

Chapter 2: Issues and Alternatives

Changes To Chapter 2

Chapter 2 has been modified from the Final EIS to provide the reader a clearer understanding of the issues, development of alternatives and the description of alternatives. The following is summary of the changes.

- ✍✍ The issues have been reviewed, clarified and updated based on comments, appeals and litigation.
- ✍✍ Two alternatives, considered in detail have been added.
- ✍✍ Alternatives, not considered in detail, have been clarified, and one alternative added.
- ✍✍ The No Action Alternative has been modified to clearly reflect the intent of “no action”. In addition, the remaining alternatives have been updated to clearly show what is included in the alternatives.
- ✍✍ During development of the Supplemental EIS some discrepancies in the alternative descriptions that were published in the Final EIS were found. Most of the discrepancies are minor acreage differences between the broad scale alternative descriptions, and the unit-by-unit acreage descriptions provided in the Supplemental EIS. The discrepancies were the result of geographic information systems technology, and database updates. One major difference is that the acreages between mixed severity burns and underburns have been modified, although the total acreage remains close to what was presented in the Final EIS. This is a result of prescription corrections. There is now more underburning and less mixed severity burns than described in the Final EIS.
- ✍✍ Design criteria/mitigation has been clarified to fully describe the objectives, criteria and effectiveness.
- ✍✍ A unit-by-unit table, by alternative, has been added to clearly show which units are included in the alternatives.

Introduction

This chapter gets to the "heart" of the analysis and contains (A) public participation; (B) scoping and identification of the issues; (C) alternative formulation; (D) alternatives eliminated from detailed study; (E) a discussion of the proposed action and each alternative considered in detail; and (F) a comparison of the alternatives as they relate to the purpose and issues. As defined in 40 CFR 1502.14 and 1502.16, Chapters 2 and 3 of

an EIS are closely related. While most of the comparisons are done in Chapter 2, both chapters display the environmental impacts of each alternative. The environmental impacts of the alternatives are summarized and compared in this chapter. Discussions of the scientific and analytic basis for the comparison are found in Chapter 3.

Public Participation

In 1995, the Lochsa Ranger District began preparation of the North Lochsa Face landscape assessment. Comments related to resource management and desired conditions in North Lochsa Face were solicited from landowners, residents, American Indian tribes, state and federal agencies and other interested parties. Two public workshops were held to discuss ecosystem management concepts and the North Lochsa Face assessment. In addition, a social assessment was completed. In June 1996, the North Lochsa Face was mailed to interested parties.

The public involvement process for the recreation and access management proposal, and the vegetative and aquatic management proposal has been quite extensive. On August 9, 1996 a Notice of Intent to prepare an EIS was published in the Federal Register for the North Lochsa Face EIS. Public involvement consisting of mailings, focus interviews, one-on-one discussions, public meetings, field trips, open house meeting, and a public hearing, was used to invite public participation and collect comments. Over 20 individual meetings, open houses, field trips were held to provide the public an opportunity to understand the project, identify concerns, and develop solutions to the issues. The Draft EIS was issued in June 1997. Because of public concern regarding the prescribed burning in the Fish Creek drainage, the public comment period on the Draft EIS was extended to March 2, 1998. The Forest hosted a public hearing in February 1998 to record comments regarding the prescribed burning. Over 300 people attended, and over 140 comments were recorded and analyzed. The Final EIS was issued in June 1999 with an additional 45-day comment period. The Records of Decision for the Vegetation and Aquatic Management, and Recreation and Access Management decisions were issued in April 2000. Both decisions were appealed. The Regional Forester affirmed the Recreation and Access Management decision, however, the Vegetation and Aquatic decision was reversed. The Regional Forester directed the Forest to complete a Supplemental EIS to clarify the environmental analysis related to the effects of road obliteration.

In December 2000, a letter was sent to interested parties stating that a Supplemental EIS was being prepared in response to the Regional Foresters decision to reverse the Vegetation and Aquatic Management ROD. A 45-day comment period will also be requested for the Supplemental EIS. A more detailed chronological listing of events can be found in Chapter 1 in the "Background" section.

Issues

The Council on Environmental Quality (CEQ) defines scoping as "...an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to the proposed action" (40 CFR 1501.7). Among other things, the scoping process is used to invite public participation, to help identify public issues, and to obtain public comment at various stages of the EIS process. As noted above, scoping started early in the process. Scoping sets the stage for the level of public, agency and tribal involvement, the level and scope of analysis, and the significant issues used to develop alternatives. In addition, scoping is used to identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review. Appendix H provides a detailed discussion of issues that were considered by the Interdisciplinary team and the disposition of those issues.

The Interdisciplinary Team grouped the issues and concerns into the following categories:

1. Issues used to develop alternatives:

Request for no active management	Roadless Areas
Road construction	Prescribed fire vs. timber harvest
Old growth	Wild and Scenic Rivers

2. Issues used to develop design criteria and/or mitigation:

Scenic quality	Wild and Scenic Rivers
Safety	Economic feasibility
Soil stability	Land management

3. Issues used to identify the level and scope of analysis:

Effects to community stability	Effects to aquatic ecosystems
Effects to air quality	Effects to wildlife habitat
Effects to Threatened and Endangered species	Effects of natural processes
Effects to special places	

4. Concerns that are covered by prior environmental review:

- Wild and Scenic River suitability/eligibility
- Wilderness designation
- Level of visual quality objectives in the Forest Plan
- Forest Plan standards and guidelines

5. Concerns where the effects are non-significant or not relevant:

Lewis and Clark campsites	Lochsa Research Natural Area
Thinning in the area covered by HR 1570	Reforestation

6. Concerns that were already considered in the design of the proposed action:

Biodiversity	Monitoring
Clearcutting	Fish Habitat

Relevant Issues

The following issues were identified where there was an unresolved conflict concerning alternative uses of available resources (40 CFR 1501.2(c)).

There is an unresolved conflict about the appropriateness of taking management actions. Some people believe that there should not be any active management to restore these ecosystems. They believe that the natural processes should be allowed to continue. To address this issue the no action alternative considers the effects of no vegetative restoration activities.

Active Management versus Passive Management : The proposed action recommends vegetative management in the form of timber harvest on 8,065 acres, and prescribed burning on 12,530 acres, for a total of 21,885 acres.

Issue Indicator:

~~Acres~~ Acres of vegetative management

Roadless Areas: The Proposed Action would harvest 3,125 acres of timber and would construct 1.1 miles of system road and one temporary road within the North Lochsa Slope Roadless Area. In addition 4,950 acres would be mixed severity burned and 6,030 underburned.

There is an unresolved conflict regarding allowing any activities within the roadless area, and/or allowing timber harvest within the roadless area. Some people stated, "Stay out of all roadless places!" Others stated, "An aggressive program of prescribed burning is far more appropriate in the Fish and Hungery Creek drainages than timber harvesting."

In 1993, the Clearwater Forest signed a Stipulation Agreement that was issued as a result of a settlement agreement between the Forest and the Wilderness Society, et. al. on a lawsuit on the Clearwater Forest Plan. That agreement precludes any proposed timber sale and/or road construction activities in the HR 1570 (a wilderness bill proposed in 1992) portion of the Fish and Hungery Creek drainages. Therefore none of the alternatives propose timber harvest or road construction within this area. The "no action" alternative and Alternative 4/4a address those comments opposed to any activity in the roadless areas. Alternative 5 proposes allowing only prescribed burning in the roadless

areas.

Issue Indicators:

- ✍✍ Acres of timber harvest in roadless areas
- ✍✍ Miles of road construction within the roadless area
- ✍✍ Acres of prescribed burning in the roadless area

Road Construction and Transportation Planning: The Proposed Action would construct 1.1 miles of system road in the Tick Creek drainage (Face) near Van Camp. Ten temporary roads, located mostly in Pete King, Canyon, and Deadman Creek drainages, totaling approximately 3.7 miles, would be constructed for yarder access and obliterated after use.

There is an unresolved conflict regarding road construction and the level of construction. Some people commented, "Key is an adequate access plan to accomplish the patch treatments." Others stated, "One of your alternatives should be based on no new road construction at all." Three action alternatives address this issue. Alternative 3 proposes treatments using "only" the existing road system. Alternatives 3a, 4, and 5 would use the existing road system, and in addition construct nine temporary roads. Alternative 6 would construct eight temporary roads.

Issue Indicators:

- ✍✍ Miles of permanent road construction
- ✍✍ Miles of temporary road construction

Prescribed Fire vs. Commercial Timber: The Proposed Action would accomplish 5,485 acres of mixed-severity burns and 7,045 acres of understory burns over a 5-year period.

There is an unresolved conflict regarding allowing commercial timber to be burned, especially within the portion of the Lochsa Slope Roadless Area that was included in HR 1570. Some people feel "There should be no irretrievable loss of commercial timber due to prescribed or natural fire until the fate of the wilderness proposal is resolved."

Aside from the "no action" alternative, no commercial timber would be burned under Alternative 4, which proposes "no" activities within the North Lochsa Slope Roadless Area, and prescribed burning under Alternative 3a would be limited to four areas along the Lochsa River breaks (930 acres) that are not feasible for timber harvest and contain little to no commercial timber.

Issue Indicators:

- ✍✍ Acres of timber harvest
- ✍✍ Acres of underburn
- ✍✍ Acres of mixed severity burn

Harvest of Old Growth: The proposed action would commercially thin, salvage or regenerate approximately 815 acres of old growth. The concern over harvest of old growth and relation to the Clearwater Forest Plan was brought up on appeal of the Vegetation and Aquatic Record of Decision, and also was included in litigation on the Fish Bate project (*TWS vs. Bosworth*). The District Court of Montana issued a decision on this case July 20, 2000. The Court found the Forest Service reliance on the August 1995 Old Growth Report finding of 10.3 percent total old growth to determine that the Fish Bait project would not violate the Clearwater's Forest Plan 10 percent old growth habitat standard was arbitrary and capricious. Based on this decision, this issue was added to the SEIS and Alternative 6 was developed to respond to the issue.

Alternative 6 proposes no harvest of old growth.

Issue Indicators:

- ☒☒ Acres of regeneration in old growth
- ☒☒ Acres of commercial thin in old growth
- ☒☒ Acres of salvage in old growth

Lochsa Wild and Scenic River Corridor: The proposed action would harvest 235 acres, in three units within the Lochsa Wild and Scenic River Corridor, which is allowed, if certain conditions are met, in the Clearwater Forest Plan. In addition, the proposed action would initiate mixed severity burns on 130 acres (4 units) and underburn 555 acres (11 units).

There is an unresolved conflict regarding whether or not timber should be harvested within the Wild and Scenic River corridor and what the effects of timber harvest and prescribed burning would be. This issue was added to the SEIS to evaluate the trade-offs. Alternative 4 would not harvest within the Lochsa Wild and River Corridor and would only underburn 35 acres. Alternative 4a was added to drop the 35 acres of underburning.

Issue Indicators:

- ☒☒ Acres of regeneration harvest w/in the corridor
- ☒☒ Acres of mixed severity fire
- ☒☒ Acres of underburn
- ☒☒ Number of Helicopter landings

Alternative Formulation

The vegetative treatments were developed considering ecological processes of the various LTAs. Treatment locations and intensities were formulated by comparing existing and desired conditions of "patches" within each LTA. The process focused on what should be retained to meet ecological needs versus what should be removed. Proposed **vegetative treatments** are designed to mimic natural fire events, as follows:

- ✂ Non-lethal fires: propose low intensity underburns or limited timber harvest, such as, precommercial thin, understory removal, individual tree selection, and/or salvage harvests.
- ✂ Mixed severity fires: propose low to high intensity prescribed fire, commercial thinning, salvage harvest, and/or small regeneration harvests.
- ✂ Lethal, stand replacing fires: propose higher intensity (not cataclysmic) prescribed fire and/or regeneration harvests. Depending on the LTA, regeneration harvests would *leave* a quarter to half of the trees on the site.

A variety of factors were evaluated for determining the location of various treatment activities including: the understanding the surrounding landscapes, determination of patch sizes, retention of movement corridors, evaluation of stand densities and species composition, providing for elk forage, and the LTAs. Each of the alternatives was screened to ensure that Forest Plan standards for sediment would be met. If the standards were exceeded then treatment areas were dropped. The intent is to ensure that aquatic protection is afforded in the short-term, while vegetative and aquatic conditions are improved in the long-term.

Public input gained from letters, meetings, field visits, and a public hearing was also used in the formulation of alternatives. The formulation of Alternative 3a was a direct result of public input. Also, a visit with Regional specialists and scientists at the Intermountain Research Station generated support for the methodology, and their suggestions were key in the revision of vegetative proposals.

Alternatives Considered but Eliminated from Detailed Study

Several alternatives were proposed for consideration. The ID team reviewed each alternative to determine if it: (1) met the purpose and need and (2) addressed the significant issues (40 CFR 1501.2(c) and FSH 1909.15 section 12.3(c)). The ID team also considered other factors including: (1) whether or not the alternative was feasible given economics and technology, and (2) whether or not the alternative was consistent with the Forest Plan and laws and regulations.

Timber Harvest in Fish/Hungry Creek Drainages: This alternative would respond to the purpose and need and to a significant issue. It was not considered in detail because it is not consistent with the 1993 Stipulation Agreement and the Clearwater Forest Plan, and Alternative 4 indirectly addresses this alternative by not foreclosing future options of timber harvest. Alternative 4 would not burn merchantable timber within this area.

Timber harvest within the Fish and Hungry Creek drainages is not consistent with the 1993 Stipulation Agreement between the Forest Service and the Wilderness Society et al. In that settlement, the Forest Service agreed not to approve any timber sale or road construction project decisions within the area covered by proposed wilderness legislation (HR 1570) until the Forest Plan is revised.

In addition, Hungry Creek is eligible for wild classification under the Wild and Scenic Rivers Act. The Clearwater Forest Plan p. II-38 states that no timber harvest is planned

in potential wild river reaches. Since most of the Fish Creek drainage and all of the Hungry Creek drainage are contained in this area, and until the Forest Plan revision becomes effective, it is not feasible to pursue a timber harvest proposal. Timber harvest will be considered near Mex Mountain in the southwest quarter of the Fish Creek drainage, which is outside of the proposed wilderness boundary (HR 1570).

Precommercial Thin within the Fish/Hungry/Face Drainages: Approximately 3,500 acres of stands having more than 1,000 trees per acre, less than 7" diameter breast height (DBH), were originally proposed to be thinned back to 400-500 trees per acre, using chainsaws or natural prescribed fire as methods of treatment. Another estimated 710 acres of overstocked stands were proposed to have shade tolerant species (grand fir, cedar, subalpine fir, and mountain hemlock) thinned back to increase the percentage of shade intolerant (Douglas-fir, ponderosa pine, white pine, larch, and lodgepole pine) left in the stand. All of these stands are without reasonable access, and further screening based on economic feasibility of using chainsaws has eliminated them from further consideration. Also, the window of opportunity needed for prescribed fire is too narrow in making this a feasible method of treatment.

This alternative would respond to the purpose and need, but really does not respond to significant issues, and as noted above it is not feasible to implement.

Reforestation of Shrubfields: It was originally proposed to treat shrubfields having poor conifer stocking using a mechanical slash buster followed by tree planting. Approximately 5300 acres within NLF were considered for this treatment. However, monitoring of a recent project done in the Middle Butte Area using this mechanical slash buster revealed that this kind of treatment is not effective and has proven to be quite costly. If more effective, less costly, techniques become available in the future some, or all, of the 5,300 acres of poorly stocked shrub fields may be proposed for this type of treatment. This will require a separate environmental analysis be conducted at that time.

This alternative is consistent with the purpose and need but based on past experience technology and site conditions are not conducive to success. In addition, it does not respond to a significant issue.

Physical/Mechanical and Biological Control of Noxious Weeds without Herbicides: This alternative is not responsive to the purpose and need and does not address significant issues, except possibly passive versus active management. Use of mechanical and biological controls alone would not contain, control or eradicate noxious weed species, therefore it was not considered in detail.

The feasibility of cultural or manual treatments depends in large part on the biology of the weed species and the size of infestation. Mowing as a manual treatment can effectively reduce seed production of many species such as spotted knapweed and leafy spurge, but areas must be accessible to equipment. Some species, such as orange hawkweed do not respond well to cultivation or hand pulling. Disturbance of these plants' underground rhizomes stimulates their spread. In addition no biological control exists for this species, therefore the only alternative is herbicides or no action.

Biological control is a slow process, and its efficacy is highly variable (Coombs, et al, 1997). It is a method that can be integrated with other practices to reduce weed populations. Biological control alone cannot be used to solve all weed problems because biological control agents are not available for some weed species, and they will not eradicate a species.

Restoration-Only Alternative: Some people requested that a restoration-only be considered in detail. Specifically they wanted only aquatic restoration to be considered. However, this alternative would not meet the purpose and need, nor does it respond to a significant issue.

All alternatives are considered restoration alternatives. The proposed action and alternatives were designed to treat all of the aquatic needs, including the vegetative needs. Based on past experiences with the fires on the early 1900s it is prudent to remove some biomass to reduce fire intensities. Fire intensities in the 1910 and 1930 fires caused significant impairment to the streams including triggering debris torrents, removing streamside shade and removing future woody debris. Not addressing the need to reduce biomass and fuel accumulations, and reintroducing fire into the ecosystem would not meet the purpose and need for restoring aquatic ecosystems.

Alternatives Considered in Detail

The IDT has considered eight alternatives, including a "no action" alternative, which provides a *reasonable* range of alternatives [40 CFR 1502.14(a)]. All alternatives are consistent with Forest Plan direction [16 U.S.C. 1604 and 36 CFR 219.10(e)] and are in compliance with the Stipulation Agreement between the Forest Service and the Wilderness Society, et al (signed September 13, 1993). Alternatives 2, 3, 3a, 5 and 6 include a Forest Plan amendment to achieve their prescribed fire objectives.

Size of Openings: Prior to fire suppression efforts, the natural fire events that influenced the North Lochsa Face ecosystem ranged from spot fires less than one acre in size to large stand replacement fires 1000+ acres in size. The ID team considered the effects of past management and concluded that in many cases smaller openings have had detrimental effects, including: 1) fragmentation of large patches of mature or late mature forest; 2) creating openings that did not meet scenic quality objectives, because they did not match form, texture, or scale of natural disturbances; and 3) the small scale treatments did not allow the effective return of fire to the landscape or effectively lessen the risk of wildfire. Proposed treatment units were designed to fit desired patch sizes and to maintain manageable boundaries for burning and logging systems. A range of possible opening sizes is included in each alternative description, with the high range representing a worst-case scenario. As per Forest Plan direction and the Northern Regional Guide, Forest Supervisor approval was obtained on all proposed openings between 40 and 60 acres, and Regional Forester approval was obtained on proposed openings over 60 acres.

The next two subsections describe treatment activities, design criteria, and monitoring common to action Alternatives 2, 3, 3a, 4, 4a, 5 and 6. Maps are provided for each of the alternatives and are based on large-scale maps maintained in the project file. The maps may not be totally accurate in all respects because of reductions in scale and imperfections in reproduction

It should be noted that the size of proposed management treatment areas displayed on the maps and described further in this chapter represent gross acreage and may be reduced or adjusted during field layout, with the implementation of riparian buffers and feasible unit boundaries. In addition, the acreages shown are gross acres. Once riparian buffers are applied on the ground, the net acres would be 30 to 40 percent less overall than what is shown.

Activities Common to all Action Alternatives

For the purpose of improving forest health and restoring certain components of the North Lochsa Face ecosystem, the following treatment activities would be implemented with each action alternative. Appendix B lists in detail the management requirements and design features that would be applied to further reduce the potential impacts for specific resources.

Control of Noxious Weeds: For the purpose of eradicating new invaders (a weed species previously not known to occur within the project area) and reducing the extent and density of established noxious weeds, an Integrated Pest Management approach to weed control is proposed along area roads and trails, which act as seed depositories and transportation corridors for these non-native plant species. The following management techniques would be considered on specific sites and plant species (see Appendix E for detailed locations of weed species and proposed treatments):

☞ **Physical/Mechanical:** Treatment, consisting of hand grubbing, mowing, tilling, or burning, would take place before seed production, with mowing or tilling being repeated during the growing season. Approximately ½ acres of dalmation toadflax, ½ acre of scotch broom would be hand pulled, and 1 acre of scotch thistle would be grubbed.

☞ **Chemical:** Herbicides considered under chemical control scenarios include Clopyralid (TRANSLINE) and Dicamba (VETERAN 10G). Herbicides would treat those species addressed by the Clearwater Basin Weed Coordinating Committee as having an eradication objective and where infestation levels warrant an eradication objective. Within the entire project area, herbicides would treat a maximum of 500 acres (16 sites) that represents 0.035 percent of the 128,000-acre project area. Some of these sites, denoted in the treatment table, would include the distribution of biological control agents or mechanical control measures outside of roadsides and areas, where proximity to water sources (streams and/or high water

tables) make herbicide applications inappropriate. Revegetation efforts would follow, and follow-up treatments would occur based upon monitoring of application effectiveness. It is anticipated that two consecutive years of herbicide application would be needed, as revegetation with desired species reduces the likelihood of reinfestation within these sites.

Biological: Biological control is a slow process, often requiring ten to twenty years to be effective, and is the deliberate introduction and establishment of natural enemies to reduce the target plants competitive or reproductive capacities. Its purpose is not eradication but a reduction in weed density and rates of spread to an acceptable level. Predatory insects are commonly released against noxious weeds, and the biocontrol agent *Larinus minutus* would be released at several sites to control spotted knapweed and Canada thistle.

The method(s) of choice for particular infestations is dependent upon weed species, infestation size, land use patterns and location. All areas of herbicide application would be followed by an aggressive revegetation effort. Selected seed mixes consider filling soil horizon niches that would reduce the risk of subsequent reinvasion. These mixes consider early, shallow rooted species; mid-season species with moderately deep roots; and late-season species with deeply rooted species. Considerations of disturbance regimes, species availability, and species performance (site habitat characteristics, germination requirements, growth rates and competition between species interactions) would also be included in revegetation plans.

Road Obliteration: For the purpose of reducing the risk of sediment entering live streams and encouraging the natural flushing of instream sediments, approximately 66 miles of roads, no longer needed for management, are proposed for obliteration. This would involve the use of heavy equipment (excavators and dozers) to remove culverts, improve drainage, reduce road fills, and scarify compacted surfaces to promote revegetation. Priority of treatment is based on: 1) high risk of landslide or debris torrent; 2) proximity to fish bearing streams; and 3) chronic sediment sources. The results of removing these roads from the system would 1) decrease erosion and instream sediment deposition; 2) promote the natural sediment cleaning processes; and 3) improve the rate of spring flow recovery to more natural conditions.

Road Long-Term Maintenance: Another 54 miles of roads are proposed for long-term maintenance. These roads are not expected to be needed for timber access in the next 20 or more years. This is the practice of retaining existing roads for future use without relying on frequent road maintenance to keep the road open. The roads would be closed to motorized traffic and be placed in a condition to assure they are self-maintaining, with stable drainage. This practice may or may not include removal of culverts and ditches. Encroaching vegetation would not be removed. This practice would: 1) reduce road maintenance costs; 2) provide for future access; and 3) minimize erosion. A table in Appendix D identifies the roads by major drainage to be obliterated or placed in long-term maintenance.

Sediment Trap Removal: There are two sediment traps in Walde Creek and two sediment traps in Pete King Creek that were installed in the mid-1980s for the purpose of

trapping some of the bedload sediment (primarily sand) coursing through the streams. These traps were cleaned annually until 1999. For the purpose of assuring floodplain/stream channel integrity, these sediment traps would be removed, with the sites restored to approximate natural channel cross-section conditions.

Planting Riparian Areas: For the purpose of restoring streamside vegetation to promote the re-establishment and role of large wood in providing shade, channel stability, and fish habitat diversity, 450 acres in a six-mile long strip along Fish Creek is proposed to be inter-planted with cottonwoods. A similar 150-acre strip along 2 miles of Pete King Creek would be planted with conifers and deciduous tree species.

Programmatic Forest Plan Burning Amendment: All action alternatives would include a programmatic Forest Plan amendment to change the maximum burned acres from “wildfire” to “unscheduled” for certain management areas that have a primary resource emphasis other than timber (see Appendix C). This is being done in an effort to balance the suppression costs with resource values lost, while also considering firefighter safety. This amendment would also allow the use of alternative suppression strategies (confine and contain within the Lochsa Research Natural Area).

The objectives of burning within the North Lochsa Face analysis area are to improve forest health, reduce the risk of severe wildfire, and maintain and restore ecological processes, function, structure, and composition, using understory burning and mixed severity fire. The burning proposed in the North Lochsa Face analysis area is intended to achieve these objectives by altering tree density and composition, reducing woody fuel loads and fuel ladders, and maintaining air quality standards.

Monitoring

The following monitoring would continue on the Forest and/or District:

- ☒ Regulations of the Idaho Forest Practices Act.
- ☒ Annually, at least one completed timber sale project is monitored by the District and Forest to determine if: (1) requirements of the EA or EIS and decision document were implemented correctly; and (2) desired/predicted results and effects occurred. These results are retained in the District files and used for future reference. Of particular interest are successful application of planned vegetative management practices (including roading practices) in or near sensitive areas, erosion control, and access management.
- ☒ For timber sales, certified sale administrators would monitor the requirements of the timber sale contract, which reflect the requirements described in the Record of Decision and the FEIS.
- ☒ All eight major watersheds within the project area that flow into the Lochsa River are currently being monitored for summer water temperatures. These streams and a number of tributaries would be monitored for water temperatures. Substrate

- monitoring is currently ongoing and would continue in the Pete King Creek, Canyon Creek, and Deadman Creek drainages. Ongoing fish population monitoring projects would continue in the Pete King Creek, Canyon Creek, Deadman Creek, and Fish Creek (including Hungery Creek) drainages. Stream channel and habitat conditions were surveyed in 1991 and 1997 in the Pete King Creek and Canyon Creek drainages, and in the Deadman Creek drainage in 1999.
- ☞☞ Pacific dogwood plants would be monitored during reconstruction of the access road to Bimerick helicopter landing, and prior to, during, and following the prescribed burning in the Lochsa RNA. Evergreen kittentails in the RNA would also be monitored prior to, during and after the burning in the RNA. The RNA monitoring would be done in conjunction with the Research Station scientists.
 - ☞☞ New plantations, established after harvest, would be monitored for five years following planting to ensure that the land is successfully reforested (funded by KV).
 - ☞☞ The CNF would monitor sediment delivery from road obliteration to better quantify the effects of this activity. A subset of the road obliteration activities, which have the potential to deliver sediment to the streams, would be monitored. The monitoring would be designed to quantify sediment delivery, and to the extent possible allow inference to the application of this activity in other areas. The results shall be submitted to the National Marine Fisheries Service each March following the field season data was collected.
 - ☞☞ The CNF would monitor the effects of the first two years of mixed severity burns. Specifically the CNF would monitor the effects of the burns on Riparian Habitat Conservation Areas to determine if additional mitigation should be applied. A report would be produced that describes where, when, acreage, and method of treatment, methods of evaluating effects, the effects of the prescribed burning, and any additional mitigation that should be applied to future burns. The CNF would report their findings and any added mitigation measures to the National Marine Fisheries Service for concurrence prior to proceeding with the next year's burns..
 - ☞☞ Monitor prescribed burning in Fish "C" reaches (see staggering of units in Design Section). If burning the first year does not result in any changes to stream reaches, then burning does not need to be staggered.
 - ☞☞ See design criteria for heritage resources for the following sites: 10-IH-558, 10-IH-2370, 10-IH-2371, 10-IH-2372, 10-IH-2373, 10-IH-2374, 10-IH-2145, 10-IH-2146, 10-IH-1649
 - ☞☞ In consultation with the Idaho SHPO, and in participation with the Nez Perce National Historic Park, develop a heritage resource management and monitoring plan that will protect culturally modified trees and other historic properties from effect. This plan will develop monitoring and mitigation measures for individual sites and will be submitted to the Idaho SHPO for review and approval by February 1, 2002. On an annual basis, no later than March 1, reports will be prepared and submitted to Idaho SHPO and the Nez Perce National Historic Park that will document accomplishments under the plan, results of monitoring, and

recommendations for amendments. The plan may be updated annually as needed, and the Nez Perce Tribe will be invited to comment and provide input to the development and updating of this plan.

Where pre-burning activities have been performed (e.g. fuels reduction, back burning, or wrapping), and in specified cases in other types of treatment areas such as salvage or thinning units, monitoring of resource conditions may be required during project implementation. A qualified archeologist would monitor resource conditions and in the case of burn units; a fire crew would be pre-positioned in strategic locations to protect the resource.

Table 2-1: Alternative Features

FEATURE	ALT 1	ALT 2	ALT 3	ALT 3a	ALT 4*	ALT 5	ALT 6
Vegetation Restoration							
Timber Harvest (acres)							
- Acres Regeneration	0	2,860	2,455	2,700	2,105	2,105	2,720
- Acres Off-site harvest	0	2,220	2,220	2,220	0	0	2,220
- Acres Commercial Thin	0	2,520	2,270	2,520	2,305	2,305	2,035
- Acres Salvage harvest	0	465	465	465	465	465	315
Total Harvest Acres	0	8,065	7,410	7,905	4,875	4,875	7,290
Prescribed Fire (acres)							
- Acres Mixed Severity Burn	0	5,485	5,485	925	0	5,485	5,655
- Acres Underburn	0	7,045	7,045	6,635	705	7,045	7,180
Total Acres Burning	0	12,530	12,530	7,560	705	12,530	12,835
Precommercial Thin-acres	0	1290	1290	1290	1290	1290	995
Total Acres of Vegetation Restoration		21,885	21,230	16,755	6,870	18,695	21,120
Noxious Weed Treatment-acres	¹	500	500	500	500	500	500
Road Construction							
- Miles Permanent Construction	0	1.1	0	0	0	0	0
- # Temporary Roads	0	10	0	9	9	9	8
- Miles Temporary Road	0	3.7	0	3.5	3.5	3.5	3.2
- Miles Reconstruction	0	13	13	13	1.5	1.5	13
Logging Systems (acres)							
- Tractor	0	2,040	1,825	2,040	2,030	2,030	1,705
- Forwarder	0	1,740	1,740	1,740	0	0	1,740
- Skyline	0	2,390	1,950	2,230	2,160	2,160	1,810
- Helicopter	0	1,895	1,895	1,895	685	685	2,035
Aquatic Restoration							
- Road Decommissioning (Miles)	0	66	66	66	66	66	66
- Road Long-Term Storage (Miles)	0	54	54	54	54	54	54
- Riparian Planting (Acres)	0	600	600	600	600	600	600
- Sediment Trap Removal (# Sites)	0	4	4	4	4	4	4

*Alternative 4a is the same as Alternative 4, except that Alternative 4a drops 35 acres of underburning in the Lochsa Wild and Scenic River Corridor.

¹ Ongoing, low level biological control agent distribution would continue as agents become available as part of an overall Forest program

Alternative 1 (No Action)

Ecosystems change on their own even without human influences. Fire is the primary agent of change within the North Lochsa Face ecosystem. The "no action" alternative means management action taken by the Forest Service would be current activities permitted by the Forest Plan and covered under other NEPA documents. Although this alternative provides a baseline for comparing the environmental consequences of the other alternatives to the existing condition (36 CFR 1502.14), it is potentially an appropriate management option that could be selected by the Responsible Official.

No road obliteration, sediment trap removal or riparian planting would occur under the no action alternative, as displayed in the Final EIS.

Alternative 2 Proposed Action

Intent: The Proposed Action was developed specifically to respond to the Purpose and Need for Action. It focuses on:

- Commercial thinning, salvage and underburns to reduce fuel accumulations, reduce tree densities and reintroduce fire into the ecosystem to improve forest health and reduce the risk of uncharacteristically intense wildfire
- Regenerating stands and implementing mixed severity fire to resemble historic disturbance processes and patch sizes, thereby restoring ecological process, function and composition
- Contributing timber products to the economy.

All Alternatives include actions to control noxious weeds, improve growing conditions and improve aquatic conditions.

Summary: Alternative 2 would implement management activities on approximately 21,885 acres (17 percent of the land in the Decision Area). This includes timber harvest on 8,065 acres, through at least five timber sales that would produce a total of 73 MMBF. Prescribed fire would occur on approximately 12,530 acres. Approximately 1.1 miles of new road and 3.7 miles of temporary road would be constructed. An estimated 13 miles of road would be reconstructed to improve surface drainage and provide for safe use. Table 2-2 summarizes the features for Alternative 2.

Table 2-2: Summary of Specific Features for Alternative 2

Action	Acreage
Prescribed Fire	
Mixed Severity Burn	5,485 acres
Underburn	7,045 acres
Timber Harvest	
Regeneration Harvest	2,860 acres
Off-Site Conversion (Clearcut)	2,220 acres
Intermediate Harvest	
Commercial Thin	2,520 acres
Salvage	465 acres
Precommercial Thin	1,290 acres
Roads	
Permanent Road Construction	1.1 miles
Temporary Road Construction – 10 roads	3.7 miles
Reconstruction	13 miles

Table 2-3: Acres of Vegetation Treatment by Landform

Treatment	Breaklands	Colluvial Midslopes	Frost Churned Uplands	Old Surfaces	Stream Terraces
Mixed Severity Burn	1355	695	2160	1260	15
Underburn	4450	1160	260	1035	140
Regeneration	1100	705	0	1055	0
Off-site Harvest	20	0	200	2000	0
Commercial Thin	480	480	0	1560	0
Salvage	0	135	0	330	0
Precommercial Thin	50	25	0	1215	0
Total	7555	3200	2620	8455	155

Forest Plan Amendment: Alternative 2 includes a programmatic Forest Plan Amendment (Appendix C) to change the maximum burned acres from wildfire to unscheduled for certain management areas having a primary resource emphasis other than timber. This is being done in an effort to balance the suppression costs with resource values lost while also considering firefighter safety. This amendment would also allow the use of alternative suppression strategies (confine and contain within the Lochsa Research Natural Area).

Design Criteria and Features of the Proposed Action

Mixed Severity Burns: Approximately 5,485 acres (24 units) of mixed severity burning is proposed mostly within the Fish/Hungry Creeks and Face drainages. Mixed severity burning is proposed across all LTAs to replicate fire disturbance processes. Although these fires would not consume all of the trees and shrubs, the size of possible openings

created would range from 50 to 500 acres. Approximately 130 acres of mixed severity burns would occur within the Lochsa Wild and Scenic River Corridor, 85 acres would occur within the Lochsa Research Natural Area, and 4,950 acres would occur within the North Lochsa Slope Roadless Area.

The mixed severity burns would be implemented over a five-year period. Only a few burns (3-5) would occur the first year and would be monitored to evaluate the effectiveness of the prescriptions in meeting land management objectives. In addition, multiple entries into the identified areas may be prescribed to slowly reduce fuel loads.

Underburns: Approximately 7,045 acres (96 units) of understory burns within ponderosa pine, grand fir, and Douglas-fir forest types are proposed mostly within the breaklands. These burns would reintroduce fire as an ecological process and would help perpetuate the types of stand composition and structure naturally found on these landscapes.

Underburning is also proposed on the colluvial midslopes, frost churned uplands and old surfaces where large old ponderosa pine or Douglas-fir are present in the stand, indicating a history of frequent, low intensity fire. Upon completion of a fire management plan, prescribed natural fire may take up additional acres, should lightning strikes occur in desirable areas at times when the risks and consequences are at acceptable levels. Approximately 555 acres of underburns would occur within the Lochsa Wild and Scenic River Corridor, 175 acres would occur within the Lochsa Research Natural Area, and 6,030 acres would occur within the North Lochsa Slope Roadless Area.

Regeneration Harvest: Regeneration harvest would occur on 2,860 acres (29 units) in order to change species composition, and achieve the desired age class/size distribution and structure patterns. Regeneration harvest is proposed primarily in the Pete King, Canyon, Fish and the Face drainages, with a lesser amount in Rye Patch, Apgar, Glade and Deadman drainages. Approximately 235 acres of regeneration harvest would occur within the Lochsa Wild and Scenic River Corridor and 450 acres would occur within the North Lochsa Slope Roadless Area.

Regeneration harvest proposed under North Lochsa Face is not a “one-size-fits-all” prescription. Rather the prescription, or retention of trees, changes within a unit or patch depending on site conditions. The prescriptions were developed recognizing the natural fire disturbance regimes. Natural fire processes on steep *breaklands* LTAs 21A, B, and C and 23A, B, and C, would typically retain tree canopies of approximately 50 percent across the slope after low to moderate intensity fire. The typical canopy retention after natural fire was distributed as follows: (1) in riparian areas and concave dissections, fire burned much less intensely due to moist, humid conditions and 70 to 100 percent of the trees were retained; (2) on well-drained, secondary, convex (rounded) ridges, running down the slope, fire burned more intensely due to drier conditions, and 0 to 30 percent of the cover was retained; (3) in areas between the two preceding zones, fire would burn a variable amount of canopy, depending on fuel conditions, wind directions, etc., and an intermediate amount of cover, 30 to 70 percent would typically remain after a wildfire. Overall, approximately 50 percent of the trees would remain across the entire breakland

slope after a historic fire, with actual retention of 0-100 percent within the three preceding areas.

The vegetative management treatments have been designed to follow these fire patterns on the breaklands. Overall regeneration harvest on the breaklands would retain 50 percent of the existing vegetation. 100 percent would be retained adjacent to the riparian areas in the PACFISH buffers; on convex slopes 0 to 30 percent would be retained and on concave slopes 30 to 70 percent would be retained. This results in a patch with variable retention and structure, much like what would occur under a natural fire process.

Similar prescription patterns would be used on the gentler LTAs, but the overall canopy retention would be less. On colluvial midslopes 35 percent would be retained. On old surfaces, which are low-relief, rolling hills, 25 percent would be retained.

(Sample stand diagnoses of proposed harvest treatments can be found in *Appendix B*.) Although the harvest sites would appear natural with many trees remaining, the size of possible openings created would range from 40 to 450 acres.

Off-site Conversion: Clearcut harvesting would be utilized on 2,220 acres (35 units) to remove off-site tree species in the Bimerick Creek drainage and restore these sites to naturally occurring species adapted to the site. Restoration would also prevent the contamination of the local gene pool. These off-site trees primarily occur on the old surfaces, with minor amounts on the frost-churned uplands and breaklands. The existing access and gentle, rolling topography of this area, west of Bimerick Creek, lends itself well for the use of a log forwarder system, which can skid logs over slash filled trails to existing roads, causing minimal soil disturbance compared to tractor yarding. The area east of Bimerick Creek would require a helicopter to land logs to landings on roads 5545 and 483. Should any of this area prove to be infeasible for harvest (i.e. no bids received), those areas would be burned to remove the off-site trees. Local seed sources would be used to replant the sites with genetically adapted species. The size of possible openings created by proposed clearcut harvests range from 10 to about 1,000 acres. All of this proposed harvest is located within the North Lochsa Slope Roadless Area.

Commercial Thinning: Approximately 2,520 acres (59 units) of commercial thinning is proposed and would retain up to 67 percent of the trees on any LTA. Commercial thinning on the breaklands and colluvial midslopes would remove suppressed trees, usually of smaller diameter, providing more water and nutrients for the trees left on the site. Stand densities would be reduced to historical levels. There are two types of thinning on the old surfaces. First, thinning would occur in some younger stands to promote faster tree growth of the remaining trees and reduce stand densities to historical levels. Second, thinning would occur in some older stands so that these stands retain their vigor, live longer, contribute to the diversity of the stand, and provide old forest characteristics across the landscape for a longer period of time. Approximately 190 acres are located with the North Lochsa Slope Roadless Area.

Salvage: Approximately 465 acres (8 units) of salvage harvest is proposed mostly in the Walde Mountain area, with some units in the Canyon Creek drainage. Approximately 10

percent of the stand volume, consisting of dead, dying, and high-risk trees, would be harvested. Conventional systems, using existing system and temporary roads, would yard the salvaged trees.

Precommercial Thinning: Approximately 1,290 acres of overstocked stands, having trees of non-commercial size, would be thinned back to about 400-500 trees per acre, using. These stands are mostly located in the roaded portions of the Pete King Creek and Canyon Creek drainages. Some of these stands will have their shade tolerant species (grand fir, cedar, subalpine fir, and mountain hemlock) thinned back to increase the desired percentage of early seral species (Douglas-fir, ponderosa pine, white pine, larch, and lodgepole pine) left in the stand.

Logging Systems: Approximately 75 percent of the area proposed for harvest has existing road systems and can be logged using conventional systems (skyline and tractor yarding). The remaining 25 percent proposed for harvest will require helicopter yarding. Most helicopter landing areas are proposed out of the river corridor along existing road systems. Two helicopter landing areas are proposed on clearings within the river corridor near the mouths of Deadman and Bimerick Creeks, with a third proposed on a large grassy area 1.5 miles up Pete King Creek. The Bimerick site, a dispersed campsite above the highway, would require some clearing of trees to make it suitable as a helicopter landing.

Permanent Roads: A short (1.1 miles), ridge-top, system road would be constructed for yarder access in the Tick Creek drainage (Face) near Van Camp. This road is located within the North Lochsa Slope Roadless Area.

Temporary Roads: Ten temporary roads, located mostly in the Pete King, Canyon, and Deadman Creek drainages totaling approximately 3.7 miles would be constructed for yarder access and obliterated after use. There is one temporary road, approximately a quarter mile in length, located within the North Lochsa Slope Roadless Area.

Reconstruction: Forest Roads 481, 483, and 5545 need some curve widening and realignment to accommodate log trucks from the Van Camp and Bimerick Meadows areas to about Frenchman Butte (approximately 11.4 miles). Another 1.5 miles of the Pete King road (# 453) would be reconstructed to access a helicopter landing.

Alternative 3

Alternative 3 was the preferred alternative in the Draft EIS

Intent: Alternative 3 responds to the issue of road construction. This alternative includes activities from Alternative 2 that could be accomplished without road construction, permanent or temporary. **No roads, permanent or temporary would be constructed.** Approximately 405 acres of regeneration harvest and 250 acres of commercial thinning are dropped as compared to Alternative 2.

Summary: Alternative 3 would implement management activities on approximately 21,230 acres (17 percent of the land in the Decision Area). This includes timber harvest on 7,410 acres, through five timber sales that would produce a total of 67 MMBF. Prescribed fire would occur on approximately 12,530 acres. An estimated 13 miles of road would be reconstructed to improve surface drainage and provide for safe use. Table 2-4 summarizes the features for Alternative 3.

Table 2-4: Summary of Specific Features for Alternative 3

Action	Acreage
Prescribed Fire	
Mixed Severity Burn	5,485 acres
Underburn	7,045 acres
Timber Harvest	
Regeneration Harvest	2,455 acres
Off-Site Conversion (Clearcut)	2,220 acres
Intermediate Harvest	
Commercial Thin	2,270 acres
Salvage	465 acres
Precommercial Thin	1,290 acres
Roads	
Permanent Road Construction	0 miles
Temporary Road Construction	0 miles
Reconstruction	13 miles

Table 2-5: Acres of Vegetation Treatment by Landform

Treatment	Breaklands	Colluvial Midslopes	Frost Churned Uplands	Old Surfaces	Stream Terraces
Mixed Severity Burn	1355	695	2160	1260	15
Underburn	4450	1160	260	1035	140
Regeneration	920	620	0	915	0
Off-site Harvest	20	0	200	2000	0
Commercial Thin	370	480	0	1420	0
Salvage	0	135	0	330	0
Precommercial Thin	50	25	0	1215	0
Total Treatment	7165	3115	2620	8175	155

Forest Plan Amendment: Same as Alternative 2.

Design Criteria and Features of Alternative 3

Prescribed burning: Alternative 3 would implement the underburns and mixed severity burns as described in Alternative 2.

Regeneration Harvest: Regeneration harvest would occur on 2,455 acres in order to change species composition, and achieve the desired age class/size distribution and structure patterns. Eight units are dropped from what was proposed in Alternative 2. Regeneration harvest is proposed primarily in the Pete King, Canyon, Fish and the Face drainages, with a lesser amount in Rye Patch, Apgar, Glade and Deadman drainages. Approximately 290 acres are located within the North Lochsa Slope Roadless Area and 235 acres within the Lochsa Wild and Scenic River Corridor.

The percent of trees proposed for retention will vary, depending upon the LTA.

☞☞ Breaklands: retain 50 percent or more of the trees

☞☞ Colluvial midslopes: retain 35 percent

☞☞ Old Surfaces: retain 25 percent

☞☞ Wild and Scenic River Corridor: retain 70 percent

Sample stand diagnoses of proposed harvest treatments can be found in Appendix G. Although the harvest sites would appear natural with many trees remaining, the size of possible openings created would range from 40 to 450 acres.

Off-site Conversion: Alternative 3 would implement the same off-site conversion/clearcutting in Bimerick Creek as described in Alternative 2.

Commercial Thinning: Approximately 2,270 acres of commercial thinning is proposed and would retain up to 67 percent of the trees on any LTA. Six units are dropped from Alternative 2. 190 acres are located in the North Lochsa Slope Roadless Area.

Salvage: Same as Alternative 2.

Precommercial Thin: Same as Alternative 2.

Logging Systems: Approximately 75 percent of the area proposed for harvest has existing road systems and can be logged using conventional systems (skyline and tractor yarding). The remaining 25 percent proposed for harvest will require helicopter yarding. Most helicopter landing areas are proposed out of the river corridor along existing road systems. Two helicopter landing areas are proposed on clearings within the river corridor near the mouths of Deadman and Bimerick Creeks, with a third proposed on a large grassy area 1.5 miles up Pete King Creek. The Bimerick site, a dispersed campsite above the highway, would require some clearing of trees to make it suitable as a helicopter landing.

Permanent Road Construction: None

Temporary Road Construction: None

Reconstruction: Same as Alternative 2.

Alternative 3a

Alternative 3a was the preferred alternative in the Final EIS.

Intent: Alternative 3a was designed to meet the purpose and need and respond to the issues of prescribed fire vs. commercial timber and the issue of transportation planning. **Burn units within Fish/Hungry Creeks that would burn trees that have a potential commercial value were eliminated. Harvest units, that only required temporary roads, were retained.** Alternative 3a drops 160 acres of regeneration harvest, 4,560 acres of mixed severity burns, and 410 acres of underburns as compared to Alternative 2.

Summary: Alternative 3a would implement management activities on approximately 16,755 acres (13 percent of the land in the Decision Area). This includes timber harvest on 7,905 acres, through five timber sales averaging which would produce a total of 70 MMBF. Prescribed fire would occur on approximately 7,560 acres. Approximately 3.5 miles of temporary road would be constructed. An estimated 13 miles of road would be reconstructed to improve surface drainage and provide for safe use. Table 2-6 summarizes the features for Alternative 3a.

Table 2-6: Summary of Specific Features for Alternative 3a

Action	Acreage
Prescribed Fire	
Mixed Severity Burn	925 acres
Underburn	6,635 acres
Timber Harvest	
Regeneration Harvest	2,700 acres
Off-Site Conversion (Clearcut)	2,220 acres
Intermediate Harvest	
Commercial Thin	2,520 acres
Salvage	465 acres
Precommercial Thin	1,290 acres
Roads	
Permanent Road Construction	0 miles
Temporary Road Construction (9 temporary roads)	3.5 miles
Reconstruction	13 miles

Table 2-7: Acres of Vegetation Treatment by Landform

Treatment	Breaklands	Colluvial Midslopes	Frost Churned Uplands	Old Surfaces	Stream Terraces
Mixed Severity Burn	920	5	0	0	0
Underburn	4880	965	350	330	110
Regeneration	990	705	0	1005	0
Off-site Harvest	20	0	200	2000	0
Commercial Thin	480	480	0	1560	0
Salvage	0	135	0	330	0
Precommercial Thin	50	25	0	1215	0
Total Treatment	7340	2315	550	6440	110

Forest Plan Amendment: Same as Alternative 2.

Design Criteria and Features of the Alternative 3a

Mixed Severity Burns: Approximately 925 acres of mixed severity burning is proposed in four units, along the Lochsa River breaks. Although these fires would not consume all of the trees and shrubs, the size of possible openings created would range from 100 to 420 acres. Approximately 130 acres of mixed severity burns would occur within the Lochsa Wild and Scenic River Corridor, 85 acres would occur within the Lochsa Research Natural Area, and all occur within the North Lochsa Slope Roadless Area.

Underburns: Approximately 6,635 acres of understory burns within ponderosa pine, grand fir, and Douglas-fir forest types are proposed mostly within the breaklands. These burns would reintroduce fire as an ecological process and will help perpetuate the types of stand composition and structure naturally found on these landscapes.

Underburning is proposed on the colluvial midslopes, frost churned uplands and old surfaces where large old ponderosa pine or Douglas-fir are present in the stand, indicating a history of frequent, low intensity fire. Upon completion of a fire management plan, prescribed natural fire may take up additional acres, should lightning strikes occur in desirable areas at times when the risks and consequences are at acceptable levels.

Approximately 680 acres of underburns would occur within the Lochsa Wild and Scenic River Corridor, 175 acres would occur within the Lochsa Research Natural Area, and 5,755 acres would occur within the North Lochsa Slope Roadless Area.

Regeneration Harvest: Regeneration harvest would occur on 2,700 acres in order to change species composition, and achieve the desired age class/size distribution and structure patterns. Regeneration harvest is proposed primarily in the Pete King, Canyon, Fish and the Face drainages, with a lesser amount in Rye Patch, Apgar, Glade and Deadman drainages. Approximately 290 acres are located within the North Lochsa Slope Roadless Area and 235 acres within the Lochsa Wild and Scenic River Corridor.

The percent of trees proposed for retention will vary, depending upon the LTA.

- ✂✂ Breaklands: retain 50 percent or more of the trees
- ✂✂ Colluvial midslopes: retain 35 percent
- ✂✂ Old surfaces: retain 25 percent
- ✂✂ Wild and Scenic River Corridor: retain 70 percent or more of the trees

Sample stand diagnoses of proposed harvest treatments can be found in Appendix G. Although the harvest sites would appear natural with many trees remaining, the size of possible openings created would range from 40 to 450 acres.

Off-site Conversion: Same as Alternative 2.

Commercial Thinning: Same as Alternative 2.

Salvage: Same as Alternative 2

Precommercial Thin: Same as Alternative 2.

Logging Systems: Approximately 75 percent of the area proposed for harvest has existing road systems and can be logged using conventional systems (skyline and tractor yarding). The remaining 25 percent proposed for harvest will require helicopter yarding. Most helicopter landing areas are proposed out of the river corridor along existing road systems. Two helicopter landing areas are proposed on clearings within the river corridor near the mouths of Deadman and Bimerick Creeks, with a third proposed on a large grassy area 1.5 miles up Pete King Creek. The Bimerick site, a dispersed campsite above the highway, would require some clearing of trees to make it suitable as a helicopter landing.

Permanent Roads: None.

Temporary Roads: Nine temporary roads, approximately 3.5 miles total, located mostly in the Pete King, Canyon, and Deadman Creek drainages would be constructed for yarder access and obliterated after use.

Reconstruction: Same as Alternative 2.

Alternatives 4 and 4a

Intent: Alternative 4 was developed to address activities in the North Lochsa Face Roadless area, while meeting the purpose and need for action. The IDT designed this alternative to respond to public comments of “stay out of all roadless places”; and “there should be no irretrievable loss of commercial timber due to prescribed or natural fire until the fate of the wilderness proposal is resolved.” **No activities would occur in the North Lochsa Face Roadless Area and no permanent road construction is proposed. In**

addition, no burning would occur in the Lochsa Research Natural Area and all but one underburn unit is dropped in the Lochsa Wild and Scenic River Corridor.

This alternative drops the off-site conversion (clearcutting) in Bimerick Creek and the mixed severity burning. It also drops 6,340 acres of underburns, 755 acres of regeneration harvest and 215 acres of commercial thinning due to the activities within the roadless area.

Alternative 4a, drops 35 acres of underburning in the Lochsa Wild and Scenic River Corridor, otherwise it is the same as Alternative 4.

Summary: Alternative 4 would implement management activities on approximately 7,220 acres (6 percent of the land in the Decision Area). This includes timber harvest on 4,875 acres, through five timber sales which would produce a total of 48 MMBF. Prescribed fire would occur on approximately 705 acres. Approximately 3.5 miles of temporary road would be constructed. An estimated 1.5 miles of road would be reconstructed to improve surface drainage and provide for safe use. Table 2-8 summarizes the features for Alternative 4.

Table 2-8: Summary of Specific Features for Alternative 4

Action	Acreage
Prescribed Fire	
Mixed Severity Burn	0 acres
Underburn	705 acres*
Timber Harvest	
Regeneration Harvest	2,105 acres
Off-Site Conversion (Clearcut)	0 acres
Intermediate Harvest	
Commercial Thin	2,305 acres
Salvage	465 acres
Precommercial Thin	1,290 acres
Roads	
Permanent Road Construction	0 miles
Temporary Road Construction (9 temporary roads)	3.5 miles
Reconstruction	1.5 miles

*Under Alternative 4a, 670 acres would be underburned

Table 2-9: Acres of Vegetation Treatment by Landform

Treatment	Breaklands	Colluvial Midslopes	Frost Churned Uplands	Old Surfaces	Stream Terraces
Mixed Severity Burn	0	0	0	0	0
Underburn	520	15	0	170	0
Regeneration	400	695	0	1010	0
Off-site Harvest	0	0	0	0	0
Commercial Thin	305	475	0	1525	0
Salvage	0	135	0	330	0
Precommercial Thin	50	25	0	1215	0
Total Treatment	1275	1345	0	4250	0

Forest Plan Amendment: No Forest Plan amendment is included with this alternative

Design Criteria and Features of Alternative 4 and 4a

Mixed Severity Burns: No mixed severity burns are prescribed

Underburns: Approximately 705 acres of understory burns within ponderosa pine, grand fir, and Douglas-fir forest types are proposed mostly within the breaklands. No burns are prescribed in the Lochsa Research Natural Area. Only one 35-acre underburn is proposed within the Wild and Scenic River Corridor. Under Alternative 4a, the 35-acre underburn in the Lochsa Wild and Scenic River Corridor would be dropped. All other actions remain the same

Regeneration Harvest: Regeneration harvest would occur on 2,105 acres in order to change species composition, and achieve the desired age class/size distribution and structure patterns. Regeneration harvest is proposed primarily in the Pete King, Canyon, Fish and the Face drainages, with a lesser amount in Rye Patch, Apgar, Glade and Deadman drainages. No regeneration units are located within the North Lochsa Slope Roadless Area or the Lochsa Wild and Scenic River Corridor.

The percent of trees proposed for retention will vary, depending upon the LTA.

- Breaklands: retain 50 percent or more of the trees
- Colluvial midslopes: retain 35 percent
- Old surfaces: retain 25 percent

Although the harvest sites would appear natural with many trees remaining, the size of possible openings created would range from 40 to 450 acres.

Off-site Conversion: No off-site conversion would occur.

Commercial Thinning: Approximately 2,305 acres of commercial thinning is proposed and would retain up to 67 percent of the trees on any LTA.

Salvage: Same as Alternative 2.

Precommercial Thin: Same as Alternative 2.

Logging Systems: Approximately 85 percent of the area proposed for harvest has existing road systems and can be logged using conventional systems (skyline and tractor yarding). The remaining 15 percent proposed for harvest will require helicopter yarding. All helicopter landings are proposed out of the river corridor along existing road systems, with one landing proposed on a large grassy area 1.5 miles up Pete King Creek.

Permanent Roads: None

Temporary Roads: Nine temporary roads, approximately 3.5 miles total, located mostly in the Pete King, Canyon, and Deadman Creek drainages would be constructed for yarder access and obliterated after use.

Reconstruction: Approximately 1.5 miles of the Pete King road (# 453) would be reconstructed to access a helicopter landing.

Alternative 5

Intent: This alternative is in response to the issue of activities within the North Lochsa Roadless Area. It responds to some comments stating that only prescribed burning should be allowed. **Only prescribed burning would be allowed in the North Lochsa Roadless Area and no permanent OR temporary roads would be constructed.** This alternative drops 2,220 acres of off-site conversion harvest, 945 acres of regeneration harvest, and 215 acres of commercial thinning.

Summary: Alternative 5 would implement management activities on approximately 18,695 acres (15 percent of the land in the Decision Area). This includes timber harvest on 4,875 acres, through five timber sales which would produce a total of 49 MMBF. Prescribed fire would occur on approximately 12,530 acres. Approximately 3.5 miles of temporary road would be constructed. An estimated 1.5 miles of road would be reconstructed to improve surface drainage and provide for safe use. Table 2-10 summarizes the features for Alternative 5.

Table 2-10: Summary of Specific Features for Alternative 5

Action	Acreage
Prescribed Fire	
Mixed Severity Burn	5,485 acres
Underburn	7,045 acres
Timber Harvest	
Regeneration Harvest	2,105 acres
Off-Site Conversion (Clearcut)	0 acres
Intermediate Harvest	
Commercial Thin	2,305 acres
Salvage	465 acres
Precommercial Thin	1,290 acres
Roads	
Permanent Road Construction	0 miles
Temporary Road Construction	3.5 miles
Reconstruction	1.5 miles

Table 2-11: Acres of Vegetation Treatment by Landform

Treatment	Breaklands	Colluvial Midslopes	Frost Churned Uplands	Old Surfaces	Stream Terraces
Mixed Severity Burn	1355	695	2160	1260	15
Underburn	4450	1160	260	1035	140
Regeneration	400	695	0	1010	0
Off-site Harvest	0	0	0	0	0
Commercial Thin	305	475	0	1525	0
Salvage	0	135	0	330	0
Precommercial Thin	50	25	0	1215	0
Total Treatment	6560	3185	2420	6375	155

Forest Plan Amendment: Same as Alternative 2.

Design Criteria and Features of Alternative 5

Mixed Severity Burns: Same as Alternative 2.

Underburns: Same as Alternative 2

Regeneration Harvest: Regeneration harvest would occur on 2,105 acres in order to change species composition, and achieve the desired age class/size distribution and structure patterns. Regeneration harvest is proposed primarily in the Pete King, Canyon, Fish and the Face drainages, with a lesser amount in Rye Patch, Apgar, Glade and Deadman drainages. No regeneration harvest units are located within the North Lochsa

Slope Roadless Area and no regeneration harvest is proposed within the Lochsa Wild and Scenic River Corridor.

The percent of trees proposed for retention will vary, depending upon the LTA.

☞ Breaklands: retain 50 percent or more of the trees

☞ Colluvial midslopes: retain 35 percent

☞ Old surfaces: retain 25 percent

Sample stand diagnoses of proposed harvest treatments can be found in Appendix G. Although the harvest sites would appear natural with many trees remaining, the size of possible openings created would range from 40 to 450 acres.

Off-site Conversion: No off-site conversion.

Commercial Thinning: Approximately 2,305 acres of commercial thinning is proposed and would retain up to 67 percent of the trees on any LTA.

Salvage: Same as Alternative 2.

Precommercial Thin: Same as Alternative 2.

Logging Systems: Approximately 86 percent of the area proposed for harvest has existing road systems and can be logged using conventional systems (skyline and tractor yarding). The remaining 14 percent proposed for harvest will require helicopter yarding. There are some long corners and isolated areas within the Pete King, Canyon and lower Face drainages that would require helicopter logging. All helicopter landings are proposed out of the river corridor, along existing roads systems. One landing is proposed on a large grassy area 1.5 miles up Pete King Creek.

Permanent Roads : None

Temporary Roads: Nine temporary roads, approximately 3.5 miles total, located mostly in the Pete King, Canyon, and Deadman Creek drainages would be constructed for yarder access and obliterated after use.

Reconstruction: Approximately 1.5 miles of the Pete King road (# 453) would be reconstructed to access a helicopter landing.

Alternative 6 – Preferred Alternative

Intent: Alternative 6 responds to the issues of harvest in old growth and precommercial thin in lynx habitat. Approximately 170 acres of mixed severity burning and 135 acres of underburning are added under alternative 6. Unit 12, a mixed severity burn is expanded to follow a logical topographical break. Unit 169, an underburn, was added from

Alternative 3a. Approximately 325 acres of regeneration harvest, 485 acres of commercial thin, and 150 acres of salvage are dropped. Most of the units dropped were in old growth. In addition, one precommercial thin unit, located in lynx habitat is dropped.

Summary: Alternative 6 would implement management activities on approximately 21,120 acres (17 percent of the land in the Decision Area). This includes timber harvest on 7,290 acres, through five timber sales which would produce a total of 66 MMBF. Prescribed fire would occur on approximately 12,835 acres. Approximately 3.2 miles of temporary road would be constructed. An estimated 13 miles of road would be reconstructed to improve surface drainage and provide for safe use. Table 2-12 summarizes the features for Alternative 6.

Table 2-12: Summary of Specific Features for Alternative 6

Action	Acreege
Prescribed Fire	
Mixed Severity Burn	5,655 acres
Underburn	7,180 acres
Timber Harvest	
Regeneration Harvest	2,720 acres
Off-Site Conversion (Clearcut)	2,220 acres
Intermediate Harvest	
Commercial Thin	2,035 acres
Salvage	315 acres
Precommercial Thin	995 acres
Roads	
Permanent Road Construction	0 miles
Temporary Road Construction (8 temporary roads)	3.2 miles
Reconstruction	13 miles

Table 2-13: Acres of Vegetation Treatment by Landform

Treatment	Breaklands	Colluvial Midslopes	Frost Churned Uplands	Old Surfaces	Stream Terraces
Mixed Severity Burn	1490	710	2155	1260	40
Underburn	4585	1160	260	1035	140
Regeneration	1070	680	0	970	0
Off-site Harvest	20	0	200	2000	0
Commercial Thin	445	435	0	1155	0
Salvage	0	95	0	220	0
Precommercial Thin	50	25	0	920	0
Total Treatment	7680	3105	2615	7560	180

Forest Plan Amendment: Alternative 6 includes a programmatic Forest Plan Amendment, Appendix C to change the maximum burned acres from wildfire to unscheduled for certain management areas having a primary resource emphasis other

than timber. This is being done in an effort to balance the suppression costs with resource values lost while also considering firefighter safety. This amendment would also allow the use of alternative suppression strategies (confine and contain within the Lochsa Research Natural Area).

Design Criteria and Features of Alternative 6

Mixed Severity Burns: Approximately 5,655 acres of mixed severity burning is proposed mostly within the Fish/Hungry Creeks and Face drainages. Unit 12 is expanded from 80 acres to 252 acres to follow a logical topographical break for controlled burning. Mixed severity burning is proposed across all LTAs to replicate fire disturbance processes. Although these fires would not consume all of the trees and shrubs, the size of possible openings created would range from 50 to 500 acres. Approximately 130 acres of mixed severity burns would occur within the Lochsa Wild and Scenic River Corridor, 85 acres would occur within the Lochsa Research Natural Area, and 5,125 acres would occur within the North Lochsa Slope Roadless Area.

The mixed severity burns would be implemented over a five-year period. Only a few burns (3-5) would occur the first year and would be monitored to evaluate the effectiveness of the prescriptions in meeting land management objectives. In addition, multiple entries into the identified areas may be prescribed to slowly reduce fuel loads.

Underburns: Approximately 7,180 acres of understory burns within ponderosa pine, grand fir, and Douglas-fir forest types are proposed mostly within the breaklands. Unit 169 was added to this alternative from Alternative 3a. Other than this change, the rest of the treatment is similar to Alternative 2.

Approximately 690 acres of underburns would occur within the Lochsa Wild and Scenic River Corridor, 175 acres would occur within the Lochsa Research Natural Area, and 6,170 acres would occur within the North Lochsa Slope Roadless Area.

Regeneration Harvest: Regeneration harvest would occur on 2,720 acres in order to change species composition, and achieve the desired age class/size distribution and structure patterns. Six units were dropped from Alternative 2. Regeneration harvest is proposed primarily in the Pete King, Canyon, Fish and the Face drainages, with a lesser amount in Rye Patch, Apgar, Glade and Deadman drainages. Approximately 435 acres are located within the North Lochsa Slope Roadless Area and 235 acres within the Lochsa Wild and Scenic River Corridor.

The percent of trees proposed for retention will vary, depending upon the LTA.

- Breaklands: retain 50 percent or more of the trees
- Colluvial midslopes: retain 35 percent
- Old surfaces: retain 25 percent
- Wild and Scenic River Corridor: retain 70 percent

(Sample stand diagnoses of proposed harvest treatments can be found in *Appendix B*.) Although the harvest sites would appear natural with many trees remaining, the size of possible openings created would range from 40 to 450 acres.

Off-site Conversion: Same as Alternative 2

Commercial Thinning: Approximately 2,035 acres of commercial thinning is proposed and would retain up to 67 percent of the trees on any LTA. Commercial thinning on the breaklands and colluvial midslopes would remove suppressed trees, usually of smaller diameter, releasing water and nutrients for the trees left on the site. Stand densities would be reduced to historical conditions. There are two types of thinning on the old surfaces. First, thinning would occur in some younger stands to promote faster tree growth of the remaining trees and reduce stand densities to historical conditions. Second, thinning would occur in some older stands so that these stands retain their vigor, live longer, contribute to the diversity of the stand, and provide old forest characteristics across the landscape for a longer period of time. Approximately 190 acres are located with the North Lochsa Slope Roadless Area.

Salvage: Approximately 315 acres of salvage harvest is proposed mostly in the Walde Mountain area, with some units in the Canyon Creek drainage. Two units were dropped and three units reduced in size. Approximately 10 percent of the stand volume, consisting of dead, dying, and high-risk trees, would be harvested. Conventional systems, using existing system and temporary roads, would yard the salvaged trees.

Precommercial Thin: One unit that is located in lynx habitat is dropped. Approximately 995 acres of stands having more than 1,000 trees per acre, less than 7" diameter breast height, would be thinned back to 400-500 trees per acre, using chainsaws or other mechanical methods to carry out the treatment. These stands are mostly within the Pete King Creek and Canyon Creek drainages. The purpose is to reduce stocking levels to reduce the incidence of disease and favor seral species that are more resilient to disturbance.

Logging Systems: Approximately 75 percent of the area proposed for harvest has existing road systems and can be logged using conventional systems (skyline and tractor yarding). The remaining 25 percent proposed for harvest will require helicopter yarding. Most helicopter landing areas are proposed out of the river corridor along existing road systems. Two helicopter landing areas are proposed on clearings within the river corridor near the mouths of Deadman and Bimerick Creeks, with a third proposed on a large grassy area 1.5 miles up Pete King Creek. The Bimerick site, a dispersed campsite above the highway, would require some clearing of trees to make it suitable as a helicopter landing.

Permanent Roads : None

Temporary Roads: Eight temporary roads, approximately 3.2 miles total, located mostly in the Pete King, Canyon, and Deadman Creek drainages would be constructed for yarder access and obliterated after use.

Reconstruction: Same as Alternative 2.

Comparison of Alternatives to the Purpose and Need

There is a need to improve forest health, reduce the risk of severe wildfire, and maintain and restore ecological process, function, structure and composition.

Table 2-14: Vegetation Restoration By Alternative

Feature	Alt 1	Alt 2	Alt 3	Alt 3a	Alt 4/4a	Alt 5	At 6
Timber Harvest (acres)							
- Acres Regeneration	0	2,860	2,455	2,700	2,105	2,105	2,720
- Acres Off-site harvest	0	2,220	2,220	2,220	0	0	2,220
- Acres Commercial Thin	0	2,520	2,270	2,520	2,305	2,305	2,035
- Acres Salvage harvest	0	465	465	465	465	465	315
Total Harvest Acres	0	8,065	7,410	7,905	4,875	4,875	7,290
Prescribed Fire (acres)							
- Acres Mixed Severity Burn	0	5,485	5,485	925	0	5,485	5,655
- Acres Underburn	0	7,045	7,045	6,635	705	7,045	7,180
Total Acres Burning	0	12,530	12,530	7,560	705	12,530	12,835
Precommercial Thin-acres	0	1290	1290	1290	1290	1290	995
Total Acres Vegetation Restoration		21,885	21,230	16,755	6,870	18,695	21,120
Tree density reduced (percentage of overstocked patches where biomass is reduced)	0	14	13	13	9	13	14

Alternative 1, No Action, would continue the successional path of increasing stand densities, increasing late seral species and increasing the likelihood of large stand replacing wildfires over time. Forest health is expected to decline as trees compete for water and nutrients. Large wildfires have been part of the landscape as seen in the early 1900s. However, the North Lochsa Face area is still recovering from those fires, especially stream temperatures. Many of the stream banks were denuded of vegetation from those fires. Some of the areas burned several times, resulting in sterile soils that only time will be able to recover. It is likely that large fires would occur again.

Alternatives 2, 3, 3a and 6 would improve forest health, improve species composition, reduce potential fire intensity, and improve age class diversity, especially in the long term, on a similar amount of area. These alternatives would also remove the off-site ponderosa pine in Bimerick Creek and reforest the site with species adapted to the site. Removal of the pine would be done under managed conditions. No harvest would occur in the riparian areas; therefore existing shade would be retained so stream temperatures do not increase. Retaining reserve trees across the landscape would provide structure and diversity.

These alternatives improve forest resiliency by reducing stand densities, and shifting species composition towards early seral species that have adapted to fire. They improve ecological processes and function by improving patch sizes, while retaining substantial amount of structure and diversity on the site.

Alternative 2, 3, 3a and 6 would reintroduce fire into the ecosystem thereby improving ecological conditions on the landscape. The areas proposed for mixed severity burns and underburns were chosen based on the likelihood of meeting resource objectives, including retaining riparian vegetation, improving elk forage habitat, improving vegetation composition, structure and function, and being able to control the fire. As noted by Jerry William, Washington Office Director of Fire, “The objective isn’t to put fire back into the woods, the objective is to put the right kind of fire back into the woods within an acceptable level of risk”.

Alternative 5 would result in similar ecological conditions as alternatives 2, 3, 3a and 6, except it does not remove the off-site ponderosa pine. Ecological conditions in Bimerick Creek would continue to decline. If natural successional processes continue this area would convert to late seral species that are more susceptible to insect and disease. Continued mortality in the off site ponderosa pine would increase the likelihood of a large wildfire due to continuous fuels, over a large area. A stand replacing wildfire would move the area back to an early seral stage, which is desirable. However, due to the fires early in the century the watershed is still recovering. Having an additional large wildfire would retard watershed recovery. Stream temperatures are above desired due to removal of streamside vegetation from early fires. Wildfires burn where they want, when they want and may not result in the desired conditions.

Alternative 4 would have similar effects as Alternative 5 in Bimerick Creek. In addition, Alternative 4 would not implement any mixed severity burns in Fish Creek or along the face of the Lochsa River. Only four underburns would be accomplished under alternative 4. Alternative 4 would result in an ecosystem less resilient to disturbance processes. Fish Creek burned early in the century and is still recovery. Allowing natural fire to burn when it wants and where it wants may result in a large stand replacing wildfire, especially as time continues and the stands increase biomass and species composition changes to species less adapted to fire. A large wildfire may result in delaying watershed recovery and affecting aquatic conditions, as well as other resources.

There is a need to reduce the number of trees per acre in overstocked stands, and where desired, reduce the density of tolerant species in favor of the seral species.

Over a 5-year period, alternatives 2 through 5 would accomplish 1,290 acres of precommercial thinning in young, overstocked stands, while favoring seral leave trees. Alternative 6 would accomplish 995 acres. No stands would be thinned under the No Action alternative. Precommercial thinning would result in a shift to early seral, fire adapted species, which are more resilient to insect and disease. Reducing stand densities would reduce competition for light and water, improving forest health conditions.

There is a need to eradicate new weed invaders; reduce the extent and density of established noxious weeds; implement the most economical, effective weed control methods for the target weed; and implement an integrated management system using all appropriate available methods.

Under Alternative 1, ongoing, low level, biological control agent distribution would continue as agents become available as part of an overall Forest program. Weeds would continue to increase and spread over time.

The action alternatives would treat noxious and undesirable weeds along roads and trails, through an Integrated Weed Management Approach. Since more tools, especially the use of herbicides would be used, the action alternatives have a higher probability of eradicating new weed invaders and reducing the extent and density of established weeds. Weeds could increase in some places by the actions in the alternatives, primarily road construction and prescribed burning. All the action alternatives include preventive (such as prewashing machinery) as well as other treatments to reduce the amount of weed spread caused by the alternatives. Overall, with the integrated weed strategy weed spread and establishment would be less under the action alternatives, even with the potential increase in weeds caused by the actions, than the No Action alternative. This is primarily due to the fact that only using biocontrol agents and mechanical methods are not effective in eradicating new invaders, nor effective in reducing the extent and density of established weeds.

There is a need to improve aquatic conditions.

During the next 5 years and as funding becomes available, all of the action alternatives would implement 66 miles of road obliteration and place 54 miles of roads under long-term road maintenance. In addition, 4 sediment traps would be removed. All action alternatives would plant 450 acres along Fish Creek and 150 acres along Pete King Creek. Removal of roads would remove chronic sediment sources thereby reducing direct sediment into the streams. This would hasten recovery of the aquatic conditions. Placing 54 miles in long-term storage would also remove existing sediment sources and ensure that roads potentially needed in the future do not create a source of sediment in the short-term.

Reforestation along Fish and Pete King Creeks would speed up the natural succession processes along these streams. Stream temperatures are above desired levels because shade was removed through the effects of fires in the early century. Both streams are listed as water quality limited streams under the Clean Water Act due to high stream temperatures. Reforestation would provide shade, and decrease stream temperatures sooner than taking no action.

Aquatic conditions cannot be improved through direct removal of sediment sources and riparian planting alone. If vegetative conditions are not improved, then the likelihood of large stand replacing fires increases over time. Additional fires in the future would retard recovery of the aquatic ecosystem, which is still recovering from the fires early in the century (see discussion under item 1).

The project is designed to ensure that there are limited effects, in duration and magnitude, in the short term and neutral or BE effects in the long term to the aquatic ecosystem.

This would be accomplished by:

- ✂✂ Ensuring there are “no measurable increases” in sediment from vegetative and road construction activities in those watersheds that do not meet Forest Plan standards;
- ✂✂ Incorporating design criteria (Chapter 2) and monitoring, such as required for the mixed severity burns, to ensure that the actions meet resource objectives.
- ✂✂ Locating road construction in areas of very low risk of landslides
- ✂✂ Not harvesting in riparian areas thereby retaining streamside shade and woody debris
- ✂✂ Increasing vegetative resiliency to decrease the likelihood of stand replacing fires that could further retard improvement in the watersheds
- ✂✂ Taking a conservative approach in the use of WATBAL.

Further accelerating watershed recovery by taking care of the whole ecosystem, including the vegetative conditions, and removing chronic sediment sources, planting riparian areas currently unvegetated, and removing sediment traps.

There is a need to contribute timber products to the economy.

Alternative 1 would not implement any timber sales, therefore would not supply timber to logging-dependent communities.

Alternative 2 proposes five timber sales totaling an estimated 73 MMBF.

Alternative 3 proposes five timber sales totaling an estimated 67 MMBF.

Alternative 3a proposes five timber sales totaling an estimated 70 MMBF.

Alternatives 4/4a and 5 propose five timber sales totaling an estimated 48 and 49 MMBF respectively

Alternative 6 proposes five timber sales totaling an estimated 66 MMBF.

Comparison of Alternatives to the Issues

Table 2-15: Comparison of Alternatives by Issues*

Issue	Alt 1	Alt 2	Alt 3	Alt 3a	Alt 4**	Alt 5	At 6
Roadless Area Activities							
Regeneration Harvest	0	450	290	290	0	0	435
Commercial Thin	0	190	190	190	0	0	190
Off-site harvest	0	2,220	2,220	2,220	0	0	2,220
Total Roadless Harvest Acres	0	2,860	2,700	2,700	0	0	2,845
Mixed Severity Burn	0	4,950	4,950	925	0	4,950	5,125
Underburn	0	6,030	6,030	5,755	0	6,030	6,170
Total Roadless Burn Acres		10,980	10,980	6,680	0	10,980	11,295
Permanent Road (Miles)	0	1.1	0	0	0	0	0
Temporary Road (Miles)		.25	0	0	0	0	0
Commercial Harvest vs. Prescribed Fire							
Timber harvest	0	8,065	7,410	7,905	4,875	4,875	7,320
Mixed severity burn	0	5,485	5,485	925	0	5,485	5,655
Underburn	0	7,045	7,045	6,635	705	7,045	7,180
Road construction							
System Road (Miles)	0	1.1	0	0	0	0	0
Temporary Road (Miles)	0	3.7	0	3.5	3.5	3.5	3.2
Old Growth							
Regeneration	0	215	87	166	166	166	0
Commercial Thin	0	464	421	464	464	464	0
Salvage	0	137	137	137	137	137	0
Harvest or Burning Within Lochsa W&S River Corridor							
Regeneration	0	235	235	235	0	0	235
Mixed Severity Fire	0	555	555	680	0	550	690
Underburn	0	130	130	130	35*	130	130
Helicopter landings (each)	0	2	2	2	0	2	2

*In acres (unless otherwise indicated). Acres have been rounded to the nearest 5.

**Under Alternative 4a, no burning would be done in the Lochsa Wild and Scenic River Corridor

Comparison of Alternatives to the Resources

Table 2-16: Comparison of Alternatives by Resource Affected

Resource	Alt 1	Alt 2	Alt 3	Alt 3a	Alt 4/4a	Alt 5	Alt 6
Elk Habitat Forest Plan Standards Met		Yes	Yes	Yes	Yes	Yes	Yes
Effects on Threatened, Endangered & Sensitive Terrestrial Species							
Bald Eagle	NE	NE	NE	NE	NE	NE	NE
Grizzly Bear	NE	NE	NE	NE	NE	NE	NE
Lynx	NLAA	NLAA	NLAA	NLAA	NLAA	NLAA	NLAA
Gray Wolf	NE	NJ	NJ	NJ	NJ	NJ	NJ
Black-backed Woodpecker	NE	BE	BE	BE	BE	NE	BE
Flammulated Owl	NE	BE	BE	BE	BE	NE	BE
Coeur d'Alene Salamander	NE	NE	NE	NE	NE	NE	NE
Northern Leopard Frog	NE	NE	NE	NE	NE	NE	NE
Townsend's Big-eared Bat	NE	NE	NE	NE	NE	NE	NE
Western Toad	NE	MIIH	MIIH	MIIH	MIIH	MIIH	MIIH
Wolverine	NE	MIIH	MIIH	MIIH	MIIH	NE	MIIH
Fisher	NE	MIIH	MIIH	MIIH	MIIH	MIIH	MIIH
Harlequin Duck	NE	MIIH	MIIH	MIIH	MIIH	NE	MIIH
Effects on Threatened, Endangered & Sensitive Fish							
- Snake River Fall Chinook Salmon	NE	NLAA	NLAA	NLAA	NLAA	NLAA	NLAA
- Steelhead Trout	NE	NLAA	NLAA	NLAA	NLAA	NLAA	NLAA
- Bull Trout	NE	NLAA	NLAA	NLAA	NLAA	NLAA	NLAA
Effects on Sensitive Plants							
Bristle-stalked sedge	NE	NE	NE	NE	NE	NE	NE
Chickweed monkeyflower	NE	NE	NE	NE	NE	NE	NE
Constance's bittercress	NE	NE	NE	NE	NE	NE	NE
Green bug-on-a-stick	NE	NE	NE	NE	NE	NE	NE
Icelandmoss	NE	NE	NE	NE	NE	NE	NE
Naked mniium	NE	NE	NE	NE	NE	NE	NE
Short-styled triantha	NE	NE	NE	NE	NE	NE	NE
Sierra woodfern	NE	NE	NE	NE	NE	NE	NE
Deer fem	NE	MIIH	MIIH	MIIH	MIIH	MIIH	MIIH
Light hookeria	NE	MIIH	MIIH	MIIH	MIIH	MIIH	MIIH
Broad-fruit mariposa	NE	MIIH/BI	MIIH/BI	MIIH/BI	MIIH/BI	MIIH/BI	MIIH/BI
Clustered lady's slipper	NE	MIIH/BI	MIIH/BI	MIIH/BI	MIIH/BI	MIIH/BI	MIIH/BI
Dasynotus	NE	MIIH/BI	MIIH/BI	MIIH/BI	MIIH/BI	MIIH/BI	MIIH/BI
Evergreen kittentail	NE	MIIH/BI	MIIH/BI	MIIH/BI	MIIH/BI	MIIH/BI	MIIH/BI
Idaho strawberry	NE	MIIH/BI	MIIH/BI	MIIH/BI	MIIH/BI	MIIH/BI	MIIH/BI
Pacific dogwood	NE	MIIH/BI	MIIH/BI	MIIH/BI	MIIH/BI	MIIH/BI	MIIH/BI
Spacious monkeyflower	NE	MIIH/BI	MIIH/BI	MIIH/BI	MIIH/BI	MIIH/BI	MIIH/BI

NLAA = Not Likely to Adversely Affect

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

BI=Beneficial Impact

NE=No Effect

NJ=No Jeopardy