

RECORD OF DECISION

**Cherry Dinner
Palouse Ranger District
Clearwater National Forest**



March 2008

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Cherry Dinner

Palouse Ranger District
Clearwater National Forest
Latah County, Idaho

March 2008

Lead Agency:

USDA Forest Service

Responsible Official:

Tom Reilly
Forest Supervisor
Clearwater National Forest
12730 U.S. Highway 12
Orofino, ID 83544

For Further Information, Contact:

Kara Chadwick
Palouse District Ranger
(208) 875-1131

***Abstract:** This document describes the decision for the Cherry Dinner project. The decision is based on the analyses documented in the Cherry Dinner Final Environmental Impact Statement (February 2008) and the Clearwater National Forest Land and Resource Management Plan Final Environmental Impact Statement (September 1987).*

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 Alternative 2 (FEIS) – Vegetative Treatments and Associated Road Activities

 Alternative 2 (FEIS) – Watershed Improvements and Access Management

 Alternative 2 (modified) – Vegetative Treatments and Associated Road Activities

 Alternative 2 (modified) – Watershed Improvements and Access Management

 Alternative 3 – Vegetative Treatments and Associated Road Activities

 Alternative 3 – Watershed Improvements and Access Management

Forest Plan Amendment

Biological Assessment

Biological Evaluation

Record of Decision
Cherry Dinner Environmental Impact Statement
Palouse Ranger District
USDA Forest Service
Clearwater National Forest
Latah County, Idaho

A. SUMMARY OF DECISION

The Palouse Ranger District of the Clearwater National Forest prepared a Final Environmental Impact Statement (FEIS) titled *Cherry Dinner*, to analyze the environmental effects of proposed forest management activities including timber harvest and associated road work, access management, watershed improvement, and hazardous fuels treatment. The 20,470 acre study area is located between the Idaho towns of Helmer and Bovill (see attached map). This Record of Decision documents the decision and rationale for implementing the selected actions in the project area.

It is my decision to implement Alternative 2 as described in the FEIS on pages 28-32, with some modifications explained later in this decision document.

Briefly, this Decision (with modifications) will accomplish the following (see attached map):

- Harvest timber through a variety of logging methods on 1,526 acres.
- Construct 1.18 miles of permanent road, construct 5.83 miles of temporary roads, reconstruct 12.2 miles of existing roads, and recondition 18.2 miles of existing roads.
- Reduce hazardous fuels (without timber harvest) on 306 acres.
- Decommission 23.6 miles of existing roads.
- Place 16.71 miles of existing roads into intermittent storage.
- Accomplish about 4.0 miles of stream bank stabilization.
- Construct about 0.5 mile ATV trail to connect two roads.
- Place 2.5 miles of existing trails onto the trail system.
- Decommission 0.9 mile of user created trail.
- Convert 1.9 miles of decommissioned roads to ATV trail.
- Open 0.4 mile of newly constructed road, placed into intermittent term service, to ATV and motorcycle traffic.
- Implement a number of road management actions listed in Appendix F of the FEIS.
- Designate 363 acres of forest to be managed for old growth forest.
- Amend the Forest Plan to raise fish/water quality standards for three streams.

B. PROJECT BACKGROUND

About six years ago, cursory field reviews indicated an opportunity for improving vegetative and watershed conditions in the Cherry Dinner project area. Initial restoration needs for vegetative treatment included: restoring seral species, especially western white pine, to the area; restoring stands with off-site ponderosa pine to native ponderosa pine; and reducing densities in younger, crowded stands in the Cherry Dinner project area. Follow-up field investigation verified a need to initiate planning to accomplish forest management needs in the area. In 2003, a study team was assembled to

identify specific management needs. The team identified a number of actions to address watershed, access management, hazardous fuels (wildfire risk) and timber management needs. These management actions became the Proposed Action that went before the public for review and comment.

This original proposal was subsequently modified in response to public comment and information gathered by the study team, as it continued to learn more about the management needs of the area. The original Proposed Action evolved to become the current Preferred Alternative (See FEIS – Discussions on pages 5 and 6).

Forest stands were selected for harvest because of stand age (growth is slowing), tree species composition (fire exclusion, past harvest actions), restoration (departure from historic conditions), disease issues (white pine blister rust, other diseases), or crowding (growth is slowing). These stand conditions are commonly found to occur on the Palouse Ranger District and are a clear indication of need for initiating harvest and restoration actions. Some stands were selected for harvest because they support off-site ponderosa pine. These stands were clear cut years ago and planted back to ponderosa pine seedlings grown from seeds gathered in the Black Hills area of North and South Dakota. These off-site pine trees do poorly, because they are not genetically adapted to this climate. The Forest Service is systematically regenerating these stands to prevent cross-pollination with native ponderosa pine.

Road management actions were informed by a roads analysis that looked at current and future management of all roads in the project area (See FEIS – Appendix F).

Access management actions responded to (1) OHV recreation trends, (2) watershed needs, and (3) wildlife needs (winter range).

Watershed management actions were selected to (1) protect and improve anadromous fish habitat and (2) improve channel stability.

Fuel management actions were selected to (1) protect adjacent private lands and (2) favor historic stand conditions.

C. PURPOSE AND NEED FOR ACTION

Five Purpose statements drove the design of the proposed action (See FEIS – Purpose and Need for Action on pages 2 through 4). In condensed form they are:

- Improve species diversity and stand productivity by reestablishing seral tree species that historically dominated the cover type in this area.
- Reduce fuel buildup in stands in the wildland urban interface (WUI) where fire suppression and changing stand composition have resulted in unnaturally high amounts of surface and ladder fuels.
 - All of the project area is within the Latah County designated WUI.
- Reduce long-term sedimentation to streams caused by existing unsurfaced roads, and stabilize stream banks made unstable by motorized vehicles, cattle trailing, and channelization (historic railroad grades).
- Update fish/water quality standards for streams in the project area.
- Provide for a reasonable level of human access, reduce user conflicts, and provide for resource protection.

D. PROPOSED ACTION

The Proposed Action was designed to address specific management needs directly related to the Purpose and Need for Action statements, but also to integrate other resource values and policy and legal requirements such as watershed, wildlife, vegetation, recreation, and social values.

The study team identified and described a Proposed Action to achieve the Purpose statements (See FEIS, - Original Proposed Action on page 5). This Proposal was identified in the Notice of Intent to prepare an EIS and is briefly described as follows:

Original Proposed Action

- Harvest timber using various harvest methods (thinning, regeneration, etc.) from about 2,210 acres.
- Construct 8.1 miles of permanent road.
- Reconstruct 9.4 miles of existing roads.
- Construct 1.5 miles temporary roads.
- Conduct understory slashing and prescribed fire, not associated with timber harvest on 310 acres.
- Improve watershed condition by:
 - Decommissioning 24.2 miles of existing roads.
 - Placing 24.6 miles of existing roads into intermittent storage.
 - Stabilizing about 4.8 miles of streambanks.
- Construct a 0.5 mile ATV connector trail.
- Review access management.
- Designate about 1,700 acres for old growth management.
- Amend the Forest Plan to raise fish/water quality standards for three streams.

The above described Proposed Action was sent to the public and other entities for review and comment. Based on public comment and further field work by the study team, the Proposed Action was modified. The FEIS describes both the Original Proposal and the Current Proposal (See FEIS pages 5 and 6). The Current Proposal became Alternative 2 and was carried through analysis. A brief description of the Current Proposal (without modifications) is as follows (see attached map):

Current Proposed Action (Alternative 2)

- Harvest timber using various harvest methods (thinning, regeneration, etc.) from 1,883 acres.
- Opportunities for precommercial thinning on 200 acres.
- Construct about 9.5 miles of permanent roads.
- Reconstruct about 15.0 miles of existing roads.
- Construct about 1.5 miles temporary roads.
- Recondition 18.2 miles of existing roads.
- Underburn (without timber harvest) 306 acres.
- Improve watershed condition by:
 - Decommissioning 23.6 miles of existing roads.
 - Placing 22.6 miles of existing roads into intermittent storage.
 - Stabilizing 4.0 miles of streambanks.

- Construct about 0.5 mile ATV trail to connect two roads.
- Place 2.5 miles of existing trails onto the trail system.
- Decommission 0.9 mile of user created trail.
- Convert 1.9 miles of decommissioned roads to ATV trail.
- Open 0.4 mile of newly constructed road, placed into intermittent term service, to ATV and motorcycle traffic.
- Implement a number of road management actions listed in Appendix F of the FEIS.
- Designate 363 acres of forest to be managed for old growth forest.
- Amend the Forest Plan to raise fish/water quality standards for three streams.

E. ISSUES

Issues addressed in the analysis flowed directly from the Proposed Action and fell into several categories. Very important issues that could not be mitigated or addressed through design were used to develop Alternatives to the Proposed Action. Important issues for which environmental consequences must be disclosed were carried through detailed analysis. Issues addressed through project design or mitigation were used to amend the Proposed Action or were folded into other Alternatives. Issues that were outside the scope, decided by law or policy, or not affected by the proposal were dismissed (See FEIS – Issues discussion on pages 13 through 18).

Issues used to develop alternatives:

Watershed Condition
Water Quality/Fish Habitat

Issues used to develop design criteria and/or mitigation:

Risk of Landslides
Sensitive Plants
Snags
Soil Productivity
Spread of Noxious Weeds

Other Issues carried through the Analysis:

Economic Feasibility
Heritage Resources
Sensitive and Management Indicator Species (MIS) of Wildlife
Tribal Treaty Rights

Issues dismissed:

Air Quality
Impacts of Grazing
Old Growth Habitat
Use of Prescribed Fire in lieu of timber harvest
Road Density
Threatened and Endangered Wildlife and Plant Species
Wildland Fire Use Planning

F. ALTERNATIVES NOT CONSIDERED IN DETAIL

During the course of project analysis, alternatives are proposed by study team members and/or reviewers. These alternatives are weighed against the Purpose and Need Statements and Issues to see if they should be carried through detailed analysis and considered for Decision by the Responsible Official. Three alternatives (See FEIS – Alternatives Considered but Eliminated from Detailed Study on pages 39 and 40) were proposed, weighed and dismissed from detailed study as follows:

An alternative that emphasized watershed restoration without timber harvest.

A watershed restoration only alternative would not meet the Purpose and Need for Action, so this alternative was dismissed as a stand-alone alternative. To address this public comment, watershed improvement actions were incorporated into Alternatives 2 and 3. For these reasons and the reasons given in the FEIS on page 39, I concur with the study team's decision to not carry this alternative through detailed analysis.

An alternative that used prescribed fire to accomplish timber management objectives.

Using prescribed fire to accomplish forest management would be inconsistent with the current Clearwater National Forest Plan direction for this area. The Forest Plan prescribes that lands within the study area boundary be managed to optimize timber production. For this reason and the reasons given in the FEIS on page 40, I concur with the study team's decision to not carry this alternative through detailed analysis.

An alternative that did not change the Forest Plan water quality objectives for three area streams.

The water quality objective for Little Boulder, East Fork Potlatch, and Ruby Creek is currently listed as "minimum viable" in Appendix K of the Clearwater National Forest Plan. The same document lists the Potlatch River as a placeholder to indicate the watershed geography. Maintaining the existing water quality objective for these watersheds would not support the requirements of the Clean Water Act. For this reason and the reasons given in the FEIS on page 40, I concur with the study team's decision to not carry this alternative through detailed analysis.

G. ALTERNATIVES CONSIDERED IN DETAIL

The *Cherry Dinner* project analysis examined three alternatives, the No Action Alternative and two action alternatives. (Maps of each action alternative are attached.)

Alternative 1 – No Action

The No Action Alternative would defer all management actions. Actions currently taking place within the project area would continue including such activities as livestock grazing, wood gathering, and recreation. Choosing the No Action Alternative would not preclude future management proposals.

Alternative 2 – Proposed Action (Preferred Alternative in the FEIS)

Alternative 2 (unmodified and already described in detail) proposes vegetative treatment (timber harvest and fuels reduction); proposes certain road and streambank activities to improve watershed conditions; and proposes access management decisions to provide a reasonable level of human access and reduce user conflicts, while protecting other resources (i.e. soils, water quality, and heritage sites).

Alternative 3 – Existing Roads (see attached map)

Alternative 3 responds to the comment submitted by the Nez Perce Tribe, asking us to develop an alternative that uses the existing road system and requires no new roads. It proposes vegetative treatment (timber harvest and fuels reduction); proposes certain road and streambank activities to improve watershed conditions; and proposes access management decisions to provide a reasonable level of human access and reduce user conflicts, while protecting other resources. Alternative 3 would accomplish the following:

- Harvest timber using various harvest methods (thinning, regeneration, etc.) from 587 acres.
- Opportunities for precommercial thinning on 200 acres.
- Construct zero (0.0) miles of permanent road.
- Reconstruct about 7.9 miles of existing roads.
- Construct zero (0.0) miles temporary road.
- Underburn (without timber harvest) 306 acres.
- Improve watershed condition by:
 - Decommissioning 20.0 miles of existing roads.
 - Placing 17.5 miles of existing roads into intermittent storage.
 - Stabilizing 4.0 miles of streambanks.
- Implement a number of road management actions listed in Appendix F of the FEIS.
- Designate 363 acres of forest to be managed for old growth forest.
- Amend the Forest Plan to raise fish/water quality standards for three streams.

H. DECISION

As the Forest Supervisor, I am the Responsible Official for this decision. Based on the analysis documented in the Cherry Dinner Final Environmental Impact Statement and the project file, I have made the decision to implement Alternative 2 with modifications¹.

Vegetative Treatments²; (modified by dropping Units 7, 58, and a portion of 39, all totaling 357 acres)

- 91 acres Clearcut w/Reserves
- 289 acres Seed Tree w/Reserves
- 296 acres Shelterwood w/Reserves

¹ The effects of these modifications are minor in the overall context of the project, and are within the range of effects considered in the FEIS.

² All acreage, distance and other figures given in the Decision are based on field traverse, road survey, and/or computer generated mapping. While these figures are generally accurate, it is possible for them to vary slightly during implementation.

- 76 acres Seed Tree/Group Selection (convert off-site ponderosa pine)
- 83 acres Group Shelterwood
- 493 acres Commercial Thinning (includes 52 acres of Preparatory Shelterwood)
- 198 acres Improvement Cut
- 306 acres Underburning without timber harvest

There are also opportunities for precommercial thinning on 200 acres.

Road Activities: (modified by dropping 3.99 miles of new roads and converting 4.33 miles of new roads to temporary roads)

Needed for Logging Access	Primarily for Watershed Improvement
1.18 miles of new road construction. Following harvest activities, 0.81 mile of this new road would be placed in intermittent storage.	23.6 miles of road decommissioning. This includes the decommissioning of Roads 3306 and 3306A that are within the Little Boulder Creek riparian area. <i>Alternative permitted access to the south side of the Little Boulder drainage through Potlatch Timber Co. road system is being explored.</i>
12.22 miles of road reconstruction. Placing gravel and installing drainage structures on these native-surfaced roads would improve watershed conditions by reducing the run-off of sediment into area streams.	15.9 miles of existing roads would be placed in intermittent storage. (This does not include the 0.81 mile of new road to be put into intermittent storage following harvest activities.)
5.83 miles of temporary road construction. These roads would be decommissioned following use.	
18.2 miles of road reconditioning, primarily consisting of blading the road surface and brushing for clearance.	

Other Watershed Improvements:

- 4.0 miles of stream bank stabilization along the East Fork Potlatch River and tributaries

A table detailing all proposed watershed improvement activities can be found in Appendix E of the FEIS.

Access Management:

- Construct a 0.5 mile ATV connector trail between Roads 4761 and 3308 and adopt 2.5 miles of user created trails. Another 0.9 mile of user created trail would be decommissioned.
- 1.9 miles of roads to be decommissioned post sale would be converted to ATV trail.
- 0.4 mile of newly constructed road would be put into intermittent term service and would be open to ATV and motorcycle traffic.

There are other access management actions included in this alternative, as part of the Cherry Dinner Roads Analysis, that can be found in Appendix F of the FEIS.

Other Activities with this Alternative:

- Designate 363 acres of forest to be managed for old growth (see Appendix I in the FEIS).
- Prepare an amendment to the Clearwater National Forest Plan to change the water quality objectives in Appendix K for Little Boulder Creek, East Fork Potlatch River, and Ruby Creek, plus, add the Potlatch River.

Mitigation Measures:

1. PACFISH default buffers are to be used to define timber sale unit boundaries. No timber harvest is to occur within 300 feet of fish-bearing streams, 150 feet of perennial non-fish bearing water, and 100 feet of intermittent streams.

Clearwater National Forest audits show this measure to be 99% effective.

2. Ignition points for prescribed fire are to be located outside of the PACFISH riparian buffers.

BMP audits show this measure to have a High effectiveness.

3. Areas of Units 18 and 36 with high landslide risk will maintain 50% canopy retention. Currently, Unit 36 does not have much canopy, so stabilization will be best accomplished by re-establishing a young stand of trees through limited site preparation followed by reforestation in steep and moist draws.

Both of these units have been previously harvested. Each unit has been reviewed by the soil scientist to identify sensitive portions where canopy retention must be maximized. Effectiveness is expected to be moderate.

4. Design activity to stay below 15% area disturbance of the treatment area. Methods include designation of skid trails or forwarder trail, 50 foot spacing of forwarder trails, reuse of skid trails by machines used for piling, and placement of piles on trails.

BMP audits show this measure to have a High effectiveness.

5. To provide for soil fertility in regeneration harvest units: (a) coarse wood will be retained at 7-15 tons per acre on drier habitat sites and 15-33 tons per acre on wetter sites, providing a variety of size materials across the unit; and (b) logging slash will over-winter (i.e. decompose through one wet season) before burning or piling.

The recommendations are conservative for maintaining forest productivity. The coarse woody material should be distributed across harvest units, where prescribed fire would remove the needles and small branches but maintain much of the organic matter on the forest floor. This would maintain forest productivity, but would be of little effect, if the forest floor is destroyed or shallow mineral soil is displaced or compacted by poor yarding or site preparation (Graham, et al., 1994).

6. Per the Northern Region Snag Management Protocol (January 2000), the combination of standing live and dead trees in timber harvest units and riparian habitats will meet or exceed 12 trees per acre (>8' dbh), with at least 4 snags per acre (where available) greater than 20" dbh. Snags or trees designated for retention, but felled for safety reasons, will be left in the harvest unit.

Wood retention maintains forest productivity, but would have little effect if the forest floor is destroyed or shallow mineral soil is displaced or compacted by poor yarding or site preparation (Graham et al, 1994).

7. Units that presently exceed the 15% detrimental soil disturbance (Unit 17) or that are found to exceed that standard after monitoring, will have soil restoration activities implemented. Measures to improve soil quality levels (such as decompacting landings and skid trails with a ripper, forest cultivator, grapple rake, or similar equipment; placement of large woody materials; and other measures) will be implemented to maintain or improve soil quality in units.

Effectiveness varies: Restoration of infiltration would be 85-90% effective; reduction of puddling or soil displacement would be 50%; and restoration of the soil profile would be less than 10%.

8. The Fuel, Transport and Containment Plan developed under Section 7 consultation with the USFWS is to be applied throughout project implementation to minimize the risk of an accidental spill of petroleum products, as well as to protect water courses and aquatic biota from adverse effects in the event of a spill.

BMP audits show this measure to have a Moderate effectiveness. A plan insures foresight, but cannot eliminate the risk of materials being spilled and escaping into waters.

9. Culvert replacement/removal (including road construction, reconstruction, and maintenance) and road decommissioning will be conducted after July 15 to avoid conflicts with steelhead trout spawning and minimize adverse effects to aquatic organisms.

BMP audits show these measures to have a High effectiveness.

10. To minimize the spread of noxious weeds, road and harvest equipment are to be cleaned of loose debris prior to moving on to the timber sale area (CT6.26). Also, raw soils exposed through project activities are to be revegetated as soon as practicable, using certified noxious weed free seed mix and fertilizer (as necessary).

Effectiveness is expected to be moderate, since it would not be possible to restrict all non-sale related traffic from entering the sale area.

11. To reduce disturbance to wildlife along several heavily traveled roads within the project area such as the Vassar Meadows Road (3347), Highway 8, Dinner Bucket Ridge (1444) and the School House Gulch Road (4761) and the Little Boulder Creek Road (3306), vegetative buffers are to be retained between the cutting unit and the road.

This measure could be effective in reducing disturbance to wildlife and reducing the potential for poaching and shooting at game from the roads.

12. For the purpose of reducing costs and maintaining structure and habitat for wildlife, unmerchantable material in units that would be broadcast burned should not be felled, unless this material is necessary to accomplish fuel management objectives.

15. To maintain aesthetics, logging debris piles should be removed from public view.

16. To minimize potential effects to heritage site 10LT187, a logging camp within the East Fork Potlatch River floodplain, proposed streambank stabilization is to be developed and implemented in consultation with the Clearwater Forest Archaeologist.

17. If additional heritage resources are found during implementation of the project, project activities are to cease. The Forest Archaeologist would then be notified, and an assessment would be made regarding the effect of continued activities on the newly identified heritage resource.

Monitoring:

The following monitoring activities would continue or be initiated with the Cherry Dinner project:

1. The Timber Sale Administrator or Contracting Officer Representative will make weekly, if not daily, checks on the progress of the sale to compare implementation with desired project outcomes and objectives.
2. PACFISH compliance monitoring will be conducted annually by the Forest Fisheries Biologist in conjunction with BMP audits and reported in the annual Clearwater National Forest Monitoring and Evaluation Report.
3. Ongoing stream temperature monitoring will continue at the Potlatch River gage site and at the mouth of the East Fork Potlatch River.
4. Riffle stability index sites (pebble count and channel transect) will occur on a three-to-four year cycle at the East Fork Potlatch River, the gage site on the Potlatch River, and Little Boulder Creek.
5. The District Soils Scientist will assess the amount of activity area impacted by proposed activities to validate the assumptions made for detrimental soil impacts in this document.
6. Historic site 10LT187 will be monitored to track the potential effects of channel meanders to the site. If the stream channel changes begin to threaten the site's integrity, mitigation measures would be developed in consultation with the Idaho SHPO.

I. RATIONALE FOR MY DECISION

The modifications made to Alternative 2 were a result of input from the Nez Perce Tribe during the comment period. These modifications also address comments from other respondents. The modifications are intended to better address impaired water quality in the project area by minimizing new road construction and resulting sedimentation. I believe Alternative 2, as modified, best meets the purpose and need of the project by balancing the need for vegetative treatment and fuels reduction activities with the need to improve watershed condition and fish habitat. It accomplishes this through minimal road construction while: (1) improving tree species composition and productivity; (2) reducing hazardous fuels; (3) managing access to provide OHV opportunities while reducing watershed concerns; and (4) funding a full range of watershed improvement projects that will achieve an improvement in watershed condition. By using a stewardship contract to implement this project, revenue from the sale of timber will be directly used to fund the watershed improvement activities using a "goods for services" concept, and the improvements will be included within the timber sale contract.

More specifically, Alternative 2 modified best meets the purpose and need in the following ways:

Vegetation, Hazardous Fuels and Control of Wildfire

The purpose and need, and issues related to improving species composition, stand productivity and reducing hazardous fuels would be best served by the alternative that treats the most acres, which is Alternative 2 without modifications. However, Alternative 2 modified will treat 1,832 acres to meet these objectives while being responsive to the issues raised by the Nez Perce Tribe and other members of the public, by significantly reducing the need for new permanent road construction. This reduction in new roads should reduce potential sediment production, and subsequently enhance watershed condition and fish habitat.

Of the 1,832 acres to be treated: (1) the 835 acres of regeneration harvest will be planted to seral species, focusing on western white pine, where appropriate; (2) the 691 acres of intermediate treatment will reduce stand density and improve species composition, improving the health and productivity of the remaining trees; and (3) the 306 acres of underburning without timber harvest will help maintain the western larch and ponderosa pine overstory by decreasing competition with fire intolerant species and reduce ladder fuels in 30-year old ponderosa pine plantations. Also, all treatments, plus an additional 200 acres of precommercial thinning opportunities, will accomplish the objective of reducing hazardous fuels within the Latah County identified WUI.

In contrast, Alternative 1 (No Action) would not result in specific management actions addressing the Purpose and Need for Action. Basic custodial work such as fire protection and road and trail maintenance and authorized activities such as livestock grazing would continue to occur. Forest stands identified ready for forest management actions would go unmanaged, and hazardous fuels in the WUI would increase, leading to conditions favoring hard-to-control wildfire adjacent to private holdings.

Alternative 2, as discussed in the FEIS, would treat a larger number of acres (total of 2,189 acres), converting 860 acres to seral species, reducing tree density on 1,023 acres, and accomplishing a larger amount of hazardous fuel reduction. Though not responsive to the issue of constructing permanent roads, this alternative would have provided more permanent access for response to wildland fire with the proposed 9.5 miles of road construction.

Alternative 3 would only treat a total 893 acres, converting 284 acres to seral species, reducing tree density on 303 acres, and accomplishing a much smaller amount of hazardous fuel reduction. However, this alternative would be most responsive to the issue of constructing permanent roads.

Watershed Condition

The purpose and need and issues related to water quality and fish habitat would be best addressed by Alternative 2 modified. While this alternative will construct 1.2 miles of permanent road along with 5.8 miles of temporary road, it will generate approximately \$1,000,000 (based on current market prices) to fund and implement most or all of the identified watershed improvement activities³ (e.g., 23.6 miles decommissioning of existing road, placing 15.9 miles of existing road into intermittent storage, and 4.0 miles of stream bank stabilization) effecting a long-term improvement in watershed condition.

Alternative 1 would not generate any money to fund any watershed improvement activities. Native surface roads, like FS Road 1444, would continue to rut, leading to high maintenance costs and the erosion of sediment into area streams, and streambanks along portions of the East Fork Potlatch River and its tributaries would remain in an unstable condition.

Alternative 2 (FEIS) would construct a total of 9.5 miles (including alternative access for FDR 3306), but due to the cost of road construction, would generate approximately \$164,013 to fund only a portion of the discretionary improvement activities.

Alternative 3, though it includes no permanent or temporary road construction, would generate approximately \$306,755 to fund a small portion of the discretionary improvement activities.

Forest Plan Amendment

All action alternatives address amending Forest Plan Appendix K. With the no action alternative, area streams would continue to be managed at Minimum Viable fish standard.

³ The suite of watershed improvements will cost between \$1,100,000 and \$1,400,000 to implement.

Access Management

All action alternatives address access in the analysis area. However, only Alternative 2 (modified) has the ability to cover the costs of all projects, including user created trail decommissioning and development of new opportunities to direct use away from streamside adjacent roads/trails. Access management, an emerging management issue, would not be addressed with Alternative 1.

How the Selected Alternative Responds to Issues and Public Comment

The Cherry Dinner project was originally scoped in 2003, with the analysis documented in an Environmental Assessment (EA). During the EA phase, the proposed action (Alternative 2) and three alternatives (in response to public comment) were formulated, with two of the alternatives later dropped from further consideration. After publishing a Notice of Intent to prepare an EIS, the proposed action was further refined to respond to the issues of old growth habitat and watershed condition, plus additional access management proposals. This evolved into Alternative 2 in the FEIS, along with Alternative 1 (no action) and Alternative 3 (existing roads).

Public meetings regarding the project were held with area city councils and the Nez Perce Tribe, and a Draft EIS was later released for public comment. Comments received from State and Federal agencies and several environmental groups were addressed, with each comment and our response displayed in Chapter 6 of the FEIS. A separate letter received from the Nez Perce Tribe and a follow-up meeting with them led to the modifications of Alternative 2 in response to their concerns about permanent road construction and the need to improve watershed condition and fish habitat. The modifications also addressed similar concerns raised by other respondents. The following table displays the estimated effects of the selected alternative for each significant issue:

Resource Issue Summary of Effects (based on issue indicators)
Watershed Condition – Unsurfaced roads are causing long-term sedimentation, and some streambanks are unstable. The selected alternative would implement the following watershed improvements: 12.22 miles of unsurfaced roads reconstructed (graveled & drainage structures installed). 23.6 miles of unsurfaced roads decommissioned 4.0 miles of streambanks stabilized
Water Quality/Fish Habitat – Past management has affected riparian areas, fish habitat, and water quality. The selected alternative would affect water quality and fish habitat, as follows: Little Boulder: The 3-yr mean sediment production would increase by 4%, but would meet the “no measurable sediment” criteria of the Forest Plan Lawsuit Stipulation of Dismissal. Hog Meadow: 3-yr mean sediment production would increase to 55%, but would meet the “basic” Forest Plan standard by not exceeding the geomorphic threshold of 254%. Unnamed trib: ECA = 10.9% (year of activity), which is less than the 20% criteria.
Sensitive Plants – Several sensitive plant species are located in the project area. Of the eight sensitive plant species known or suspected to occur within the analysis area, only clustered lady’s slipper and Idaho strawberry would be affected by the selected alternative. The effects of regeneration harvest and/or prescribed fire may impact individuals or habitat, but would not likely result in a trend toward federal listing or reduced viability for the population or species. The effects on Idaho strawberry are considered beneficial.

<p>Resource Issue Summary of Effects (based on issue indicators)</p>
<p>Soil Productivity – Past activities may have decreased the amount of coarse woody material and damaged soils.</p> <p>All but 10 units proposed for treatment under the selected alternative have detrimental soil impacts from previous activities, with only one unit (#17) having impacts above 15%. The underburn treatment would increase soil impacts in Unit 17 by another 2%. However, restoration efforts would be implemented after the burn to reduce the soil impacts below 30%, which would improve the existing condition. Units 14 and 23 could approach 15% with the proposed action. In these units mitigation measures (e.g., designation of skid trails and re-use of those trails for site preparation) would reduce or mitigate adverse impacts.</p>
<p>Sensitive & MIS Species of Wildlife – These species could be affected by proposed management activities.</p> <p>The selected alternative would affect sensitive and MIS species of wildlife, as follows: (Also refer to the attached Biological Evaluation.)</p> <p>Black-backed Woodpecker: 4,110 acres of available suitable habitat 115 acres of habitat improved by prescribed fire</p> <p>Elk Summer Range: Elk habitat effectiveness by EAA range from 41% to 61% Open road densities by EAA range from 0.7 mi/mi² to 1.9 mi/mi² Available hiding cover by EAA range from 63% to 90%</p> <p>Elk Winter Range: Available winter browse increases by 200 acres Available hiding cover decreases by 367 acres</p> <p>Fisher: Available suitable habitat decreases by 35 acres</p> <p>Flammulated Owl: No change in available suitable habitat, but an 18-acre improvement in habitat due to commercial thinning</p> <p>Pygmy Nuthatch: No change in available suitable habitat, but a possible loss of large, standing ponderosa pine trees on 18 acres due to commercial thinning</p> <p>Western (Boreal) Toad: 300 acres of timber harvest and burn activities, plus road decommissioning and road storage could locally reduce breeding and rearing habitats</p> <p>White-tailed Deer: Average open road density increases to 1.2 mi/mi² Available hiding cover decreases to 79% or 11,590 acres Existing winter forage increases by 200 acres</p>
<p>Economic Feasibility – Effects of activity outputs on local economies.</p> <p>If the project was implemented under a traditional timber sale offering, the selected alternative would have a Present Net Value of \$140,875, which does not include the costs of watershed improvement activities. If implemented using a stewardship contract (i.e. trading goods for services), the selected alternative would generate an estimated \$1,000,000, which would cover all costs, including most or all of the watershed improvement activities.</p>
<p>Heritage Resources – Much of the area is rich in cultural resources, both prehistoric and historic.</p> <p>Proposed treatment areas of the selected alternative would avoid cultural sites, and contract provisions would be implemented to protect sites discovered during management activities.</p>
<p>Tribal Treaty Rights – Effects of activities on fishing, hunting, and gathering (roots and berries).</p> <p>Planned actions of the selected alternative would have minimal impacts to area streams and lessen the risk of catastrophic wildfire. Big game hiding cover would remain high, and there would be increases in the amount of available forage. There would be no impacts on the availability of cultural plants, and timber harvest and/or fire activities could enhance the growth of berries and mushrooms. Mitigation measures to reduce the spread of noxious weeds would limit impacts to native and cultural plants.</p>

In summary, the selected alternative is in direct response to public comment, and its effects on various resource issues meet Forest Plan direction, Regional guidelines, and/or other policies and protocols.

J. Consistency with the Forest Plan

The Cherry Dinner analysis was guided by the goals, objectives, standards, guidelines, and management area direction of the Clearwater Forest Plan (September 1987). National Forest lands (14,670 acres) within the analysis area are mostly Management Area E1, with some areas of A4 and A5. Management area M2 consists of riparian areas that can be found in all management areas. The following Management areas are within the Cherry Dinner analysis area:

Management Areas	NF Acres	Direction
A4	1,660	Travel Corridors – Manage to maintain and enhance an aesthetically pleasing natural appearing Forest setting surrounding the roads, trails, and areas of concentrated public use (Clearwater Forest Plan, page. III-11).
A5	20	Administrative Sites – Manage developed recreational sites to meet public demands for facilities for camping and picnicking (Clearwater Forest Plan, page. III-15).
E1	12,750	Timber Producing Land – Manage to provide optimum, sustained production of wood products and viable elk populations while providing adequate protection of soil and water quality (Clearwater Forest Plan, page. III-57).
M2	240 + Inclusions	Riparian Areas – Manage under the principles of multiple use as areas of special consideration, distinctive values, and integrated with adjacent management areas to the extent that water and other riparian dependent resources are protected (Clearwater Forest Plan, page. III-69).

Consistency findings were discussed throughout the FEIS. I have evaluated the selected alternative with Forest Plan goals, objectives, and standards, and have determined that it meets management direction for all resources, including the following:

Aquatics Forest Plan Standards:

Standard 8A: Maintain the integrity and equilibrium of all stream systems in the forest.

Areas of unstable banks are found naturally in all streams in the project area (*Fish, Watershed and Soils Report* pp. 46-47). All activities stay within the thresholds for measurable increases in sediment, ECA and peak flows (pages 80-86 of the *Fish, Watershed and Soils Report* and FEIS, Chapter 4, pp. 93-99), so channel stability is expected to be maintained in all project area streams. Use of PACFISH buffers and road decommissioning will further protect the streams

Standard 8B: Manage water quality and stream conditions to assure that the National Forest management activities do not cause permanent or long term damage to existing or specified beneficial uses.

Because the selected alternative, in concert with planned road decommissioning and stabilization of streambanks, is not expected to affect channel morphology, sediment levels, stream flow regime, riparian conditions, or temperature, management will not cause permanent or long term damage to any existing beneficial uses (FEIS, Chapter 4, effects on Watershed Condition, Water Quality and Fisheries). Beneficial uses identified by the State of Idaho are indicated in the FEIS (pp. 8 and 9). The fish species found in project area streams are identified in Appendix K of the Forest Plan and on pages 59-60 of the FEIS.

Standard 8C: Apply Best Management Practices (BMPs) to project activities to ensure water quality standards are met or exceeded (this also addresses Standard 8K).

Best Management Practices and their effectiveness are discussed in *Appendix G* of the FEIS. BMPs will be applied before, during, or after management activities to reduce or eliminate the introduction of pollutants into receiving waters.

Standard 8D: Manage all waters in the Forest under a basic standard (appendix K, section B).

The selected alternative will maintain the stability, equilibrium, and function (physical and biological) of all tributary streams as they relate to the beneficial uses of local, downstream, and parent streams. This standard also requires that individual projects identify the beneficial uses and the criteria necessary to protect them. Beneficial uses identified by the State of Idaho are indicated in the FEIS, pp. 8 and 9. The fish species found in project area streams are identified on pages 59-60 of the FEIS.

Standard 8E: Manage all watershed systems in the Forest that are considered important for the fishery resource.

Water quality objectives for area streams are listed in Forest Plan Appendix K. The proposed activities meet the water quality objectives for the named streams. In addition, I have decided to make a site-specific amendment to the Clearwater Forest Plan for the following changes:

1. Change the water quality objectives in Appendix K of the Clearwater National Forest Plan for Little Boulder Creek, East Fork Potlatch River, and Ruby Creek “minimum viable” to “high fish”, plus, add the Potlatch River. Currently the water quality objective for Little Boulder, East Fork Potlatch and Ruby Creek is “Minimum viable” and the fish species is listed as rainbow. Minimum Viable does not support the requirements of the Clean Water Act to provide fishable streams. It only provides a minimal population and does not reflect the listing of the species or importance of the area for spawning. Surveys have documented steelhead in Little Boulder, East Fork Potlatch River, and Ruby Creek. Steelhead was listed as a Threatened Species within the Snake River in 1997.
2. The Potlatch River, a migratory channel for steelhead, had only been listed in Appendix K as a placeholder to indicate the watershed geography. Stream surveys have shown the river to have a C channel and steelhead as the fish species. Spawning occurs in the East Fork Potlatch, and rearing occurs in most of the tributaries of the Potlatch River. Since the Potlatch River is proposed as critical habitat for steelhead, the water quality objective is being changed from “Minimum Viable” to “High Fish” to follow the direction of the Clean Water Act and Endangered Species Act. Also, as part of the high fish standard, threshold levels of sediment for the Potlatch River should not exceed 10 out of 30 years.

The need for these site-specific changes was identified during the Cherry Dinner analysis and was based on new information gathered since the Forest Plan was developed. Specific changes are noted in the amendment (attached). Forest Service policy permits Forest Plan amendments resulting from analyses conducted during Forest Plan implementation [36 CFR 219.10(f) and FSM 1926.51]. Changes as a result of this amendment are not significant, based on consideration of the following four factors:

Goals, Objectives and Outputs – Adoption of this amendment will not significantly change the forest-wide environmental impacts disclosed in the Clearwater National Forest Plan EIS. I have determined the proposed changes are not significant, since they are minor adjustments resulting from new information and will not alter the multiple-use goals and objectives for long-term land and resource management.

Location and Size – This amendment is only applicable to the above mentioned streams within the Cherry Dinner analysis area.

Management Prescription – This amendment does not change the management prescription or anticipated goods and services to be produced. This change is procedural, not substantive.

Timing – Although not needed to implement this project, this amendment will be effective concurrently with the Cherry Dinner decision.

Standard 8F: Monitor, analyze, and evaluate water quality within the critical reaches of specified streams, which are generally third or fourth order streams with watersheds ranging from 4 to 40 square miles.

A list of specific stream systems and their standards is located in Appendix K, Section C of the Forest Plan. The existing stream gage on the Potlatch River and channel surveys have provided the current condition for analysis of the proposed activities. A WATBAL analysis was conducted for Little Boulder Creek and Hog Meadow Creek to assess the effects of proposed activities. The evaluation of water quality effects is presented in the *Fish, Watershed and Soils Report*, pp. 72-87 and the FEIS, Chapter 4 pp. 93-99.

Standard 8G: Design, schedule, and implement management practices at the project level that:

- 1. will maintain water quality and stream conditions that are not likely to cause sustained damage to the biological potential of fish habitat.**
- 2. will not reduce fish habitat productivity in the short term below the assigned standards.**
- 3. will maintain water quality in a condition that is not likely to inhibit recovery of the fish habitat for more than the stated duration; and**
- 4. will require cumulative effects feasibility analysis of projects involving significant vegetation removal, prior to including them on implementation schedules, to ensure that the project, considered with other activities, will not increase water yields or sediment beyond acceptable limits. Also require that this analysis identify any opportunities for mitigating adverse effects on water-related beneficial uses, including capital investments for fish habitat or watershed improvement.**

Since there are no expected adverse effects on channel morphology, sediment levels, stream flow, stream temperature, or riparian areas, none are expected on fish habitat (pages 72-87 of the *Fish, Watershed and Soils Report* and Chapter 4 of the FEIS). In addition, activities within Management Area M2 must meet the following standards (Forest Plan, III-70):

- 4.a. (2) Maintain an overmature component for dependent wildlife species and for large woody debris recruitment as necessary for stream stability and for fish habitat.**
- 4.a. (3) Maintain the buffering function of organic debris and vegetative cover such that landslides, potential water yields, and sediment delivery from upslope management activities are moderated.**

Management Area M2 includes the area within 100 feet from perennial streams. This area is included in the PACFISH riparian habitat conservation area (RHCA), which was specifically designed to protect stream stability and fish habitat.

PACFISH - This is the interim strategy for managing fish-producing watersheds in Eastern Oregon and Washington, Idaho, western Montana, and portions of Nevada. The selected alternative will implement default PACFISH riparian habitat conservation areas and comply with the Clearwater Forest Plan standards and guidelines, as amended by the PACFISH Decision Notice.

Old Growth Habitat – On a Forestwide scale, old growth habitat for the Clearwater National Forest has been analyzed using FIA data. A complete description of the data and methodology used is available in the following reports: *Detailed Estimates of Old Growth, Clearwater National Forest* by Renate Bush et al. (2005) and *A Conservation Assessment of the Northern Goshawk, Black-backed Woodpecker, Flammulated Owl, and Pileated Woodpecker in the Northern Region*, USDA Forest Service by Fred Samson (2005). These reports are available on the internet at <http://www.fs.fed.us/r1/> or <http://www.fs.fed.us/r1/clearwater/>.

The amount of old growth habitat was then used to determine if viable populations of old growth associated management indicator species (goshawk, pileated woodpecker, and pine marten) can be maintained. Currently, FIA data shows 11.13% old growth on all forested lands on the Clearwater National Forest with a 90% confidence interval of 8.72% to 13.69%.

At the project level, the Cherry Dinner project affects old growth analysis unit (OGAU) 209. The following table summarizes the old growth within OGAU 209, including approximately 363 acres of replacement old growth that is being designated with this decision:

Old Growth Summary			
OGAU 209 (13,855 ac)	Verified OG	33 acres	
	Previously designated replacement OG	1,070 acres	
	Designated replacement OG with this Decision	363 acres	
	Total Old Growth	1,466 acres	10.6% (meets FP standard of 5%)

The selected alternative does not treat any old growth, including recruitment old growth needed to meet the Forest Plan standard of 5%. An extensive review of stands proposed for treatment was compared against existing old growth data (field reviews, field exams, eco data, and/or photo interpretation) to exclude any old growth (existing or recruitment) from proposed treatment. This review is documented and located in the project file.

Size of Openings – Seven of the treatment areas scheduled for regeneration harvest are over 40 acres in size. A 60-day public review period was initiated on April 19, 2005. Approval to exceed 40 acres was received from the Regional Office on November 22, 2005.

Consistency with the Forest Plan Lawsuit Stipulation of Dismissal – I have reviewed the September 13, 1993, settlement agreement between The Wilderness Society et al., and the Forest Service. I find that the Cherry Dinner project complies with the Lawsuit Stipulation of Dismissal, as follows:

- An analysis was completed to verify the old growth status of all stands proposed for harvest or road construction. The settlement agreement stipulates that any harvest or road building in old growth stands greater than 100 acres be preceded by an EIS. All activities of the Cherry Dinner project avoid old growth habitat, and therefore fulfills that agreement.
- Activities that could potentially exceed the criteria for a given watershed were dropped during alternative development and analysis.
- All proposed activities, including prescribed fire, timber harvest, road construction/reconstruction, road decommissioning, and streambank stabilization were considered in making the determination of “no measurable increase” in sediment, where streams currently exceed the sediment standard.

- Timber harvest or road construction activities are not proposed in any lands identified in proposed Idaho Wilderness Bill HR 1570, nor in any area selected for wilderness by any member of the Idaho delegation.
- This project alone or in combination with other anticipated timber sales will not cause the Forest to exceed the 80 MMBF schedule for any of the Fiscal Years affected by this project's timber sales.

K. Consistency with other Laws and Regulations

Clean Water Act and Idaho State Water Quality Laws – The selected alternative complies with the Clean Water Act by following all federal, state, interstate and local requirements, administrative authority and process and sanctions, with respect to control and abatement of water pollution. These authorities are listed on pages 8-10 of the FEIS and have been addressed by design of the project and by mitigation measures described in this document and the FEIS.

Endangered Species Act – As required by the Endangered Species Act, specific habitat needs for Threatened and Endangered species of wildlife and fish in regards to the proposed project were analyzed and documented in a Biological Assessment (attached). As proposed this project was determined to be within the scope of, and will support, the National Fire Plan, because the project area is located within wildland urban interface lands, and one of its primary purposes is fuel reduction. The effects analysis determined that the project is *not likely to adversely affect* steelhead trout and bull trout. The effects analysis was documented in the biological assessment and was done under the Section 7 counterpart regulations of the Endangered Species Act (Federal Register, December 8, 2003), and is in compliance with those regulations and the March 3, 2004 Alternative Consultation Agreement between the Forest Service, Fish and Wildlife Service, and National Marine Fisheries Service.

Environmental Justice – In regards to Environmental Justice Executive Order 12898, the human health and environmental effects of the selected alternative will not disproportionately impact minority and low income populations. Also, the implementation of this project will not subject anyone to discrimination because of race, color, or national origin. The selected alternative complies with Executive Order 12898.

Healthy Forest Restoration Act and the National Fire Plan – The Healthy Forest Restoration Act and the National Fire Plan provide over-arching direction to reduce the threat of wildfire and restore ecosystems. Planned management activities within the project area have been designed to be consistent with this direction. Particularly, timber harvest and prescribed fire activities would trend the general landscape condition toward Condition Class 1 in fire regimes 2, 3 or 4 and would optimize opportunities to treat hazardous fuels in identified wildland urban interface lands.

National Environmental Policy Act (NEPA) – This law insures that high quality environmental information is available and disclosed to public officials and citizens before decisions are made and before actions are taken. Scientific analysis and public scrutiny are essential in complying with NEPA requirements. I have met these requirements by using a knowledgeable and skilled interdisciplinary team to develop and analyze the proposed action and alternatives. Public involvement was key in identifying issues and continued throughout preparation of the EIS. State agencies, special interest groups/organizations, and individuals provided comments to the Draft EIS. I have considered their comments in reaching my decision. A summary of public comments and our responses can be found in Chapter 6 of the Final EIS. I find the selected alternative in compliance with the National Environmental Policy Act.

National Forest Management Act (NFMA) – I find that the selected alternative and its full complement of actions comply with the requirements of NFMA, specifically in complying with the Clearwater Forest Plan.

National Historic Preservation Act (NHPA) - The National Historic Preservation Act of 1966 (as amended) requires that Federal Agencies with direct or indirect jurisdiction over Federal, federally assisted, or federally licensed undertakings to consider the effects of their proposed actions on historic properties and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings. The detailed formal process for meeting this requirement is found in Title 36 Chapter 800 of the Code of Federal Regulations (36CFR800). This process includes requirements for identification and evaluation of historic properties, assessment and resolution of effects, consultation with the Advisory Council, State Historic Preservation Offices, Tribal governments and others, and coordination with NEPA.

The above entities have been consulted, and the State Historic Preservation Office concurs with our findings that the timber harvest, prescribed fire, watershed restoration, and access activities of the project will have no effect on historic properties.

L. Appeal Provisions and Implementation

This decision is subject to appeal pursuant to 36 CFR 215. A written Notice of Appeal must be postmarked or received within 45 days following the publication date of the legal notice of this decision in the Lewiston Tribune, Lewiston, Idaho. It is the responsibility of the appellant to ensure their appeal is received in a timely manner. The publication date of the legal notice of the decision in the Lewiston Tribune is the *exclusive* means for calculating the time to file an appeal. Appellants should not rely on date or timeframe information provided by any other source.

Paper appeals must be submitted to:

USDA Forest Service, Northern Region
Federal Building, 200 Broadway
ATTN: Appeal Deciding Officer
P.O. Box 7669
Missoula, MT 59807
FAX: (406) 329-3411
Business Hours: 7:30 AM to 4:00 PM (Mountain Time)

Electronic appeals must be submitted to:

appeals-northern-regional-office@fs.fed.us

In electronic appeals, the subject line should contain the name of the project (Cherry Dinner) being appealed. An automated response will confirm your electronic appeal has been received. Electronic appeals must be submitted in MS Word, Word Perfect, or Rich Text Format (RTF).

The appellant must have submitted comments during the 45-day comment period of the Draft EIS, and it is the appellant's responsibility to provide sufficient project- or activity-specific evidence and rationale, focusing on the decision, to show why my decision should be reversed. The appeal must be filed with the Appeal Deciding Officer in writing. At a minimum, the appeal must meet the content requirement of 36 CFR 215.14, and include the following information:

- The appellant’s name and address, with a telephone number, if available;
- A signature, or other verification of authorship upon request (a scanned signature for electronic mail may be filed with the appeal);
- When multiple names are listed on an appeal, identification of the lead appellant and verification of the identity of the lead appellant upon request;
- The name of the project or activity for which the decision was made, the name and title of the Responsible Official, and the date of the decision;
- The regulation under which the appeal is being filed, when there is an option to appeal under either 36 CFR 215 or 36 CFR 251, subpart C;
- Any specific change(s) in the decision that the appellant seeks and rationale for those changes;
- Any portion(s) of the decision with which the appellant disagrees, and explanation for the disagreement;
- Why the appellant believes the Responsible Official’s decision failed to consider the substantive comments; and
- How the appellant believes the decision specifically violates law, regulation, or policy.

If an appeal is received on this project, there may be informal resolution meetings and/or conference calls between the Responsible Official and the appellant. These discussions would take place within 15 days after the closing date for filing an appeal. All such meetings are open to the public. If you are interested in attending any informal resolution discussions, please contact the Responsible Official or monitor the following website for postings about current appeals in the Northern Region of the Forest Service: http://www.fs.fed.us/r1/projects/appeal_index.shtml.

If no appeal is received, implementation of this decision may occur on, but not before, five business days from the close of the appeal filing period. If an appeal is received, implementation may not occur for 15 days following the date of appeal disposition.

M. Contact Person

Detailed records of the environmental analysis are available for public review at the Palouse Ranger Station, Hwy 6, Potlatch, Idaho. For further information on this decision, contact:

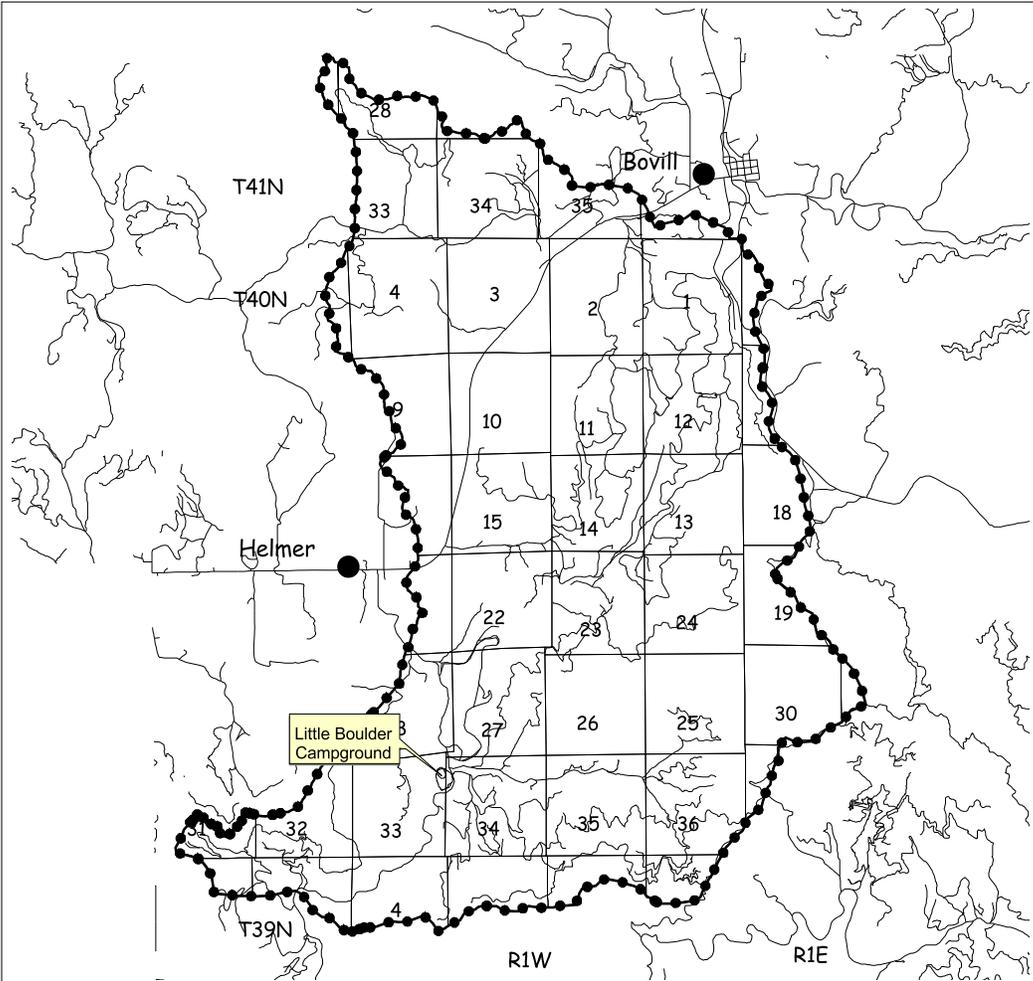
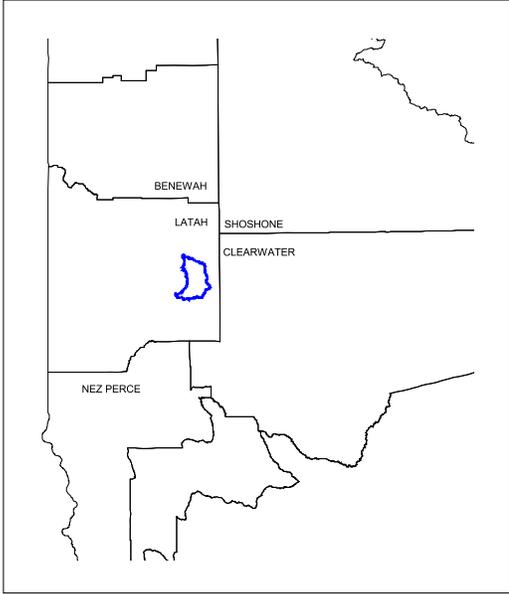
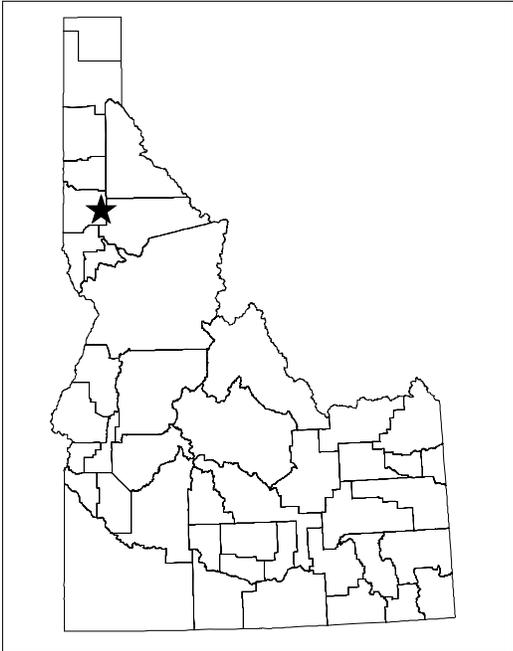
Kara Chadwick
 Palouse District Ranger
 1700 Highway 6
 Potlatch, ID 83855
 (208) 875-1131

or George Harbaugh
 Interdisciplinary Team Leader
 Lochsa Ranger District
 (208) 926-4274

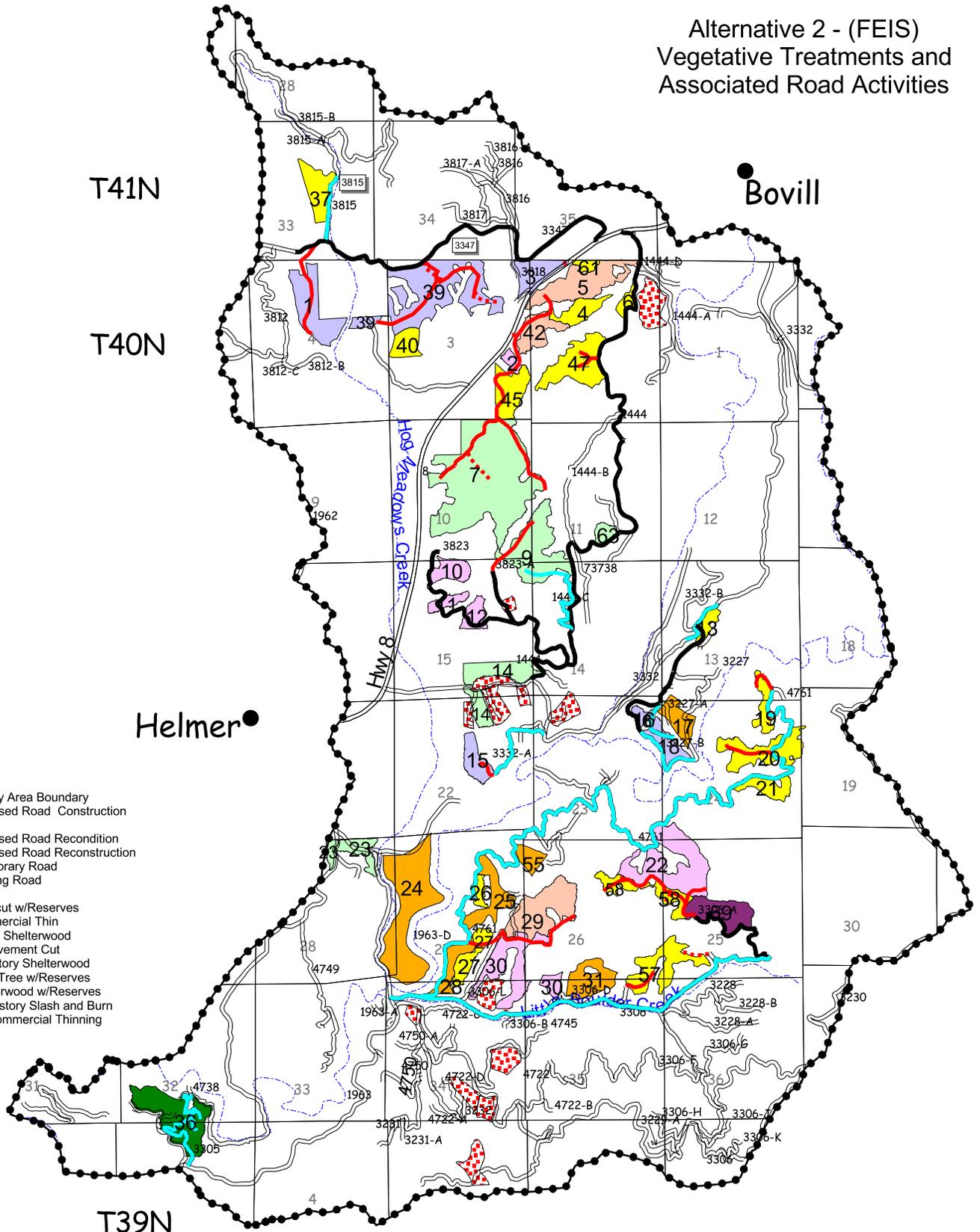
/s/ Thomas K. Reilly
THOMAS K. REILLY
 Forest Supervisor

March 3, 2008
 Date

Vicinity Map



Alternative 2 - (FEIS) Vegetative Treatments and Associated Road Activities



- Study Area Boundary
- Proposed Road Construction
- Proposed Road Recondition
- Proposed Road Reconstruction
- Temporary Road
- Existing Road
- Clearcut w/Reserves
- Commercial Thin
- Group Shelterwood
- Improvement Cut
- Preparatory Shelterwood
- Seed Tree w/Reserves
- Shelterwood w/Reserves
- Understory Slash and Burn
- Pre-commercial Thinning

T41N

T40N

Helmer

Bovill

T39N

R1W



Alternative 2 - (FEIS) Watershed Improvements and Access Management

T41N

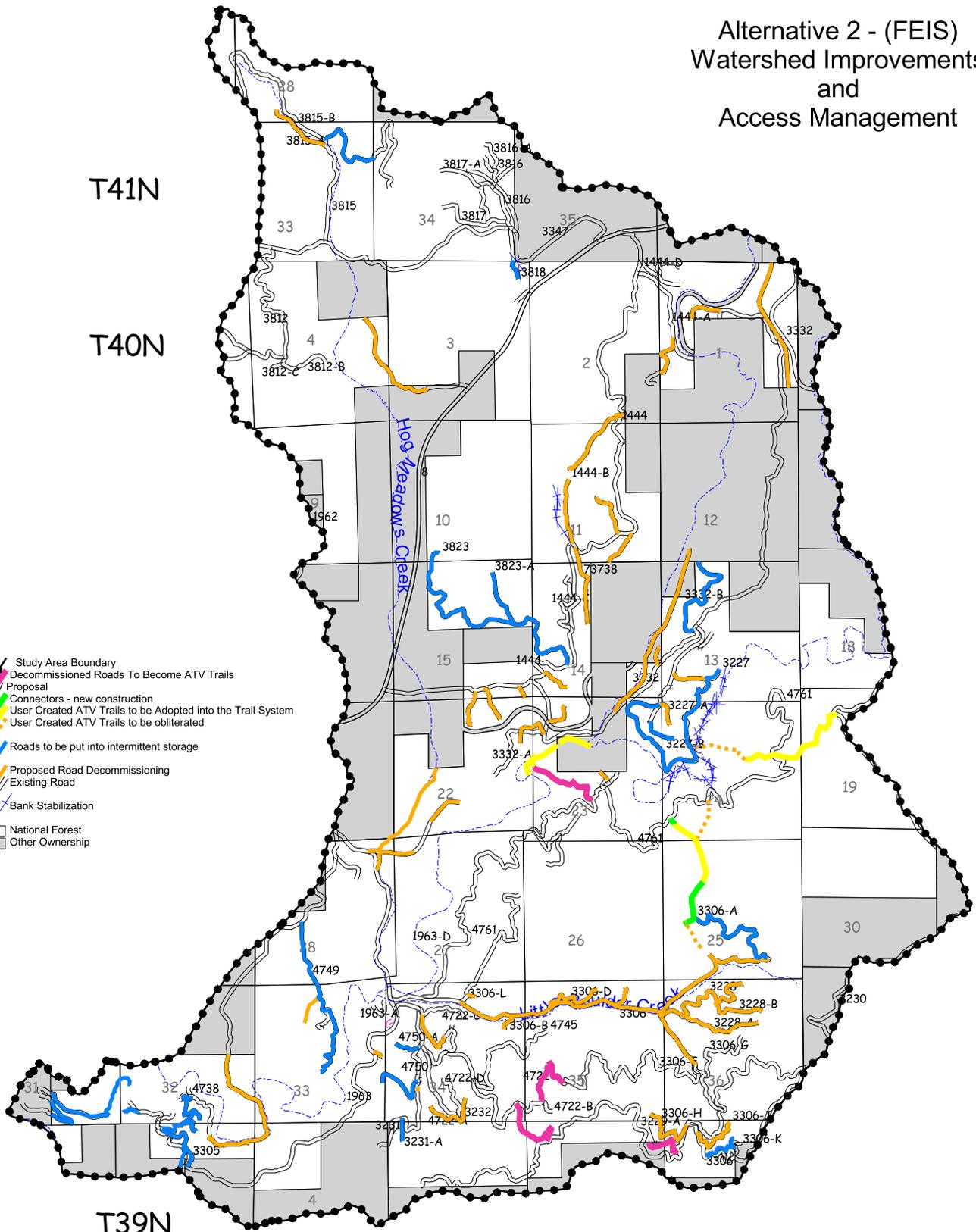
T40N

T39N

R1W

R1E

-  Study Area Boundary
-  Decommissioned Roads To Become ATV Trails
-  ATV Proposal
-  Connectors - new construction
-  User Created ATV Trails to be Adopted into the Trail System
-  User Created ATV Trails to be obliterated
-  Roads to be put into intermittent storage
-  Proposed Road Decommissioning
-  Existing Road
-  Bank Stabilization
-  National Forest
-  Other Ownership



Alternative 2 - Modified Vegetative Treatments and Associated Road Activities

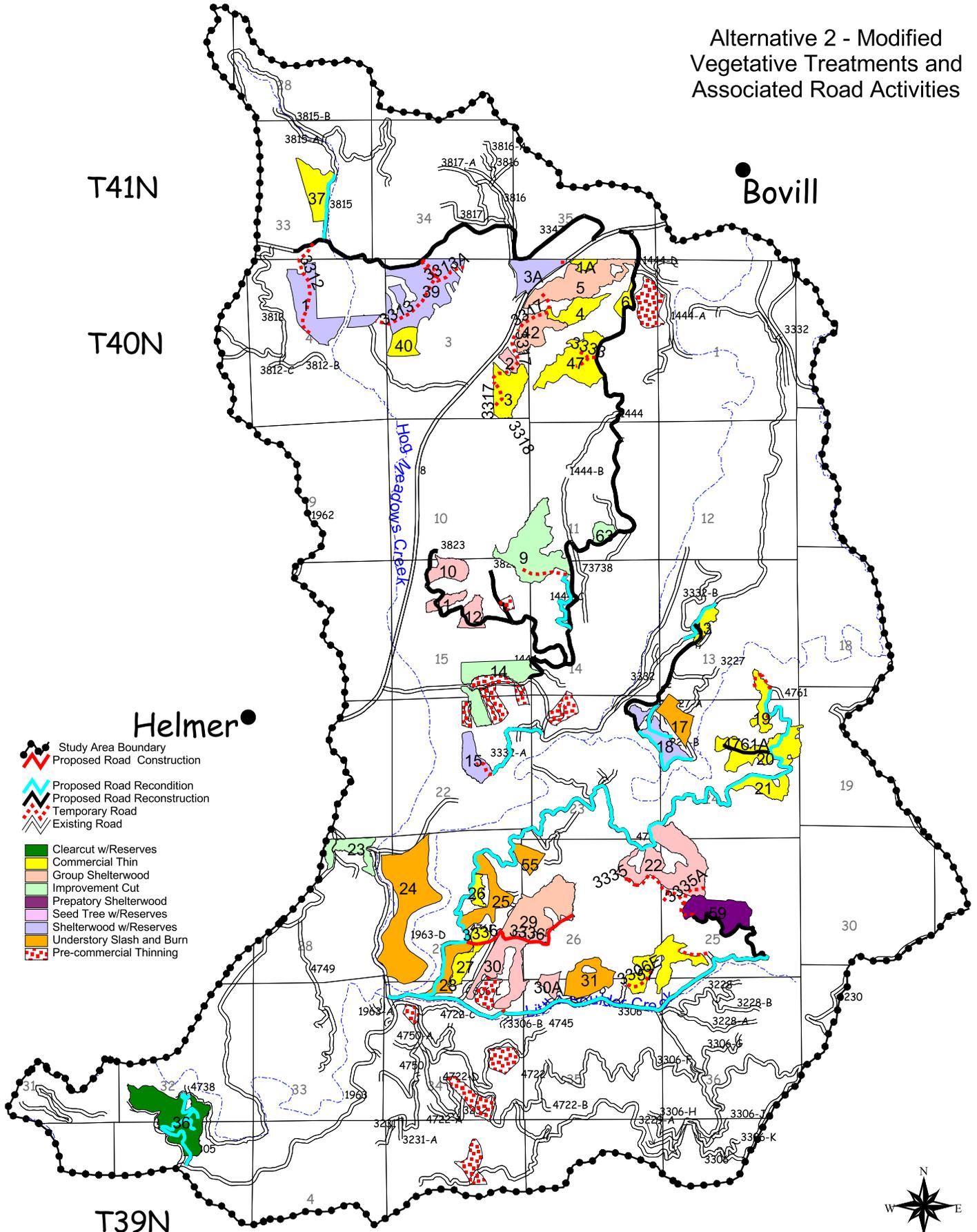
T41N

Bovill

T40N

Helmer

-  Study Area Boundary
-  Proposed Road Construction
-  Proposed Road Recondition
-  Proposed Road Reconstruction
-  Temporary Road
-  Existing Road
-  Clearcut w/Reserves
-  Commercial Thin
-  Group Shelterwood
-  Improvement Cut
-  Preparatory Shelterwood
-  Seed Tree w/Reserves
-  Shelterwood w/Reserves
-  Understory Slash and Burn
-  Pre-commercial Thinning



T39N

0.9 0 R1W 0.9 Miles



R1E

Alternative 2 - Modified Watershed Improvements and Access Management

T41N

T40N

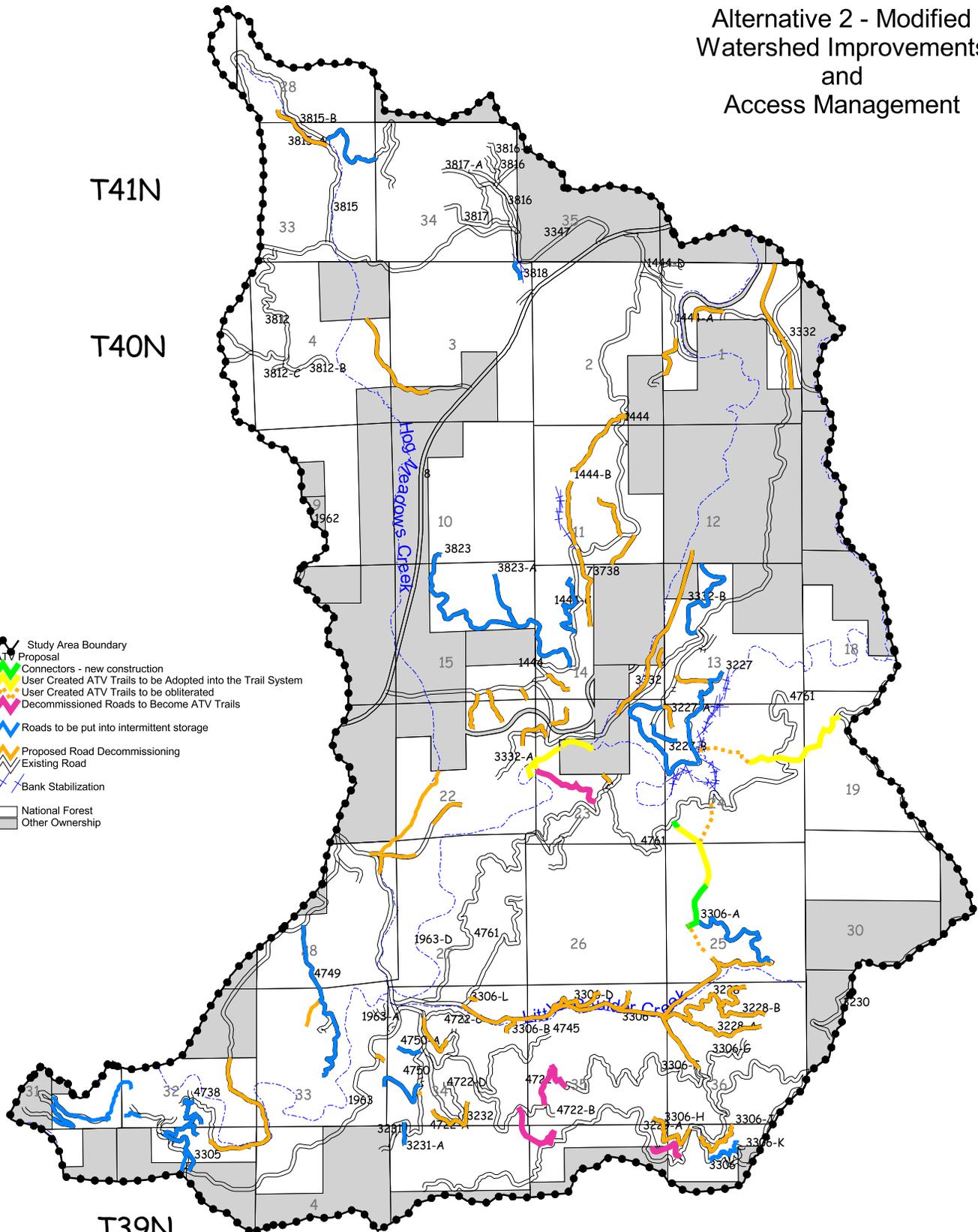
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R1W

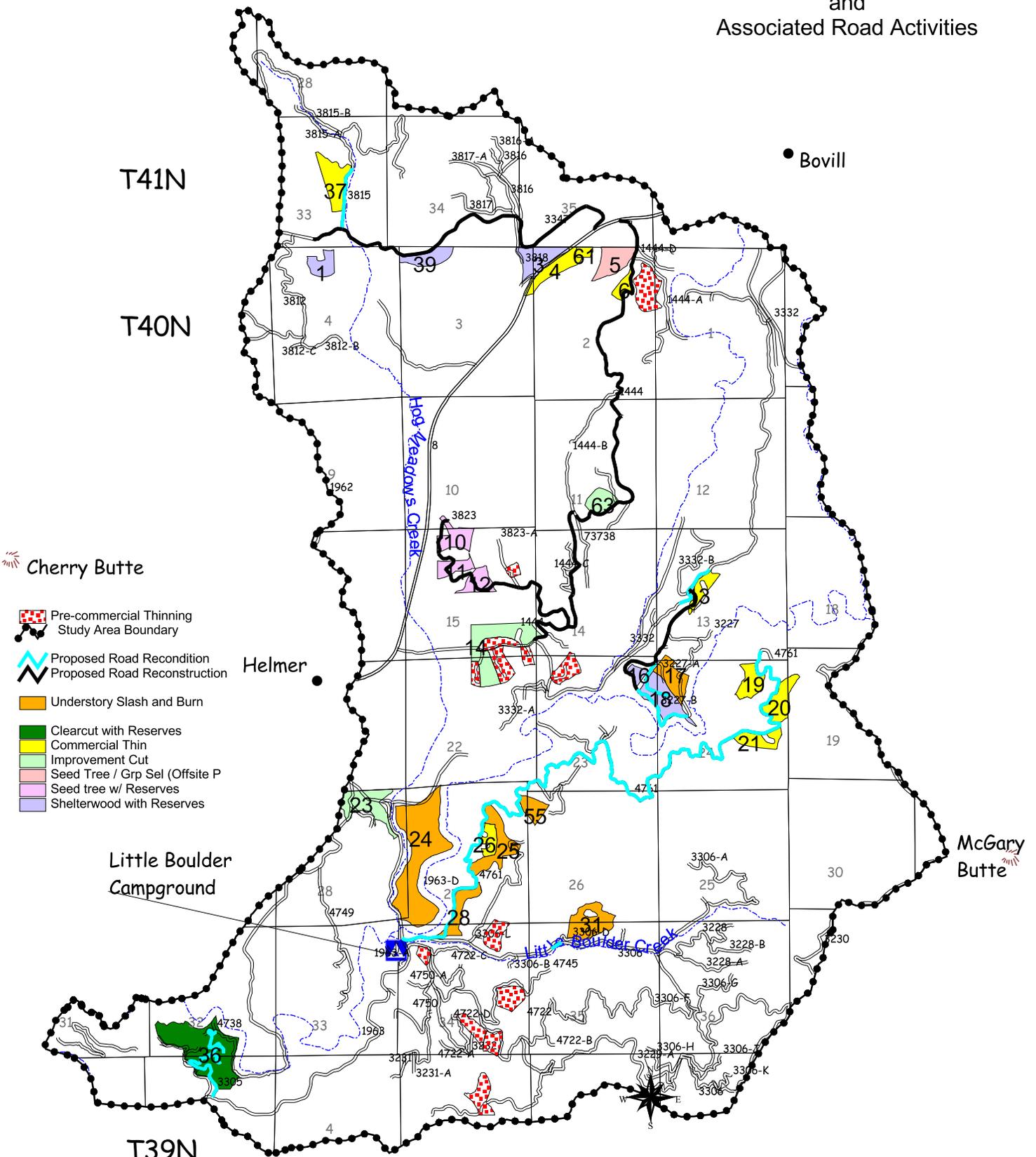
R1E

-  Study Area Boundary
-  ATV Proposal
-  Connectors - new construction
-  User Created ATV Trails to be Adopted into the Trail System
-  User Created ATV Trails to be Obliterated
-  Decommissioned Roads to Become ATV Trails
-  Roads to be put into intermittent storage
-  Proposed Road Decommissioning
-  Existing Road
-  Bank Stabilization
-  National Forest
-  Other Ownership

0.5 0 0.5 1 Miles



Alternative 3 Vegetative Treatments and Associated Road Activities



- Cherry Butte**
- Pre-commercial Thinning Study Area Boundary
 - Proposed Road Recondition
 - Proposed Road Reconstruction
 - Understory Slash and Burn
 - Clearcut with Reserves
 - Commercial Thin
 - Improvement Cut
 - Seed Tree / Grp Sel (Offsite P)
 - Seed tree w/ Reserves
 - Shelterwood with Reserves



• Bovill

• Helmer

Little Boulder Campground

McGary Butte

T41N

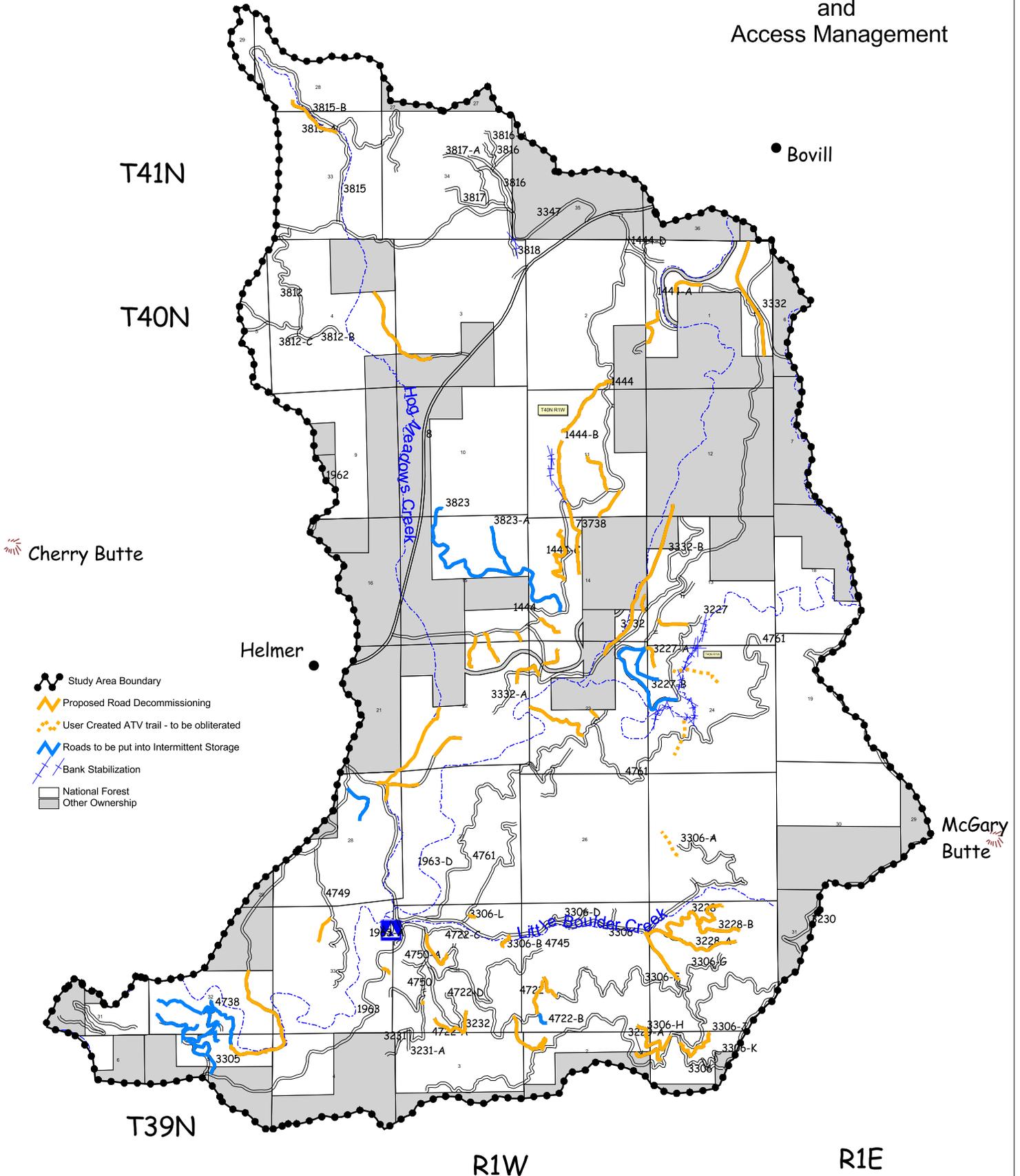
T40N

T39N

R1W

R1E

Alternative 3 Watershed Improvements and Access Management



Cherry Butte

- Study Area Boundary
- Proposed Road Decommissioning
- User Created ATV trail - to be obliterated
- Roads to be put into Intermittent Storage
- Bank Stabilization
- National Forest
- Other Ownership

McGary Butte

0.5 0 0.5 1 Miles



**Forest Plan Amendment No. 30
Clearwater National Forest
Latah County, Idaho**

The purpose of Amendment No. 30 is to change the water quality objectives in Appendix K of the Clearwater National Forest Plan for Little Boulder Creek, East Fork Potlatch River, and Ruby Creek, plus, add the Potlatch River.

Currently the water quality objective for Little Boulder, East Fork Potlatch and Ruby Creek is “Minimum viable” and the fish species is listed as rainbow. Minimum Viable does not support the requirements of the Clean Water Act to provide fishable streams. It only provides a minimal population and does not reflect the listing of the species or importance of the area for spawning. Surveys have documented steelhead in Little Boulder, East Fork Potlatch River, and Ruby Creek. Steelhead was listed as a Threatened Species within the Snake River in 1997.

The Potlatch River, a migratory channel for steelhead, had only been listed in Appendix K as a placeholder to indicate the watershed geography. Stream surveys have shown the river to have a C channel and steelhead as the fish species. Spawning occurs in the East Fork Potlatch, and rearing occurs in most of the tributaries of the Potlatch River. Since the Potlatch River is proposed as critical habitat for steelhead, the water quality objective is being changed from “Minimum Viable” to “High Fish” to follow the direction of the Clean Water Act and Endangered Species Act. Also, as part of the high fish standard, threshold levels of sediment for the Potlatch River should not exceed 10 out of 30 years.

Since the proposed changes are not significant, adoption of this amendment would not significantly change the forest-wide environmental impacts disclosed in the Clearwater National Forest Plan EIS. The Forest Plan would be amended to read as follows:

Watershed	Channel Type	Indicator Species Objective	Water Quality	Allowable Years in 30 Exceeding Threshold
Potlatch River above Forest boundary	C	Steelhead	High Fish	10
Little Boulder Creek	B	Steelhead	High Fish	10
East Fork Potlatch	C	Steelhead	High Fish	10
Ruby Creek	B	Steelhead	High Fish	10

**BIOLOGICAL ASSESSMENT OF THE CHERRY DINNER PROJECT
FEDERALLY LISTED SPECIES**

Wildlife

Gray Wolf - *Canis lupus*

Canada Lynx - *Lynx canadensis*

Plants

Water howellia (*Howellia aquatilis*)

Fish

Snake River Fall Chinook Salmon - *Oncorhynchus tshawytscha*

Steelhead Trout - *Oncorhynchus mykiss*

Bull Trout - *Salvelinus confluentus*

U.S. Forest Service

Clearwater National Forest

Orofino, Idaho

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Prepared and Approved By:

/s/ Patrick K. Murphy

Date: *February 25, 2008*

Patrick K. Murphy

Forest Fisheries Biologist

/s/ Dan Davis

Date: *February 25, 2008*

Dan Davis

Forest Wildlife Biologist

/s/ Jim Mital

Date: *February 25, 2008*

Jim Mital

Forest Ecologist/Soils Scientist

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Introduction

This biological assessment addresses potential effects to designated Threatened and Endangered Species from proposed timber harvest, prescribed fire, watershed restoration and access management activities within the Potlatch River drainage. The proposed site is located on the Palouse Ranger District, Clearwater National Forest, within Latah County, Idaho. The project legal description is in the Boise Meridian from T39N, R1W to T40N, R1W.

The Endangered Species Act of 1973 directs federal agencies to conserve Endangered and Threatened Species and to ensure that federal actions authorized, funded, and carried out are not likely to jeopardize their continued existence or result in the destruction or adverse modification of critical habitat. In response to Section 7(c) of the Endangered Species Act and Forest Service Manual (FSM) 2670, this biological assessment displays the potential effects of the proposed activities upon Threatened and Endangered Species that are known or may occur in the area. The analysis area used to evaluate effects of the proposed project is the Potlatch River drainage.

Starting in 2001, NMFS has required the Forest to address the potential effects of proposed activities on salmon habitat. Therefore, this biological assessment will also evaluate potential effects of proposed activities within the Potlatch River drainage on Essential Fish Habitat, in accordance with applicable requirements of section 305(b) of the Magnuson-Stevens Act and its implementing regulations, 50 CFR Part 600.920.

As required by the Endangered Species Act, specific habitat needs for Threatened and Endangered species of wildlife and fish in regards to the proposed project were analyzed and documented in a biological assessment. As proposed this project was determined to be within the scope of, and will support, the National Fire Plan, because the project area is located within Wildland Urban Interface (WUI) lands, and one of the primary purposes is fuel reduction. The effects analysis determined that the project *will not likely to adversely affect* (NLAA) steelhead trout and bull trout. The effects analysis was documented in the biological assessment and was done under the Section 7 counterpart regulations of the Endangered Species Act (Federal Register, December 8, 2003 and on web site: http://www.fs.fed.us/biology/resources/pubs/tes/ForestServiceACA_3Mar04.pdf), and is in compliance with those regulations and the March 3, 2004 Alternative Consultation Agreement between the Forest Service, FWS and NMFS.

Background Information

The Potlatch River drainage is approximately 380,000 acres in size and is located in the lower portion of the mainstem Clearwater River Subbasin (Figure 1). National Forest lands compose about 13% of the drainage or 50,000 acres. Most of the national forest lands are located in the headwaters of the drainage and the lower reaches of the drainage are mostly on State and private lands.

Historical land use within the Potlatch River drainage within and upstream of the project area has shaped the current terrestrial and aquatic resources conditions. An excerpt from the *Clearwater Subbasin Ecosystem Analysis at the Watershed Scale* (U.S.D.A. Forest Service – Clearwater National Forest 1997) states: *Much of the land in the Potlatch drainage was originally owned by Potlatch Corporation in the early 1900's. Railroad logging was the technology used during these early logging years. Most of the drainages in the Potlatch system had railroads built up them in order to haul out logs. After the areas were logged, large numbers of livestock were turned into the cutover areas (higher numbers of livestock than are grazed currently). Portions of the area were burned in the 1914 fires. During the*

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Depression, this land was deeded to the U.S. government for back taxes. These early land uses significantly changed the landscape to what is today.

For the past several decades numerous activities (timber harvest, road work, grazing, trail, recreational and administrative) have taken place on USFS lands within the project area and upstream within the upper Potlatch River drainage. In addition, several activities, most notably, timber harvest, road work, and grazing have occurred extensively on State and private lands. These completed activities on Federal and non-Federal lands are now part of the baseline conditions and are reflected in existing field conditions. Administrative and recreational activities are ongoing throughout the drainage; the effects of these activities on the environment, especially to ESA listed species are considered negligible. To accurately assess the current situation within and upstream of the project area, several ongoing projects and planning efforts were reviewed. These are summarized below:

Grazing: In June 1996, the Forest finalized the Potlatch River Grazing Allotments Environmental Assessment (U.S.D.A. Forest Service – Clearwater National Forest 1996) which re-authorized term grazing permits to three allotments within the Potlatch River watershed. Of the three allotments, the Potlatch Creek allotment is located within the Cherry Dinner project area. The Corral Creek and West Fork Potlatch/Moose Creek allotments are located upstream of the project area. Within the Potlatch Creek Allotment, the permit provided livestock grazing for a total of 218 cow/calf pairs on lands owned by the State, Potlatch Corporation and the USFS. The re-authorization reduced the the allotment by 39 cow/calf pairs. Of the 218 cow/calf pairs, the USFS portion of the permit would allow 155 cow/calf pairs, a reduction of 27 cow/calf pairs. Mitigation measures included the maintenance of 3.5 miles of riparian fencing along the East Fork Potlatch River and a rotating three pasture grazing system that permits grazing in the Little Boulder Creek area during final grazing period between September 1 and October 31. In addition, the allotment management plan limits grazing access to the Potlatch Canyon area to provide additional protection to potential spawning habitat for steelhead trout.

The three allotments were included in the initial *Section 7 Watershed Biological Assessment – Potlatch River Drainage – Mainstem Clearwater River Subbasin*, dated May 21, 1998 (U.S.D.A. Forest Service – Clearwater National Forest 1998). On August 28, 1998, NOAA Fisheries concurred via letter with the Forest’s determination that the three allotments in addition to other ongoing and proposed projects would may affect, not likely to adversely affect (NLAA) steelhead trout. At that time, all actions were determined to have no effect on bull trout, as such, the biological assessment was submitted to the USFWS on June 3, 1998 for their review with no concurrence requested by the Forest. Since 1996, project monitoring and annual field reviews of the three allotments have not indicated any major problems with administration and/or resource degradation or protection issues.

West Fork Potlatch Ecosystem Management Project: On January 2002, the Forest issued a decision to proceed with activities proposed within the West Fork Potlatch Environmental Impact Statement (U.S.D.A. Forest Service – Clearwater National Forest 2001 and 2002). The project included timber harvest, road work (construction, re-construction, maintenance, and road decommissioning), grazing re-authorization (Purdue Creek allotment), noxious weed treatment, watershed restoration (channel re-construction, riparian plantings) and trail construction. Currently a portion of the vegetative treatments and all of the road work has been completed; approximately 55 % (1770 acres) have been treated and 17.5 miles and 19.3 miles of roads have been constructed or re-constructed. All of the road decommissioning proposed under the project (3.3 miles) has been completed. With the exception of the suction dredging, the watershed restoration activities have been completed; riparian plantings were completed along approximately 1.5 miles of fish-bearing streams and woody debris installations were completed in the headwater streams (approximately four miles). The decision re-authorized the Nat Brown – Purdue Creek allotment in the upper Potlatch River drainage; grazing is currently administered on this allotment. The noxious weed treatment authorized under the decision is currently being implemented.

Activities proposed under the West Fork Potlatch project were included in the second version of the *Section 7 Watershed Biological Assessment – Potlatch River Drainage – Mainstem Clearwater River Subbasin*, dated June 26, 2000 (U.S.D.A. Forest Service – Clearwater National Forest 2000). On September 1, 2000, NOAA Fisheries and the USFWS concurred via a dual signature letter with the Forest's determination that the activities would may affect, not likely to adversely affect steelhead trout and bull trout.

Ecosystem Assessment: During 1996-1997, the Forest completed an ecosystem assesment of the USFS lands within the mainstem Clearwater River subbasin which included the Potlatch River drainage (U.S.D.A. Forest Service – Clearwater National Forest 1997). The assessment followed the format and guidelines found in the Federal Guide for Watershed Analysis (U.S.D.A. et al. 1995). Similar to an *Ecosystem Analysis at the Watershed Scale*, the assessment characterized the human, aquatic, riparian, and terrestrial features, conditions, processes, and interactions within the mainstem Clearwater River subbasin. Although not a decision document, the assessment provided the Forest with recommendations for future management on USFS lands within three major watersheds: Potlatch River, Orofino Creek and Lolo Creek. The proposed project is consistent with the recommendations noted in the assessment.

Little Boulder Campground: On January 21, 2005, the Forest completed a biological assessment for the Little Boulder Campground Hazard Tree Removal Project within the Cherry Dinner project area (U.S.D.A. Forest Service – Clearwater National Forest 2005a). The large scale removal of hazard trees within the campground did not meet the provisions of the programmatic biological assessment on developed recreation (U.S.D.A. Forest Service – Clearwater National Forest 2000). Therefore the Forest conducted a project specific consultation on the removal of 150 trees along a 300 segment of the mainstem Potlatch River (74 trees within the 300-foot RCA). NOAA Fisheries and the USFWS concurred with the Forest's determination of NLAA steelhead trout and bull trout via concurrence letters dated February 17, 2005 and February 23, 2005 respectively. The hazard trees were removed during April 2007; the placement of large woody debris into the mainstem Potlatch River was completed in September 2007.

Cherry Dinner Environmental Assessment: During August 2005, the Forest completed an environmental assessment for the Cherry Dinner Project (U.S.D.A. Forest Service - Clearwater National Forest 2005b). A biological assessment for the project was completed (dated October 20, 2005); the effects analysis determined that the project *will not likely to adversely affect* (NLAA) steelhead trout and bull trout. The ESA consultation process was done under the Section 7 counterpart regulations of the Endangered Species Act (Federal Register, December 8, 2003). On February 22, 2006 a decision notice and Finding of No Significant Impact (FONSI) was signed. The decision was subsequently appealed and the decision was withdrawn on June 6, 2006 due to inconsistencies in the analysis between the biological evaluation and the environmental analysis.

Identification of Action - Project Proposal

The environmental analyses for second version of the Cherry Dinner Project was documented via an environmental impact statement (EIS) in 2007 (U.S.D.A. Forest Service – Clearwater National Forest 2008). The document was updated to reflect newer information and Forest direction involving vegetation management (specifically dealing with old growth issues). While the project area is the same as the previous project, the number of acres proposed for vegetative treatment has been reduced slightly.

The purpose and need of the Cherry Dinner Project involves (1) vegetation, (2) hazardous fuels and control of wildfire, (3) watershed condition and (4) access management (U.S.D.A. Forest Service – Clearwater National Forest 2008). See Appendix B for maps showing locations and types of harvest units, proposed changes in the road network, and watershed restoration projects.

Vegetative Treatments¹

- 91 acres Clearcut w/Reserves
- 289 acres Seed Tree w/Reserves
- 296 acres Shelterwood w/Reserves
- 76 acres Seed Tree/Group Selection (convert off-site ponderosa pine)
- 83 acres Group Shelterwood
- 493 acres Commercial Thinning (includes 52 acres of Preparatory Shelterwood)
- 198 acres Improvement Cut
- 306 acres Slashing/Underburning that have fuels reduction needs but are not part of the timber harvest units.

There are also opportunities for precommercial thinning on 200 acres.

Road Activities

These consist of proposed road activities needed for logging access (as determined through a roads analysis and field reconnaissance) and those activities aimed at improving watershed condition. Note that some of the activities needed for logging access also improve the watershed condition, as displayed in the following table:

Table 1: Road Activity Summary

Needed for Logging Access	Primarily for Watershed Improvement
1.18 miles of new road construction. Following harvest activities, 0.81 miles of these new roads would be placed in intermittent storage.	23.6 miles of road decommissioning. This includes the decommissioning of Roads 3306 and 3306A that are within the Little Boulder Creek riparian area.
12.22 miles of road reconstruction. Placing gravel and installing drainage structures on these native-surfaced roads would improve watershed conditions by reducing the run-off of sediment into area streams.	15.9 miles of existing roads would be placed in intermittent storage. (This does not include the 0.81 miles of new road to be put into intermittent storage following harvest activities.)
5.83 miles of temporary road construction. These roads would be decommissioned following use.	
18.2 miles of road reconditioning, primarily consisting of blading the road surface and brushing for clearance.	

Other Watershed Improvements

- 4.0 miles of stream bank stabilization along the East Fork Potlatch River and tributaries

Access Management

- Construct a 0.5 mile ATV connector trail between Roads 4761 and 3308 and adopt 2.5 miles of user created trails. Another 0.9 mile of user created trail would be decommissioned.
- 1.9 miles of roads to be decommissioned post sale would be converted to ATV trail.
- 0.4 mile of newly constructed road would be put into intermittent term service and would be open to ATV and motorcycle traffic.

There are other access management actions included in this alternative, too numerous to display here, that came out of the Cherry Dinner Roads Analysis. A table and map displaying all of those proposals can be found in Appendix F in the Cherry Dinner FEIS.

¹ All treatment activities are located within the Latah County WUI boundary or treated as WUI for the purpose of this project.

Other Activities Proposed

- As described under the old growth habitat issue on pages 18-19 of this chapter, designate 363 acres of forest to be managed for old growth (see Appendix I in the Cherry Dinner FEIS).
- Prepare an amendment to the Clearwater National Forest Plan to change the water quality objectives in Appendix K of the Forest Plan for Little Boulder Creek, East Fork Potlatch River, and Ruby Creek, plus, add the Potlatch River.

Mitigation Measures

The following is a list of mitigation measures designed to eliminate or reduce to acceptable levels the effects of proposed activities. A majority of these are derived from site specific best management practices (BMP) from the Idaho Forest Practices Act and Stream Channel Alteration Handbook, with comparable practices from the FS R1/R4 Soil and Water Conservation Practices Handbook (FSH 2509.22) that are all described in the Fish, Watershed and Soils Report for the Cherry Dinner Project. The *effectiveness* of the each measure is also included, where applicable.

1. PACFISH default buffers would be used to define timber sale unit boundaries. No timber harvest would occur within 300 feet of fish-bearing streams, 150 feet of perennial non-fish bearing water, and 100 feet of intermittent streams.

Field reviews of harvest units following vegetative treatment (via harvest and prescribed fire) have shown this measure to have a High effectiveness.

PACFISH/INFISH field reviews conducted by the Forest have indicated that when the buffers are properly located and retained, the riparian buffers remained intact and were considered sufficient to achieve the RMO's and avoid adverse effects.

2. Ignition points for prescribed fire would be located outside of the PACFISH riparian buffers.

Field reviews of wildland prescribed burns and site treatment of harvest units (via prescribed fire) have shown this measure to have a High effectiveness.

Post project monitoring of riparian areas of wildland prescribed burns (i.e. Roaring Skull Prescribe Fire, Upper North Fork Fuels Project) have indicated that burned areas do not for the most part extend into the riparian areas (Forest files). Fire lines and fuel treatments minimize the potential of fires burning within riparian areas outside harvest units.

3. Areas of Units 18 and 36 with high landslide risk will maintain 50% canopy retention. Currently, Unit 36 does not have much canopy, so stabilization will be best accomplished by re-establishing a young stand of trees through limited site preparation followed by reforestation in steep and moist draws.

Both of these units have been previously harvested. Each unit has been reviewed by the soil scientist to identify sensitive portions where canopy retention must be maximized. Effectiveness is expected to be moderate.

4. Design activity to stay below 15% area disturbance of the treatment area. Methods include designation of skid trails or forwarder trail, 50 foot spacing of forwarder trails, reuse of skid trails by machines used for piling, and placement of piles on trails.

BMP audits show this measure to have a High effectiveness.

5. To provide for soil fertility in regeneration harvest units: (a) coarse wood will be retained at 7-15 tons per acre on drier habitat sites and 15-33 tons per acre on wetter sites, providing a variety of size materials across the unit; and (b) logging slash will over-winter (i.e. decompose through one wet season) before burning or piling.

The recommendations are conservative for maintaining forest productivity. The coarse woody material should be distributed across harvest units, where prescribed fire would remove the needles and small branches but maintain much of the organic matter on the forest floor. This would maintain forest productivity, but would be of little effect, if the forest floor is destroyed or shallow mineral soil is displaced or compacted by poor yarding or site preparation (Graham, et al., 1994).

6. Per the Northern Region Snag Management Protocol (January 2000), the combination of standing live and dead trees in timber harvest units and riparian habitats will meet or exceed 12 trees per acre (>8' dbh), with at least 4 snags per acre (where available) greater than 20" dbh. Snags or trees designated for retention, but felled for safety reasons, will be left in the harvest unit.

Wood retention maintains forest productivity, but would have little effect if the forest floor is destroyed or shallow mineral soil is displaced or compacted by poor yarding or site preparation (Graham et al, 1994)

7. Units that presently exceed the 15% detrimental soil disturbance (Unit 17) or that are found to exceed that standard after monitoring, will have soil restoration activities implemented. Measures to improve soil quality levels (such as decompacting landings and skid trails with a ripper, forest cultivator, grapple rake, or similar equipment; placement of large woody materials; and other measures) will be implemented to maintain or improve soil quality in units.

Effectiveness varies: Restoration of infiltration would be 85-90% effective; reduction of puddling or soil displacement would be 50%; and restoration of the soil profile would be less than 10%.

8. The Fuel, Transport and Containment Plan developed under a Section 7 consultation with NOAA Fisheries and USFWS regarding the North Lochsa Face Project would be applied throughout project implementation to minimize the risk of an accidental spill of petroleum products, as well as to protect water courses and aquatic biota from adverse effects in the event of a spill.

BMP audits show this measure to have a Moderate effectiveness (U.S.D.A. Forest Service – Clearwater National Forest 2004). A plan insures foresight, but cannot eliminate the risk of materials being spilled and escaping into waters.

9. During culvert replacement/removal (including road construction, reconstruction and maintenance activities) and road decommissioning activities, the following mitigation measures would be taken to avoid or minimize impacts to the aquatic resources:

- All instream work will occur after July 15.
- All new culverts will accommodate a 100-year flood as per PACFISH and INFISH standard and guideline RF-4.
- The contractor will submit a plan for controlling erosion during construction activity. The "Erosion Control Plan" must address construction activities that have the potential for stream sedimentation including, but not limited to, dewatering the site.
- The stream at each culvert replacement location will be diverted (via temporary culvert) or pumped around the work site (dewatered) and fish screens will be placed on the pump intakes.
- The stream will be dewatered at the construction site using a non-eroding, water tight diversion during excavation. Settling basins or other methods will be used to ensure that muddy water does not return to the stream. Diversions will be installed operated and removed such that erosion and sedimentation is minimized.
- Culverts will be removed and the sites will then be excavated to accommodate the new and larger pipes or bottomless structures.
- The new culverts will be placed at the natural stream grade and slightly countersunk to allow for gravel deposition within the pipe.
- Project designs will address control of surface run-off from the road and adjacent slopes in the vicinity of the replacement culvert. Wherever possible, run-off will be controlled so that it does not run directly into the stream. Armoring channel banks and dissipating energy with large rock when needed.

- Erosion control measures such as rocking ditches and constructing sediment detention basins will be implemented when needed to avoid delivery of sediment to waterways.
- Construction sites will be re-vegetated using a combination of seeding and mulching, and planting with native species. Mulching with native materials where available, or using weed-free straw, to ensure coverage of exposed soils. Utilizing erosion control mats on fill slopes and disturbed stream banks when needed.
- Embankments will be compacted in layers using a roller or other acceptable compaction equipment. The compaction equipment must be operated for at least three passes over the full width of each layer until visible deformation of the layer ceases.
- Fill slopes will be laid back to 1.5:1 or the angle of repose of the fill material above replacement culverts.
- The contractor will dispose of removed culverts and other structural materials off National Forest ground.
- Closure of roads will be posted with signs and by issuing press releases to local media.
- Equipment used for instream work shall be cleaned of external oil, grease, dirt and mud; and leaks repaired; prior to arriving at the project site. All equipment will be inspected by the COR before unloading at site. Equipment will be inspected daily for leaks or accumulations of grease, and identified problems corrected before entering streams or areas that drain directly to streams or wetlands. This cleaning shall also remove all dirt and plant parts to ensure that noxious weeds and aquatic invasive species are not brought to the site.
- Equipment used for in-stream or riparian work (including chainsaws and other hand power tools) shall be fueled and serviced in an area that will not deliver fuel, oil, etc. to streams.

Project monitoring (road decommissioning) show these measures to have a High effectiveness (U.S.D.A. Forest Service – Clearwater National Forest 2005c)

10. To minimize the spread of noxious weeds, road and harvest equipment are to be cleaned of loose debris prior to moving on to the timber sale area (CT6.26). Also, raw soils exposed through project activities are to be revegetated as soon as practicable, using certified noxious weed free seed mix and fertilizer (as necessary).

Effectiveness is expected to be moderate, since it would not be possible to restrict all non-sale related traffic from entering the sale area.

11. To reduce disturbance to wildlife along several heavily traveled roads within the project area such as the Vassar Meadows Road (3347), Highway 8, Dinner Bucket Ridge (1444) and the School House Gulch Road (4761) and the Little Boulder Creek Road (3306), vegetative buffers are to be retained between the cutting unit and the road.

This measure could be effective in reducing disturbance to wildlife and reducing the potential for poaching and shooting at game from the roads.

12. For the purpose of reducing costs and maintaining structure and habitat for wildlife, unmerchantable material in units that would be broadcast burned should not be felled, unless this material is necessary to accomplish fuel management objectives.

13. To maintain aesthetics, logging debris piles should be removed from public view.

14. To minimize potential effects to heritage site 10LT187, a logging camp within the East Fork Potlatch River floodplain, proposed streambank stabilization is to be developed and implemented in consultation with the Clearwater Forest Archaeologist.

15. If additional heritage resources are found during implementation of the project, project activities are to cease. The Forest Archaeologist would then be notified, and an assessment would be made regarding the effect of continued activities on the newly identified heritage resource.

Monitoring

The following monitoring activities would continue or be initiated with the Cherry Dinner project:

1. The Timber Sale Administrator or Contracting Officer Representative would make weekly, if not daily, checks on the progress of the sale to compare implementation with desired project outcomes and objectives.
2. PACFISH compliance monitoring would be conducted annually by the Forest Fisheries Biologist in conjunction with BMP audits and reported in the annual Clearwater National Forest Monitoring and Evaluation Report.
3. Ongoing stream temperature monitoring would continue at the Potlatch River gage site and at the mouth of the East Fork Potlatch River.
4. Riffle stability index sites (pebble count and channel transect) would occur on a three-to-four year cycle at the East Fork Potlatch River, the gage site on the Potlatch River, and Little Boulder Creek.
5. The District Soils Scientist will assess the amount of activity area impacted by proposed activities to validate the assumptions made for detrimental soil impacts in this document.
6. Historic site 10LT187 will be monitored to track the potential effects of channel meanders to the site. If the stream channel changes begin to threaten the site's integrity, mitigation measures would be developed in consultation with the Idaho SHPO.

Identification of Action Area

The Cherry Dinner Project Area is located within the Potlatch River drainage downstream of the town of Bovill, Idaho (Figure 1). The project area includes Little Boulder Creek, Hog Meadow Creek and East Fork Potlatch River (mouth upstream to Ruby Creek) and the mainstem Potlatch River (from the Forest's boundary near Brush Creek upstream to Bovill). The analysis area used in the environmental assessment covers approximately 20,480 acres of which approximately 14,670 acres (71 percent) are located within USFS lands (Appendix B – maps).

Potlatch River Habitat Conditions (*The following habitat summaries include excerpts from the mainstem Clearwater River Assessment; USDA Forest Service – Clearwater National Forest 1997*)

Stream channels have been extensively altered throughout the analysis area by farming, grazing, railroad and conventional logging and road building. From 1905-1915, railroad logging relocated, channelized and completely overbuilt large sections of many streams. The area also experienced a large man-caused fire in 1914 and extensive grazing after that date (U.S.D.A. Forest Service 1996). These impacts have additionally altered the streams from their historical conditions. In February of 1996 the Potlatch River experienced a large flood event. This flood caused extensive channel damage, especially from Kendrick downstream to the Clearwater River. In these lower reaches, the Potlatch River will be in a state of disequilibrium for several years while the river adjusts by reworking alluvial deposition and builds new stream banks.

Current Habitat Conditions: Information regarding the lower mainstem of Potlatch River (downstream of USFS lands) and its tributaries is limited to site monitoring and survey data from the Idaho Department of Environmental Quality. These Beneficial Use Reconnaissance Project (BURP) surveys were conducted in 1994 and surveyed sites throughout the Potlatch River drainage, including sites on USFS lands, were chosen for habitat and fish population evaluations. The reports noted that all surveyed sites had various levels of degradation; specific problems noted were excessive fine sediment, low flow conditions, high summer water temperatures, lack of large organic debris and channel instability (Kinney 1995 and Wertz and Kinney 1995). The survey also noted two streams, Little Potlatch Creek and Middle Potlatch Creek, did not have any salmonids observed during the fish population survey. Wertz and Kinney (1995) noted that unless major land use changes are implemented

in the Little Potlatch Creek drainage, the stream would not be able to support salmonid spawning and incubation due to frequent low flow conditions and high summer water temperatures. Middle Potlatch Creek was also noted as having similar conditions. In both cases, the report noted that these drainages were not a high priority by IDFG and others for watershed/habitat restoration efforts.

From 1990-1995, all streams within the USFS boundary in the Potlatch River drainage were surveyed and monitored by the USFS and/or USFS contractors. Recent surveys administered by the USFS have showed that a number of streams within the Potlatch River drainage can be characterized by poor substrate conditions, fair riparian conditions, and poor-fair rearing habitats (Clearwater BioStudies, Inc. 1991, 1994a, 1994b, 1994c, 1994d, and 1996 and Isabella Wildlife Works 1994a, 1994b and 1995). The reports mostly identified the high levels of cobble embeddedness as a primary limiting factor to fish production. The poor substrate conditions affect the quality and quantity of spawning habitat as well as summer and winter rearing habitat. Low summer stream flows were also noted as a major limiting factor to salmonid production. Low levels of acting debris and sub-optimal levels of instream cover were noted as limiting factors in a number of stream reaches. The BURP surveys conducted on USFS streams in 1994 (Kinney 1995, Wertz and Kinney 1995) generally supported the data and conclusions of the USFS surveys; high summer water temperatures, poor substrate conditions, and poor streamside shade (canopy closure) were noted as the major limiting factors for salmonid production.

Water Temperatures: Stream temperatures within the lower mainstem Potlatch River regularly approach and exceed lethal temperatures for salmonids during the summer months. Kucera et al. (1983) noted a maximum summer water temperature of about 28° C during the 1982 field season. Murphy (1986) found water temperatures at the mouth of the Potlatch River to exceed 26° C during the 1986 field season.

Stream temperatures within the tributaries of the Potlatch River vary somewhat, but all sampling sites on USFS lands during the 1990-95 period (USDA Forest Service 1996) showed the maximum daily summer temperatures ranged from 17.5 to 29° C. Surveys conducted by the Idaho Department of Health and Welfare - Division of Environmental Quality (Kinney 1995 and Wertz and Kinney 1995) show similar temperature ranges for streams on both USFS and non-USFS lands in 1995. Data from the summers of 1992 and 1994 showed the upper limits of the water temperatures as these two summers exhibited very hot and dry conditions. An analysis of the maximum daily summer temperatures shows that current water conditions within the Potlatch River system are rated as poor for the spawning and rearing of anadromous and resident salmonids.

From 1990-1996 and 1998-2006 the Forest has collected temperature data on selected stream within the Potlatch River drainage to determine if stream temperatures meet Forest and State standards, locate temperature problems, identify recovery trends, and prioritize riparian recovery efforts. Sixteen years of thermograph data indicate that most of the streams have summer stream temperatures that are higher than the desired objectives for salmonid rearing. In most years, all temperature sites within the Potlatch River system exceeded the desired future condition (DFC) for temperatures during the spring spawning period and all temperature sites within the Potlatch River system exceeded the State spawning standard of 13° C during the spring.

Comparison of the 2006 stream temperature data from the monitoring sites (U.S.D.A. Forest Service – Clearwater National Forest 2007b), the 14 monitoring sites on 9 streams with available data and the desired maximum temperatures as defined for the "low fishable" standard in the Forest Plan revealed that:

1. The mainstem Potlatch River (at Little Boulder Creek), East Fork Potlatch River (mouth), Moose

Creek (downstream of Moose Creek Reservoir) and Nat Brown Creek (lower & upper) did not meet the DFC (less than 20°C) for steelhead trout rearing.

2. Four of the 14 sites, Cougar Creek, Feather Creek, Moose Creek (upstream Moose Creek Reservoir) and West Fork Potlatch River (downstream Talapus Creek) met the DFC for steelhead trout rearing.
3. An additional four of the 14 sites, Corral Creek, mainstem Potlatch River above West Fork Potlatch River, Ruby Creek and mainstem West Fork Potlatch River at mouth exceeded the DFC (less than 20°C) for steelhead trout rearing on five days or less.
4. In 2006, four sites, mainstem Potlatch River (at Little Boulder Creek), mainstem East Fork Potlatch River (mouth), Moose Creek (downstream of Moose Creek Reservoir) and mainstem West Fork Potlatch below Stout property exceeded the State standard for cold-water biota of the daily maximum of 22°C and the maximum daily average of 19°C.
5. An additional two sites, Nat Brown Creek (lower) and Ruby Creek exceeded the State cold-water biota standard on two days.
6. The State temperature standard of 13°C or below for the spring spawning period (for steelhead trout) was not met at any of the 14 sites.
7. All streams exceeded the bull trout maximum summer rearing temperature of 12°C (consecutive seven-day average of daily maximums) that EPA issued as final temperature guidance for water quality standards throughout the Pacific Northwest.

Project Area Habitat Conditions: As previously stated the Potlatch River has undergone substantial channel changes due to various land management activities. Historical and current information regarding the physical and biological characteristics of the Potlatch River watershed (including the mainstem Potlatch River, and East Fork Potlatch River) are presented in the Section 7 Watershed Biological Assessment for the Potlatch River Drainage, Mainstem Clearwater River Subbasin, dated June 26, 2000 (U.S.D.A. Forest Service - Clearwater National Forest 2000). This biological assessment also summarized the overall presence/absence, relative abundance, habitat conditions and current trends for steelhead trout and bull trout on USFS lands in the Potlatch River drainage. More recent information regarding current conditions for the four major streams within the project area (mainstem Potlatch River, East Fork Potlatch River, Little Boulder Creek and Hog Meadow Creek) were summarized using the matrix of pathways and indicators of watershed conditions adapted for the Clearwater River Subbasin and Lower Salmon River (Appendix C).

Mainstem Potlatch River: The environmental baseline for mainstem Potlatch River within the project area was determined by supporting data collected in response reaches: POB- 18 and 19 (Clearwater BioStudies, Inc. 2006). These response reaches were selected because they are the most sensitive channel types (from Rosgen stream classification) that will show the most cumulative impacts within the project area. Response reaches PO-18 and 19 are B3c channel types. The B3c reach has a gradient of 1 % and resembles a C channel type.

Survey data summarized for the two response reaches indicated that the limiting factors within and downstream of the project area are the lack of large acting woody debris, low number of pools and fair to poor pool quality (Appendix C). Substrate conditions were rated as fair to good with sediment levels slightly higher than desired conditions for the low gradient B channel types.

Little Boulder Creek: The environmental baseline was determined by supporting data collected in the response reach of LB-04, 05 and 07 (Clearwater BioStudies, Inc. 2006). The entire Little Boulder Creek drainage is located within the project area. As with the mainstem Potlatch River, these response reaches were selected because they are the most sensitive channel types (from Rosgen stream classification) that will show the most cumulative impacts. Response reaches LB-04 and 05 are an E5 channel type. Reach 07 is a B4c channel type. The E3 reaches have a gradient of 0.6 to 0.9% while the B4c reach has a similar low gradient of 0.9%. The three response reaches are primarily pool habitat type (64%) with a dominant substrate of sand (65%).

Clearwater BioStudies, Inc. (1994) found that the limiting factors within Little Boulder Creek are the poor substrate conditions (moderate to high levels of cobble embeddedness), poor winter habitat (limited and of poor quality), and the lack of spawning habitat due to poor substrate conditions. The 2005 survey conducted by Clearwater BioStudies, Inc. (2006) did not indicate any substantial changes from the 1994 assessment of limiting factors; however a slight improvement in substrate conditions (decrease in cobble embeddedness) was noted.

East Fork Potlatch River: The environmental baseline was determined by supporting data collected in the response reaches of EFP-04 through EFP-06 (Clearwater BioStudies, Inc. 2006). The response reaches are located within the project area (on USFS lands) and are the most sensitive channel types (from Rosgen stream classification) that will show the most cumulative impacts. Response reaches EFP-04 and EFP-06 are F3 channel types and EFP-05 is a C4 channel type. The average gradient for the response reaches is 0.7%. The stream segment has primarily pool and run/pool habitat types with a dominant substrate ranging from small gravel to small rubble.

Survey data (Isabella Wildlife Works 1994a) summarized for the three response reaches indicated that the limiting factors within the project area are the low number of pools, poor spawning habitat (due to poor substrate conditions), minimal overstory shade, low number of large woody debris and subsequent high summer water temperatures (primarily due to the meadow habitat. Some areas of bank instability from high stream flows and past cattle grazing were evident. Stream restoration (fencing exclosures) helped stabilized stream banks that were affected by past cattle grazing.

The 2005 survey conducted by Clearwater BioStudies, Inc. (2006) did indicate a substantial change in substrate conditions (decrease in cobble embeddedness) from the 1994 assessment of limiting factors. However, the recent data also validates that the limiting factors, such as low number of pools, low numbers of large woody debris, pool spawning habitat (due to poor substrate conditions) and bank stability problems are still present. The 2006 report did note that the enhancement efforts (i.e. fencing, stream stabilization) appear to be producing results.

Hog Meadow Creek: No complete stream survey information is available for Hog Meadow Creek. When available, anecdotal information collected by USFS personnel was used to established the environmental baseline.

Identification of Listed Species and Critical Habitat

The U.S. Fish and Wildlife Service (USFWS) provided an updated species list for the Clearwater National Forest on December 3, 2007 (File #103.0000, 2008-SL-0070). This list identifies two endangered, six threatened species. The following species were included in the list: gray wolf (E:XXN), sockeye salmon (E), fall chinook salmon (T), spring chinook salmon (T), steelhead trout (T), bull trout

(T), Canada lynx (T) and Water Howellia (T). Two of the fish species, sockeye salmon and spring Chinook salmon were not listed within the Clearwater National Forest (specifically the Clearwater River and Palouse River subbasins); therefore these species will not be discussed as ESA species in this Biological Assessment.

Endangered Wildlife Species - Gray Wolf (*Canis lupus*)

Source habitats for wolves span a broad elevation range and include all (native) terrestrial community groups. Key components (source habitats) of wolf habitat include: 1) Sufficient year-round prey base of ungulates and alternate prey; 2) Suitable somewhat secluded denning and rendezvous sites; and 3) Sufficient space with minimal exposure to humans. Home ranges (pack territories) typically include 50-200 mi² and typically include both summer and winter habitats of their primary prey base. In the Rocky Mountains wolves prey primarily on elk, white-tailed deer, moose and small mammals. Inadequate or deteriorated big game winter range can limit prey populations and effect wolves.

Wolf dens are usually located on moderately steep slopes with southerly aspects and well-drained soils usually within close proximity to surface water and at an elevation overlooking surrounding low-lying areas. Rendezvous sites are typically complexes of meadows that have adjacent hillside forest and nearby water. On old surfaces, slopes in the analysis area are relatively gentle, particularly on the major ridges. On these main ridges, deep soils and occasional rock outcrops are present; water is abundant. The deep soils, moist climate and abundant water encourages a mixture of young, dense coniferous stands interspersed among patches of mixed shrubs (willow, mountain maple, ceanothus spp., etc) and small “bogs”.

The Palouse RD has had several undocumented records of wolf use, but there is no known documentation of pack formation. The Chesimia pack is known to reside on the eastern edge of the Palouse RD about 25 miles southeast of the town of the Cherry Dinner project area. It is possible that animals from this pack intermittently use the Cherry Dinner project area.

Threatened Wildlife Species - Lynx (*Lynx canadensis*)

Lynx are believed to occupy habitats in Idaho at elevations above 4000 feet elevation. They utilize Engelmann spruce, sub-alpine fir or lodgepole pine habitats that provide a mosaic of forest age classes. They require early successional habitats for foraging and forested habitats for security, cover and denning. The lynx is a specialized predator and at a competitive disadvantage against other species. Lynx may be displaced or eliminated by bobcats or coyotes expanding into, and competing for, its range. There is probably limited overlap in the ranges of bobcats or coyotes with the range of lynx. However, as bobcats and coyotes expand their ranges because of forest alteration and other factors, the amount of overlap would likely increase. Where lynx and bobcat or coyote ranges overlap, their niches are typically only segregated by winter range conditions. Lynx are typically restricted to areas that receive deep snow cover, where they are more highly adapted than bobcats or coyotes. Lynx prefer forested cover for security and hunting and usually do not cross open habitats (i.e., meadows, etc) greater than 300 feet wide. Favored travel routes are forested areas along ridges and saddles.

They prey almost exclusively on snowshoe hares. Lynx hunting habitat largely depends on the availability of snowshoe hare habitat. Snowshoe hares require both forage and thermal cover within their typical 20 to 25 acre home range. The most productive snowshoe hare habitats occur where winter forage (willows, birch and conifers) and thermal cover (typically provided by a closed canopy of coniferous trees) are co-mingled. Thermal and security cover are so important that snowshoe hares may select this habitat even if forage is limited. In early forest succession stages in central Idaho, snowshoe

hare thermal and security cover is characterized by dense stands of sapling size or larger conifers. Observations of snowshoe hare winter habitat use by this biologists, suggest they use nearly all forest succession stages, provided thermal cover is present, occurring on more gentle landscapes (which excludes most breaklands). Lynx denning habitat is characterized as occurring in moist, mature forests, on northerly aspects. Denning sites require a high density of down trees, 1 to 4 feet above the ground. Denning areas range from 1 to 5 acres, connected by mature forest travel routes accessing prey habitat.

Factors affecting lynx habitat are the alteration of forested habitats via prescribed fire management, roads, urbanization, ski development, motorized winter recreation and fire suppression. Loss of suitable habitat for lynx reduces the potential for population growth or re-colonization of the lynx and further confines lynx to smaller, more isolated habitat units. Forest fires historically created and maintained mosaics of early successional forest stands and mature conifer forest forming ideal snowshoe hare and lynx habitat. In Montana, 90% of locations of studied lynx were in dense stands of lodgepole pine that burned 67 years earlier. The lack of adequate hare habitat in southern latitudes may be partially a result of fire suppression over the past 50 years. Extensive forest fires occurred in Idaho during the early 1900's, and it is possible that fire suppression has allowed many of these burns to advance to older successional stages that are not conducive to supporting the landscape mosaic necessary for snowshoe hare and lynx populations.

Human access into lynx habitat has increased significantly over the last several decades. Increases roads, coupled with and the rapidly growing popularity of snowmobiles and other off-road vehicles has facilitated human access into historic lynx habitats. Increased human access presents a significant threat to lynx because of the increased likelihood of intentional or unintentional lynx mortality. Human access concerns are particularly important when or where lynx populations are low or are concentrated in localized refugia.

Trapping and hunting over harvest of lynx during the 1970's and 1980's, has reduced the potential for recovery of lynx populations. Lynx populations may have become so depleted that they cannot reach former densities even during the periods of abundant prey and maximum reproductive success. The threats to resident lynx from legal trapping for other species are reduced in many regions. Hunting seasons for bobcats may be a potential threat because of the difficulty in hunters distinguishing between bobcat and lynx. However, this potential threat may be less where the use of hounds for hunting is legal, because those hunters have a better chance of identifying the treed animal as a bobcat or a lynx. Dispersing lynx are also likely to increase their susceptibility to injury or mortality from legal trapping for other furbearers.

Threatened Plant Species - Water Howellia (*Howellia aquatilis*)

Water howellia (*Howellia aquatilis*) grows in firm, consolidated sediments associated with glacial potholes and former river oxbows which flood in spring but usually dry to some degree by late summer. This aquatic plant is restricted to small, vernal, and fresh water wetlands that have an annual cycle of filling up with water over the fall, winter and early spring, followed by drying during the summer months. These wetland habitats are generally <2.5 acre in area and <3' deep. Water howellia generally occupies only a fraction of the basin of each wetland.

Microhabitats include shallow water and the edges of deep ponds that are partially surrounded by deciduous trees such as black cottonwood and aspen. Ponds are generally found in Engelmann spruce or lodgepole pine forests. The bottom surfaces of the wetlands usually consist of firm, consolidated clay and organic sediments. Fall drying of the wetlands is required for seed germination, while spring submergence is required for growth and flowering.

Threatened Fish Species - Fall Chinook Salmon (*Oncorhynchus tshawytscha*)

The Snake River spring/summer Chinook salmon and fall Chinook salmon were listed as threatened on April 22, 1992 (57 FR 14653; 57 FR 23458, June 3, 1992) and listings reissued on June 28, 2005 (70 FR 37160, June 28, 2005). Spring/summer Chinook salmon were also not listed in the Clearwater River subbasin. Critical habitat was designated for Snake River sockeye salmon, Snake River spring/summer Chinook salmon, and Snake River fall Chinook salmon on December 28, 1993 (58 FR 68543; and 64 FR 57399, October 25, 1999).

The National Marine Fisheries Service (NMFS) Federal Register (issued 12/28/93) identified a reach of the mainstem Clearwater River as critical habitat for Snake River fall chinook salmon. Critical habitat for the fall run chinook includes only the mainstem of the Clearwater River up to the Idaho/Clearwater county line below the town of Greer, Idaho. Distance from the proposed activities in the upper Potlatch River drainage to the Clearwater River is over 25 miles. Consequently, no critical habitat for this species occurs within the Clearwater National Forest. Under the ESA, the Forest Service must assess cumulative impacts from federally authorized or funded projects on the Clearwater National Forest to fall chinook salmon populations in both the lower Clearwater River and Palouse River below the falls.

Threatened Fish Species - Steelhead Trout (*Oncorhynchus mykiss*)

Steelhead trout in the Snake River basin have been listed as threatened under the ESA with an effective listing date of October 17, 1997 (62 FR 43937, August 18, 1997) and proposed for revision on June 14, 2004, (69 FR 33102). The revised Snake River steelhead ESU proposed for relisting as the Snake River Basin /*O. mykiss* /ESU, which includes both resident and anadromous forms within the range of the existing steelhead ESU, and also includes the North Fork Clearwater River drainage upstream of Dworshak Dam. The ESA listed status for Snake River Basin steelhead trout was finalized on January 5, 2006 via final rule in the Federal Register (71 FR 834). The final rule was consistent with the initial ruling (August 18, 1997) in that the listed Snake River Basin steelhead ESU included all anadromous forms in the Clearwater River subbasin excluding the resident forms upstream of Dworshak Dam in the North Fork Clearwater River subbasin.

Critical habitat for the Snake River Basin /*O. mykiss* /ESU was proposed on December 14, 2004 (69 FR 74572). On September 2, 2005, critical habitat for the Snake River Basin steelhead trout was designated via final rule (70 FR 52630). Streams designated for critical habitat designation are identified in the September 2, 2005 Federal Register by their corresponding fifth-field hydrologic unit codes.

The Cherry Dinner Project includes several streams designated critical habitat for steelhead trout. The project area is located within the Upper Potlatch River (1706030607) which includes the upper mainstem Potlatch River, East Fork Potlatch River and Little Boulder Creek drainages (70 FR 52781 and 52806).

Threatened Fish Species - Bull Trout (*Salvelinus confluentus*)

On July 10, 1998, bull trout were listed as a threatened species within the Snake River under ESA (63 FR 31647). On November 29, 2002, a proposed rule to designate critical habitat for the Klamath and Columbia River populations of bull trout was published in the Federal Register (67 FR 71235). A final rule designating critical habitat for these populations was published on October 6, 2004 (69 FR 59996). The Final Rule excluded PACFISH/INFISH areas among others. The USFWS was challenged on the Final Rule on December 14, 2004 in a complaint filed by the Alliance of the Wild Rockies and Friends of the Wild Swan. The USFWS subsequently requested a voluntary partial remand to reconsider the Final Rule. On September 26, 2005, a new Final Rule was published in the Federal Register (70 FR

56212). The Final Rule excluded areas that were already covered by approved conservation agreements and habitat management plans; the Clearwater River Subbasin was excluded from critical habitat designation.

Status of Listed Species

Endangered Wildlife Species - Gray Wolf (*Canis lupus*)

An “experimental, nonessential” reintroduction of wolves from Canada to Central Idaho was implemented in January 1995. The Cherry Dinner project area is within the boundary of the Central Idaho non-essential population area for the gray wolf. The USFWS has determined that “...existing land use restrictions, such as those for protecting big game habitat, provide more protection for wolves and wolf habitat on a large scale than is needed to effect wolf recovery in Idaho.” They have developed a recovery program with a minimal degree of potential land use restrictions. Two restrictions have been recommended: 1) restrictions on non-selective methods for predator control and 2) potential restrictions on some activities within a maximum of a one-mile radius of active den and rendezvous sites. Wolf population recovery goals have been exceeded for the experimental population. The USFWS is currently in the process of delisting this species.

Threatened Wildlife Species - Lynx (*Lynx canadensis*)

The USFWS believes existing regulatory mechanisms in the contiguous United States are adequate to control over exploitation. There are no regulatory mechanisms that specifically address the management or conservation of functional lynx habitat. Thus, USFWS believes that the magnitude and immediacy of threat due to inadequate regulatory mechanisms for habitat conservation are moderate and imminent, respectively. An appropriate mix of habitat conditions suitable for hunting, denning and cover are essential to re-establishing viable lynx populations. Assessments of lynx habitat, per the “*Canada Lynx Assessment and Conservation Strategy*” guidelines (pp 7-2 to 7-4) are conducted using Lynx Analysis Units (LAUs)². Typically, lynx conservation guidelines apply only to lynx habitat within LAUs, although considerations related to connectivity may be appropriate for other areas. There is no lynx habitat within the project area.

No current population estimates are available. The Idaho Department of Fish and Game does not monitor lynx populations in the State except through harvest records. Low population densities make effective monitoring efforts for lynx cost-prohibitive. The Idaho Fish and Game Department has no records (historical or otherwise of reliable) lynx sightings in the Cherry Dinner project area.

Threatened Plant Species - Water Howellia (*Howellia aquatilis*)

Only a single known occurrence is reported in Idaho (Latah County). There are no habitat features (as depicted above) within Cherry Dinner treatment areas that would indicate water howellia habitat or populations may be present.

² The LAU is a project analysis unit upon which direct, indirect, and cumulative effects analyses are performed. LAU boundaries should remain constant to facilitate planning and allow effective monitoring of habitat changes over time. An area of at least the size used by an individual lynx, about 25-50 mi². LAUs were developed per USDA Forest Service, 2000b, Lynx Habitat Mapping Direction.

Threatened Fish Species - Fall Chinook Salmon (*Oncorhynchus tshawytscha*)

The majority if not all of the fall Chinook salmon spawning documented over the last 16 years has occurred within the designated critical habitat reaches of the Clearwater River, mostly downstream of the North Fork Clearwater River. Some limited spawning has been observed in the reach around Orofino Creek, the area near the Lolo Creek confluence and upstream of the critical habitat near the confluence of the South Fork Clearwater River. These are assumed sporadic and not considered viable/natural sustaining populations (due to natural constraints regarding rearing habitat, water temperatures during incubation and early rearing).

Spawning ground surveys conducted by the Nez Perce Tribe from 1988-2006 have found up to 628 redds in the lower mainstem Clearwater River (Garcia 2000; Nez Perce Tribe 2003, 2004, 2005, 2006, 2007). Redd counts have ranged from four redds in 1990 and 1992 to 524, 571, 628, 487, and 257 redds in 2002, 2003, 2004, 2005 and 2006 respectively (Garcia 2000; Nez Perce Tribe 2003, 2004, 2005, 2006, 2007). The majority of redds were located downstream of the North Fork Clearwater River; less than five percent in any one year were located upstream of the North Fork Clearwater River confluence. During 2006, only six of the 257 redds documented in the mainstem Clearwater River were found between the North Fork Clearwater River and the South Fork Clearwater River. Increased spawning success over the past ten years has been attributed to supplementation efforts in the subbasin.

Stream flows within the upper mainstem Potlatch River are very low during fall and early winter and would not support fall Chinook spawning. In 2000, the Nez Perce Tribe has documented fall Chinook salmon and coho salmon spawning in the lower mainstem Potlatch River (approximately 20 miles downstream of USFS lands). No documentation is available to indicate any fall Chinook salmon production in the upper Potlatch River.

Threatened Fish Species - Steelhead Trout (*Oncorhynchus mykiss*)

Life History: Snake River Basin steelhead trout are summer steelhead trout, as are most inland steelhead trout, and comprise two groups, A-run and B-run, based on migration timing, ocean-age, and adult size. Snake River Basin steelhead trout enter fresh water from June to October and spawn during the following spring from March to May. B-run fish, which occur in the Clearwater River Basin, enter fresh water from late August to October, passing Bonneville Dam after August 25. B-run steelhead trout are thought to be age 2 ocean fish. They are 75 to 100 mm larger than A-run steelhead trout of the same age due to their longer residency in the ocean. Unlike other Pacific salmon, steelhead trout are capable of spawning more than once before they die. However, most steelhead trout in the Clearwater Basin survive to spawn only once.

Spawning and initial rearing of juvenile steelhead trout generally take place in moderate gradient (generally 3-5%) streams. Females dig redds and deposit 1,500 to 6,000 eggs in pea to baseball size gravel. The eggs hatch in about 35-50 days, dependent upon water temperature. The alevins remain in the gravel 2 to 3 weeks until the yolk sac is absorbed, then emerge as fry in late spring, and begin to actively feed. Egg to fry survival is usually near 15%. Snake River Basin steelhead trout usually smolt as 2 or 3 year olds and migrate to the ocean.

Productive steelhead trout habitat is characterized by complexity, primarily in the form of large and small wood and/or boulders and rock. Juveniles will take advantage of microhabitats to seek refuge from high water velocity and/or temperatures. Juveniles may move around in a basin to take advantage of favorable habitat. Fry prefer protected and complex edge habitat with low velocity (<0.3 ft/s). They are seldom observed in water over 15 inches deep. Summer rearing takes place primarily in the faster

parts of small and deep scour pools with some form of surface cover and wood or medium to large substrate (cobble or boulders). Other important habitat components for juveniles are pools with "bubble curtains", undercut/scoured areas, and pocket water in deep riffles and rapids. Winter rearing occurs more uniformly at lower densities across a wide range of fast and slow habitat types. Small tributaries and lakes are probably important winter habitat. As juveniles get older, some tend to move downstream to rear in larger tributaries and mainstem rivers.

Historical Population Condition in the Potlatch River: Historically, the Potlatch River drainage contributed substantially to the spring chinook and steelhead production within the mainstem Clearwater River drainage. The drainage was most likely second to Lolo Creek in spring chinook production. Anadromous and resident fish production occurred throughout the Potlatch River drainage. Habitat conditions within the mainstem Potlatch River (upstream of Boulder Creek), East Fork Potlatch River and West Fork Potlatch River were probably the most conducive to spring chinook, coho salmon and steelhead production. No permanent migration barriers to anadromous fish were present within the mainstem of Potlatch River, West Fork or East Fork tributaries. Johnston (1993) reported that reviews of historical documents and interviews with residents from the late 1800's and early 1900's indicate that salmon (spring chinook) and steelhead (B-run size) migrated into the upper Potlatch River system. In the 1920's and 1930's, residents of the upper Potlatch River area reported to Johnston (1993) that lamprey followed the steelhead trout up the Potlatch River, upstream of Bovill, Idaho.

Within lower Potlatch River tributaries of Big Bear, Corral and Hog Meadow creeks, steelhead trout most likely inhabited Corral Creek (Johnston 1993). Steelhead also reared in Hog Meadow Creek if migration barriers were not present downstream on non-USFS lands. A migration barrier in the lower Bear Creek drainage, prevented anadromous fish production within the upper Bear Creek drainage. Within the East Fork Potlatch/Little Boulder Creek, Moose Creek and West Fork/upper Potlatch River sub-analysis areas, steelhead trout probably spawned and reared in all accessible streams. Johnston (1993) documented accounts of people catching steelhead in Mallory Creek, Laguna Creek, and Feather Creek. The streams within the lower gradient meadows reaches provided meandering stream channels with good bank stability, cover, cool water temperatures and excellent pool habitat which would equate to good populations of westslope cutthroat trout; the populations probably exceeded five fish (age 2+ and older)/100 squared meters of stream habitat. Lower tributaries most likely provided fair to good habitat for A-run steelhead and small resident fish populations; lower summer stream flows and higher summer water temperatures within these lower tributaries as well as the mainstem may have limited fish production. While warmer water temperatures within the lower mainstem of Potlatch River most likely limited rearing during the summer months, this area provided critical overwintering habitat for anadromous and resident fish.

Existing Population Condition in Clearwater River subbasin: Present distribution includes the Salmon River and Clearwater River subbasins. Wild, indigenous steelhead trout, unaltered by hatchery stocks, are rare and present in 25 percent of the current steelhead trout distribution. Within the Central Idaho Mountains, recent steelhead trout runs are described as critically low. Key factors to the decline of steelhead trout in the Pacific Northwest include predation and competition from introduced fish, blocked access to historical habitat, passage mortality at major dams, habitat degradation, hatchery interactions, and harvest.

Existing Population Condition in the Potlatch River: Juvenile steelhead rearing has been documented in most the Potlatch River drainage; production is considered very low due to overall adult escapement and habitat conditions. On USFS lands, steelhead spawning has been monitored in the East Fork Potlatch River since 1992. These surveys have shown a consistently low number of redds from three to nine. During the 2004 spawning period, one survey conducted in May found nine redds. Very little spawning has been observed in the West Fork Potlatch River, presumably due to fine textured substrates

in the alluvial meadow systems of that drainage. Steelhead trout spawning is most likely occurring within Little Boulder Creek as fish population surveys indicate low densities of juvenile rainbow/steelhead trout throughout the drainage. Steelhead trout production within the Hog Meadow Creek is most likely nonexistent due to poor existing habitat conditions (i.e. intermittent stream flows, poor substrate conditions and high water temperatures).

Existing Habitat Conditions and Environmental Baseline: Historical and current information regarding the physical and biological characteristics of the Potlatch River watershed (USFS lands) are presented in the *Section 7 Watershed Biological Assessment for the Potlatch River Drainage, Mainstem Clearwater River Subbasin*, dated June 26, 2000 (U.S.D.A. Forest Service - Clearwater National Forest 2000). This biological assessment also summarized the overall presence/absence, relative abundance, habitat conditions, current trends and the environmental baseline for steelhead trout in the Potlatch River drainage. The environmental baselines for four major streams within the project area (mainstem Potlatch River, East Fork Potlatch River, Little Boulder Creek and Hog Meadow Creek) were summarized using the Matrix of pathways and indicators of watershed conditions adapted for the Clearwater River Subbasin and Lower Salmon River (Appendix C).

Threatened Fish Species - Bull Trout (*Salvelinus confluentus*)

Life History: Bull trout are found in cold-water streams, rivers, and lakes. Two distinct forms of bull trout, resident and migratory, exist throughout the range. Resident adults range from 150 to 300 millimeters in length while migratory fish commonly exceed 600 millimeters. Resident populations are often found in small headwater streams where they spend their entire lives. Most information indicates bull trout mature when they are between five and seven years of age and they may spawn each year or in alternate years. Spawning occurs in clear, headwater streams with a gravel or rubble bottom. In the spring, migratory adults return to spawning streams from rivers or lakes. Spawning occurs from mid-August to November and begins when stream temperatures fall between 5 and 9 degrees Celsius. Eggs hatch in January and the fry remain within the gravel until early spring. Migratory, adfluvial juveniles migrate to the lakes and larger rivers by mid-summer. Migratory, fluvial juveniles may rear in tributary streams for three to four years before recruiting to larger streams and rivers.

Existing Population Condition in the Potlatch River: Surveys have indicated that bull trout are either very rare or nonexistent within the Potlatch River drainage; there is no evidence of any viable populations currently inhabiting the drainage. Within the Potlatch River drainage, one juvenile bull trout was observed in 1990 during a fish population survey in Feather Creek, a tributary of the West Fork Potlatch River (Clearwater BioStudies, Inc. 1991). Another sighting was documented by USFS personnel in the same area of Feather Creek the following summer. These observations were judged to be very unusual due to the strong brook trout populations and high summer water temperatures within the upper Potlatch River system. In 1995, an intensive fish population survey was conducted within the Feather Creek drainage and other areas within the upper Potlatch River drainage to document the presence/absence of bull trout and other salmonid species. The surveys did not report any observations of bull trout in the upper Potlatch River system (Clearwater BioStudies, Inc. 1996). In summary, a stray bull trout or two may be present within the cooler tributaries of the Potlatch River drainage, but there is no evidence of any viable populations currently inhabiting the drainage.

Existing Habitat Conditions and Environmental Baseline: Historical and current information regarding the physical and biological characteristics of the Potlatch River watershed are presented in the *Section 7 Watershed Biological Assessment for the Potlatch River Drainage, Mainstem Clearwater River Subbasin*, dated June 26, 2000 (U.S.D.A. Forest Service - Clearwater National Forest 2000). This biological assessment also summarized the overall presence/absence, relative abundance, habitat

conditions, current trends and the environmental baseline for bull trout in the Potlatch River drainage. Another document summarized the status of bull trout using presence/absence data within the drainage (State of Idaho 1998). The environmental baselines for four major streams within the project area (mainstem Potlatch River, East Fork Potlatch River, Little Boulder Creek and Hog Meadow Creek) were summarized using the Matrix of pathways and indicators of watershed conditions adapted for the Clearwater River Subbasin and Lower Salmon River (Appendix C).

Effects Analysis

Endangered Wildlife Species - Gray Wolf (*Canis lupus*)

Effects of Planned Actions: The Cherry Dinner project would cause no direct or indirect affect on wolf denning or rendezvous habitats or populations. Though open road density would be reduced in the Cherry Dinner project area, the over-all level of human activity is not expected to change in the Cherry Dinner project area. There are no planned uses of indiscriminate lethal predator control measures within the project area. The critical factor for wolf habitat is the continued availability of elk (prey) and white-tailed deer populations. Forest Plan standards and guidelines for ungulate habitat management would be implemented. The availability of grass forage for elk, moose and white-tailed deer would persist on meadow habitats occurring on both National Forest and state/private ownerships. Hiding cover would remain adequate, but reliance on National Forest to provide hiding cover would increase. Sufficient wolf habitat and prey are available and will be maintained to meet recovery goals, and no specific land use restrictions are needed. The continued availability of hiding and foraging habitats on both National Forest and state/private lands is expected to continue to provide a big game prey base for wolves.

Threatened Wildlife Species - Lynx (*Lynx canadensis*)

Effects of Planned Actions: The Cherry Dinner project area is not within suitable lynx habitat. There are no current records or indications that Canada lynx would reside or travel in or near the Cherry Dinner project area. There are no effects related to Canada lynx populations or habitat features to analyze for this species.

Threatened Plant Species - Water Howellia (*Howellia aquatilis*)

Effects of Planned Actions: There are no records of water howellia habitat or populations in or near the Cherry Dinner project area. The Cherry Dinner project area is not considered to contain suitable water howellia habitat features or attributes. Planned stream channel restoration projects would occur in meadow habitats (vs habitats "...partially surrounded by deciduous trees such as black cottonwood and aspen..."). Channel restoration projects are not intended to restore "vernal-like" pond conditions (i.e., small wetlands that have an annual cycle of filling up with water over the fall, winter and early spring, followed by drying during the summer months). Stream habitats (i.e., Riparian Habitat Conservation Areas) in the project area are either being maintained or protected by the implementation of default PACFISH buffers.

Threatened Fish Species - Fall Chinook Salmon (*Oncorhynchus tshawytscha*)

Effects of Proposed Action: Since fall Chinook salmon do not spawn and rear within the mainstem Potlatch River within the project area, no direct or indirect impacts to fall Chinook salmon are expected. The potential impacts from the proposed activities in the mainstem Potlatch River within the project area on the other fish populations (i.e. steelhead trout) are expected to be insignificant and discountable. Therefore, the potential effects to fall Chinook salmon in the lower Potlatch River (approximately 20

miles downstream of the project area) and the mainstem Clearwater River are considered nonexistent (see below).

Cumulative Effects downstream of the Potlatch River Drainage: Due to the PACFISH default riparian buffers being implemented to protect all streams adjacent to vegetative treatment areas, the construction of new roads on stable landtypes with no perennial stream crossings, and the timing of instream road related activities on tributary streams until lower summer stream flows, changes to stream features and habitat (i.e. changes to water temperatures and potential large woody debris levels in the mainstem Potlatch River within project area and immediately downstream) are expected to be negligible and non-measurable. Therefore, no effect to downstream fall Chinook salmon within the lower Potlatch River or the mainstem Clearwater River is expected from the Cherry Dinner Project within the Potlatch River drainage.

Threatened Fish Species - Steelhead Trout (*Oncorhynchus mykiss*)

Effects of Proposed Action: Instream and riparian activities within the Potlatch River drainage have the potential to affect steelhead trout directly through displacement or indirectly through altered habitat conditions. Vegetative removal activities and road activities (i.e. road construction, reconstruction and decommissioning) have the potential to also affect steelhead trout indirectly through altered habitat conditions.

The effects of the vegetative removal activities have been avoided by the elimination of riparian alterations (i.e. PACFISH default riparian buffers). The effects of instream and riparian activities associated with road work has been minimized by the location of new permanent and temporary roads outside riparian zones and the delayed timing of instream work during the low stream flows in July through September.

As noted above, the environmental baselines for four major streams within the project area (mainstem Potlatch River, East Fork Potlatch River, Little Boulder Creek and Hog Meadow Creek) were summarized using the Matrix of pathways and indicators of watershed conditions adapted for the Clearwater River Subbasin and Lower Salmon River (Appendix C). The potential and expected changes to these indicators during and following the implementation of the Cherry Dinner Project are summarized below.

Effects to Watershed Condition Indicators: Of the seven indicators, a positive response (restore) is expected on the three road density indicators and the sediment yield indicator within the four major analysis watersheds. Although some road construction is proposed, the majority of the new construction will be decommissioned (obliterated or intermittent storage) and a substantial portion of the existing road network will be also decommissioned. A positive response (restore) is also expected for the riparian indicator in all four watersheds due to natural (passive) management in the riparian zones. In addition, bank stabilization project will restore approximately four miles of riparian areas along the East Fork Potlatch River. No changes are expected to the peak/base flow indicators.

Within the Little Boulder Creek drainage, the water yield indicator shows a moderate negative response due to the vegetation treatments, but this response is predicted to be temporary. The ECA will increase from 13.8% to 19.5% due to the vegetative removal. This increase is higher than the 15% level for a properly functioning watershed however, the changes in peak flows (from 7% to 12%) is below the WATBAL threshold (15-20%) that indicates a risk in channel degradation. The ECA is predicted to drop below 15% in 2014. Finally, the sediment yield

indicator is expected to have a short-term negative response due to culvert replacement and removal activities. The increased levels are expected in the non-fish bearing tributaries and not be evident in the downstream fish bearing tributaries. A long-term positive response (decrease in sediment yield) is expected due to the reduced number of road fills subject to failure.

Short-term small increases in sediment along the East Fork Potlatch River are expected during the bank stabilization activities. The bank revetments may produce slight increases in turbidity and suspended sediment levels in localized areas, but these are expected to be short duration (several hours) and within State standards at downstream mixing zone. Short-term small increases in sediment yield in localized areas is expected, however, a long-term decrease in sediment yield is expected in East Fork Potlatch River due to the bank stabilization.

- *Effects to Channel Condition Indicators:* With the exception of the East Fork Potlatch River watershed, no changes are expected in the channel condition indicators. The stream bank stabilization project is expected to have a positive response regarding the width/depth ratio and stream bank stability indicators along the East Fork Potlatch River. No changes are expected regarding the floodplain connectivity indicator.
- *Effects to Water Quality Indicators:* No changes in stream temperatures are expected due to the avoidance of activities within the RCA. PACFISH default riparian buffers will protect all streams adjacent to vegetative treatment areas. Removal or alterations of riparian vegetation may occur in small local areas at culvert replacement and removal sites; effects are minimal. Slight restoration in overall riparian conditions as riparian conditions at culvert removal sites will be improved to allow for natural vegetative conditions.

Short-term small increases in suspended sediment in localized areas within the tributaries are expected (i.e. culvert replacement/removal and associated stream bank alterations). These increases are expected to extend 200 to 500 feet downstream dependent upon stream gradient and stream flows. The increases are not expected to be transported to fish bearing streams. A long-term decrease in suspended sediment is expected in all four major streams due to reduced number of road fills subject to failure.

No changes in the chemical contaminants – nutrients indicator is expected due to the avoidance of activities within the RHA and adherence to a fuel, transport and containment plan.

- *Effects to Habitat Access Indicators:* No activity is proposed which would create a barrier to adult or juvenile aquatic species.
- *Effects to Habitat Elements Indicators:* Short-term small increases in the cobble embeddedness, percent fines (surface and by depth) are expected in localized areas within the tributaries are expected (i.e. culvert replacement/removal and associated stream bank alterations). These increases are expected to extend 200 to 500 feet downstream dependent upon stream gradient and stream flows. The increases are not expected to be transported to fish bearing streams. A long-term decrease in cobble embeddedness and percent fines (surface and by depth) is expected in all four major streams due to reduced number of road fills subject to failure. No changes in indicators regarding large woody debris, pool frequency, off-channel habitat and habitat refugia are expected due to avoidance of activities within the RCA. However, the decreased risks of road failures and the subsequent reduction in sediment transport into the fish bearing streams is expected to show a moderate positive response in the pool quality indicator.
- *Effects to Take Indicators:* No changes to the harassment, redd disturbance or juvenile harvest indicators for steelhead trout and bull trout are expected. Due to various mitigation measures,

(i.e. PACFISH riparian buffers, no activities proposed within mainstems of Potlatch River, Little Boulder Creek and Hog Meadow Creek, and timing of instream road related activities on tributary streams and the bank stabilization activities on East Fork Potlatch River until after the incubation period) no impacts to steelhead trout redds are expected (see spawning/incubation/early rearing section below).

- *Effects to Specific Bull Trout Indicators:* Due to the various mitigation measures employed to protect steelhead trout and since bull trout are most likely not present within the project area, no changes are expected to the five indicators.

Spawning/incubation/early rearing: Although spawning surveys have been conducted only on a portion of the East Fork Potlatch River within and adjacent to the project area, steelhead spawning most likely occurs in other stream segments within the project area; substrate conditions that are conducive to spawning are available and accessible in stream segments within mainstem Potlatch River and Little Boulder Creek. Due to various mitigation measures, (i.e. PACFISH riparian buffers, no instream activities proposed within mainstems of the Potlatch River and Little Boulder Creek, and timing of instream road related activities on tributary streams until after the incubation period) no impacts to steelhead trout redds are expected. The bank stabilization project along the East Fork Potlatch River involves minor instream work that will be scheduled after the incubation period; no impacts to steelhead trout redds are expected.

U.S.D.C. NOAA Fisheries (2006) analyzed temperature data from Lolo Creek and steelhead emergence timing from applicable studies and found that in typical spring water temperature years, Lolo Creek steelhead trout will start emerging between July 1 and 6 and finish emerging by July 17. Since Potlatch River Creek is slightly lower elevation watershed and exhibits warmer water temperatures earlier in the summer, steelhead trout incubation and emergence would be earlier in the summer. Therefore, if instream activities are deferred to after July 15, effects to emergence should be negligible and discountable.

Short-term small increases in sediment in localized areas within the non-fish bearing tributaries are expected, however, a long-term decrease in sedimentation and sediment transport to fish bearing streams is expected due to reduced number of road fills subject to failure. Slight increases in turbidity and suspended sediment levels are expected directly downstream of culvert replacement/removal and associated stream bank alterations in tributary streams. These increases are expected to extend 200 to 500 feet downstream dependent upon stream gradient and stream flows. The increases from road decommissioning activities are not expected to be transported to the mainstems of the Potlatch River, East Fork Potlatch River and Little Boulder Creek during low stream flow period. Transport of the increased sediment within these tributaries is expected to occur during high stream flows during the spring runoff period; the amount of sediment being transported into the mainstem streams is expected to be insignificant and discountable in relation to the overall sediment movement in the Potlatch River system.

Short-term small increases in sediment along the East Fork Potlatch River are expected during the bank stabilization activities. The bank revetments may produce slight increases in turbidity and suspended sediment levels in localized areas, but these are expected to be short duration (several hours) and within State standards at downstream mixing zone.

Hog Meadow Creek which historically had steelhead trout production, is most likely a poor drainage for steelhead trout production due to existing habitat conditions (i.e. intermittent stream flows, poor substrate conditions and high water temperatures). Due to the poor spawning habitat conditions, the effects to steelhead spawning, incubation and early rearing within Hog Meadow Creek are considered

negligible.

Rearing: The riparian zone along the mainstems of the three major steelhead production streams within the project area (i.e. mainstem Potlatch River, East Fork Potlatch River, and Little Boulder Creek) are expected to improve slightly on natural basis. Moderate improvements to the riparian zone are expected along the East Fork Potlatch River. These passive and active management strategies will have minimal to nonexistent short-term effects on rearing habitat, but moderate long-term effects that will improve rearing habitat in terms of vegetative conditions, potential large woody debris and subsequent acting woody debris, pool quantity and quality.

Due to the PACFISH default riparian buffers being implemented to protect all streams adjacent to vegetative treatment areas, the construction of new roads on stable landtypes with no perennial stream crossings, and the timing of instream road related activities on tributary streams until lower summer stream flows, changes to stream features and habitat (i.e. changes to water temperatures and substrate conditions) in the mainstem Potlatch River, East Fork Potlatch River and Little Boulder Creek within project area are expected to be negligible and non-measurable.

Cumulative Effects: As defined in 40 CFR 1508.7, “cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”

Cumulatively, past land uses within and upstream of the Cherry Dinner Project area have altered the riparian, stream channel and stream habitat conditions of the fish bearing streams. Specifically changes to stream flows, substrate conditions, summer water temperatures and various habitat conditions have been degraded in various degrees dependent upon the land ownership. Over the past decade, improvements have been observed as a result of restoration activities, primarily on USFS lands, involving riparian fencing, road decommissioning, improved road maintenance, PACFISH riparian buffers and the adherence of the PACFISH standards and guidelines. The recovery trend regarding the aquatic resources is expected to be a slow process which will occur over many decades, especially considering improvements to substrate conditions and summer water temperatures. To avoid offsetting this improving trend, the Cherry Dinner Project was designed to avoid actions that would affect stream habitat conditions (i.e. sedimentation, riparian vegetation alterations, and stream flow alterations).

Current activities on USFS lands that were briefly described earlier were analyzed in regards to the proposed Cherry Dinner Project and the associated cumulative effects to the aquatic resources. Other than the ongoing grazing activities, the two major actions involving vegetative treatments and/or road related work (West Fork Potlatch Project and Little Boulder Campground Hazard Tree Removal Project) are expected to have negligible impacts to the improving trend. These projects were designed to avoid actions that would affect stream habitat conditions. While the ongoing grazing allotments upstream and within the project area will continue to have minor impacts on stream habitat conditions, primarily riparian and stream bank stability, numerous fencing projects in the upper Potlatch River drainage (i.e. West Fork Potlatch River) and within the project area (i.e. East Fork Potlatch River) have avoided impacts on the most sensitive stream areas and minimize overall impacts.

The effects of the Cherry Dinner Project on fish bearing streams are expected to be non-existent or negligible and thereby insignificant, and will not lead to cumulatively significant impacts when other Federal or State and private actions are considered. Due to various mitigation measures, (i.e. PACFISH riparian buffers, no activities (other than bank stabilization) proposed within mainstems of Potlatch

River, East Fork Potlatch River, Little Boulder Creek and Hog Meadow Creek, and timing of instream road related activities on tributary streams), impacts to the riparian, stream channel or habitat conditions in existing or potential steelhead trout and bull trout areas are not expected. Other than short-term increases in sediment due to culvert replacement/removal, bank stabilization and associated stream bank alterations in tributary streams, no long-term negative changes to the aquatic resources are expected as the result of the Cherry Dinner Project. Any direct effects to the aquatic resources are considered negligible and non-measurable within the downstream fish bearing streams. Long-term (beneficial) indirect effects are anticipated due to the reduction in the miles of road, road improvements (culvert replacements and drainage improvements), and stream bank stabilization projects.

Cumulative Effects regarding State and Private Lands: As defined in 50 CFR 402.02, cumulative efforts are “those effects of future state and private activities, not involving Federal activities that are reasonably certain to occur within the action area of the Federal action subject to consultation”. State and private lands are located intermixed with Federal lands upstream and downstream of the project area. In general, timber harvest and grazing will continue to occur on private and State lands in the Potlatch River drainage; the amount and intensity may vary annually.

Other than short-term increases in sediment due to culvert replacement/removal and associated stream bank alterations in tributary streams, no long-term negative changes to the aquatic resources are expected as the result of the Cherry Dinner Project. Any direct effects to the aquatic resources are considered negligible and non-measurable within the downstream fish bearing streams. Long-term (beneficial) indirect effects are anticipated due to the reduction in the miles of road, road improvements (culvert replacements and drainage improvements), and stream bank stabilization projects. Therefore ongoing or future activities on State and private lands that have detrimental impacts to the aquatic resources within the Potlatch River drainage, especially upstream of the project area will not change the effects analysis or determinations regarding the proposed activities of the Cherry Dinner Project. Specifically, the potential and expected effects of the activities proposed under the Cherry Dinner Project are considered insignificant individually and will not lead to cumulatively significant impacts when other State and private actions are considered.

Cumulative Effects downstream of the Potlatch River Drainage: The potential impacts from the proposed Cherry Dinner project in the Potlatch River drainage on the steelhead trout populations in the Clearwater River drainage is expected to be insignificant and discountable. Due to the PACFISH default riparian buffers being implemented to protect all streams adjacent to vegetative treatment areas, the construction of new roads on stable landtypes with no perennial stream crossings, and the timing of instream road related activities on tributary streams until lower summer stream flows, changes to stream features and habitat (i.e. changes to water temperatures and potential large woody debris levels in the mainstem Potlatch River, East Fork Potlatch River, Little Boulder Creek and Hog Meadow Creek within project area) are expected to be negligible and non-measurable. Therefore, no effect to downstream steelhead trout within the lower Potlatch River or the mainstem Clearwater River is expected from the proposed Cherry Dinner Project within the Potlatch River drainage.

Designated Critical Habitat – Steelhead Trout: On September 2, 2005, critical habitat for the Snake River Basin steelhead trout was designated by NOAA Fisheries (U.S.D.C. NOAA Fisheries 2005) via final ruling published in the Federal Register (70 FR 52630). The Potlatch River drainage includes several streams that were designated critical habitat for steelhead trout within the Clearwater River subbasin. Within the Cherry Dinner Project area, the mainstem Potlatch River (1706030607) and tributaries East Fork Potlatch River and Little Boulder Creek were designated as critical habitat.

The designation of the mainstem and tributaries of Potlatch River as critical steelhead trout habitat requires the Forest to confer with the NOAA Fisheries on any agency action which is likely to result in

the destruction or adverse modification of proposed critical habitat. Regulations implementing Section 7(a) (2) of the ESA define destruction or adverse modification of critical habitat as alteration of primary constituent elements “that appreciable diminishes the value of critical habitat for both the survival and recovery of a listed species” (50 CFR 402.02). Of the six primary constituent elements listed in the proposed rule, three elements pertain to the Clearwater River subbasin (freshwater spawning sites, freshwater rearing sites, and freshwater migration corridors). Any potential impacts, regarding these three primary constituent elements requires the Forest to confer with the NOAA Fisheries. The potential impacts for the proposed Cherry Dinner Project are summarized below:

- *“Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning; incubation and larval development”*. As noted in the effects analysis above, the Cherry Dinner Project will have negligible effects to designated habitat in the Potlatch River. Due to various mitigation measures, (i.e. PACFISH riparian buffers, no instream activities proposed within mainstems of the Potlatch River and Little Boulder Creek, and timing of instream road related activities on tributary streams until after the incubation period) no impacts to steelhead trout redds are expected. The bank stabilization project along the East Fork Potlatch River involves minor instream work that will be scheduled after the incubation period; no impacts to steelhead trout redds are expected.
- *“Freshwater rearing sites with:*
 - i. *Water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility;*
 - ii. *Water quality and forage supporting juvenile development; and*
 - iii. *Natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.”*
- The changes to the riparian zone along the Potlatch River, East Fork Potlatch River, Little Boulder Creek and Hog Meadow Creek in the project area are considered negligible in relation to the effects on rearing habitat. Moderate improvements to the riparian zone are expected along the East Fork Potlatch River. The passive and active management strategies will have minimal to nonexistent short-term effects on rearing habitat, but moderate long-term effects that will improve rearing habitat in terms of vegetative conditions, potential large woody debris and subsequent acting woody debris, pool quantity and quality. PACFISH default riparian buffers will protect all streams adjacent to vegetative treatment areas. As noted above, slight increases in turbidity and suspended sediment levels are expected directly downstream of culvert replacement/removal, bank stabilization and associated stream bank alterations in tributary streams. The increases from road decommissioning are not expected to be transported to the mainstems of the Potlatch River, East Fork Potlatch River and Little Boulder Creek during low stream flow period. Transport of the increased sediment within these tributaries is expected to occur during high stream flows during the spring runoff period; the amount of sediment being transported into the mainstem streams is expected to be insignificant and discountable in relation to the overall sediment movement in the Potlatch River system.
- *“Freshwater migration corridors free of obstruction and excessive predation with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.”* Activities proposed under the Cherry Dinner Project will not create any impediments to steelhead trout migration. PACFISH default riparian buffers will protect all streams adjacent to vegetative treatment areas. No short-term changes in natural cover and shade are expected within the mainstem Potlatch River, East Fork Potlatch River, Little Boulder Creek and Hog Meadow Creek. Moderate long-term effects that will improve

rearing habitat in terms of vegetative conditions, potential large woody debris and subsequent acting woody debris, pool quantity and quality are expected.

Threatened Fish Species - Bull Trout (*Salvelinus confluentus*)

Effects of Proposed Action: Instream and riparian activities within the Potlatch River drainage have the potential to affect bull trout directly through displacement or indirectly through altered habitat conditions. Although existing bull trout numbers are minimal to nonexistent, potential habitat in upper Potlatch River exists for bull trout production.

Spawning/incubation/early rearing: Due the absence of bull trout in the Potlatch River (most likely due to high water temperatures and substrate conditions), effects to bull trout spawning within project area are considered negligible.

Rearing: The changes to the riparian zone along the mainstems of the three major steelhead production streams within the project area (i.e. mainstem Potlatch River, East Fork Potlatch River, and Little Boulder Creek) are considered nonexistent in relation to the effects on rearing habitat. Due to the PACFISH default riparian buffers being implemented to protect all streams adjacent to vegetative treatment areas, the construction of new roads on stable landtypes with no perennial stream crossings, and the timing of instream road related activities on tributary streams until lower summer stream flows, changes to stream features and habitat (i.e. changes to water temperatures and substrate conditions) in the mainstem Potlatch River, East Fork Potlatch River and Little Boulder Creek within project area are expected to be negligible and non-measurable. In the unlikely scenario that bull trout are present in the Potlatch River, and migrate and rear within the project area, the overall effect of the proposed project would be negligible.

Cumulative Effects: See steelhead trout discussion.

Cumulative Effects regarding State and Private Lands: See steelhead trout discussion.

Cumulative Effects downstream of the Potlatch River Drainage: The potential impacts from the proposed Cherry Dinner Project on the bull trout populations in the Clearwater River drainage is expected to be insignificant and discountable. As noted above, current information suggests that the Potlatch River drainage contributes a small number of the bull trout to the mainstem Clearwater River. Numerous stronger populations of bull trout have been documented in other areas in the Clearwater River basin, such as, the Lochsa River, Selway River, and South Fork Clearwater River subbasins; many drainages in these subbasins have been designated focal drainages for bull trout. The overall small number of trees proposed for removal within the 150-foot riparian impact zone supports the conclusion that the project will have negligible effects on the stream habitat and water quality (i.e. temperature). Therefore, no effects to downstream bull trout within lower Potlatch River or the mainstem Clearwater River are expected from the hazard tree removal activities within the Potlatch River drainage.

Proposed Critical Habitat: On September 26, 2005, the USFWS issued a final rule in the Federal Register (70 FR 56212) designating critical habitat for bull trout. The Final Rule excluded areas from critical habitat designation that were already covered by approved conservation agreements and habitat management plans; the Clearwater River Subbasin was excluded from critical habitat designation.

Determination of Effects

Endangered Wildlife Species - Gray Wolf (*Canis lupus*)

Determination: The Cherry Dinner project would have no direct or indirect effects. Therefore, no cumulative effects to wolf habitat would occur. Based on this information the proposed project **would not jeopardize** the continued existence of the gray wolf.

Threatened Wildlife Species - Lynx (*Lynx canadensis*)

Determination: The Cherry Dinner project would have **no effect** on Canada lynx populations or habitat.

Threatened Plant Species - Water Howellia (*Howellia aquatilis*)

Determination: Planned actions would neither impact nor restore "...small, vernal, and fresh water wetlands that have an annual cycle of filling up with water over the fall, winter and early spring, followed by drying ... generally <2.5 acre in area and <3' deep." The Cherry Dinner project, therefore, would have **no effect** on water howellia populations or habitat.

Threatened Fish Species - Fall Chinook Salmon (*Oncorhynchus tshawytscha*)

Determination: Due to the absence of fall Chinook salmon spawning within the upper Potlatch River direct impacts to fall Chinook salmon spawning and rearing are nonexistent. The potential impacts from the proposed activities in the mainstem Potlatch River within the project area on the other fish populations (i.e. steelhead trout) are expected to be insignificant and discountable. Therefore, the potential effects to fall Chinook salmon in the lower Potlatch River (approximately 20 miles downstream of the project area) and the mainstem Clearwater River are considered nonexistent. The activities proposed under the Cherry Dinner Project within the upper Potlatch River drainage would have **no effect** on recovery of fall Chinook salmon in the Clearwater River subbasin.

Threatened Fish Species - Steelhead Trout (*Oncorhynchus mykiss*)

Assumptions for Determination: Mitigation measures outlined in the *Mitigation Measures* section are implemented to avoid or minimize impacts to the aquatic resources. These include:

- PACFISH standards and guidelines are implemented including the default riparian buffers.
- Mitigation measures regarding culvert replacement/removal and road decommissioning activities detailed in the mitigation section are followed.
- USFS road #3306 (including #3306A) is decommissioned prior to constructing the replacement road network consisting of 0.8 miles of new road construction and the re-construction of 3.2 miles within the Little Boulder Creek drainage.
- Instream work regarding road construction, reconstruction and decommissioning work is conducted after July 15 to avoid spawning issues with steelhead trout.

Determination: Based on the avoidance of impacts to riparian areas by the vegetative treatment

actions, the negligible impacts from the road activities (construction, re-construction, decommissioning and maintenance) and negligible, but beneficial impacts of the stream bank stabilization, the effects of the activities proposed under the Cherry Dinner Project are expected to be insignificant and discountable. Therefore, the determination for the Cherry Dinner Project is **may affect, not likely to adversely affect** steelhead trout and their continued existence in the Potlatch River drainage. The project is expected to have negligible effects to steelhead trout critical habitat in the Potlatch River, and **is not likely to destroy or adversely modify that habitat.**

Threatened Fish Species - Bull Trout (*Salvelinus confluentus*)

Determination: Due to absence of potential spawning habitat within the project area and immediately upstream, the potential for early rearing of age 0+ to 3+ juveniles within the mainstem Potlatch River, Little Boulder Creek and East Fork Potlatch River is very unlikely. Due to the poor spawning habitat conditions (i.e. intermittent stream flows, poor substrate conditions and high water temperatures), bull spawning, incubation and early rearing are not expected within Hog Meadow Creek. Based on the avoidance of impacts to riparian areas by the vegetative treatment actions, the negligible impacts from the road activities (construction, re-construction, decommissioning and maintenance) and negligible, but beneficial impacts of the stream bank stabilization, the effects of the activities proposed under the Cherry Dinner Project are expected to be insignificant and discountable. The absence of recent fish population data in the Potlatch River drainage precludes the determination that the activities proposed within the riparian zone (road activities and stream bank stabilization) would have no effect on bull trout. Therefore, the determination for the Cherry Dinner Project is **may affect, not likely to adversely affect** bull trout and their continued existence in the Potlatch River drainage.

EFFECTS OF THE PROPOSED ACTION ON ESSENTIAL FISH HABITAT

In accordance with applicable requirements of section 305(b) of the Magnuson-Stevens Act and its implementing regulations (50 CFR Part 600.920), the Forest needs to evaluate potential effects of the hazard tree removal activities within the Potlatch River drainage on Essential Fish Habitat. Spring chinook salmon are not listed under ESA within the Clearwater River basin. Although some incidental production may occur within the lower portions of several of the larger tributaries (ie. Potlatch River, Orofino Creek, Lawyers Creek etc) and/or mainstem Clearwater River, it is highly unlikely any viable populations in these drainage exists due to the low stream flows and high water temperatures during the spawning period. In addition, no recent documentation is available to support any production outside the Lolo Creek drainage.

Re-introduction of coho salmon has been undertaken by the Nez Perce Tribe in tributaries of the mainstem Clearwater River, including the Potlatch River drainage. Historically, coho most likely inhabited tributaries in the lower Clearwater River Basin including some in the lower Lochsa River subbasin. Since designated critical habitat for Snake River steelhead trout in the Potlatch River drainage is identical to the area designated as EFH for coho salmon, the EFH analysis, potential adverse effects on designated critical habitat for ESA-listed species and EFH MSA-managed species are considered to be functionally equivalent. Effects on salmon EFH (coho salmon) would be the same as those described for steelhead trout and bull trout within the biological assessment. Therefore, the determination for the Cherry Dinner Project is that the proposed activities **would not adversely affect EFH for coho salmon.**

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APPENDIX A
MAPS OF PROPOSED ACTIVITIES
CHERRY DINNER PROJECT
POTLATCH RIVER DRAINAGE

Veg Map Inserted on this page

Watershed Map Inserted on this page

APPENDIX B
VEGETATIVE TREATMENT UNIT SUMMARY
CHERRY DINNER PROJECT
POTLATCH RIVER DRAINAGE

Table 1 – Treatment Unit Summary³

Unit	Acres	Treatment ⁴	Unit	Acres	Treatment
1	68	Shelterwood w/reserves	24	149	Slashing/Underburning
2	9	Seed Tree w/reserves	25	41	Slashing/Underburning
3	36	Shelterwood w/reserves	26	10	Commercial Thin
4	27	Commercial Thin	27	28	Commercial Thin
5	76	ST/Group Sel. (off-site PP)	28	26	Slashing/Underburning
6	10	Commercial Thin	29	83	Group Shelterwood
9	94	Improvement Cut	30	79	Seed Tree w/reserves
10	25	Seed Tree w/reserves	31	43	Slashing/Underburning
11	13	Seed Tree w/reserves	36	91	Clearcut w/reserves
12	19	Seed Tree w/reserves	37	40	Commercial Thin
13	13	Commercial Thin	39	129	Shelterwood w/reserves
14	60	Improvement Cut	40	24	Commercial Thin
15	28	Shelterwood w/reserves	42	36	Seed Tree w/reserves
16	7	Shelterwood w/reserves	45	43	Commercial Thin
17	29	Slashing/Underburning	47	68	Commercial Thin
18	28	Shelterwood w/reserves	55	18	Slashing/Underburning
19	22	Commercial Thin	57	57	Commercial Thin
20	64	Commercial Thin	59	52	CT (Preparatory Shelterwood)
21	28	Commercial Thin	61	7	Commercial Thin
22	108	Seed Tree w/reserves	63	13	Improvement Cut
23	31	Improvement Cut			

³ Unit acreages have been traversed in the field, but may be further reduced or adjusted during final field layout, with the implementation of riparian buffers and feasible unit boundaries.

⁴ All timber harvest units would have fuel treatments in which acres would be treated wholly or in part, as described in the FEIS.

APPENDIX C
ENVIRONMENTAL BASELINE INFORMATION
PROJECT EFFECTS ANALYSIS
CHERRY DINNER PROJECT
POTLATCH RIVER DRAINAGE
MAINSTEM CLEARWATER RIVER

Drainage: Mainstem Potlatch River
Watershed: Potlatch River
Subbasin: Mainstem Clearwater River

Project or Actions:	Vegetative Treatments	Hazardous Fuels Treatment	Watershed Restoration	Access Management
Watershed Road Density	-4; +4		+4	
Streamside Road Density			+4	
Landslide Prone Road Density			+4	
Riparian Vegetation Condition				
Peak/Base Flow				
Sediment Yield	-2	-1	-2; +3	+1
Water Yield (ECA)				
Width/Depth Ratio				
Streambank Stability				
Floodplain Connectivity				
Temperature - Spawning				
Temperature -Rearing and Migration				
Turbidity or Suspended Sediment	-2	-1	-2; +3	+1
Chemical Contaminants - Nutrients				
Physical Barriers - Adults				
Physical Barriers - Juvenile				
Cobble Embeddedness			-1; +3	+1
% Fines (Surface or by Depth)			-1; +3	+1
Large Woody Debris				
Pool Frequency				
Pool Quality			-1; +2	
Off-Channel Habitat				
Habitat Refugia				
Harassment				
Redd Disturbance				
Juvenile Harvest				

If two figures are indicated; the first is the short-term effects and the last one the long-term effects

Blank boxes indicate no effect on the indicator by the action

Probability of Effect					
Potential Level of Effect	None	Very Low	Low	Moderate	High
None	0	0	0	0	0
Very Low	0	1	1	1	1
Low	0	1	1	2	2
Moderate	0	2	3	3	4
High	0	3	4	4	4

Drainage: Little Boulder Creek
Watershed: Potlatch River
Subbasin: Mainstem Clearwater River

Project or Actions:	Vegetative Treatments	Hazardous Fuels Treatment	Watershed Restoration	Access Management
Watershed Road Density	-4;+4		+4	
Streamside Road Density			+4	
Landslide Prone Road Density			+4	
Riparian Vegetation Condition				
Peak/Base Flow				
Sediment Yield	-2	-1	-2;+3	+1
Water Yield (ECA)	-1			
Width/Depth Ratio				
Streambank Stability				
Floodplain Connectivity				
Temperature - Spawning				
Temperature -Rearing and Migration				
Turbidity or Suspended Sediment	-2	-1	-2;+3	+1
Chemical Contaminants - Nutrients				
Physical Barriers - Adults				
Physical Barriers - Juvenile				
Cobble Embeddedness			-1;+3	+1
% Fines (Surface or by Depth)			-1;+3	+1
Large Woody Debris				
Pool Frequency				
Pool Quality			-1;+2	
Off-Channel Habitat				
Habitat Refugia				
Harassment				
Redd Disturbance				
Juvenile Harvest				

Blank boxes indicate no effect on the indicator by the action

Probability of Effect					
Potential Level of Effect	None	Very Low	Low	Moderate	High
None	0	0	0	0	0
Very Low	0	1	1	1	1
Low	0	1	1	2	2
Moderate	0	2	3	3	4
High	0	3	4	4	4

Drainage: East Fork Potlatch River
Watershed: Potlatch River
Subbasin: Mainstem Clearwater River

Project or Actions:	Vegetative Treatments	Hazardous Fuels Treatment	Watershed Restoration	Access Management
Watershed Road Density	-4;+4		+4	
Streamside Road Density			+4	
Landslide Prone Road Density			+4	
Riparian Vegetation Condition				
Peak/Base Flow				
Sediment Yield	-2	-1	-2;+3	+1
Water Yield (ECA)				
Width/Depth Ratio			+2	
Streambank Stability			+4	
Floodplain Connectivity				
Temperature - Spawning				
Temperature -Rearing and Migration				
Turbidity or Suspended Sediment	-2	-1	-2;+3	+1
Chemical Contaminants - Nutrients				
Physical Barriers - Adults				
Physical Barriers - Juvenile				
Cobble Embeddedness			-1;+3	+1
% Fines (Surface or by Depth)			-1;+3	+1
Large Woody Debris				
Pool Frequency				
Pool Quality			-1;+2	
Off-Channel Habitat				
Habitat Refugia				
Harassment				
Redd Disturbance				
Juvenile Harvest				

Blank boxes indicate no effect on the indicator by the action

Probability of Effect					
Potential Level of Effect	None	Very Low	Low	Moderate	High
None	0	0	0	0	0
Very Low	0	1	1	1	1
Low	0	1	1	2	2
Moderate	0	2	3	3	4
High	0	3	4	4	4

Drainage: Hog Meadow Creek
Watershed: Potlatch River
Subbasin: Mainstem Clearwater River

Project or Actions:	Vegetative Treatments	Hazardous Fuels Treatment	Watershed Restoration	Access Management
Watershed Road Density	-4;+4		+4	
Streamside Road Density			+4	
Landslide Prone Road Density			+4	
Riparian Vegetation Condition				
Peak/Base Flow				
Sediment Yield	-2	-1	-2;+3	+1
Water Yield (ECA)	-2			
Width/Depth Ratio				
Streambank Stability				
Floodplain Connectivity				
Temperature - Spawning				
Temperature -Rearing and Migration				
Turbidity or Suspended Sediment	-2		-2;+3	+1
Chemical Contaminants - Nutrients				
Physical Barriers - Adults				
Physical Barriers - Juvenile				
Cobble Embeddedness			-1;+3	+1
% Fines (Surface or by Depth)			-1;+3	+1
Large Woody Debris				
Pool Frequency				
Pool Quality			-1;+2	
Off-Channel Habitat				
Habitat Refugia				
Harassment				
Redd Disturbance				
Juvenile Harvest				

Blank boxes indicate no effect on the indicator by the action

Probability of Effect					
Potential Level of Effect	None	Very Low	Low	Moderate	High
None	0	0	0	0	0
Very Low	0	1	1	1	1
Low	0	1	1	2	2
Moderate	0	2	3	3	4
High	0	3	4	4	4

ENVIRONMENTAL BASELINE DATA: Mainstem Potlatch River

Habitat: The environmental baseline was determined by data collected during the 2005 resurvey of two response reaches (POB-18 and 19) within the project area (Clearwater BioStudies, Inc. 2006). Based on data collected in 1993 during the initial stream surveys within the project area (Isabella Wildlife Works 1994), these response reaches had the most sensitive channel types (from Rosgen stream classification) that will show the most cumulative impacts. The channel types for both reaches was a B3c. The B3c reach has a gradient of 1% and resembles a C channel type. The B3c channel reaches have a run pool/run riffle habitat types with a dominant substrate of small rubble. Data was also used from ISCO data files for suspended sediment, and water temperature recorders that were in the response reach or close proximity.

Fish Populations: Fish population surveys conducted in 1993 (Isabella Wildlife Works 1994), found rainbow/steelhead trout within or adjacent to the response reaches. Age 0+ to age 2+ fish were observed at one of the two snorkel sites. Numerous reddsided shiners, speckled dace, longnose dace, chiselmouth, bridgelip sucker, largescale sucker and two scuplin species were observed throughout the stream.

During the 2005 survey (Clearwater BioStudies, Inc. 2006) the fisheries assemblage within the mainstem Potlatch River were found to be similar to the mid-1990's surveys; the distribution and abundance of overyearling trout was not substantially different.

A. Watershed Conditions

1. Watershed Road Density:

a) Environmental baseline = Low - 5.3 miles/mile².

b) Effects of actions = Restore. After project implementation, road density decreases from 5.5 to 4.2 miles/mile² for the mainstem Potlatch River drainage (from Little Boulder Creek to USFS boundary downstream of Bovill), and 5.3 to 3.4 miles/mile² on USFS lands. Currently, USFS lands between Little Boulder Creek and Bovill have a total of 27.6 miles of road (5.3 miles/mile²). Including non-USFS lands, the road mileage increases to 41.7 miles (5.5 miles/mile²). Under the proposed action, the total road mileage would decrease on USFS lands by approximately 9.7 miles via road decommissioning. In addition, 0.8 miles of temporary road constructed under the project will be decommissioned, and approximately 8.5 miles of existing road placed will be placed into intermittent storage. The 0.1 miles of new road construction will also be placed in intermittent storage. After project implementation, the total road mileage will be approximately 17.9 miles on USFS lands (3.4 miles/mile²). For the mainstem Potlatch River drainage (from Little Boulder Creek to USFS boundary downstream of Bovill), a total of 32 miles of road will remain with a density of 4.2 miles/mile².

2. Streamside Road Density:

a) Environmental baseline = Low - 5.9 miles/mile². USFS lands have a density of 5.7 miles/mile² and the remainder of the watershed has a density of 6.5 miles/mile² in RCA's.

b) Effects of actions = Restore. This value will decrease with the proposed road decommissioning activities, but the amount is unknown at this time; future map refinements will provide an updated figure.

3. Landslide Road Density:

a) Environmental baseline = Low - 6.7 miles/mile². USFS lands have a density of 7.1 miles/mile² and the remainder of the watershed has a density of 6.0 miles/mile² in land slide prone areas.

b) Effects of actions = Restore. This value will decrease with the proposed road decommissioning activities, but the amount is unknown at this time; future map refinements will provide an updated figure.

4. Riparian Vegetation Condition: No data is available.

a) Environmental baseline = High – along mainstem Potlatch River. The stream bank stability is rated excellent (Isabella Wildlife Works 1994, Clearwater BioStudies, Inc. 2005).

Approximately 155 cow/calf pairs graze the two pastures within the mainstem Potlatch River area (from Brush Creek to USFS boundary downstream of Bovill) during June through October 31. These cows have a rider and also graze on private, state and other watersheds in the area. Impacts from grazing are considered minimal along the mainstem Potlatch River within the project area due to: the movement of the cattle, excellent stream bank stability, the best fisheries habitat is already fenced, and of the wooded vegetation in parts of the watershed.

b) Effects of actions = Restore. A positive response is also expected for the riparian indicator due to natural (passive) management in the riparian zones. PACFISH default riparian buffers will be protect all streams adjacent to vegetative treatment areas. Removal or alterations of riparian vegetation may occur in small local areas at culvert replacement and removal sites; effects are minimal. Slight restoration in overall riparian conditions as riparian conditions at culvert removal sites will be improved to allow for natural vegetative conditions.

5. Peak/Base flow: No data is available. Due to it's large size there is not a complete WATBAL run for the Potlatch River watershed upstream of the East Fork Potlatch River. The size of the watershed exceeds the recommended size limit for the model.

a) Environmental baseline = Assumed to be Moderate: Due to the past management practices upstream of the project area, some evidence of altered peak flows, base flows and flow timing characteristics have been observed; however the watershed is most likely functioning within its natural disturbance regime.

b) Effects of actions = Maintain. No changes to peak flows within the Potlatch River are expected.

6. Water Yield (ECA): No data is available. Due to it's large size there is not a complete WATBAL run for the Potlatch River watershed upstream of the East Fork Potlatch River. The size of the watershed exceeds the recommended size limit for the model.

a) Environmental baseline = Assumed to be Moderate: Due to the past management practices upstream of the project area, ECA is most likely greater than 15% especially when considering private lands.

b) Effects of actions = Maintain. No changes to water yield within the Potlatch River is expected due to relatively low acreage (1%) proposed for vegetative removal compared to the watershed size upstream of the East Fork Potlatch River. In addition, approximately 30% of the 412 acres proposed for vegetative treatment is commercial thinning which will have minimal impacts to annual or peak flows.

7. Sediment Yield: No data is available. Due to it's large size there is not a complete WATBAL run for the Potlatch River watershed upstream of the East Fork Potlatch River. The size of the watershed exceeds the recommended size limit for the model.

a) Environmental baseline = Assumed to be Moderate: due the relatively high acreage of harvest and miles of roads within the entire drainage upstream East Fork Potlatch River.

b) Effects of actions = Restore. Slight increases in turbidity and suspended sediment levels are expected directly downstream of culvert replacement and removal activities. These increases are expected to extend 200 to 500 feet downstream dependent upon stream gradient and stream flows. Short-term small increases in sediment yield are expected (i.e. culvert replacement/removal and associated stream bank alterations), however, a long-term decrease in sediment yield is expected due to reduced number of road fills subject to failure.

B. Channel Conditions and Dynamics

1. Width/Depth Ratio: Data was used from the 2005 resurvey (Clearwater BioStudies, Inc. 2006). The width is measured from bankfull to bankfull and the depth is the maximum bankfull depth in the cross section.

a) Environmental baseline = High: Within the response reaches the width/depth ratio is 17.6 (high rating for B or C type channels).

b) Effects of actions = Maintain. The project will avoid any stream bank impacts. The stream banks are very stable due to boulder substrate composition.

2. Streambank stability: Streambank stability was determined by using a rating of 1 (low) to 5 (excellent) by the contracted survey crew as they walked up the stream channel.

a) Environmental baseline = High, with a bank rating of 5 or 100% in the response reaches.

b) Effects of actions = Maintain. The stream banks are well armored with large substrate. PACFISH default riparian buffers will be protect all streams adjacent to vegetative treatment areas. No activities are proposed instream or within the RCA of the mainstem Potlatch River.

3. Floodplain Connectivity: Floodplain connectivity was assessed from reach photos during the 1993 stream survey by Isabella Wildlife Works.

a) Environmental baseline = High. Photos show the off channel areas are frequently linked to main channel with overbank flow.

b) Effects of actions = Maintain. No changes are expected as a result of proposed action. PACFISH default riparian buffers will be protect all streams adjacent to vegetative treatment areas. No activities are proposed instream or within the RCA of the mainstem Potlatch River.

C. Water Quality

For determining the temperature, the Forest looked through all of the data records and looked for the highest temperature year on record. This was done to determine the highest constraining temperature for the fish present in the watershed. For the mainstem Potlatch River, nine years (1998-2006) of data collected at the gage site (downstream Little Boulder Creek) was available. The temperature is represented by the highest seven day running average of the daily maximums, during specific time periods for each species.

1. Temperature - steelhead spawning: The highest seven day running average of the daily maximums during the spawning period (Feb. 1 to July 15) was used.

a) Environmental baseline = Low condition. The highest spawning temperature ranged from 24.8 to 27.8 during the 1998-2006 monitoring period. Due to spring runoff flows and moderate air temperatures, water temperature stays cool during the early months of spawning.

b) Effects of actions = Maintain. With the exception of minor riparian alterations at the stream crossings, alterations in riparian vegetation and streamside shade are expected to be minimal in any stream reach. Therefore, no change in water temperature is expected.

2. Temperature - steelhead rearing: Steelhead rearing and migration occurs throughout the year.
 - a) Environmental baseline = Low condition. The highest rearing temperature ranged from 26.4 to 29.4 during the 1998-2006 monitoring period.
 - b) Effects of actions = Maintain. See steelhead spawning.
3. Temperature - bull trout spawning: The Clearwater National Forest used the spawning period of September 1 to December 31.
 - a) Environmental baseline = Low condition. The highest spawning temperature of 18.1 to 22.9° C during the 1998-2006 monitoring period.
 - b) Effects of actions = Maintain. Due the absence of bull trout in the Potlatch River (most likely due to high water temperatures and substrate conditions), effects to bull trout spawning within project area are considered negligible. See steelhead spawning.
4. Temperature - bull trout incubation: The Clearwater National Forest used an incubation period from September 1 to April 30. Data is only available from September 1 to early November. Water temperature recorders are not usually put into the water until early May or June.
 - a) Environmental baseline = Low condition. The highest temperature during the incubation period ranged from 18.1 to 22.9 during the 1998-2006 monitoring period.
 - b) Effects of actions = Maintain. Due the absence of bull trout in the Potlatch River (most likely due to high water temperatures and substrate conditions), effects to bull trout incubation within project area are considered negligible. See steelhead spawning.
5. Temperature - bull trout rearing: The Clearwater National Forest used temperatures throughout the year for rearing.
 - a) Environmental baseline = Low condition. The highest rearing temperature ranged from 26.4 to 29.4 during the 1998-2006 monitoring period.
 - b) Effects of actions = Maintain. The changes to the riparian zone along Potlatch River are considered minimal in relation to the effects on rearing habitat. In the unlikely scenario that bull trout are present in the Potlatch River, and migrate and rear within the Potlatch River, the overall effect of the proposed project would be negligible. See steelhead spawning.
6. Suspended Sediment: The Clearwater National Forest has ten years (1995-2004) of suspended sediment data from ISCO samples at the Potlatch River gauge in reach PO-15.
 - a) Environmental baseline: High - besides 1997 which had the highest amount of sediment: 20 days at 25 mg/L (moderate), the other nine years did not exceed the 10 days over the 25 mg/L standard. In addition, all of the years (1995-2004) did not exceed the 5 days over the 80 mg/L. The average number of days exceeding the 25 mg/L level was 4.6 days for the ten year period.
 - b) Effects of actions = Maintain. No changes are expected as a result of proposed action.
7. Chemical Contamination/Nutrients: Nutrient input from cattle is the only known potential contaminate. No data is available.
 - a) Environmental baseline = Moderate – based on grazing within project area and agricultural and residential areas upstream of the project area.
 - b) Effects of actions = Maintain. No changes are expected as a result of proposed action. PACFISH default riparian buffers will be protect all streams adjacent to vegetative treatment areas. No activities are proposed instream or within the RCA of the mainstem Potlatch River.

The Fuel, Transport and Containment Plan developed under a Section 7 consultation with NOAA Fisheries and USFWS regarding the North Lochsa Face Project would be applied throughout project implementation to minimize the risk of an accidental spill of petroleum products, as well as to protect water courses and aquatic biota from adverse effects in the event of a spill. Equipment used for vegetation treatments and riparian/instream work in tributary streams (including chainsaws and other hand power tools) would be fueled and serviced in an area that will not deliver fuel, oil, etc. to streams.

D. Habitat Access

1. Physical Barriers - Adult:

- a) Environmental baseline = High: No barriers exist for adult steelhead and bull trout on the mainstem Potlatch River.
- b) Effects of actions = Maintain. No activity is currently proposed which would create a barrier.

2. Physical Barriers - Juvenile:

- a) Environmental baseline = High: No barriers exist for juvenile steelhead and bull trout on the mainstem Potlatch River.
- b) Effects of actions = Maintain. No activity is currently proposed which would create a barrier.

E. Habitat Elements

1. Cobble Embeddedness:

- a) Environmental baseline = Low. Cobble embeddedness has a 35.9% average for reaches POB-18 and 19 (Clearwater BioStudies, Inc. 2006).
- b) Effects of actions = Restore. Slight increases in turbidity and suspended sediment levels are expected directly downstream of culvert replacement and removal activities in tributary streams. These increases are expected to extend 200 to 500 feet downstream dependent upon stream gradient and stream flows. The increases are not expected to be transported to the mainstem Potlatch River. Short-term small increases in cobble embeddedness in localized areas within the tributaries are expected (i.e. culvert replacement/removal and associated stream bank alterations), however, a long-term decrease in cobble embeddedness is expected due to reduced number of road fills subject to failure.

2. Percent Surface Fines: Percent surface fines was calculated by a cumulative distribution from two adjacent riffles in the Potlatch River at the gage station above Little Boulder Creek by USFS in 1997 (in reach PO-15). Data was collected as described by Kappesser (1993). Cattle grazing is one source of fine sediment, but it is considered to be minimal along the mainstem Potlatch River in the project area.

- a) Environmental baseline = Percent surface fines are 20.2% (moderate). This is only for particle sizes < 4 mm. Particle size 6 mm could not be broken out because the next category collected is 4-8 mm.
- b) Effects of actions = Restore. Slight increases in turbidity and suspended sediment levels are expected directly downstream of culvert replacement and removal activities in tributary streams. These increases are expected to extend 200 to 500 feet downstream dependent upon stream gradient and stream flows. The increases are not expected to be transported to the mainstem Potlatch River. Short-term small increases in percent surface fines in localized areas within the tributaries are expected (i.e. culvert replacement/removal and associated stream bank alterations), however, a long-term decrease in percent surface fines is expected due to reduced number of road fills subject to failure.

3. Percent Fines by Depth: No data is available for this element.

a) Environmental baseline = No data.

b) Effects of actions = Restore. Slight increases in turbidity and suspended sediment levels are expected directly downstream of culvert replacement and removal activities in tributary streams. These increases are expected to extend 200 to 500 feet downstream dependent upon stream gradient and stream flows. The increases are not expected to be transported to the mainstem Potlatch River. Short-term small increases in percent fines by depth in localized areas within the tributaries are expected (i.e. culvert replacement/removal and associated stream bank alterations), however, a long-term decrease in percent fines by depth is expected due to reduced number of road fills subject to failure.

4. Large Woody Debris: LWD was broken into acting and potential categories. Acting debris is defined as stable woody debris at least 10 cm in diameter which influenced habitat within each transect-bound segments of stream, and expressed as number of pieces/100 meters. Potential debris is the number of trees on each bank that could contribute large organic debris in to the stream and expressed as pieces/100 meters.

a) Environmental baseline = LWD is low with acting debris of 0.6 pieces/100 m and potential debris of 3.4 pieces/100 m (Clearwater BioStudies, Inc. 2006).

b) Effects of actions = Maintain. PACFISH default riparian buffers will be protect all streams adjacent to vegetative treatment areas. No activities are proposed instream or within the RCA of the mainstem Potlatch River.

5. Pool Frequency: The Clearwater National Forest used primary pools counted within each segment of stream and expressed as number per mile.

a) Environmental baseline: The response reaches have a low primary pool frequency of 8.3/mile (Clearwater BioStudies, Inc. 2006). Streams with an average width between 25 and 50 feet are expected to have an average of 26 pools/mile; the response reaches have an average width of 43 feet.

b) Effects of actions = Maintain. Activities are not expected to lower the overall number of pools in the mainstem Potlatch River.

6. Pool Quality: Is rated on a scale of 1 (poor) to 5 (excellent) from Isabella Wildlife Works 1993 survey.

a) Environmental baseline: Baseline is low with an average pool quality of 2.9 (Clearwater BioStudies, Inc. 2006).

b) Effects of actions = Maintain. Ongoing activities are not expected to increase fine sediment deposition to decrease the size, and quality of pools.

7. Off-Channel Habitat: C type channels normally have a moderate to high amount of backwater and side channels.

a) Environmental baseline = Moderate. The response reach sections of the Potlatch River, have not been very affected by cattle grazing and some backwaters exist (Isabella Wildlife Works 1994).

b) Effects of actions = Maintain. No changes are expected as a result of proposed action.

8. Habitat Refugia: Limited habitat refugia exists in the Potlatch River drainage.

a) Environmental baseline = Moderate.

b) Effects of actions = Maintain. No changes are expected as a result of proposed action.

F. Take

1. Harassment: There are no known activities other than recreational fishing and cattle grazing that could result in harassment.

a) Environmental baseline = High: Current levels or risk of harassment are most likely low.

b) Effects of actions = Maintain. No changes are expected as a result of proposed action.

2. Redd Disturbance: Steelhead redds are likely to occur throughout the mainstem Potlatch River within the project area (from Brush Creek to the USFS boundary downstream of Bovill). No surveys have been conducted in this segment of the mainstem Potlatch River. Due to various mitigation measures, (i.e. PACFISH riparian buffers, no activities proposed within the mainstem Potlatch River, and timing of instream road related activities on tributary streams until after the incubation period) no impacts to steelhead trout redds are expected.

a) Environmental baseline = High: Current levels or risks of redd disturbance are most likely low.

b) Effects of actions = Maintain. No changes are expected as a result of proposed action.

3. Juvenile Harvest: There are no special fishing regulations on the Lower Potlatch River. The fishing season is open year-round in main river below Moose Creek. Moose Creek is also open year-round. Rainbow trout/steelhead under 20 inches in length are legal to harvest in the Lower Potlatch River. General fishing season limits (six trout) apply to the Lower Potlatch River.

a) Environmental baseline = Moderate: Current levels or risks of juvenile harvest of steelhead trout are most likely moderate due to the higher concentrations of campers and anglers (i.e. Little Boulder Campground).

b) Effects of actions = Maintain. No changes are expected as a result of proposed action.

G. Bull Trout Subpopulation Characteristics and Habitat Integration

1. Subpopulation Size, Growth & Survival, Life History Diversity and Isolation

a. Env. Baseline = Low. Bull trout have not been observed in the mainstem Potlatch River within the project area; an adult could possibly use the mainstem during the early spring for rearing, but high water temperatures are not conducive to over summer rearing.

b. Effect of the Actions = Maintain. No change is expected.

Checklist for Documenting Environmental Baseline and Effects of Action(s) on Relevant Indicators

Subbasin: Mainstem Clearwater River

Watershed: Potlatch River

Subwatershed: Mainstem Potlatch River (upstream Corral Creek and downstream East Fork Potlatch River)

PATHWAYS: INDICATORS	ENVIRONMENTAL BASELINE ⁵			EFFECTS OF THE ACTION(S)		
	High	Moderate	Low	Restore ⁶	Maintain ⁷	Degrade ⁸
Watershed Conditions:			5.3 mi /mi ² (USFS Lands)	3.4 mi /mi ² (USFS Lands)		
Watershed Road Density						
Streamside Road Density			5.9mi/mi ²	X		
Landslide prone Road Density			6.7mi/mi ²	X		
Riparian Vegetation Condition	N/D			X		
Peak/Base Flow		N/D			X	
Water Yield (ECA)		N/D			X	
Sediment Yield		N/D			X	
Channel Condition. & Dynamics:						
Width/Depth Ratio	17.6				X	
Stream bank Stability	5.0				X	
Floodplain Connectivity	X				X	
Water Quality:			27.8°C		X	
Temp - Steelhead Spawning					X	
Temp- Steelhead Rear/Migration			29.4°C		X	
Temperature - Bull Trout			S=22.9°C I=22.9°C R=29.4°C		S=X I=X R=X	
Suspended Sediment	X				X	
Chem. Contamination/Nutrients		N/D			X	
Habitat Access:						
Physical Barriers - Adult	X				X	
Physical Barriers - Juvenile	X				X	

⁵Indicators of high, moderate, or low habitat condition.

⁶For the purposes of this checklist, "restore" means to change the function of an indicator for the better, or that the rate of restoration rate is increased.

⁷For the purposes of this checklist, "maintain" means that the function of an indicator will not be degraded and that the natural rate of restoration for this indicator will not be retarded.

⁸For the purposes of this checklist, "degrade" means to change the function of an indicator for the worse, or that the natural rate of restoration for this indicator is retarded. In some cases, a low environmental baseline indicator maybe further worsened, and this should be noted.

PATHWAYS: INDICATORS	ENVIRONMENTAL BASELINE ⁹			EFFECTS OF THE ACTION(S)		
	High	Moderate	Low	Restore ¹⁰	Maintain ¹¹	Degrade ¹²
Habitat Elements:						
Cobble Embeddedness		23.6%		X		
Percent Surface Fines		20.2%		X		
Percent Fines by Depth	N/D			X		
Large Woody Debris A=Acting; P=Potential (#/100 meters)			A=0.6 P=3.4		X	
Pool Frequency (primary pools per mile)			8.3/mi		X	
Pool Quality			2.9		X	
Off-channel Habitat		X			X	
Habitat Refugia		X			X	
Take:						
Harassment	B=X S=X				X	
Redd Disturbance	B=X S=X				X	
Juvenile Harvest	B=X	S=X			X	
Bull Trout Subpopulation Characteristics & Habitat Integration:						
Subpopulation Size			X		X	
Growth and Survival			X		X	
Life History Diversity, Isolation			X		X	
Persistence & Genetic Integrity			X		X	
Integration of Species and Habitat Conditions			X		X	

⁹Indicators of high, moderate, or low habitat condition.

¹⁰For the purposes of this checklist, "restore" means to change the function of an indicator for the better, or that the rate of restoration rate is increased.

¹¹For the purposes of this checklist, "maintain" means that the function of an indicator will not be degraded and that the natural rate of restoration for this indicator will not be retarded.

¹²For the purposes of this checklist, "degrade" means to change the function of an indicator for the worse, or that the natural rate of restoration for this indicator is retarded. In some cases, a low environmental baseline indicator maybe further worsened, and this should be noted.

ENVIRONMENTAL BASELINE DATA: Little Boulder Creek

Habitat: The environmental baseline was determined by data collected during the 2005 resurvey of three response reaches (LB-04, 05, and 07) within the project area (Clearwater BioStudies, Inc. 2006). Based on data collected in 1993 during the initial stream surveys within the project area (Clearwater BioStudies, Inc. 1994), these response reaches had the most sensitive channel types (from Rosgen stream classification) that will show the most cumulative impacts. Response reaches LB-04 and 05 are an E5 channel type. Reach 07 is a B4c channel type. The E3 reaches have a gradient of 0.6 to 0.9% while the B4c reach has a similar low gradient of 0.9%. The three response reaches are primarily pool habitat type (64%) with a dominant substrate of sand (65%). Data was also used from WATBAL runs and thermographs that were in the response reach or close proximity. WATBAL runs reflect sediment, peakflows and water yield conditions for 2005-2011.

Fish Populations: Fish population surveys conducted in 1993 (Clearwater BioStudies, Inc. 1994), showed that rainbow/steelhead trout were the only salmonid found in the Little Boulder Creek drainage. Age 0+ to age 2+ fish were observed throughout the mainstem of Little Boulder Creek. Speckled dace and Paiute sculpin were also found at the sampling sites.

During the 2005 resurvey, only rainbow/steelhead trout were found in at the nine electrofishing sites in Little Boulder Creek (Clearwater BioStudies, Inc. 2005).

A. Watershed Conditions

1. Watershed Road Density:

a) Environmental baseline = Low – 5.3 miles/mile².

b) Effects of actions = Restore. After project implementation, road density in the Little Boulder Creek drainage decreases from 5.3 to 3.7 miles/mile². Currently, USFS lands have a total of 26.5 miles of road (5.4 miles/mile²). Including non-USFS lands, the road mileage increases slightly to 28.1 miles (5.3 miles/mile²). Under the proposed action, the total road mileage would decrease on USFS lands by approximately 9.7 miles via road decommissioning. In addition, 0.8 miles of temporary road constructed under the project will be decommissioned and approximately 2.1 miles of road will be placed into intermittent storage. The project also proposes to build approximately 1.1 miles of new road in the Little Boulder Creek drainage; approximately 0.8 miles will be placed into intermittent storage. After project implementation, the total road mileage will be approximately 17.9 miles on USFS lands (3.7 miles/mile²). For the Little Boulder Creek drainage, a total of 19.5 miles of road will remain with a density of 3.7 miles/mile².

2. Streamside Road Density:

a) Environmental baseline = Low - 5.9 miles/mile². USFS lands have a density of 6.1 miles/mile² and the remainder of the watershed has a density of 2.6 miles/mile² in RCA's.

b) Effects of actions = Restore. This value will decrease with the proposed road decommissioning activities, but the amount is unknown at this time; future map refinements will provide an updated figure.

3. Landslide Road Density:

a) Environmental baseline = Low - 6.3 miles/mile². USFS lands have a density of 7.2 miles/mile² and the remainder of the watershed has a density of 3.4 miles/mile² in land slide prone areas.

b) Effects of actions = Restore. This value will decrease with the proposed road decommissioning activities, but the amount is unknown at this time; future map refinements will provide an updated figure.

4. Riparian Vegetation Condition:

a) Environmental baseline = High. The stream bank stability is rated good to excellent (Clearwater BioStudies, Inc. 2005) from their stream inventory. Approximately 155 cow/calf pairs roam in and out of this watershed during the final grazing period between September 1 and October 31. These cows have a rider and also graze on private, state and other watersheds in the area. Impacts from grazing are considered minimal along Little Boulder Creek: the movement of the cattle, excellent stream bank stability, temporary drift fences, and of the wooded vegetation in parts of the watershed.

b) Effects of actions = Restore. A positive response is also expected for the riparian indicator due to natural (passive) management in the riparian zones. PACFISH default riparian buffers will be protect all streams adjacent to vegetative treatment areas. Removal or alterations of riparian vegetation may occur in small local areas at culvert replacement and removal sites; effects are minimal. Slight restoration in overall riparian conditions as riparian conditions at culvert removal sites will be improved to allow for natural vegetative conditions.

5. Peak/Base flow: WATBAL run for the Little Boulder Creek Watershed.

a) Environmental baseline = High. Currently (2006) the watershed is 7% over natural conditions. Watershed is functioning within its natural disturbance regime.

b) Effects of actions = Maintain. A 5% increase to peak/base flows to 12% within the Little Boulder Creek is expected; however the watershed will be still functioning within its natural disturbance regime.

6. Water Yield (ECA): WATBAL run for the Little Boulder Creek Watershed.

a) Environmental baseline = High. Currently (2006) the watershed is 13.8 percent ECA.

b) Effects of actions = Degrade. The ECA will increase from 13.8% to 19.5% due to the vegetative removal. This increase is higher than the 15% level for a properly functioning watershed however, the changes in peak flows (from 7% to 12%) is below the WATBAL threshold (15-20%) that indicates a risk in channel degradation. The ECA is predicted to drop below 15% in 2014.

7. Sediment Yield: WATBAL run for the Little Boulder Creek Watershed.

a) Environmental baseline = High. Current sediment conditions predicted by WATBAL are approximately 7% over natural.

b) Effects of actions = Restore. WATBAL predicts the sediment conditions would increase to 11% over natural; this level is below the no effect threshold of 45% of natural for a B channel type. Slight increases in turbidity and suspended sediment levels are expected directly downstream of culvert replacement and removal activities. These increases are expected to extend 200 to 500 feet downstream dependent upon stream gradient and stream flows. Short-term small increases in sediment yield are expected (i.e. culvert replacement/removal and associated stream bank alterations), however, a long-term decrease in sediment yield is expected due to reduced number of road fills subject to failure.

B. Channel Conditions and Dynamics

1. Width/Depth Ratio: Data was used from the 2005 resurvey (Clearwater BioStudies, Inc. 2006). The width is measured from bankfull to bankfull and the depth is the maximum bankfull depth in the cross section.

a) Environmental baseline = 5.7 (high rating for a E and B type channels). Less than 7 for an E channel type. Less than 20 is a high rating for a B channel type.

b) Effects of actions = Maintain. The project will avoid any stream bank impacts along Little Boulder Creek. The stream banks are very stable due to stream bank vegetation. Increases in peak flows and water yield are not of the magnitude to increase width/depth ratio.

2. Streambank stability: Streambank stability was determined by using a rating of 1 (low) to 5 (excellent) by the contracted survey crew as they walked up the stream channel.

a) Environmental baseline = Moderate - overall bank stability rating of 4.8; with a bank rating of 4.9 or greater in 95% of the E channel type response reaches and greater than 90% stable (4.4 rating) in response reach 07 (B channel type).

b) Effects of actions = Maintain. The stream banks are well armored by stream bank vegetation.

3. Floodplain Connectivity: No data is available.

a) Environmental baseline = High – based on observations.

b) Effects of actions = Maintain. No change is expected due to the watershed and vegetative restoration activities.

C. Water Quality

For determining the temperature, the Forest looked through all of the data records and looked for the highest temperature year on record. This was done to determine the highest constraining temperature for the fish present in the watershed. For the Little Boulder Creek drainage, only one year (1994) of data was available. The temperature is represented by the highest seven day running average of the daily maximums, during specific time periods for each species.

1. Temperature - steelhead spawning: The highest seven day running average of the daily maximums during the spawning period (Feb. 1 to July 15) was used.

a) Environmental baseline = Low condition. The highest spawning temperature of 16.2 °C was recorded in 1994. Due to spring runoff flows and moderate air temperatures, water temperature stays cool during the early months of spawning.

b) Effects of actions = Maintain. With the exception of minor riparian alterations at the stream crossings, alterations in riparian vegetation and streamside shade are expected to be minimal in any stream reach. Therefore, no change in water temperature is expected.

2. Temperature - steelhead rearing: Steelhead rearing and migration occurs throughout the year.

b) Environmental baseline = Low condition. The highest rearing temperature of 21.6° C was recorded in 1994.

b) Effects of actions = Maintain. See steelhead spawning.

3. Temperature - bull trout spawning: The Clearwater National Forest used the spawning period of September 1 to December 31.

a) Environmental baseline = Low condition. The highest spawning temperature of 19.6° C was recorded in 1994.

b) Effects of actions = Maintain. Due the absence of bull trout in the Potlatch River (most likely due to high water temperatures and substrate conditions), effects to bull trout spawning within project area are considered negligible. See steelhead spawning.

4. Temperature - bull trout incubation: The Clearwater National Forest used an incubation period from September 1 to April 30. Data is only available from September 1 to early November. Thermographs are not usually put into the water until early May or June.

a) Environmental baseline = Low condition. 19.6° C was recorded in 1994.

b) Effects of actions = Maintain. Due the absence of bull trout in the Potlatch River (most likely due to high water temperatures and substrate conditions), effects to bull trout incubation within project area are considered negligible. See steelhead spawning.

5. Temperature - bull trout rearing: The Clearwater National Forest used temperatures throughout the year for rearing.

a) Environmental baseline = Low condition. The highest rearing temperature of 21.6° C was recorded in 1994.

b) Effects of actions = Maintain. The changes to the riparian zone along Little Boulder Creek are considered minimal in relation to the effects on rearing habitat. In the unlikely scenario that bull trout are present in the Potlatch River, and migrate and rear within Little Boulder Creek, the overall effect of the proposed project would be negligible. See steelhead spawning.

6. Suspended Sediment: No data is available.

a) Environmental baseline: High - based on observations.

b) Effects of actions = Maintain. No changes are expected as a result of proposed action.

7. Chemical Contamination/Nutrients: No water quality data is available. Nutrient input from cattle is the only known potential contaminate.

a) Environmental baseline = High – based on observations.

b) Effects of actions = Maintain. No changes are expected as a result of proposed action. PACFISH default riparian buffers will be protect all streams adjacent to vegetative treatment areas. No activities are proposed instream or within the RCA of Little Boulder Creek. The Fuel, Transport and Containment Plan developed under a Section 7 consultation with NOAA Fisheries and USFWS regarding the North Lochsa Face Project would be applied throughout project implementation to minimize the risk of an accidental spill of petroleum products, as well as to protect water courses and aquatic biota from adverse effects in the event of a spill. Equipment used for vegetation treatments and riparian/instream work in tributary streams (including chainsaws and other hand power tools) shall be fueled and serviced in an area that will not deliver fuel, oil, etc. to streams.

D. Habitat Access

1. Physical Barriers - Adult:

a) Environmental baseline = High: No barriers exist for adult steelhead and bull trout on the mainstem Little Boulder Creek.

b) Effects of actions = Maintain. No activity is currently proposed which would create a barrier.

2. Physical Barriers - Juvenile:

a) Environmental baseline = High: No known barriers exist for juvenile steelhead and bull trout on the mainstem Little Boulder Creek.

b) Effects of actions = Maintain. No activity is currently proposed which would create a barrier.

E. Habitat Elements

1. Cobble Embeddedness:

a) Environmental baseline = Low. Cobble embeddedness averages 91.4% for the response reaches.

b) Effects of actions = Restore. Slight increases in turbidity and suspended sediment levels are expected directly downstream of culvert replacement and removal activities in tributary streams. These increases are expected to extend 200 to 500 feet downstream dependent upon stream gradient and stream flows. The increases are not expected to be transported to Little Boulder Creek. Short-term small increases in cobble embeddedness in localized areas within the tributaries are expected (i.e. culvert replacement/removal and associated stream bank alterations), however, a long-term decrease in cobble embeddedness is expected in Little Boulder Creek due to reduced number of road fills subject to failure.

2. Percent Surface Fines: Percent surface fines was calculated by a cumulative distribution from three adjacent riffles in lower Little Boulder Creek by USFS in 2004 (in reach LB-09). Data was collected as described by Kappesser (1993). Cattle grazing is one source of fine sediment, but it is considered to be minimal along the mainstem Little Boulder Creek in the project area.

a) Environmental baseline = Low. Percent surface fines are 34.1%. The trend between 1994 and 2004 is static. This is only for particle sizes < 4 mm. Particle size 6 mm could not be broken out because the next category collected is 4-8 mm.

b) Effects of actions = Restore. Slight increases in turbidity and suspended sediment levels are expected directly downstream of culvert replacement and removal activities in tributary streams. These increases are expected to extend 200 to 500 feet downstream dependent upon stream gradient and stream flows. The increases are not expected to be transported to Little Boulder Creek. Short-term small increases in percent surface fines in localized areas within the tributaries are expected (i.e. culvert replacement/removal and associated stream bank alterations), however, a long-term decrease in percent surface fines is expected in Little Boulder Creek due to reduced number of road fills subject to failure.

3. Percent Fines by Depth: No data is available for this element.

a) Environmental baseline = Low – based on surface fines data.

b) Effects of actions = Restore. Slight increases in turbidity and suspended sediment levels are expected directly downstream of culvert replacement and removal activities in tributary streams. These increases are expected to extend 200 to 500 feet downstream dependent upon stream gradient and stream flows. The increases are not expected to be transported to Little Boulder Creek. Short-term small increases in percent fines by depth in localized areas within the tributaries are expected (i.e. culvert replacement/removal and associated stream bank alterations), however, a long-term decrease in percent fines by depth is expected in Little Boulder Creek due to reduced number of road fills subject to failure.

4. Large Woody Debris: LWD was broken into acting and potential categories. Acting debris is defined as stable woody debris at least 10 cm in diameter which influenced habitat within each transect-bound segments of stream, and expressed as number of pieces/100 meters. Potential debris is the

number of trees on each bank that could contribute large organic debris in to the stream and expressed as pieces/100 meters.

a) Environmental baseline = Low: LWD is low with acting debris of 17.8 pieces/100 m and potential debris of 2.0 pieces/100 m (Clearwater BioStudies, Inc. 2005).

b) Effects of actions = Maintain. PACFISH default riparian buffers will be protect all streams adjacent to vegetative treatment areas.

5. Pool Frequency: The Clearwater National Forest used primary pools counted within each segment of stream and expressed as number per mile.

a) Environmental baseline: Low: The response reaches have a low primary pool frequency of 118.6 pools/mile (Clearwater BioStudies, Inc. 2005). For streams with an average channel width of less than 5 feet (three response reaches average 3.9 feet), the number of pools/mile is expected to be around 184.

b) Effects of actions = Maintain. Activities are not expected to affect the overall number of pools in Little Boulder Creek.

6. Pool Quality: Is rated on a scale of 1 (poor) to 5 (excellent).

a) Environmental baseline: Low: Baseline is low with an average pool quality of 2.7 (Clearwater BioStudies, Inc. 2006).

b) Effects of actions = Maintain. Proposed activities are not expected to increase fine sediment deposition to decrease the size, and quality of pools.

7. Off-Channel Habitat: B type channels do not normally have a moderate to high amount of backwater and side channels.

a) Environmental baseline = Moderate. The response reach sections of Little Boulder Creek, have not been very affected by cattle grazing and some backwaters exist.

b) Effects of actions = Maintain. No changes are expected as a result of proposed action.

8. Habitat Refugia: Limited habitat refugia exists in the Little Boulder Creek drainage.

a) Environmental baseline = Moderate

b) Effects of actions = Maintain. No changes are expected as a result of proposed action.

F. Take

1. Harassment: There are no known activities other than recreational fishing and cattle grazing that could result in harassment.

a) Environmental baseline = High: Current levels or risk of harassment are most likely low.

b) Effects of actions = Maintain. No changes are expected as a result of proposed action.

2. Redd Disturbance: Steelhead trout spawning is most likely occurring within Little Boulder Creek as fish population surveys indicate juvenile rainbow/steelhead trout throughout the drainage. Due to various mitigation measures, (i.e. PACFISH riparian buffers, no activities proposed within mainstem Little Boulder Creek, and timing of instream road related activities on tributary streams until after the incubation period) no impacts to steelhead trout redds are expected.

a) Environmental baseline = High: Current levels or risks of redd disturbance are most likely low.

b) Effects of actions = Maintain. No changes are expected as a result of proposed action.

3. Juvenile Harvest: There are no special fishing regulations on the Lower Potlatch River drainage. The fishing season is open year-round in main river below Moose Creek. Moose Creek is also open year-round. Rainbow trout/steelhead under 20 inches in length are legal to harvest in the Lower Potlatch River. General fishing season limits (six trout) apply to the Little Boulder Creek.

a) Environmental baseline = Moderate: Current levels or risks of juvenile harvest of steelhead trout are most likely moderate due to the higher concentrations of campers and anglers (i.e. Little Boulder Campground).

b) Effects of actions = Maintain. No changes are expected as a result of proposed action.

G. Bull Trout Subpopulation Characteristics and Habitat Integration

1. Subpopulation Size, Growth & Survival, Life History Diversity and Isolation

a. Env. Baseline = Low. Bull trout have not been observed in the Lower Potlatch River drainage (including Little Boulder Creek); an adult could possibly use the mainstem during the early spring for rearing, but high water temperatures are not conducive to over summer rearing.

b. Effect of the Actions = Maintain. No changes are expected as a result of proposed action.

Checklist for Documenting Environmental Baseline and Effects of Action(s) on Relevant Indicators

Subbasin: Mainstem Clearwater River

Watershed: Potlatch River

Subwatershed: Little Boulder Creek

PATHWAYS: INDICATORS	ENVIRONMENTAL BASELINE 13			EFFECTS OF THE ACTION(S)		
	High	Moderate	Low	Restore 14	Maintain 15	Degrade 16
Watershed Conditions:						
Watershed Road Density			5.3 mi/mi ²	3.7 mi/mi ²		
Streamside Road Density			5.9 mi/mi ²	X		
Landslide prone Road Density			6.3 mi/mi ²	X		
Riparian Vegetation Condition	X			X		
Peak/Base Flow	7.0 %				X	
Water Yield (ECA)	13.8 %					X
Sediment Yield	7.0 %			X		
Channel Condition & Dynamics:						
Width/Depth Ratio	5.7				X	
Stream bank Stability	4.8				X	
Floodplain Connectivity	N/D				X	
Water Quality:						
Temp - Steelhead Spawning			16.2 °C		X	
Temp- Steelhead Rear/Migration			21.6 °C		X	
Temperature - Bull Trout			S=19.6°C I=19.6°C R=21.6°C		S=X I=X R=X	
Suspended Sediment	N/D				X	
Chem. Contamination./Nutrients	N/A				X	
Habitat Access:						
Physical Barriers - Adult	X				X	
Physical Barriers - Juvenile	X				X	

¹³Indicators of high, moderate, or low habitat condition.

¹⁴For the purposes of this checklist, "restore" means to change the function of an indicator for the better, or that the rate of restoration rate is increased.

¹⁵For the purposes of this checklist, "maintain" means that the function of an indicator will not be degraded and that the natural rate of restoration for this indicator will not be retarded.

¹⁶For the purposes of this checklist, "degrade" means to change the function of an indicator for the worse, or that the natural rate of restoration for this indicator is retarded. In some cases, a low environmental baseline indicator maybe further worsened, and this should be noted.

PATHWAYS: INDICATORS	ENVIRONMENTAL BASELINE 17			EFFECTS OF THE ACTION(S)		
	High	Moderate	Low	Restore 18	Maintain 19	Degrade 20
Habitat Elements:						
Cobble Embeddedness			91.4 %	X		
Percent Surface Fines			31.4 %	X		
Percent Fines by Depth			N/D	X		
Large Woody Debris A=Acting; P=Potential (#/100 meters)			A=17.8 P=2.0		X	
Pool Frequency (primary pools per mile)			118.6/mi		X	
Pool Quality			2.7		X	
Off-channel Habitat		N/D			X	
Habitat Refugia		X			X	
Take:						
Harassment	B=X S=X				X	
Redd Disturbance	B=X S=X				X	
Juvenile Harvest	B=X	S=X			X	
Bull Trout Subpopulation Characteristics & Habitat Integration:						
Subpopulation Size			X		X	
Growth and Survival			X		X	
Life History Diversity, Isolation			X		X	
Persistence & Genetic Integrity			X		X	
Integration of Species and Habitat Conditions			X		X	

¹⁷Indicators of high, moderate, or low habitat condition.

¹⁸For the purposes of this checklist, "restore" means to change the function of an indicator for the better, or that the rate of restoration rate is increased.

¹⁹For the purposes of this checklist, "maintain" means that the function of an indicator will not be degraded and that the natural rate of restoration for this indicator will not be retarded.

²⁰For the purposes of this checklist, "degrade" means to change the function of an indicator for the worse, or that the natural rate of restoration for this indicator is retarded. In some cases, a low environmental baseline indicator maybe further worsened, and this should be noted.

ENVIRONMENTAL BASELINE DATA: East Fork Potlatch River

Habitat: The environmental baseline was determined by data collected during the 2005 resurvey of three response reaches (EFP-04, 05, and 06) within the project area (Clearwater BioStudies, Inc. 2006). Based on data collected in 1993 during the initial stream surveys within the project area (Isabella Wildlife Works 1994), these response reaches had the most sensitive channel types (from Rosgen stream classification) that will show the most cumulative impacts. Response reaches EFP-04 and EFP-06 are a F3 channel type and EFP-05 is a C4 channel type. The average gradient for the response reaches is 0.7%. The stream segment has primarily pool and run/pool habitat types with a dominant substrate ranging from small gravel to small rubble.

Fish Populations: Fish population surveys conducted in 1994 (Isabella Wildlife Works 1995), found no salmonids in the eight 30-meter snorkel stations within the 4.7 mile segment of the East Fork Potlatch River on USFS lands. Numerous reddsided shiners, speckled dace, longnose dace and bridgelip suckers were observed throughout the stream. However, steelhead trout spawning surveys on USFS lands have found steelhead trout spawning in the lower reaches of the East Fork Potlatch River. Steelhead redds have been monitored in the East Fork Potlatch River since 1992 (usually twice a year during April and May). These surveys have shown a consistently low number of redds (3-9) in the 1.9 miles of East Fork Potlatch River. Due to the high summer water temperatures within this segment of the East Fork Potlatch River, the juvenile steelhead trout most likely migrate to cooler tributary streams or other cooler areas downstream.

During the 2005 survey (Clearwater BioStudies, Inc. 2006) the fisheries assemblage within the East Fork Potlatch River were found to be similar to the mid-1990's surveys; however, low densities of rainbow/steelhead trout were observed (snorkeling) in six of the eight monitoring sites.

A. Watershed Conditions

1. Watershed Road Density:

- a) Environmental baseline = Moderate - 2.8 miles/mile² on USFS lands in lower portion of the drainage. The majority of USFS lands within the East Fork Potlatch River are located in the lower five miles of the drainage (Ruby Creek downstream).
- b) Effects of actions = Restore. After project implementation, road density decreases from 2.8 to 2.6 miles/mile² on USFS lands. Currently, USFS lands have a total of 21.2 miles of road (2.8 miles/mile²). Including non-USFS lands, the road mileage increases substantially to 302.9 miles (4.9 miles/mile²); this is most likely underestimate due to the limited GIS information available. Under the proposed action, the total road mileage would decrease on USFS lands by approximately 1.6 miles via road decommissioning. In addition, 1.0 miles of temporary road constructed under the project will be decommissioned and approximately 0.3 miles of existing road will be placed into intermittent storage. After project implementation, the total road mileage will be approximately 19.6 miles on USFS lands (2.6 miles/mile²). For the entire East Fork Potlatch River drainage, a total of 301.3 miles of road will remain with a density of 4.9 miles/mile².

2. Streamside Road Density:

- a) Environmental baseline = Moderate - 1.7 miles/mile² on USFS lands. Non-USFS lands have a density of 7.2 miles/mile² with the entire watershed having a density of 6.4 miles/mile² in RCA's.
- b) Effects of actions = Restore. This value will decrease with the proposed road decommissioning activities, but the amount is unknown at this time; future map refinements will provide an updated figure.

3. Landslide Road Density:

a) Environmental baseline = Low – 2.4 miles/mile² on USFS lands. Non-USFS lands have a density of 5.6 miles/mile² with the entire watershed having a density of 5.3 miles/mile² in land slide prone areas.

b) Effects of actions = Restore. This value will decrease with the proposed road decommissioning activities, but the amount is unknown at this time; future map refinements will provide an updated figure.

4. Riparian Vegetation Condition:

a) Environmental baseline = Moderate. The stream bank stability is rated fair to good (Clearwater BioStudies, Inc. 2005) from their stream inventory. Approximately 155 cow/calf pairs roam in and out of this watershed during the one of the two grazing periods between June 1 and September 1. These cows have a rider and also graze on private, state and other watersheds in the area. Impacts from grazing are considered minimal along the East Fork Potlatch River on USFS lands: riparian area along the mainstem East Fork Potlatch River is fenced, the movement of the cattle, and of the wooded vegetation in parts of the watershed.

b) Effects of actions = Restore. A positive response is also expected for the riparian indicator due to natural (passive) management in the majority of the riparian zones. An active restoration project (bank stabilization) will restore approximately four miles of riparian areas along the East Fork Potlatch River. PACFISH default riparian buffers will be protect all streams adjacent to vegetative treatment areas. As per Potlatch Creek Allotment management plan, approximately 3.5 miles of permanent fence will be maintain along the mainstem East Fork Potlatch River to allow restoration of riparian and instream conditions. Removal or alterations of riparian vegetation may occur in small local areas at culvert replacement and removal sites; effects are minimal. Slight restoration in overall riparian conditions as riparian conditions at culvert removal sites will be improved to allow for natural vegetative conditions.

5. Peak/Base flow: No data is available. Due to it's large size, and the majority of the area on non-USFS lands, there is not a complete WATBAL run for the East Fork Potlatch River Watershed. The size of the watershed exceeds the recommended size limit for the model.

a) Environmental baseline = Assumed to be Moderate: Due to the past management practices upstream of the project area (primarily on private lands), some evidence of altered peak flows, base flows and flow timing characteristics have been observed; however the watershed is most likely functioning within its natural disturbance regime.

b) Effects of actions = Maintain. No changes to peak flows within the East Fork Potlatch River is expected. The total acreage proposed for vegetative treatment is less than one percent of the entire watershed. In addition, approximately 46% of the 271 acres proposed for vegetative treatment is commercial thinning which will have minimal impacts to annual or peak flows.

6. Water Yield (ECA): No data is available. Due to it's large size, and the majority of the area on non-USFS lands, there is not a complete WATBAL run for the East Fork Potlatch River Watershed. The size of the watershed exceeds the recommended size limit for the model.

a) Environmental baseline = Assumed to be Moderate: Due to the past management practices upstream of the project area, ECA is most likely greater than 15% especially when considering private lands.

b) Effects of actions = Maintain. No changes to water yield within the East Fork Potlatch River is expected. The total acreage proposed for vegetative treatment is less than one percent of the

entire watershed. In addition, approximately 46% of the 271 acres proposed for vegetative treatment is commercial thinning which will have minimal impacts to water yield.

7. Sediment Yield: No data is available. Due to its large size, and the majority of the area on non-USFS lands, there is not a complete WATBAL run for the East Fork Potlatch River Watershed. The size of the watershed exceeds the recommended size limit for the model.

a) Environmental baseline = Assumed to be Moderate: based the majority of the drainage upstream of the project area is non-USFS lands.

b) Effects of actions = Restore. Slight increases in turbidity and suspended sediment levels are expected directly downstream of culvert replacement and removal activities in tributary streams. These increases are expected to extend 200 to 500 feet downstream dependent upon stream gradient and stream flows. The increases are not expected to be transported to East Fork Potlatch River. Short-term small increases in sediment yield in localized areas within the tributaries are expected (i.e. culvert replacement/removal and associated stream bank alterations), however, a long-term decrease in sediment yield is expected in East Fork Potlatch River due to reduced number of road fills subject to failure.

Short-term small increases in sediment along the East Fork Potlatch River are expected during the bank stabilization activities. The bank revetments may produce slight increases in turbidity and suspended sediment levels in localized areas, but these are expected to be short duration (several hours) and within State standards at downstream mixing zone. Short-term small increases in sediment yield in localized areas is expected, however, a long-term decrease in sediment yield is expected in East Fork Potlatch River due to the bank stabilization.

B. Channel Conditions and Dynamics

1. Width/Depth Ratio: Data was used from the 2005 resurvey (Clearwater BioStudies, Inc. 2006). The width is measured from bankfull to bankfull and the depth is the maximum bankfull depth in the cross section.

a) Environmental baseline = High: 10.7 (F and C type channels). Less than 35 is a high rating for a F channel type. Less than 40 is a high rating for a C channel type.

b) Effects of actions = Maintain. The project will avoid any stream bank impacts along East Fork Potlatch River. PACFISH default riparian buffers will be protect all streams adjacent to vegetative treatment areas. Stream bank stabilization of approximately 1.6 miles of stream bank within the East Fork Potlatch River will improve stream bank stability and improve width/depth ratio.

2. Streambank stability: Streambank stability was determined by using a rating of 1 (low) to 5 (excellent) by the contracted survey crew as they walked up the stream channel.

a) Environmental baseline = Moderate, with a bank rating of 4.0 or greater than 95% in the response reach.

b) Effects of actions = Maintain. The stream banks are well armored with large substrate.

3. Floodplain Connectivity:

a) Environmental baseline = High: The response reaches are a confined F-type channel that are not conducive to overbank flows.

b) Effects of actions = Maintain. No change is expected due to the watershed and vegetative restoration activities.

C. Water Quality

For determining the temperature, the Forest looked through all of the data records and looked for the highest temperature year on record. This was done to determine the highest constraining temperature for the fish present in the watershed. For the East Fork Potlatch River drainage, five years (2002-2006) of data collected at the mouth was available. The temperature is represented by the highest seven day running average of the daily maximums, during specific time periods for each species.

1. Temperature - steelhead spawning: The highest seven day running average of the daily maximums during the spawning period (Feb. 1 to July 15) was used.

a) Environmental baseline = Low condition. The highest spawning temperature ranged from 23.3 to 25.3 during the 2002-2006 monitoring period. Due to spring runoff flows and moderate air temperatures, water temperature stays cool during the early months of spawning.

b) Effects of actions = Maintain. With the exception of minor riparian alterations at the stream crossings, alterations in riparian vegetation and streamside shade are expected to be minimal in any stream reach. Therefore, no change in water temperature is expected.

2. Temperature - steelhead rearing: Steelhead rearing and migration occurs throughout the year.

a) Environmental baseline = Low condition. The highest rearing temperature ranged from 26.0 to 28.5 during the 2002-2006 monitoring period.

b) Effects of actions = Maintain. See steelhead spawning.

3. Temperature - bull trout spawning: The Clearwater National Forest used the spawning period of September 1 to December 31.

a) Environmental baseline = Low condition. The highest spawning temperature of 17.4 to 20.3° C during the 2002-2006 monitoring period.

b) Effects of actions = Maintain. Due the absence of bull trout in the Potlatch River (most likely due to high water temperatures and substrate conditions), effects to bull trout spawning within project area are considered negligible. See steelhead spawning.

4. Temperature - bull trout incubation: The Clearwater National Forest used an incubation period from September 1 to April 30. Data is only available from September 1 to early November. Thermographs are not usually put into the water until early May or June.

a) Environmental baseline = Low condition. The highest temperature during the incubation period ranged from 17.4 to 20.3 during the 2002-2006 monitoring period.

b) Effects of actions = Maintain. Due the absence of bull trout in the Potlatch River (most likely due to high water temperatures and substrate conditions), effects to bull trout incubation within project area are considered negligible. See steelhead spawning.

5. Temperature - bull trout rearing: The Clearwater National Forest used temperatures throughout the year for rearing.

a) Environmental baseline = Low condition. The highest rearing temperature ranged from 26.0 to 28.5 during the 2002-2006 monitoring period.

b) Effects of actions = Maintain. The changes to the riparian zone along East Fork Potlatch River are considered minimal in relation to the effects on rearing habitat. In the unlikely scenario that bull trout are present in the Potlatch River, and migrate and rear within the East Fork Potlatch River, the overall effect of the proposed project would be negligible. See steelhead spawning.

6. Suspended Sediment: No data is available.

a) Environmental baseline: High – based on other suspended sediment sampling on other streams within the Potlatch River drainage.

b) Effects of actions = Maintain. Slight increases in turbidity and suspended sediment levels are expected directly downstream of culvert replacement and removal activities in tributary streams. These increases are expected to extend 200 to 500 feet downstream dependent upon stream gradient and stream flows. The increases are not expected to be transported to East Fork Potlatch River. Short-term small increases in suspended sediment in localized areas within the tributaries are expected (i.e. culvert replacement/removal and associated stream bank alterations), however, a long-term decrease in suspended sediment is expected in East Fork Potlatch River due to reduced number of road fills subject to failure.

Short-term small increases in sediment along the East Fork Potlatch River are expected during the bank stabilization activities. The bank revetments may produce slight increases in turbidity and suspended sediment levels in localized areas, but these are expected to be short duration (several hours) and within State standards at downstream mixing zone.

7. Chemical Contamination/Nutrients: Nutrient input from cattle is the only known potential contaminate. No data is available.

a) Environmental baseline = Moderate - based on grazing within project area and agricultural lands upstream of the project area.

b) Effects of actions = Maintain. No changes are expected as a result of proposed action. PACFISH default riparian buffers will be protect all streams adjacent to vegetative treatment areas. No activities are proposed instream or within the RCA of the mainstem East Fork Potlatch River. The Fuel, Transport and Containment Plan developed under a Section 7 consultation with NOAA Fisheries and USFWS regarding the North Lochsa Face Project would be applied throughout project implementation to minimize the risk of an accidental spill of petroleum products, as well as to protect water courses and aquatic biota from adverse effects in the event of a spill. Equipment used for vegetation treatments and riparian/instream work in tributary streams (including chainsaws and other hand power tools) shall be fueled and serviced in an area that will not deliver fuel, oil, etc. to streams.

D. Habitat Access

1. Physical Barriers - Adult:

a) Environmental baseline = High: No barriers exist for adult steelhead and bull trout on the mainstem East Fork Potlatch River.

b) Effects of actions = Maintain. No activity is currently proposed which would create a barrier.

2. Physical Barriers - Juvenile:

a) Environmental baseline = High: No barriers exist for juvenile steelhead and bull trout on the mainstem East Fork Potlatch River.

b) Effects of actions = Maintain. No activity is currently proposed which would create a barrier.

E. Habitat Elements

1. Cobble Embeddedness:

a) Environmental baseline = Low. Cobble embeddedness averages approximately 42.7% for the response reaches.

b) Effects of actions = Maintain. Slight increases in turbidity and suspended sediment levels are expected directly downstream of culvert replacement and removal activities in tributary streams. These increases are expected to extend 200 to 500 feet downstream dependent upon stream gradient and stream flows. The increases are not expected to be transported to East Potlatch River. Short-term small increases in percent surface fines in localized areas within the tributaries are expected (i.e. culvert replacement/removal and associated stream bank alterations), however, a long-term decrease in percent surface fines is expected in East Fork Potlatch River due to reduced number of road fills subject to failure.

Short-term small increases in sediment along the East Fork Potlatch River are expected during the bank stabilization activities. The bank revetments may produce slight increases in turbidity and suspended sediment levels in localized areas, but these are expected to be short duration (several hours) and within State standards at downstream mixing zone. No changes in cobble embeddedness levels are expected within the project area or downstream.

2. Percent Surface Fines: Percent surface fines was calculated by a cumulative distribution from three adjacent riffles in the East Fork Potlatch River upstream mouth above USFS (in reach EFP-01). Data was collected as described by Kappesser (1993). Cattle grazing is one source of fine sediment, but it is considered to be minimal along the mainstem East Fork Potlatch River in the project area.

a) Environmental baseline = High. Percent surface fines are 20.0%. The trend between 1994 and 2004 is static. This is only for particle sizes < 4 mm. Particle size 6 mm could not be broken out because the next category collected is 4-8 mm.

b) Effects of actions = Maintain. Slight increases in turbidity and suspended sediment levels are expected directly downstream of culvert replacement and removal activities in tributary streams. These increases are expected to extend 200 to 500 feet downstream dependent upon stream gradient and stream flows. The increases are not expected to be transported to East Fork Potlatch River. Short-term small increases in percent surface fines in localized areas within the tributaries are expected (i.e. culvert replacement/removal and associated stream bank alterations), however, a long-term decrease in percent surface fines is expected in East Fork Potlatch River due to reduced number of road fills subject to failure.

Short-term small increases in sediment along the East Fork Potlatch River are expected during the bank stabilization activities. The bank revetments may produce slight increases in turbidity and suspended sediment levels in localized areas, but these are expected to be short duration (several hours) and within State standards at downstream mixing zone. No changes in percent surface fines are expected within the project area or downstream.

3. Percent Fines by Depth: No data is available for this element.

a) Environmental baseline = High – based on percent surface fines data.

b) Effects of actions = Maintain. Slight increases in turbidity and suspended sediment levels are expected directly downstream of culvert replacement and removal activities in tributary streams. These increases are expected to extend 200 to 500 feet downstream dependent upon stream gradient and stream flows. The increases are not expected to be transported to East Fork Potlatch River. Short-term small increases in percent surface fines in localized areas within the tributaries are expected (i.e. culvert replacement/removal and associated stream bank alterations), however, a long-term decrease in percent surface fines is expected in East Fork Potlatch River due to reduced number of road fills subject to failure.

Short-term small increases in sediment along the East Fork Potlatch River are expected during the bank stabilization activities. The bank revetments may produce slight increases in turbidity and suspended sediment levels in localized areas, but these are expected to be short duration (several hours) and within State standards at downstream mixing zone. No changes in percent fines by depth are expected within the project area or downstream.

4. Large Woody Debris: LWD was broken into acting and potential categories. Acting debris is defined as stable woody debris at least 10 cm in diameter which influenced habitat within each transect-bound segments of stream, and expressed as number of pieces/100 meters. Potential debris is the number of trees on each bank that could contribute large organic debris in to the stream and expressed as pieces/100 meters.

a) Environmental baseline = Low: LWD is low with an average acting debris of 5.4 pieces/100 m and potential debris of 0.7 pieces/100 m within the response reaches (Clearwater BioStudies, Inc. 2005). Due to the meadow habitat along the East Fork Potlatch River, the large woody debris levels would naturally be low.

b) Effects of actions = Maintain. PACFISH default riparian buffers will be protect all streams adjacent to vegetative treatment areas. As per Potlatch Creek Allotment management plan, approximately 3.5 miles of permanent fence will be maintain along the mainstem East Fork Potlatch River to allow restoration of riparian and instream conditions.

5. Pool Frequency: The Clearwater National Forest used primary pools counted within each segment of stream and expressed as number per mile.

a) Environmental baseline = Low: The response reaches have a low primary pool frequency of 2.3 pools/mile (Isabella Wildlife Works 1995). For streams with an average channel width of 25-50 feet (response reaches average 30 feet), the number of pools/mile is expected to be around 26.

b) Effects of actions = Maintain. Activities are not expected to affect the overall number of pools in the East Fork Potlatch River.

6. Pool Quality: Is rated on a scale of 1 (poor) to 5 (excellent).

a) Environmental baseline: Information is not available from the survey. Assumed to be Low.

b) Effects of actions = Maintain. Ongoing activities are not expected to increase fine sediment deposition to decrease the size, and quality of pools.

7. Off-Channel Habitat: F channels are primarily confined channels.

a) Environmental baseline = Moderate. The response reaches of the East Fork Potlatch River have been affected by cattle grazing, however permanent fencing should allow for minimal side channel formation.

b) Effects of actions = Maintain. No changes are expected as a result of proposed action.

8. Habitat Refugia: Limited habitat refugia exists in the East Fork Potlatch River drainage.

a) Environmental baseline = Moderate.

b) Effects of actions = Maintain. No changes are expected as a result of proposed action.

F. Take

1. Harassment: There are no known activities other than recreational fishing and cattle grazing that could result in harassment.

a) Environmental baseline = High: Current levels or risk of harassment are most likely low.

b) Effects of actions = Maintain. No changes are expected as a result of proposed action.

2. Redd Disturbance: Steelhead trout spawning surveys on USFS lands have found steelhead trout spawning in the lower reaches of the East Fork Potlatch River. Steelhead redds have been monitored in the East Fork Potlatch River since 1992 (usually twice a year during April and May). These surveys have shown a consistently low number of redds (3-9) in the 1.9 miles of East Fork Potlatch River. Due to various mitigation measures, (i.e. PACFISH riparian buffers, no activities proposed within mainstem Little Boulder Creek, and timing of instream road related activities on tributary streams until after the incubation period) no impacts to steelhead trout redds are expected.

a) Environmental baseline = High: Current levels or risks of redd disturbance are most likely low.

b) Effects of actions = Maintain. No changes are expected as a result of proposed action.

3. Juvenile Harvest: There are no special fishing regulations on the Lower Potlatch River drainage. The fishing season is open year-round in main river below Moose Creek. Moose Creek is also open year-round. Rainbow trout/steelhead under 20 inches in length are legal to harvest in the Lower Potlatch River. General fishing season limits (six trout) apply to the East Fork Potlatch River.

a) Environmental baseline = High: Current levels or risks of juvenile harvest of steelhead trout are most likely low due to the lack of road access on USFS lands along the East Fork Potlatch River within the project area.

b) Effects of actions = Maintain. No changes are expected as a result of proposed action.

G. Bull Trout Subpopulation Characteristics and Habitat Integration

1. Subpopulation Size, Growth & Survival, Life History Diversity and Isolation

a. Env. Baseline = Low. Bull trout have not been observed in the Lower Potlatch River drainage (including East Fork Potlatch River); an adult could possibly use the mainstem during the early spring for rearing, but high water temperatures are not conducive to over summer rearing.

b. Effect of the Actions = Maintain. No change is expected.

Checklist for Documenting Environmental Baseline and Effects of Action(s) on Relevant Indicators

Subbasin: Mainstem Clearwater River

Watershed: Potlatch River

Subwatershed: East Fork Potlatch River

PATHWAYS: INDICATORS	ENVIRONMENTAL BASELINE ²¹			EFFECTS OF THE ACTION(S)		
	High	Moderate	Low	Restore ²²	Maintain ²³	Degrade ²⁴
<u>Watershed Conditions:</u>						
Watershed Road Density		2.8mi/mi ² (USFS Lands)		2.6mi/mi ² (USFS Lands)		
Streamside Road Density		1.7 mi/mi ²		X		
Landslide prone Road Density			2.4mi/ mi ²	X		
Riparian Vegetation Condition	X			X		
Peak/Base Flow		N/D			X	
Water Yield (ECA)		N/D			X	
Sediment Yield		N/D		X		
<u>Channel Condition. & Dynamics:</u>						
Width/Depth Ratio	10.7			X		
Stream bank Stability		4.0		X		
Floodplain Connectivity	X				X	
<u>Water Quality:</u>						
Temp - Steelhead Spawning			25.3°C		X	
Temp- Steelhead Rear/Migration			28.5°C		X	
Temperature - Bull Trout			S=20.3°C I=20.3°C R=28.5°C		S=X I=X R=X	
Suspended Sediment	N/D				X	
Chem. Contamination/Nutrients		N/D			X	
<u>Habitat Access:</u>						
Physical Barriers - Adult	X				X	
Physical Barriers - Juvenile	X				X	

²¹Indicators of high, moderate, or low habitat condition.

²²For the purposes of this checklist, "restore" means to change the function of an indicator for the better, or that the rate of restoration rate is increased.

²³For the purposes of this checklist, "maintain" means that the function of an indicator will not be degraded and that the natural rate of restoration for this indicator will not be retarded.

²⁴For the purposes of this checklist, "degrade" means to change the function of an indicator for the worse, or that the natural rate of restoration for this indicator is retarded. In some cases, a low environmental baseline indicator maybe further worsened, and this should be noted.

PATHWAYS: INDICATORS	ENVIRONMENTAL BASELINE ²⁵			EFFECTS OF THE ACTION(S)		
	High	Moderate	Low	Restore ²⁶	Maintain ²⁷	Degrade ²⁸
Habitat Elements:						
Cobble Embeddedness			50%	X		
Percent Surface Fines	20%			X		
Percent Fines by Depth	N/D			X		
Large Woody Debris A=Acting; P=Potential (#/100 meters)			A=3.6 P=3.0		X	
Pool Frequency (primary pools per mile)			2.3/mi		X	
Pool Quality			N/D		X	
Off-channel Habitat		X			X	
Habitat Refugia		X			X	
Take:						
Harassment	B=X S=X				X	
Redd Disturbance	B=X S=X				X	
Juvenile Harvest	B=X S=X				X	
Bull Trout Subpopulation Characteristics & Habitat Integration:						
Subpopulation Size			X		X	
Growth and Survival			X		X	
Life History Diversity, Isolation			X		X	
Persistence & Genetic Integrity			X		X	
Integration of Species and Habitat Conditions			X		X	

²⁵Indicators of high, moderate, or low habitat condition.

²⁶For the purposes of this checklist, "restore" means to change the function of an indicator for the better, or that the rate of restoration rate is increased.

²⁷For the purposes of this checklist, "maintain" means that the function of an indicator will not be degraded and that the natural rate of restoration for this indicator will not be retarded.

²⁸For the purposes of this checklist, "degrade" means to change the function of an indicator for the worse, or that the natural rate of restoration for this indicator is retarded. In some cases, a low environmental baseline indicator maybe further worsened, and this should be noted.

ENVIRONMENTAL BASELINE DATA: Hog Meadow Creek

Habitat: Besides some anecdotal information collected by USFS personnel, no complete stream survey information is available for Hog Meadow Creek. USFS lands comprise approximately 67 percent of the watershed. Approximately 50 percent of the mainstem Hog Meadow Creek is located on USFS lands. An excerpt from the *Fish Watershed and Soils Report for the Cherry Dinner Environmental Assessment* states: *Headwater surveys done by district personnel during 1997 show Hog Meadow Creek and its tributaries range in gradient from 0.9 percent to 6 percent, and have substrates of silt, sand and fine gravel, with a few areas of large cobble in the mainstem Hog Meadow Creek adjacent to FR 1963. Hog Meadow Creek is an intermittent stream, having high flows in the spring and going subsurface as early as July. In the 1920s railroad grades built along Hog Meadow Creek, channelized the stream and compacted the soil where landings and camps were located. Woody debris is sparse, as one would expect in a meadow system. This stream experienced a peak in sediment production in 1983, after the construction of the 3815 road system. Hog Meadow Creek should be meeting the basic standard of channel integrity. It is presently predicted by WATBAL to be within standards, but the presence of mostly fine sediments and the fact it goes subsurface during the summer indicates the channel is not functioning well.*

Fish Populations: No USFS fish population surveys conducted on Hog Meadow Creek. Due to intermittent stream flows, poor substrate conditions and high water temperatures, aquatic fisheries, especially salmonids are most likely limited or non-existent in most of the stream.

A. Watershed Conditions

1. Watershed Road Density:

- a) Environmental baseline = Moderate – 2.7 miles/mile².
- b) Effects of actions = Restore. After project implementation, road density for the Hog Meadow Creek drainage will decreased from 2.7 to 2.4 miles/mile². Currently, USFS lands have a total of 18.9 miles of road (3.0 miles/mile²). Including non-USFS lands, the road mileage increases to 25.0 miles (2.7 miles/mile²). Under the proposed action, the total road mileage would decrease on USFS lands by approximately 2.9 miles via road decommissioning. In addition, 3.1 miles of temporary road constructed under the project will be decommissioned and approximately 5 miles of road will be placed into intermittent storage. After project implementation, the total road mileage will be approximately 16 miles on USFS lands (2.5 miles/mile²). For the Hog Meadow Creek drainage, a total of 22.1 miles of road will remain with a density of 2.4 miles/mile².

2. Streamside Road Density:

- a) Environmental baseline = Low - 5.9 miles/mile². USFS lands have a density of 6.1 miles/mile² and the remainder of the watershed has a density of 2.6 miles/mile² in RCA's.
- b) Effects of actions = Restore. This value will decrease with the proposed road decommissioning activities, but the amount is unknown at this time; future map refinements will provide an updated figure.

3. Landslide Road Density:

- a) Environmental baseline = Low - 6.3 miles/mile². USFS lands have a density of 7.2 miles/mile² and the remainder of the watershed has a density of 3.4 miles/mile² in land slide prone areas.

b) Effects of actions = Restore. This value will decrease with the proposed road decommissioning activities, but the amount is unknown at this time; future map refinements will provide an updated figure.

4. Riparian Vegetation Condition: No data is available.

a) Environmental baseline = Low: Based on observations of meadow conditions and grazing. Approximately 91 cow/calf pairs roam in and out of this watershed during the period between June 1 and October 31. These cows have a rider and also graze on private, state and other watersheds in the area. Impacts from grazing are considered minimal along Little Boulder Creek: the movement of the cattle, excellent stream bank stability, temporary drift fences, and of the wooded vegetation in parts of the watershed.

b) Effects of actions = Restore. A positive response is also expected for the riparian indicator due to natural (passive) management in the majority of the riparian zones. PACFISH default riparian buffers will be protect all streams adjacent to vegetative treatment areas. Removal or alterations of riparian vegetation may occur in small local areas at culvert replacement and removal sites; effects are minimal. Slight restoration in overall riparian conditions as riparian conditions at culvert removal sites will be improved to allow for natural vegetative conditions.

5. Peak/Base flow: WATBAL run for the Hog Meadow Creek watershed.

a) Environmental baseline = Low: Currently (2006) the watershed is 4% over natural conditions which indicates a high condition. However, due to past land management practices, pronounced changes in peak flows, base flows and flow timing characteristics have been observed (subsurface summer stream flows) and the watershed is most likely not functioning within its natural disturbance regime.

b) Effects of actions = Maintain. The peak flows will be increased to 7% (2007-2010) over natural conditions; however the increase will most likely have negligible changes in peak/base stream flows.

6. Water Yield (ECA): WATBAL run for the Hog Meadow Creek Watershed.

a) Environmental baseline = High. Currently (2006) the watershed is 8.6% ECA.

b) Effects of actions = Degrade. The ECA will increase from 8.6% (2006) to 14.7% (2007) due to the vegetative removal. This increase is below the 15% level for a properly functioning watershed. The change in peak flows (from 4% to 7%) is below the WATBAL threshold (15-20%) that indicates a risk in channel degradation.

7. Sediment Yield: WATBAL run for the Hog Meadow Creek Watershed.

a) Environmental baseline = High. Current sediment conditions (2006) predicted by WATBAL are approximately 33 percent over natural.

b) Effects of actions = Restore. WATBAL predicts the sediment conditions would increase to 55 percent over natural in 2008-2009 and decrease to pre-project levels in 2011; this level is above no effect threshold of 35% of natural for a C channel type. The majority of the sediment increase is predicted for the 3.1 miles of new road (temporary) construction and approximately 3.7 miles of road reconstruction. However this increase is expected to be short-term when the new road construction (3.1 miles) is decommissioned. In addition, approximately 2.9 miles of existing road will be decommissioned and an additional 5 miles of existing road will be placed in intermittent storage. Slight increases in turbidity and suspended sediment levels are expected directly downstream of culvert replacement and removal activities. These increases are expected to extend 200 to 500 feet downstream dependent upon stream gradient and stream flows. Short-

term small increases in sediment yield are expected (i.e. culvert replacement/removal and associated stream bank alterations), however, a long-term decrease in sediment yield is expected due to reduced number of road fills subject to failure.

B. Channel Conditions and Dynamics

1. Width/Depth Ratio: No data is available.
 - a) Environmental baseline = Moderate – based on observations.
 - b) Effects of actions = Maintain. The project will avoid any stream bank impacts along Hog Meadow Creek.
2. Streambank stability: No data is available.
 - a) Environmental baseline = Low – based on observations.
 - b) Effects of actions = Maintain. The project will avoid any stream bank impacts along Hog Meadow Creek.
3. Floodplain Connectivity: No data is available.
 - a) Environmental baseline = Low – based on observations.
 - b) Effects of actions = Maintain. No change is expected due to the watershed and vegetative restoration activities.

C. Water Quality

For determining the temperature, the Forest looked through all of the data records and looked for the highest temperature year on record. This was done to determine the highest constraining temperature for the fish present in the watershed. No temperature data is available for Hog Meadow Creek.

1. Temperature - steelhead spawning: The highest seven day running average of the daily maximums during the spawning period (Feb. 1 to July 15) was used.
 - a) Environmental baseline = Low (Assume low condition – no data available).
 - b) Effects of actions = Maintain. With the exception of minor riparian alterations at the stream crossings, alterations in riparian vegetation and streamside shade are expected to be minimal in any stream reach. Therefore, no change in water temperature is expected.
2. Temperature - steelhead rearing: Steelhead rearing and migration occurs throughout the year.
 - a) Environmental baseline = Low (Assume low condition – no data available condition).
 - b) Effects of actions = Maintain. See steelhead spawning.
3. Temperature - bull trout spawning: The Clearwater National Forest used the spawning period of September 1 to December 31.
 - a) Environmental baseline = Low (Assume low condition – no data available).
 - b) Effects of actions = Maintain. Due the absence of bull trout in the Potlatch River (most likely due to high water temperatures and substrate conditions), effects to bull trout spawning within project area are considered negligible. See steelhead spawning.
4. Temperature - bull trout incubation: The Clearwater National Forest used an incubation period from September 1 to April 30. Data is only available from September 1 to early November. Thermographs are not usually put into the water until early May or June.

a) Environmental baseline = Low (Assume low condition – no data available condition).

b) Effects of actions = Maintain. Due the absence of bull trout in the Potlatch River (most likely due to high water temperatures and substrate conditions), effects to bull trout incubation within project area are considered negligible. See steelhead spawning.

5. Temperature - bull trout rearing: The Clearwater National Forest used temperatures throughout the year for rearing.

a) Environmental baseline = Low (Assume low condition – no data available condition).

b) Effects of actions = Maintain. The changes to the riparian zone along Hog Meadow Creek are considered minimal in relation to the effects on rearing habitat. In the unlikely scenario that bull trout are present in the Potlatch River, and migrate and rear within Hog Meadow Creek, the overall effect of the proposed project would be negligible. See steelhead spawning.

6. Suspended Sediment: No data is available.

a) Environmental baseline: High – based on other suspended sediment sampling on other streams within the Potlatch River drainage.

b) Effects of actions = Maintain. No changes are expected as a result of proposed action.

7. Chemical Contamination/Nutrients: Nutrient input from cattle is the only known potential contaminate.

a) Environmental baseline = Moderate – based on grazing intensity. No data exists.

b) Effects of actions = Maintain. No changes are expected as a result of proposed action. PACFISH default riparian buffers will be protect all streams adjacent to vegetative treatment areas. No activities are proposed instream or within the RCA of Hog Meadow Creek. The Fuel, Transport and Containment Plan developed under a Section 7 consultation with NOAA Fisheries and USFWS regarding the North Lochsa Face Project would be applied throughout project implementation to minimize the risk of an accidental spill of petroleum products, as well as to protect water courses and aquatic biota from adverse effects in the event of a spill. Equipment used for vegetation treatments and riparian/instream work in tributary streams (including chainsaws and other hand power tools) shall be fueled and serviced in an area that will not deliver fuel, oil, etc. to streams.

D. Habitat Access

1. Physical Barriers - Adult:

a) Environmental baseline = High: Other than intermittent stream flows, no known barriers exist for adult steelhead and bull trout on the mainstem Hog Meadow Creek.

b) Effects of actions = Maintain. No activity is currently proposed which would create a barrier.

2. Physical Barriers - Juvenile:

a) Environmental baseline = High: Other than intermittent stream flows, no known barriers exist for adult steelhead and bull trout on the mainstem Hog Meadow Creek.

b) Effects of actions = Maintain. No activity is currently proposed which would create a barrier.

E. Habitat Elements

1. Cobble Embeddedness: No data is available.

a) Environmental baseline = Low – based on channel type and livestock grazing impacts.

b) Effects of actions = Restore. Slight increases in turbidity and suspended sediment levels are expected directly downstream of culvert replacement and removal activities. These increases are expected to extend 200 to 500 feet downstream dependent upon stream gradient and stream flows. Short-term small increases in cobble embeddedness are expected (i.e. culvert replacement/removal and associated stream bank alterations), however, a long-term decrease in cobble embeddedness is expected due to reduced number of road fills subject to failure.

2. Percent Surface Fines: No data is available.

a) Environmental baseline = Low – based on channel type and livestock grazing impacts.

b) Effects of actions = Restore. Slight increases in turbidity and suspended sediment levels are expected directly downstream of culvert replacement and removal activities. These increases are expected to extend 200 to 500 feet downstream dependent upon stream gradient and stream flows. Short-term small increases in cobble embeddedness are expected (i.e. culvert replacement/removal and associated stream bank alterations), however, a long-term decrease in cobble embeddedness is expected due to reduced number of road fills subject to failure.

3. Percent Fines by Depth: No data is available.

a) Environmental baseline = Low – based on channel type and livestock grazing impacts.

b) Effects of actions = Restore. Slight increases in turbidity and suspended sediment levels are expected directly downstream of culvert replacement and removal activities. These increases are expected to extend 200 to 500 feet downstream dependent upon stream gradient and stream flows. Short-term small increases in cobble embeddedness are expected (i.e. culvert replacement/removal and associated stream bank alterations), however, a long-term decrease in cobble embeddedness is expected due to reduced number of road fills subject to failure.

4. Large Woody Debris: No data is available.

a) Environmental baseline = Low – based on observations and meadow type habitats.

b) Effects of actions = Maintain.

5. Pool Frequency: No data is available.

a) Environmental baseline: Low – based on meadow habitat and grazing intensity.

b) Effects of actions = Maintain. Activities are not expected to affect the overall number of pools in Hog Meadow Creek.

6. Pool Quality: No data is available.

a) Environmental baseline: Low - based on meadow habitat and grazing intensity.

b) Effects of actions = Maintain. Ongoing activities are not expected to increase fine sediment deposition to decrease the size, and quality of pools.

7. Off-Channel Habitat: C type channels normally have a moderate to high amount of backwater and side channels.

a) Environmental baseline = Low – based livestock grazing impacts.

b) Effects of actions = Maintain. No changes are expected as a result of proposed action.

8. Habitat Refugia: Limited habitat refugia exists in the Hog Meadow Creek drainage.

a) Environmental baseline = Moderate.

b) Effects of actions = Maintain. No changes are expected as a result of proposed action.

F. Take

1. Harassment: There are no known activities other than recreational fishing and cattle grazing that could result in harassment.

a) Environmental baseline = High: Current levels or risk of harassment are most likely low.

b) Effects of actions = Maintain. No changes are expected as a result of proposed action.

2. Redd Disturbance: Steelhead redds are unlikely to occur in the project area due to the larger substrate materials and conditions not suitable for steelhead trout spawning.

a) Environmental baseline = High: Current levels or risks of redd disturbance are most likely low.

b) Effects of actions = Maintain. No changes are expected as a result of proposed action.

3. Juvenile Harvest: There are no special fishing regulations on the Lower Potlatch River drainage. The fishing season is open year-round in main river below Moose Creek. Moose Creek is also open year-round. Rainbow trout/steelhead under 20 inches in length are legal to harvest in the Lower Potlatch River. General fishing season limits (six trout) apply to the Hog Meadow Creek.

a) Environmental baseline = Low: Current levels or risks of juvenile harvest of steelhead trout are most likely low due to the lack of habitat within Hog Meadow Creek.

b) Effects of actions = Maintain. No changes are expected as a result of proposed action.

G. Bull Trout Subpopulation Characteristics and Habitat Integration

1. Subpopulation Size, Growth & Survival, Life History Diversity and Isolation

a. Env. Baseline = Low. Bull trout have not been observed in the Lower Potlatch River drainage (including Hog Meadow Creek); an adult could possibly use the mainstem during the early spring for rearing, but high water temperatures are not conducive to over summer rearing.

b. Effect of the Actions = Maintain. No change is expected.

Checklist for Documenting Environmental Baseline and Effects of Action(s) on Relevant Indicators

Subbasin: Mainstem Clearwater River

Watershed: Potlatch River

Subwatershed: Hog Meadow Creek

PATHWAYS: INDICATORS	ENVIRONMENTAL BASELINE ²⁹			EFFECTS OF THE ACTION(S)		
	High	Moderate	Low	Restore ³⁰	Maintain ³¹	Degrade ³²
Watershed Conditions:						
Watershed Road Density		2.7 mi/mi ²		2.4 mi/mi ²		
Streamside Road Density			5.9 mi/mi ²	X		
Landslide prone Road Density			6.3 mi/mi ²	X		
Riparian Vegetation Condition	X			X		
Peak/Base Flow			4.0 %		X	
Water Yield (ECA)	8.6 %					X
Sediment Yield	33 %			X		
Channel Condition & Dynamics:						
Width/Depth Ratio		N/D			X	
Stream bank Stability			N/D		X	
Floodplain Connectivity			N/D		X	
Water Quality:						
Temp - Steelhead Spawning			N/D		X	
Temp- Steelhead Rear/Migration			N/D		X	
Temperature - Bull Trout			N/D		S=X I=X R=X	
Suspended Sediment	N/D				X	
Chem. Contamination./Nutrients		N/D			X	
Habitat Access:						
Physical Barriers - Adult	X				X	
Physical Barriers - Juvenile	X				X	

²⁹Indicators of high, moderate, or low habitat condition.

³⁰For the purposes of this checklist, "restore" means to change the function of an indicator for the better, or that the rate of restoration rate is increased.

³¹For the purposes of this checklist, "maintain" means that the function of an indicator will not be degraded and that the natural rate of restoration for this indicator will not be retarded.

³²For the purposes of this checklist, "degrade" means to change the function of an indicator for the worse, or that the natural rate of restoration for this indicator is retarded. In some cases, a low environmental baseline indicator maybe further worsened, and this should be noted.

PATHWAYS: INDICATORS	ENVIRONMENTAL BASELINE ³³			EFFECTS OF THE ACTION(S)		
	High	Moderate	Low	Restore ³⁴	Maintain ³⁵	Degrade ³⁶
Habitat Elements:						
Cobble Embeddedness			N/D	X		
Percent Surface Fines			N/D	X		
Percent Fines by Depth			N/D	X		
Large Woody Debris A=Acting; P=Potential (#/100 meters)			N/D		X	
Pool Frequency (primary pools per mile)			N/D		X	
Pool Quality			N/D		X	
Off-channel Habitat			N/D		X	
Habitat Refugia		X			X	
Take:						
Harassment	B=X S=X				X	
Redd Disturbance	B=X S=X				X	
Juvenile Harvest	B=X S=X				X	
Bull Trout Subpopulation Characteristics & Habitat Integration:						
Subpopulation Size			X		X	
Growth and Survival			X		X	
Life History Diversity, Isolation			X		X	
Persistence & Genetic Integrity			X		X	
Integration of Species and Habitat Conditions			X		X	

³³Indicators of high, moderate, or low habitat condition.

³⁴For the purposes of this checklist, "restore" means to change the function of an indicator for the better, or that the rate of restoration rate is increased.

³⁵For the purposes of this checklist, "maintain" means that the function of an indicator will not be degraded and that the natural rate of restoration for this indicator will not be retarded.

³⁶For the purposes of this checklist, "degrade" means to change the function of an indicator for the worse, or that the natural rate of restoration for this indicator is retarded. In some cases, a low environmental baseline indicator maybe further worsened, and this should be noted.

Biological Evaluation



United States
Department of
Agriculture

Forest
Service

Palouse Ranger District
Potlatch, Idaho

File Code: 2670
Route To: 1950 – Cherry Dinner Project - EIS
Subject: Biological Evaluation
To: District Ranger

Date: February 12, 2008

I. INTRODUCTION

The Palouse Ranger District of the Clearwater National Forest is proposing the Cherry Dinner project, between the towns of Helmer and Bovill. The project analysis includes the mainstem Potlatch River from Bovill, downstream to the extent of National Forest land. Also included are Hog Meadow Cr, Little Boulder Cr, and the lowest seven miles of the East Fork Potlatch River. The Cherry Dinner project area is approximately 25 air miles north of Orofino, Idaho, and is entirely within Latah County (T40N, R1W; and portions of T40N, R1E; T41N, R1W; and T39N, R1W, Boise Meridian).

The project area incorporates approximately 14,670 acres of National Forest lands within the project area. Clearwater National Forest Plan Management Areas include A4/A5, E1, and M2 (depicted in the following table):

Clearwater National Forest Plan Management Areas

Management Area	Area (ac)	Management Goals
A4	1,660	Travel Corridors – Maintain and enhance an aesthetically pleasing natural appearing Forest setting surrounding the roads, trails, and areas of concentrated public use.
A5	20	Administrative Sites – Manage developed recreational sites to meet public demands for facilities for camping and picnicking.
E1	12,750	Timber Production – Manage to provide optimum, sustained production of wood products and viable elk populations while providing adequate protection of soil and water quality. Manage a roaded natural setting for dispersed recreation, and manage for all levels of difficulty of ORV use on trails.
M2	240+	Riparian Areas – Manage under the principles of multiple use as areas of special consideration, distinctive values, and integrated with adjacent management areas to the extent that water and other riparian dependent resources are protected.

II. PLANNED ACTIONS

Planned actions include timber harvest and fuels reduction; timber management access; watershed improvements; motorized recreation access; and old growth forest designation and a Forest Plan amendment. These planned actions, including project design criteria/mitigations and project monitoring requirements, are described below:

Timber Harvest and Prescribed Fire¹

- Implement 835 acres of stand-regeneration harvest {i.e., 91 acres clearcut w/reserves; 289 acres seed tree w/reserves; 296 acres shelterwood w/reserves; 76 acres seed tree/group selection (convert off-site ponderosa pine); and 83 acres group shelterwood }
- Implement 691 acres of intermediate harvest {i.e., 441 acres commercial thinning; 52 acres of preparatory shelterwood; and 198 acres improvement cut}
- Reduce fire-fuel accumulations using prescribed fire to under-burn 306 acres of forested stands.

Timber Harvest Road Access²

- Construct 1.18 miles of new road³
- Reconstruct 12.22 miles of existing roads⁴.
- Construct 5.83 miles of temporary road (decommissioned following use).
- Recondition⁵ 18.2 miles of existing road

Watershed Improvement:

- Decommission 23.6 miles of existing road decommissioning (includes Roads 3306 and 3306A located with the Little Boulder Creek RHCA)
- Place 15.9 miles of existing roads into intermittent storage⁶.
- Stabilize 4.0 miles of stream bank along the East Fork Potlatch River and tributaries

Motorized Recreation Access:

- Construct 0.5 mile ATV connector trail between Roads 4761 and 3308; adopting 2.5 miles of user-created trails; and obliterate/rehabilitate 0.9 mile of user-created trail.
- Convert 1.9 miles of existing road (decommissioned following timber harvest) to an ATV trail.
- Place 0.4 mile of newly constructed road into intermittent storage (open to ATV and motorcycle traffic).

Other Activities:

- Designate 363 acres of forest to be managed for old growth.
- Amend the Clearwater National Forest Plan (Appendix K) for Little Boulder Creek, East Fork Potlatch River, and Ruby Creek, to elevate their water quality objectives; add the Potlatch River.

¹ Project/activity acreages have been traversed in the field. Acreages, however, may be reduced or adjusted during final field layout, with the implementation of riparian buffers and feasible unit boundaries. All timber harvest units would have fuel treatments in which acres would be treated wholly or in part.

² Includes actions related to road construction/reconstruction, intermittent storage or decommissioning

³ Following completion of harvest activities, 0.81 mile of this road would be placed in intermittent storage

⁴ Placing gravel and installing drainage structures on native-surfaced roads to stabilize road surface and reduce surface erosion and sediment production.

⁵ Primarily consisting of grading/re-shaping the road surface, and brushing for clearance.

⁶ This does not include the 0.81 mile of new road to be put into intermittent storage following harvest activities.

Project Design Criteria/Mitigations:

The following project design criteria/mitigations are actions relate to providing for the needs of sensitive wildlife, plants or fish species:

1. PACFISH default buffers are to be used to define timber sale unit boundaries. No timber harvest is to occur within 300 feet of fish-bearing streams, 150 feet of perennial non-fish bearing water, and 100 feet of intermittent streams.
2. Ignition points for prescribed fire are to be located outside of the PACFISH riparian buffers.
3. Areas of Units 18 and 36 with high landslide risk will maintain 50% canopy retention. Currently, Unit 36 does not have much canopy, so stabilization will be best accomplished by re-establishing a young stand of trees through limited site preparation followed by reforestation in steep and moist draws.
4. Design activity to stay below 15% area disturbance of the treatment area. Methods include designation of skid trails or forwarder trail, 50 foot spacing of forwarder trails, reuse of skid trails by machines used for piling, and placement of piles on trails.
5. To provide for soil fertility in regeneration harvest units: (a) coarse wood will be retained at 7-15 tons per acre on drier habitat sites and 15-33 tons per acre on wetter sites, providing a variety of size materials across the unit; and (b) logging slash will over-winter (i.e. decompose through one wet season) before burning or piling.
6. Per the Northern Region Snag Management Protocol (January 2000), the combination of standing live and dead trees in timber harvest units and riparian habitats will meet or exceed 12 trees per acre (>8' dbh), with at least 4 snags per acre (where available) greater than 20" dbh. Snags or trees designated for retention, but felled for safety reasons, will be left in the harvest unit.
7. Units that presently exceed the 15% detrimental soil disturbance (Unit 17) or that are found to exceed that standard after monitoring will have soil restoration activities implemented. Measures to improve soil quality levels (such as decompacting landings and skid trails with a ripper, forest cultivator, grapple rake, or similar equipment; placement of large woody materials; and other measures) will be implemented to maintain or improve soil quality in units.
8. The Fuel, Transport and Containment Plan developed under Section 7 consultation with the USFWS is to be applied throughout project implementation to minimize the risk of an accidental spill of petroleum products, as well as to protect water courses and aquatic biota from adverse effects in the event of a spill.
9. Culvert replacement/removal (including road construction, reconstruction, and maintenance) and road decommissioning will be conducted after July 15 to avoid conflicts with steelhead trout spawning and minimize adverse effects to aquatic organisms.
10. To minimize the spread of noxious weeds, road and harvest equipment are to be cleaned of loose debris prior to moving on to the timber sale area (CT6.26). Also, raw soils exposed through project activities are to be revegetated as soon as practicable, using certified noxious weed free seed mix and fertilizer (as necessary).
11. To reduce disturbance to wildlife along several heavily traveled roads within the project area such as the Vassar Meadows Road (3347), Highway 8, Dinner Bucket Ridge (1444) and the School House Gulch Road (4761) and the Little Boulder Creek Road (3306), vegetative buffers are to be retained between the cutting unit and the road.

Biological Evaluation

12. For the purpose of reducing costs and maintaining structure and habitat for wildlife, unmerchantable material in units that would be broadcast burned should not be felled, unless this material is necessary to accomplish fuel management objectives.

Monitoring:

The following monitoring activities will continue or be initiated with the Cherry Dinner project:

- The Timber Sale Administrator or Contracting Officer Representative will make weekly, if not daily, checks on the progress of the sale to compare implementation with desired project outcomes and objectives.
- PACFISH compliance monitoring will be conducted annually by the Forest Fisheries Biologist, in conjunction with BMP audits, and reported in the annual Clearwater National Forest Monitoring and Evaluation Report.
- Ongoing stream temperature monitoring will continue at the Potlatch River gage site and at the mouth of the East Fork Potlatch River.
- Riffle stability index sites (pebble count and channel transect) will occur on a three-to-four year cycle at the East Fork Potlatch River, the gage site on the Potlatch River, and Little Boulder Creek.
- The District Hydrologist/Soils Scientist will assess the amount of activity area impacted by proposed activities to validate the assumptions made for detrimental soil impacts in this document.

III. ASSESSMENT

Tables 1 thru 3, depict the biological impacts of implementing the Cherry Dinner project on designated sensitive wildlife, plant and fish species.

Biological Evaluation

Table 1 - Biological Evaluation and Summary of Impacts - Sensitive Wildlife Species

Species	Determination	Rationale
<i>Black-backed Woodpecker</i>	<i>MIIH</i> ⁷	<p>The planned actions would decrease existing black-backed nesting and foraging habitat by approximately 800 acres. Black-backed woodpecker habitat improvement would occur from limited larger tree death as the result of slashing and burning approximately 300 acres of forest understory. The net availability of black-backed woodpecker habitat would be approximately 3,900 acres or 27% of the Cherry Dinner project area.</p> <p>Approximately 5525 acres of suitable black-backed woodpecker foraging and nesting habitat, well distributed, within and between OGAUs and planned National Forest timber harvest activities. Estimated suitable black-backed woodpecker habitat would comprise approximately 18% of the Cherry Dinner project area. The planned actions would retain a minimum of 3,900 acres of suitable black-backed woodpecker habitat, well distributed, within OGAU 206.</p> <p>Dead trees remaining in untreated areas and those retained within the treated areas (some killed by subsequent prescribed fire), are expected to provide both nesting and foraging habitat for approximately 6 to 10 years following disturbance. Nesting habitat is also expected to be retained in riparian areas. The rationale for this conclusion is based on the retention of: 1) Snags and down deadwood within these patches; and 2) Maturing conifers in riparian habitats. Firewood gathering from along roads open to highway or OHV access would remove potential nesting and foraging habitat. The planned actions also comply with the Northern Region Snag Management Protocol (January 2000).</p>
<i>Coeur d'Alene Salamander</i>	<i>No Impact</i>	Suitable habitat features are not present in the Cherry Dinner project area for this species.
<i>Fisher</i>	<i>MIIH</i>	The planned actions would decrease fisher habitat by an approximately 50 acres. An estimated 1,200 acres of suitable fisher habitat (approximately 250 acres of summer habitat and 950 acres of winter habitat) would be available within the Cherry Dinner project area. The planned actions would retain approximately 4,150 acres of suitable fisher habitat, well distributed within and between OGAUs. Existing fisher habitats are expected to remain available, well distributed and connected, within the Bitterroot Mountains Uplands habitats (characteristic of OGAUs 206 and 209). The planned actions comply with Forest Service policies and management actions to maintain available, well distributed fisher habitat within the Cherry Dinner project area and the cumulative effects analysis area.
<i>Flammulated Owl</i>	<i>MIIH/BI</i> ⁸	Thinning practices within suitable habitat would locally improve 85 acres of flammulated owl habitat. The planned actions comply with Forest Service policies and management actions to maintain a variety of dying and recently dead standing trees, well distributed on the landscape.

⁷ MIIH = May impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the population or species.

⁸ BI = Long-term beneficial impact.

Biological Evaluation

Species	Determination	Rationale
<i>Fringed Myotis</i>	<i>No Impact</i>	An estimated 1440 acres (approximately 10% of the Cherry Dinner project area) is currently considered suitable fringed myotis habitat. Suitable fringed myotis habitat features are dependant upon National Forest managed lands. A recent comprehensive bat survey (Baker 2004) near Elk River, confirmed the presence of the fringed myotis on the Palouse RD. Of 388 captured bats, there were five fringed myotis (and no reports of Townsend's Big-eared bats). It is probable that fringed myotis occur within the CB project area. Planned retention of pileated woodpecker nesting habitat and implementation of default PacFish buffers is expected to provide for fringed myotis habitat needs within the Cherry Dinner project. No project-specific desired conditions, concerns or opportunities, exclusive to fringed myotis, apply to the CB project area.
<i>Harlequin Duck</i>	<i>No Impact</i>	Suitable habitat features are not present in the Cherry Dinner project area for this species.
<i>Northern Leopard Frog</i>	<i>No Impact</i>	There are no documented sightings within or adjacent to the CNF. There is a low probability that Northern leopard frog inhabit the Cherry Dinner project area.
<i>Pygmy Nuthatch</i>	<i>MIIH</i>	The planned actions could remove large, standing ponderosa trees (believed to be hazardous to tree fallers and choker setters) on 85 acres of treatment area. The planned actions could affect approximately 20% acres of currently suitable pygmy nuthatch foraging and nesting habitat. The planned actions comply with Forest Service policies and management actions to would retain approximately 420 acres (approximately 3% of the Cherry Dinner project area) of currently suitable pygmy nuthatch foraging and nesting habitat.
<i>Ringneck Snake</i>	<i>No Impact</i>	Believed associated with large, down wood and breakland shrub/forests (dry grand fir, Douglas fir and Ponderosa pine habitats). An estimated 10 acres (63% of the Cherry Dinner project area) is considered suitable ringneck habitat. There are no proposed actions in or near this area.
<i>Townsend's Big-Eared Bat</i>	<i>No Impact</i>	Habitat not present on the Clearwater National Forest.
<i>Western (Boreal) Toad</i>	<i>MIIH</i>	The planned actions would implement approximately 320 acres of regeneration harvest understory slashing and burning. 23.6 miles of planned road decommissioning; and 16.7 miles of long-term storage. Approximately 1.6 miles of road in meadow habitats (1444-B and 3815-A) and 3.1 miles along Little Boulder Creek (3306/3306A) would be decommissioned. Approximately 8,940 acres of western toad habitat would remain unaffected by planned actions. Not all roads, or all sections of many roads, would be mechanically treated (i.e., distance or area of mechanical treatment unknown at this time), The planned actions comply with Forest Service policies and management actions to maintain available, well distributed western toad habitat within the Cherry Dinner project area and the cumulative effects analysis area.
<i>Wolverine</i>	<i>No Impact</i>	No suitable habitat in the planned activity areas.

Biological Evaluation

Table 2 - Biological Evaluation and Summary of Impacts - Sensitive Plant Species

Species	Determination	Rationale
<i>Anderegg's Cladonia</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area
<i>Bristle-stalked Sedge</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area
<i>Broad-fruit Mariposa</i>	<i>No Impact</i>	Although there is a fairly large population of this species located in the meadow above the mouth of Hog Meadow Creek, it is not expected to be impacted by planned actions.
<i>Bug-On-A-Stick</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area
<i>Chickweed Monkey-flower</i>	<i>No Impact</i>	This species might occur on steep natural openings above the Potlatch River, although, there are no known locations in the project area that would be impacted by planned actions.
<i>Clustered Lady's Slipper</i>	<i>MIIH</i>	Regeneration harvest treatments could locally reduce populations of this species (where they occur). The planned actions avoid commercial timber harvest near the Potlatch River Trail and the only known population of Clustered Lady's Slipper in the project area. The planned actions is expected to retain suitable habitat conditions in non-treatment areas for Clustered Lady's Slipper populations (where they might currently occur) to persist.
<i>Constance's Bittercress</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area
<i>Crenulate Moonwort</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area
<i>Dasynotus</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area
<i>Deer Fern</i>	<i>No Impact</i>	Although Deer fern populations are known on the Palouse Ranger District, it is not expected to be impacted by planned actions.
<i>Douglas' Clover</i>	<i>No Impact</i>	The largest population of Douglas clover within the project area occurs in a broken meadow with thin soils over a basalt substrate, and is not expected to be impacted by planned actions.
<i>Evergreen Kittenail</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area
<i>Gold-Back Fern</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area
<i>Green Bug-On-A-Stick</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area
<i>Idaho Strawberry</i>	<i>MIIH/BI</i>	Both prescribed fire and timber harvest activities are expected improve habitat conditions for this species by reducing forest shade and exposing mineral soils. The planned actions, though not directly affecting this species; would not create beneficial effects. Alternative 2 (modified) would use a combination of commercial timber harvest (approximately 500 acres of regeneration and 315 acres of intermediate harvest treatments). Approximately 100 acres slashing/prescribed fire ⁹ and 8.0 to 8.6 miles of roadside fuel treatment. Both prescribed fire and timber harvest activities are expected improve habitat conditions for this species by reducing forest shade and exposing mineral soils.
<i>Lance-Leaved Moonwort</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area
<i>Least Moonwort</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area
<i>Licorice Fern</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area

⁹ Pruning tree boles, followed by under burning

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Species	Determination	Rationale
<i>Light Hookeria</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area
<i>Linearleaf Moonwort</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area
<i>Mountain Moonwort</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area
<i>Maidenhair Spleenwort</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area
<i>Mingan Moonwort</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area
<i>Mountain Moonwort</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area
<i>Naked Mnium</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area
<i>Pacific Dogwood</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area
<i>Salmon-Flower Desert-Parsley</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area
<i>Short-Styled Triantha</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area
<i>Sierra Wood-fern</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area
<i>Spacious Monkey-flower</i>	<i>No Impact</i>	This species might occur on steep natural openings above the Potlatch River, although, there are no known locations that would be impacted by planned actions.
<i>Sticky Goldenweed</i>	<i>No Impact</i>	Although known local populations are in headwater meadows, such as along Hog Meadow Creek, this species is not expected to be impacted by planned actions.
<i>Sweet Coltsfoot</i>	<i>No Impact</i>	Species/habitat neither present nor expected in the project activity area

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Table 3 - Biological Evaluation and Summary of Impacts Sensitive Fish Species

Species	Determination	Rationale
<i>Westslope Cutthroat Trout</i>	<i>No Impact</i>	Suitable habitat is available in the Potlatch River drainage however, fish population surveys by the Forest and other entities have not found cutthroat trout in the Potlatch River drainage. There would be no effects to this species since they do not occur in the area.
<i>Spring Chinook Salmon</i>	<i>No Impact</i>	<p>Although some incidental production may occur within the lower portions of several of the larger tributaries within the lower Clearwater River subbasin (ie. Potlatch River, Orofino Creek, Lawyers Creek etc) and/or mainstem Clearwater River, it is highly unlikely any viable populations in these drainage exists due to the low stream flows and high water temperatures during the spawning period. In addition, no recent documentation is available to support any production outside the Lolo Creek drainage.</p> <p>Based on the avoidance of impacts to riparian areas by the vegetative treatment actions, the negligible impacts from the road activities (construction, re-construction, decommissioning and maintenance) and negligible, but beneficial impacts of the stream bank stabilization, the effects of the activities proposed under the Cherry Dinner Project are expected to be insignificant and discountable (see Biological Assessment). In addition, the absence of spring Chinook salmon in the Potlatch River drainage supports the determination that the activities proposed within the riparian zone (road activities and stream bank stabilization) would have no effect on spring Chinook salmon or any potential spring Chinook salmon habitat in the Potlatch River drainage.</p>
<i>Pacific Lamprey</i>	<i>No Impact</i>	Lamprey may occur downstream in Potlatch River although densities would be very low. There would be no impacts to Pacific lamprey as a result of the project since it will not produce measurable sediment to streams or increase stream temperatures. Potential effects are similar to steelhead trout and bull trout (see Biological Assessment).
<i>Inland Redband Trout</i>	<i>No Impact*</i>	Suitable habitat is available in the Potlatch River drainage. Based on information presented in Quigley et al. (1997) and Campbell and Cegelski (2004) the focus of identifying unique populations of interior redband trout should focus upstream of fish migration barriers. With the exception of the anadromous life history form (steelhead trout) which is listed under ESA and possible resident interior redband trout (of steelhead progeny) interior redband trout populations that have been isolated from steelhead trout (allopatric redband trout) have not been documented nor are expected in the Potlatch River drainage. Potential effects are similar to steelhead trout and bull trout (see Biological Assessment).

* Based on the current status of no existing populations of Interior Redband Trout (besides steelhead trout) within Potlatch River drainage.

Campbell, M. and C. Cegelski. 2004. Mitochondrial DNA analysis of redband trout (*Oncorhynchus mykiss gairdneri*) from tributaries to the Salmon and Snake rivers, ID. Completion report for BLM CCS #DAF020080. Lab report 04-1. Idaho Department of Fish and Game, Eagle Fish Genetics Lab. Eagle, ID.

Quigley, T. M. and S. J. Arbelbide, tech. eds. 1997. An assessment of ecosystem components in the interior Columbia basin and portions of the Klamath and Great Basins: Volume 3. Gen. Tech. Rep. PNW-GTR-405. U.S.D.A. Forest Service, Pacific Northwest Research Station, Portland, Oregon.

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/s/ Dennis E. Talbert, February 12, 2008

**Dennis E. Talbert
Wildlife Biologist**

/s/ Patrick K. Murphy, February 12, 2008

**Patrick K. Murphy
Forest Fisheries Biologist**

/s/ Danny L. Davis, February 12, 2008

**Danny L. Davis
Forest Wildlife Biologist**

/s/ Jim Mital, February 12, 2008

**Jim Mital
Forest Ecologist/Soils Scientist**