

NEMO

TIMBER SALE

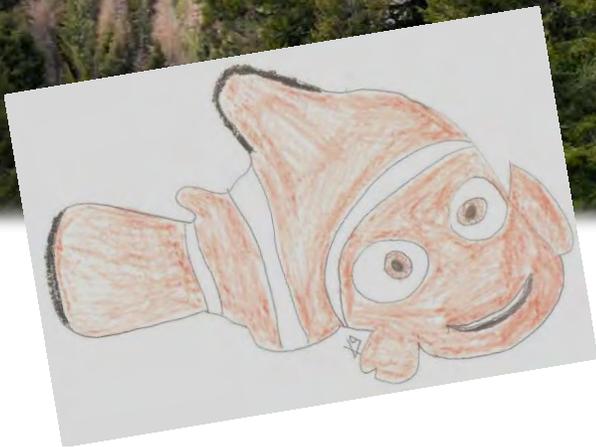
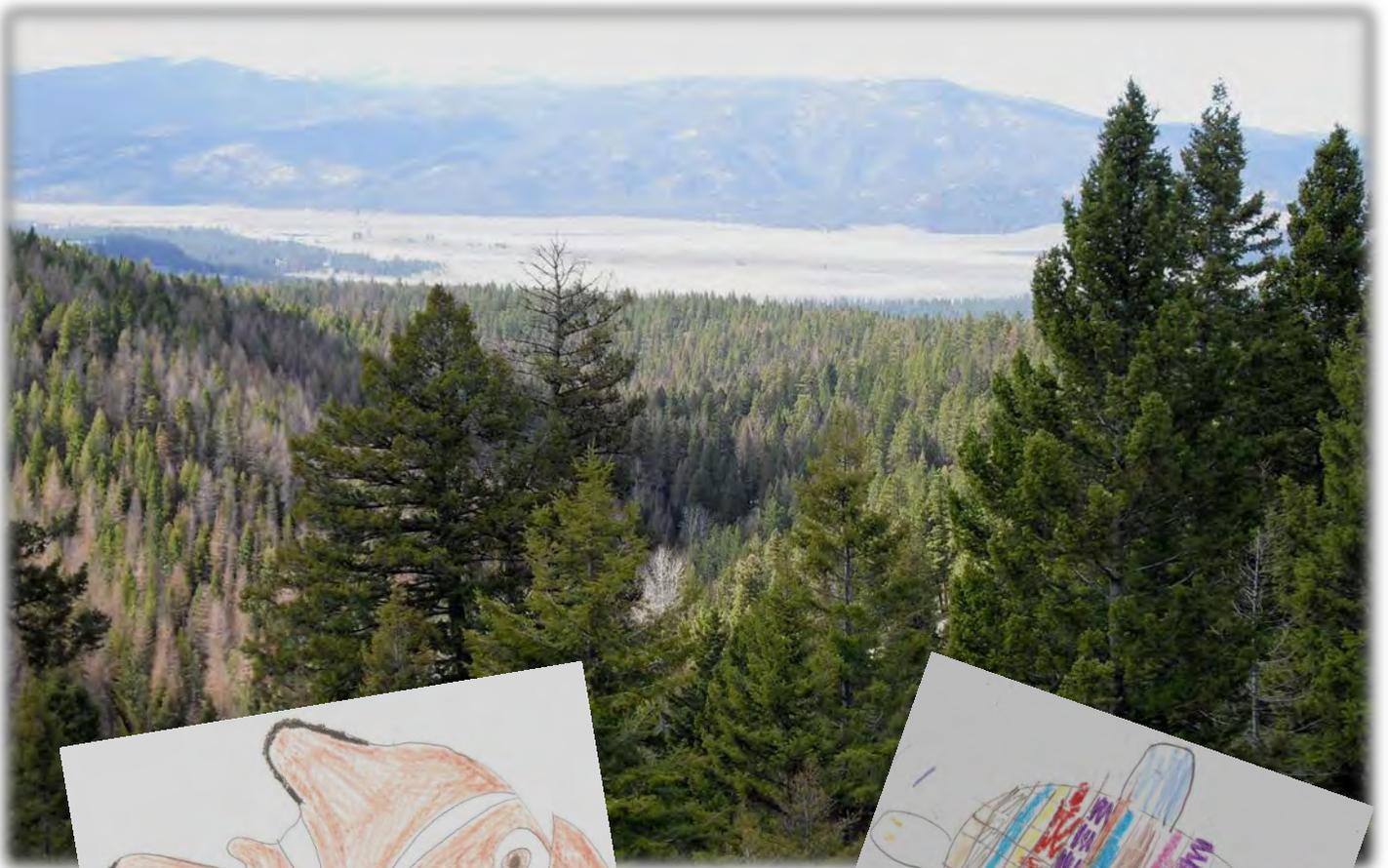
And projects

Montana Department of Natural Resources and Conservation

Southwest Land Office

Clearwater Unit

May 2013



***NEMO TIMBER SALE
ENVIRONMENTAL ASSESSMENT***

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CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	Nemo Timber Sale and Projects
Proposed Implementation Date:	Summer 2013
Proponent:	Clearwater Unit, Montana DNRC
Location:	East of Greenough, MT. approximately 4 miles. Sections 34 T.14N R14W, and sections 2, 3, 10 and 11 T13N R14W
County:	Missoula

I. TYPE AND PURPOSE OF ACTION

The Montana Department of Natural Resources and Conservation (DNRC) is proposing management activities on up to 700 acres east of Greenough, Montana. The proposed projects would include commercial timber harvests and pre-commercial thinning projects. Projected harvest could result in approximately 1.5 million board feet (mmbf). In some of this area, pine species are being affected by mountain pine beetle (*Dendroctonus ponderosae*). Throughout a majority of the project area Western spruce budworm (*Choristoneura occidentalis*) has defoliated Douglas-fir, spruce, true fir, and western larch trees.

This project would be in compliance with State Statute 77-5-207 MCA which states that we will maximize revenue over the long-term for our Trust accounts, especially if the timber resources are threatened by insects, disease, fire, or windthrow. The proposed harvest would emulate natural disturbances such as wildfire, would salvage dead and dying trees, reduce the likelihood of short term losses, and would improve timber stand health and vigor. The pre-commercial thinning would reduce stand density and allow reserved trees to use the increase water, nutrients, and sunlight that would be available for their use. This would promote growth in these stands.

As a whole, these projects would benefit the Trusts involved (Common Schools and Public Buildings). Portions of section 34 Township 14 North and Range 14 West and sections 3 and 11 of Township 13 North and Range 14 West were recently purchased by the DNRC in 2010. This gave the DNRC the ability to treat larger portions of ownership with a "bigger picture" approach as opposed to management on single sections. The harvest that is proposed would be designed to promote the seral conditions that we are managing for the long-term, and to produce the largest amount of return for those Trusts involved. The pre-commercial thinning would be designed to promote seral species as well, and many of the same benefits would be seen in the reserved trees as described above.

As part of these projects, several large culverts that may cause migration concerns for native trout are proposed to be removed. Given this change to the transportation plan, several short stretches of road would be required to be constructed to keep our current access to these parcels for timber harvest, forest improvement work, and fire protection.

The lands involved in this proposed project are held by the State of Montana in trust for the Common Schools and Public Buildings (Enabling Act of February 22, 1889; 1972 Montana Constitution, Article X, Section 11). The Board of Land Commissioners and the DNRC are required by law to administer these trust lands to produce the largest measure of reasonable and legitimate return over the long run for the beneficiary institutions (Section 77-1-202, MCA). The DNRC would manage lands involved in this project in accordance with the State Forest Land Management Plan (DNRC 1996), Administrative Rules for Forest Management (ARM 36.11.401 through 450), DNRC Habitat Conservation Plan as well as other applicable state and federal laws.

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:

Provide a brief chronology of the scoping and ongoing involvement for this project. List number of individuals contacted, number of responses received, and newspapers in which notices were placed and for how long. Briefly summarize issues received from the public.

The proposed Nemo Timber Sale was scoped in March of 2012 and due to changes mentioned above regarding removal of existing corrugated metal pipes, portions were scoped again in January of 2013. This was sent to the *Missoulian* and the *Seeley Lake, Montana Pathfinder*. It was also distributed to the public, organizations, and other agencies with letters, on the internet on the DNRC website, or by postings at local businesses. A list of these is located at Clearwater Unit and is within the project file. The only responses to these scopings were the Montana Department of Fish, Wildlife and Parks and the Confederated Salish and Kootenai Tribes. These responses are also found at the Clearwater Unit and are also within the project file.

DNRC specialists were consulted including: Garrett Schairer, Wildlife Biologist; Jeff Collins, Hydrologist; Patrick Rennie, Archeologist; Jim Bower, Fisheries Biologist. Craig V. Nelson, Clearwater Unit Forest Management Supervisor, has written this E.A. and Dave Poukish, Unit Manager of the Clearwater Unit will be the decision maker.

2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

Examples: cost-share agreement with U.S. Forest Service, 124 Permit, 3A Authorization, Air Quality Major Open

Montana Department of Environmental Quality (DEQ): Slash burning would be done in compliance with air quality rules and regulations through compliance with statewide cooperative smoke management agreements.

- All prescribed burning must also be approved by Missoula County Airshed Desk prior to ignition.

Montana Department of Fish, Wildlife, and Parks (FWP): A 124 permit would be required for the removal of existing culverts within Little Fish Creek.

3. ALTERNATIVE DEVELOPMENT:

Describe alternatives considered and, if applicable, provide brief description of how the alternatives were developed. List alternatives that were considered but eliminated from further analysis and why.

No-Action

Under this alternative, no large scale timber harvest would occur, however the DNRC would continue current uses including firewood permits and timber permits. Timber Permits would undergo an Environmental Analysis specific to any proposed projects. The bark beetle epidemic would continue and could continue to kill more of ponderosa pine trees in the project area. The Western spruce budworm would continue to defoliate Douglas-fir and spruce trees resulting in growth losses and possible tree mortality. The existing culverts would not be removed and fish migration would not be addressed.

Action

Under this alternative, the DNRC would continue current uses, and also harvest approximately 1.5 MMBF of timber from approximately 486 acres. Timber harvest would include both live and dead trees. Pre-commercial thinning could take place on up to 200 acres. Road maintenance would take place on up to 10.5 miles of existing access roads and would construct up to 1.2 miles of road, including a temporary road of 0.25 miles. Existing culverts would be removed from Little Fish Creek, and roads would be constructed to ensure access to areas previously accessed by that route.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" if no impacts are identified or the resource is not present.*

4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:

Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify direct, indirect, and cumulative effects to soils.

SOIL RESOURCES

Issues and Concerns

The following issue statement was developed from internal and public scoping regarding the effects of the proposed timber harvest and road systems to soils and noxious weeds. For specific comments and concerns, refer to the project file.

There is a concern that forest management activities may result in increased erosion and reduced soil productivity where excessive disturbance from compaction, displacement, or loss of nutrients occurs, depending on the extent and degree of harvest related soil effects.

Recommended Mitigation Measures for Soil Resources:

The analysis and levels of effects to Soil resources are based on implementation of the following mitigation measures.

- DNRC would implement all applicable BMP's, Montana Administrative Rules for Forest Management, and reasonable mitigation and erosion control practices during timber harvest, road maintenance, and road construction and road use activities. The commitments of the DNRC Habitat Conservation Plan (HCP) would be implemented on the applicable parcels.

- Limit harvest equipment and hauling operations to periods when soils are relatively dry, (less than 20%), frozen or snow covered to minimize soil compaction and rutting, and maintain drainage features. Check soil moisture conditions prior to equipment start-up. Avoid dispersed skidding unless on snow or frozen ground. Portions of the access roads have clayey segments that tend to remain wet later into the spring and requires strict adherence to dry or frozen season of use to limit impacts in harvest units or damage to roads. Some moister conditions are accepted on harvest units where tractors remain on designated trails and timber will be felled and bunched or winched to trails.

- On tractor harvest units the logger and sale administrator will agree to a general skidding plan prior to equipment operations to limit trails to 15% or less of the harvest unit. Prefer use of existing skid trails, unless too steep. Limit ground skidding equipment to slopes less than 45% on the short steep slopes. Feller-bunchers may work on slopes up to 45% as long as displacement and turning is minimized to prevent excessive disturbance.

- On moderate to densely stocked stands, whole tree skidding can reduce slash hazard, but also remove a portion of nutrients from growing sites. Target fine slash and woody debris levels are to retain 5-15 tons/acre well distributed on site while meeting the requirements of the slash law. On thinning sites with lower basal area, retain large woody debris as feasible since it may not be possible to retain 5 tons/acre and the emphasis will be on providing additional CWD in the future. Slash would be placed on main skid trails to protect soils and reduce erosion potential and potential unauthorized ATV use as needed.

- Road use will be limited to dry or frozen ground conditions to reduce rutting and erosion. New road construction, including drainage features should be completed in the fall prior to freeze-up. Check snow/frozen ground conditions prior to operations. Minimal effects are expected with snow road construction.

Direct and Indirect Effects of the No- Action Alternative on Soils

The No-action alternative would be similar to existing conditions and have little effect on soil resources. There would be no additive effect of ground disturbance from timber harvest operations or road construction and soil properties would continue to recover to natural conditions. Existing access roads with inadequate drainage would continue to erode without maintenance.

Cumulative Effects of the No-Action Alternative to Soils

Cumulative effects to soils can occur from repeated ground skidding entries into the harvest area and additional road construction, depending on area and degree of detrimental impacts. Previous harvest effects have largely recovered with 10% or fewer impacts based on site. No operations would occur and no change in cumulative effects would occur compared to existing conditions.

Direct and Indirect, Effects of the Action Alternative on Soils

The primary risks to long term soil productivity and hydrologic function are excessive impacts to soil properties caused by rutting, compaction and displacement of surface soils by equipment operation and road construction and the combined effects are summarized in table 3-1 The most sensitive soils in the area are wet sites and small areas of steep slopes which will be avoided or protected with mitigation measures (refer to Mitigation Section attached).

For the proposed harvest, BMP's and mitigations would be implemented to minimize the area and degree of detrimental soil impacts (displacement, erosion, and compaction). Mitigations include general skid trail planning, limit ground based equipment to moderate slopes less than 45%, and avoiding wet areas by marking protection boundaries. Contract administration would monitor on-going operation to control soil disturbance to avoid excessive impacts and meet silvicultural goals to reduce competition. The proposed pre-commercial and commercial thinning would mainly use historic, existing trails and landings which will reduce the area of potential soil impacts. The improved tree spacing would improve growth of retained trees, due to reduced competition for soil nutrients and moisture.

Based on DNRC soil monitoring on comparable sites, implementation of BMP's and the recommended mitigation measures, has been shown to effectively limit soil impacts to less than 20% of the harvest units. Harvest operations present low to moderate risk of detrimental impacts to soil resources if impacts are restricted to ~20% of the proposed harvest areas. We expect that by protecting at least ~80% of a harvest area in non-detrimental soil impacts, soil properties important to soil productivity will be maintained. The estimates of existing impacts are approximately 10% as noted in table 3-1 and additional impacts from the proposed operations are expected to add no more than 5% = 15% projected.

Table 3-1 Predicted Harvest Effects on Soil Resources from the Proposed Action including Commercial Harvest, Pre-commercial thinning and New roads/Relocation			
Project Harvest Areas	Treatment Acres within 1,775 acre Project area <i>(Area used for soil effects analysis)</i>	Operation	Estimated max. acres impacted,* with the Proposed Operations
Pre-commercial Thinning	197 ac.	Hand felling	No measurable disturbance expected by foot traffic
Commercial Harvest/Thinning	486 ac.	Tractor Sanitation/Salvage	<15% / acre = Up to 79 ac., includes Use of existing trails
Roads	3.6 ac. New Road 1.8 ac. Reclaim	New Road 1.2 mi. Reclaim ~ 0.6 mi.	Net 2 ac. New road Relocations
Totals	Roads 1.8 acres net Harvest Ac. 486 Thinning 197		Up to 81 ac. Total impacts (~ 15.% of total)

* Estimates of harvest impacts on soils based DNRC Soil Monitoring and comparison to similar treatments

DNRC focused road design and location efforts to minimize the extent of new road construction, stream crossings and construction costs and includes temporary use roads where feasible. The proposed haul route is primarily across existing roads and site specific road recommendations would be implemented on 10.5 miles of existing roads to maintain, restore and improve road surface drainage to control erosion. About 1.2 miles of new road would be constructed to relocate the haul route to section 11, T13N, R14W and away from Little Fish that would result in up to 3.6 acres of disturbance and 1.8 miles of road would be reclaimed. Temporary use roads

would be located for minimal construction and stabilized after use. Following use, temporary roads will be closed, stabilized with long-term drainage features installed, and reseeded with site adapted grass to control erosion and compete with noxious weeds.

The proposed harvest and road operations present low risk of excessive impacts to soils based on, implementation of BMP's and the recommended mitigation measures. Sale administrators will monitor soil conditions and the on-going harvest and road construction activities to meet contract requirements, BMP'S for soil and water protection and silvicultural objectives. For all of these reasons the proposed harvest operations and mitigation measures are expected to maintain soil properties important to plant growth and hydrologic function and present low risk of excessive direct and indirect impacts to soils.

Cumulative Effects of the Action Alternative to Soils

There is low risk of cumulative effects to soils with the proposed harvest based on use of existing roads, skid trail planning using existing trails where feasible and implementation of mitigation measures to limit the area impacted. We expect that effects would be less than 15% of the harvest area based on; modifications to harvest since BMP inception in 1989, implementation of mitigation measures that include season of use limits, skid trail planning to use existing trails where feasible and site specific measures near wetlands. Road drainage would be improved on existing roads throughout the area. Proposed new roads would impact up to 1.2 miles and 0.6 miles would be reclaimed for a net increase of 0.6 miles or less than 1% of the project parcels

The level of tree mortality of pine has already caused many needles and fine litter to fall to the forest floor. Most needles and fine foliage that have not already fallen would be expected to break off during logging operations. On all proposed harvest areas a portion of old and new coarse woody debris (CWD >3" dia.) at ~5-10 tons/acre and fine litter (similar to historic ranges) would be retained or return skidded on harvest units. Coarse wood would be well distributed throughout the units and trampled. The combination of fine litter and coarse woody debris would maintain surface organic matter that provides media for healthy soil fungi and conserves soil nutrients and moisture important to tree growth. Improved tree spacing will reduce competition for nutrients and soil moisture, enhance growth of retained trees, and promote regeneration of conifers as noted in the vegetation section.

For complete soils analysis, please ask Clearwater Unit for that portion of the sale file

5. WATER QUALITY, QUANTITY AND DISTRIBUTION:

Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify direct, indirect, and cumulative effects to water resources.

Issues and Concerns

The following issue statements were developed from internal and public scoping regarding the effects of the proposed timber harvest and road systems to water resources. For specific comments and concerns, refer to the project file.

*Water Quality - There is a concern that the proposed action may cause impacts to water quality and quantity from timber management, road construction and road use. Public comments were received that riparian management may not provide for aquatic values unless management requirements are the same as in the nearby North Chamberlain Conservation Easement parcels.

*Cumulative Watershed Effects- There is a concern that the proposed timber harvest may cause or contribute to cumulative watershed impacts as a result of increased water yields.

Recommended Mitigation Measures for Water Resources:

The analysis and levels of effects to Water resources are based on implementation of the following mitigation measures:

- DNRC would locate, clearly mark and maintain suitable water resource protection boundaries including Streamside Management Zones (SMZ's), Riparian Management Zones (RMZ's), and Wetland Management Zones (WMZ's) adjacent to streams and wetlands consistent with State Forest Land Management rules.
- Locate a 50 ft. no cut harvest boundary along Little Fish Creek and a 100 ft. Riparian Management Zone (RMZ/CMZ) where 50% of representative standing trees would be retained in the 50-100 ft. strip that would be designated parallel to Little Fish Creek.
- Existing road segments would be improved and maintained in association with the harvest activities. Road improvements would include surface blading, installation of drainage features to prevent surface erosion and sediment delivery to the stream, ditching to improve road surface stability, gravel surfacing of selected segments as needed to comply with BMP'S, and to protect water quality.
- Approximately 0.6 miles of existing roads would be reclaimed, that includes 2 road segments that parallel Little Fish Creek and several culvert removals that limit fish passage. The road reclamation would require removal of existing culverts, reshaping the crossings to stable cross-sections, and installing road surface drainage for long term stability. The roads would be closed to traffic and grass seeding to control erosion.
- The removal of the two existing culverts on Little Fish Creek would meet the BMP's and requirements of the FWP 124 permit issued for this project for erosion control and stream protection.

Direct and Indirect Effects of the No- Action Alternative on Water Quality, Yield, and Quantity

No direct or indirect effects to water quality or quantity would be expected to result other than those described under existing conditions. Sedimentation on existing roads with inadequate surface drainage would continue to impact water quality unless mitigations or remedial actions are taken. Continued insect mortality or wildfire may increase runoff and water yield relative to increasing canopy loss. Grazing management within the project drainages would continue and should gradually improve over time as inspections and management modifications are made.

Cumulative Watershed Effects of No-Action Alternative on Water Quality, Yield, and Quantity:

Cumulative watershed effects can be characterized as impacts on water quality and quantity that result from the interaction of past, current or foreseeable future disturbances, both human-caused and natural such as wildfires and mortality. Past management activities in the proposed project areas include timber harvest, grazing, road construction, irrigation diversions, agriculture, fire suppression and recreation. Recent timber harvest projects in the general area include: Elk Wall Timber Sale, Squirrel Tail Timber Sale, and Elbow Lake Salvage near Clearwater Junction. A programmatic, BMP audit was completed on Elbow Lake Salvage in 2012 to monitor administration and mitigations, and operations were found to be in compliance with all BMP's and SMZ rules. Under the no-action alternative, cumulative effects would remain the same as described in existing conditions.

Direct and Indirect Effects of the Action Alternative on Water Quality, Yield, and Quantity:

SEDIMENT DELIVERY AND WATER QUALITY, YIELD, AND QUANTITY

The haul route would not cross Fish Creek or Warren Creek. Road drainage would be maintained on all roads during use. There would be no increase in open road density as the area is gated. Following use, temporary roads will be closed, stabilized with long-term drainage features installed, and reseeded with site adapted grass to control erosion and compete with noxious weeds.

Two culverts on Little Fish Creek would be removed to reduce sedimentation and improve fish passage. The access roads for upper Little Fish Creek would be rerouted with minor new road construction on better locations to reduce potential sediments. The road relocation would allow the reclamation of 0.6 mile of existing road that is located adjacent to the stream, by installing drainage and seeding. There would be a temporary increase in sediment when the culverts are removed and the channel profiles are reestablished, but sediment is expected to be low, short term and will quickly subside, based on DNRC monitoring following culvert removals (DNRC 2012). All requirements of the 124 permit and erosion control measures would be implemented, at the proposed stabilization site to minimize erosion.

The proposed action is mainly low to moderate harvest of trees that are overstocked, dead or in poor condition. No harvest or thinning operations are proposed near Fish Creek or its riparian zones. The SMZ width for Little Fish Creek is mainly 50ft based on the shallow slopes with some short reaches of 100 ft SMZ, where short steep slopes exceed 35%. For comparison, the North Chamberlain Conservation Easement requires a no harvest buffer of 25 ft and a 120 ft RMZ adjacent to Class 1 streams like Little Fish Creek. For the proposed action, no SMZ harvest would occur within 50 feet of Class I streams, principally Little Fish Creek. A 100 ft. Riparian Management Zone would be designated along Little Fish Creek consistent with the DNRC Habitat Conservation Plan (HCP).

The proposed thinning in Little Fish Creek drainage would retain well stocked advance regeneration of pole and sapling trees. The current overstocked stands supports over 800 trees/acre that would be thinned to 200 to 300 trees/acre using primarily existing roads and trails that meet BMP's. Thinning would also reduce competition and promote faster growth and improved water efficiency by retained trees.

Implementing the SMZ law and BMP's have proved effective in controlling erosion and protecting riparian zones (DNRC 2012). Sediment trapping research (Lakel et. al.) on the effectiveness of stream buffers, found that > 97% of watershed erosion was trapped by vegetation prior to entering streams for SMZ's of 25ft or more.

All requirements of the SMZ laws, Forest management rules, BMP's, 124 and associated stream permits and DNRC Habitat Conservation Plan (HCP) and conservation easement will be implemented. Based on implementation of Best Management Practices, site specific mitigations, and all rules and agreements, the proposed timber harvest and road construction is expected to result in low overall short term direct or in-direct water quality impacts due to erosion and sediment delivery. There is low potential in Little Fish Creek and Fish Creek for surface runoff or measurable water yield increases from the proposed partial harvest and thinning, compared to the no-action. Warren Creek has a moderate potential for water yield increase considering an increase of 18.9%, yet the increase is unlikely to have a perceptible change in runoff or channel forms compared to historic range of vegetation and stream flows based on the following.

The proposed ground based timber harvest is expected to result in low risk of erosion and sediment delivery to streams. No harvest operations would occur near Warren or Fish Creek. Little Fish Creek would be protected by implementation of the SMZ law and RMZ requirements consistent with rules and HCP requirements. Two existing crossings of Little Fish Creek would be removed and up to ½ mile of road adjacent to Little Fish Creek would be reclaimed and stabilized to reduce sedimentation at the crossing sites. There would be a short term pulse in sediment at the site of the culvert removals that would subside quickly and there would be a long term reduction in sediments at these crossings. The proposed road relocation, crossing removals, road reclamation, road drainage improvements, and road maintenance would reduce current sediments and maintain or improve water quality. The combination of harvest effects, road repairs and restoration treatments to remove stream crossings is expected to result in a net moderate positive cumulative effect to water quality and water resources and low risk of cumulative effects to beneficial uses.

There is no channel on the dry draw within the harvest area, and flows are intermittent downslope of the harvest area in the Warren tributary. Removal of the approximately 30% of dead and dying trees would not measurably contribute to interception or transpiration. The proposed harvest would also remove stagnant trees and promote codominant and understory trees that use water more efficiently. Average annual precipitation of 18-21" are moderate in the proposed harvest area, where evapotranspiration and soil infiltration rates

exceed precipitation levels and surface runoff is unlikely, even during storm events. Research has shown that water yield is not likely detectable (MacDonald & Stednick. 2003, Romme et.al.2006 for these low precipitation levels of less than 20' annually, even with aggressive harvests, and the proposal is low to moderate selective harvest over a broad area, using existing roads. For these reasons there is low risk of cumulative watershed effects .

Cumulative Watershed Effects of the Action Alternative on Water Quality, Yield, and Quantity:

There would be low risk of adverse cumulative impacts from the proposed action, to water quality and beneficial uses based on implementation of BMPs, Rules, HCP requirements and mitigation measures during timber harvest and road construction operations.

For complete watershed analysis, please ask Clearwater Unit for that portion of the sale file

6. AIR QUALITY:

What pollutants or particulate would be produced (i.e. particulate matter from road use or harvesting, slash pile burning, prescribed burning, etc)? Identify the Airshed and Impact Zone (if any) according to the Montana/Idaho Airshed Group. Identify direct, indirect, and cumulative effects to air quality.

The DNRC is a member of the Montana/Idaho Airshed Group which was formed to minimize or prevent smoke impacts while using fire to accomplish land management objectives and/or fuel hazard reduction (Montana/Idaho Airshed Group 2006). The Group determines the delineation of airsheds and impact zones throughout Idaho and Montana. Airsheds describe those geographical areas that have similar atmospheric conditions, while impact zones describe any area in Montana or Idaho that the Group deems smoke sensitive and/or having an existing air quality problem (Montana/Idaho Airshed Group 2006).

The project area is in Airshed 3b which encompasses much of eastern Missoula County. Currently, this airshed includes an impact zone near Seeley Lake. This project is located approximately 4 miles east of Greenough, Montana. The Bob Marshall Wilderness area lies approximately 21 miles north of the project area. This wilderness area exceeds 5,000 acres and as such, is considered a Federal Class I Area that ultimately receives protection under the Federal Clean Air Act of 1977.

Direct , Indirect, and Cumulative Effects of the No-Action Alternative on Air Quality: Under the No Action Alternative slash piles would not be created or burned. Thus, there would be no effects to air quality within the local vicinity and throughout Airshed 3b.

Direct , Indirect, and Cumulative Effects of the Action Alternative on Air Quality: Under the Action Alternative, slash piles consisting of tree limbs and tops and other vegetative debris would be created throughout the project area during harvesting. These slash piles would ultimately be burned after harvesting operations have been completed. Burning would introduce particulate matter into the local airshed, temporarily affecting local air quality. Over 70% of emissions emitted from prescribed burning is less than 2.5 microns (National Ambient Air Quality PM 2.5). High, short-term levels of PM 2.5 may be hazardous. Within the typical column of biomass burning, the chemical toxics are: Formaldehyde, Acrolein, Acetaldehyde, 1,4 Butadiene, and Polycyclic Organic Matter.

Burning within the project area would be short in duration and would be conducted when conditions favored good to excellent ventilation and smoke dispersion as determined by the Montana Department of Environmental Quality and the Montana/Idaho Airshed Group. Prior to burning a "Prescribed Fire Burn Plan" would be done for the area. The DNRC, as a member of the Montana/Idaho Airshed Group, would burn only on approved days. Thus, direct and indirect effects to air quality due to slash pile burning associated with the proposed action would be minimal.

Burning that may occur on adjacent properties in combination with the proposed action could potentially increase cumulative effects to the local airshed and the Class I Areas. The United States Forest Service and large scale industrial forestry operations in the area participate as airshed cooperators and operate under the same Airshed Group guidelines as the DNRC. Non-industrial timberland operators are regulated by the Montana Department of Environmental Quality and burning is only allowed during seasons that provide good ventilation and smoke dispersion. Thus, cumulative effects to air quality due to slash pile burning associated with the proposed action would also be expected to be minimal.

Harvesting and log hauling could create dust which may affect local air quality. Harvesting operations would be short in duration and could occur during the winter months which would minimize dust dispersal. Thus, direct, indirect, and cumulative effects to air quality due to harvesting and hauling associated with the proposed action would be minimal.

7. VEGETATION COVER, QUANTITY AND QUALITY:

What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify direct, indirect, and cumulative effects to vegetation.

RARE PLANTS

Rare plants within the area are limited to Howell's gumweed. This is a sensitive plant that has limited distribution across portions of western Montana (Powell and Missoula Counties) and Idaho (Benewah County). In some areas, the populations are well established. This gumweed responds like a pioneer species and requires disturbance for an effective germination substrate.

The Montana Natural Heritage Program stated on their website: *"In Montana, Grindelia howellii is known from over 100 mapped occurrences. However, most populations are small and many occur on roadsides or other similarly disturbed habitat. This habitat preference in conjunction with the short-lived nature of the species means occurrences may drift from place to place or from year to year and as a result many occurrences may be ephemeral..."*

Invasive weeds are a threat to many occurrences, as the habitat occupied by G. howellii is also favorable for many weedy species. Application of herbicides to control these weeds, especially along roadsides may also have a direct, negative impact."

Rare Plants – Direct, Indirect, and Cumulative Effects of the No-Action Alternative

The No Action alternative would not change the existing conditions available for Howell's gumweed populations present within the proposed area. No disturbance would occur as part of the no action alternative. As a result, there would be low risk of direct, indirect, and cumulative effects to Howell's gumweed given the No-Action Alternative.

Rare Plants – Direct and Indirect Effects of the Action Alternative

If a population is found, disturbance would be limited, and based on the fact that Howell's gumweed is often found in disturbed areas, and the gumweed population should remain the same or would slightly increase if plants establish on reclaimed road sites. Some individual plants would likely be killed if present during timber harvest. Core populations would be protected and potentially enhanced through the ground disturbance nearby. If a population is found, mitigations would be put in place during herbicide application to protect the plants.

Given the limited area that Howell's gumweed inhabits and the protective measures that will be taken, there will not be any adverse cumulative effects. There may be an increase in the gumweed population as disturbance would cause an increase in adequate germination substrates. As a result, there would be low risk of direct, indirect, and cumulative effects.

NOXIOUS WEEDS

Noxious weeds infestations are mainly a combination of spotted knapweed, houndstongue and spots of thistle which occur along portions of the existing access road system, open forest and rangeland sites. Noxious weeds occurring in the project parcels are mostly knapweed (*Centaurea maculosa*), houndstongue (*Cynoglossum officinale L*) and spot infestations of thistle (*Cirsium arvense*). Knapweed (*Centaurea maculosa*) was found along roadsides as well as in some forested portions of the project area. Houndstongue was found mostly along roadsides along the access haul route. Cattle grazing, past timber harvests, and recreational uses are most likely the reasons for the existing rate of spread of noxious weeds. Previous weed management treatments in the area have been limited to reseeding of some roadcuts and treatments on adjacent private lands and spraying of roads after DNRC timber sales.

Noxious Weed Mitigations

- All road maintenance and harvest equipment will be cleaned of plant parts, mud and weed seed to prevent the introduction of noxious weeds. Equipment will be subject to inspection by forest officer prior to moving on site.
- All newly disturbed soils on road cuts and fills will be promptly reseeded to site adapted grasses to reduce weed encroachment and stabilize roads from erosion.
- Weed treatment measures will include roadside and spot herbicide treatment of noxious weeds. Where herbicide treatments are required by the forest officer, herbicide must be applied under the supervision of a licensed applicator following label directions in accordance with Department of Agriculture regulations, applicable laws and rules and regulations of the Missoula County Weed Board.
- DNRC will monitor the project roads and areas to evaluate weed control measures implemented and determine if any new noxious weeds establish that were not previously identified.

Noxious Weeds- Direct and Indirect Effects of the No- Action Alternative

With no action, noxious weeds will continue to spread along roads and may increase on the drier site habitats. Following disturbance events such as timber harvest activities, fires, or grazing, the establishment and spread of noxious weeds can be more prevalent than in undisturbed areas. DNRC would treat selected sites on DNRC roads based on priorities and funding availability. If new weed invader species are found they would have highest priority for management. The grazing licensees would be required to continue weed control efforts consistent with their use.

Noxious Weeds- Direct and Indirect Effects of the Action Alternative

The action alternative will involve ground-disturbing activities that have the potential to introduce or spread noxious weeds in susceptible habitat types. For the action alternative, an Integrated Weed Management (IWM) approach was considered for treatment of existing and prevention of potential noxious weeds. For this project: prevention, revegetation and weed control measures for spot outbreaks are considered the most effective weed management treatments. Prevention measures would require clean off-road equipment. Roadsides would be sprayed and weed control and revegetation would slow noxious weed spread and reduce weed density and occurrence compared to no-action. There would be a similar or potential slight increase in weed infestation with harvest units due to soil disturbance and reduction of tree canopy. The silvicultural prescriptions are designed to control disturbance and scarification to goals needed for sustained forest growth. Control efforts will promote rapid revegetation and emphasize treatment of any new noxious weeds found.

Herbicide application would be completed on segments of DNRC roads along the haul route, to reduce weed spread along roads and promote desired vegetation for weed competition and to reduce sedimentation. Herbicide would be applied according to labeled

directions, laws and rules, and would be applied with adequate buffers to prevent herbicide runoff in surface. Implementation of IWM measures listed in the mitigations would reduce existing weeds, limit the possible spread of weeds, and improve current conditions, to promote existing native vegetation. More weed control would occur compared to the no-action alternative and grass and competitive vegetation would increase along roads.

Noxious Weeds- Cumulative Impacts of No-Action

Impacts of noxious weeds within the project areas are moderate. Weeds have spread through the drainage across ownerships over time and are prone to more dispersal along open roads. Weeds also have spread by multiple uses from wind, traffic, forest management and wildlife. Current weed infestations are mainly limited to roadsides within the project parcel and open forest sites. No control occurs along the main county access road, and this increases the potential for windblown seed. Timber harvest and roads throughout these drainages has increased grass growth and the risk for noxious weeds to spread through ground disturbance. As tree density and vegetation increase, weeds are reduced through vegetative competition.

Noxious Weeds- Cumulative Impacts of the Action Alternative

Impacts of noxious weeds within the project areas are moderate. Weeds have spread through the drainage across ownerships over time mainly along roadsides and open forest sites with multiple uses and by seed dispersal from wind, traffic and wildlife. Timber harvest throughout these drainages has increased grass growth and the risk for noxious weeds to spread through ground disturbance. Within the project area, overall cumulative effects of increased noxious weeds are expected to be low to moderate, based on herbicide treatments of existing weeds along roads and implementing prevention measures to reduce new weeds, by cleaning equipment and planting grass on roads to compete against weeds.

STANDARD VEGETATIVE COMMUNITY

The analysis area for the standard vegetative community will contain state owned portions within; section 34 Township 14 North, Range 14 West and sections 2, 3, 10, and 11 of Township 13 North and 14 West. The total acreage of this state land is 2,416.4 acres.

Within the past 7 years, 2 other timber sales have been sold within the general area. The Haywire Wallace Timber Sale (TS-1535) was sold in 2006 and was on portions of sections 2, 4, and 10 of Township 13 North and Range 14 West. Currently the Elk Wall Timber Sale (TS-1680) is active within sections 10, 14, and 16 of Township 13 North Range 14 West. These sales have changed the surface vegetation, primarily the stocking. This sale area was not included in this original Haywire Wallace EA given the reasons discussed within **Part I Type and Purpose of Action** of this EA.

Many of the ponderosa pine stands have been attacked by the mountain pine beetle (*Dendroctonus ponderosae*). This caused concern two years ago during the peak of activity on these parcels, but given the time since those attacks, the beetle population decreased. Mountain pine beetle is still found in the area, and is still a concern to the DNRC. Within the past 10 years, the Western spruce budworm (*Choristoneura occidentalis*) has also increased. In some areas regeneration has been severely defoliated. Although these trees may be able to regain their original growth, if this constant defoliation continues, the trees will die.

The inventoried analysis provided the information found in the Table 7.1. The table indicates that a majority (less than 1% of the total acres) are within the desired future condition. At the larger scale, DNRC lands managed by the Clearwater Unit are approximately 85% forested. Most of this is ponderosa pine and western larch/Douglas-fir cover types. This area fall within a climatic section 332B which was historically 79% forested. This simply means a desired future state of an area especially if silvicultural management treatments and objectives are achieved.

Table 7-1: Current Cover Types and treatment for the Nemo Project Area

Current Cover Type	Desired Future Condition	Acres Treated	Desired Future Condition (DFC) Acres	Excess or Deficit of Current Acres Compared to DFC
Ponderosa Pine	Douglas-fir	0	58	Excess 58
Western Larch/Douglas-fir	Ponderosa Pine	5.7	44.3	Excess 38.6
Ponderosa Pine	Western Larch / Douglas-fir	0	13	Excess 13
Lodgepole Pine	Western Larch / Douglas-fir	0	72.1	Excess 72.1*
Douglas-fir	Ponderosa Pine	0	102.3	Excess 102.3*
Subalpine fir	Western Larch / Douglas-fir	0	32.7	Excess 32.7
Ponderosa Pine	Ponderosa Pine	447	1,058.6	0
Western Larch /Douglas-fir	Western Larch / Douglas-fir	33 + (197.23 PCT)	1,035.4	0
-	-	485.77 + (197.23 PCT)	2,099.7 ac. meeting DFC	316.7* ac. currently in wrong type

*** Some acres within this greater project are being treated by the DNRC Elk Wall Timber Sale (TS-1680)- EA March 2006**

The average diameter at breast height is 14 inches and the average basal area per acre is 80 square feet. This varies greatly between the heavier areas and the lightly stocked portions. There are primarily two types of stands within the proposed sale area. Much of the area within section 34 is a three story stand, with the largest overstory trees being the smallest component. Much of harvest units 3 and 4 are two story stands. This is a result of past treatment by Anaconda Copper Mining Company, Champion International Corporation, and Plum Creek Timber Company (previous owners) that allowed the area to be regenerated, primarily by Douglas-fir.

Proposed Action

It is estimated that 2,099.7 acres in this project area either are, or will be after a treatment, within DFC. The total area of the DNRC parcels represented within this proposed project is 2,416.4 acres. Although there are acres that will be treated by the Elk Wall T.S. that have not been tabulated, the current percentage of stands that meet DFC is 87%.

This project is proposed to move acres toward the desired future condition (DFC), protect the condition of the stand as a whole, and to promote the stands of the future. It is estimated that the final volume removed would be around 1.5 MMBF (million board feet) from the estimated acreage. Pre-commercial thinning also would be used to reduce stocking within stands, and it is estimated that these stands would grow at a faster rate of growth after this treatment. Generally, all treatments would continue to promote the existing cover class (which is also the desired future condition). Other acres shown in Table 7-1 show that treatment may be occurring within a current timber sale that is located on the south side of Cap Wallace Creek. These acres will continue to bring the cover type closer to, if not change it completely to the DFC. As can be seen, no acres will be converted to a deficit class.

A majority of the treatments within this area would be similar to a shelterwood harvest within section 34 and the small portion of section 3 that is adjacent and north of Little Fish Creek. Primarily, the area to the northern portion of this area is proposed to leave half of the existing volume and favor seral trees for the residual stand. This treatment is planned to leave the stands within the ponderosa pine stand class, and would reduce the overall crown closure to promote the growth of future ponderosa pine. The units to the south of the ridge and that carry into the Little Fish Creek drainage are proposed to remove a larger portion of the Douglas-fir and the stand would end up "clumpier", leaving ponderosa pine closer together, but would leave larger openings for potential regeneration.

Ages within the project area and the planned timber harvest range from 17 years old (within the proposed pre-commercial thinning), to a stand that is around 145 years of age (within the proposed timber sale). A majority of the stands within the proposed timber sale are 130 years of age. Unit 4, within section 3, Township 13 North Range 14 West, is comprised of trees that are around 70 years old.

The area of proposed harvest within section 3 and 10 of Township 13 North, Range 14 West, would be similar to a commercial thin, but would favor seral species whenever possible. The existing stands are different than ones found upon much of the older DNRC ownership in the area. To correct the general stand trajectory of being controlled by Douglas-fir, to a stand that ponderosa pine dominated, the proposed treatment would harvest many of the Douglas-fir. Within areas closer to the top of this unit, Douglas-fir is often the only choice. The proposed plan is to work with the species we have within this area, and plan to plant seedlings after the next entry. This proposed treatment should decrease the amount of stems per acre, by removing an estimated one-third to half of the existing stand volume. As a majority of these trees are not producing a high amount of viable seeds, regeneration should be minimal, allowing the stand to continue to grow and fill the stand as time continues.

No-Action Alternative Direct, Indirect, and Cumulative Effects of the No-Action Alternative

No large scale timber harvest or pre-commercial thinning would occur at this time. Small timber permits, firewood permits, grazing, and pre-commercial thinning projects would likely continue. Weed control would take place as funding allows. The mountain pine beetle would likely continue to kill trees. Defoliation from Western spruce budworm would likely continue, resulting in growth loss and possible mortality. Some openings in the canopy from tree mortality would be expected. Over time, natural regeneration would be expected in these openings. Thus, no adverse direct, indirect, or cumulative effect would take place.

Action Alternative Direct, Indirect, and Cumulative Effects of the No-Action Alternative

Within the past ten years, several other sales have been proposed and completed within this general area. A large percentage of this treatment was done to address large insect populations and salvaging dead and dying trees. Within 5 air miles of this proposed project, DNRC has treated 2,081 acres with either timber sales or timber permits. This harvest has been done on approximately 2.7 percent of the unit total (76,414 acres). DNRC land within this radius equates to approximately 9,745 acres. Given the proposed project total of 683 acres, this sale represents 7 percent of this area. Adding this portion of DNRC historic harvest within the area (2,081 acres) to the proposed project (693 acres), the total treated area is 2,764 acres. Within the 5 mile radius, all harvest within the past ten years only equates to slightly more than 28 percent of DNRC land. At a large scale, this proposed harvest occupies less than one percent of the surface acres on the Clearwater Unit. If the total amount of proposed harvest (1.5 million board feet) was compared to the approximate board footage on the Clearwater Unit (310 million board feet), the potential harvest is also less than 1 percent.

Given the acreage and volume treated, the percentage of the area and the Clearwater Unit, and the continuity of the desired future condition, no adverse direct, indirect, or cumulative effect would take place.

8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:

Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify direct, indirect, and cumulative effects to fish and wildlife.

TERRESTRIAL HABITATS

Forested Habitat Connectivity and Wildlife Movements

Connectivity of forest cover between adjacent patches is important for promoting movements of species that are hesitant to cross non-forested areas and other openings. Effective corridors tend to be those that are relatively wide, unfragmented, diverse, and associated with riparian areas (Fischer and Fischenich 2000). Width of the travel corridor tends to determine the efficacy of the corridor for individual species. Riparian areas and ridges often play an important role in providing connective corridors. As such, corridors can become compromised through human management and environmental changes (e.g., fires or floods).

The project area currently contains approximately 1,092 acres of mature stands (100-plus years in age) of Douglas-fir, Douglas-fir/western larch, and ponderosa pine stands that have a reasonably closed canopy. Currently, forested and semi-forested areas cover

most of the project area, facilitating some use by those species requiring connected-forested conditions. The cumulative effects analysis area is approximately 38,429 acres and includes the area bounded by Highway 200, Elk Creek, North Fork Elk Creek, and Chamberlain Creek. DNRC manages approximately 33% (12,599 acres) of the cumulative effects analysis area. On DNRC-managed lands within the cumulative effects analysis area, roughly 6,700 acres of mature stands with a reasonably closed canopy exist.

Suggested Wildlife Mitigations

- Motorized public access will be restricted at all times on restricted roads that are opened for harvesting activities; motorized public access would revert to existing levels following harvesting. Efforts to discourage additional motorized access (legal and illegal) by reclaiming temporary roads and obstructing skid trails would benefit several wildlife species.
- Snags, snag recruits, and coarse woody debris will be managed according to *ARM 36.11.411* through *36.11.414*, particularly favoring western larch and ponderosa pine. Clumps of existing snags could be maintained where they exist to offset areas without sufficient snags. Coarse woody debris retention would emphasize retention of downed logs of 15-inch diameter or larger.
- Contractors and purchasers conducting contract operations will be prohibited from carrying firearms while on duty.
- Food, garbage, and other attractants will be stored in a bear-resistant manner.

Direct and Indirect Effects of the No-Action Alternative to Forested Habitat Connectivity and Wildlife Movement

No appreciable changes to existing stands would be anticipated. Stands providing forested cover that may be functioning as corridors, including riparian areas, saddles, and ridgelines, would not be altered. No changes in human developments, motorized access, or visual screening would occur. No changes in wildlife use would be expected. Thus, no direct or indirect effects to forested habitat connectivity and wildlife movements would be expected.

Cumulative Effects of the No-Action Alternative to Forested Habitat Connectivity and Wildlife Movement

No appreciable changes to existing stands would be anticipated. Stands providing forested cover that may be functioning as corridors, including riparian areas, saddles, and ridgelines, would not be altered. Past harvesting has reduced the amount of mature, forested habitats in portions of the cumulative effects analysis area; however, continued successional advances are moving stands toward mature forests. This alternative would continue to contribute to the amount of mature forested stands in the cumulative-effects analysis area. No changes in human developments, motorized access, or visual screening would occur. No changes in wildlife use would be expected. Thus, no cumulative effects to forested habitat connectivity and wildlife movements would be expected.

Direct and Indirect Effects of the Action Alternative to Forested Habitat Connectivity and Wildlife Movement

Approximately 231 acres of mature Douglas-fir and ponderosa pine stands with a closed canopy would be harvested. The majority of those acres would receive a shelterwood-type treatment, which would reduce habitat for those species relying on mature, closed-canopied forested habitats. Although these treatments would create fairly open stands that would not likely be used by wildlife species that use mature stands to move through the landscape, functional corridors, particularly along ridges, draws, and other topographic features, would be retained. Additionally, the only permanent human development constructed would be roughly 1.2 miles of new restricted road, but this would not be expected to concentrate human activity beyond the proposed activities. No changes in motorized human access would occur in the project area. Furthermore contract stipulations would minimize the presence of human-related attractants during the duration of the proposed activities. Some changes in visual screening would occur within individual units, but the combination of irregular-shaped units, topography, and unharvested patches throughout the project area would minimize the effect of the reductions in visual screening. Thus, a minor risk of adverse direct and indirect effects to forested habitat connectivity and wildlife movements would be expected.

Cumulative Effects of the Action Alternative to Forested Habitat Connectivity and Wildlife Movement

Proposed harvesting would reduce forested habitats that may be serving as corridors. Across the cumulative effects analysis area a variety of stands are providing for wildlife movements. No appreciable changes in the presence of human developments would occur, particularly no changes in the presence of human-related attractants or concentrations of human activities beyond the short duration of proposed activities. No changes to motorized access to the cumulative effects analysis area would occur. Negligible reductions in visual screening in a small portion of the cumulative effects analysis area would be anticipated. Thus, a minor risk of adverse cumulative effects to forested habitat connectivity and wildlife movements would be expected.

BIG GAME

Big Game Winter Range

Winter ranges enable big game survival by minimizing the effects of severe winter weather conditions. Winter ranges tend to be relatively small areas that support large numbers of big game, which are widely distributed during the remainder of the year. These winter ranges have adequate midstory and overstory to reduce wind velocity and intercept snow. The effect is that temperatures are moderated and snow depths are lowered, which enables big game movement and access to forage with less energy expenditure than in areas with deeper snow and colder temperatures. Snow depths differentially affect big game; white-tailed deer are most affected, followed by mule deer, elk, and then moose. Thus, removing cover that is important for wintering big game through forest management activities can increase their energy expenditures and stress in winter, but may increase forage production for use on summer range. Reductions in cover could ultimately result in a reduction in winter range carrying capacity and subsequent increases in winter mortality within local big game herds.

Montana Department of Fish, Wildlife, and Parks identified white-tailed deer (1,445 acres), elk (334 acres), and moose (2,401 acres) winter range in the project area. Mature Douglas-fir, with lesser amounts of ponderosa pine and lodgepole pine stands in the project area are providing attributes facilitating use by wintering big game. Approximately 810 acres of the project area appear to be providing snow intercept and thermal cover attributes. Evidence of non-winter use by deer and elk was noted during field visits.

A variety of stands across the 67,058-acre winter range, used for the cumulative effects analysis area, are presently providing thermal cover and snow intercept for big game. In the recent past, harvesting within this area has reduced thermal cover and snow intercept; ongoing harvesting across the winter range could continue altering these attributes while potentially disturbing wintering big game. Portions of the cumulative effects analysis area are in non-forested, herbaceous, or shrub types, which would not be expected to provide thermal cover or snow intercept in the future. Human disturbance within the winter range is associated with residential development, agricultural clearing, recreational snowmobile use, commercial timber management, and the several roadways.

Direct and Indirect Effects of the No-Action Alternative to Big Game Winter Range

No direct or indirect effects to big game winter range would be anticipated since: 1) subtle changes in thermal cover due to mortality and successional advances increasing canopy densities would be anticipated; 2) the amount of mature forested habitats on the winter range would not change appreciably; and 3) the levels of human disturbance would remain similar.

Cumulative Effects of the No-Action Alternative to Big Game Winter Range

Continued winter use of the larger winter range would be expected. No further changes in thermal cover and snow intercept would be anticipated. Human disturbance levels would be anticipated to continue at current levels. Thus, minor positive cumulative effects to big game winter range would be anticipated.

Direct and Indirect Effects of the Action Alternative to Big Game Winter Range

Some disturbance and displacement could be expected if some or all of proposed activities were to occur during the winter. However, winter logging provides felled tree tops, limbs, and slash piles that could concentrate feeding deer during nighttime and quiet periods when logging operations are shut down. Increasing short-term forage availability in this manner may partially offset some of the effects associated with temporary displacement caused by logging disturbance. This short-term benefit would not be expected to offset effects associated with reductions in thermal cover over the long-term (several decades). Proposed harvesting and pre-commercial thinning would occur on roughly 471 acres (33%) of white-tailed deer winter range, 15 acres (4%) of elk winter range, and 682 acres (28%) of moose winter range; proposed activities would reduce canopy closure and potential winter use by big game on roughly 174 acres (21% of existing stands) that likely have attributes facilitating considerable winter use by big game. Proposed timber harvesting would not prevent big game movement through the project area appreciably in winter and could stimulate browse production in the units. Proposed thinning could negligibly reduce future thermal cover and snow intercept capabilities in those areas. Thus, a low risk of adverse direct or indirect effects to big game winter range would be anticipated.

Cumulative Effects of the Action Alternative to Big Game Winter Range

Disturbance and displacement associated with this alternative could be additive to any displacement associated with ongoing activities in the cumulative effects analysis area and any other disturbances that may be affecting wintering big game. Similarly, any harvesting that may be occurring on other ownerships in the cumulative effects analysis area could continue altering big game winter range and/or disturbing big game. Modifications to thermal cover and snow intercept in the project area could further alter the amount of the larger winter range providing these attributes for big game. Thus, a minor risk of adverse cumulative effects to big game would be anticipated.

Elk Security Habitat

Timber harvesting can increase elk vulnerability by changing the size, structure, juxtaposition, and accessibility of areas that provide security during hunting season (Hillis et al. 1991). As visibility and accessibility increase within forested landscapes, elk and deer have a greater probability of being observed and, subsequently, harvested by hunters.

Areas that are within 0.5 mile of an open road do not provide elk security habitat. The project area is more than 0.5 miles from any open road. Hiding cover, which is the other component of elk security habitats, is fairly abundant in much of the project area. The project area contributes to the larger patch of potential elk security habitats in the cumulative effects analysis area, which in turn contributes to a larger block of security habitats that extends beyond the cumulative effects analysis area. While no motorized access to the project area exists, restricted roads facilitate non-motorized access. The cumulative effects analysis area is approximately 38,429 acres. DNRC manages approximately 33% (12,599 acres) of the cumulative effects analysis area. In the cumulative effects analysis area, motorized access for recreational hunting is somewhat limited, but some open roads (at least 11 miles, 0.2 miles/sq. mile) coupled with several open roads immediately outside of the cumulative effects analysis area facilitate access. Additionally, numerous restricted roads (at least an additional 240 miles; 4.00 mi./sq. mi.) that could be used for non-motorized use. Hiding cover in the cumulative effects analysis area is fairly common, and the combination of topography, distance from open roads, and the presence of hiding cover likely provides adequate cover for elk during the hunting season. The inclusion of the area in Montana Department of Fish, Wildlife, and Parks' Block Management Area likely attracts additional non-motorized use to the area.

Direct and Indirect Effects of the No-Action Alternative to Elk Security Habitat

No risk of adverse indirect effects to elk security habitats would be expected.

Cumulative Effects of the No-Action Alternative to Elk Security Habitat

No changes in elk security habitat would be anticipated. Past harvesting has reduced elk security habitats and allowed increased human access; continued maturation in previously harvested stands in the cumulative-effects analysis area would improve hiding cover in those areas. No other changes in disturbance and potential mortality due to hunting would be anticipated. Thus, a minor risk of positive cumulative effects to elk security habitats would be anticipated.

Direct and Indirect Effects of the Action Alternative to Elk Security Habitat

No changes in open roads or motorized access for the general public would occur. During all phases of the project, any roads opened with project activities would be restricted to the public and closed after the completion of project activities. Slight increases in non-motorized access would occur with the proposed construction of 1.2 miles of restricted roads. Proposed harvesting on 486 acres and

pre-commercial thinning on another 197 acres in the block of elk security habitats could reduce some of the hiding cover in the short-term, while slightly increasing sight distances; however hiding cover could improve as trees and shrubs become reestablished in the openings. The retention of structure and unharvested areas between the various units would reduce the potential effects of the hiding cover reductions. Overall, slight increases in sight distances and the modification of hiding cover may slightly increase elk vulnerability risk in the project area. Additionally, numerous contract stipulations would minimize the effect on the existing elk security habitats by prohibiting contractors from carrying firearms while conducting contract operations and prohibiting contractors from accessing restricted areas for other purposes, such as hunting. Collectively, a negligible risk of adverse effects to elk security habitats would be anticipated.

Cumulative Effects of the Action Alternative to Elk Security Habitat

No changes in public, motorized access or non-motorized access would be expected, which would not affect elk vulnerability in the cumulative effects analysis area. Alterations of cover could reduce the quality of elk security habitats in a small portion of the cumulative effects analysis area. Continued maturation across the cumulative-effects analysis area would improve hiding cover and elk security habitats. Negligible effects to big game survival would be anticipated. Thus, a negligible risk of adverse cumulative effects to elk security would be anticipated.

AVIAN HABITATS

Red-tailed Hawk

Red-tailed hawks are fairly common birds of prey. They use a wide variety of open to semi-open habitats, including: grasslands, rangelands, deserts, forests, woodlands, agricultural fields, and urban areas. In general, red-tailed hawks prefer a mixture of forests and fields or other open habitats and generally avoid dense, unbroken forested habitats. Breeding begins in March and young fly in June or July. The nest is in a tall tree in or at the edge of woodlands near an open area. Nesting territories range from 0.5 to 3 square miles.

While an active nest was not located, based upon the behavioral responses of an adult red-tailed hawk encountered in the project area in 2012, a nest is suspected. The stands in the project area likely provide suitable nesting structure and habitats for a suite of potential prey species using forested habitats. Within the project area, roughly 448 acres of semi-open types exist; additionally habitats likely exist on some of the other forested habitats in the project area that have been harvested in the past. The cumulative effects analysis area encompasses the project area and lands within a one mile radius. Within the cumulative-effects analysis area, approximately 3,450 acres of semi-open types exist, including a mixture of recently harvested forest stands and pastures.

Suggested Wildlife Mitigations

-Harvesting would be prohibited between April 1 and June 15 to minimize the potential for disturbance to grizzly bears, bald eagles, red-tailed hawks, and a host of other avian species.

-Retain nest tree and several perch trees within 100 yards of the nest tree for any identified red-tailed hawk nest. Within 0.5 miles of nest restrict harvesting to non-nesting period (August 1 – April 1).

Direct and Indirect Effects of the No-Action Alternative to Red-tailed Hawks

Existing red-tailed hawk nesting and foraging habitats in the project area would persist. With advancing succession, stands could continue to become more densely stocked, which could reduce habitat quality for red-tailed hawks. Thus, a negligible risk of adverse direct and indirect effects to red-tailed hawks would be anticipated.

Cumulative Effects of the No-Action Alternative to Red-tailed Hawks

Existing red-tailed hawk nesting and foraging habitats would persist. Recent timber management in the cumulative effects analysis area has potentially improved red-tailed hawk habitats by creating foraging habitats and reversing a portion of the Douglas-fir encroachment. Areas exhibiting mature forested conditions would be expected to persist and would not be expected to provide high quality red-tailed hawk habitats into the future. Thus, a negligible risk of adverse cumulative effects to red-tailed hawks would be anticipated.

Direct and Indirect Effects of the Action Alternative to Red-tailed Hawks

Some disturbance of red-tailed hawks could occur if activities were conducted during the nesting season; however harvesting activities would not be permitted between April 1 and June 15, which would avoid much of the nesting period. Although no nest has been identified to date, should a nest be identified prior to commencement of activities, the nest tree and several perch trees within 100 yards of the nest tree would not be harvested and additional seasonal mitigations (operations would be permitted between August 1 and April 1) would be implemented for areas within 0.5 miles of the nest. Should the nest be identified after commencement of activities, activities would cease until a DNRC wildlife biologist could review the situation. Proposed timber harvest and pre-commercial thinning on 682 acres would open the canopy while favoring ponderosa pine, western larch, and Douglas-fir, which could improve red-tailed hawk foraging habitats in the project area. Thus, minor positive direct and indirect effects would be expected to red-tailed hawks.

Cumulative Effects of the Action Alternative to Red-tailed Hawks

Proposed harvesting would increase the amount of the cumulative-effects analysis area that has been recently harvested. Overall a slight improvement in habitat quality at the cumulative-effects analysis level could be realized with this alternative. Thus, negligible beneficial cumulative effects to red-tailed hawks would be expected.

FISHERIES / AQUATIC HABITAT – Summary of Existing Conditions and Environmental Effects

Three analysis areas are considered in the fisheries assessment for the Nemo Timber Sale. Existing adverse cumulative effects to fisheries resources in the Fish Creek, Little Fish Creek, and the Warren Creek analysis areas are likely low to moderate. The primary

mechanisms for the elevated existing impacts in the analysis areas are sedimentation from forest roads, impacts to habitat connectivity, and grazing effects.

The proposed actions do not include any timber harvest or pre-commercial thinning within the SMZs. Also as part of the proposed actions, two road-stream crossings on Little Fish Creek would be permanently be removed, and approximately 0.6 miles of adjacent road would be reclaimed. Short-term impacts to sediment are expected as a result of removing the two road-stream crossings, but the long-term impacts at the affected areas are expected to be positive.

A risk of additional low, direct and indirect long-term impacts to fisheries resources is expected in the Fish Creek and Warren Creek analysis areas as a result of implementing the Action Alternative, but the overall cumulative effects to fisheries resources in these two analysis areas are expected to fundamentally be the same as those described under Existing Conditions. A net moderate, positive cumulative impact to fisheries resources is expected in the Little Fish Creek analysis area, which is due to the substantial mitigations to sediment delivery and habitat connectivity. Internal and public issues raised with regard to fisheries resources have been addressed in the detailed assessment.

For complete fisheries or wildlife biology analysis, please ask Clearwater Unit for that portion of the sale file

9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:

Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify direct, indirect, and cumulative effects to these species and their habitat.

FISHERIES- WESTSLOPE CUTTHROAT

Westslope cutthroat trout are classified as S2 Montana Animal Species of Concern. Species classified as S2 are considered to be at risk due to very limited and/or potentially declining population numbers, range and/or habitat, making the species vulnerable to global extinction or extirpation in the state. The Department of Natural Resources and Conservation has also identified westslope cutthroat trout as a sensitive species.

Westslope cutthroat – Direct, Indirect, and Cumulative Effects of the No-Action Alternative

Small timber permits, firewood permits, grazing, and pre-commercial thinning projects would likely continue. As a result of implementing the No-Action Alternative, no additional direct or indirect effects to fisheries resources would be expected to occur within all analysis areas beyond those described in the Existing Conditions.

Westslope cutthroat – Direct, Indirect, and Cumulative Effects of the Action Alternative

Three analysis areas are considered in the fisheries assessment for the Nemo Timber Sale. Existing adverse cumulative effects to fisheries resources in the Fish Creek, Little Fish Creek, and Warren Creek analysis areas are likely low to moderate. The primary mechanisms for the elevated existing impacts in the analysis areas are sedimentation from forest roads, impacts to habitat connectivity, and grazing associated effects.

The proposed actions do not include any timber harvest or pre-commercial thinning within SMZs. Also as part of the proposed actions, two road-stream crossings on Little Fish Creek would be permanently removed, and approximately 0.6 miles of adjacent forest road would be reclaimed. Short-term impacts to sediment are expected as a result of removing the two road-stream crossings, but long-term impacts at the affected areas are expected to be positive.

A risk of additional low, direct and indirect long-term impacts to fisheries resources is expected in the Fish Creek and Warren Creek analysis areas as a result of implementing the Action Alternative, but the overall cumulative effects to fisheries resources in these two analysis areas are expected to fundamentally be the same as those described under Existing Conditions. A net moderate, positive cumulative impact to fisheries resources is expected in the Little Fish Creek analysis area, which is due to the substantial mitigations to sediment delivery and habitat connectivity. Internal and public issues raised with regard to fisheries resources have been addressed through the attached detailed assessment.

TERRESTRIAL WILDLIFE:

The following species were considered but eliminated from detailed study due to lack of habitat present: black-backed woodpecker, Coeur d'Alene salamander, Columbian sharp-tailed grouse, common loon, harlequin duck, mountain plover, northern bog lemming, peregrine falcon, and Townsend's big-eared bat. Thus there would be a low risk of adverse direct, indirect, or cumulative effects as a result of either alternative.

Suggested Wildlife Mitigations

- A DNRC biologist will be consulted if a threatened or endangered species is encountered to determine if additional mitigations that are consistent with the administrative rules for managing threatened and endangered species (ARM 36.11.428 through 36.11.435) are needed.
- Identify and retain unthinned 20 percent of the thinning area to provide dense stands for snowshoe hares and Canada lynx.
- Retain small shade-tolerant trees in the pre-commercial thinning units to facilitate the development of multi-storied stands.
- Provide connectivity for fisher, Canada lynx, grizzly bears, and a host of other species by maintaining corridors of unharvested and/or lighter harvested areas along riparian areas, ridge tops, and saddles.

Grizzly Bears

Grizzly bears are native generalist omnivores that use a diversity of habitats found in western Montana. The search for food drives grizzly bear movements, with bears moving from low elevations in spring to higher elevations through the summer and early fall, as fruits ripen throughout the year. Primary threats to grizzly bears are related to human-bear conflicts, habituation to unnatural foods near high-risk areas, and long-term habitat loss associated with human development (Mace and Waller 1997). Forest-management activities may affect grizzly bears by altering cover and/or by increasing human access into secure areas by creating roads (Mace et al. 1997). These actions could lead to the displacement of grizzly bears from preferred areas and/or result in an increased risk of human-caused mortality by bringing humans and bears closer together and/or making bears more detectable, which can increase the risk of bears being illegally shot. Displacing bears from preferred areas may increase their energetic costs, which may, in turn, lower their ability to survive and/or reproduce successfully.

The project area is approximately 15 miles south of the Mor-Dun grizzly bear subunit of the Lander Fork Grizzly Bear Management Unit of the Northern Continental Divide Ecosystem grizzly bear recovery area, which has a sizeable grizzly bear population. The project area is in the 'occupied habitat' area as mapped by grizzly bear researchers and managers to address increased sightings and encounters of grizzly bears in habitats outside of recovery zones (Wittinger 2002). The project area primarily provides low elevation forested areas, riparian areas, and big game winter range. The cumulative effects analysis area is approximately 38,429 acres and includes the portion of the "occupied habitat". DNRC manages approximately 33% (12,599 acres) of the cumulative effects analysis area.

There are no open roads in the project area. Open road densities are fairly low in the cumulative effects analysis area (0.504 mi. /sq. mi., simple linear calculation); however open roads exist on the cumulative effects analysis area boundary, which would effectively increase the potential for disturbance to grizzly bears in the cumulative effects analysis area. Hiding cover exists on roughly 945 acres in the project area; grizzly bear hiding cover is likely present on a portion of the 9,278 acres of forested stands with $\geq 40\%$ canopy closure across the cumulative effects analysis area. Within the cumulative effects analysis area, hiding cover is largely absent from the 7,634 acres of shrubs, herbaceous, and non-forested habitats and is likely somewhat limited on the other 8,760 acres of sparsely stocked and young forest habitats in the cumulative effects analysis area. The habitats in the project area contribute to grizzly bear security habitats (blocks ≥ 0.3 miles from roads receiving motorized use and $\geq 2,500$ acres in size); within the cumulative effects analysis area a 28,611-acre block of grizzly bear security habitat exists.

Direct and Indirect Effects of the No-Action Alternative to Grizzly Bears

No direct or indirect effects to grizzly bears would be anticipated.

Cumulative Effects of the No-Action Alternative to Grizzly Bears

No appreciable changes to existing habitats would be anticipated; advances in succession within those recently harvested stands could improve hiding cover and potentially foraging habitats for grizzly bears. Use of the cumulative effects analysis area by grizzly bears would not be expected to change from present levels. Thus, no further adverse cumulative effects to grizzly bears would be anticipated.

Direct and Indirect Effects of the Action Alternative to Grizzly Bears

Proposed activities might affect grizzly bears directly through increased road traffic, noise, and human activity, and indirectly by altering the amount of hiding cover and forage resources. Activities in grizzly bear habitats reduce grizzly bear security, possibly resulting in increased stress and/or energy expenditure to endure the disturbance or to move from the area. These disturbances would only be present during harvesting operations; therefore, the season of disturbance is important in addressing effects to grizzly bears. Proposed activities would not be permitted between April 1 and June 15 since this area is in spring grizzly bear habitat. Otherwise harvesting could occur when soil conditions are dry, frozen, or snow covered. Thus activities could either occur during the denning or non-denning period for grizzly bears. If activities were to occur during the denning period, no direct effects to grizzly bears would be anticipated. Some disturbance of grizzly bears could be possible with any activities that may occur during the non-denning period, but activities would avoid the spring period when grizzly bears are most likely to be using the area. Overall, since the proposed activities would avoid the important spring period, a negligible potential for disturbance and displacement of grizzly bears exists.

Hiding cover, defined as vegetation that will hide 90 percent of a grizzly bear at a distance of 200 feet, would be partially reduced on roughly 682 acres in the short-term. Some hiding cover in the form of brush, shrubs, and sub-merchantable trees would persist in several of the units, albeit at a reduced level from the existing condition; hiding cover would increase through time as young trees and shrubs regenerate over the next 5 to 10 years. All proposed harvesting and thinning activities would occur in grizzly bear security habitats, and the proposed reductions in hiding cover with this alternative would reduce the quality of the security habitats in the project area.

No new open roads and roughly 1.2 miles of restricted roads would be constructed with this alternative. No changes in open road density or motorized public access would be anticipated. No appreciable changes in non-motorized human access would occur in the project area. Thus, a minor risk of adverse direct or indirect effects to grizzly bears would be anticipated.

Cumulative Effects of the Action Alternative to Grizzly Bears

Project activities that would be conducted during the non-denning period could temporarily increase human disturbance to grizzly bears within a portion of the cumulative effects analysis area; activities conducted during the denning period would not be expected to disturb grizzly bears. Any potential human disturbance would be of short duration (2-4 years) and would largely occur outside of the more sensitive time periods for grizzly bears in the area. Continued use of the cumulative effects analysis area by grizzly bears would be anticipated at levels similar to present levels. Modifications to existing hiding cover would be additive to the reductions from past timber

harvesting, ongoing harvesting, as well as more permanent land-cover changes in the cumulative effects analysis area; however, portions of the cumulative effects analysis area are currently providing hiding cover. Quality of grizzly bear security habitats would be reduced in short-term, but would persist through time. No changes in long-term open-road density would be anticipated. Thus, a minor risk of adverse cumulative effects to grizzly bears would be anticipated.

Canada Lynx

Canada lynx are associated with subalpine forests, generally between 4,000 to 7,000 feet in elevation in western Montana (Ruediger et al. 2000). The proposed project area ranges from approximately 4,160 to 5,920 feet in elevation and is dominated by Douglas-fir, western larch, and ponderosa pine stands. Lynx habitat in western Montana consists primarily of stands that provide habitat for snowshoe hares, either dense, young coniferous stands or dense, mature forested stands. Lynx in western Montana preferred mature, multi-storied stands with dense horizontal cover year-round; during the summer lynx also selected earlier successional stands with a high horizontal cover (Squires et al. 2010). For denning sites, the primary component appears to be abundant large woody debris, particularly in the form of downed logs, root wads, slash piles, and live trees (Squires et al. 2008). These conditions are found in a variety of climax vegetation habitat types, particularly within the subalpine fir series (Pfister et al. 1977). Historically, high intensity, stand-replacing fires of long fire intervals (150 to 300 years) occurred in continuous dense forests of lodgepole pine, subalpine fir, and Engelmann spruce. These fires created extensive even-aged patches of regenerating forest intermixed with old stands that maintained a mosaic of snowshoe hare and lynx habitat.

Approximately 617 acres of lynx habitat occur in the project area, which is comprised of foraging (257 acres), other suitable lynx habitats (largely forested lands that provide cover to facilitate movement; 285 acres), and temporary non-suitable lynx habitats (75 acres). Connectivity of forested habitats in the project area is only reasonably intact due to past harvesting and the matrix of unsuitable types intermixed within the project area. The cumulative effects analysis area is approximately 38,429 acres. DNRC manages approximately 33% (12,599 acres) of the cumulative effects analysis area. On DNRC-managed lands within the cumulative effects analysis area, roughly 2,718 acres of potential lynx habitats exist, which are dominated by 'other suitable' lynx habitats (1,276 acres), with smaller components of foraging (895 acres) and temporary non-suitable lynx (547 acres) habitats. On other ownerships, there are roughly 9,278 acres of forested stands with $\geq 40\%$ canopy closure across the cumulative effects analysis area; a portion of those stands would likely be suitable lynx habitats and probably include some winter foraging habitats. Additionally younger summer foraging habitats likely exist on a portion of the 8,760 acres of sparsely stocked and young forest on other ownerships; no lynx habitats likely exist on the 7,634 acres of shrubs, herbaceous, and non-forested types on other ownerships in the cumulative effects analysis area. The project area is on the northern edge of DNRC's Garnet Lynx Management Area (LMA). Within this LMA, roughly 87% of the total potential lynx habitats on DNRC-managed lands is in the various suitable habitat classes and 13% is in the temporary non-suitable habitat category.

Direct and Indirect Effects of the No-Action Alternative to Canada Lynx

In the short-term, no changes in lynx habitat elements would be expected in the project area. In the longer-term, barring any major natural disturbances, natural succession would advance several classes of lynx habitats forward, generally improving several classes of lynx habitats; however, summer foraging habitats would continue to be a fairly minor component of the project area. Winter foraging habitats would be expected to remain at similar levels, or increase in the future, as shade-tolerant trees develop in the understory and coarse woody debris accumulates through time due to natural events. Landscape connectivity would not be altered. Thus, a negligible risk of adverse direct and indirect effects to Canada lynx would be expected.

Cumulative Effects of the No-Action Alternative to Canada Lynx

No appreciable change in lynx habitats in the cumulative effects analysis area would occur, except the continued maturation of stands. Winter foraging habitats would be expected to improve in the future as shade-tolerant trees continue to develop in the understory, coarse woody debris accumulates through time due to natural events, and, in general, stands continue maturing out of summer foraging and other suitable habitats. No appreciable changes to landscape connectivity would be anticipated. Within the Garnet LMA, roughly 87% of the total potential lynx habitats would be in the various suitable habitat classes and 13% would be in the temporary non-suitable habitat category. Thus, a negligible risk of adverse cumulative effects to lynx would be expected.

Direct and Indirect Effects of the Action Alternative to Canada Lynx

Approximately 37 acres of other suitable habitats (6% of lynx habitats in the project area) in units 3402 and 3403 would be altered with proposed activities. These habitats would be expected to be moved into the temporary non-suitable lynx habitat class, increasing the amount of the project area in this category from 12 % to 18%. Forested connectivity could be slightly altered with the proposed activities, but overall connectivity would be maintained with a couple of corridors being retained along riparian areas, draws, ridges, and other topographic features. Collectively, a minor risk of adverse direct and indirect effects to Canada lynx would be expected.

Cumulative Effects of the Action Alternative to Canada Lynx

Within the cumulative-effects analysis area, lynx habitats would continue to persist. Reductions in other suitable habitats coupled with the increase in temporary non-suitable lynx habitats on the portions of the cumulative effects analysis area managed by DNRC could slightly decrease the quality of the lynx habitats in the cumulative effects analysis area. Within the cumulative effects analysis area, the forested habitats would be expected to continue providing suitable lynx habitats, which likely includes some winter foraging habitats. No changes in summer foraging habitats would occur, and through time, this habitat attribute could decrease in abundance as stands continue maturing and advancing in the absence of other disturbance. Slight increases in the amount of the cumulative effects analysis area in the temporary non-suitable lynx habitats would occur. Forest connectivity would not be appreciably altered within the cumulative effects analysis area. Within the Garnet LMA, roughly 86% of the total potential lynx habitats would be in the various suitable habitat classes and 14% would be in the temporary non-suitable habitat category. Thus, a minor risk of adverse cumulative effects to Canada lynx would be expected.

****Full reports for these species are within the sale project files and can be requested from Clearwater Unit****

SENSITIVE SPECIES

Bald Eagle

In Montana, bald eagles begin the breeding process with courtship behavior and nest building in early February; the young fledge by approximately mid-August, ending the breeding process.

Portions of the project area are within the home ranges associated with the Sunset Hill bald eagle territory. Direct, indirect, and cumulative effects were analyzed on the home ranges associated with the bald eagle territory.

Direct and Indirect Effects of the No-Action Alternative to Bald Eagles

No direct or indirect effects to bald eagles would be anticipated since: 1) no changes to human disturbance levels would occur; and 2) no changes in the availability of large, emergent trees suitable for perching or nesting would be expected.

Cumulative Effects of the No-Action Alternative to Bald Eagles

No cumulative effects to bald eagles would be anticipated since: 1) no changes to human disturbance levels would occur; and 2) no changes in the availability of large, emergent trees would be expected.

Direct and Indirect Effects of the Action Alternative to Bald Eagles

No activities would occur in the nest area or primary use area associated with the Sunset Hill bald eagle territory. Proposed activities would not be permitted between April 1 and June 15, otherwise harvesting could occur when soil conditions are dry, frozen, or snow covered. Thus, the proposed activities could occur during the early nesting season (February 1 – March 31), late nesting season (June 16-August 15), or the non-nesting period (August 16-February 1). Thus, a negligible risk of direct and indirect effects to bald eagles would be anticipated.

Cumulative Effects of the Action Alternative to Bald Eagles

Nesting bald eagles would continue to experience varying levels of disturbance. Any potential disturbance and/or noise from the proposed harvesting would be additive to any of these other forms of disturbance, however no changes in bald eagle behavior would be anticipated. Thus, a negligible risk of cumulative effects to bald eagles would be anticipated.

Fisher

Fishers are a mid-sized forest carnivore whose prey includes small mammals such as voles, squirrels, snowshoe hares, and porcupines, as well as birds (Powell and Zielinski 1994). They also take advantage of carrion and seasonally available fruits and berries (Foresman 2012). Fishers appear to be highly selective of stands that contain resting and denning sites and tend to use areas within 150 feet of water (Jones 1991). Forest-management considerations for fisher involve providing for resting and denning habitats near riparian areas while maintaining travel corridors.

There are approximately 46 acres of potential riparian fisher habitats and 303 acres of upland habitats in the project area. The cumulative effects analysis area is approximately 38,429 acres. DNRC manages approximately 33% (12,599 acres) of the cumulative effects analysis area; roughly 2,705 acres of upland fisher habitats and 246 acres of riparian habitats exist on DNRC-managed lands. On DNRC-managed lands, roughly 92% of the potential riparian fisher habitats in the cumulative effects analysis area are providing structural habitat attributes that would facilitate use by fisher.

Direct and Indirect Effects of the No-Action Alternative to Fisher

No direct and indirect effects to fisher would be expected.

Cumulative Effects of the No-Action Alternative to Fisher

No further cumulative effects to fishers would be anticipated.

Direct and Indirect Effects of the Action Alternative to Fisher

No riparian habitats would be altered with this alternative. Approximately 106 of the 303 acres (35%) of upland fisher habitats in the project area would receive treatments that would likely be too open to be used by fisher. No changes in open roads would be anticipated, which would not likely alter trapping pressure and the potential for fisher mortality. Negligible reductions in landscape connectivity could occur with the proposed activities, but activities would avoid riparian areas commonly used by fisher. Thus, a minor risk of adverse direct and indirect effects to fisher would be anticipated.

Cumulative Effects of the Action Alternative to Fisher

Since no riparian habitats would be modified, no changes in the amount of the preferred riparian fisher cover types meeting structural requirements for fishers at the cumulative-effects analysis area would occur. Reductions in suitable upland fisher habitats in the project area would lead to negligible reductions in the amount of suitable upland fisher habitats in the cumulative effects analysis area. These reductions would be additive to the losses associated with past timber harvesting in the cumulative-effects analysis area as well as any ongoing harvesting. No appreciable changes to landscape connectivity would be anticipated, and activities would avoid riparian areas commonly used by fisher. No appreciable changes in human disturbance and potential trapping mortality would be anticipated. Thus, a minor risk of adverse cumulative effects to fisher would be anticipated since.

Flammulated Owl

Flammulated owls are tiny, migratory, insectivorous forest owls that inhabit old, open stands of warm-dry ponderosa pine and cool-dry Douglas-fir forests in the western United States and are secondary cavity nesters. In general, preferred habitats have open to moderate canopy closure (30-50 percent) with at least 2 canopy layers, and are often near small clearings. Without disturbance,

Douglas-fir encroach upon ponderosa pine stands resulting in increased stand density and decreased habitat quality for flammulated owls.

There are approximately 1,495 acres of potential flammulated owl habitats in ponderosa pine and dry Douglas-fir stands across the project area. The cumulative effects analysis area encompasses the project area and lands within a one mile radius. Within the cumulative-effects analysis area, approximately 2,915 acres of potential flammulated owl habitats exist on DNRC-managed lands. A portion of the cumulative effects analysis area has been harvested in the recent past, potentially improving flammulated owl habitat by creating foraging areas and reversing a portion of the Douglas-fir encroachment and opening up stands of ponderosa pine.

Direct and Indirect Effects of the No-Action Alternative to Flammulated Owls

Existing flammulated owl habitats in the project area would persist. Habitat sustainability and quality for flammulated owls would continue to decline. Thus, a negligible risk of adverse direct and indirect effects to flammulated owls would be anticipated.

Cumulative Effects of the No-Action Alternative to Flammulated Owls

Existing flammulated owl habitats would persist. Recent timber management in the cumulative effects analysis area has potentially improved flammulated owl habitats by creating foraging habitats and reversing a portion of the Douglas-fir encroachment, however retention of large ponderosa pine and/or Douglas-fir was not necessarily achieved in many of those areas, thereby minimizing the benefits to flammulated owls. Areas exhibiting mature forested conditions would be expected to persist and could provide flammulated owl nesting habitats into the future. Thus, a negligible risk of adverse cumulative effects to flammulated owls would be anticipated.

Direct and Indirect Effects of the Action Alternative to Flammulated Owls

Flammulated owls are tolerant of human disturbance (McCallum 1994), however the elevated disturbance levels associated with proposed activities could negatively affect flammulated owls should activities occur during the nesting season. Proposed timber harvest would open the canopy while favoring western larch, ponderosa pine, and Douglas-fir. Elements of the forest structure important for nesting flammulated owls, including snags, coarse woody debris, numerous leave trees, and snag recruits would be retained in the proposed units. Additionally, the proposed pre-commercial thinning could improve foraging habitats. The more open stand conditions, the retention of fire adapted tree species, and the maintenance of snags would move the proposed project area toward historical conditions, which is preferred flammulated owl habitat. Thus, minor positive direct and indirect effects would be expected to flammulated owls.

Cumulative Effects of the Action Alternative to Flammulated Owls

Proposed harvesting would increase the amount of the cumulative-effects analysis area that has been recently harvested, which would add to the amount of potential habitat available, but possibly at the expense of losing snags and large trees important for nesting. Overall a slight improvement in habitat quality at the cumulative-effects analysis level could be realized. The portions of the cumulative-effects analysis area not currently providing flammulated owl habitats would not be expected to change any time in the future. Thus, negligible beneficial cumulative effects to flammulated owls would be expected.

Gray Wolf

Wolves are a wide-ranging, mobile species that occupy a wide variety of habitats that possess adequate prey and minimal human disturbance, especially at den and/or rendezvous sites. In Montana, wolves prey primarily on white-tailed deer and elk (Kunkel et al. 1999, Arjo et al. 2002). Reductions in big game populations and/or winter range productivity could indirectly be detrimental to wolf populations.

Big game species are abundant in the project area. Several landscape features commonly associated with denning and rendezvous sites occur in the project area, such as areas with gentle terrain near a water source (valley bottoms), openings, and proximity to big game wintering areas. The project area is not within any known wolf pack areas; however, the Garnet and Union Peak wolf packs are in the general vicinity. Some use of the project area by wolves could occur for breeding, hunting, or other life requirements. No known den or rendezvous sites occur in the project area.

The cumulative effects analysis area is approximately 38,429 acres. DNRC manages approximately 33% (12,599 acres) of the cumulative effects analysis area. Within this cumulative-effects analysis area, big game species are fairly abundant and winter range for deer and elk are common. Numerous landscape features commonly associated with denning and rendezvous sites, including meadows and other openings near water and in gentle terrain, occur in the cumulative-effects analysis area. Past timber management and human developments have altered big game and wolf habitats in the cumulative effects analysis area.

Direct and Indirect Effects of the No-Action Alternative to Gray Wolves

Disturbance to wolves would not increase. No changes in big game habitat, including no changes to big game winter ranges, would be expected during the short-term; therefore, no changes in wolf prey availability would be anticipated. Thus, no direct and indirect effects would be expected to gray wolves.

Cumulative Effects of the No-Action Alternative to Gray Wolves

White-tailed deer and elk winter ranges would not be affected and substantive changes in big game populations, distribution, or habitat use would be not anticipated. Levels of human disturbance would be expected to remain similar to present levels. Past harvesting and any ongoing harvesting may cause shifts in big game use and, subsequently, gray wolf use, of the cumulative-effects analysis area; however, no changes would be anticipated that would alter levels of gray wolf use of the cumulative-effects analysis area. Thus, no further cumulative effects to gray wolves would be expected.

Direct and Indirect Effects of the Action Alternative to Gray Wolves

Wolves using the area could be disturbed by harvesting activities and are most sensitive at den and rendezvous sites, which are not known to occur in the project area or within 1 mile of the project area. Should either a den or rendezvous site be identified within 1 mile of the project area, a DNRC biologist would be consulted to determine if additional mitigations would be necessary. Seasonal operations constraints would restrict activities between April 1 and June 15. Proposed harvesting on approximately 486 acres would alter canopy closure and potential winter use by big game. Thus, a low risk of direct and indirect effects would be expected to gray wolves .

Cumulative Effects of the Action Alternative to Gray Wolves

Reductions in thermal cover and snow intercept capacity on a portion of the winter range in the cumulative effects analysis area could redistribute the big game relying on those habitats, and subsequently shift wolf use of a small portion of the cumulative effects analysis area. Reductions in cover may cause slight decreases in use by deer and elk; however, no appreciable changes would be expected within the cumulative-effects analysis area. These reductions in cover would be additive to losses from past timber-harvesting activities as well as any ongoing harvesting in the cumulative-effects analysis area. No substantive change in wolf use of the cumulative-effects analysis area would be expected; wolves could continue to use the area in the long-term. Thus, a low risk of cumulative effects to gray wolves would be expected.

Pileated Woodpecker

Pileated woodpeckers are one of the largest woodpeckers in North America and excavate the largest cavities of any woodpecker. Preferred nest trees are large diameter western larch, ponderosa pine, cottonwood, and quaking aspen trees and snags, usually 20 inches dbh and larger. In the project area, potential pileated woodpecker nesting habitat exists on approximately 308 acres. These nesting habitats are dominated by Douglas-fir, western larch, and ponderosa pine. Additionally, roughly 1,698 acres of sawtimber stands exist in the project area and are potential foraging habitats. The cumulative effects analysis area encompasses the project area and lands within a one mile radius. Within the cumulative-effects analysis area, approximately 1,130 acres of potential pileated woodpecker habitats exist on DNRC-managed lands. . Much of the area is poorly stocked, and recently harvested stands on other ownerships in the cumulative effects analysis and is likely too open to be useful to pileated woodpeckers.

Direct and Indirect Effects of the No-Action Alternative to Pileated Woodpeckers

A negligible risk of adverse direct and indirect effects to pileated woodpeckers would be expected.

Cumulative Effects of the No-Action Alternative to Pileated Woodpeckers

No disturbance of pileated woodpeckers would occur. Continued use of the cumulative-effects analysis area by pileated woodpeckers would be expected at levels similar to the existing condition. Thus, a negligible risk of adverse cumulative effects to pileated woodpeckers would be expected since.

Direct and Indirect Effects of the Action Alternative to Pileated Woodpeckers

Pileated woodpeckers tend to be tolerant of human activities (Bull and Jackson 1995), but might be temporarily displaced by the proposed harvesting and thinning should those activities occur during the nesting season. No appreciable disturbance to pileated woodpeckers would be anticipated should the proposed activities occur during the non-nesting period. Activities would be restricted between April 1 and June 15, which would limit the potential for disturbance during middle of the nesting season. Harvesting would alter some of the continuously-forested habitats suitable for pileated woodpeckers in the project area. Roughly 39 acres of the potential nesting habitat and an additional 638 acres of potential foraging habitats would be modified. Most of these acres would likely be too open to be used by pileated woodpeckers following proposed treatments. Proposed pre-commercial thinning could improve habitat quality in the future. The silvicultural prescriptions would retain healthy ponderosa pine, western larch, and Douglas-fir while promoting the growth and/or regeneration of many of these same species, which would benefit pileated woodpeckers in the future by providing nesting, roosting, and foraging habitats. Thus, a minor risk of adverse direct and indirect effects to pileated woodpeckers would be anticipated.

Cumulative Effects of the Action Alternative to Pileated Woodpeckers

Reductions in pileated woodpecker habitats and further modifications in the amount of continuously forested habitats available in the cumulative effects analysis area would occur. Several snags, coarse woody debris, and potential nesting trees would be retained in the project area; however, future recruitment of these attributes may be reduced in a portion of the area by the proposed activities. Any modifications would be additive to past harvesting. Continued maturation of stands across the cumulative-effects analysis area is increasing suitable pileated woodpecker habitats. Thus, a minor risk of adverse cumulative effects to pileated woodpeckers would be anticipated.

For complete fisheries or wildlife biology analysis, please ask Clearwater Unit for that portion of the sale file

10. HISTORICAL AND ARCHAEOLOGICAL SITES:

Identify and determine direct, indirect, and cumulative effects to historical, archaeological or paleontological resources.

The DNRC staff archeologist was scoped and no historical, archaeological, or paleontological resources were found to be at risk. Traces of a log flume were found in the fall of 2007 in Section 10. Much of this flume was in poor condition and was impossible to find on section 3, Township 13 North, Range 14 West (at that time it was owned by Plum Creek Timber Company). At this time, no direct, indirect, or cumulative impacts are expected from the proposed action.

11. AESTHETICS:

Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify direct, indirect, and cumulative effects to aesthetics.

The landscapes in the greater area are influenced by glaciation (such as Seeley Lake or areas near Ovando, Mt.) with steep glaciated peaks and lower rolling ridges, or have been carved and formed by the Blackfoot River. The landscape within the project area is mountainous with deep canyons formed by the streams that still occupy the bottom areas. The Blackfoot River is located west and northwest of the proposed project. The terrain gently slopes upward in a series of benches moving upward in elevation to the east and southeast of the river. These benches are moderately to heavily timbered. Several primary road systems such as Elk Creek and Sunset Hill are present. Any changes within the area from these alternatives would be in addition to past harvests, road building, and mining within the area.

Direct and Indirect Effects of the No-Action Alternative to Aesthetics:

The risk of direct effects would be expected to be low. Over time, tree growth would be expected to fill in current, naturally occurring openings. Due to the long period of time involved, this affect would be expected to be low. The risk of indirect affects would be expected to be insignificant.

Cumulative Effects of the No-Action Alternative to Aesthetics:

Past forest management activity on surrounding lands, would contribute to the cumulative visual effects to project area landscape. The risk of cumulative effects would be expected to be low as disturbances from past forest management activities have mostly revegetated. A minimal amount of cumulative effects would be expected from the continued increase in vegetative growth due to the long period of time involved.

Direct and Indirect Effects of the Action Alternative to Aesthetics:

The timber harvest may be visible from Highway 200, but will appear to be “an extension” of other cutting units from the past. Some of the areas of harvest will be blocked from long distance viewing due to topographic changes or flatter land. An experienced observer or someone who resides in the area would notice the changes to the other stands, mostly this will occur due to the decrease in stand density.

Where possible, much of the proposed cutting would be light to moderate in intensity. As many of the largest trees would be left, and a random, natural spacing would be used, it would be easier to decrease contrast in form, line, color, and texture between treated and untreated stands. Silvicultural treatments would borrow extensively from the natural grassy openings and only slightly affect the texture of the seen areas. Likewise, silvicultural treatments in section 3 would decrease the hard edge that occurs when comparing DNRC harvest from 2007 in section 10. This is caused by the noticeable difference regenerated stands from the previous industrial owner.

Cumulative Effects of the No-Action Alternative to Aesthetics:

Any change to the scenery in the area from these alternatives would be in addition to past timber harvests, road building, vegetation management (grazing, pre-commercial thinning, etc.) and fire activity within the project area. This analysis includes all past and present effects. Due to slash and the initial color contrasts of the slash and limited road improvement work, there is an expected short-term impact.

12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:

Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify direct, indirect, and cumulative effects to environmental resources.

No negative direct, indirect, or cumulative effects are expected to occur as a result of the No-Action or of this project.

13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:

List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.

Haywire Wallace Timber Sale (TS-1535), DNRC 2006

Elk Wall Timber Sale (TS-1680) *under the Haywire Wallace E.A.*, DNRC 2006

Salmo Warren Timber Permit (TP-15,235), DNRC 2013

State Forest Land Management Plan EIS, DNRC 1996, set the strategy that guides DNRC forest management and decisions statewide.

Montana DNRC Forested Trust Lands Habitat Conservation Plan (HCP), DNRC and Fish and Wildlife Service 2012

IV. IMPACTS ON THE HUMAN POPULATION

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" if no impacts are identified or the resource is not present.*

14. HUMAN HEALTH AND SAFETY:

Identify any health and safety risks posed by the project.

Log truck traffic would increase slightly on area roads for the duration of the proposed action. Signs in the general area would be used to warn motorists and local residents. No unusual safety concerns are foreseen as part of these projects. Neither the No-Action nor Action would cause long term safety concerns. The reduction of fuels available the potential event of a wildfire are addressed by this timber harvest and pre-commercial thinning. No other additional positive or negative effects would be seen for this proposed project or the No-Action.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:

Identify how the project would add to or alter these activities.

The proposed action would lead to a small, temporary increase in industrial activity during implementation. The proposed action would include timber harvesting, pre-commercial thinning, and log hauling. There would be no impact to the existing grazing permit by either the No-Action or the proposed project.

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:

Estimate the number of jobs the project would create, move or eliminate. Identify direct, indirect, and cumulative effects to the employment market.

A few short term jobs may be created for the duration of the proposed action.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:

Estimate tax revenue the project would create or eliminate. Identify direct, indirect, and cumulative effects to taxes and revenue.

The proposed action has only limited indirect implications for tax collection.

18. DEMAND FOR GOVERNMENT SERVICES:

Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify direct, indirect, and cumulative effects of this and other projects on government services

Aside from contract administration, there would be minimal impacts related to demand for government services.

19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:

List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.

No locally adopted environmental plans are associated with these proposed projects.

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:

Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify direct, indirect, and cumulative effects to recreational and wilderness activities.

This project area is used by the public primarily for hunting and is done by foot, horse, or non-motorized bicycle travel only. This is part of the Department of Fish, Wildlife, and Parks Block Management and hunter access is between September 1 and the end of hunting season. The nearest wilderness area is 21 miles to the north and is not accessed through this area.

No direct, indirect, or cumulative effects to the recreational access or wilderness areas would be expected as a result of this proposed project.

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:

Estimate population changes and additional housing the project would require. Identify direct, indirect, and cumulative effects to population and housing.

There would be no measurable direct, indirect, or cumulative impacts related to population and housing due to the proposed project.

22. SOCIAL STRUCTURES AND MORES:

Identify potential disruption of native or traditional lifestyles or communities.

No negative direct, indirect, or cumulative effects would be expected under either alternative.

23. CULTURAL UNIQUENESS AND DIVERSITY:

How would the action affect any unique quality of the area?

No negative direct, indirect, or cumulative effects would be expected under either alternative.

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:

Estimate the return to the trust. Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify direct, indirect, and cumulative economic and social effects likely to occur as a result of the proposed action.

No-Action: The current grazing lease would continue. The approximate amount of return would be \$516.88 for the section, although this parcel is "cut" in half by Cap Wallace Creek. There is a current recreational income from Montana Hunting, Fishing, and Trapping licenses. A rough approximation based upon fiscal year incomes in 2011, showed the trust beneficiaries received \$0.17 per acre. Given the 2,416.4 acres within the project area, the income would be \$410.79. Other activities would be looked at again in the future.

Action: This proposed project would include the income from above (\$927.67). Also, it would show income and forest improvement payments from the proposed project. Given the projected harvest volume of 1.5 million board feet (MMBF), we would expect a purchase price of \$25.00 per ton. Assuming a conversion factor of 6.5 tons per thousand board foot, it would have a rough equivalent of \$162.50 per thousand board foot. Our "stumpage" would be around \$243,750.00. We currently collect \$22.72 per thousand board foot that is used for forest improvement. This money would be used in the future to pay for projects such as thinning and planting. That income would be approximately \$34,080.00. Although the DNRC doesn't track project level costs, the fiscal year 2011 cost to revenue ratio was 1.8:1 showing that \$1.80 was earned with \$1.00 of cost.

EA Checklist Prepared By:	Name: Craig V. Nelson	Date: March 26, 2013
	Title: Supervisory Forester	

V. FINDING

25. ALTERNATIVE SELECTED:

I select the action alternative

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

No significant impacts are expected with the selection of the action alternative. Harvest during relatively dry time periods or in winter months with frozen and/or snow covered ground will mitigate concerns of sensitive soils and the removal of dead, dying and potential of infected Ponderosa pine trees will decrease chances of catastrophic fire activity in this area as well as leaving the stand growing more vigorous and making the residual stand more resistant to future infestations of insect and disease. The combination of harvest effects, road repairs and restoration treatments to remove stream crossings is expected to be a positive effect to water quality and water resources in this project area.

Significant impacts are not expected as a result of implementing the proposed activity. There are no unique resources or habitats associated with the project area which would indicate anything but short term or minor impacts occurring as a result of the harvest actions. The project area is appropriate for timber harvest and normal, regularly applied mitigation measures (BMPS) will be effective in minimizing impacts.

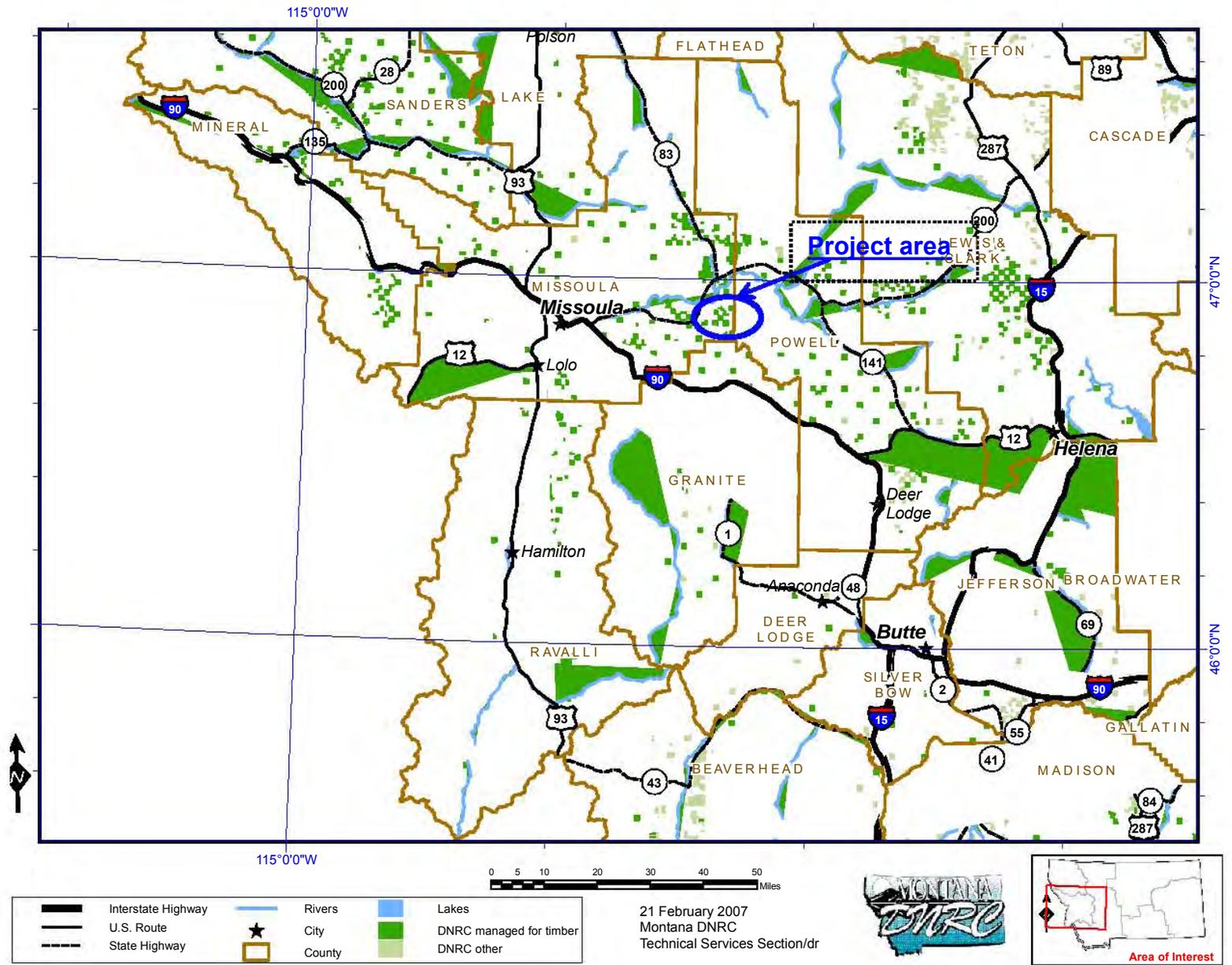
27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

EIS

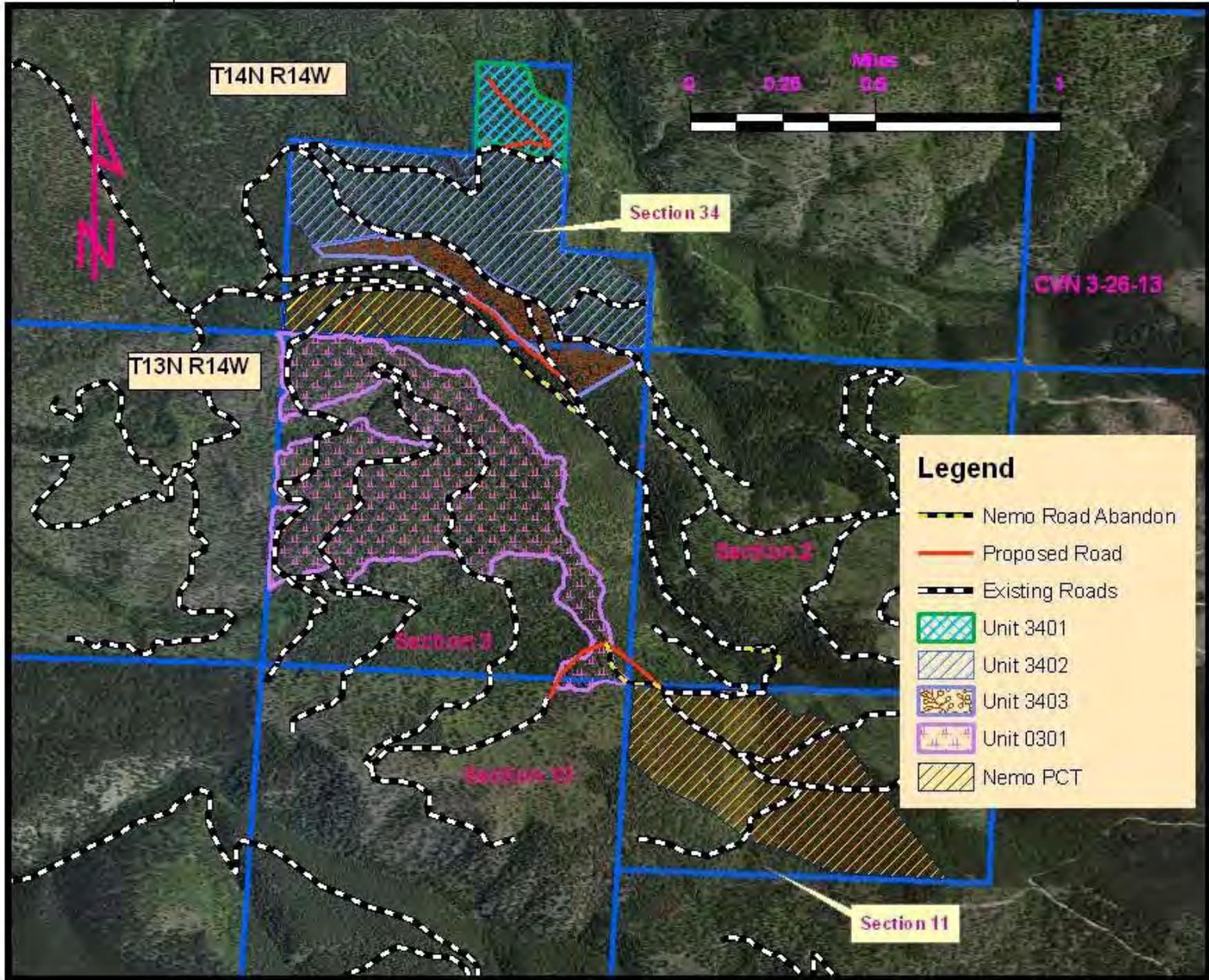
More Detailed EA

No Further Analysis

EA Checklist Approved By:	Name: David M. Poukish
	Title: Clearwater Unit Manager
Signature: /s/ David M. Poukish	
Date: 5/01/2013	



Proposed Nemo Projects



DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION



BRIAN SCHWEITZER, GOVERNOR

SOUTHWESTERN LAND OFFICE

STATE OF MONTANA

Phone: (406) 542-4200
Fax: (406) 542-4285

1401 27th Avenue
Missoula, MT 59804-3199

Initial Proposal Nemo Timber Sale and Projects

The Montana Department of Natural Resources and Conservation, Clearwater Unit is proposing to manage forest land on the following state owned parcels near Greenough, Montana.

Section 34 T14N R14W: Common School Trust
East ½ of Section 2, and Sections 3 and 11 T13N R14W: Common Schools Trust
West ½ of Section 2 T13N R14W: Public Buildings Trust

The primary objectives of this proposal is to salvage trees infested by the mountain pine beetle (*Dendroctonus ponderosae*), open stands to reduce infestations of insects, and to produce funds for the above mentioned trusts. The proposed harvest would contribute to the DNRC's sustained yield as mandated by State Statute 77-5-222, MCA. This project would be developed in compliance with the State Forest Land Management Plan, Montana Administrative Rules regarding Forest Management, and the DNRC Habitat Conservation Plan. The State would also use this as an opportunity to remove dying, stagnant, diseased, and overstocked trees. Many of the stands in the area are in a condition resulting from fire suppression and past logging practices. This created many of the resulting stands of old, stagnant, small diameter Douglas-fir saw log and exceptionally thick stands of regeneration. Traditionally the area was primarily dominated by ponderosa pine and Western larch-Douglas-fir stands.

Some of the above mentioned parcels were previously owned by a large timber company. DNRC became the owner in July of 2010. The DNRC would like to begin treatments that will move this land toward our desired future condition. These are generally based on the situation described above.

The proposed project may include harvest of approximately 1.5 million board feet of timber and could construct up to one mile of road. DNRC also plans to repair and maintain up to 10.5 miles of road to ensure they meet Best Management Practices or DNRC guidelines. Up to a mile of existing road may be closed. Noxious weed management, property surveys, pre-commercial thinning, and tree planting may also be involved.

The proposed project area is bordered by the Ninemile Prairie, Chamberlain Creek, Cap Wallace Creek, and the Blackfoot River. This area is known to contain numerous wildlife species and fish bearing streams run through the project area. These streams would be examined to determine the potential effect of this sale. Grizzly Bears have been sighted in this general area. Protective measures to fulfill the Endangered Species Act and the DNRC Habitat Conservation Plan will be used in applicable areas. This area is also part of a Lynx Management Area and all stands will be looked at for potential effect of the proposed harvest and pre-commercial thinning.

The DNRC is in the scoping phase of the project environmental assessment so all volumes and acreages are preliminary estimates. We plan that portions of this proposed action could begin to take place as early as fall 2012. In preparation for this project, specialists in forest management, wildlife biology, hydrology, soil science, and archeology will be consulted. Neighboring landowners will also be asked for their input.

The Montana D.N.R.C. invites comments and suggestions concerning this proposal from all interested parties. Please respond by April 20, 2012 to:

Department of Natural Resources and Conservation
Attn: Craig V. Nelson
48455 Sperry Grade Road
Greenough, MT.
59823-9635

or e-mail to: crnelson@mt.gov
or: (406) 244-2386

DEPARTMENT OF NATURAL RESOURCES
AND CONSERVATION



STEVE BULLOCK, GOVERNOR

1625 ELEVENTH AVENUE

STATE OF MONTANA

DIRECTOR'S OFFICE: (406) 444-2074
FAX: (406) 444-2684

PO BOX 201601
HELENA, MONTANA 59620-1601

January 24, 2013

Tribal Historic Preservation Office
Confederated Salish and Kootenai Tribes
P.O. Box 278
Pablo, MT.
59855

Greetings,

This scoping notice is for a short segment of road that we would like to construct, and a small parcel of land that we would like to harvest. All operations would be done as part of the Nemo Timber Sale.

You responded to our scoping of the Nemo Timber Sale in March of 2012. These projects would be described and effects would be described in the Nemo Timber Sale environmental assessment. This change in our plans is necessary if we remove several corrugated metal pipes to enhance fish habitat and fish passage. This would be done as part of our Habitat Conservation Program and as a fisheries issue.

I have also included a map as you had originally requested. Included on the map are potential units, proposed road construction (including the segment referred to above), and proposed pre-commercial thinning units.

Given the small area that this will affect, the scoping deadline is 15 days. As such, could you please respond to me through one of the avenues listed below by February 15, 2013.

Thank you for your time.

Department of Natural Resources and Conservation
Attn: Craig V. Nelson
48455 Sperry Grade Road
Greenough, MT.
59823-9635

DEPARTMENT OF NATURAL RESOURCES
AND CONSERVATION



STEVE BULLOCK, GOVERNOR

1625 ELEVENTH AVENUE

STATE OF MONTANA

DIRECTOR'S OFFICE: (406) 444-2074
FAX: (406) 444-2684

PO BOX 201601
HELENA, MONTANA 59620-1601

January 24, 2013

Sharon Rose
Comments Coordinator
Region 2 MT Fish, Wildlife & Parks
3201 Spurgin Rd, Missoula, MT 59804-3101

Sharon,

This scoping notice is for a short segment of road that we would like to construct, and a small parcel of land that we would like to harvest. All operations would be done as part of the Nemo Timber Sale.

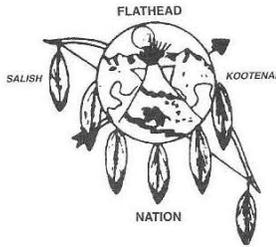
You responded to our scoping of the Nemo Timber Sale in April of 2012. These projects would be described and effects would be described in the Nemo Timber Sale environmental assessment. This change in our plans is necessary if we remove several corrugated metal pipes to enhance fish habitat and fish passage. This would be done as part of our Habitat Conservation Program and as a fisheries issue.

I have also included a newer map. Included on the map are potential units, proposed road construction (including the segment referred to above), and proposed pre-commercial thinning units.

Given the small area that this will affect, the scoping deadline is 15 days. As such, could you please respond to me through one of the avenues listed below by February 15, 2013.

Thank you for your time.

Department of Natural Resources and Conservation
Attn: Craig V. Nelson
48455 Sperry Grade Road
Greenough, MT.
59823-9635



THE CONFEDERATED SALISH AND KOOTENAI TRIBES
OF THE FLATHEAD NATION

P.O. BOX 278
Pablo, Montana 59855
(406) 275-2700
FAX (406) 275-2806
www.cskt.org



A People of Vision

A Confederation of the Salish,
Pend d' Oreilles
and Kootenai Tribes

TRIBAL COUNCIL MEMBERS:

Joe Durglo - Chairman
Carole Lankford - Vice Chair
Reuben A. Mathias - Secretary
Ron Trahan - Treasurer
Leonard W. Gray
Lloyd D. Irvine
Steve Lozar
Jim Malatare
James Bing Matt
Terry Pitts

March 15, 2012

Craig V. Nelson
DNRC Clearwater Unit
48455 Sperry Grade Road
Greenough, MT 59823-9635

RE: Nemo Timber Sale and Projects

Mr. Nelson:

The Confederated Salish and Kootenai Tribes (CSKT) have reviewed the proposal to harvest approximately 1.5 million board feet of timber and construct up to one mile of road and repair and maintain up to 10.5 miles of road. The proposed project area is bordered by the Ninemile Prairie, Chamberlain Creek, Cap Wallace Creek and the Blackfoot River. This project is located in:

Section 34, Township 14 North., Range 14 West: Common School Trust.

E½ Section 2, Sections 3 and 11, Township 13 North., Range 14 West.: Common Schools Trust.

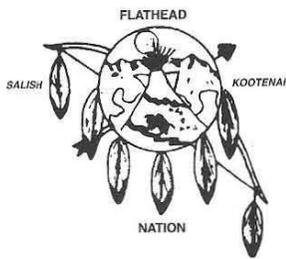
W½ Section 2, Township 13 North., Range 14 West.: Public Buildings Trust.

Despite the lack of documented sites in the vicinity of the project area, the CSKT would like to remind the Department of Natural Resources and Conservation of the important connections that our tribes has with the landscape. Our trail corridors, harvesting and hunting areas, camp location and other important cultural sites are embedded throughout the region. We would appreciate being notified if any new or additional information arises throughout the course of this project so that we may actively participate in the management of our cultural resources.

We appreciate the time and effort placed into the report provided to us. If you have any questions or concerns please feel free to contact Mike Durglo, Sr. mikeds@cskt.org or Francis Auld francisa@cskt.org at (406) 675-2700 ext. 1075.

Sincerely,

Joe Durglo
CSKT Council Chairman



THE CONFEDERATED SALISH AND KOOTENAI TRIBES
OF THE FLATHEAD NATION

P.O. BOX 278
Pablo, Montana 59855
(406) 275-2700
FAX (406) 275-2806
www.cskt.org



A People of Vision

A Confederation of the Salish,
Pend d' Oreilles
and Kootenai Tribes

January 29, 2013

Craig V. Nelson
DNRC Clearwater Unit
48455 Sperry Grade Road
Greenough, MT 59823-9635

TRIBAL COUNCIL MEMBERS:

Joe Durglo - Chairman
Carole Lankford - Vice Chair
Reuben A. Mathias - Secretary
Ron Trahan - Treasurer
Leonard W. Gray
Lloyd D. Irvine
Steve Lozar
Jim Malatare
James Bing Matt
Terry Pitts

RE: Nemo Timber Sale and Projects

Mr. Nelson:

The Confederated Salish and Kootenai Tribes (CSKT) Tribal Historic Preservation Office (THPO) have reviewed the Department of Natural Resources and Conservation (DNRC) proposal for the construction of a short stretch of road (approximately 100 feet), and harvest a small portion of trees (approximately 2 acres) located in the NE¼ of Sec. 10, T.13 N., R.14 W., P.M.M. The projects would be done as part of the Nemo Timber Sale., which we have sent our comments on.

Just a reminder. We would appreciate being notified if any new or additional information arises throughout the course of this project so that we may actively participate in the management of our cultural resources.

We appreciate the time and effort placed into the report provided to us. If you have any questions or concerns feel free to contact me or Ira Matt at any time.

Sincerely,

Michael L. Durglo, Sr., Co-Director
Tribal Historic Preservation Office
Confederated Salish and Kootenai Tribes
(406) 675-2700 ext. 1077
mikeds@cskt.org

Ira Matt
CSKT Tribal Historic Preservation Officer
(406) 675-2700 ext. 1083
iram@cskt.org

cc:

Francis Auld, Co-Director
CSKT – Tribal Historic Preservation Office



Montana Fish, Wildlife & Parks

Region 2 Office
3201 Spurgin Road
Missoula, MT 59804-3101
406-542-5500
Fax 406-542-5529
April 24, 2012

Craig Nelson
Clearwater Unit
DNRC
48455 Sperry Grade Rd.
Greenough, MT 59823-9635

Reference: Nemo Timber Sale and Projects (Little Fish Creek drainage, off Blackfoot River; Missoula Co; T13N, R14W, Sec. 2, 3, N2 11; T14N, R14W, part of Sec 34)--
Scoping

Dear Mr. Nelson:

Montana Fish, Wildlife and Parks (FWP) has reviewed the Initial Proposal for this Montana Department of Natural Resources and Conservation (DNRC) projected timber harvest of approximately 1.5 million board feet of timber within portions of approximately 1,920 DNRC acres east of Greenough. The primary natural resource purposes are to “salvage trees infested with mountain pine beetle, [and] open stands to reduce infestations of insects.” Our comments follow.

Fisheries

Little Fish Creek supports genetically pure westslope cutthroat trout. The population is small and is negatively influenced by roads and culvert crossings within the riparian corridor. The public has made a significant investment through a native fish Habitat Conservation Plan conservation easement on adjacent private land. This investment is similar to the Chamberlain Creek HCP conservation easement on DNRC properties.

FWP Fisheries personnel are especially interested in how this project would correct existing conditions to meet Best Management Practices. FWP recommends that riparian buffers that improve water quality and restore riparian function be incorporated into project planning, given the conservation values of this stream. We also recommend that this sale along Little Fish Creek follow the riparian harvest plan as adopted on the nearby North Chamberlain Creek Conservation Easement parcels in order to provide for aquatic values.

Please feel free to contact our Blackfoot area fisheries biologist, Ron Pierce (phone 542-5532 in Missoula; rpierce@mt.gov) with any questions.

From: Nelson, Craig
Sent: Monday, January 28, 2013 10:08 AM
To: Rose, Sharon
Cc: Schairer, Garrett; Collins, Jeff; Poukish, Dave
Subject: RE: scoping for a small project adjacent to the Nemo T.S.

Sharon,

Beginning at the northernmost unit and working south, the proposed silvicultural treatments would be as follows:

The first unit had a redtail hawk within the stand during the beginning of the preparatory work. The nest was never found, but as the marking continues, if we find the nest we will consult our wildlife biologist (Garrett Shairer). We will use the language within the EA and the timber sale contract that will allow us to take mitigations, if we need to use them. We plan to use the standard timelines for protecting the redtail nesting by using requirements in the Migratory Bird Act. Silvicultural prescription would be a shelterwood leaving ½ of the existing volume. Our marking would be key on reserving seral species.

The next unit would also similar to the above prescription, but would not include the mitigation language or timelines. Harvest would again be around ½ of the standing volume. Leave trees would be based upon seral species.

The next unit is south facing and has been harvested by ACM, Champion, and PCTC prior to our ownership. We propose to make a switch to seral trees (primarily ponderosa pine), and in many places trees would be in clumps. This is generally a light reserve to a moderate reserve shelterwood, and assume ½ of the stand being removed.

The last unit would be within section 3. This area has been logged several times by the previous landowners. Our proposed prescription would be more similar to a commercial thin that would be based upon moving the stand to a larger seral state. The proposed harvest would remove 1/3 to ½ of the stands.

The roads that are on the map can also be described from the northern most road proposed to the south. The one that is within the proposed unit to the north will be temporary. The next road (north of Little Fish Creek) is proposed to be extended and would tie into the existing road. There is a large culvert that is proposed to be removed on the south road adjacent to Little Fish Creek. This would promote the channel stability and fish passage. Along the main road further up the drainage, we propose removing several other pipes on this creek or on side channels. This would make the final road to the south (Dorey Road) necessary if the proposed actions above were completed. This would be for future management and fire protection as the roads to the south of Little Fish Creek would travel across the ridge and down the Warren Creek drainage. All of these roads are behind gates and are not open for motorized public travel.

I hope this helps,
Craig

From: Rose, Sharon
Sent: Thursday, January 24, 2013 4:47 PM
To: Nelson, Craig
Subject: RE: scoping for a small project adjacent to the Nemo T.S.

Thanks, Craig. I'll get my guys looking at it.

Can we have more info on the following?

- What is proposed action for each of the 4 units?
- Status of the 3 proposed roads after harvest?
- Relative to "This segment of road would allow us to change the direction of flow of traffic on an existing road, . . .": If you are proposing changes (closures, openings, direction, etc.) to the road system in this area, could we have a map of current roads and proposed for after the sale?

Thanks for this extra,
Sharon

From: Nelson, Craig
Sent: Thursday, January 24, 2013 12:48 PM
To: Rose, Sharon
Subject: scoping for a small project adjacent to the Nemo T.S.

Sharon,

This is a scoping for a very short segment of road that we are proposing to build and a small parcel of ground that we would like to harvest at the same time. All work would be done under the Nemo TS that you commented on in April of 2013.

A hard copy is in the mail.

Craig

Montana Department of Natural Resources and Conservation



**Clearwater Unit
48455 Sperry Grade Road
Greenough, MT 59823
(406) 244-5857**

Persons with disabilities who need an alternative, accessible format of this document should contact the DNRC at the above address or phone number.

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