

## Appendix B

### Management Requirements and Design Features

The measures identified in the following table serve to further reduce impacts of the specific resources identified. Most are considered design features and are included in all action alternatives.

Objective	Task	Effectiveness
<b>Provide public review of mixed severity burns</b>	Units 18, 16, 17, and 19 would be burned in stages to allow for public field review and monitoring prior to full implementation. The units would be burned in the order presented. Monitoring would include evaluation of burn results with respect to maintaining riparian buffers and improving elk habitat. This sequencing of units can take place simultaneously with other mixed severity burns.	<i>High.</i> The public was concerned whether mixed severity burns could be implemented while meeting resource objectives such as retaining riparian areas and improving elk habitat. Burning and monitoring these units in stages would help ensure resource objectives are met, and if not identify what if any changes in design are needed.
<b>Watershed Design Measures</b>		
Minimize overland sediment from reaching streams	Utilize PACFISH buffers. No timber harvest will occur within 300 feet of fish-bearing streams, 150 feet of non-fish bearing perennial streams, or 100 feet of non-fish bearing intermittent streams	<i>High.</i> Research has found the width of buffers to be more than adequate to provide a filter from sediment reaching the stream. Pertinent research was summarized in the Interior Columbia River Basin Scientific Assessment (Quigley et.al. 1997). This assessment concluded based on several studies in Idaho and elsewhere that 300-foot buffer widths are generally effective for controlling sediment that is not channelized. This statement was primarily based on conclusions in Belt et.al. (1992) report which noted that sediment rarely travels more than about 300-feet for non-channelized flows. CNF Forest Monitoring has confirmed these findings (USDA Forest Service, 1997, 1998, 1999a, 2000a, 200b)
Minimize sediment movement from helicopter landings	Two helicopter landings are located within the riparian habitat conservation areas (RHCA) of fish bearing streams. Locate a helicopter log/service landing at an existing bench. The landing would be located over 280 feet from Pete King Creek and approximately 200 feet from Nut Creek. The associated service landing is located approximately 130 feet from Nut Creek and 200 feet from Pete	<i>High.</i> Field review of these sites by the CNF level 1 team (including NMFS) showed low gradient, stable terrain sufficiently distant from streams that fuel spills and erosion can be readily avoided/contained through the use of this mitigation measure, along

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	<p>King Creek. Protect these buffers with a sediment filter cloth to filter mobilized sediment prior to reaching the streams. No riparian trees and/or shrubs will be removed from this site. Restrict use to dry periods and complete restoration (revegetation with grass) after use.</p> <p>Locate the second helicopter landing along the Lochsa River at an existing flat upstream of Deadman Creek, approximately 150 away from the river. Utilize a sediment filter cloth to retain sediment from moving into the Lochsa River. Do not remove riparian vegetation. Stabilize the site after use with gravel and use as a river rafting portal.</p>	<p>with fuel storage measures. The NFMS determined that activities at these two sites would have a negligible likelihood of affecting listed fish or their habitat. (Biological Opinion, p 11).</p>
<p>Minimize risk and damage from fuel storage and/or spills</p>	<p>Utilize the Fuel Transport, Storage, and Spill Containment Plan, Biological Assessment, Appendix J to minimize risk and damage from fuel spills</p> <p>In addition, service landings for helicopter fueling and maintenance would require an approved spill plan. Absorbent materials, spill kits, and diking around fuel storage areas would be required at the landing site to contain spilled fuel. The Forest Service would inspect all landings for compliance prior to helicopter activities proceeding</p>	<p><i>High.</i> This Plan was used on the Van Camp Timber Sale and Goat Roost road construction projects (NMFS 1994). The plan was used for the Goat Roost road construction project. No problems regarding fuel spill, fuel transport or storage were reported or observed on the Goat Roost Project. NMFS determined that mitigation measures included in this updated Plan (for the North Lochsa Face Project) would avoid/contain any fuel spills at the two helicopter sites. NMFSS concluded that the proposed activities at these sites would have negligible likelihood of affecting listed species or their habitat. (NMFS 1999).</p>
<p>Minimize effects from prescribed fire on riparian areas</p>	<p>Locate ignition points for prescribed fire outside of RHCAs. Complete prescribed fire with multiple entries to gradually reduce fuel loading at the sites. Timing of burns will be based on fuel moisture to achieve the objectives and to avoid impacts to the riparian areas. Size of burn strips will be varied to control the intensity of the fire. As an additional measure, prescribed fire, especially with mixed severity burns will be conducted on several selective burn areas in order to evaluate impacts prior to full project implementation. Modifications of subsequent burns will be conducted if damage to riparian area functions are apparent. Prior to implementing the trial prescribed fires for the mixed severity burns, the CNF will provide the NMFS with a specific description of (where, when, acreage, methods of evaluating effects on RHCAs, etc). Prior to initiating subsequent prescribed fire for this action, CNF will submit for NMFS</p>	<p><i>High.</i> Burning units when fuel moistures are higher reduces the intensity of fire. In addition, burn strips also can reduce intensity (USDA, Forest Service 1999c). Monitoring of similar projects within the North Fork Clearwater subbasin (Clearwater National Forest) have showed this to be effective in minimizing the effects on riparian areas (USDA Forest Service 199b, 199c). Although there may be some small, localized burning in the riparian areas, it would not effect a large enough area to show any measurable changes to stream habitat or conditions. In addition, staging of prescribed fire and subsequent</p>

Objective	Task	Effectiveness
	concurrance the results of the evaluations, and any additional mitigation CNF proposes based on these results and other information.	monitoring and adaptive management will ensure RHCAs and their functions are maintained (NMFS 1999).
Avoid/minimize effects to fish from sediment trap removal	Complete sediment trap removal between July 15 and August 15 to avoid spawning/incubation/early rearing for steelhead trout during June and early July and to avoid any potential bull trout spawning in late August through September. Utilize erosion control measures, such as, application of silt fences, seeding and bank stabilization to minimize soil movement into the stream channel. Existing sand deposition areas will be leveled and replanted and/or material excavated and removed from riparian areas. Existing control structures within the stream channel will be modified to allow sediment movement through the site and avoid sediment deposition.	<i>High.</i> “Instream sediment trap removal would occur during a one-month mid-summer work window to minimize turbidity and siltation below these sites and avoid effects on spawning steelhead or incubating eggs” (NMFS, 1999). Bull trout have not been observed in the Pete King drainage; however, project implementation would also avoid effects to spawning bull trout or incubating bull trout eggs.
Minimize sedimentation caused by road obliteration	<p>Schedule road obliteration over a 3-4 year period, and within in any one year, stream crossings and other sections of road potentially affecting fish-bearing streams would be removed only during the mid-summer work window, and only a few at a time to minimize sediment delivery to any one stream.</p> <p>Additional mitigation to reduce sediment to negligible levels includes:</p> <ol style="list-style-type: none"> <li>(1) Place removable sediment traps below work areas to trap fines during road obliteration work;</li> <li>(2) When working instream, remove all fill around pipes prior to bypass and pipe removal (where this is not possible, use non-eroding diversions; use non-eroding diversion in any channels where the culvert has been removed or failed;</li> <li>(3) Revegetate scarified and disturbed soils with grasses for short-term erosion protection and with shrubs and trees for long-term soil stability;</li> <li>(4) Utilize erosion control mats on stream channel slopes and slides;</li> <li>(5) Mulch with native materials, where available, or use weed-free straw to ensure coverage of exposed soils;</li> <li>(6) Dissipate energy in the newly constructed stream channels using log or rock weirs;</li> <li>(7) Armor channel banks an dissipate energy with large rock whenever possible; and</li> <li>(8) Coordinate obliteration around spawning times and locations;</li> <li>(9) Drag the duff layer down off the top of cut in order to bring nutrients, native seed and microorganisms to the disturbed slopes.</li> </ol>	<p><i>High.</i> From past monitoring on the West Fork of Squaw Creek and from road obliteration monitoring on the Nez Perce Forest, only minor amounts of suspended sediment are expected to headwater streams. (USDA, Forest Service 1999a)</p> <p>In addition, the stage implementation will minimize sediment delivery to any one stream.</p>

Objective	Task	Effectiveness
Minimize slope stability risk	(1) Retain an average of at least 50% canopy cover on steep (60%) slopes; (2) Design units acknowledging historical fire patterns on these landforms (historically fire burned more intensely on convex secondary ridges and less intensely in dissections and riparian areas). <b>SO HOW WOULD UNITS BE DESIGNED.?</b> (3) Avoid areas with wet site plant indicators (lady fern, sedges, etc.) and thin soils and/or mixed ash caps; and (4) Limit diameter of openings on steep slopes to less than twice the average canopy.	<b>Will do this after the landslide stuff is done – may want to reference appendix</b>
Ensure temporary road obliteration.	Applies to Alternatives 2, 3a, 4, 5 and 6. Include special provisions C(T)6.6.03 and C(T)6.4 in applicable timber sale contracts.	<i>High.</i> Contract requirement
Minimize sediment caused by permanent road construction	Only applies to Alternative 2. Permanent road locations would be reviewed on the ground by soil, water and engineering specialists to ensure appropriate mitigation and design criteria are implemented. See BMP section in Appendix	<i>High.</i> Review by appropriate specialists ensure that needed contract clauses are in place.
Ensure no measurable increase in sediment	Stagger implementation of harvest and prescribed burning units to ensure no measurable increase in sediment. See table at the end for requirements by watershed	<i>High.</i> Staggering implementation allows recovery to occur between activities
<b>Wildlife Design Measures</b>		
Provide standing and down, dead and alive wood for variety of wildlife species.	The following criteria assumes planned timber management practices would retain: ?? A minimum of 25 percent of the current tree canopy in the most heavily harvested (regeneration areas); ?? Large live trees and snags would be retained in PACFISH buffers ?? Snags created by prescribed burning would not be harvested The following are based on the Northern Region Snag Management Protocol (SMP, 2000) which was developed to provide adequate cavity habitat based on habitat needs of wildlife that require cavity habitat. ?? Where available retain a minimum of two to four (SMP, p 6) Types 1, 2, or 3 snags (refer to Reserve Tree Marking Guide, pp 10-11) per acre over 21" diameter and greater than 50' tall, including at least 1 ½ snags per acre greater than 28" (Bull, et al, 1997, pp 21-29). Where snags are not large enough to meet the above diameter criteria, retain two to four snags per acre of the largest snags (if available).	<i>High.</i> These guidelines favor retention of broken top live trees for snags. These trees do not present the safety risk to loggers and are likely to prevail much longer than well-decayed snags. Broken top trees, therefore have a higher probability of being retained within treatment units. (See Wildlife Report, pp 15-20 for more information)

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	<p>?? In addition to the above (and where available) retain a minimum of 6-8 (SMP, p 6), Type 1 and 2 snags per acre over 9" to 21+" in diameter.</p>	
<p>Provide standing and down, dead and alive wood for variety of wildlife species. (Continued)</p>	<p>Retain a minimum of 5 to 10 live trees (i.e. "post burn") (&gt;50' tall and 9-21" DBH) per acre in all harvest units (Bull, et.al., 1997 pp 21-29) Favor retention of:</p> <p>?? Live and dead trees with broken boles, greater than 8" at the break (Types 2 and 4 snags) ?? Larger, greater than 21" dbh, hollow trees; ?? Trees which contain witches brooms</p> <p>Favor retention of ponderosa pine, western larch, Douglas-fir on ridges and drier sites. In moist habitats, favor retention of western red cedar, larch and grand fir. Assure a variety of dead trees, well distributed, of varying diameter, height, density and decay. Apply snag density determinations, which can include RCHAs, at the stand level. Live trees in riparian areas included in the interior of the harvest unit can be used to supplement the count of a minimum of snags and live trees remaining within the harvest units.</p> <p>?? Favor retention of: 1) Live and dead trees with broken boles, greater than 8" at the break (Types 2 and 4 snags); 2) Large greater than 21" dbh), hollow trees; and 3) Trees that contain witches brooms.</p> <p>?? Favor retention of ponderosa pine, western larch, and Douglas-fir on ridges and drier sites. In moist habitats, favor retention of western red cedar, larch, and grand fir. Assure a variety of dead trees, well distributed, of varying diameter, height, density and decay. Apply snag determinations, which can included RHCAs, at the stand level. Live trees in riparian areas included in the interior of the harvest unit can be used to supplement the count of a minimum of snags and live trees remaining within the harvest unit.</p> <p>?? Favor retention of snags in patches (clumps), mixed with live trees. Avoid marking snags near log landings and firelines. Recognize terrain, unit boundaries, and logging system limitation that can constrain or remove opportunities for retaining snags and replacement snags. Do not retain snags which are obvious threats to tree faller safety.</p> <p>?? "High stump" snags to be felled; fall trees away from snag patches to reduce risk of damage during logging and prescribed fire.</p> <p>?? Develop planned fire prescriptions which retain at least 2 to 4 per acre (&gt;15" dbh and &gt;50' tall) and 5 more live trees per acre.</p>	

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	<p>?? Blind leads, benches and/or in the interior of the unit are likely sites for retaining patches.</p> <p>?? Do not plan to retain snags within 100 feet below and 200 feet above, an open road.</p> <p>?? Retain all damages reserve trees. Where there is a need to replace a live tree, replace “in-kind”.</p>	
Promote optimum levels of browse production and utilization.	Develop and employ dry-season prescribed fire on productive (forested) winter range sites. Each site would be reviewed (at a minimum) in the field by a wildlife biologist, ecologist/silviculturist and fire manager to assure dry-site burning is feasible to meet elk winter range and other resource management objectives.	<i>Low to High.</i> Where dry-season fire is applied the effectiveness would be high because it emulates historic vegetation disturbances, and produces the largest quantities of high quality browse. However, dry-season fire may not be applied to all prescribed burns in the winter range because certain areas may have a high risk of stand replacement fire, or concerns over smoke or degraded visual quality. Spring burning may have to be applied in these areas with the result of less than optimum levels of browse production.
Provide free movement of big game	Where thinning is done to promote tree growth, keep existing big-game trails clear of slash.	<i>High.</i> Implementation of this criterion would be via routine project planning and contract specifications. Existing big-game trails are readily observed on the ground and thinning slash easily directed away. Removal of slash from big-game trails would ensure free movement of big game.
Protect goshawk nests	Buffer confirmed goshawk nests, located during project planning, by retaining approximately 20-25 acres of the forest stand in which the nest occurs. If an active nest is found during active timber harvest or prescribed burning activities, suspend all activities within a 500 to 600 foot radius (approximately 20 to 25 acres) of the nest during courtship, nesting and brood rearing (March 15 to August 1).	<i>High.</i> Buffering or avoiding disturbance to species which are sensitive to human disturbance during nesting and brood rearing, assures the best opportunity for the species to reproduce successfully. CNF field crews are encouraged (and the public) to report active goshawk nests (See SEIS Wildlife Report pp 15-20 for more information).
<b>Vegetative Design Measures</b>		
Coordinate activities for Pacific dogwood within the Lochsa RNA	Develop a prescribed fire plan for the Lochsa RNA through the Regional RNA coordinator. Develop the prescribed fire plan(s) and monitoring by (as a minimum) qualified Pacific dogwood botanist, forest ecologist, fire scientist, and fire manager.	<i>High.</i> Skilled botanists (through university sources, Research Station or contracting) ecologists, fire scientists and fire practioners are available to collaborate on developing, implementing and monitoring fire prescriptions to

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		promote Pacific dogwood.
Protect Green Bug-on-a-Stick	If green bug-on-a-stick occurs outside a default PACFISH buffer, then buffer the area from disturbance (not to exceed 2 acres). This species may be located on the extreme northeast margin of Unit 48.	<i>High.</i> Skilled botanists (through University sources or contracting) are available to survey Unit 48 to verify presence/absence. Avoidance/buffering would be high. If no species is found, then buffering is not required.
Protect threatened and endangered plants	Include standard timber sale contract clause CT6.251 in the contract which allows any proposed, endangered, or threatened plant species observed during sale activity be given protective measures.	<i>High.</i> Avoids impacts to plants found.
<b>Safety Design Measures</b>		
Ensure safe herbicide applications	A pesticide applicator, licensed by the State of Idaho, will administer herbicide application. All label restrictions will be adhered to (i.e. recommended applications, precautions, and safety equipment).	<i>High.</i> A licensed applicator requires training to apply herbicides. <b>DOES THE STATE MONITOR AT ALL?</b>
Provide highway safety	Coordinate activities for timber harvest and prescribed burning activities adjacent to Highway 12 with the Idaho Department of Transportation. Coordination may include posting of warning signs and use of flagmen during operations.	<i>High.</i> Coordination with the State will ensure safe highway operations.
Meet Idaho Air Quality Standards	Follow the Northern Smoke Management Memorandum of Agreement that regulates the smoke produced by prescribed burning and requires all operations to adhere to strict smoke management guidelines during the fall burning period. In addition to regulatory restrictions, the Lochsa District restricts burning activities when local air dispersion conditions warrant.	<i>High.</i> Compliance and coordination with the MOA minimizes the extent and duration of smoke.
<b>Scenic Quality Design Measures</b>		
Protect the scenic quality in the Wild and Scenic River Corridor	Retain a minimum of 70% of the existing tree canopy within approximately ¼ mile viewshed boundary of the Lochsa Wild and Scenic River Corridor (foreground views from U.S. Highway 12 and the Lochsa River). (Wild and Scenic River corridor is delineated in maps in the River Plan.) Marking in Units 32, 33 and 43 would be inspected and approved by the Landscape Architect and Wild and Scenic River Administrator before harvesting commences.	<i>High.</i> Harvest would result in a landscape that appears natural. Harvest is designed to repeat the form, line, color, texture, and patterns of the existing landscape. Monitoring has shown that similar harvest has been highly effective at meeting desired conditions. (January 8, 2001 Memo to File "Wild and Scenic River Corridor Timber Harvest", Clearwater National Forest Monitoring Report 1998)
Protect the scenic quality	Lessen the effects from harvest and fire containment measures in foreground areas by flush	<i>High.</i> Use of these criteria minimizes the effect of

Objective	Task	Effectiveness
along U.S. Highway 12, the Lolo Motorway and other designated travel corridors.	<p>cutting or back cutting stumps (usually within 300 feet of the corridor). Retain screening vegetation along trails and adjacent to use areas.</p> <p>Retain reserve tree islands in mid to large size clumps so that a grouping of green trees can be retained even if trees at the edge of the reserve clumps are burned in site preparation activities.</p> <p>Return helicopter landings within the U.S. Highway 12 corridor to a natural appearing condition following use including disposal of all waste products such as landing slash, re-contouring where needed, and planting of native vegetation if critical to the aesthetics of the site.</p>	management activities on the scenic resources. Flush cutting trees in the foreground minimizes stumps that are seen. Providing screening also reduces the foreground effects. Retaining islands reduces sharp contrasts in form and line, softening visual effects.
<b>Recreation Design Measures</b>		
Protect the scenic quality in the Wild and Scenic River Corridor	Restrict helicopter logging within the Lochsa Wild and Scenic River corridor to Monday through Friday, (no flying on weekends) from May 1 through Labor Day. There are no restrictions outside of this corridor.	<i>Moderate.</i> Avoids conflict on highest use days during the summer.
Reduce conflicts with log haul traffic and recreational traffic	Restrict log hauling on Roads 483, 481, and 5545 (Frenchman Butte to Bimerick Meadows and Van Camp) outside of high use periods (i.e. hunting season Monday through Friday. For safety reasons, close these roads to the public during hauling operations. During the fall hunting season (Oct 1 – Nov 3), log hauling will not be allowed on these roads.	<i>High.</i> Avoids simultaneous use of truck traffic and recreational traffic on roads.
<b>Noxious Weeds Design Features</b>		
Minimize the spread of noxious weeds	Clean off-road equipment of loose debris (CT6.26) prior to moving on to Sale Area.	<i>Moderate.</i> Requiring cleaning of equipment reduces the chance that weed seeds that have been picked up by the equipment are transported from site to site
Minimize the spread of noxious weeds	Revegetate raw soils (seeding) that are exposed through project activities as soon as practicable. Use weed free seed.	<i>Moderate.</i> Revegating raw soils reduce the likelihood that weeds can get established.
Minimize the spread of Noxious Weeds	Certified weed-free forage and straw, is now required for use on all National Forest lands on the Clearwater National Forest (36 CFR 261.5)	<i>High.</i> If enforced this is a very effective tool at eliminating new invaders
Minimize new weed invaders	To prevent the establishment and spread of noxious weeds, revegetate all ground disturbances resulting from management activities with an appropriate, certified noxious weed free seed mix and fertilized as necessary.	<i>Moderate.</i> Care needs to be taken not to seed too much. In areas where ground disturbance is minimal, allowing native plants to re-seed also helps to maintain plant

Objective	Task		Effectiveness
			diversity.
Ensure safe herbicide use	Post treatment areas prior to and following herbicide applications near high human use areas. In addition, information on where and when spraying and other treatments would occur would be available to the public at the Ranger District Office		<i>High.</i> Effective at preventing unintentional exposure.
Ensure safe herbicide use	Application of registered herbicides to treat noxious weeds would be performed by or directly supervised by a State licensed applicator.		<i>Moderate.</i> Licensed applicators are required to be trained in the proper use and handling of herbicides. Applicators must be kept current annually, so new information is always shared.
Protect the Resources	All herbicide applications would be ground based, not aerial.		<i>Moderate.</i> This helps to prevent drift.
Protect the Resources	Evaluate all treatment sites for threatened, endangered and sensitive species plant habitat suitability. Survey highly suitable habitat as necessary before treatment. No spraying with vehicle based spraying devices would be done within 25 feet of any known threatened, endangered, or sensitive (TES) plant location. No chemical spraying would be done within 25 feet of any known (TES) plant occurrence.		<i>Moderate.</i> It is important that a botanist, or a person trained in botany, be involved in implementation of the spray program. The Forest Botanist developed these mitigation items.
Protect the Resources	Mix herbicides at least 100 feet away from surface water or wellheads. Have a spill kit available in the immediate vicinity of all herbicide mixing and spray operations. Apply herbicides when wind speeds are less than 6 miles per hour, or as specified on the label. Do not apply herbicides if precipitation is expected within 4 to 6 hours.		<i>Moderate to High.</i> Use of ground based equipment minimizes the risk of contaminants reaching streams while mixing, amounts are usually small. Monitoring wind speed and knowing weather forecasts are very important in helping keep the herbicides where they are intended to be.
Eliminate herbicide contact with water where needed	<b>Distance from water</b>	<b>Practice</b>	<i>Moderate to High.</i> These recommendations are well above any of the protection measures on the herbicide labels and should help eliminate any herbicide contact with water.
	0-10 feet	Prohibit application of herbicides over water. Hand application of glyphosate and triclopyr only.	
	10-50 feet	Hand application of aquatically approved herbicides only	
	50-150 feet	Use aquatically approved herbicides if boom spraying	
	All distances	Reseed with native mix or mix which would prevent invasion of weeds and is certified weed free.	
Pre-treat Units to Limit Further Weed Spread	Pre-treat spotted knapweed adjacent to units 32,33, 47,48, and 227 prior to harvest activities.  Pre-treat orange and yellow hawkweeds on Dry Point prior to activities in the area.		<i>Moderate to High.</i> Pre-treatment would minimize further weed spread.

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<b>Heritage Resources Design Features</b>		
Protect known heritage sites <b>within</b> the National Historic Landmark. These sites are within or adjacent to proposed areas for treatment. Assure no effect or no adverse effect	<b>10-IH-558, 10-IH-2370, 10-IH-2371, 10-IH-2372, 10-IH-2373, 10-IH-2374:</b> These six sites form a complex of sites and features located in close proximity to one another within a proposed mixed severity fire treatment area. 10-IH-558 is related to a brief visit by the Lewis and Clark party. 10-IH-2370 is a lithic isolate that consists of one hammerstone. 10-IH-2371 and 10-IH-2372 are both historic trail markings consisting of blazed trees. 10-IH-2373 is a large precontact period campsite extending along the ridgetop for approximately 700 meters. The site consists of several stone tools, hammerstones, a possible mortar base, and debris from the manufacture and use of these tools. 10-IH-2374 consists of three stone cairns, two of which are collapsed. In addition to these sites and features, a portion of the Lewis and Clark trail passes through this site complex. Protection of this set of historic properties is essential during implementation. Exclusion of this area from a mixed severity burn unit would best serve to protect the integrity of these sites. No line will be excavated through this area, however. If hand line is used to exclude this area from the burn unit, it will be placed below the ridgetop and will be monitored by a qualified archaeologist. Controlled back burning may provide an opportunity to further buffer this site complex. If exclusion is not possible, all heavy, long-burning fuels will be removed by hand from within and around the sites to result in a low intensity fire. If this measure is used, a qualified archaeologist will monitor all fuels reduction and burning activities. After-burn survey and assessment of the sites will also be conducted to assess and document the efficacy of these mitigation measures.	<i>High.</i> Avoids site
	<b>10-IH-2145:</b> A 1930's Emergency Relief Act (ERA) camp was located at this site, and at least one prehistoric stone tool suggests the presence of an older buried component. The site is located on both sides of the Lolo Motorway, and has been evaluated as potentially eligible for the National Register of Historic Places. A proposed prescribed fire has the potential to cause effects to the site. The preferred mitigation measure will exclude the site from the burn area by fuels reduction, establishment of a line below the site, and possible back burning. No line will be established within the site boundaries, although hand fuels reduction can occur and may be necessary to avoid effects. A qualified archaeologist will monitor fuels reduction, back burning, and any	<i>High.</i> Avoids site

Objective	Task	Effectiveness
	other activities on, or near, this site.	
	<b>10-IH-2146:</b> This site consists of a small prehistoric lithic scatter located on the north side of the Lolo Motorway. It has been evaluated as potentially eligible for listing on the National Register of Historic Places. The known site area is immediately outside of a proposed mixed-severity burn unit. Stationing a fire crew to insure that the proposed fire does not cross the motorway and burn over this site should be adequate to protect it from effect. Hand fuels reduction activities on site may provide additional insurance against effect during project implementation. A qualified archaeologist would be present to monitor any activities such as fuels reduction.	<i>High.</i> Avoids site
	<b>LOC 272:</b> The Lewis and Clark trail (LOC 272) runs along the northern boundary of the project area, as well as through the Hungry Creek valley. Several prescribed fire and underburn treatment areas adjoin or cross the trail. Burning in the vicinity of historic trail tread should have little effect on the trails integrity. The greatest danger to the integrity of this historic feature is fire suppression. No hand or mechanical line would be used to control fire in the vicinity of this trail.	<i>High.</i>
Protect known heritage sites <b>outside of</b> the National Historic Landmark. These sites are within or adjacent to proposed areas for treatment. Assure no effect or no adverse effect	<b>10-IH-967:</b> This site was a Works Progress Administration (WPA) camp housing 300 to 400 men during the 1930s and early 1940s. Crews from this camp worked on construction of US Highway 12. Remnants of this camp include leveled areas where tents were erected, but no subsurface investigations have been conducted and the National Register status of the site has not been assessed. A proposed understory burn unit may affect site integrity. The site would be avoided until its National Register status has been determined and a treatment plan developed.	<i>High.</i> Until further information is collected and a treatment plan developed the site would be avoided.
	<b>10-IH-974:</b> Two cabins, a mineshaft, and an ore car remain at this site, documenting early to mid-20 <sup>th</sup> century mining in the Lochsa basin. This unevaluated site would be avoided by redesigning project boundaries to exclude the entire site from potential effects of proposed salvage harvest.	<i>High.</i> Avoids site
	<b>10-IH-978:</b> A historic lookout tree and trail marker comprise this unevaluated site. The lookout tree is a large Douglas fir with spikes, while about 50 yards away a metal sign is a former trail marker that identifies the lookout tree. The site likely dates to the early 20 <sup>th</sup> century. Commercial thinning activities have the potential to affect the site. A protective buffer would be established around the site	<i>High.</i> Protects the site

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	boundaries thereby excluding it from the treatment area. This would protect this area.	
	<b>10-IH-993:</b> This mid- to late-20 <sup>th</sup> century site represents hardrock mining within the Lochsa watershed. A cabin, outbuildings, privy, and pond are present on-site. Use of this site appears to date between the 1940's and 1970's. The site has been designated as ineligible for listing on the National Register, and no design criteria are proposed.	<i>High.</i> Ineligible site, no protection needed
	<b>10-IH-997:</b> The burned remains of a 1931 L-4 lookout are represented at this site. The site was used by the Forest Service for fire detection between 1931 and 1934, and was burned in 1960. Depressions, an access road, iron fragments, glass, and ceramic insulators are still present on-site. The national register status of the site has not been determined. It is located on the edge of a treatment area proposed for under burning. This site would be excluded from the proposed treatment area and maintained in its current condition until the national register status of the site has been resolved,	<i>High.</i> Provides protection to the site
	<b>10-IH-1406:</b> The Grouse Ridge Trail is shown on maps of the Clearwater National Forest as early as 1915, and may represent an even older native trail. It adjoins a prescribed fire unit in Sections 9 and 16, T35N, R9E. Burning in the vicinity of historic trail tread should have little effect on the trails integrity. The greatest danger to the integrity of this historic feature is fire suppression. No hand or mechanical line should be used to control fire in the vicinity of this trail.	<i>High.</i> Provides protection to the site
	<b>10-IH-1413:</b> The Fish Creek Ranger Station was in operation as early as 1905, and burned in 1916. The site has not been evaluated, nor has it been fully recorded. The site must be fully documented by a qualified archaeologist, including the development of scaled site maps. After the site is documented, it would be protected by both hand fuels reduction and back burning if it is found to be eligible or potentially eligible for the National Register of Historic Places.	<i>High.</i> Provides protection to the site
	<b>10-IH-1493:</b> This site has been recorded solely from historic references and has not been found in the field. It is thought to be an early 20 <sup>th</sup> century structure located near the north side of the Lochsa River. It is possible that the site was destroyed by construction of Highway 12, yet it may still be present north of the highway. Field verification of the site should focus in the area of a proposed regeneration harvest where it may still be located. If the site is found, it should be evaluated in terms of the criteria for the National Register of Historic Places. If eligible or potentially eligible, it would be protected by excluding it from the proposed treatment area or by placing a protective buffer	<i>High.</i> Provides protection to the site

Objective	Task	Effectiveness
	around the site and excluding harvest activities from within the site area.	
	<p><b>10-IH-1649:</b> A series of pits along the north side of the Lochsa River may represent placer mining from the late 19<sup>th</sup> or early 20<sup>th</sup> centuries. Crews from the University of Idaho tested the site in 1986 with negative results. At that time, no further work was recommended at the site, but formal determination of its national register status has not been made. This site is located within and adjacent to a proposed under burn treatment area. Heavy, long burning fuels would be removed by hand from the site area. Without long burning fuels, a low intensity under burn would likely have no effect on the integrity of cultural deposits at 10-IH-1649. A qualified archaeologist would monitor burning and inspect and document the site area after burning.</p>	<p><i>High.</i> Provides protection to the site</p>
<p>Provide protection for unknown sites.</p>	<p>Not all areas proposed for treatment have been surveyed and legally mandated consultation with the Idaho State Historic Preservation Office is incomplete. The Clearwater National Forest is using a process called “phased identification and evaluation” to identify heritage resources and develop mitigation and other management measures. This process is outlined in Title 36, Chapter 800.4(b)(2) of the Code of Federal Regulations, and uses a Memorandum of Agreement (MOA) signed by the Clearwater National Forest, Nez Perce National Historical Park, Idaho State Historic Preservation Office, and the Advisory Council on Historic Preservation. In using this approach, the Clearwater National Forest will conduct heritage resource surveys, prescribe mitigation measures or redesign to avoid effects, or cancel individual treatment areas in the case of unmitigatable effects, and complete consultation with the Idaho SHPO and other parties prior to approving implementation of individual projects within the North Lochsa Face area. The Nez Perce Tribe was invited to participate as a signatory to the agreement, and received a copy of the draft on July 12, 2000. The MOA and North Lochsa Face projects have been further discussed with the Tribe in phone conversations on July 11, 2000, and in a meeting on January 31, 2001.</p> <p>This MOA requires that the Clearwater National Forest meet the following stipulations in order to be in compliance with the National Historic Preservation Act. These include the following:</p> <p>?? Ensure that archaeological surveys are conducted for the remaining treatment areas within the North Lochsa Face project area. Surveys will be consistent with the Secretary of Interior’s Standards and Guidelines and the Clearwater</p>	<p><i>Moderate to High.</i> Provides protection to the sites if found during site inventories. Assures no effect or no adverse effects depending on the criteria determined necessary.</p>

Objective	Task	Effectiveness
	<p>National Forest’s site identification strategy (USDA Forest Service, 2001). Surveys shall be completed in consultation with the Idaho SHPO and the National Park Service, and a report of the survey, meeting the standards of the Idaho SHPO and Forest Service, shall be submitted to the Idaho SHPO for review.</p> <p>?? Not conduct any activities other than the previously surveyed and approved projects within the North Lochsa Face project area until consultation with the Idaho SHPO and other appropriate parties has been completed. Survey and consultation will meet the requirements of historic property identification, assessment of effects, and resolution of effects as defined in Section 800.4 through 800.6 of Title 36 of the Code of Federal Regulations.</p> <p>?? Manage fire and other activities to meet the visual quality objectives of the Lolo Trail National Historic Landmark as identified in the Clearwater National Forest Land Management Plan (USDA Forest Service, 1987) and the Final Environmental Impact Statement of the Nez Perce National Historical Park General Management Plan (USDI National Park Service, 1997).</p> <p>?? 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 consulted and will have the opportunity to provide input to the development and updating of this plan.</p> <p>?? Proceed with implementation on a project-by-project basis after satisfactorily completing inventory, consultation with Idaho SHPO, additional consultation with the National Park Service for those projects affecting the Lolo Trail NHL, and development of the heritage resource management and monitoring plan.</p> <p>?? If unanticipated heritage resources are discovered during implementation, the Forest</p>	

Objective	Task	Effectiveness
	<p>Service will cease work in that area and notify the Zone Archaeologist of the discovery. Depending on the nature of the find, activity may continue as determined by the Zone Archaeologist in consultation with the Idaho SHPO. If significant heritage resources are discovered, preservation in place of the resource will be the preferred alternative but data recovery may be required if the site cannot be avoided. Avoidance, mitigation, or data recovery plans will be developed by the Forest Service and submitted to the Idaho SHPO for review and approval as needed. If unanticipated discoveries occur within the Lolo Trail National Historic Landmark boundary, these plans will also be provided to the National Park Service for review.</p>	
	<p>To meet the objectives of the MOA the following design criteria are provided as a guide to the type of management alternatives available for protection of heritage resources. These criteria would be utilized for <b>new sites</b> found during heritage resources. This is not a comprehensive list, and often several different approaches may be combined (i.e. Fuels reduction, fuels ignition, and wrapping) to protect sites from adverse effect. It is important to note that some effects cannot be mitigated other than by canceling the planned activity. Individual treatment strategies would be developed for each identified site, leading to a determination of either “No Effect” or “No Adverse Effect”.</p> <p>?? <b>Avoidance</b> Avoid historic properties (no project activities performed within a prescribed buffer zone or site boundaries) whenever possible so that the resource is preserved and protected in its current state, location, and setting. The site type dictates the type of avoidance required depending on the proposed activity, e.g. burning versus salvage sale.</p> <p>?? <b>Fuels Reduction:</b> Where significant heritage resources occur within a proposed burn unit, and the burn unit cannot be redesigned to avoid those resources, fuels reduction may be used as a mitigation measure. The type of fuels reduction may depend on the type of site being protected. Removal of long-burning, high intensity fuels such as large woody debris and stumps may be performed by hand to produce a cooler, fast moving fire through the site. Hand removal of fuels around historic structures may be required prior to ignition. Culturally modified trees may be protected by removal of fuels and duff from the base of the tree to a significant distance away from the tree to prevent flames and embers from</p>	

Objective	Task	Effectiveness
	<p>igniting those historic resources.</p> <p>?? <b>Fuels Ignition:</b> Digging a hand line around the site with subsequent burning out around the resource to create a defensible space may also be performed where significant sites are located within proposed burn units.</p> <p>?? <b>Wrapping:</b> Some resources may best be protected from fire by a combination of fuels reduction, back burning, and wrapping with a flame resistant shelter material. These would be determined on a case-by-case basis.</p> <p>?? <b>Monitoring:</b> 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.</p> <p>?? <b>Data Recovery:</b> If project activities are such that none of the above forms of mitigation can be performed for a significant site, and no acceptable alternatives exist, then data recovery would be required to protect the values that make the site significant. Data recovery or documentation may take the form of archaeological excavation and removal of the resource, documentation of historic structures meeting current professional standards such as HABS/HAER, or some other form of highly intensive documentation. Data recovery is a mitigation measure of last resort and is often time-consuming and expensive and ultimately removes the historic resource from its primary context .</p> <p>?? <b>Unmitigatable Effects:</b> There exists the potential for sites for which there are no acceptable mitigation measures. Traditional cultural properties and other areas of traditional tribal use and concern are known within the Lolo Trail National Historic Landmark in other areas, and there is a very real potential for their presence within the North Lochsa Face Analysis area. For these types of heritage resources, the only acceptable mitigation may involve cancellation of proposed activities within that treatment unit or even in the general area.</p>	

## Staggered Implementation Schedule by Watershed

### Units/Alts/Watersheds Not Listed Have No Special Implementation Schedule

Watershed	Unit Numbers	Alts	Implementation
<b>Hungery:</b>			
Gass	MSB 2,8	2,3,5,6	Burn #2 wait at least 3 yrs. Burn #8
Obia	MSB #1	2,3,5,6	Split in half and burn w/at least 2 yrs between entries
Greensaddle	MSB #3	2,3,5,6	Split in half and burn w/ at least 3 yrs. between entries
Bowl	MSB #4	2,3,5,6	Split in 1/4s and burn w/ at least 2 yrs between entries.
Doubt	MSB 5 & 6 UB 126,127,128	2,3,5,6	Burn 5,6. Burn UB 126-128 at least 2 yrs. later
<b>Fish</b>			
Fish "C" Reaches	MSB 18,19 UB 152,153,155,157	2,3,5,6	Burn UB and MSB at least 4 yrs apart. Monitor 1 <sup>st</sup> burn and if no sediment can drop delay
Alder	UB 15, 91,158,160,161,177,178 UB 15, 91,160,161,178	2,3,5,6 3a	Split in half w/ at least 3 yrs between entries Burn #15 wait at least 3 yrs and burn others
<b>Pete King</b>			
Nut	UB 241,242,248 Harvest 44,75,76,80,180,232,260	2,3,3a,4,5,6	Separate harvest and UB by at least 3 yrs.
	UB 241,242,248 Harvest 44,75,76,80,232	3	Separate harvest and UB by at least 3 yrs.
Placer	UB 235,236,239,240 Harvest 93,110,111,112,251,296	2,3,3a,4,5	Separate harvest and UB by at least 2 yrs.
	UB 235,236,239,240 Harvest 110,111,112,93	6	Separate harvest and UB by at least 2 yrs.
<b>Canyon</b>			
SF Canyon	Harvest 41,42,70- 72,74,75,243,253,254	2,3,3a	100 acres-- harvest 2002 Balance--harvest at least 2 yrs later.
	Harvest 41,70- 72,74,75,243,253,254	4,5	100 acres-- harvest 2002 Balance--harvest at least 2 yrs later.
Upper Canyon	Harvest 25,26,28,29,30,49,59,60,119	2,3,3a,4,5	Implement all units after 3 yrs. Beyond 2002