stream habitats, suitable substrates, migratory connectivity, and an abundant food base. It also contributes to maintaining hydrologic regimes and groundwater sources. Proper road management helps avoid conditions that would favor deleterious species or would degrade water quality. In some cases, fish passage may not be provided through road crossings to avoid increasing the range of deleterious species.

Slope stability addresses PCEs 2-4, 3, 6, 8, and 9.

Unstable hill-slopes will be identified and activities that would increase the frequency or severity of slope failure or would alter the natural input of large woody debris, gravel, or fine sediment would be avoided. Maintaining slope stability is key to maintaining complex in-stream habitats, suitable substrates, as well as migratory connectivity. It also contributes to maintaining cool stream temperatures and an abundant food base. By maintaining natural rates of slope failure and erosion, and therefore habitat-forming processes, the HCP will avoid conditions that would favor deleterious species.

Wetland and Hydrology addresses PCEs 1-5, 7, and 8.

Wetlands protection and hydrological maturity will maintain natural water flow and vegetation, and protect surface and subsurface connectivity. The wetland and hydrological components of the HCP are key to maintaining a natural hydrograph and groundwater sources. These components of the HCP also contribute to maintaining cool stream temperatures, complex habitats and suitable substrates (by avoiding excessive peak flows), and help provide an abundant food base. Maintaining these components of bull trout habitat will avoid favoring deleterious species.

Table 1. Key factor in providing for PCE.

PCE	Buffers	Roads	Slopes	Hydro
1. Groundwater	T	T		x
2. Migratory Habitat	T	x	x	
3. Food Base	T	x	T	T
4. Complex Habitat	x	x	x	T
5. Temperature	x	x	T	T
6. Substrate	T	x	x	T
7. Hydrograph	T	T		x
8. Water Quality	x	x		

and Quantity				
9. Nonnative Species	x	x	x	x
T = Contributes to providing PCE x = Assists in avoiding negative effects				

Assessment of Benefits Derived from Washington WDNR HCP for Bull Trout Habitat and PCEs

Background

The HCP is expected to conserve riparian forests, improve water quality, prevent management-related hill-slope instability, and address hydrological maturity of small subbasins. The HCP prescriptions for riparian and wetland areas focus on the following functions: recruitment of woody debris to streams and the forest floor, shade and control of stream-side air temperature, stream-bank stability, detrital inputs, capture and storage of sediment and organic matter on the floodplain, maintenance and augmentation of nutrient dynamics and processing, groundwater discharge, base-flow support in streams, and flood amelioration. The HCP road program addresses legacy, current, and future roads. Road-system management is addressed through a combination of road inventory; road remediation; road maintenance; managed road use; and new road location, design, and construction. Prescriptions and standards address the chronic production and movement of fine sediment, and the catastrophic failure of road fills and sidecast that generate and propagate hill-slope and channel failures. Prescriptions for unstable slopes are to identify these areas and avoid management activities that could trigger mass-wasting processes. In sub-basins, within the rain-on-snow zone, prescriptions address the maintenance of sufficient mature forest canopy to avoid peak-flow damage; road-related prescriptions will address the diffusion and shunting of water, reducing the potential for roads to accelerate the delivery of water and exacerbate peak-flow problems. Within riparian management zones, timber harvest would only occur to achieve restoration objectives.

HCP Assessment

We evaluated the WDNR HCP to determine whether it provides benefits to bull trout. This included an assessment of whether the HCP provides: (1) a conservation benefit to the species; (2) assurances that the management plan will be implemented; and (3) assurances that the plan will be effective.

(1) The degree to which the HCP provides benefits to bull trout is discussed in greater detail below with respect to each of the Primary Constituent Elements.

(2) The Service has received assurances that the plan will be implemented. An Implementation Agreement was signed by the parties and compliance with the HCP is a condition of the incidental take permit. The Service monitors activities conducted by the WDNR. In addition, the WDNR has organized an internal implementation team which monitors and reviews the

conduct of projects under the HCP.

Provisions in the HCP allow for sale or exchange of lands but, as WDNR is a State agency, public review is required. The Service maintained the ability to assess whether land exchanges infringe on the integrity of the HCP. The WDNR provides annual reports that address the amount and impact of exchanges during that year and those that have occurred cumulatively.

The Implementation Agreement addresses WDNR's ability to terminate the permit and the HCP. However, WDNR expended significant amounts of time and resources to acquire an incidental take permit to address the Endangered Species Act. It is not anticipated that the WDNR will abandon the HCP in the foreseeable future.

(3) The Service has a high degree of confidence that the HCP will be effective because: (a) there was rigorous application of science in the development of the HCP through the science team as well as substantial input by the Tribes; (b) rigorous application of science in prescription and monitoring development; and (c) there is continued Service, tribal, and other scientific involvement in the implementation of the HCP through the Scientific Advisory Team and direct discussion by WDNR with the Tribes and other stakeholders. The Service has had ample opportunity to participate in the Scientific Advisory Team process and through direct discussions regarding implementation. Through its compliance monitoring program, the Service has had opportunities to observe the HCP as applied to specific sites.

Effectiveness monitoring will measure environmental elements including large woody debris, channel characteristics, and sediments. Research priorities include managing riparian buffers that maintain wind-firm streamside forests, evaluating local and downstream effects of forest management activities along small headwater streams not associated with unstable slopes (including designing and managing buffers if needed), maintaining slope stability, and discerning the relationships between forest management activities and hydrology in managed forests (particularly among forest management activities, basin soils, and stream-channel / stream-bed changes during rain-on-snow floods).

Strategies subject to adaptive management (see section 24 of the IA) include improving the prediction of unstable slopes, improvement of the landscape-based road network management plan, refinement of management activities allowed in riparian management zones, development of a long-term conservation strategy for forest management along small headwater streams and incorporation of prescriptions resulting from watershed analysis.

Assessment of Primary Constituent Elements

Nine Primary Constituent Elements (PCEs) were defined in the proposed rule for designation of critical habitat. These PCEs apply to areas proposed for designation with respect to foraging, migrating, and overwintering habitat; as well as for spawning and rearing habitat. The only exception is that PCE #3 (substrates) addresses substrates needed for spawning and rearing and does not address or is not attributable to bull trout needs with respect to foraging, migrating, and overwintering needs. Each PCE is repeated below and is followed by a brief discussion of how the WDNR HCP meets or exceeds those expectations.

PCE #1: "Springs, seeps, groundwater sources, and subsurface water connectivity

(hyporheic flows) to contribute to water quality and quantity and provide thermal refugia.”

The HCP protects surface and subsurface water connectivity through a variety of diverse mechanisms. Mineral springs receive specific protection to address band-tailed pigeons, but these same protections would benefit bull trout. Other springs or seeps that result in perennial or intermittent channels, or wetlands may be addressed through those conservation provisions.

The HCP addresses wetlands and hydrological integrity and connectivity. The HCP addresses forested and nonforested wetlands. Wetland prescriptions throughout the HCP area will protect water quality and hydrologic integrity and connectivity. Roads will avoid disrupting surface and ground-water flows. The HCP protects hyporheic flow. Current road standards minimize ground-water pirating and return intercepted water to the forest floor immediately via out-sloped roads, minimizing infrastructure impacts on basin hydrology.

PCE #2: “Migration habitats with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and freshwater and marine foraging habitats, including but not limited to permanent, partial, intermittent, or seasonal barriers.”

The WDNR HCP contains measures to ensure water quality and quantity that would address a barrier-free environment for bull trout. Roads will be managed in a manner that does not contribute to the formation of barriers and remediation will address existing barriers.

PCE #3: “An abundant food base including terrestrial organisms of riparian origin, aquatic macro-invertebrates, and/or forage fish.”

The HCP maintains the natural hydrology and riparian functions of large wood input, shade, bank stability, detrital inputs, as well as natural functions of flood plains and unstable slopes. It is expected to fully address the aquatic environment necessary to provide a healthy food base within the constraints of the natural system.

PCE #4: “Complex river, stream, lake, reservoir, and marine shoreline, and processes that establish and maintain these aquatic environments, with features such as large wood, side channels, pools, undercut banks and substrates, to provide a variety of depths, gradients, velocities, and structure.”

The HCP addresses the need for complex habitat by providing riparian buffers along streams and wetlands that are expected to contribute to large woody debris recruitment and maintain stream bank integrity. The HCP addresses sediment which has the potential to simplify and degrade instream habitat conditions. The HCP ensures that the stream system is not disrupted by the road network and that ditch and road run-off is disconnected from the stream system. The HCP also focuses on maintaining mass-wasting and erosion processes within natural regimes.

The HCP utilizes riparian buffer prescriptions. Fishbearing streams receive site-potential (100-year index) buffers that will generally average 150 to 160 feet. Streams which exceed 2 feet in width (whether perennial or seasonal) will receive 100 foot buffers. Small headwater streams (less than 2 feet in width) will often be addressed through unstable slopes and features

identification. Otherwise, small headwater streams not associated with instability will be addressed through the development of a strategy focusing on these streams. While the buffering scenarios are based on slightly different features within the Olympic Experimental State Forest, they are generally expected to resemble those buffers throughout the west side, and will be expected to provide equivalent protection to the salmonid habitat. These buffers are very likely to address the needs of instream habitat through provision of large wood and other riparian functions.

The HCP includes provisions to manage forest cover in the rain-on-snow subbasins to reduce the frequency of major storm flows that are capable of shifting instream habitat structure, and it also is expected to substantially reduce the amount of coarse and fine sediments transported downstream that could further simplify and degrade habitat conditions.

PCE #5: “Water temperatures ranging from 2 to 15 °C (36 to 59 °F), with adequate thermal refugia available for temperatures that exceed the upper end of this range. Specific temperatures within this range will depend on bull trout life-history stage and form; geography; elevation; diurnal and seasonal variation; shading, such as that provided by riparian habitat; streamflow; and local groundwater influence.”

Stream temperature is a complicated issue and is addressed in this HCP through a number of avenues. Because elevation of stream temperatures can be related to and caused by interruption of hydrology, riparian removal, increased sedimentation, and simplification of habitat, the WDNR HCP recognized and addressed all of these factors in its attempt to address stream temperatures. The riparian buffers on streams and wetlands are expected to provide natural levels of shade to avoid increasing sunlight which could result in stream warming. Road and wetland prescriptions are expected to maintain natural hydrological regime so that streams are not abnormally dry during periods of the year when this could exacerbate warming problems. Stream buffers and road standards also address sediment delivery, which will in turn avoid artificial filling of pools which could lead to increased stream warming. Additional prescriptions derived through watershed analysis will be applied and may address all of the above factors. The HCP includes provisions to manage forest cover in the rain-on-snow subbasins to reduce the frequency of major storm flows that are capable of shifting instream habitat structure, and it also is expected to substantially reduce the amount of coarse and fine sediments transported downstream that may fill pools and contribute to stream warming.

PCE #6: “In spawning and rearing areas, substrate of sufficient amount, size, and composition to ensure success of egg and embryo overwinter survival, fry emergence, and young-of-the-year and juvenile survival. A minimal amount of fine sediment, generally ranging in size from silt to coarse sand, embedded in larger substrates are characteristic of these conditions. The size and amounts of fines suitable to bull trout will likely vary from system to system.”

The HCP addresses the need for natural substrates in a wide variety of ways. Reducing road-generated fine sediment is a major focus of the HCP. Considerable focus is placed on road maintenance, repair, and improved construction standards. In addition, road remediation of existing road-related problems is a major component of the HCP. Already, WDNR has decommissioned many stream-side roads and addressed a number of road segments with a high-level of concern regarding aquatic impacts. The HCP strives to keep slope failures at natural

levels, which serves to reduce the delivery of fine sediments, but also recognizes the contribution of these processes to supplying gravel needed for substrates. Once material has been delivered to the stream, it depends on large woody debris and other channel features to sort substrate by particle size. The HCP addresses bank stability and large wood recruitment which should help store fine sediment and provide for suitable substrates for bull trout spawning.

The HCP includes provisions to manage forest cover in the rain-on-snow subbasins to reduce the frequency of major storm flows that are capable of shifting instream habitat structure that contributes to sorting and development of suitable substrates, and it also is expected to substantially reduce the amount of coarse and fine sediments transported downstream.

PCE #7: “A natural hydrograph, including peak, high, low, and base flows within historic and seasonal ranges or, if flows are controlled, they minimize departures from a natural hydrograph.”

The HCP includes provisions to manage forest cover in the rain-on-snow subbasins to reduce the frequency of major storm flows that are capable of shifting instream habitat structure, and it also is expected to substantially reduce the amount of coarse and fine sediments transported downstream.

The HCP is expected to maintain floodplains and wetlands in a manner that retains the functions of the hyporheic zone and off-channel habitats. The HCP provides substantial protection for nonforested wetlands, but also protects forest wetlands. Road management is designed to disconnect ditches and road intercepts from the stream system to reduce delivery of sediment, but also to slow the delivery of storm-related run-off and reduce the contribution to peak flows.

PCE #8: “Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.”

As discussed above, both water quality and quantity are addressed through a variety of mechanisms. In addition to protecting the natural hydrograph and addressing sediment and temperature, the HCP will result in a minimal amount of chemical introduction into surface waters.

PCE #9: “Nonnative predatory (e.g., lake trout, walleye, northern pike, smallmouth bass); interbreeding (e.g., brook trout); or competing (e.g., brown trout) species that, if present, are at sufficiently low levels of occurrence or adequately temporally and spatially isolated.” The HCP is not expected to contribute to the spread of deleterious aquatic species. Provisions of the HCP that protect the natural environment should assist native fish in maintaining a competitive advantage when that is possible. The Service maintains the ability to request WDNR not address passage blockages where such projects would negatively affect bull trout by making additional habitat available to deleterious species.

SUMMARY

We assessed the WDNR HCP with respect to the primary constituent elements for bull trout critical habitat. HCP actions should not result in contaminated waters that inhibit reproduction,

growth, or survival; instead, they are expected to maintain a high-level of water quality. They are expected to maintain the thermal regime of streams within the range of normal variation, and contribute to the maintenance of complex stream channels, appropriate substrates, a natural hydrologic regime, ground-water sources and subsurface connectivity, migratory corridors, and an abundant food base. HCP actions are not expected to introduce or favor nonnative competitors or predators.

The proposed designation of critical habitat on WDNR HCP is generally for main-stem reaches and direct tributaries. Riparian and in-stream habitat conditions for main-stem rivers overall will be on an improving trend under the WDNR HCP, and those improvements will continue to develop through the plan period. Riparian protection should lead to less streambed aggradation, less streambed sedimentation, and more large wood in the main-stem rivers. Road-management program under the WDNR HCP should lead to improving stream-channel conditions and water quality. All of these measures combined should lead to lower levels of stream sedimentation in main-stem rivers and less mass-wasting events triggered by roads. Overall, the HCP is expected to result in improving conditions for main-stem rivers, as well as other portions of the stream network.

Therefore, we expect the HCP to result in significant benefits to bull trout, as well as other covered aquatic species. We expect the HCP will be implemented in an effective manner. The Service has a high degree of confidence in the likelihood that the initial prescription will achieve the stated resource objectives and contribute to the recovery of the covered species. In addition, the HCP provides for a mechanism to address certain topics of uncertainty through the adaptive-management process. Therefore, the WDNR HCP is the functional equivalent of critical habitat.

CONCLUSION

The WDNR HCP is expected to contribute to the recovery of bull trout and the conservation benefits derived from the continuance of this HCP are substantial. As stated in the Statement of Findings for issuance of the incidental take permit, “the combination of provisions for riparian areas, wetlands, and springs provide for conservation of aquatic species. Ecosystem protection would be derived largely from management directed at maintaining and restoring riparian ecosystem function as well as older forest conditions across much of the managed uplands which are expected to benefit all aquatic species. This management should provide the clean, cool water and the habitat components needed by these species because the HCP protects natural processes. It is expected that the protection of those natural processes, which operate in a dynamic fashion upon the aquatic environment will sustain water quality, within-water structures, and sedimentation rates at natural levels to adequately address the species adapted to life in these habitats”. The WDNR HCP is the functional equivalent to critical habitat.

WASHINGTON FOREST PRACTICES HCP

Part A: Plan/Program Description and Analysis

1) Brief Overview of the State of Washington Forest Practices HCP.

In 1986, forest stakeholders representing the Washington Tribes; the Washington State Departments of Natural Resources, Ecology, Game, and Fish (the latter two now Department of Fish and Wildlife); the timber industry and non-industrial private forest landowners; and environmental interests, each for their own reasons, possessed a level of frustration with the existing regulatory process for making changes to the Washington Forest Practices Rules that regulate non-Federal and nontribal forest landowners. Meetings were held to determine if these disparate interests could negotiate a cooperative approach to management and regulation of forest practices. The stakeholder negotiation process became known as Timber, Fish, and Wildlife (TFW) and resulted in the Timber, Fish, and Wildlife Agreement.

Beginning in late 1996, faced with the imminent listing under the Endangered Species Act (ESA) of several salmonid species (including bull trout) in Washington, TFW participants agreed to address emerging riparian-habitat issues. Because of the regulatory implications of the ESA, representatives from Federal agencies accepted an invitation to join the original TFW collaborators in the discussions. After almost 2 years of negotiations, representatives of environmental interests and some Tribes withdrew from negotiations. The remaining participants continued negotiating and eventually agreed to the Forests and Fish Report (FFR) in April 1999. The groups contributing to the development of the report included State agencies (Washington State Department of Natural Resources, Washington Department of Fish and Wildlife, Washington State Department of Ecology, and the Governor's Office), Federal agencies (U.S. Fish and Wildlife Service (Service), National Marine Fisheries Service, and U.S. Environmental Protection Agency), several Washington Tribes, the Northwest Indian Fisheries Commission, the Washington State Association of Counties, the Washington Forest Protection Association, and the Washington Farm Forestry Association.

During the same time period, the Washington State Legislature addressed ESA salmon and steelhead listings with the passage of the 1998 Salmon Recovery Planning Act (Engrossed Substitute House Bill 2496). In this legislation, the Legislature made clear its intent to immediately begin the work required to recover salmon and created the Governor's Salmon Recovery Office to coordinate the State salmon recovery strategy. The following year, the Washington Legislature passed the 1999 Salmon Recovery Funding Act (Second Engrossed Second Substitute Senate Bill 5595). In it, the Legislature established guiding principles for the statewide salmon recovery strategy, which emphasized collaborative, incentive-based approaches. The statewide salmon recovery strategy identified forest practices as a critical component for salmon recovery. The Legislature recognized the FFR as responsive to its policy directive for a collaborative, incentive-based approach to support salmon recovery; ESA coverage and regulatory certainty being key incentives of implementation.

Also in 1999, the Washington State Legislature passed the Forest Practices Salmon Recovery Act (Engrossed Substitute House Bill 2091), which directed the Washington Forest Practices Board to adopt new forest practices rules, encouraging the Forest Practices Board to follow the recommendations of the FFR. To further the purpose of regulatory stability, the Forest Practices

Salmon Recovery Act also limited future changes to the new rules so that outside of a court order or legislative directive, new rules could be adopted by the Forest Practices Board “only if the changes or new rules are consistent with the recommendations resulting from the scientifically based adaptive management process” included in the FFR. The language further solidified the adaptive management process as a key component of the conservation program. In its rulemaking procedures, the Forest Practices Board conducted an evaluation of the FFR, as well as alternatives to the Report. This evaluation included an Environmental Impact Statement under the Washington State Environmental Policy Act. The Final State Environmental Impact Statement, entitled *Alternatives for Forest Practices Rules for Aquatic and Riparian Resources*, was published in April 2001.

Following the passage in 1999 of emergency forest practices rules based on the FFR, the Washington Forest Practices Board adopted new permanent rules in May 2001. Effective July 2001, these permanent rules cover a wide variety of forest practices and include: (1) a new, more functional, classification of rivers and streams on nonfederal and nontribal forestland; (2) improved plans for properly designing, maintaining, and upgrading existing and new forest roads; (3) additional protections for unstable slopes; and (4) greater protections for riparian areas intended to restore or maintain properly functioning aquatic and riparian habitat conditions. In addition to these substantive provisions, the rules adopted the procedural recommendations of the FFR that address adaptive management, training, and other features. The Washington State Legislature and U.S. Congress continued to support the collaboration with significant funding for the research, monitoring, and adaptive management activities called for in the FFR.

When the State legislature adopted the FFR in 1999 and directed the Forest Practices Board to develop new State forest practice rules, it took this action with the understanding that the Governor would obtain assurances from the Federal agencies to the effect that compliance with the forest practices rules would satisfy Federal requirements under the Endangered Species Act and the Federal Water Pollution Control Act (“Clean Water Act”). In June 2006, the preparation of a Habitat Conservation Plan (HCP) and associated processing of a permit application was completed and an incidental take permit was issued to the state of Washington. The provisions under the HCP were the same as contained in the FFR with a few exceptions such as provisions for small nonindustrial forest landowners.

2) Describe the area covered by the program and the specific habitats affected/protected/improved (with emphasis on the areas proposed as critical habitat).

The Washington Forest Practices Rules contain prescriptions designed to improve and maintain properly functioning aquatic and riparian habitat on nonfederal, nontribal forest lands throughout the State. Thus, salmonid habitat, including bull trout habitat, has the HCP’s protective measures on all forest lands where the Washington Forest Practices Rules apply.

Approximately 11.4 million acres of nonfederal and nontribal forest land are regulated under the Washington Forest Practices Act and the underlying Rules. Approximately 2.3 million acres of the 11.4 million acres are currently covered under existing, approved Habitat Conservation Plans under Section 10 of the ESA. The Washington Forest Practices Rules recognize individual Habitat Conservation Plans and allow for a substitution of the prescriptions in the Rules with the prescriptions of a specific Habitat Conservation Plan.

The 9.1 million acres of lands regulated by the Washington Forest Practices HCP include a mixture of large, industrial ownerships and small, nonindustrial ownerships. These lands are most prevalent at lower elevations, while Federal forest lands are more prevalent at higher elevations. Nonindustrial forest lands are common along the urban-growth margin.

3) What Primary Constituent Elements (PCEs) are covered by the plan and how effective is the plan at meeting the specific PCE criteria?

See Attachment 1 (PCE analysis)

4) Describe specific restoration and improvement goals, actions, or standards included as part of the plan:

The overall goals of the Washington Forest Practices Rules are: (1) to provide compliance with the ESA for aquatic and riparian-dependent species on nonfederal, nontribal forestlands; (2) to restore and maintain riparian habitat on nonfederal, nontribal forestlands to support a harvestable supply of fish; (3) to meet the requirements of the Clean Water Act for water quality on nonfederal, nontribal forestlands; and (4) to keep the timber industry economically viable in the State of Washington.

In order to comply with the ESA and the Clean Water Act, the Washington Forest Practices Rules modified existing forest practices statutes and rules related to: (1) the protection of riparian areas; (2) unstable slopes and wetlands; (3) the construction, maintenance and abandonment of forest roads; (4) the application of forest chemicals; and (5) the implementation of watershed analysis. These protective measures are described in detail in Chapter 222-10, -22, -24, -30, and -38 of the Washington Administrative Code at: <http://www.dnr.wa.gov/forestpractices/rules/>.

5) Identify the entity responsible for implementing the plan/program and the implementing mechanism (i.e., management plan, MOU/MOA etc).

The State of Washington, under the Department of Natural Resources, administers and enforces the Washington Forest Practices Rules and implements their incidental take permit. The Service and National Marine Fisheries Service work cooperatively to oversee their respective permits and provide monitoring and implementation assistance.

6) Identify specific provisions of the program that provide habitat protections or improvements (not just for the listed species, although those should be identified particularly with other habitat based benefits described more generally).

The primary measures that provide habitat protections are discussed in the Washington Forest Practices Rules PCE attachment (Attachment 1) and were also briefly summarized in the answer to number 4 above. For more details, please refer to Chapter 222-10, -22, -24, -30, and -38 of the Washington Administrative Code at: <http://www.dnr.wa.gov/forestpractices/rules/> or consult the Biological Opinion prepared by the Service regarding the issuance of the incidental take permit (USFWS 2006x).

7) Identify instruments memorializing the program and its requirements which may be

agreements, standards, management plans, biological opinions, and guidance.

- Washington Forest Practices Rules. 2001. Washington State Department of Natural Resources, Olympia, WA.
- Engrossed Substitute House Bill 2091. 1999. Forest Practices Salmon Recovery Act (i.e., the Forests and Fish Law). Washington State Legislature.
- Forests and Fish Report. 1999. Washington's Forestland Stakeholders.
- Final State Environmental Impact Statement, entitled *Alternatives for Forest Practices Rules for Aquatic and Riparian Resources*.
- Final Forest Practices Habitat Conservation Plan. 2005. Washington State Department of Natural Resources.
- Incidental Take Permit (and associated permit conditions). 2006. U.S. Fish and Wildlife Service.

8) Describe the basis for the standards, and whether the Service participated in their design.

The basis for the Washington Forest Practices Rules is the FFR (April, 1999). The authors of this report included representatives from State agencies (Washington State Department of Natural Resources, Washington Department of Fish and Wildlife, Washington State Department of Ecology, and the Governor's Office), Federal agencies (Service, National Marine Fisheries Service, and U.S. Environmental Protection Agency), several Washington Tribes, the Northwest Indian Fisheries Commission, the Washington State Association of Counties, the Washington Forest Protection Association, and the Washington Farm Forestry Association.

The authors of the FFR, including the Service, worked together to develop biologically sound and economically practical solutions to improve and protect riparian habitat on nonfederal and nontribal forestlands in Washington and to meet the four specific goals identified in the response to number 4 above. The process to create the report was slow and deliberate, allowing time for the authors to better understand one another's concerns and to build relationships that would strengthen the implementation of the report (and subsequently the Washington Forest Practices Rules). There were numerous 2- and 3-day sessions attended by all of the authors to develop trust in the negotiations of the content of the FFR. Technical work groups were created so that the Report would be shaped by sound science. The technical issues were repeatedly revisited in a process that led to greater and greater detail and refinement in the FFR (and subsequently the Washington Forest Practices Rules).

9) What are the requirements for implementation? (Is it required through regulation, is it required through formalized terms and conditions, is it voluntary, is it optional? are some actions required only if a certain predicate is met (if so, be specific)?)

The incidental take permit is conditioned based upon compliance with the Washington Forest

Practices HCP as well as upon specific permit conditions. The State Forest Practices program is therefore committed to implementation of the Forest Practices HCP through their implementation of the rules and their program. The implementation of the Washington Forest Practices Rules is required by all nonfederal, nontribal landowners in Washington, through the Washington Forest Practices Act, on “all land which is capable of supporting a merchantable stand of timber and is not being actively used for a use which is incompatible with timber growing” (Revised Code of Washington 76.09.010(9)). The biological goals identified in the response to number 4 above (to comply with the ESA, the Clean Water Act, and to restore and maintain riparian habitat to support a harvestable supply of fish) are expected to be achieved through the following regulations: Washington Administrative Code 222-10, -22, -24, -30, and -38 pertaining to road construction and maintenance, timber harvesting, application of forest chemicals, and harvesting on potentially unstable slopes.

Note: The Washington Forest Practices Rules allow for landowners that have their own approved Habitat Conservation Plan to substitute the requirements in the Rules for the corresponding requirements in their Habitat Conservation Plan. See also the response to number 2 above.

10) What is the consequence of noncompliance? What are the monitoring provisions?

Currently, landowners that are not in compliance with the Washington Forest Practices Rules can be subjected to a variety of enforcement consequences and penalties, ranging from Stop Work Orders to civil and criminal penalties for the most serious offenses.

11) What is the expectation for continued compliance? (If voluntary (compliance not governed by statute or regulations) this should include the length of time that a voluntary program has been implemented since past performance is an indicator of future performance.)

Nonfederal and nontribal forest landowners are required by law to follow the Washington Forest Practices Act and the underlying Washington Forest Practices Rules. Compliance with the Rules is fully expected or the consequences described in number 10 above would be imposed on landowners not in compliance with the Rules. The State of Washington is expected to comply with its Forest Practices HCP for the full term of the permit, 50 years. At the termination of the permit, renewal is an option.

All indications are that the Washington Forest Practices HCP is functioning according to the expectations at the time of signing. Extensive annual reports are available for each year from 2001 to 2009. In 2011, Washington Department of Natural Resources intends to provide a 10-year report that will summarize the progress made in the first 10 years of the HCP. As of December 1, 2008, the Road Maintenance and Abandonment Plan (RMAP) program documented that approximately 44 percent of known fish passage barriers (2,871 of 6,505 presumed fish passage barriers on RMAPs statewide) had been fixed and thereby opened 1,448 miles of fish habitat. In November of 2009, Washington State Department of Ecology temporarily extended the Clean Water Act Assurances for the HCP, and documented information gaps that need to be provided for future extensions. Washington Department of Natural Resources is currently working to address those needs to ensure continued compliance with the Clean Water Act. In 2006, Washington Department of Natural Resources implemented a robust

Compliance Monitoring Program for the HCP and to date has inspected greater than 400 harvest units to assess levels of compliance with rule standards.

In November of 2010, the program will be sending its second biennial report to the Washington State Legislature to document progress and levels of compliance. The HCP also includes an active Adaptive Management process that is working to verify that implementation of the agreement will have the desired outcomes and adjust rule standards to ensure desired outcomes are met. The program has worked to address riparian desired future conditions, adequate protections for landslide prone landscapes, non-fishbearing stream riparian management, and road design and planning standards as well as various other studies. One concern with the HCP with regard to bull trout is the potential for 20-acre-exempt riparian management zones (reduced riparian management requirements for certain small forest landowners) to negatively impact critical spawning habitat for the species. Washington Department of Natural Resources is tracking the potential impacts of this rule package on bull trout and while a few 20-acre-exempt harvests have occurred within bull trout spawning habitat there is no indication that any of these harvests have come to within 75 feet of the stream channel and there is little likelihood that there has been significant impacts to the spawning populations.

All aspects of the Washington Forest Practices HCP contain extensive oversight from a large stakeholder contingency that includes the Services, Washington Department of Fish and Wildlife, Washington Department of Ecology, affected Tribes, the Conservation Caucus, and forest landowners. In the 10 years since the implementation of the Washington Forest Practices HCP the program has clearly made considerable progress toward achieving the goals outlined in the agreement and by all accounts appears to be on schedule for successful implementation of the HCP.

Information on the continued implementation of the Washington Forest Practices HCP and the conservation progress they have made to date can be found at the following website:
http://www.dnr.wa.gov/BusinessPermits/Topics/ForestPracticesHCP/Pages/fp_hcp.aspx

Part B: Benefits Analysis

Benefits of the State of Washington Forest Practices HCP:

Biological and Regulatory

The Washington Forest Practices Rules – and the Forest Practices program as a whole – require the maintenance and restoration of aquatic and riparian habitat. The Washington Forest Practices Rules provide protection for riparian and aquatic habitat and also for unstable slopes that may affect these habitats. In addition, the Rules address ongoing and past road-related problems and require that all fish passage problems be fixed by 2016.

The Washington Forest Practices Rules address forestry over a substantial amount of relatively contiguous ownership. The rules are expected to protect all of the bull trout PCEs to some extent, in all of the streams subject to the rules on nonfederal, nontribal forest lands in Washington. This includes providing substrates suitable for spawning and rearing, and not just the PCEs which apply to foraging, migratory, and overwintering or nonspawning/nonrearing portions of core habitats in designated reaches. PCEs need not be present for the protective

measures of the Washington Forest Practices Rules to apply. Specifically, the Washington Forest Practices Rules provide appropriate management for PCEs through:

- (1) riparian buffers that are designed to address large wood recruitment, bank stability, shade, stream temperature, nutrient cycling, detritus inputs, and sediment filtering (addresses PCEs 1-9);
- (2) management of existing and future roads, and addressing ongoing and past road-related problems to provide fish passage, minimize hydrologic disruption, and reduce delivery of fine sediment (addresses PCEs 1-9);
- (3) identification and protection of unstable slopes that would reduce the frequency and severity of slope failures and would maintain the natural inputs of large wood, gravel, and fine sediment to streams (addresses PCEs 2-4, 3, 6, 8, 9); and
- (4) aquatic habitat protection that would maintain natural water flow and vegetation, and protect surface and subsurface connectivity (addresses PCEs 1-5, 7, 8).

Education and Information

The Washington Forest Practices Rules, the 1999 Forest Practices Salmon Recovery Act (Engrossed Substitute House Bill 2091), and the FFR acknowledged the areas which are important to bull trout on the lands regulated under the Washington Forest Practices Rules. Through the development of the FFR (the basis for the Washington Forest Practices Rules), stakeholders displayed that they were already well-aware of the value of various stream reaches for the conservation of bull trout. In addition, the Washington Forest Practices Rules facilitated the development and accumulation of important biological information that would otherwise be unavailable. The information generated by the Washington Forest Practices Rules compliance and adaptive management and monitoring programs provides valuable habitat data and research and monitoring results that aid the Service in the protection and conservation of bull trout, as well as other aquatic species. In addition, in order to increase public understanding of critical habitat, we will show all waterbodies determined to be essential habitat for bull trout in the final critical habitat designation. To display narrative exclusions, we will show the boundaries of those land ownerships or entities that are excluded from the critical habitat regulations, relative to these waterbodies.

Further public educational and informational benefits have been derived from several television commercials and at least one public television infomercial sponsored by some of the stakeholders involved. These television communications have aired since the 1999 FFR was completed and the Washington Forest Practices Rules were amended.

Landscape/Ecosystem Issues

The Washington Forest Practices Rules provide conservation benefits that address multiple species and riparian and aquatic habitat across broad landscapes in Washington, regardless of occupancy by bull trout. The Washington Forest Practices Rules provide conservation beyond what could be achieved through parcel-by-parcel avoidance and enforcement of take through section 9 of the ESA or through multiple, interagency consultations under section 7 of the ESA, for activities with a Federal nexus. The Washington Forest Practices Rules result in far more benefit than section 7 and section 9 due to a diversity of actions undertaken through the rules, including proactive restoration and remediation of existing road-related problem areas. The Washington Forest Practices Rules can serve as a foundation for landscape projections and analyses, thereby aiding landscape planning efforts by public resource agencies and all

Washington forest landowners.

Partnerships

The Washington Forest Practices Rules facilitate cooperative activities between public and private stakeholders that benefit bull trout. Continued cooperative relations are expected to influence other future partners and should lead to greater conservation than would be achieved through the prohibitions against take under section 9 of the ESA or through multiple, interagency consultations under section 7 of the ESA. The Service participates in policy and science groups, with respect to the Washington Forest Practices Rules, which allow a sharing of information and development of relationships with a number of other entities including the Tribes. Also, the Service works cooperatively with the State to develop and update the Rules for terrestrial, threatened and endangered species.

Economic Issues

The Washington Forest Practices Rules protect bull trout and other species across the regulated landscape with respect to forestry-related activities. The Washington Forest Practices Rules also protect clean water and stream conditions and allow the other economic benefits, such as recreation, commercial fishing, and subsistence fishing, which may result from compatible management.

Benefits provided by the proposed critical habitat designation in areas currently covered under the Washington Forest Practices HCP:

Given the existence of the Washington Forest Practices HCP, to what degree are the benefits of including the area in the final designation (discussed in detail in the preamble) still relevant?

The majority of the activities regulated by the Washington Forest Practices Rules (i.e., timber harvest and secondary or spur road building within and adjacent to timber harvest activities) are unlikely to have a Federal nexus. In light of this, and the limitations on the benefits of designation discussed in the preamble (the need for a Federal nexus; the fact that critical habitat designation can at most prohibit effects to habitat that adversely affect bull trout conservation, but not require habitat restoration; and the overlap with the protection provided by the jeopardy prohibition), the Service analyzed the following issues with respect to the regulatory benefits of designation.

First, what Federal actions would (a) be covered by the Washington Forest Practices HCP, (b) be consistent with the Rules requirements, and (c) still destroy or adversely modify critical habitat?

Only limited Federal actions would be combined with activities regulated by the Washington Forest Practices Rules. Federal projects are somewhat unpredictable, but are more likely to occur on the lands regulated under the Washington Forest Practices Rules zoned for non-forestry purposes (e.g., rock quarries or open wetlands) and in areas closer to development. Based on the requirements of the Washington Forest Practices Rules, which are designed to protect riparian and aquatic habitat for bull trout and other aquatic species, the Service has determined that it is unlikely that any Federal actions that interface with activities regulated by the Washington Forest Practices Rules would adversely modify bull trout critical habitat if it were designated

Second, what Federal actions might take place that are not addressed by the Washington Forest Practices HCP?

It is possible that some Federal actions could take place on or adjacent to lands regulated by the Washington Forest Practices Rules. However, these Federal actions would most likely be limited to actions involving open wetlands, utility corridors, hydroelectric dams; and possibly some road work on mainline transportation routes. Federal actions would not likely interfere with timber harvesting and secondary and spur road building, the vast majority of the regulated activities under the Washington Forest Practices Rules.

Third, what assurances are there that the protections of the Washington Forest Practices HCP will be maintained?

The Washington Forest Practices Rules, governed by the Washington Forest Practices Act, have been in existence since 1974. Since that time, the Rules have been modified and updated to reflect environmental concerns over water typing, water quality, listed species protections, unstable slope protections, cumulative effects, and many other resource concerns. Virtually all of the modifications and updates to the Rules over the years have further restricted timber harvest, road building, and other activities regulated by the Rules. In addition, the State of Washington has been issued incidental take permits with conditions by the Service and the National Marine Fisheries. This permit is further evidence of the State's commitment to maintain the protections contained within the Washington Forest Practices Rules.

Other benefits of designation:

The designation of critical habitat on lands regulated by the Washington Forest Practices Rules may provide some additional protections to bull trout and their habitat in that Washington State laws (e.g. the Washington Forest Practices Rules, the Growth Management Act, and the Shoreline Management Act) encourage the protection of "critical areas" including fish and wildlife habitat based on the best available science. However, the Service does not anticipate significant changes in State laws because these laws already acknowledge and address the same elements important to bull trout identified in the bull trout PCEs (e.g., water temperature, water connectivity, sedimentation, etc.).

Benefits of excluding affected areas from critical habitat:

Education and Information

The Washington Forest Practices Rules require a large-scale, comprehensive adaptive-management program that is supported by in-kind participation by the stakeholders that authored the FFR. The exclusion of critical habitat designation fosters this unique collaborative, adaptive-management approach. The proposed exclusion would ensure that research and monitoring that specifically targets the effectiveness of the Washington Forest Practices Rules on riparian and aquatic habitat, and specifically bull trout habitat requirements, is supported by the broad community of individuals and organizations that are regulated or affected by the Washington Forest Practices Rules.

Partnerships

Exclusion of the Washington Forest Practices Rules from critical habitat designation would be viewed as honoring the assurances made during the negotiations of the FFR for most Washington forestland stakeholders. The assurances being that the Rules provide adequate minimization and

mitigation measures to address bull trout conservation. Failure to exclude the Rules could be viewed as an attempt to extract additional and "unfair" mitigation in violation of the principles behind the Washington Forest Practices Rules and FFR negotiations. In addition, failure to exclude the Rules could be a disincentive for other entities contemplating collaborative rule-making or contemplating entering into conservation agreements for a variety of species as it would imply that the Service intends to impose additional regulatory burdens once conservation measures have been agreed upon and could undermine the progress made by generating perceptions that we might erode those assurances. By excluding the lands regulated by the Washington Forest Practices Rules, landowners would continue to be regulated by the Rules, the Growth Management Act, and the Shoreline Management Act knowing that these laws are adequately protecting riparian and aquatic habitat, including bull trout habitat and that another, Federal law is unnecessary. Also the cooperation between the Service and the State to develop and update the Washington Forest Practices Rules for terrestrial, threatened and endangered species would be enhanced through continued cooperative relationships.

Economic Issues

Exclusion would help landowners avoid costly time delays associated with section 7 consultation where a Federal nexus exists, as well as the actual costs associated with preparation of section 7 and associated documents and information. It would help the Service avoid additional costs associated with additional future consultations or re-initiations (many of which would be technically necessary but without substantial resource benefit) which would come at the expense of other necessary conservation work elsewhere.

The most noteworthy economic issue in excluding the lands regulated by the Washington Forest Practices Rules is that nonfederal, nontribal forest landowners are less likely to consider converting and/or selling their land for nonforestry uses, thus maintaining the economic viability of commercial forestry. With few exceptions, land in forestry is preferable (in terms of bull trout conservation) to land converted to nonforestry, commercial uses (e.g., urban development).

Washington Forest Practices HCP Balancing:

As discussed above, it is possible, although very unlikely, that any Federal action would be proposed that would be likely to destroy or adversely modify the habitat proposed as critical within the lands regulated by the Washington Forest Practices Rules. If such a project was proposed, due to the specific way in which jeopardy and adverse modification are analyzed for bull trout, discussed in detail in the preamble, it would likely also jeopardize the continued existence of the species. Most Federal projects that could occur on these lands would likely remove the lands from forest status and would therefore be outside the jurisdiction of the Forest Practices HCP.

The forest landowners regulated by the Washington Forest Practices Rules, as well as those organizations that are directly or indirectly affected by the Rules, are already aware of the need for protecting and conserving bull trout and their habitat. In addition to the prescriptions in the Rules for protecting riparian and aquatic habitat that benefits the broad range of aquatic species, the Rules include specific provisions for protecting bull trout habitat in eastern Washington. Beyond this, there is adaptive-management research and monitoring required under the Washington Forest Practices Rules that specifically addresses the effectiveness and validity of

the Rules in protecting bull trout habitat.

The basis for the Washington Forest Practices Rules is the FFR. The FFR was created in a collaborative effort by multi-stakeholders to identify goals and prescriptions to protect riparian and aquatic-dependent species, including bull trout. This cooperative conservation is crucial to the long-term recovery of listed species.

Based on the above discussion, we assign relatively little weight to the benefits of designating the lands regulated by the Washington Forest Practices Rules as critical habitat for bull trout and assign great weight to the benefits of excluding these lands from designation. Therefore, the benefits of exclusion outweigh the benefits of inclusion. Because we anticipate that little, if any, conservation benefit to bull trout will be foregone as a result of excluding these lands, the exclusion will not result in the extinction of bull trout. The Secretary exercises his discretion under section 4(b)(2) to exclude these areas from the designation (see comprehensive discussion in “Exclusions” section in the proposed rule).

Attachment 1 (PCE Analysis for Washington Forest Practices HCP)

PCE #1: “Springs, seeps, groundwater sources, and subsurface water connectivity (hyporheic flows) to contribute to water quality and quantity and provide thermal refugia.”

Through the requirements to provide no harvest buffers around sensitive sites (springs, seeps, and tributary junctions of streams without fish) and the requirements that timber harvest be limited with the bankfull width or channel migration zone of perennial streams, the Washington Forest Practices Rules protect the surface and subsurface water connectivity important for bull trout habitat. The other riparian management buffers mentioned in PCE #1 also contribute to maintaining surface and subsurface water sources and connectivity important for water quality and quantity.

PCE #2: “Migration habitats with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and freshwater and marine foraging habitats, including but not limited to permanent, partial, intermittent, or seasonal.”

The requirements in the Washington Forest Practices Rules to replace or upgrade all fish-blocking culverts and sub-standard roads by 2016 would ensure that migratory corridors are accessible to bull trout. The riparian-buffer requirements also protect the quality of these migratory corridors by maintaining stream temperatures and other stream functions important for bull trout foraging, migration, overwintering, and spawning habitat.

PCE #3: “An abundant food base including terrestrial organisms of riparian origin, aquatic macro-invertebrates, and/or forage fish.”

Through the requirements for riparian management buffers, sensitive-site protections, and road and culverts improvements, the Washington Forest Practices Rules maintain the other aquatic and riparian habitats and organisms that occur in these areas. The Rules are designed to benefit not only bull trout, but also all Washington salmon and virtually all other native fish species associated with stream and river habitats. Therefore, the food base for bull trout is also an important component of the Washington Forest Practices Rules and its protective measures.

PCE #4: “Complex river, stream, lake, reservoir, and marine shoreline, and processes that establish and maintain these aquatic environments, with features such as large wood, side channels, pools, undercut banks and substrates, to provide a variety of depths, gradients, velocities, and structure.”

PCE #2 is met in the Washington Forest Practices Rules primarily through the requirement that timber harvest is limited within the bankfull width or channel migration zone of perennial waters. As stated above, this requirement maintains stream geomorphology, but also maintains stream-adjacent large wood, side channels, pools, and undercut banks. In addition, the riparian management strategies mentioned above provide extra protection for maintaining intact, complex stream channels important for bull trout. Provisions for 20-acre exempt landowners are seldom used in bull trout habitat but also provide for minimum amounts of retention for streamside trees.

PCE #5: “Water temperatures ranging from 2 to 15 °C (36 to 59 °F), with adequate thermal refugia available for temperatures that exceed the upper end of this range. Specific temperatures within this range will depend on bull trout life-history stage and form; geography; elevation; diurnal and seasonal variation; shading, such as that provided by riparian habitat; streamflow; and local groundwater.”

The riparian buffers prescribed in the Washington Forest Practices Rules are designed to maintain cool stream temperatures, canopy cover, recruitment of large wood, bank stability, nutrient cycling, detritus inputs, and to provide sediment filtering. Timber harvest is limited within the bankfull width or channel migration zone of any perennial waters, thereby maintaining stream geomorphology. PCE #1 is provided for in the Washington Forest Practices Rules through no-harvest buffers generally applied along fish-bearing streams and, at a minimum, half of the non-fish-bearing, perennial streams. Adjacent to the no-harvest buffers, timber harvest is limited within riparian areas depending on site conditions. Sensitive sites, such as seeps and springs, are also protected with buffers. In western Washington, the riparian strategy is designed to result in riparian conditions on growth and yield trajectories towards what are called “desired future conditions” or the stand conditions of mature riparian forests of 140 years of age. In eastern Washington, riparian management is intended to provide stand conditions that vary over time within a range that meets functional conditions and maintains general forest health. Provisions for 20-acre exempt landowners include a provision to maintain shade.

PCE #6: “In spawning and rearing areas, substrate of sufficient amount, size, and composition to ensure success of egg and embryo overwinter survival, fry emergence, and young-of-the-year and juvenile survival. A minimal amount of fine sediment, generally ranging in size from silt to coarse sand, embedded in larger substrates are characteristic of these conditions. The size and amounts of fines suitable to bull trout will likely vary from system to system.”

The Washington Forest Practices Rules address the need for natural substrates in a wide variety of ways. Reducing road-generated, fine sediment is a major focus of the Washington Forest Practices Rules. Considerable focus is placed on road maintenance, repair, and improved construction standards. All fish-blocking culverts and sub-standard roads must be replaced or upgraded to provide fish passage and minimize sediment delivery to streams by 2016; the worst problems are prioritized and fixed first. Timber harvest is limited within the bankfull width or channel migration zone of perennial waters and this provision also protects the natural substrates in streams that bull trout use. Also, there are requirements in the Washington Forest Practices Rules to identify and restrict timber harvesting and road building on unstable slopes with the potential for mass-wasting. These requirements protect against management-caused debris flows that would otherwise increase management-caused sediment entering streams.

PCE #7: “A natural hydrograph, including peak, high, low, and base flows within historic and seasonal ranges or, if flows are controlled, they minimize departures from a natural hydrograph.”

The requirements in the Washington Forest Practices Rules that timber harvest be limited within the bankfull width or channel migration zone of perennial waters, the requirements for riparian management zones, and the restrictions on timber harvesting on unstable slopes all help to maintain a natural hydrograph, protecting against day-to-day fluctuations. The road

maintenance, repair, and improved construction standards help to minimize or divert road-induced sediment and artificial water flows away from streams. The Rules also include provisions to minimize the negative effects of timber harvest in rain-on-snow areas through conditioning timber harvesting in these areas to limit clear-cut harvest sizes and through green-up requirements in which young stands must reach a certain size before adjacent stands of timber can be harvested.

PCE #8: “Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.”

As discussed above, both water quality and quantity are addressed through a variety of protective requirements in the Washington Forest Practices Rules. In addition to protecting the natural hydrograph, stream temperatures, and other riparian and aquatic habitat elements, the requirements for roads and culverts would minimize sediment delivery to streams, thereby minimizing effects to water quality.

PCE #9: “Nonnative predatory (e.g., lake trout, walleye, northern pike, smallmouth bass); interbreeding (e.g., brook trout); or competing (e.g., brown trout) species that, if present, are at sufficiently low levels of occurrence or adequately temporally and spatially.”

The Washington Forest Practices Rules are not expected to contribute to the spread of nonnative, competitive aquatic species. The provisions of the Rules that protect the riparian and stream habitats should assist native fish in maintaining a competitive advantage over nonnative species.

SUMMARY

We assessed Washington Forest Practices HCP with respect to the primary constituent elements for bull trout critical habitat. HCP actions should not result in contaminated waters that inhibit reproduction, growth, or survival; instead, they are expected to maintain water quality. They are expected to maintain the thermal regime of streams within the range of normal variation, contribute to the maintenance of complex stream channels, appropriate substrates, a natural hydrologic regime, ground-water sources and subsurface connectivity, migratory corridors, and an abundant food base. HCP actions are not expected to introduce or favor nonnative competitors or predators.

PLUM CREEK CENTRAL CASCADES HCP

Part A: Plan/Program Description and Analysis

1) Brief Overview of the Plum Creek Central Cascades HCP:

In June 1996, an HCP was completed and an incidental take permit was issued for forestry operations on 170,000 acres of the company's Washington timberlands located in the central Cascades within King and Kittitas Counties. The HCP is designed to conserve mature forests and riparian forests, improve water quality by addressing road-generated sediment and stream temperatures, prevent management-related hill-slope instability, and address hydrological maturity of small sub-basins. The plan addresses vertebrate species, including bull trout and over 300 other aquatic and terrestrial species. Since the HCP was completed, a land exchange and a series of conservation sales have reduced the covered area to about 89,000 acres. All of the known (documented) occupied bull trout habitat that occurred on the ownership at the time of permit issuance is now in Federal ownership.

2) Describe the area covered by the plan/program and the specific habitats affected/protected/improved: (with emphasis on the areas proposed as CH):

The HCP covers the land owned by Plum Creek Timber Company in the Central Cascades. These lands are mainly in the upper Green River Watershed, the upper Yakima River Watershed, and the Little Naches Watershed. The Upper Green is within the municipal watershed for the City of Tacoma.

The Upper Green is a Class I, fourth-order stream. The basin encompasses about 56 square miles and is comprised of a mix of National Forest and private lands. Both Plum Creek and City of Tacoma have ownerships within the watershed that are covered under their respective HCPs. There are several dams below this ownership and the Upper Green does not contain any proposed critical habitat for bull trout.

The Yakima River Subbasin encompasses 6,155 square miles. Major tributaries to the Yakima River include the Kachess, Cle Elum, and Teanaway rivers in the northern portion of the subbasin and the Naches River in the west.

One of the tributaries to the Yakima River is Taneum Creek. The South Fork of the Taneum Creek has a waterfall which forms a natural barrier downstream of the Plum Creek ownership. No fish have been observed in surveys conducted above these falls and the South Fork Taneum above the waterfall has been withdrawn from the proposed designation. The North Fork of the Taneum contains two major tributaries, Butte Creek and Lookout Creek. While the areas surrounding these streams is generally in a semi-checkerboard ownership, the upper North Fork Taneum as well as Butte Creek and Lookout Creek are generally on Plum Creek ownership; however, only the mainstem of the North Fork Taneum is proposed for designation.

The North Fork of the Little Naches River runs through a checkerboard of Plum Creek and National Forest lands. A major tributary to the North Fork of the Little Naches River is Blowout Creek. Although the North Fork of the Little Naches does not have historical documentation of bull trout presence, it is presumed to be occupied based on direct connectivity to known occupied

habitat (Naches River). A major tributary to the Little Naches River is Bear Creek, including the West Fork of Bear Creek. However, only the mainstem of the Little Naches River and the North Fork of the Little Naches River are proposed for designation.

The three areas where Plum Creek has ownership that can influence the proposed critical habitat would be North Fork of Taneum Creek, North Fork of Little Naches River, and the Little Naches River. Approximate amounts of Plum Creek ownership on these streams is 6 miles, 3.5 to 4 miles, and 1.5 miles, respectively.

The North Fork of the Taneum has presumed occupancy and is within the Taneum Potential Local Population and its intended function would be spawning and rearing habitat. The North Fork of the Little Naches River and the Little Naches River within Plum Creek ownership have also been identified as part of the Naches Potential Local Population.

There is no other proposed critical habitat on Plum Creek Cascades HCP lands. In areas along Kaches, Cle Elum, and Keechelus Lakes, there is a strip of government ownership (Bureau of Reclamation) separating the remaining Plum Creek ownership from the lakes.

3) What PCEs are covered by the plan and how effective is the plan at meeting the specific PCE criteria?

See Attachment 1 (PCE analysis).

4) Describe specific restoration and improvement goals, actions, or standards included as part of the plan:

The Plum Creek Central Cascades HCP is expected to contribute effectively toward bull trout recovery. Riparian buffers and road system management are key components in this HCP. Road system management is addressed through a combination of watershed analysis and prescriptions for aquatic and terrestrial species.

The HCP is designed to conserve riparian forests, and thereby address shade, detritus, nutrient cycling, large-wood recruitment, bank stability, and sediment filtration. Thereby, the HCP is expected to improve water quality and provide for pools and complex habitat features. It is also designed to prevent management-related hill-slope instability, road-generated sediment delivery, and address hydrological maturity of rain-on-snow subbasins. The HCP prescriptions for riparian and wetland areas, as well as seeps and springs, focus on meeting the needs of aquatic and terrestrial species. The HCP maintains 200-foot buffers on streams with fish and 100-foot buffers on the majority of streams providing perennial flow. All perennial streams in the Yakima and Naches basins will receive the 100-foot buffers and seeps and springs will be protected. The HCP contains specific prescriptions and monitoring designed to meet the needs of bull trout. The HCP road program is designed to minimize road building activity, minimize disruption of natural hydrologic flow patterns, restrict side casting during construction to prevent the introduction of sediment into streams and riparian areas, minimize erosion from roads, identify and address roads and associated drainage features that pose a potential risk, close or stabilize unused roads, and use the smallest possible right-of-way clearing that allows for safe construction and passage, and road will cross streams at right angles to minimize stream-adjacent parallel roads. Prescriptions for unstable slopes are developed through the watershed analysis

process and its extrapolation. The intent is to identify unstable areas and avoid management activities that could trigger mass-wasting processes. In subbasins within the Rain-on-Snow Zone, watershed analysis prescriptions address the maintenance of sufficient mature forest canopy to avoid peak-flow damage and road-related prescriptions will address the diffuse shunting of water and reducing the potential for roads to accelerate the delivery of water and exacerbate peak-flow problems.

HCP actions are not expected to result in contaminated waters that inhibit reproduction, growth, or survival; instead, they are expected to maintain a high-level of water quality. They are expected to maintain the thermal regime of streams within the range of normal variation and contribute to the maintenance of complex stream channels, appropriate substrates, a natural hydrologic regime, ground-water sources and subsurface connectivity, migratory corridors, and an abundant food base. HCP actions are not expected to introduce or favor nonnative competitors or predators.

This HCP has a strong aquatic monitoring program and adaptive management for aquatic and riparian management. Monitoring efforts focus on aquatic insects, fish populations, stream temperature, and in-stream habitat conditions.

5) Identify the entity responsible for implementing the plan/program and the implementing mechanism (i.e., management plan, MOU/MOA etc.):

An incidental take permit was issued to Plum Creek Timber Company on June 27, 1996, (PRT-808398). The implementation agreement was executed by Plum Creek, National Marine Fisheries Service, and the U.S. Fish and Wildlife Service (Service). In late 1999 the I-90 Land Exchange was completed and the HCP was modified accordingly. In December of 2000, the HCP document was reprinted to account for the land exchange modification as well as other minor modifications that occurred over the first 5 years of the permit. All permit terms and conditions remain in effect and the HCP and associated field manual continue to guide the management of the remaining lands.

6) Identify specific provisions of the program that provide habitat protections or improvements (not just for the listed species, although those should be identified particularly with other habitat based benefits described more generally):

Primary measures are discussed generally under the response to question 4 above. For details regarding prescriptions, refer to Chapter 3 in the December 2000 Habitat Conservation Plan (Attachment 2a). For details regarding monitoring and adaptive management, refer to Chapter 5 in the December 2000 Habitat Conservation Plan (Attachment 2b).

7) Identify instruments memorializing the program and its requirements which may be agreements, standards, management plans, biological opinions, and guidance:

- Central Cascades Habitat Conservation Plan Plum Creek Timber originally printed June 1996, and revised December 2000
- The Implementation Agreement dated June 27, 1996
- Permit PRT-808398 dated June 27, 1996
- Section 7 Biological Opinions written for issuance of the original permit, addition of bull trout

in the Yakima River Basin, addition of bull trout in the Green River Basin, addition of Canada lynx, and the modification of the HCP to accommodate the I-90 Land Exchange.

- The Section 10 Findings for issuance of the Permit, and reassessment of findings conducted for the land exchange and species additions.
- The FEIS and Record of Decision regarding permit issuance, as well as the FSEIS and Record of Decision regarding the modification to accommodate the I-90 Land Exchange.
- Various completed Watershed Analyses

8) Describe the basis for the standards, and whether the Service participated in their design:

The Habitat Conservation Plan was developed by Plum Creek Timber Company in coordination with Service and National Marine Fisheries Service staff who participated in plan development and review. Numerous agencies, tribes, and organizations participated in meetings and preparation or review of 13 technical papers during development of the HCP. Stakeholders also participated in the Watershed analysis process. The plan also underwent numerous public meetings and a public comment period regarding the initial permit issuance, as well as public meetings and a public comment period for the modification to accommodate the I-90 Land Exchange.

The basis of the HCP is to provide for habitat conditions (including water quality) sufficient to meet the needs of the Endangered Species Act, and thereby provide instream salmonid habitat to address species such as bull trout. The Service continues to participate in implementation of this HCP directly with the Company, as well as through involvement of State Forest Practices staff. The Service also conducts compliance monitoring of activities and reviews existing habitat conditions.

9) What are the requirements for implementation? (Is it required through regulation, is it required through formalized terms and conditions, is it voluntary, and is it optional? Are some actions required only if a certain predicate is met (if so, be specific)?)

For the incidental take coverage to be in effect, the permittee must comply with the permit terms and conditions, HCP, and implementing agreement. The permittee must also comply with permit regulations found at 50 CFR 13, 17.32, and 17.22. Key conservation measures required by the HCP include: riparian and wetland buffers that should maintain natural processes, road maintenance and abandonment; and identification and avoidance of unstable slopes.

10) What is the consequence of non-compliance? What are the monitoring provisions?

Non-compliance would place the permittee at risk of a permit suspension, revocation, and a take violation if the permittee carried out actions that resulted in unauthorized take of a listed species. Plum Creek submits an annual report each year covering their activities conducted as well as reporting on their monitoring and research activities per Chapter 5 of the HCP.

11) What is the expectation for continued compliance? (If voluntary (compliance not governed by statute or regulations) this should include the length of time that a voluntary program has been implemented since past performance is an indicator of future performance.)

The permit is in effect through June 27, 2046, but may be extended until 2096. It is anticipated that Plum Creek will continue to implement the terms and conditions of their incidental take permit. Provisions of the HCP allow for sale or exchange of lands with certain provisions and categorize potential disposition by conservation sales, partial-permit transfers, or de minimis land sales. De minimis lands sales are limited to only 5 percent of the original ownership and are anticipated to occur outside one of the 7 identified management blocks. Terms of the HCP require that the Service be notified and approve of any modification of the permit.

To date, Plum Creek has met their obligations under the HCP. The Plum Creek Central Cascades HCP submits annual reports that are available at the Service's Washington Fish and Wildlife Office. The Service conducts compliance monitoring of activities carried out under this HCP. Plum Creek has been conducting effectiveness monitoring and research and includes the results of those efforts within the annual reports.

Part B: Benefits Analysis

Benefits of the Plum Creek Central Cascades HCP:

The Plum Creek Central Cascades HCP, approved in 1996, addresses forest management and timber harvest across approximately 170,000 ac (now reduced to 89,000 acres) of the company's Washington timberlands located in the central Cascades in King and Kittitas Counties. Plum Creek owns lands along the North Fork of the Taneum, North Fork of the Little Naches, and Little Naches River.

The HCP provides conservation for riparian and wetland areas, and unstable slopes. It addresses ongoing and past road-related problems. Impacts of timber harvest and associated roads are fully minimized and mitigated and overall the HCP contributes to recovery of the covered species. The Plum Creek HCP addresses forestry and is expected to protect all of the PCEs in all streams. PCEs need not be present for the protective measures of the HCP to apply. Specifically the HCP provides appropriate management for PCEs through:

- Riparian buffers are designed to address large-woody-debris recruitment, bank stability, shade, sediment filtration, nutrient cycling, and detrital inputs;
- Management of existing and future roads, and addressing on-going and past road-related problems, will provide fish passage, minimize hydrologic disruption, and will reduce delivery of fine sediment;
- Unstable hillslopes will be identified and activities that would increase the frequency or severity of slope failure or would alter the natural input of large woody debris, gravel, or fine sediment will be avoided;
- Wetlands protection and hydrological maturity will maintain natural water flow and vegetation, and protect surface and subsurface connectivity.

The HCP and associated biological opinions and findings highlighted the areas which are

important to bull trout on the HCP landscape. Through their development of this HCP and the Native Fish HCP, Plum Creek displayed it was well-aware of the value of various stream reaches for the conservation of bull trout. In addition, this HCP involved the development and accumulation of important biological information that would otherwise be unavailable. This HCP was the pioneering HCP in the application of adaptive management and has thus improved all the HCPs that followed. The information being generated by this HCP applies to many other species, not just bull trout. This HCP has educated many people regarding the needs of stream habitats by understanding the ecological processes that develop, maintain, or degrade these habitats. This HCP has been a pioneer effort in this learning process.

The Plum Creek HCP provides conservation benefits that address and benefit multiple species and address environmental concerns across broad landscapes, regardless of occupancy by bull trout. The HCP addresses over 300 other species. The HCP provides conservation beyond what could be achieved through parcel-by-parcel avoidance of take, or through multiple section 7 consultations. The HCP results in more benefit than those provided under sections 7 and 9 of the Endangered Species Act due to a diversity of actions undertaken through the HCP, including proactive restoration and remediation of existing road-related problem areas, and additional voluntary actions.

Benefits provided by the proposed critical habitat designation in areas currently covered by the Plum Creek Cascades HCP:

Given the existence of the Plum Creek Central Cascades HCP, to what degree are the benefits of including the area in the final designation still relevant?

The HCP provides additional protections to stream and wetland systems adjacent to or that flow through Plum Creek's covered lands. By entering into the HCP agreement, Plum Creek and the Service have committed to long-term partnership with the goal of managing aquatic systems for species covered by the HCP including bull trout. The HCP is designed to conserve riparian forests and the aquatic ecosystems which depend on them. This partnership will have the added effect of facilitating landscape management by Plum Creek and interspersed Federal lands. In light of this, and the limitations on the benefits of designation (the need for a Federal nexus; the fact that critical habitat designation can at most prohibit effects to habitat that adversely affect bull trout conservation, but not require habitat restoration; and the overlap with the protection provided by the jeopardy prohibition), the Service analyzed the following issues with respect to the regulatory benefits of designation.

First, what Federal actions would be (a) covered by the terms of the HCP, (b) consistent with HCP requirements, and (c) still destroy or adversely modify critical habitat?

No known Federal permits other than road-access agreements or tail-hold permits are anticipated that would be covered by the terms of the HCP and would be consistent with the requirements of the HCP to manage HCP lands to conserve riparian forests. Actions taken by Plum Creek are unlikely to require approvals by a Federal agency. However, should these situations arise, the HCP has analyzed the effects these actions would have on bull trout and bull trout habitat. Yet, it may still be necessary to conduct additional section 7 analysis at the time of application for such additional individual permits. Based on the terms of the HCP, discussed above, and the Service's current understanding of the habitat needs of bull trout, the Service has determined that it is highly unlikely that such a Federal action would adversely modify bull trout critical habitat

if it were designated. This is our assessment because these HCP-covered actions, which may require a Federal consultation, have been designed to promote bull trout recovery in the HCP area.

Second, what Federal actions might take place that are not addressed by the HCP?

It is possible that there are some Federal actions that could take place on lands covered by the HCP. In some instances, Plum Creek lands are adjacent to or intermingled with U.S. Forest Service lands. Because of the scrutiny on this landscape by recreationalist, many Federal actions will be carefully conducted in the central Cascades. However, some areas, such as those in the Taneum and Manastash drainages, are subject to intense off-road vehicle use that does not remain on trails and riders often seek wetland and meadow areas for “mudding”. These uses also lead to self-constructed latrines, often in riparian areas, and other indirect effects to fish and wildlife. The interspersed ownership also results in some of these unauthorized activities occurring on Plum Creek ownership, such as motorized off-road vehicles and unauthorized firewood cutting in riparian zones. In some cases, people may hold a firewood cutting permit from the Forest Service, but failed to recognize land ownership boundaries or riparian areas. These activities have the potential to influence aquatic conditions upon which bull trout would depend. Also, future Federal restoration projects; timber-management actions; and road building, decommissioning, maintenance, and repair projects could be proposed by the Forest Service over the term of the Plum Creek Cascades HCP. These projects could affect Plum Creek lands or Plum Creek could be a partner to such actions especially restoration activities or road-related projects.

HCP lands are bordered by several main highways and it is likely that these roads will undergo some level of construction, widening, or realignment funded by Federal dollars over the 50-year HCP term. However, there are few areas where highways are immediately adjacent to HCP lands, and no areas where highways are immediately adjacent to streams that are proposed for designation, and therefore these lands are highly unlikely to be affected by such construction activities.

Although it is not possible for us to predict with any confidence what Federal actions are likely to occur over the next 50 to 100 years, we think it is unlikely that any such major projects will occur over the life of the permit. Therefore, we conclude at this time that designation of this area as critical habitat is unlikely to provide any significant conservation benefits with respect to Federal actions not covered by the HCP. It does not appear that designation of Plum Creek lands could provide any additional education to Federal agencies as we are currently proposing to designate critical habitat on Federal lands in those areas which would have a more direct education benefit. Other mechanisms would be more effective at working cooperatively with the Forest Service so that they might better address dispersed recreation and other associated effects. Therefore, we see little benefit to designating critical habitat on Plum Creek land. If it appears later in the life of the HCP that conclusions in this respect may change, we can consider revising critical habitat at that time.

Third, what assurances are there that the protection of will be maintained?

The permit is in effect through at least 2046 unless it was to be discontinued sooner. It is anticipated that Plum Creek will continue to implement the terms and conditions of their incidental take permit, since they want to manage their otherwise lawful timber operations and receive assurances that they remain in compliance with section 9 of the Act. If the permit is

terminated or revoked, Plum Creek agrees to provide post-termination mitigation according to the Implementation Agreement. Provisions of the HCP also allow for sale or exchange of lands with certain restrictive provisions. But these provisions are not anticipated in the areas proposed for designation unless the permit would continue to be applied to those lands or the sales would be for conservation purposes.

Other benefits of designation:

Little additional educational benefit is expected to be derived from designating the Taneum and Naches portions of the Plum Creek HCP as critical habitat. Although some additional education may influence the dispersed recreation and the resulting impacts of those activities, there would be minimal benefit beyond the educational benefit associated with designating Federal lands in those areas. Since the HCP is required to monitor and report on the effectiveness of the Plan, which is available to the public, the HCP already provides for some education to the interested parties and agencies which read those reports. Critical habitat has no such reporting requirement. In addition, in order to increase public understanding of critical habitat, we will show all waterbodies determined to be essential habitat for bull trout in the final critical habitat designation. To display narrative exclusions, we will show the boundaries of those land ownerships or entities that are excluded from the critical habitat regulations, relative to these waterbodies.

Benefits of excluding affected areas from critical habitat:

We identified a number of possible benefits of excluding the area covered by the Plum Creek HCP from critical habitat designation. First, to the extent designation would provide any additional protection of bull trout habitat, costs associated with that protection would be avoided. Second, exclusion would reduce largely redundant administrative costs of section 7 consultation; as discussed, these costs are unlikely to lead to additional actual protection for bull trout habitat. Third, exclusion would provide an incentive for participation in the development of new HCPs. This has already been demonstrated by this particular permittee who since completing the original Cascades HCP has become party to other HCPs and similar agreements in five or more other states addressing a variety of species. Fourth, exclusion would help to foster an atmosphere of cooperation in the conservation of endangered species. This particular permittee has provided conservation measures over and above those required by the HCP when requested by Federal and State biologists so as to further enhance species conservation.

As we have concluded that there is little likelihood of a significant Federal action causing adverse modification of the HCP lands, subject to the qualifications and limitations discussed above, exclusion of the HCP lands from critical habitat is unlikely to provide a section 7 applicant with a benefit in terms of avoiding the costs of additional conservation measures. Existing HCPs are provided with No Surprises assurances. However, designation of the HCP lands would impose the requirement for consultation which may help educate certain Federal agencies about the importance of bull trout critical habitat. The designation would also initiate a technical requirement of consultation under the adverse modification standard, requiring reinitiation of consultation on the Service's issuance of the incidental take permit associated with the HCP. This would require the Service to conduct additional analyses, but would not be likely

to place any additional process burden on the HCP Permittee. Only in the event of Jeopardy could the permit be revoked. Additional mitigation may be required in the event of extraordinary circumstances as defined by the HCP. Designation would also require additional analysis in consultations on any future Federal actions. Therefore, avoiding the additional expense (on the part of Service, the action agency, and the applicant) associated with those consultations is a benefit of exclusion.

A benefit of excluding the HCP from critical habitat designation includes relieving landowners, communities, and counties from any additional regulatory burden and costs associated with the preparation of section 7 documents related to critical habitat. The costs of these additional documents and the associated analyses to the Service may be more than minor. In addition, there may be resulting delays which generate very real costs to private landowners in the form of opportunity costs as well as direct costs. There would be increased costs and staffing requirements as consultations would be more extensive with a critical habitat designation thereby increasing costs associated with producing biological assessments and biological opinions.

In this instance, critical habitat is proposed for potentially occupied areas, areas that in the future may be subject to a jeopardy analysis for the species, it is anticipated this increase in section 7 workload would be minimal. The HCP provides substantial protection to the ecosystem as a whole, which may contribute to the conservation of a number of species, including bull trout. By providing conservation measures in habitat not currently occupied by bull trout, the HCP includes streams and habitats outside of critical habitat that contribute to bull trout recovery, including habitats suitable for future occupancy by bull trout and other species.

Because the HCP lands are adjacent to other commercial timberlands, there may be costs associated with designating areas as critical habitat based upon the perceptions and reactions of adjacent landowners. We do anticipate that designating critical habitat on HCP lands may lead to diminishing the real or perceived economic value of the HCP lands.

In addition to the direct regulatory effect of critical habitat designation, there are very important indirect effects of designation (or the decision not to designate). The exclusion of HCP lands from critical habitat designations is an important incentive for participation in the HCP program; on the other hand, failure to exclude HCP lands could undermine the conservation benefits provided by the HCP program, and, more generally, the partnerships required to conserve most listed species.

Partnerships with nonfederal parties are crucial to the conservation of many listed species. One of the key vehicles for such conservation partnerships is the HCP program, in part because of the potential breadth of its scope. There are few limitations on the geographic scope or breadth of activities for potential conservation measures in HCPs. A robust and comprehensive HCP can provide more conservation than is required to avoid adverse modification of critical habitat in a section 7 consultation. This HCP provides research and education programs that provide benefits beyond the habitat protection or management provisions of the HCP. In contrast, although it is an important component of the ESA, section 7 consultation is more limited. Section 7 only applies to Federal actions; therefore, its application may be concentrated on, although not limited to, Federal lands, as many activities on private lands do not involve Federal action.

Moreover, HCPs can address habitat conservation on a very large scale, addressing ecosystems and a wide variety of the species in them, whether listed or not. The Service's experience suggests that large-scale HCPs provide more comprehensive, and therefore more effective, protection to listed species as well as species that might otherwise require listing in the future. In this particular case, Plum Creek is committed under its HCP to manage its entire ownership while meeting the habitat needs of over 300 covered species. Large-scale HCPs in effect become regional conservation plans that are consistent with the recovery objectives for listed species that are covered within the plan area. Large-scale HCPs can also provide an important forum for exchanging information and developing relationships with additional entities that can affect the conservation of species. For example, we participate in various forums with other stakeholders involved in this HCP; this allows for the sharing of information and development of relationships with a number of other entities, including State agencies and Tribes. These educational opportunities build community support for HCPs and helps convey to the public the requirements of bull trout and their conservation needs.

HCPs can provide other important conservation benefits, including the development of important biological information needed to guide conservation efforts and assist in species conservation outside the HCP planning area, and the creation of innovative solutions to conserve species that can be applied wherever similar needs exist, irrespective of land ownership.

Finally, HCPs provide a more cooperative framework for engaging the broader public in endangered species conservation. For example, the Plum Creek HCP also facilitates cooperative activities with other similarly situated forest landowners. The completion of the Plum Creek HCP served as a model for similar HCPs being developed with forest landowners. Continued cooperative relations with Plum Creek are expected to influence other future partners and lead to greater conservation than would be achieved through multiple section 7 consultations.

The conservation benefits resulting from this collaborative approach are built upon a foundation of mutual trust and understanding. It takes considerable time and effort to establish this foundation, which is one reason it often takes several years to develop a successful HCP. Thus, HCPs both depend on and foster an atmosphere of cooperation with respect to species conservation.

Nonfederal landowners are motivated to work with the Service collaboratively to develop voluntary HCPs because of the regulatory certainty provided by an incidental take permit under section 10(a)(1)(B) of the Act with the No Surprises Assurances. Although the HCP process can be complex and time-consuming, the perceived benefit to landowners in undertaking this extensive process is the resulting regulatory certainty, which translates into real savings for private land owners, savings in both opportunity costs as well as direct savings and avoided costs.

Designation of critical habitat on HCP lands undermines the certainty that the HCP proponents are seeking. A failure to exclude HCP lands could be viewed as the Service retreating from its previous position as to the adequacy of the conservation measures in the HCP, undermining the Service's credibility in future interactions with potential partners. Designation of critical habitat within the boundaries of already approved HCPs is also viewed as a disincentive by other entities currently developing HCPs or contemplating them in the future because it implies potential additional regulation after conservation measures needed for the species have already been

agreed to. In discussions with the Service, HCP permittees have indicated they view critical habitat designation as an unnecessary additional intrusion on their property, and an erosion of the regulatory certainty provided by their incidental take permit and the No Surprises Assurances. Because the Service would be required to reinitiate Section 7 consultation with itself if critical habitat is designated on our action of issuing a Section 10(a)(1)(B) permit, the permittees are concerned that the Service could use this as an excuse to request new conservation measures for the bull trout even though we have existing agreements already in place. In reality, the No Surprises assurances would prevail unless (1) there was grounds for permit revocation which would entail that continuation of the permit would appreciably reduce the likelihood of the survival and recovery of the species in the wild, or (2) there was grounds to require additional mitigation which would depend on how unforeseen circumstances or extraordinary circumstances were defined in the HCP and what measures were preserved or identified for such occasion.

Failure to exclude HCP lands from critical habitat could reduce the conservation value of the HCP program in several ways. First, parties may be less willing to participate in large, regional HCPs, preferring instead to address any possible take on a project-by-project basis. Second, in any given HCP, applicants may reduce the amount of protection to which they are willing to agree, in effect holding some additional protective measures “in reserve” for use in any future discussions to address critical habitat. Third, without the incentive of exclusion from critical habitat, some potential applicants, particularly (1) those whose actions may, but are not certain to take listed species, and (2) those against whom enforcement for any take that does occur may be difficult, may decide not to seek an incidental take permit at all. Although the reality of section 9 liability will prevent the HCP program from being devitalized by a failure to exclude HCP lands from critical habitat designations, the HCP program is such an important tool in endangered species conservation that any decrease in its efficacy could have profound effects.

Excluding HCP lands from critical habitat provides permittees with the greatest possible certainty, thereby helping foster the cooperation necessary to allow the HCP program to achieve the greatest possible conservation benefit. Thus, excluding the lands covered by the Plum Creek Cascades HCP improves the Service’s ability to enter into new partnerships. Permittees who trust and benefit from the HCP process discuss the benefits with others who may become future HCP participants, such as States, counties, local jurisdictions, conservation organizations, and private landowners. New HCPs will result in implementation of conservation actions that we would be unable to accomplish otherwise.

Plum Creek Central Cascades HCP balancing

As discussed above, it is possible, although unlikely, that any Federal action will be proposed that would be likely to destroy or adversely modify the habitat proposed as critical within the area governed by the Plum Creek Cascades HCP. If such a project was proposed, due to the specific way in which jeopardy and adverse modification are analyzed for bull trout, it would likely also jeopardize the continued existence of the species. In addition, as discussed above, we expect that the benefit of informing the public of the importance of this area to bull trout conservation would be slight given we will be displaying essential habitat that is excluded. Therefore, we assign relatively little weight to the benefits of designating this area as critical habitat.

The benefits of encouraging participation in HCPs, particularly large-scale HCPs, and helping to foster cooperative conservation are indirect benefits. In spite of the fact these are indirect benefits, enthusiastic HCP participation and an atmosphere of cooperation are crucial to the long-term effectiveness of the endangered species program. Therefore, we assign great weight to these benefits of exclusion. To the extent that there are regulatory benefits of including, there would be associated costs that could be avoided by excluding the area from designation. However, as we expect the regulatory benefits to be low, we likewise give little weight to avoidance of those associated costs, as well as the additional transaction costs related to section 7 compliance.

Therefore, we have determined that the benefits of inclusion of the areas covered by this HCP are small, while the benefits of exclusion are more significant. Therefore, the benefits of exclusion outweigh the benefits of inclusion. Because we anticipate that little if any conservation benefit to the bull trout will be foregone as a result of excluding these lands, the exclusion will not result in the extinction of the bull trout. The Secretary exercises his discretion under section 4(b)(2) to exclude these areas from the designation (see comprehensive discussion in “Exclusions” section in the proposed rule).

Attachment 1 (PCE Analysis for Plum Creek Central Cascades HCP)

PCE #1: “Springs, seeps, groundwater sources, and subsurface water connectivity (hyporheic flows) to contribute to water quality and quantity and provide thermal refugia.”

The HCP protects surface and subsurface water connectivity through a variety of diverse mechanisms. Springs and seeps that result in perennial or intermittent channels may be addressed through those conservation provisions. All perennial streams are protected with riparian buffers. Buffers are measured from the outside of channel disturbance zones. Intermittent streams are often buffered through provisions for inner gorges or through watershed analysis.

The HCP addresses wetlands and hydrological integrity and connectivity. The HCP addresses forested and nonforested wetlands. Wetland, seep, and spring prescriptions throughout the HCP area will protect water quality and hydrologic integrity and connectivity. Roads will avoid disrupting surface and ground-water flows. Equipment exclusions surrounding wetlands will also help protect hydrology.

PCE #2: “Migration habitats with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and freshwater and marine foraging habitats, including but not limited to permanent, partial, intermittent, or seasonal barriers.”

The HCP contains measures to ensure water quality and quantity that would address a barrier-free environment for bull trout. Roads will be managed in a manner that does not contribute to the formation of barriers and remediation will address existing barriers.

PCE #3: “An abundant food base including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and/or forage fish.”

The HCP maintains the natural hydrology and riparian functions of large wood input, shade, bank stability, detrital inputs, as well as natural functions of flood plains and unstable slopes. It is expected to fully address the aquatic environment necessary to provide a healthy food base within the constraints of the natural system.

PCE #4: “Complex river, stream, lake, reservoir, and marine shoreline, and processes that establish and maintain these aquatic environments, with features such as large wood, side channels, pools, undercut banks and substrates, to provide a variety of depths, gradients, velocities, and structure.”

The HCP addresses the need for complex habitat by providing buffers along streams and wetlands that are expected to contribute to large woody debris recruitment and maintain stream bank integrity. The HCP also addresses sediment which has the potential to simplify and degrade instream habitat conditions. The HCP also focuses on maintaining mass-wasting and erosional processes within natural regimes. The HCP, through watershed analysis, includes provisions to manage forest cover in the rain-on-snow subbasins.

PCE #5: “Water temperatures ranging from 2 to 15 °C (36 to 59 °F), with adequate thermal refugia available for temperatures that exceed the upper end of this range. Specific temperatures within this range will depend on bull trout life-history stage and form; geography; elevation; diurnal and seasonal variation; shading, such as that provided by riparian habitat; streamflow; and local groundwater influence.”

Stream temperature is a complicated issue and is addressed in the HCP through a number of avenues including buffers that provide shade, road-management practices that avoid sedimentation, and maintenance of natural hydrologic regimes that contribute cool water to streams.

The buffers on streams and wetlands are expected to provide natural levels of shade to avoid increasing sunlight which could result in stream warming. Road and wetland prescriptions are expected to maintain natural hydrological regime so that streams are not abnormally dry during periods of the year when this could exacerbate warming problems. Stream buffers and road standards also address sediment delivery, which in turn will avoid artificial filling of pools which could lead to increased stream warming.

PCE #6: “In spawning and rearing areas, substrate of sufficient amount, size, and composition to ensure success of egg and embryo overwinter survival, fry emergence, and young-of-the-year and juvenile survival. A minimal amount of fine sediment, generally ranging in size from silt to coarse sand, embedded in larger substrates are characteristic of these conditions. The size and amounts of fines suitable to bull trout will likely vary from system to system.”

The HCP addresses the need for natural substrates in a wide variety of ways. Reducing road-generated, fine sediment is a major focus. Considerable focus is placed on road maintenance, repair, and improved construction standards. In addition, road remediation of existing road-related problems is a major component of the HCP. The HCP strives to keep slope failures at natural levels, which serves to reduce the delivery of fine sediments, but also recognizes the contribution of these processes to supplying gravel needed for substrates. Once material has been delivered to the stream, it depends on large woody debris and other channel features to sort substrate by particle size. The HCP addresses bank stability and large wood recruitment which should help store fine sediment and provide for suitable substrates for bull trout spawning. The HCP includes provisions to manage forest cover in the rain-on-snow subbasins.

PCE #7: “A natural hydrograph, including peak, high, low, and base flows within historic and seasonal ranges or, if flows are controlled, they minimize departures from a natural hydrograph.”

The HCP includes provisions to manage forest cover in the rain-on-snow subbasins to maintain normal storm flows. The HCP is expected to maintain floodplains and wetlands in a manner that retains the functions of the hyporheic zone and off-channel habitats. Road management is designed to disconnect ditches (and ground water intercepted by roads) from the stream system to reduce delivery of sediment, but also to slow the delivery of storm-related run-off and reduce the contribution to peak flows. Ditch water and road run-off is diffusely shunted onto the forest floor.

PCE #8: “Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.”

As discussed above, both water quality and quantity are addressed through a variety of mechanisms. In addition to protecting the natural hydrograph and addressing sediment and temperature, the HCP will result in a minimal amount of chemical introduction into surface waters.

PCE #9: “Nonnative predatory (e.g., lake trout, walleye, northern pike, smallmouth bass); interbreeding (e.g., brook trout); or competing (e.g., brown trout) species that, if present, are at sufficiently low levels of occurrence or adequately temporally and spatially isolated.”

The HCP is not expected to contribute to the spread of deleterious aquatic species. Provisions of the HCP that protect the natural environment should assist native fish in maintaining a competitive advantage when that is possible. The Service maintains the ability to request Plum Creek not address passage blockages where such projects would negatively affect bull trout by making additional habitat available to deleterious species.

SUMMARY

We assessed Plum Creek Central Cascades HCP with respect to the primary constituent elements for bull trout critical habitat. HCP actions should not result in contaminated waters that inhibit reproduction, growth, or survival; instead, they are expected to maintain a high-level of water quality. They are expected to maintain the thermal regime of streams within the range of normal variation, contribute to the maintenance of complex stream channels, appropriate substrates, a natural hydrologic regime, ground-water sources and subsurface connectivity, migratory corridors, and an abundant food base. HCP actions are not expected to introduce or favor nonnative competitors or predators.

PLUM CREEK AND STIMSON LUMBER NATIVE FISH HABITAT CONSERVATION PLANS

Part A: Plan/Program Description and Analysis

1) Brief Overview of the Plum Creek and Stimson Lumber Native Fish Habitat Conservation Plans:

Plum Creek Timber Company initiated an effort in 1997 to develop a conservation strategy for native salmonids (including bull trout) in Montana, Idaho, and Washington. The stated purpose of the Plum Creek Native Fish Habitat Conservation Plan (NFHCP) was to help conserve native salmonids and their ecosystems while allowing Plum Creek to continue to conduct commercial timber harvest within a framework of long term regulatory certainty and flexibility. Plum Creek submitted an application for an incidental take permit as authorized under section 10(a)(1)(B) of the ESA of 1973, as amended. In September, 2000, the Final EIS was published for the proposed permit and the NFHCP was accepted (Plum Creek 2000). This NFHCP provided Plum Creek with a permit authorizing the take of federally listed species in the NFHCP for 30 years. The Incidental Take Permit from the Service was issued on October 24, 2000, and from the National Marine Fisheries Service on November 20, 2000. In 2001 all covered lands in Washington were relinquished due to land transfer and associated concerns. The Stimson Lumber Kootenai Lands HCP (KLHCP) was created in 2003-2004, when Stimson Lumber Company acquired certain lands previously owned by Plum Creek and assumed all of the applicable NFHCP commitments. Because of the commonality, for purposes of this discussion, the Plum Creek NFHCP and Stimson KLHCP are considered one and the same. In 2005, Plum Creek relinquished remaining holdings in Idaho (per the agreed to HCP provisions). In 2008, the Montana Legacy Project began to phase in a three-phased purchase of HCP-covered lands from Plum Creek. The first two phases were completed, with the third phase scheduled to occur in December, 2010. Most Plum Creek lands sold to the Nature Conservancy will ultimately be transferred to State and Federal ownership, and although they will no longer be covered under the HCP or excluded, they will have some level of conservation protection. In 2010, Stimson relinquished their Bonner Block (Missoula area) lands from HCP coverage.

2) Describe the area covered by the program and the specific habitats affected/protected/improved (with emphasis on the areas proposed as CH):

The NFHCP and KLHCP covered approximately 1.4 million acres, all within the range of the Columbia River basin and mostly (95 percent) within Western Montana in the Clark Fork and Kootenai River drainages. The remaining lands were in northern Idaho (5 percent) in the Clearwater River drainage. Some lands originally proposed in Washington and Idaho were ultimately relinquished from HCP coverage. Lands within this NFHCP initially occurred adjacent to approximately 210 miles (338 km) of streams reaches that we identified as meeting the biological criteria and containing PCE's for proposed critical habitat. The existing acreage under current HCP coverage is approximately 1.0 million acres, but due to ongoing transactions the current exact number is difficult to pinpoint.

The areas where Plum Creek or Stimson have significant amounts of land that can influence the proposed critical habitat and own major portions of the proposed critical habitat are concentrated

in the Swan Lake, Blackfoot River, Clearwater River and Lakes (Montana), and Kootenai River core areas. Ownership in these areas is often checkerboarded, but substantial portions of specific tributaries hosting local populations of bull trout occur in all of these core areas.

Currently, the HCPs cover lands bordering about 107 miles (172 km) of the following streams and lakes in the Clark Fork River Unit 2 that were identified in the proposed rule (USDI 2002) as meeting the requirements for bull trout critical habitat:

Lower Clark Fork River (Subunit 2ii):

- Beatrice Creek – 2.5 miles (4.1 km)
- Fishtrap Creek – 7.2 miles (11.6 km)

Middle Clark Fork River (Subunit 2iii):

- Fish Creek – 4.5 miles (7.2 km)

Flathead River (Subunit 2vi):

- Swift Creek – 5.3 miles (8.5 km)

Swan River (Subunit 2vii):

- Swan River – 3.3 miles (5.4 km)
- Woodward Creek – 2.0 miles (3.3 km)
- So. Fk. Woodward Creek – 1.0 mile (1.7 km)
- Goat Creek – 1.5 miles (2.4 km)
- Squeezer Creek – 2.8 miles (4.6 km)
- Lion Creek – 2.7 miles (4.3 km)
- Piper Creek – 1.2 miles (1.9 km)
- Jim Creek – 3.6 miles (5.9 km)
- Cold Creek – 4.3 miles (7.0 km)

Blackfoot River (Subunit 2x):

- Blackfoot River – 6.5 miles (10.6 km)
- Daisy Creek – 2.8 miles (4.5 km)
- Gold Creek – 10.0 miles (16.1 km)
- West Fork Gold Creek – 6.4 miles (10.4 km)
- Belmont Creek – 8.5 miles (13.7 km)
- Cottonwood Creek – 6.8 miles (11.1 km)

Clearwater River (Subunit 2xi):

- Clearwater River – 4.1 miles (6.7 km)
- Owl Creek – 3.2 miles (5.2 km)
- Deer Creek – 7.1 miles (11.4 km)
- West Fork Clearwater River – 9.2 miles (14.8 km)

The HCPs also cover lands bordering about 29 miles (47 km) of the following streams and lakes in the Kootenai River Unit 3 that were identified in the proposed rule (USDI 2002) as meeting the requirements for bull trout critical habitat:

- July Creek – 0.7 mile (1.1 km)

Fisher River – 28.2 miles (45.5 km)

The NFHCP coverage for lands owned by Plum Creek (originally bordering about 68 miles (110 km) of streams and lakes in the Clearwater River Unit 15 that were identified in the proposed rule (USDI 2002) as meeting the requirements for bull trout critical habitat, were relinquished by Plum Creek in 2005. HCP lands no longer occur in the Lochsa River Subunit.

3) What PCEs are covered by the plan and how effective is the plan at meeting the specific PCE criteria?

See Attachment 1 (PCE analysis).

The following is a summary of the commitments made in the Plum Creek NFHCP and Stimson KLHCP:

General Environmental Commitment

EP1: Environmental Principles Commitment.

Plum Creek commits to continue practicing forestry according to its 11 Environmental Principles. (pages 1-14). Stimson commits to their own standard of following “sustainable forestry principles.”

Road and Upland Management Commitments

R1: Best Management Practices (BMP) Compliance.

Specifies that State Best Management Practices are a rigorous starting point for implementing additional measures. (pages 2-6)

R2: New Road Construction.

Requires “enhanced BMP” standards when constructing new logging roads. (pages 2-7)

R3: Road Condition Tracking.

Use of a GIS database layer to track status and condition of roads provides a comprehensive system for road management. (pages 2-10)

R4: Road Condition Inspections.

Inspection of roads updates the road database and identifies those places that require attention. (pages 2-12)

R5: Upgrade of Old Roads.

Commits to a time frame for upgrading all old roads to enhanced BMP standards. (pages 2-13)

R6: Hot Spot Treatments.

Provides a mechanism for identifying and prioritizing special treatment for critical problem areas (hot spots) on roads with lingering effects from past management activities. (pages 2-15)

R7: Abandonment of Surplus Roads.

All roads no longer needed will be identified and abandoned. (pages 2-16)

R8: Periodic Re-Inspection and Maintenance.

Roads will be re-inspected on specified intervals and maintained as needed to preserve BMP function. (pages 2-17)

R9: Road Sediment Delivery Analyses.

A technical approach for calculating erosion from road surfaces will be performed for selected watersheds during the first decade. (pages 2-19) These have all been completed.

R10: Poaching Mitigation.

A road management plan to reduce fish mortality from poaching will be developed. (pages 2-20)

R11: Road Restrictions.

Provides for restricting public access to newly constructed roads and managing road restrictions for other roads using a road database. (pages 2-21)

R12: Papoose Creek Landslide Assessment.

Commits to the development of a watershed specific landslide assessment in Papoose Creek and an action plan associated with it. This watershed is in Idaho. The assessment was done before the relinquishment; but it never applied to Stimson who did not own HCP lands in Idaho.

Riparian Management Commitments**Rp1: State Riparian Rules As A Basis.**

Applies State Riparian Rules as a base prescription for riparian areas. (pages 3-7)

Rp2: High Sensitivity Channel Migration Zone (Tier 1).

Provides for extra tree retention and wider streamside management zones along stream reaches with the highest sensitivity to management in bull trout spawning watersheds. (pages 3-12)

Rp3: Moderate Sensitivity Channel Migration Zone (CMZ) (Tier 1).

Provides for extra tree retention and wider streamside management zones along stream reaches with a moderate sensitivity to management in bull trout spawning watersheds. (pages 3-14)

Rp4: High and Moderate Sensitivity CMZs (Tier 2).

Provides for extra tree retention and wider streamside management zones along stream reaches with a high or moderate sensitivity to management in all other watersheds. (pages 3-16)

Rp5: High Sensitivity Streams Without CMZs (Tier 1).

Specifies a no-harvest restriction zone along confined stream channels that are sensitive to management in bull trout spawning watersheds. (pages 3-17)

Rp6: Other Perennial Fish-Bearing Streams.

Specifies additional conservation guidance for all other fish-bearing streams. (pages 3-18)

Rp7: Headwater Streams Both Perennial and Connected.

Describes streamside management zone requirements for non fish-bearing perennial streams. (pages 3-19) Applies to Idaho streams – so is no longer applicable to Plum Creek and never applied to Stimson.

Rp8: Interface Caution Areas.

Extends additional tree retention and other restrictions beyond the riparian area to provide additional conservation. (pages 3-22)

Rp9: Riparian Harvest Deferrals.

Harvest in streamside riparian stands is deferred for the first decade in seven watersheds. (pages 3-24) None of the deferred watersheds are on Stimson lands.

Range Management Commitments (These do not apply to Stimson who has no HCP lands that are grazed.)

G1: Grazing BMPs.

Requires grazing leaseholders to perform range management planning and implement Plum Creek Grazing BMPs in grazing lease areas on Plum Creek lands. (pages 4-6)

G2: Grazing Enclosures.

Provides for fences to exclude cattle from selected stream reaches in highly impacted grazing areas. (pages 4-6)

G3: Evaluate Long-Term Effectiveness of Plum Creek's Grazing BMPs.

Establishes a monitoring strategy and a rigorous scientific study for evaluating the effectiveness of restoring riparian function in grazing areas. (pages 4-8)

G4: Status of Vacated Leases.

Specifies riparian health criteria that must be met before a vacated lease may be re-leased. (pages 4-8)

G5: Rancher Training.

Provides for training of ranchers and Plum Creek personnel in grazing BMPs. (pages 4-9)

Land Use Planning Commitments**L1: Land Use Principles.**

Specifies use of Plum Creek Land Use Principles as a guide for land use planning. (pages 5-4)

L2: Federal Agency and Not-For-Profit Conservation Organization Dispositions.

Incentives are provided to find public conservation buyers for lands that may be sold. (pages 5-6)

L3: Conservation Dispositions and Selling Away of Development Rights.

Incentives are provided to find private conservation buyers for lands that may be sold, or to keep the land in commercial forestry and sell away the rights to develop the land. (pages 5-7)

L4: Restricted Disposition - Land Use Conservation Areas.

Where conservation sales are not possible, a specified set of land use restrictions would be required on some lands and encouraged on others if the land were to be sold. (pages 5-8)

L5: "Conservation Neutral" Dispositions.

Incentive is provided, if selling land, to pass along NFHCP commitments. (pages 5-10)

L6: Unrestricted Dispositions.

Lands sold without any restrictions are limited and can only occur in certain places without requiring a permit amendment. (pages 5-11)

L7: Land Acquisitions.

An incentive is provided when purchasing land to apply conservation measures and include in the NFHCP. (pages 5-11)

L8: Land Exchanges.

Land exchanges are encouraged as an alternative to selling lands. (pages 5-12)

L9: Proportionality Balance.

Requires reporting of land sales according to a point system that calculates the net conservation certainty outcome of land transactions. (pages 5-14)

Legacy and Restoration Commitments**Lg1: Assessment - Riparian Condition Survey.**

Provides for a survey of all key migratory rivers for restoration opportunities. (pages 6-3) This was completed before Stimson acquired any HCP lands

Lg2: Implementation - Riparian Vegetation Restoration.

Restoration projects will be designed and implemented along severely impacted key migratory rivers. (pages 6-4)

Lg3: Monitoring - Riparian Vegetation Restoration.

Provides for monitoring of treated river reaches to determine rate of riparian function restoration and cost effectiveness of restoration projects. (pages 6-5)

Lg4: Engineered Habitat Restoration.

Provides opportunity for cooperative habitat improvement projects, such as addition of large woody debris or boulder placement. (pages 6-6)

Lg5: Diversions.

Provides for development of a plan to manage impacts caused by irrigation diversions on Plum Creek land. (pages 6-7)

Lg6: Brook Trout Suppression in Gold Creek.

A project to remove brook trout using explosives, and determine the benefits of this action to native trout will be conducted. (pages 6-8) This methodology was not permitted by the state of Montana so an alternative needs to be renegotiated. Since this is drainage specific, it does not apply to Stimson.

Lg7: State Fish and Game Enforcement Agreements.

Agreements with fish management agencies will be sought to cooperate on enforcement activities that compliment native fish conservation efforts. (pages 6-9)

Lg8: Watershed Cooperation.

Plum Creek will participate in watershed groups and share information with neighboring

landowners. (pages 6-10)

Administration and Implementation Commitments

A1: Field Implementation Manual.

A field implementation manual for Plum Creek foresters will be written within 3 months of NFHCP initiation. (pages 7-1)

A2: Forester and Contractor Training.

Foresters and key contractors will be trained in NFHCP prescriptions. (pages 7-2)

A3: Logger Certification and Training.

Requires certified logger training for Plum Creek loggers. (pages 7-2)

A4: NFHCP Internal Audits.

Internal audits will be conducted early in the permit period to get the NFHCP off to a good start. (pages 7-3) These have been completed by both Plum Creek and Stimson.

A5: NFHCP External Audits.

Third party audits will be conducted throughout the NFHCP to ensure and document proper implementation. (pages 7-3) These are done at 5-year intervals and during relinquishments. Plum Creek and Stimson have both had an independent audit at their fifth year of implementation.

A6: Metrics and Reporting.

Performance metrics (units of measurement) are defined for each commitment and provisions are made to report to the Services using them. (pages 7-4)

Adaptive Management and Monitoring Commitments

AM1: NFHCP Effectiveness Monitoring and Core Adaptive Management Projects.

Four Core Adaptive Management Projects (CAMPs) will be conducted that will provide the scientific basis for NFHCP effectiveness monitoring. (pages 8-13) Plum Creek will take the lead on conducting these projects; Stimson will assist

AM2: Evaluate And Respond - The NFHCP Implementation Framework.

A framework is provided that evaluates implementation and effectiveness monitoring data against the NFHCP biological goals. If certain conditions are not met, a process is set in motion that results in an appropriate management response. (pages 8-14) If a trigger is tripped in a CAMP project, Plum Creek and Stimson will respond independently but will each follow the adaptive management pathway to respond.

AM3: Changed Circumstances.

Provides for a process to follow and actions to be taken if a fire, flood, or landslide within a pre-determined size range of Plum Creek Lands occurs. (pages 8-25)

AM4: Native Fish Assemblages.

An opportunity is provided for the Services and Plum Creek to collaborate on customized management prescriptions for seven identified watersheds in the Planning Area that have unusual diversity of native fish species. (pages 8-28) Plum Creek has finished the NFA they committed to doing; Stimson NFA is underway

AM5: Landslide Monitoring.

Plum Creek will monitor the occurrence of landslides and report it to the Services along with an assessment of the cause of the landslide. This will provide information for possible cooperative management responses.

AM6: Adding Tier 1 Watersheds.

A procedure is specified whereby additional watersheds may be added to the tier 1 watersheds regardless of the species of fish for which there is a concern. To date, only one additional Tier 1 watershed has been added; that was on Plum Creek lands.

4) Describe specific restoration and improvement goals, actions, or standards included as part of the plan:

The Biological Goals and Objectives of the NFHCP and KLHCP were listed as follows:

Cold Water Goal: Protect stream temperatures where they are suitable for fish and contribute to restoration of temperatures where past Project Area management has rendered them unsuitable.

Objectives: (1) minimize impacts to canopy closure and changes in channel morphology resulting from riparian timber harvest and grazing; (2) improve the ability of riparian vegetative communities to provide canopy closure over streams through passive and active restoration; and (3) create a net increase in canopy closure over streams.

Clean Water Goal: Protect instream sediment levels where they are suitable for fish and contribute to restoration of instream sediment levels where they have been impacted by past Project Area management.

Objectives: (4) minimize sediment delivery to streams resulting from the construction of new roads and timber harvesting; (5) reduce sediment delivery to streams from existing roads; (6) create a net reduction in sediment delivery to streams; and (7) contribute to restoration of the function of riparian vegetative communities for sediment filtration and streambank stability.

Complex Habitat Goal: Protect instream habitat diversity where it is suitable for fish and contribute to restoration of instream habitat diversity where it has been impacted by past Project Area management.

Objectives: (8) minimize impacts to large woody debris recruitment and bank stability in harvested streamside stands; (9) minimize impacts to overhanging stream banks because of grazing or riparian harvest; (10) improve the ability of riparian forests to provide a broad range of riparian functions to streams; (11) improve the ability of riparian vegetative communities to develop overhanging banks and other habitat diversity through passive or active restoration; and (12) create a net increase in large woody debris recruitment potential and other riparian functions in the Project Area.

Connected Habitat Goal: Protect and contribute to restoration of connectivity among subpopulations of native fish in the Project Area.

Objectives: (13) avoid creating fish passage barriers when constructing stream crossings; (14)

restore fish passage where existing road stream crossings restrict passage; and (15) Cooperate to restore fish migration where restricted by other factors, such as irrigation diversions or thermal barriers.

5) Identify the entity responsible for implementing the plan/program and the implementing mechanism (i.e., management plan, MOU/MOA etc.):

Plum Creek and Stimson are each responsible for independently implementing their own HCPs; there is a separate ITP for each HCP. They each work closely with the Service on monitoring the implementation; and the Service monitors each HCP independently. Plum Creek has responsibility for conducting the CAMP studies. Plum Creek and Stimson will respond independently to any trigger that is tripped, although each will follow the adaptive management pathway for addressing the trigger.

6) Identify specific provisions of the program that provide habitat protections or improvements (not just for the listed species, although those should be identified particularly with other habitat based benefits described more generally):

The NFHCP and KLHCP business goals require conservation planning to take a close look and determine where resources can be best allocated to obtain the maximum conservation gain. Therefore, Plum Creek and the Service sought opportunities to focus on conservation. In some cases this meant identifying specific stream segments that have higher sensitivity to management, while in others it meant prioritizing entire watersheds for increased protection because of a specific concern such as sediment. These are described in the HCP commitments. Another approach for focusing conservation was to address specific species because of their unique needs or imperiled status. While the HCPs intended to provide conservation benefits for all native salmonids, Plum Creek categorized their lands and streams based upon bull trout biology early in the NFHCP development. It was felt that this was a basis for prioritizing conservation measures because bull trout exhibit more demanding habitat requirements and are more of a habitat specialist than the other covered species. In some parts of the Project Area they are also more imperiled. The Services encouraged Plum Creek, as the planning process proceeded, to build into the NFHCP other methods of focusing conservation to ensure that the needs of all of the covered species are met. The various approaches for focusing conservation are described throughout the NFHCP while certain broad categories are described here:

- **Tier 1 Watersheds** are those watersheds that contain streams known to be important for bull trout spawning and juvenile rearing. This part of the life cycle of bull trout is particularly sensitive and has the most specific habitat needs. Less than 20 percent of Plum Creek lands in the NFHCP Project Area occur within Tier 1 watersheds. A provision is included in the NFHCP that allows Plum Creek and/or Stimson to collaboratively designate new Tier 1 watersheds as new fish distribution or status information becomes available. New Tier 1 designations can be made for the conservation of any of the Permit species. This has been done once on Plum Creek lands.

- **Tier 2 Lands** are those Plum Creek lands that occur outside of Tier 1 watersheds. Fish habitats associated with these lands are important for other native salmonids as well as other life history stages for bull trout. Initial designations of Tier 1 watersheds and Tier 2 lands are shown on Map 2.2-2 in Chapter 2 of the EIS.

- **Key Migratory Rivers** are segments of large rivers bordering, and longitudinally encompassed by HCP lands that provide habitat for any and all Permit species and are shown on Map 4.6-1 in Chapter 4 of the EIS. The distinguishing feature of Key Migratory Rivers is that they serve to connect the variety of habitats used by the migratory life forms of the Permit species. These are generally rivers that Permit species use to migrate from the ocean or a lake or a big river to smaller, lower order spawning or rearing streams. The Key Migratory River designation captures the largest streams throughout the Project Area where Permit species rely on the distinct features provided by larger river habitat, such as over-wintering habitat, foraging habitat, or pre-spawn staging habitat. Key Migratory Rivers also share a common legacy of historic land management patterns not usually found on other project area lands, including railroads and highways, residential development, concentrated recreation, and flood control and channelization.

- **Planning Area Basins** are the larger river basins within which Project Area lands occur. They are generally river systems that are interconnected. While bull trout occur in most of the Planning Area Basins, some of the covered species occur in only one or a few of them. These basins provide the planning context for evaluating the NFHCP so that the conservation benefits can be determined for each of the covered species. They are also used as the primary subdivisions.

- **Native Fish Assemblages (NFAs)** are watersheds containing unique assemblages of a diversity of Permit species. Limiting factors analyses and specific watershed analysis assessments will be conducted in the NFAs. Results from the analyses will be used by permit holders and the Services to collaborate in the development of customized (See Section 1: Introduction to the NFHCP Page 1-11) management prescriptions to enhance conservation of these native salmonid concentrations.

- **High Priority Bin for Road Upgrades** are watersheds selected based upon risk features related to roads, such as erodible geologic types, streams considered “impaired” by the EPA because of sediment, and Native Fish Assemblages.

7) Identify instruments memorializing the program and its requirements which may be agreements, standards, management plans, biological opinions, and guidance:

Issuance of an incidental take permit by the Service and NOAA Fisheries is a Federal action that potentially could affect listed species, so this action was subject to NEPA compliance. The EIS has been completed and the incidental take permit was issued from the Service on October 24, 2000, and from the National Marine Fisheries Service on November 20, 2000. In 2001, Plum Creek relinquished covered lands in Washington following the protocol outlined in the NFHCP. A new permit was issued to Stimson Lumber in 2003 based on an Assignment and Assumption Agreement, wherein Stimson agreed to take on the commitments of the NFHCP. This permit was amended in 2004 to add additional lands that Stimson purchased from Plum Creek that were covered by the NFHCP. In 2005, Plum Creek relinquished its covered lands in Idaho. Subsequently, Plum Creek gave up its NOAA permit. In 2010, Stimson relinquished its lands in the Upper Clark Fork area; Stimson still retains covered lands in the Lower Kootenai area. Also, the documentation of the program includes:

- **The Habitat Conservation Plan**
- **The Implementation Agreement**
- **The Section 7 Biological Opinion**
- **The Section 10 Findings**
- **The FEIS and Record of Decision**

8) Describe the basis for the standards, and whether the Service participated in their design:

Plum Creek Timber Company worked closely with the Service and NOAA Fisheries to negotiate the NFHCP and an Implementation Agreement. The Implementation Agreement legally binds the Services and Plum Creek and now Stimson to the requirements and responsibilities of the NFHCP, KLHCP and the incidental take permits.

9) What are the requirements for implementation? (Is it required through regulation, is it required through formalized terms and conditions, is it voluntary, is it optional? Are some actions required only if a certain predicate is met (if so, be specific)?)

The implementation is complex and is guided by formal terms and conditions of the incidental take permit. Additional details are available in the Implementation Agreement. The permit may be given up, but while the HCPs are in effect, the commitments are mandatory.

10) What is the consequence of non-compliance? What are the monitoring provisions?

The HCPs are a business agreement, as it represents the commitment of substantial financial resources in its preparation and implementation as an investment to ensure long-term business predictability and the commitment of No Surprises Assurances by the Services.

Two primary types of monitoring generate feedback for evaluating the success of the plan to the Service and the permit holders over the life of the HCPs: (1) implementation monitoring; and (2) effectiveness monitoring. Because of the breadth and complexity of the HCPs, implementation monitoring provides a continuous stream of information to gauge compliance with individual conservation measures (e.g., riparian prescriptions) and implementation targets (e.g., road upgrading schedules). There are 3 levels of implementation monitoring that occur: (1) Annual audits conducted internally by Plum Creek that have occurred for the first 3 years of the plan and may occur as needed thereafter; (2) Required external audits conducted every 5 years by an independent environmental auditing firm; and (3) Field inspections conducted by the Service's monitoring team throughout the year to ensure compliance.

Effectiveness monitoring involves experimental research to determine if the commitments are in fact achieving the Biological Goals and Specific Habitat Objectives of the NFHCP (See Section 8 of the NFHCP: Adaptive Management and Monitoring Commitments - Page 8-3). It also involves work to validate models that were used to increase confidence that expected results will indeed be achieved. With credible information on NFHCP implementation throughout the Project Area, effectiveness monitoring results (developed for a subset of the Project Area) can be reliably extrapolated to the entire Project Area.

11) What is the expectation for continued compliance? (if voluntary (compliance not governed by statute or regulations) this should include the length of time that a voluntary program has been implemented since past performance is an indicator of future performance).

The NFHCP is a complex science plan, which is dependent upon the best technical information available and must, to some degree, rely on predictive models to ensure long-term conservation certainty. The scientific aspect of adaptive management must provide the platform to rigorously test whether the biological goals of the NFHCP are being met and to guide changes to the plan that ensure success, if needed. The adaptive management commitments specify the terms under which the conservation commitments established by the NFHCP might be modified to meet biological goals. This balanced approach recognizes both the business needs of the permit holders and the science-based objectives of the Service.

The Service has developed a monitoring program, based out of the Creston Fish and Wildlife Center in Kalispell, Montana. To date, over the past 10 years, Plum Creek has fully met their obligations under the NFHCP. Over the past 5+ years, Stimson has fully met their obligations under the KLHCP. Annual monitoring reports on the implementation of the HCPs from both the Service and from the permit holders are available. We have every reason to anticipate compliance will continue through the 30-year life of the permit.

Part B: Benefits Analysis

Benefits of the Plum Creek Native Fish Habitat Conservation Plan:

HCPs typically provide for greater conservation benefits to a covered species than section 7 consultations because HCPs assure the long term protection and management of a covered species and its habitat - in these cases for at least 30 years. Such assurances are typically not provided by section 7 consultations which, in contrast to HCPs, often do not commit the project proponent to long term special management or protections.

The development and implementation of HCPs provide other important conservation benefits, including the development of biological information to guide conservation efforts and assist in species recovery and the creation of innovative solutions to conserve species while allowing for commercial activity. The educational benefits of critical habitat, including informing the public of areas that are important for the long-term survival and conservation of the species, are essentially the same as those that would occur from the public notice and comment procedures required to establish an HCP, as well as the public participation that occurs in the development of many regional HCPs. For these reasons, we believe that designation of critical habitat normally has little benefit in areas covered by HCPs.

NFHCP and KLHCP actions should maintain a high-level of water quality. They are expected to maintain the thermal regime of streams within the range of normal variation, and contribute to the maintenance of complex stream channels, appropriate substrates, a natural hydrologic regime, ground-water sources and subsurface connectivity, migratory corridors, and an abundant food base. HCP actions are not expected to introduce or favor nonnative competitors or predators. In short, the HCPs are expected to benefit the aquatic environment by providing a

gradual improvement in the cold and clean water as well as complex and connected habitat necessary for protection and restoration of bull trout.

Benefits of Designation of Critical Habitat in the Absence of the NFHCP and KLHCP:

The principal benefit of any designated critical habitat is that activities in such habitat that may affect it require consultation under section 7 of the Act if such actions involve a Federal nexus (i.e., an action authorized, funded, or carried out by a Federal agency). Such consultation would ensure that adequate protection is provided to avoid adverse modification of critical habitat. Very few actions with a Federal nexus are expected to occur the project area.

Benefits provided by the proposed critical habitat designation in areas currently covered under the NFHCP and KLHCP:

The benefits of including HCP lands in critical habitat are normally small. The principal benefit of any designated critical habitat is that activities in such habitat that may affect it require consultation under section 7 of the Act if such actions involve a Federal nexus (i.e., an action authorized, funded, or carried out by a Federal agency). Such consultation would ensure that adequate protection is provided to avoid adverse modification of critical habitat. Due to the checkerboard nature of much of the HCP ownership with adjacent Federal lands, the benefits of consultation already occur on Federal lands on most streams under consideration. Where the HCPs are in place, our experience indicates that this benefit is small or non-existent.

Benefits of excluding affected areas from critical habitat:

The benefits of excluding HCPs from being designated as critical habitat include relieving landowners, communities and counties of any additional regulatory review that result from such a designation. Many HCPs, particularly large regional HCPs such as the NFHCP and KLHCP, take many years to develop and, upon completion, become regional conservation plans that are consistent with the recovery of covered species. Imposing an additional regulatory review after HCP completion may jeopardize conservation efforts and partnerships in many areas and could be viewed as a disincentive to those developing HCPs.

A related benefit of excluding NFHCP areas is that it would encourage the continued development of partnerships with HCP participants, including States, local governments, conservation organizations, and private landowners, that together can implement conservation actions we would be unable to accomplish alone. By excluding areas covered by the HCPs from critical habitat designation, we preserve these partnerships and, we believe, set the stage for more effective conservation actions in the future.

Designation of critical habitat on HCP lands undermines the certainty that the HCP proponents are seeking. A failure to exclude HCP lands could be viewed as the Service retreating from its previous position as to the adequacy of the conservation measures in the HCP, undermining the Service's credibility in future interactions with potential partners. Designation of critical habitat within the boundaries of already approved HCPs is also viewed as a disincentive by other entities currently developing HCPs or contemplating them in the future because it implies potential additional regulation after conservation measures needed for the species have already been agreed to. In discussions with the Service, HCP permittees have indicated they view critical

habitat designation as an unnecessary additional intrusion on their property, and an erosion of the regulatory certainty provided by their incidental take permit and the No Surprises Assurances. Because the Service would be required to reinitiate Section 7 consultation with itself if critical habitat is designated on our action of issuing a Section 10(a)(1)(B) permit, the permittees are concerned that the Service could use this as an excuse to request new conservation measures for the bull trout even though we have existing agreements already in place. In reality, the No Surprises assurances would prevail unless (1) there was grounds for permit revocation which would entail that continuation of the permit would appreciably reduce the likelihood of the survival and recovery of the species in the wild, or (2) there was grounds to require additional mitigation which would depend on how unforeseen circumstances or extraordinary circumstances were defined in the HCP and what measures were preserved or identified for such occasion.

Failure to exclude HCP lands from critical habitat could reduce the conservation value of the HCP program in several ways. First, parties may be less willing to participate in large, regional HCPs, preferring instead to address any possible take on a project-by-project basis. Second, in any given HCP, applicants may reduce the amount of protection to which they are willing to agree, in effect holding some additional protective measures “in reserve” for use in any future discussions to address critical habitat. Third, without the incentive of exclusion from critical habitat, some potential applicants, particularly (1) those whose actions may, but are not certain to take listed species, and (2) those against whom enforcement for any take that does occur may be difficult, may decide not to seek an incidental take permit at all. Although the reality of section 9 liability will prevent the HCP program from being devitalized by a failure to exclude HCP lands from critical habitat designations, the HCP program is such an important tool in endangered species conservation that any decrease in its efficacy could have profound effects.

Excluding HCP lands from critical habitat provides permittees with the greatest possible certainty, thereby helping foster the cooperation necessary to allow the HCP program to achieve the greatest possible conservation benefit. Thus, excluding the lands covered by the Plum Creek and Stimson Native Fish HCPs improve the Service’s ability to enter into new partnerships. Permittees who trust and benefit from the HCP process discuss the benefits with others who may become future HCP participants, such as States, counties, local jurisdictions, conservation organizations, and private landowners. New HCPs will result in implementation of conservation actions that we would be unable to accomplish otherwise.

Plum Creek and Stimson Native Fish HCPs Balancing:

As discussed above, it is possible, although unlikely, that any Federal action will be proposed that would be likely to destroy or adversely modify the habitat proposed as critical within the area governed by the Plum Creek and Stimson Native Fish HCPs. If such a project was proposed, due to the specific way in which jeopardy and adverse modification are analyzed for bull trout, it would likely also jeopardize the continued existence of the species. In addition, as discussed above, we expect that the benefit of informing the public of the importance of this area to bull trout conservation would be slight given we will be displaying essential habitat that is excluded. Therefore, we assign relatively little weight to the benefits of designating this area as critical habitat.

The benefits of encouraging participation in HCPs, particularly large-scale HCPs, and helping to

foster cooperative conservation are indirect benefits. In spite of the fact these are indirect benefits, enthusiastic HCP participation and an atmosphere of cooperation are crucial to the long-term effectiveness of the endangered species program. Therefore, we assign great weight to these benefits of exclusion. To the extent that there are regulatory benefits of including, there would be associated costs that could be avoided by excluding the area from designation. However, as we expect the regulatory benefits to be low, we likewise give little weight to avoidance of those associated costs, as well as the additional transaction costs related to section 7 compliance.

Therefore, we have determined that the benefits of inclusion of the areas covered by this HCP are small, while the benefits of exclusion are more significant. Therefore, the benefits of exclusion outweigh the benefits of inclusion. Because we anticipate that little if any conservation benefit to the bull trout will be foregone as a result of excluding these lands, the exclusion will not result in the extinction of the bull trout. The Secretary exercises his discretion under section 4(b)(2) to exclude these areas from the designation (see comprehensive discussion in “Exclusions” section in the proposed rule).

Attachment 1 (PCE Analysis for Plum Creek and Stimson Lumber Native Fish HCPs)

PCE #1: “Springs, seeps, groundwater sources, and subsurface water connectivity (hyporheic flows) to contribute to water quality and quantity and provide thermal refugia.”

The HCPs protect surface and subsurface water connectivity through a variety of diverse mechanisms. Springs and seeps that result in perennial or intermittent channels may be addressed through those conservation provisions. All perennial streams are protected with riparian buffers. In addition, the riparian strategy specifically addresses Channel Migration Zones. Intermittent streams receive protection in a manner that will optimize functional needs of those specific channel classes.

The HCPs address wetlands and hydrological integrity and connectivity. The HCPs address forested and nonforested wetlands. All riverine and all unstable-slope-associated wetlands are buffered. The HCPs also provide protection for depressional wetlands and stable-slope wetlands. Wetland prescriptions (and prescriptions for management of wetland complexes) throughout the HCP areas will protect water quality and hydrologic integrity and connectivity. Roads will avoid disrupting surface and ground-water flows. Specific road remediation is directed at wetlands.

PCE #2: “Migration habitats with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and freshwater and marine foraging habitats, including but not limited to permanent, partial, intermittent, or seasonal barriers.”

The HCPs contain measures to ensure water quality and quantity that would address a barrier-free environment for bull trout. Roads will be managed in a manner that does not contribute to the formation of barriers and remediation will address existing barriers.

PCE #3: “An abundant food base including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and/or forage fish.”

The HCPs maintain the natural hydrology and riparian functions of large wood input, shade, bank stability, detrital inputs, as well as natural functions of flood plains and unstable slopes. It is expected to fully address the aquatic environment necessary to provide a healthy food base within the constraints of the natural system.

PCE #4: “Complex river, stream, lake, reservoir, and marine shoreline, and processes that establish and maintain these aquatic environments, with features such as large wood, side channels, pools, undercut banks and substrates, to provide a variety of depths, gradients, velocities, and structure.”

The HCPs address the need for complex habitat by providing buffers along streams and wetlands that are expected to contribute to large woody debris recruitment and maintain stream bank integrity. The HCPs also address sediment which has the potential to simplify and degrade instream habitat conditions. The HCPs also focus on maintaining mass-wasting and erosional processes within natural regimes. The HCPs include provisions to manage forest cover to reduce the frequency of major storm flows that are capable of shifting instream habitat structure, and it

also is expected to substantially reduce the amount of coarse and fine sediments transported downstream that could further simplify and degrade habitat conditions.

PCE #5: “Water temperatures ranging from 2 to 15 °C (36 to 59 °F), with adequate thermal refugia available for temperatures that exceed the upper end of this range. Specific temperatures within this range will depend on bull trout life-history stage and form; geography; elevation; diurnal and seasonal variation; shading, such as that provided by riparian habitat; streamflow; and local groundwater influence.”

Stream temperature is a complicated issue and is addressed in these HCPs through a number of avenues including buffers that provide shade, road-management practices that avoid sedimentation, riparian and grazing management, and maintenance of natural hydrologic regimes that contribute cool water to streams.

The buffers on streams and wetlands are expected to provide natural levels of shade to avoid increasing sunlight which could result in stream warming. Road and wetland prescriptions are expected to maintain natural hydrological regime so that streams are not abnormally dry during periods of the year when this could exacerbate warming problems. Stream buffers and road standards also address sediment delivery, which will in turn avoid artificial filling of pools which could lead to increased stream warming.

PCE #6: “In spawning and rearing areas, substrate of sufficient amount, size, and composition to ensure success of egg and embryo overwinter survival, fry emergence, and young-of-the-year and juvenile survival. A minimal amount of fine sediment, generally ranging in size from silt to coarse sand, embedded in larger substrates are characteristic of these conditions. The size and amounts of fines suitable to bull trout will likely vary from system to system.”

The HCPs address the need for natural substrates in a wide variety of ways. Reducing road-generated, fine sediment is a major focus of the HCPs. Considerable focus is placed on road maintenance, repair, and improved construction standards. In addition, road remediation of existing road-related problems is a major component of the HCPs. The HCPs strive to keep slope failures at natural levels, which acts to reduce the delivery of fine sediments, but also recognizes the contribution of these processes to supplying gravel needed for substrates. Once material has been delivered to the stream, it depends on large woody debris and other channel features to sort substrate by particle size. The HCPs address bank stability and large wood recruitment which should help store fine sediment and provide for suitable substrates for bull trout spawning. The HCPs include multiple provisions that contribute to maintenance and development of suitable substrates, and it also is expected to substantially reduce the amount of coarse and fine sediments transported downstream.

PCE #7: “A natural hydrograph, including peak, high, low, and base flows within historic and seasonal ranges or, if flows are controlled, they minimize departures from a natural hydrograph.”

The HCPs are expected to maintain floodplains and wetlands in a manner that retains the functions of the hyporheic zone and off-channel habitats. Road management is designed to disconnect ditches (and ground water intercepted by roads) from the stream system to reduce

delivery of sediment, but also to slow the delivery of storm-related run-off and reduce the contribution to peak flows. Ditch water and road run-off is diffusely shunted onto the forest floor.

PCE #8: “Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.”

As discussed above, both water quality and quantity are addressed through a variety of mechanisms. In addition to protecting the natural hydrograph and addressing sediment and temperature, the HCPs will result in a minimal amount of chemical introduction into surface waters.

PCE #9: “Nonnative predatory (e.g., lake trout, walleye, northern pike, smallmouth bass); interbreeding (e.g., brook trout); or competing (e.g., brown trout) species that, if present, are at sufficiently low levels of occurrence or adequately temporally and spatially isolated.”

The HCPs are not expected to contribute to the further spread of deleterious aquatic species. Provisions of the HCPs that protect the natural environment should assist native fish in maintaining a competitive advantage when that is possible. In addition, the HCPs make specific commitments to help further the best available science as it regards invasion and proliferation of nonnative species in bull trout habitat.

SUMMARY

The Service assessed the NFHCP and KLHCP with respect to the primary constituent elements for bull trout critical habitat. HCP actions should not result in contaminated waters that inhibit reproduction, growth, or survival; instead, they are expected to maintain a high-level of water quality. They are expected to maintain the thermal regime of streams within the range of normal variation, and contribute to the maintenance of complex stream channels, appropriate substrates, a natural hydrologic regime, ground-water sources and subsurface connectivity, migratory corridors, and an abundant food base. NFHCP actions are not expected to introduce or favor nonnative competitors or predators.

LEWIS RIVER HYDROELECTRIC PROJECTS

Part A: Plan/Program Description and Analysis

1) Brief Overview of Lewis River Hydroelectric Projects:

There are four projects and three dams that impound over 30 miles of river habitat on the Lewis River in Washington. They are located in portions of Clark, Cowlitz, and Skamania Counties. Bull trout are present in all of the reservoirs although the upper two reservoirs have the most significant populations and also support spawning populations. A Settlement Agreement (Agreement) for the relicensing of the Yale, Merwin, Swift No. 1 and Swift No. 2 hydroelectric projects was signed on November 30, 2004, and the U.S. Fish and Wildlife Service (Service) expects that the new license will incorporate these same measures. Conservation measures are incorporated in the Agreement to minimize or compensate for the effects of the projects on listed species, including bull trout. Conservation measures for bull trout include perpetual conservation covenants on PacifiCorp's lands in the Cougar/Panamaker Creek area and PacifiCorp's and Cowlitz PUD's lands along the Swift Creek arm of Swift Creek Reservoir, upstream and downstream fish passage improvements at all reservoirs, enhanced habitat conditions in the Swift bypass reach, limiting factors analysis for bull trout to determine additional enhancement measures, public information program to protect bull trout, and monitoring and evaluation efforts for bull trout conservation measures. This agreement will also restore anadromous salmon to the upper Lewis River system, restoring a significant part of the historic forage base for bull trout.

2) Describe the area covered by the program and the specific habitats affected/protected/improved (with emphasis on the areas proposed as Critical Habitat):

The Settlement Agreement that was signed in 2004 covers the Lewis River Hydroelectric Projects which include Merwin, Yale, and Swift No. 1 which are owned by PacifiCorp, and Swift No. 2 which is owned by the Cowlitz PUD and operated under contract by PacifiCorp. The Merwin, Yale, and Swift No.1 projects represent a linked reservoir/powerhouse system covering over 30 miles of the Lewis River. The Swift No. 2 project does not include a dam and reservoir. It uses water directly from the tailrace of Swift No. 1 and discharges through the Swift No. 2 powerhouse into Yale Lake. The operation of the Merwin Project is coordinated with operation of the other three North Fork Lewis River projects. It acts as a "re-regulation" project by providing a more stable flow downstream of the project. Yale and Swift No. 1 are operated as peaking facilities, i.e., coming on-line during peak power demands, and also providing flood regulation in the basin. Therefore, Yale and Swift reservoirs are drawn down during winter months to provide for flood storage. In addition, the two utilities own approximately 11,000 acres of upland habitat adjacent to the projects.

The three reservoirs were proposed as Critical Habitat for bull trout because they provide heavily used foraging, migration, and overwintering habitat. Bull trout require these reservoirs to complete their life history within the Lewis River system. There are no specific impacts to bull trout known from the operations of the reservoirs, however, draw-down during the winter for flood control and the daily fluctuations during operations may have some negative effects on bull trout. The extent of these effects are currently unknown. The Lewis River bypass reach (Swift

bypass) is also influenced by the project operation, and is considered important foraging habitat based on recent bull trout observations and recent habitat and flow improvements implemented under the settlement agreement and FERC license.

The perpetual conservation easements include the following areas of the Lewis River Hydroelectric Projects:

Swift Creek 0.3 mile up to a barrier falls is likely used for foraging since habitat in this lower section of the creek is an extension of the Swift Arm segment of Swift Creek Reservoir. Swift Creek Reservoir provides foraging, migration, and overwintering habitat for the Pine and Rush Creek bull trout local populations, and subadult bull trout are known to use the Swift Arm segment of the reservoir. Actual use of the lower section of Swift Creek by bull trout is unknown; spawning and rearing is not known to occur here. However, PacifiCorp has voluntarily provided a conservation easement for Swift Creek that includes: (1) Conserving and protecting habitat for bull trout, cutthroat trout, and other aquatic species; (2) monitoring to minimize sedimentation due to human disturbance; and (3) development and implementation of vegetation management practices to remove nonnative or invasive plant species.

Cougar Creek 1.7 miles upstream to a lava tube barrier contains the least abundant of the three local populations of bull trout in the Lewis River. Conservation measures in PacifiCorp's conservation easement include: (1) Management to conserve and protect spawning and rearing habitat for bull trout; (2) monitoring to assure no detrimental changes to bull trout habitat have occurred due to upland management activities, winter storm damage, or other causes; (3) development and implementation of vegetation management practices to remove nonnative or invasive plant species; and (4) development and implementation of a road maintenance plan to include provisions for repair or closure of roads. The latter plan includes closing a road on the southeast boundary of the Cougar Creek lands to all vehicular access except maintenance equipment.

3) What PCEs are covered by the plan and how effective is the plan at meeting the specific PCE criteria? All of the PCEs are affected by the Settlement Agreement:

See Attachment 1 (PCE analysis)

4) Describe specific restoration and improvement goals, actions, or standards included as part of the plan:

The Settlement Agreement contains several actions that are specific to bull trout. The Settlement Agreement anticipates a 50-year license term so the activities for bull trout will be conducted for at least that time frame. Fish passage for bull trout has been implemented between the reservoirs by using a gill net to catch adults below Yale and Swift Dams and transport them above the barriers. Alternative transport methods will be explored during the first few years of the new license to see if there are more effective, less stressful ways to capture and move bull trout. Downstream movement of adults will be accomplished by floating surface collectors. The first will be installed at Swift No. 1 and two others phased in at Yale and Merwin projects later in the license term. A fund for habitat improvement projects has been set up and has a specific amount dedicated to bull trout habitat improvement projects. A limiting factor analysis will be completed on streams tributary to the three reservoirs to determine if there is habitat that would

be suitable for establishing additional spawning populations to meet recovery goals set in the Draft Bull Trout Recovery Plan. Upstream and downstream passage is being designed to meet bull trout passage needs, in addition to, salmon and steelhead. Flows have been recently increased in the bypass reach by means of the Upper Flow Release and spawning channels for reintroduced salmon have been recently constructed (401 Certification requirement by Washington Department of Ecology (WDOE) under the FERC relicensing) that will enhance foraging opportunities for bull trout. PacifiCorp and Cowlitz PUD will participate with the Washington Department of Fish and Wildlife in the yearly bull trout monitoring and population estimates that are conducted in the Lewis River basin.

5) Identify the entity responsible for implementing the plan/program and the implementing mechanism (i.e., management plan, MOU/MOA etc.):

PacifiCorp a private corporation and Cowlitz PUD a public utility will be responsible for implementing the terms of the Settlement Agreement and ultimately the new licenses for the Lewis River Projects. We anticipate that 50-year licenses will be issued by the Federal Energy Regulatory Commission (Commission) within the next year. The licenses' articles will specify the obligations with which the two utilities will need to comply during the term of the new licenses.

6) Identify specific provisions of the program that provide habitat protections or improvements (not just for the listed species, although those should be identified particularly with other habitat based benefits described more generally):

See section 4 above. In addition, a fund has been set up to acquire lands for wildlife habitat management and protection for a wide range of species within the project area including riparian and wetland habitat.

7) Identify instruments memorializing the program and its requirements which may be agreements, standards, management plans, biological opinions, and guidance:

The Settlement Agreement was signed November 30, 2004, and submitted to the Commission as part of the license application process. The conservation easements were filed with the Commission as part of the Biological Opinion for Interim Operations issued by the Service on June 6, 2001. The two utilities also recorded the conservation easements as conservation covenants in perpetuity with Skamania, Clark, and Cowlitz Counties as appropriate. A draft Environmental Assessment was prepared by the utilities and filed with the Settlement Agreement along with a draft Biological Evaluation for the operations of the projects under a new license.

8) Describe the basis for the standards, and whether the Service participated in their design.

The Service has been working with PacifiCorp since 1995 on the relicensing of the Yale hydroelectric project. In 1998, PacifiCorp and other participants in the relicensing decided to expand the studies and scope of the analysis to include the remaining three hydroelectric projects on the North Fork Lewis River watershed. Cowlitz PUD, as the owner of the Swift No. 2 project, then became involved with the relicensing. The licensees, agencies, and other interested parties agreed to use the Alternative Licensing Process for relicensing all of the Lewis River

projects. This process is a more collaborative approach than the traditional relicensing process and allows for a more thorough discussion of the issues before the Commission completes their environmental analysis.

In July 1999, PacifiCorp and Cowlitz PUD requested a meeting with the Service, National Marine Fisheries Service (NMFS), and the Commission to discuss a proposal for habitat protection measures designed to conserve salmon, steelhead, and bull trout. The objective was to obtain authorization for incidental take under section 7 of the Endangered Species Act for the operations of the Lewis River projects. It was understood that this incidental take protection was desired for the period of time until consultation for the new license is complete. Several key studies were concluded that allowed a more complete understanding of bull trout status and needs in the Lewis River. Formal consultation for the interim operations and conservation measures included in the license amendment application was concluded with a joint Biological Opinion from the NMFS and the Service on June 6, 2002.

Negotiations for terms and conditions to be included in a new Commission license for each of the four Lewis River projects continued until a Settlement Agreement was signed by the Service and 24 other parties on November 30, 2004. The Settlement Agreement submitted to the Commission on December 3, 2004, along with an Applicant prepared draft Environmental Assessment and a Draft Biological Evaluation. The Settlement Agreement is intended to be the preferred alternative in the Commission's NEPA document. The Service was a key participant in crafting actions and measures to protect and enhance bull trout and its habitat through implementation of new license actions.

9) What are the requirements for implementation? (Is it required through regulation, is it required through formalized terms and conditions, is it voluntary, is it optional, are some actions required only if a certain predicate is met (if so, be specific)?)

The requirements for implementation are assumed to be the new license to be issued by the Commission within the year. The Settlement Agreement is considered by the Parties to be a binding document but can be dissolved by written notification from any Party. If the license is issued by the Commission, the terms contained within are regulatory under the Federal Power Act and will be enforced by the Commission. The Conservation Easements are established in perpetuity.

Our recommended terms and conditions are only recommendations for the Commission to include in the new license although the Commission must give them special consideration. Our fish passage prescriptions are mandatory and must be included as license requirements by the Commission with any new license that it issues. Key conservation actions include: upstream and downstream fish passage facilitation over the three dams; aquatic habitat improvements within the tributaries to the reservoirs; and conducting limiting factor analysis of bull trout in the system.

10) What is the consequence of non-compliance? What are the monitoring provisions?

Non-compliance with the Settlement Agreement would require the Parties to litigate against the Utilities for relief. Non-compliance with the new license could result in enforcement action by the Commission, which could range from a significant fine to revoking the license. Annual reports are required to be submitted to the Service by the Settlement Agreement and are

consistently required by the Commission in new licenses.

11) What is the expectation for continued compliance? (If voluntary (compliance not governed by statute or regulations) this should include the length of time that a voluntary program has been implemented since past performance is an indicator of future performance).

The Commission has a good track record for enforcement of the license terms and conditions. If the Settlement Agreement is adopted as the new license then the Commission will be enforcing compliance. The Settlement Agreement does not have the same force but we expect the Utilities to honor their commitments because of their need to maintain compliance under section 9 of the Act to operate the hydroelectric facilities.

Part B: Benefits Analysis

Benefits of Lewis River Hydro Project Relicensing Settlement Agreement:

Under the Proposed Action, the Licensees will implement the following measures that will directly benefit bull trout.

- Provide upstream and downstream passage for bull trout at Project dams.
- Monitor upstream and downstream passage to ensure that passage is adequately facilitated.
- Monitor bull trout population dynamics and determine limiting factors.
- Test alternatives to limit bull trout entrainment and implement a preferred alternative.
- Install signage and distribute flyers to inform public about bull trout in the project area.
- Manage existing conservation covenants to protect bull trout habitat in perpetuity.
- Modify the Yale spillway to improve downstream resident fish survival (including bull trout) during spill events.
- Reintroduce anadromous salmonids upstream of Merwin Dam; this action will increase primary production and the bull trout forage base.
- Monitor the anadromous salmonid reintroduction program to ensure that any potential negative effects on bull trout are minimized or avoided.
- Increase flow in the bypass reach to increase habitat for bull trout and other salmonids.

The draft Lower Columbia River bull trout recovery plan (USFWS 2002) specifies several key information gaps that need to be addressed in the Lower Columbia Recovery Unit including: (1) specific information on the suitability of potential spawning and rearing areas in each basin; (2) increased inventory in each basin to establish the current distribution; and (3) a complete limiting

factors analysis to identify site specific actions needed to recover bull trout within each system. Under the proposed action a bull trout limiting factors analysis will be completed to address these information gaps for the North Fork Lewis River basin upstream of Merwin Dam.

The draft recovery plan also states that dams have fragmented bull trout habitat, isolated local populations, and blocked access to historical foraging and overwintering habitat. The proposed action addresses this concern by implementing upstream and downstream passage for bull trout at Merwin, Yale, and Swift Creek Dams. As stated previously, facilitating passage will address the following recovery goals:

- Maintain current distribution of bull trout and restore distribution in previously occupied areas within the Lower Columbia Recovery Unit.
- Conserve genetic diversity and provide opportunity for genetic exchange.

By maintaining conservation covenants for important bull trout habitats; identifying bull trout limiting factors and monitoring bull trout abundance over time; and implementing habitat projects under the Aquatic Habitat Fund to address potential habitat limiting factors the proposed action will address additional recovery goals including:

- Maintain stable or increasing trends in abundance of bull trout.
- Restore and maintain suitable habitat conditions for all bull trout life history stages and strategies.

By addressing the four primary recovery goals in the North Fork Lewis River basin, the proposed action will benefit the Lower Columbia River bull trout recovery unit, and will improve the chance for the recovery of the Columbia River bull trout by protecting and enhancing PCEs required for bull trout conservation.

Benefits of Designation of Critical Habitat in the Absence of the Lewis River Hydro Project Relicensing Settlement Agreement:

Designating critical habitat would be beneficial:

- To ensure that adequate habitat protection will be in place in the future when potentially harmful Federal actions are proposed through section consultation.
- To ensure that Federal agency actions not only avoid pushing species to extinction, but also do not destroy habitat on which endangered and threatened species depend for their ultimate recovery.
- To promote species recovery, enhance conservation efforts, provide uniform habitat protection, and facilitate more environmentally appropriate local land use planning and project development decisions.
- To promote ecosystem protection and benefit species listed in the future.

- Benefits countless native plants and animals, both listed and unlisted, that rely on similar habitat values, and would generally promote native ecosystem conservation.
- Because the designation process plays an important role in educating the public, as well as State and local governments, about areas essential to the survival and recovery of the listed species.

Benefits provided by the proposed critical habitat designation in areas currently covered under the Settlement Agreement:

Designation will address threats from Federal projects that cannot be addressed by the Settlement Agreement, especially on lands not under the complete management control of PacifiCorp. Designation may also provide some increment of benefit beyond that derived from section 7 requirements on the species alone. However, consultation on critical habitat will only address those activities associated with a Federal nexus that may affect the PCEs. The occurrence of Federal actions are somewhat unpredictable. Given the remote location of the projects and the steepness in the topography of the sites, large Federal actions, such as highway projects, are unlikely to occur. However, lands along the reservoirs and tributary streams have been impacted by development and forest management actions which are not part of the settlement agreement. In addition, larger Federal actions with significant impacts to the aquatic environment are unlikely to occur on the lands covered by the Settlement Agreement unless they are: (1) as a result of modification of the Settlement Agreement or New License to fully address and minimize and mitigate impacts to the maximum extent practicable; (2) the New License is not as protective as the Settlement Agreement; (3) the new License is substantially different than the Settlement Agreement; or (4) the Settlement Agreement becomes null and void. Should the Federal action occur adjacent to but not on the proposed exclusion, consultation on such Federal project would not need to consider the impacts of critical habitat to the excluded areas, but may need to consider impacts to designated critical habitat in adjacent areas.

Other benefits of designation:

Designation of critical habitat facilitates State and local regulatory agencies in taking further protective measures where critical habitat is designated resulting in potential additional land-use and water-use restrictions for forest landowners. In fact, State law requires consideration of additional rules and areas for protection upon designation of critical habitat Under the Washington State Growth Management Act, Shoreline Management Act and State Environmental Policy Act.

To the extent that critical habitat designation would result in environmental protection (e.g., Federal projects that otherwise would have resulted in destruction or adverse modification) that would exceed the protection garnered from other environmental regulations (e.g., Clean Water Act) there would be some benefit associated with cleaner water and better stream conditions.

Benefits of excluding affected areas from critical habitat:

Lewis River Hydroelectric Projects Settlement Agreement

On November 30, 2004, PacifiCorp, the Service, and NOAA Fisheries, along with other Federal agencies, Indian tribes, Washington state agencies and local governments, and various private and conservation organizations, entered into a comprehensive settlement agreement for relicensing the Projects for 50-year terms ("Settlement Agreement"). In addition to representing an historic agreement among the several parties, the Settlement Agreement was subject to significant public notice and opportunity for involvement pursuant to both the Federal Power Act's Alternative Licensing Process and the early application of National Environmental Policy Act scoping and review procedures. The Settlement Agreement was the result of a collaborative effort, and includes a comprehensive suite of bull trout, salmon and steelhead fish passage, reintroduction, and conservation measures and actions that will be implemented in a phased approach over the terms of the new licenses. The Settlement Agreement provides a conservation benefit to the subject species, provides assurances that conservation management strategies and actions will be implemented, and provides assurances that the conservation strategies and measures will be effective.

The benefits of excluding lands from critical habitat designation include maintaining and enhancing our ability to negotiate with hydroelectric power companies, counties, and other participants in relicensing negotiations. The complex process of negotiating relicensing for the Lewis River hydroelectric projects has been ongoing for 9 years. We have established valuable working relationships with the PacifiCorp, Cowlitz County PUD, and the other participants during these complex negotiations. Through the relicensing negotiations, we have built partnerships with a wide coalition of stakeholders, built trust and encouraged open dialogue regarding aquatic and riparian management issues among the participants.

The benefits of excluding Settlement Agreement lands also include the social and economic considerations of the potential costs and increased regulatory burdens, time, uncertainty, and costs of section 7 consultations that the Service, the Commission, PacifiCorp, and Cowlitz PUD must undertake for relicensing the Projects. Designation of critical habitat above Merwin Dam might act as a disincentive for PacifiCorp, the other Settlement Agreement parties, other hydroelectric licensees, and others considering voluntary conservation partnerships or initiatives with the Services. Given that the Service was a signatory to the Settlement Agreement, designation of critical habitat could be perceived by some as the Service backtracking from the Settlement Agreement itself.

A benefit to exclude certain areas (i.e., Swift Creek and Cougar Creek conservation easement areas and the Swift bypass reach) from bull trout critical habitat would be to protect the Settlement Agreement outcome and to foster the positive relationships surrounding the Settlement, especially where such designation would have no added benefit to the species and it could undermine the positive efforts already in place.

Lewis River Hydroelectric Projects Conservation Easements and Swift Bypass Reach

We have been working with PacifiCorp since 1995 on relicensing the Yale hydroelectric project in Washington. Subsequently, NMFS and Cowlitz County PUD and other participants joined this process and included relicensing of Merwin, Swift No. 1, and Swift No. 2 hydroelectric projects on the Lewis River. We completed the Biological Opinion for the interim operation of the Lewis River hydroelectric projects in June 2002. Conservation measures were incorporated in the project description to minimize or compensate for the effects of the projects on listed

species, including bull trout.

Conservation measures included perpetual conservation easements on PacifiCorp's lands in the Cougar/Panamaker Creek area and along the Swift Creek arm of Swift Creek Reservoir. PacifiCorp signed and notarized covenant agreements and filed Cougar Creek in Clark and Cowlitz Counties, and Swift Creek in Clark and Skamania Counties.

Swift Creek 0.3 mile (0.5 km) up to a barrier falls is likely used for foraging because habitat in this lower section of the creek is an extension of the Swift Arm segment of Swift Creek Reservoir. Swift Creek Reservoir provides foraging and overwintering habitat for the Pine and Rush Creek bull trout local populations, and subadult bull trout are known to use the Swift Arm segment of the reservoir.

Conservation measures for Swift Creek will be implemented including:

- Conserving and protecting habitat for bull trout, cutthroat trout, and other aquatic species.
- Monitoring to minimize sedimentation due to human disturbance.
- Development and implementation of vegetation management practices to include but not limited to, removal of nonnative or invasive plant species.

Cougar Creek 1.7 miles (2.7 km) upstream to a lava tube barrier contains the smallest of the three local populations of bull trout in the Lewis River. Conservation measures in PacifiCorp's conservation easement include:

- Management to conserve and protect spawning and rearing habitat for bull trout; by conducting yearly habitat conditions surveys and taking action to correct any damage.
- Monitoring to assure no detrimental changes to bull trout habitat have occurred due to upland management activities, winter storm damage, or other causes.
- Development and implementation of vegetation management practices to include, but not limited to, removal of nonnative or invasive plant species.
- Development and implementation of a road maintenance plan to include provisions for repair or closure of roads. This will include closing a road on the southeast boundary of the Cougar Creek lands to all vehicular access except maintenance equipment.

Conservation measures in the Swift bypass reach under the settlement agreement and FERC license include:

- Increased flows under WDOE's 401 Certification.
- Construction of spawning channels for salmon.
- Ongoing monitoring of bull trout use in this reach.

- Collection and transport of adult bull trout to areas upstream of Swift Dam that have been entrained from the Swift reservoir population.

Excluding portions of Swift Creek and Cougar Creek from critical habitat based on conservation easements, and the Swift bypass reach based on aspects of the Settlement Agreement and FERC license, will help maintain trust in our intentions to honor our agreements. It will also facilitate our ability to negotiate in future consultations on other relicensing projects. The introduction of additional Federal influence through critical habitat designation could impact the spirit of cooperation established over the last several years. Exclusion would avoid impacting ongoing and future cooperative efforts, and will reduce the cost and logistical burden of unnecessary regulatory oversight. The benefits of excluding areas covered by conservation easements from being designated critical habitat include relieving landowners and counties of any additional regulatory review that result from such a designation. Imposing an additional regulatory review after completion of conservation easements with adequate conservation measures may jeopardize conservation efforts and could be viewed as a disincentive to those developing conservation easements.

An additional benefit of excluding conservation easement areas is the encouragement of continued development of partnerships with State, local governments, conservation organizations, and private landowners. By excluding areas covered by conservation easements from designated critical habitat, we encourage more effective conservation actions in the future that would allow implementation of conservation actions we would be unable to accomplish alone. Other important conservation benefits to developing conservation easements include developing biological information to guide conservation efforts and assist in species recovery, and the creation of innovative solutions to conserve species while allowing commercial activity. The conservation easements will provide greater conservation benefits to bull trout because they will assure long-term protection and management of bull trout in Swift and Cougar Creeks. Such assurances are typically not provided by section 7 consultations that, in contrast to conservation easements with conservation measures, often do not commit the project proponent to long-term species and habitat protections. Also, the protections of section 7, with respect to the jeopardy standard, and section 9 will still be in effect and will ensure that actions protect the species.

By excluding lands included in the two conservation easements from designated critical habitat we will: (1) Maintain and enhance our ability to continue working with PacifiCorp, Cowlitz County PUD, Federal Energy Regulatory Commission, and other relicensing applicants; and (2) other jurisdictions, private landowners, and other entities will likely continue to see the benefit of working cooperatively with us. This will provide incentives to develop other conservation agreements, or other conservation actions such as HCPs, to provide the basis for future opportunities to conserve species and their habitats. Negotiating conservation measures under conditions of mutual trust can result in greater conservation benefits to the species than would result from including Swift and Cougar Creeks in designated critical habitat.

Lewis River Hydroelectric Projects Conservation Easement and Swift Bypass Reach Balancing:

As discussed above, it is possible, although unlikely, that any Federal action will be proposed

that would be likely to destroy or adversely modify the habitat proposed as critical within the area governed by the Lewis River Conservation Easement or within the Lewis River's Swift bypass reach which is governed by the settlement agreement and FERC license. If such a project was proposed, due to the specific way in which jeopardy and adverse modification are analyzed for bull trout, it would likely also jeopardize the continued existence of the species. In addition, as discussed above, we expect that the benefit of informing the public of the importance of this area to bull trout conservation would be slight. Therefore, we assign relatively little weight to the benefits of designating this area as critical habitat.

In contrast, although the benefits of encouraging participation in conservation partnerships, particularly large-scale conservation projects, and, more broadly, helping to foster cooperative conservation are indirect, enthusiastic conservation project participation and an atmosphere of cooperation are crucial to the long-term effectiveness of the endangered species program. Therefore, we assign great weight to these benefits of exclusion. To the extent that there are regulatory benefits of including, there would be associated costs that could be avoided by excluding the area from designation. However, as we expect the regulatory benefits to be low, we likewise give little weight to avoidance of those associated costs, as well as the additional transaction costs related to section 7 compliance.

Therefore, we have determined that the benefits of inclusion of the areas covered by this conservation easement and the area of the bypass reach are small, while the benefits of exclusion are more significant. Therefore, the benefits of exclusion outweigh the benefits of inclusion. Because we anticipate that little if any conservation benefit to the bull trout will be foregone as a result of excluding these lands, the exclusion will not result in the extinction of the bull trout. The Secretary exercises his discretion under section 4(b)(2) to exclude these areas from the designation (see comprehensive discussion in "Exclusions" section in the proposed rule).

Attachment 1 (PCE Analysis for Lewis River Hydro Project)

PCE #1: “Springs, seeps, groundwater sources, and subsurface water connectivity (hyporheic flows) to contribute to water quality and quantity and provide thermal refugia.”

The Settlement Agreement protects surface and subsurface water connectivity through a variety of diverse mechanisms. Springs and seeps that result in perennial or intermittent channels and all perennial streams are protected with riparian buffers. The terrestrial wildlife management plan places special emphasis on stream side riparian zones. The goal is to exceed the standards in the Washington State Forest Practices.

The Settlement Agreement addresses all wetlands and hydrological integrity and connectivity within the project boundaries and provides for protection of any wetlands that are acquired. Wetland protection (and water level management) will follow the Washington Department of Fish and Wildlife Guidelines. The emphasis will be on discouraging bull frog populations and encouraging native amphibian where water level management is possible. Roads will avoid disrupting surface and ground-water flows. There are several specific road remediation efforts directed at existing wetlands within the project boundaries.

PCE #2: “Migration habitats with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and freshwater and marine foraging habitats, including but not limited to permanent, partial, intermittent, or seasonal barriers.”

The Settlement Agreement contains measures to improve on access for bull trout but will not provide a barrier-free environment. All of the passage scenarios will allow for upstream and downstream passage in a timely manner but will preclude free movement without human intervention in the near term. There are provisions in the Settlement Agreement that will attempt to provide close to volitional passage by using trams and bypass pipes. These provisions are dependent on several factors including feasibility, cost, and timing. The enhanced flows under the license in the Swift bypass reach allow bull trout to access this important FMO habitat that may play an important future role in the collection and transport of adult bull trout to areas upstream of Swift Dam that have been entrained from the Swift reservoir population. In addition, roads covered by the Settlement Agreement will be managed in a manner that does not contribute to the formation of barriers and remediation will address existing barriers.

PCE #3: “An abundant food base including terrestrial organisms of riparian origin, aquatic macro-invertebrates, and/or forage fish.”

The Settlement Agreement maintains the natural hydrology and riparian functions of large wood input, shade, bank stability, detritus inputs, as well as natural functions of flood plains and unstable slopes on the streams that are tributary to the reservoirs. The reservoirs themselves do not include riparian origin material to any significant degree. On the other hand, the development of a self sustaining kokanee population in the two upper reservoirs has probably increased the available prey base for bull trout. The re-introduction of anadromous salmonids into the basin above Merwin Dam will provide a much larger and broader food base for bull trout. It is expected the reintroduction will also increase the aquatic productivity in the tributary

streams by re-establishing natural marine derived nutrient components into the system. In the Swift bypass reach, the recent construction of spawning channels for reintroduced salmon will increase the potential forage base for bull trout.

PCE #4: “Complex river, stream, lake, reservoir, and marine shoreline, and processes that establish and maintain these aquatic environments, with features such as large wood, side channels, pools, undercut banks and substrates, to provide a variety of depths, gradients, velocities, and structure.”

The Settlement Agreement and conservation easements address the need for complex habitat by providing buffers and protecting Cougar Creek and completing yearly habitat surveys to make sure there are no negative impacts to the habitat and provide for habitat restoration if such negative impacts are found. The Agreement also addresses sediment which has the potential to simplify and degrade instream habitat conditions. The Conservation Easements provide for closing and removing culverts, roads and treating erosional surfaces in the Cougar and Panamaker Creek drainages.

PCE #5: “Water temperatures ranging from 2 to 15 °C (36 to 59 °F), with adequate thermal refugia available for temperatures that exceed the upper end of this range. Specific temperatures within this range will depend on bull trout life-history stage and form; geography; elevation; diurnal and seasonal variation; shading, such as that provided by riparian habitat; streamflow; and local groundwater influence.”

Stream temperature is a complicated issue and is addressed in this Settlement Agreement through a number of avenues including a 1,000 foot no-touch buffer along Cougar Creek and 400 foot no-touch buffer along Panamaker Creek. Higher standard buffers along other streams and wetlands are expected to provide natural levels of shade to avoid increasing sunlight which could result in stream warming within the project boundaries. Instream temperature regulation is possible with hydroelectric projects specifically with deep intakes for the turbines that are below a thermocline. The Merwin project has a deep intake and the Lewis River downstream of the project typically runs much cooler than it would as an unregulated stream. Yale and Swift are also fairly deep intakes although the water coming out of the tailrace of the Yale may actually be warmer than the receiving water and may cause problems with capturing bull trout during operations of the Yale project. The actual effect of this has not been analyzed but will be one of the factors addressed during the testing of alternative bull trout passage facilities at the Yale and Swift projects. The bypass reach between Swift No.1 and the head of Yale Reservoir will be getting a permanent instream flow of up to 100 cfs as part of the Settlement Agreement. This should actually decrease the temperature of the bypass water during the summer months but may increase the temperature during the fall and early winter over the background temperature.

PCE #6: “In spawning and rearing areas, substrate of sufficient amount, size, and composition to ensure success of egg and embryo overwinter survival, fry emergence, and young-of-the-year and juvenile survival. A minimal amount of fine sediment, generally ranging in size from silt to coarse sand, embedded in larger substrates are characteristic of these conditions. The size and amounts of fines suitable to bull trout will likely vary from system to system.”

The Settlement Agreement addresses the need for natural substrates by reducing road-generated,

fine sediment on project owned roads. See above for efforts in the Cougar Creek drainage. Additionally it provides for gravel augmentation to mitigate for the blockage of natural bedload movement by the project dams and reservoirs. The Settlement Agreement addresses bank stability and large wood recruitment which should help store fine sediment and provide for suitable substrates for bull trout spawning by providing a fund for enhancement and protection measure.

PCE #7: “A natural hydrograph, including peak, high, low, and base flows within historic and seasonal ranges or, if flows are controlled, they minimize departures from a natural hydrograph.”

The Settlement Agreement includes provisions to provide instream flows below the project that somewhat mimic the natural hydrograph including limiting un-natural downramping rates. The project negatively affects the habitat creating effects of peak flows by providing flood control downstream of the project. Instream flows are being provided in the bypass channel but do not approach the magnitude of variation that would have occurred absent the project. Other than these effects, flow regimes in the remaining streams within the project boundaries are unchanged by the Settlement Agreement.

PCE #8: “Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.”

The Settlement Agreement and the conservation easements protect both water quality and quantity through a variety of mechanisms including minimum instream flow regimes. Total Dissolved Gases can be an impact below high head hydroelectric dams, but the provisions of the Settlement Agreement require that the discharges meet State Water Quality standards for Total Dissolved Gases and if not modification to the facility are required. The project reservoirs develop a thermocline in the summer months. During warm weather the upper water column temperatures may exceed the bull trout water temperature preferences but below the thermocline waters stays very cold and within their preference range. In the Swift bypass reach, flows have been significantly increased under the licenses 401 Certification issued by WDOE to enhance bull trout use in this FMO habitat.

PCE #9: “Nonnative predatory (e.g., lake trout, walleye, northern pike, smallmouth bass); interbreeding (e.g., brook trout); or competing (e.g., brown trout) species that, if present, are at sufficiently low levels of occurrence or adequately temporally and spatially isolated.”

The Settlement Agreement is not expected to contribute to the spread of deleterious aquatic species. Provisions of the Settlement Agreement that protect the natural environment should assist native fish in maintaining a competitive advantage when that is possible. Reintroduction of the historic assemblage of salmon may create competition for spawning space between bull trout and coho salmon. In non-disturbed systems these two species have been observed spawning in the same areas but in general they tend to stratify the habitat by choosing slightly different habitat parameters such as water temperature, gradient, substrate, and cover. There are brook trout present in low numbers and an unconfirmed report of a bull trout X brook trout hybrid but the distribution of brook trout is limited.

SUMMARY

During the relicensing process and settlement negotiations, bull trout protection and enhancement were a major focus of the studies and the proposed actions. The goals from the draft bull trout Recovery Plan for the Lewis River core population was incorporated into the relicensing process. Several studies focused on answering many of the additional information needs identified in the Recovery Plan. Conservation measures such as moving bull trout above the dams, and protecting significant spawning and rearing habitat in Cougar Creek were included in the Settlement Agreement and are expected to improve bull trout population numbers significantly. We believe the PCEs are appropriately supported by the terms of the Settlement Agreement and FERC license to conserve bull trout in those waterbodies (i.e., Swift and Cougar Creeks) covered under the permanent conservation agreements and in the Swift bypass reach.