Appendix D – Biological Evaluation

United States Department of Agriculture	Forest Service	Colville National Forest	Newport-Sullivan Lake Ranger Districts 12641 Sullivan Lake Road Metaline Falls, WA 99153 (509) 446-7500

Reply To: 2430/2672 **Date**: July 30, 2009

Subject: Hanlon Timber and Fuels Management Project: Biological Evaluation of Effects to Terrestrial Threatened, Endangered, and Sensitive Species

To: John Buehler: District Ranger

I. INTRODUCTION

This document is an analysis of the effects of the proposed Hanlon Timber Sale and Fuels Management Project on terrestrial threatened, endangered and sensitive (TES) wildlife species. Effects of the Hanlon project on sensitive plant and fish species will be addressed in separate reports.

On June 1, 2005 the USDI Fish and Wildlife Service (FWS) listed six animals that might occur on the Colville National Forest (CNF) as either threatened or endangered under the Endangered Species Act of 1973 (USFWS reference 1-9-05-SP-0272). On August 8, 2007 the FWS officially removed the bald eagle from the threatened and endangered species list, owing to the successful recovery of eagle populations throughout their range. On May 4, 2009 the FWS officially removed the northern Rocky Mountains population of gray wolves from the threatened and endangered list. Table 1 displays the species that are presently listed for the CNF. Species in shaded blocks have suitable habitat present in the Hanlon Project Area and will be addressed in this report.

Table 1: Hanlon Project Area - habitats for threatened (T) and endangered (E) species.
(Species in shaded blocks are addressed in this report)

Species	Status	Habitat Present?	Comments
bull trout (*Salvelinus confluentus*)	T	Yes	Effects to this species are covered in the fish biologist's report for this project.
Canada lynx (*lynx canadensis*)	T	Yes	Project area lies below the lynx primary range. Lynx might use the area during dispersal movements between areas of suitable habitat.
grizzly bear (*Ursus arctos*)	T	Yes	Project area is within recovery habitat. Spring forage habitats include low – mid elevation riparian areas, meadows, parklands, etc. Summer / fall foraging sites include mid - high elevation, berry producing shrub fields. Grizzlies often den in alpine / subalpine areas with deep soils. Seclusion from human disturbance is a primary management objective.
woodland caribou (*Rangifer tarandus caribou*)	E	Yes	Project area is outside recovery habitat and at lower elevations than what is presently considered potential caribou range. Many timber stands in the project area are warmer / drier forest types (mixed conifer, lodgepole pine) that do not provide suitable habitat for caribou.

The USDA Forest Service (FS) maintains a list of sensitive species for each National Forest. Sensitive species are those whose population viability is a concern because of:

- Significant current or predicted downward trends in numbers of animals, or
- Significant current or predicted downward trends in habitat capability that could reduce a species' existing distribution.

Table 2 displays the sensitive terrestrial vertebrate species listed for the CNF. Species in shaded blocks have suitable habitat present in the Hanlon Project Area and will be addressed in this report.

Table 2: Hanlon Project Area - habitats for USDA Forest Service (Region 6) sensitive terrestrial vertebrates (Species in shaded blocks are addressed in this report)

Species	Habitat Present?	Comments
bald eagle (*Haliaeetus leucocephalus*)	Yes	Eagles forage on rivers and large lakes with abundant fish, (ex. Pend Oreille River). For nesting / perching, they select large trees that stand above the main forest canopy, and usually within one mile of a foraging area. Winter roosts may be in late and old structural stage stands with good canopy closure.
common loon (*Gavia imner*)	Yes	Recent nesting on Yocum Lake. Loons use the Pend Oreille River during migrations.
fisher (*Martes pennanti*)	Yes	Fishers inhabit dense coniferous or mixed coniferous/deciduous forests with good canopy closure. They prefer late and old structural stage stands. Travel habitat includes forest stands adjacent to lakeshores, riparian areas, ridges. Fishers den in large hollow logs or snags, tree cavities, brush piles etc.
gray wolf (*Canis lupus*)`	Yes	This species is closely tied to habitats that support abundant big game. Limiting human-caused mortality is a primary management objective. Wolves have been documented in the Hanlon Project Area.
great gray owl (*Strix nebulosa*)	Yes	This owl forages in open, grassy habitat including open forest stands, shelterwood and clear-cut logged areas, meadows and wetlands. They nest in forest stands near wet meadows, pastures and other openings. Nest structures include large, broken topped snags and abandoned raptor nests.
harlequin duck (*Histrionicus histrionicus*)	Yes	Harlequins breed in cold, fast-moving mountain streams (ex. Sullivan, Harvey Creeks) with dense shrub / timber nearby and an absence of human disturbance. They winter on boulder strewn coastal waters.
n. leopard frog (*Rana pipiens*), eared grebe (*Podiceps nigricollis*)	Yes	These species require wetland and pond habitats with much concealing cover.
peregrine falcon (*Falco peregrinus*)	No	No tall cliff faces or other rock features that peregrines could use for nesting exist in the Hanlon Project Area.
pygmy shrew (*Sorex hoyi*)	Yes	Found in conifer stands with dense ground vegetation. May be associated with disturbed, seral habitats. In WA, pygmy shrews have been captured in upland, even-aged second-growth conifer forests.
red-tailed chipmunk (*Tamias ruficaudus*)	No	Project area is at lower elevations than would be expected to be inhabited by this species.
sandhill crane (*Grus canadensis*)	No	Project area contains no large expanses of undisturbed marshes or wet and dry meadows where visibility is good from all vantage points (WDFW, 2003).
Townsend's big-eared bat (*Corynorhinus Townsendii*)	No	Project area contains no known mines or caves that this bat could use for roosting / hibernation. There are no suitable old, abandoned buildings for nursery colonies.

Table 2 continued

Species	Habitat Present?	Comments
white-headed woodpecker (*Picoides albolarvatus*)	Yes	Primarily birds of mature, ponderosa pine forests. This species forages on large, decayed snags and ponderosa pine trees greater than 24" in size.
wolverine (*Gulo gulo luteus*)	Yes	Wolverines typically den in higher elevation rock slides, caves, and crevices; often in glacial cirque basins. They forage in all forested habitats but particularly those where carrion can be found. They require seclusion from human disturbance.

Table 3 displays the sensitive invertebrate species that will be addressed in this document. Species in shaded blocks have suitable habitat present in the Hanlon Project Area and will be addressed in this report.

Table 3: Hanlon Project Area - habitats for USDA Forest Service (Region 6) sensitive invertebrates (Species in shaded blocks are addressed in this report)

Species	Habitat Present?	Comments
meadow fritillary (*Boloria bellona*)	Yes	Common in the eastern US in hayfields and human-disturbed habitats. In the west they occur in meadows and openings in aspen or pine forests.
Great Basin fritillary (*Speyeria egleis*)	No	This species uses forest openings and edges, generally at higher elevations. The project area is likely too low in elevation to support this species.
Rosner's hairstreak (*Callophyrus nelsoni*)	Yes	Habitat for this species includes openings and edges in coniferous forest around mature western red cedar stands.
magnum mantleslug (*Magnipelta mycophaga*)	Yes	Found in a variety of low to mid-elevation sites, often with water in the general vicinity.
Fir pinwheel (*Radiodiscus abietum*)	Yes	Most often found in moist and rocky Douglas fir forest at mid-elevations in valleys and ravines and sometimes in western redcedar. Often found in or near talus of a variety of rock types, or under fallen logs.
masked duskysnail (Lyogyrus spp.)	Yes	This species is a kettle lake associate.

II. PROJECT AREA DESCRIPTION

The Hanlon Project Area is mainly located in the lower LeClerc Creek drainage, but includes some lands to the west that drain directly into the Pend Oreille River. The project area lies below 3,500 feet in elevation. Land ownership in the area is checkerboard, with alternating sections of National Forest System (NFS) lands and private lands (predominantly Stimson Lumber Company). There are three small lakes in the area; Yocum, Ridge, and Scotchman lakes. County roads, power line corridors, home sites, pastures, fields, etc. exist on the lower reaches of LeClerc Creek.

The Colville National Forest Land and Resource Management Plan (USDA, 1989), hereinafter referred to as the Forest Plan, divided the forest into several different "Management Areas" (MAs), each with its own management emphasis. Table 4 lists the MAs within the project area.

Table 4: Hanlon Project Area – Forest Plan management areas (MAs)

Forest Plan Management Area	Management Emphasis	Acres
MA1	Old Growth Associated Species Habitat	465
MA5	Scenic/Timber	91
MA6	Scenic / Big Game Winter Range	347
MA7	Wood / Forage Production	4,434
MA8	Big Game Winter Range	3,659
Total National Forest System (NFS) land		8,996
Private land		5,275
Hanlon Project Area		14,271

A. Past Timber Management – The Panhandle Lumber and Diamond Match companies completed most of the original logging in the LeClerc Creek watershed in the 1920s and 1930s. These companies focused on cutting mature western white pine trees (to make matchsticks) and western redcedar poles. In the summer of 1929, major fires burned through the LeClerc Creek basin. These fires burned up entire stands across the watershed. About the same time white pine blister rust came into the area, and became widespread in a few years.

As the forest began to grow back following the fires, much of the land in the watershed was bought by the county, then ultimately the Forest Service. Presently the watershed has a more or less checkerboard ownership pattern with alternating sections of National Forest System (NFS) lands and private lands predominantly owned by Stimson Lumber Company.

Timber harvest on NFS lands in the Hanlon Project Area began in the 1960s and has been relatively sporadic. Roughly 18 percent of the NFS lands have been harvested since they were acquired by the Forest Service. About 93 percent of the private timber lands in the project area have been harvested over the last few decades. Past harvest activities on all ownerships are displayed in the following table.

Table 5: Hanlon Project Area - past harvest activity

Harvest Rx	NFS Acres Harvested (percent of total)	Pvt. Acres Harvested (percent of total)
Clearcut (HCC)	198 (12%)	448 (9%)
Clearcut with reserve trees (HCR)	17 (1%)	197 (4%)
Cull tree removal (HCU)	101 (6%)	101 (2%)
Shelterwood (HSH)	375 (23%)	839 (17%)

Harvest Rx	NFS Acres Harvested (percent of total)	Pvt. Acres Harvested (percent of total)
Partial removal (HPR)	678 (41%)	2,108 (43%)
Overstory removal (HOR)	92 (6%)	942 (19%)
Commercial thinning (HTH)	176 (11%)	176 (4%)
Selection Cut (HSL)	0	28 (1%)
Salvage Cut (HSV)	0	80 (2%)
Total	1,637 (100%)	4,919 (100%)

Harvest prescriptions:
Clearcut – All merchantable trees were removed.
Clearcut with reserve trees – All merchantable trees were removed except 12 - 15 trees per acre left as seed sources.
Shelterwood – Residual stand retains 16 - 20+ trees per acre in the overstory to shelter advanced regeneration.
Overstory removal – All overstory trees were removed to release advanced regeneration.
Partial removal – individual trees were selected for harvest
Commercial thin – Generally thinning from below leaving about one third of the stand basal area
Cull tree removal – Trees with no commercial value were removed to release and / or reduce competition with desired trees to be retained.
Selection cut – Individual trees or small groups of trees were removed. The intention is to retain high a high degree of forest cover while providing for an orderly development of trees with a range of ages and / or size classes.
Salvage cut – Dead and dying trees were removed.

B. Current Vegetation - Due to past logging, wildfires, and white pine blister rust, very few trees from pre-settlement times exist in the LeClerc Creek watershed. These are mostly western larch or ponderosa pine, with an occasional white pine or cedar. They tend to be of very large diameter and often have fire scars near the base. Most existing trees in the watershed started growing following the large fires of 1929. They are now approaching 80 years of age.

In the Hanlon Project Area, upland areas support stands of mixed tree species. South-facing slopes favor stands dominated by Douglas-fir and ponderosa pine. East and west facing slopes are dominated by stands containing Douglas-fir with scattered ponderosa pine, western larch, and grand fir. The north-facing slopes are dominated by stands containing cedar, hemlock, and grand fir with scattered Douglas-fir and larch. Small draws and sheltered benches have cedar, white pine, and western hemlock in addition to other species. Engelmann spruce and subalpine fir trees are present in local areas of cold air drainage such as stream bottoms.

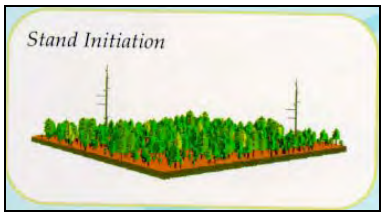
Throughout the Hanlon Project Area, lodgepole pine stands dominate many flat terraces adjacent to the major creeks. Lodgepole pine is a relatively short-lived tree. As these trees approach 80 years of age, they become less able to tolerate moisture stress and competition from neighboring trees. They become increasingly vulnerable to attack by mountain pine beetles. As over-mature lodgepole pines drop out of

a stand over time, the species composition of the stand will shift towards more shade tolerant trees such as grand fir, cedar, western hemlock and Douglas-fir.

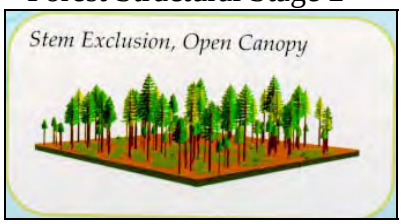
Three species of hardwoods are present in the Hanlon Project Area. Large, black cottonwood trees exist singly or in small clumps along the major creeks. Paper birch and aspen occur in small patches throughout the area. These trees have a relatively short life span and are now reaching maturity. In many cases they are being shaded out by growing conifers. Disturbances such as wildfire can reverse this trend by removing conifer cover and the above-ground portion of the hardwood trees. The aspen and birch can then re-sprout from intact, underground root systems. Some aspen saplings exist in openings created by past timber harvest in the project area.

1. Stand Structural Stages – The Forest Plan, as amended by Lowe (1995) identifies seven stages of timber stand development ranging from stand initiation to late and old structure. These seven structural stages are described in detail on the following page.

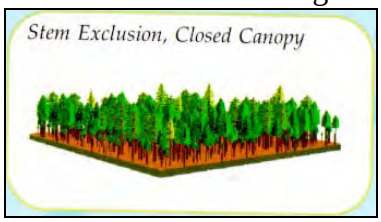
Forest Structural Stage 1



Forest Structural Stage 2



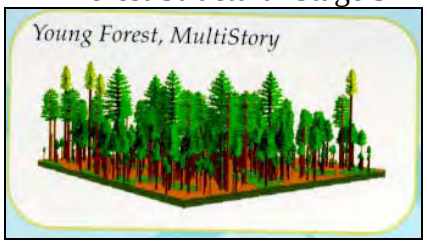
Forest Structural Stage 3



Stand Initiation through Stem Exclusion (Stages 1-3). These early stands are fully stocked with conifer trees that may range in size from seedlings through 15” diameter trees. The distinguishing characteristic is that all the trees are near the same age (same cohort), and all the trees are in the same canopy layer. A second canopy layer of shade tolerant trees has not yet started to develop in the understory.

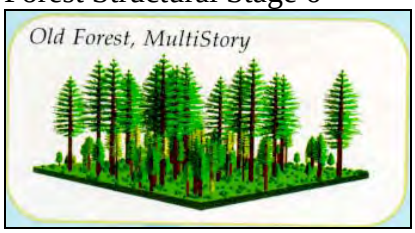
Forest Structural Stage 4

Forest Structural Stage 5



Understory Re-initiation and Multi-Stratum without Large Trees (Stages 4 & 5). A second cohort of trees is established under an older overstory in these middle stages. Openings start to appear in the canopy, and the amount of down wood increases. The trees in the overstory are typically sun-loving (larch, pine, Douglas-fir, etc.) while the trees in the understory are typically shade-tolerant (western redcedar, hemlock). The stand may contain many sizes of trees, but large trees are uncommon.

Forest Structural Stage 6



Forest Structural Stage 7

Multi-stratum with Large Trees (Stage 6). These late and old structural stage stands contain two or more cohorts of trees, and trees of all sizes are present. The overstory canopy is discontinuous, and dominated by large trees

Single-Stratum with Large Trees (Stage 7). A single layer of large seral trees is present in this late and old stage. The understory may be absent or may contain sparse or clumpy seedlings and saplings. These stands are often park-like in appearance.

The majority of the Hanlon Project Area lies in the LeClerc Creek Watershed. The following table compares the current and historic range of stand structural stages on NFS lands in the watershed, as a percentage of each biophysical environment.

Table 6: NFS lands in the LeClerc Creek Watershed - existing stand structural stages

Biophysical Environment	Early Stages 1, 2, 3		Middle Stages 4, 5		Late and Old Stages 6		Late and Old Stages 7	
	H%	C%	H%	C%	H%	C%	H%	C%
Group 3 warm, dry Douglas fir /shrub	10-25	6*	10-25	87*	5-20	3*	30-75	4*
Group 5 Cool, wet Douglas fir / grand fir / shrub	15-35	30	20-50	67*	20-30	2*	10-25	1*
Group 7 Cold, wet subalpine fir / shrub	15-40	28	35-75	53	10-30	9*	2-5	10*
Group 11 Cool, wet, western redcedar / western hemlock / forb-shrub	10-30	27	20-50	66*	30-70	6*	NA	1

H - Historic Range (percent of the biophysical environment)
C - Current Condition (percent of the biophysical environment)
* - Denotes currently outside of the Historic Range of Variability

Based on the table above, late and old structural stage stands occupy less of the forested area in the watershed now than they did historically. There should be no timber harvest in these stands until more late and old stands are recruited in the watershed (Lowe, 1995).

Stands in middle structural stages are more common now than they were historically, especially in the Douglas fir groups. These stands are available for timber harvest. Timber harvest should be designed to move the stands towards late and old structural conditions as appropriate to meet the historic range of variability.

Most stands in early structural stages are not available for timber harvest since they do not contain commercial sized trees. Some of these stands could be pre-commercially thinned.

2. Old Growth Forest - As directed by the Regional Forester in a letter dated December 3, 1992 and by the Forest Supervisor in a letter dated April 5, 1993, we surveyed the Hanlon Project Planning Area for old growth forest stands using the North Idaho Zone definitions (Green et al, 1992). No stands that currently meet the North Idaho Zone definition for old growth were identified in the project area.

C. Existing Transportation System – The following table displays the miles of roads and trails within the Hanlon Project Area.

Table 7: Hanlon Project Area - existing motorized route data

Motorized route type	Description	Approximate miles (mi. / sq. mi.)
open roads (NFS)	open to public travel	15.8 (0.71)
open roads (state, county, pvt.)		13.2 (0.59)
restricted roads	Closed with a gate. Administrative access allowed for forest management activities.	47.7 (2.14)
un-drivable roads	Brushed in, or boulders / berms on road entrance. No longer safely and prudently drivable.	11.4 (0.51)
motorized trails	User-created, mostly on old, closed roadbeds.	2.5 (0.11)

III. PROPOSED FOREST MANAGEMENT ACTIVITIES

A. Alternative A (no action)

No forest management activities would occur with this alternative. Programmatic activities such as road maintenance and livestock grazing would continue.

B. Alternative B (proposed action)

This alternative would include commercial timber harvest, pre-commercial thinning of sapling to pole sized conifers, prescribed burning, and mechanical fuels treatments. These activities would be primarily designed to:

- Reduce forest fuel loads and restore fire to its historic function across the landscape,
- Reduce the susceptibility of trees to insects and diseases by reducing stand density,

- Limit the magnitude of future mountain pine beetle outbreaks by removing lodgepole pine trees that are susceptible to beetle attack (based on their diameter and age),
- Restore early seral tree species (ponderosa pine, western larch, western white pine) that have been dramatically reduced by past over-harvest, fire suppression, and white pine blister rust,
- Promote additional "late and old" structural stage stands and otherwise move the area closer to its Historic Range of Variability (HRV) for stand structural stages.

Table 8 displays the various commercial and non-commercial forest management activities proposed with Alternative B.

Table 8: Hanlon Project Area - Proposed vegetation management

Silvicultural prescription	Approximate harvest acres	Approx. acres created openings
commercial thin	1,519	0
selection harvest	1,177	0
shelterwood	107	107
thin / shelterwood	863	201
shelterwood / thin	849	604
thin / overstory removal	78	0
pre-comm. thin with pulp removal	54	0
total commercial acres	4,647 (30 MMBF)	912
pre-commercial thin existing plantations	624	0

Logging system	Approx. acres
ground-based	4,063
helicopter	489
skyline	95

Fuels treatments	Maximum acres
grapple pile / masticate / biomass removal	2,324
under-burn	2,323
total	4,646

1. Silvicultural Prescriptions - Harvest units might have a single prescription, or a combination of two prescriptions, depending on natural variations in the stand. For example: portions of a given stand with trees that would respond well to thinning would be thinned, while areas of stagnant and suppressed trees would be harvested using a shelterwood prescription.

Commercial Thin (HTH) – Thin out the suppressed, intermediate and co-dominant trees (a "thin from below"). Increase the growing space for the largest and most vigorous appearing trees, thereby

accelerating their growth and moving the stand towards a late structural stage. The thinned stand would average 40-60 trees / acre depending on the average tree diameter. Overhead canopy closure would be reduced for up to 15 years, but there would still be much overhead cover retained.

Selection Harvest (HSL) – Selectively remove individual trees or groups of trees. Small holes (up to one acre in size) would be created in the tree canopy. A new crop of seedlings would become established in the small openings. This treatment would accelerate the growth of the remaining over-story trees and move the stand more rapidly towards a late structural stage. Canopy closure would be reduced, but normally to a lesser extent than would be the case with a commercial thin.

Shelterwood Harvest (HSH) – Harvest all trees except 20-25 trees per acre. Generally select the largest and most vigorous trees to be retained. The reserved trees would provide a seed source, shelter for existing regeneration, and wildlife habitat. This prescription is mostly used in dense, stagnant stands. The intent is to establish a new cohort (age class) of trees, capable of growing toward late structural stages. With the Hanlon project, this prescription would mainly be used within areas stocked predominantly with lodgepole pines. This prescription would create openings in the overhead forest canopy that would persist for several decades.

Overstory Removal (HOR) – Remove a portion of the stand overstory to release an already established cohort of young trees (6-20 feet tall). Trees removed would be those not expected to become large diameter trees such as lodgepole pine, or trees that have been infected with insects or diseases.

Pre-commercial Thin / Pulp Removal (HCU) – Thin young conifers in existing plantations. Favor the best trees of the desired species. Some of the material could be utilized for biomass / wood chips.

2. Logging Systems - The proposed methods of harvest are described below. Ground-based logging systems are generally designed for slopes less than 35 percent. Skyline systems are designed for slopes greater than 35 percent. Helicopter logging would be used in some areas to eliminate the need to build new roads.

Ground-Based

a) Cut-to-length - Use mechanical harvesters to shear trees at the base, remove their limbs, and cut them to the proper length. Use a self-loading vehicle with a log bunk (forwarder) to load the cut logs and drive them out of the woods to a landing. Harvester / forwarder trails are usually spaced 40 feet apart.

b) Tractor – Cut trees with chainsaws or with tree shearing equipment. Drag trees to a landing site using a track-mounted or rubber tired skidder. Yarding (skidding) distances are generally less than ¼ mile. Skid trails are usually 130 feet apart in the harvest unit.

Helicopter – Use a helicopter to fly cut trees to a landing site. Landing sites are usually within 0.5 mile of the unit, but occasionally further away. Trees are usually felled by chainsaws, as there is no access for tree shearing equipment.

Skyline (cable yarding) – Move cut trees to a landing using a suspended cable attached to a mobile tower parked on a road. Yarding can be uphill or downhill. Yarding distances are generally 1200 feet or less. Cable corridors are usually 100 feet apart in the harvest unit. Trees are usually cut with chain saws or rarely, with tree-shearing equipment.

3. Fuels Treatments – Post-harvest, the FS / contractors would use the following fuels treatments where there is a need to reduce logging slash and other surface fuels, and to create planting spots. The three mechanical treatments would occur on slopes < 35%; the operational limit of the machines used.

Grapple Piling - Pile branches, tops, and other logging slash with a rubber-tired or track mounted machine that has an articulated grapple. Larger logs would not be piled. Piles might be burned.

Mastication - Grind up small diameter trees and slash using a machine with a masticating head. Treatment would mostly occur in harvest units having dense understories of shade-tolerant trees (western redcedar, western hemlock, grand fir).

Biomass Removal – Utilize slash piled at landings for wood chips or hog fuel. Biomass such as smaller diameter conifers, slash, and pulp logs (in excess of down log requirements) within harvest units could also be moved with a forwarder machine to the landing, for processing.

Under-burn - Use prescribed fire to consume forest litter and the above ground portions of herbaceous vegetation, shrubs and small conifers. Less than 30 percent of the duff should be consumed (personal comm. with E. Trimble). There should be <30 percent mortality for trees 8-12" in diameter, and <10 percent mortality for trees over 12" in diameter.

4. Road Management

Relocation of Forest Road (FR) 1935 – This road lies very close to the Middle Branch of LeClerc Creek. With Alternative B, the Forest Service (FS) would relocate a segment of this road to an upland area west of its present location. The existing road would be ripped, seeded, and planted with native vegetation. Over time this would reduce sediment input to the creek, restore natural drainage patterns, and restore riparian habitats on the creek. This project would also eliminate up to five culverts on the creek that are presently blocking fish movement. Work would necessarily occur during the summer months.

New Construction **–** As described above, the FS would move FR 1935 to upland area west of its present location. This is the only new road construction proposed with the Hanlon project. Work would necessarily occur during the summer months.

Brushed-out Roads – The Hanlon Timber Sale (TS) would brush out certain road segments that are closed with vegetation and are presently not drivable. They are spurs off restricted (gated) FR 1935110. Following their use, these roads would be rendered un-drivable with earthen berms / boulders installed on the road entrance, slash piled into the road prism, or by other means. All re-construction, use, and closure of these roads would occur from November 15 to April 1. At no time would brushed-out roads be drivable during the active season for grizzly bears.

Temporary Roads – The Hanlon TS would construct / reconstruct several short (usually 0.25 mile or less) temporary roads with no stream crossings. Most would be spurs off restricted roads. Following their use, temporary roads would be rendered un-drivable with earthen berms / boulders installed on the road entrance, slash piled into the road prism, or by other means. All construction / re-construction, use, and closure of these roads would occur from November 15 to April 1. At no time would temporary roads be drivable during the active bear season.

Road Closures - During the development of this project, the Hanlon Interdisciplinary Team (IDT) examined the Forest Service road system in the LeClerc Grizzly Bear Management Unit (BMU) to see if there were any compelling reasons to re-size the system. The IDT determined that continued access is necessary on:

- Roads which access private or state lands,
- Major arterials or collector roads necessary for forest and range management, fire protection, and dispersed recreation.

Most of the roads in the BMU fall into one of the two categories above. In order to address issues related to grizzly bear core habitat, the IDT identified certain restricted (gated) road segments that could be made un-drivable in the BMU. These roads access NFS lands only. The FS would berm and plant these road segments prior to the Hanlon project.

Motorized Trails – The timber sale would not protect user-created motorized trails. Following the sale, the FS would obliterate these trails by placing logging slash in the trail tread, installing earth berms on their entrances, or other means.

Rock Pits – The FS would develop up to three rock pits. The pits would likely be developed to a maximum total size of seven acres for this project. Most of the rock would be needed for the relocation of FR 1935. Blasting at a given pit would take a few hours, drilling could take up to 3 days, and crushing operations would likely take one month to complete. The pits could be further developed for future forest management projects and could reach a total maximum size of about 31 acres (personal comm. with B. Bailey).

Table 9: Hanlon Project - motorized route work

Road type	miles
Restricted roads made un-drivable prior to the project (outside Hanlon Project Area but within LeClerc Grizzly Bear Management Unit)	4.4
FR 1935 - existing segment to be obliterated	3.2
FR 1935 - new construction	3.0
other new system road construction	0
temporary roads (made un-drivable following use)	5.2
brushed out roads (made un-drivable following use)	1.9
motorized trails (user created) made un-drivable following project	2.5

The following table displays open, closed, and total road densities in the Hanlon Project Area.

Table 10: Hanlon Project Area - Roads data by alternative

Project Area Route Mileage (project area = 22.3 square mi)	**Alternative A (existing condition)**	**Alternative B (during project)**	**Alternative B (post-project)**
open roads (state, county, private)	13.2	13.3	12.3
open roads (Forest Service)	15.8	18.9	14.0
motorized trail (user created)	2.5	2.5	0
total open routes	31.5	34.7	26.6
restricted roads	47.7	47.6	46.5
temporary roads (winter only)	NA	5.2	0
total drivable routes	79.2	82.3	73.1
Project Area Route Density (miles per square mile)			
open roads (state, county, private)	0.59	0.60	0.55
open roads (FS)	0.71	0.84	0.63
motorized trail (user created)	0.11	0.11	0
total open route density	1.41	1.55	1.18
restricted roads	2.14	2.14	2.10
total drivable route density	3.55	3.69	3.28
Elk Winter Range (6.3 sq. mi)			
groomed snowmobile routes	3.9	3.9	3.9
plowed county roads	2.3	2.3	2.3
total open routes	6.2	6.2	6.2
open route density	0.98	0.98	0.98

5. Stream Protection / Enhancement Projects – In addition to the relocation of the Middle Branch of LeClerc Creek Road, the FS would complete the following projects to benefit riparian habitat, water quality, and native fish in the project area. All activities within streams would comply with CNF Best Management Practices (BMPs) and the requirements of the hydraulic permit issued by the Washington Department of Fish and Wildlife. No new road construction or reconstruction would be needed for any of the following projects. Any in-stream work would occur during low flows from July 1 to August 31.

West Branch Diversion Dam Sediment Reduction – The FS would use a portable suction dredge to move sediment captured behind a 1920s era diversion dam, onto an adjacent terrace. The dam is located on the creek in T36N, R44E, NW 1/4 of Section 8. The relocated sediment would be stabilized with a temporary silt fence, then planted and seeded. This project would allow the dam to continue to collect sediment and limit the amount of embeddedness of substrate in the stream below the dam.

West Branch (Racetrack) Meadows Riparian Protection – A FS hand crew would build fencing along 0.25 mile of the West Branch of LeClerc Creek in T36N, R44E, NE 1/4 of Section 19. This project would protect the stream from overuse by campers using the meadow and allow the riparian vegetation and streambanks to recover in impacted areas.

Diamond City Stream Channel Restoration - The project location is in T36N, R44E, NE 1/4 of Section 18. The project would use a backhoe or excavator to place a section of the West Branch of LeClerc Creek back into its original stream channel. Coarse wood and/or rock may be placed in the stream at various locations. Some streambed material might be removed and the existing stream banks would be reshaped. The objectives would be to improve the complexity of existing fish habitat, stabilize the stream channel, reduce sediment input, and protect cultural resources. Some riparian vegetation would be removed during this project. Any disturbed site would be re-vegetated with native riparian vegetation where possible.

LeClerc In-stream Habitat Improvement – The FS would place coarse wood and/or rock into fish-bearing streams at various locations in the Hanlon Project Area. This would improve the complexity of existing fish habitat, reconnect stream channels to their floodplains and stabilize stream channels. Minor amounts of riparian vegetation might be removed during installation of this material. Any disturbed site would be re-vegetated with native riparian vegetation where possible.

Riparian Exclosures – The FS would use riparian exclosures to protect stream segments throughout the project area that exhibit over-utilization by livestock. Riparian vegetation would be supplemented with plantings grown from local seed sources, or with cuttings from local stock.

6. Yocum Lake Recreation Projects - The FS would complete certain recreation management projects at Yocum Lake. The north access road to the lake (FR 1900096) would be gated, leaving the south access road (county-owned) the only open road to the lake. A new spur road would be built off the county road that would access the existing dispersed campsites on the west shore of the lake. The camping area would be defined and a pre-fabricated toilet would be installed. A boat portage would be installed from the camp area. User-created trails and roads would be ripped and re-vegetated. The intent of these projects would be to define and control recreational use of the lake, improve sanitation, and make the site more family-friendly.

7. **Potential Wildlife Habitat Improvement Projects –** The FS could complete the following habitat improvement / enhancement projects in the project area using excess timber sale receipts (KV funds), grants, cost share monies, etc.

Aspen Maintenance / Protection **–** Small (non-commercial) conifers could be cut down within selected aspen stands to forestall the aspen trees from being shaded out over time. Selected aspen stands on the edges of meadows or near roads could be fenced to limit livestock browsing of young sprouts.

Forage Seeding - Shelterwood harvest units that are under-burned could be seeded to supplement green forage for wintering big game.

Meadow Maintenance – Small (non-commercial) conifers could be cut down where they are encroaching into old homestead meadows, in order to keep these sites in an open, productive condition for big game. Meadows could be burned to remove encroaching conifers and grass thatch, and to rejuvenate grasses.

IV. WILDLIFE CONSERVATION MEASURES AND MITIGATION

A. Wildlife-Related Project Design Criteria

The FS would incorporate the following elements into the unit layout, tree marking guidelines, harvest design, and fuels prescriptions of Alternative B. We have successfully implemented these practices with similar projects completed on the ranger districts. They have proven to be effective in avoiding or minimizing potential negative effects of the projects to the essential habitats of TES and other wildlife species.

Table 11: Hanlon Project Area – Project design criteria for wildlife

Target Species	Design Element	Mgmt. Guidance	Project Design Criteria
grizzly bear	hiding cover along open roads	USDI, 2001	Where the opportunity exists, provide a vegetative screen of shrubs, seedlings, saplings, and pole-sized trees between created openings and open roads. Allow no biomass removal from these cover patches.
	hiding cover in created openings	USDI, 2001	Where necessary, leave un-harvested cover blocks within created openings to ensure that no point in an opening is more than 600 feet from cover. Cover blocks would be at least 600 feet wide. Allow no biomass removal from cover blocks.
	hiding cover adjacent to foraging sites	USDI, 2001, USDA, 1995	Leave cover around natural openings so that no point in an opening is more than 600 feet from cover. Cover blocks would be at least 600 feet wide. Allow no timber harvest or mechanical fuels treatments within 50 feet of wetlands < 1 acre in size, and within 100 feet of wetlands > 1 acre. Allow no biomass removal from these areas of cover. Manage riparian habitat along streams according to guidelines listed in the fisheries report for this project.
	spring timing restriction	IGBC, 1986	Allow no motorized activities (heavy equipment / chainsaw operation) from April 1 – July 1 in recovery habitat, to avoid disturbing bears during the period following den emergence. Hand work such as prescribed burning or tree planting would be allowed.
	temporary roads	consultation with FWS	Construct / reconstruct, use, and effectively close temporary roads from November 15 to April 1. At no time should these roads be drivable during the active bear season.
	system roads	USDI, 2001	Re-construct, use, and effectively close system roads brushed-out for this project (T36N, R44E, Sec. 8) from Nov. 15 to April 1. At no time should these roads be drivable during the active bear season. Do not open any closed roads for post-project fuel wood gathering.
	FR 1935 re-location	USDI, 2001	Effectively close the existing segment of FR 1935 post-project, by ripping the road prism, scattering slash on the road, installing boulders on the road entrance, seeding and planting, or other means.
	rock pits	USDI, 2001	Allow no rock pit development from April – July 1. Attempt to confine blasting and crushing operations to after August 15. Stockpile topsoil and reclaim / re-vegetate pits following their useful life.
	motorized	USDI, 2001	Do not protect user-created, off-highway vehicle (OHV) trails within

Target Species	Design Element	Mgmt. Guidance	Project Design Criteria
	trails		harvest units. The FS would effectively close these trails with piled logging slash, boulders, earthen berms, or other means post-project.
	core habitat / open, total road densities	USDI, 2001, consultation with FWS	Use project timing (Nov. 15 to April 1 operating period), and road closures to ensure the project does not result in a net loss of core habitat, or a net gain in total road densities in the BMU (see appendix B for the operating schedule by unit). Allow felling operations (chainsaw or mechanical harvester) in helicopter units from Oct. 15 to April 1 in the BMU.
bald eagle	nest protection	USDI, 2007	Allow no harvest activities in Unit 3 from December 1 to August 31, in order to avoid disturbance to an active eagle nest across the river.
common loon	nest protection		Complete proposed recreation projects (EA chapter 2) in the Yocum Lake basin outside the nesting season for loons (April 1 to July 1).
pileated woodpecker, pine marten, fisher, large raptors, etc.	old growth stands	Lowe, 1995	Exclude any stands meeting the North Idaho definition of old growth from harvest that are identified during future recon. or unit layout.
	large live trees	Lowe, 1995	Retain all trees 21 inches in diameter or larger, except those located within new ground-based or skyline equipment corridors, roads, landings, or rock pits.
	special structures		To the extent feasible, reserve broken-topped trees, trees with broom rusts, and hollow trees / logs from harvest.
furbearers	travel corridors	Lowe, 1995	Do not use shelterwood harvest within mapped travel corridors. Do not allow biomass removal from corridors. Ensure that project activities within corridors maintain; a) corridor width of 400 feet, b) overhead canopy closure within the top third of site potential, c) some understory in patches or scattered to assist in supporting stand density and cover.
goshawk	nest protection	Lowe, 1995	If a nearby goshawk nest stand is active, allow no project activities within Unit 53 from March 1 to August 15 in order to avoid disturbing the nest.
primary cavity excavators	snags	Mellen, et al, 2003 (DecAid)	To the extent feasible, retain snags that are 10+ inches dbh. Some 10+ inch snags would be felled within new road and equipment corridors, landings, and rock pits. Others may need to be felled for worker safety.
	down logs	Lowe, 1995, Mellen, et al, 2003	Do not cut or remove any log pieces that are 14+ inches in diameter at the small end. If not enough 14+ inch material exists to meet the requirements of the Eastside Screens for Timber Sales, retain enough smaller material to meet the requirements of the screens. An exception to the above is where there are large concentrations of 14+ inch logs. In such a case, some logs may be cut / moved in order to meet fuel management objectives, allow equipment operation, or for worker safety. Removal of 14+ inch logs from the site would be decided on a case by case basis after consultation between the district wildlife biologist, timber sale administrator, and fuels specialist.
big game	winter operations	Forest Plan page 4-99	Allow no project activities from December 1 to March 31 in those units located on elk winter range and *outside* grizzly recovery habitat (Units 1, 2, 3, 21).
	forested cover	Forest Plan page 4-98	Where the opportunity exists, exclude pockets of shade tolerant regeneration / sapling / pole-sized or larger trees at least three acres in size within harvest units.
landbirds	hardwoods		Mark no hardwood trees for removal, with the exception of those located within new equipment or road corridors, landings, or rock pits.
	dry forest		When thinning dry forest stand types (ponderosa pine / Douglas fir),

Target Species	Design Element	Mgmt. Guidance	Project Design Criteria
	stands		leave some overstory leave trees in clumps of at least 3-4 trees. An average of 2 - 3 clumps would be retained per harvested acre. This would provide pockets of interlocking tree canopies.

B. Required Mitigation for TES Species

The conservation measures listed in the table above would be incorporated into the design of Alternative B. The following measures would be necessary under certain conditions to mitigate potential impacts of Alternative B to TES and other wildlife species.

1. TES Species Protection - If a TES species or activity site (den, nest, rendezvous site, etc.) is found in the project area while the project is active, consult a biologist as to measures required to protect the species / site.

2. Post-Project Road Management (FS personnel) **-** If an existing gate is being driven around by off-highway vehicles, take steps to more effectively close the road. This could include installing boulders or other barriers on the side of the gate. The gate might be moved to a more effective location.

Monitor the effectiveness of closures on temporary roads, brushed out roads, and the obliterated portion of FR 1935 each year for five years following the sale. If a given closure is not 100 percent effective at prohibiting unauthorized, motorized travel on the road, the FS would implement actions necessary to improve the closure.

3. Snag Creation (FS personnel) – Following timber harvest and fuels treatments, survey regeneration harvest units for standing snags. In units having less than the prescribed number of snags / acre, create additional snags by top girdling, inoculation with forest pathogens, or other means. Do not create snags within commercial thinning and other partial harvest units since only a fraction of the green trees would be logged and any existing snags would be much easier to retain.

V. PRE-FIELD AND FIELD REVIEW

We obtained sighting records of TES species in the project planning area and vicinity filed at the offices of the USDI Fish and Wildlife Service, the Colville National Forest Supervisor's Office, and the Newport - Sullivan Lake Ranger Districts. We used aerial photo interpretation, stand exam data, field reconnaissance, interviews, and a geographic information system (computerized mapping) to conduct the analysis for this report.

During field visits we collected data on such things as type and condition of existing big game habitats, occurrence of wildlife or evidence of use, and potential mitigation measures or habitat improvement projects.

VI. PROJECT EFFECTS TO THREATENED AND ENDANGERED SPECIES

A. Canada lynx (threatened)

1. Management Framework - This animal was listed as a threatened species in March of 2000. An interagency team completed the Canada Lynx Conservation Assessment and Strategy (Ruediger, et al, 2000) several months later. That document is a culmination of the latest research findings on lynx. It proposes guidelines, objectives, and standards, for all projects on public lands within designated lynx range.

In 2000, biologists with the Colville National Forest mapped Lynx Analysis Units (LAUs), based on watershed boundaries. This was a task identified in the Canada Lynx Conservation Assessment and Strategy (LCAS). On the east side of the Pend Oreille River, the lower limit of lynx primary range roughly coincides with the 3,500 foot contour.

2. Existing Conditions - In northeastern Washington, lynx use lodgepole pine, subalpine fir, Englemann spruce, and aspen cover types in subalpine fir plant associations. Cedar/hemlock cover types may also be important to lynx in this part of the state. Subalpine fir plant associations are rare in the Hanlon Project Area. Cedar/hemlock cover types are common, as are stands with a major lodgepole pine component.

The Hanlon Project Area lies below 3,500 feet in elevation and is outside lynx primary range. No observations of lynx or their sign are on record at the ranger districts from the project area. There are no known lynx den sites within the vicinity of the project area or anywhere in the nearby LeClerc LAU.

3. Effects of This Project - Areas outside of LAUs are not considered important for supporting reproducing lynx (LCAS 7-2 to 7-4). Project activities would not occur within the vicinity of any known lynx den site. Thus, the project would not affect adults or kittens during critical life stages. There would be no direct, indirect, or cumulative effects resulting from this project.

4. Effects Determination –Based on the preceding discussion, the alternatives as proposed would be consistent with management direction in the LCAS and would have no affect on lynx.

Risk Analysis – All Alternatives
Likelihood of adverse effects = none
Consequence of adverse effects = low
Risk index value = 0 x 1 = 0

B. grizzly bear (threatened)

1. Management Framework – The Interagency Grizzly Bear Guidelines (IGBC, 1986), the Grizzly Bear Recovery Plan (USDI, 1993), the Forest Plan (USDA, 1989), and the Amended Biological Opinion for the Continued Implementation of the Colville National Forest Land and Resource Management Plan (USDI, 2001), all provide direction for managing habitat for grizzly bears.

The Grizzly Bear Recovery Plan identifies specific recovery areas in the western United States. The Selkirk Mountains Grizzly Bear Recovery Area includes a portion of the Colville National Forest located east of the Pend Oreille River. Recovery areas "contain grizzly population centers (areas key to the survival of grizzlies where seasonal or year long grizzly activity under natural, free-ranging conditions is common) and habitat components needed for the survival and recovery of the species or a segment of its population" (IGBC, 1986). Grizzly habitat management and grizzly-human conflict avoidance are the highest management priorities for public lands in recovery areas. Each grizzly bear recovery area is divided into several bear management units (BMUs). A BMU is roughly 100 square miles in size; the area required by an adult sow with cubs. Biologists complete grizzly habitat evaluation at the scale of an individual BMU.

Hiding Cover - Hiding cover is defined as vegetation capable of hiding 90 percent of a bear at a distance of 200 feet (USDA Forest Service, et al, 1990). The Colville National Forest must maintain visual screening between all open roads and adjacent regeneration-type harvest units in the grizzly bear recovery area (USDI, 2001). Screening can consist of vegetation or topography to a minimum of one sight distance from the road (approximately 100-200 feet). In addition, no point in a created opening should be further than 600 feet from cover. Vegetated buffers between management created openings must be at least 600 feet wide (USDI, 2001).

Access Management – Roads and trails provide access for people into grizzly bear habitat. In areas of high road or trail densities, grizzly bears are prone to being disturbed by vehicle traffic or people on foot. A bear may learn to avoid areas near open roads and high-use trails, forgoing access to suitable habitat which might occur in the road / trail corridor. The risk of a grizzly being shot is higher in areas of high road densities, than in areas with few or no roads. In the Selkirk Mountains Ecosystem, human-caused grizzly bear mortality has been well documented and is considered the greatest threat to the continued existence of the animals (Knick and Kasworm, 1989).

Present standards for open and total road densities within BMUs are displayed in the table below. For each project that might affect road densities in a BMU, the Forest Service must calculate the effective area of the BMU with high open and total road densities before, during, and after the project. This is done with a "moving windows" analysis using a geographic information system (GIS).

Core Habitat – Core habitat is those portions of a BMU that lie further than 500 meters from open or restricted (gated) roads, motorized trails, or high-use non-motorized trails. Any roads within core habitat must be impassable to motorized vehicles (i.e. effectively closed with excavated berms, boulders, or vegetation). Once core areas are established, they should not be impacted or moved by forest management activities for ten years (USDI, 2001). Present standards for core habitat in BMUs are displayed in the following table.

Table 12. – Present habitat standards for grizzly bears on the Colville National Forest (USDI, 2001).

% Federal Land in BMU	Open Roads >1 mi/sq. mi.	Total Roads >2 mi/sq. mi	Minimum % Core
75%+	No more than 33 % of BMU	No more than 26 % of BMU	55 %
<75%	No net increase due to Federal actions		No decrease due to Federal actions

2. Existing Conditions - The majority of the Hanlon Project Area lies within the LeClerc BMU. The Forest Service receives occasional reports of grizzly bear sightings in the BMU. It is difficult to positively confirm most sightings. In the early 1990s there was a confirmed sighting of a grizzly in the Hanlon Project Area by a Forest Service employee. In 2006, a radio-collared grizzly utilized the East Branch of LeClerc Creek and Molybdenite Ridge for several weeks. In 2008 a grizzly bear track was photographed in the same drainage.

Forage - Diets of grizzly bears change with the seasons as different food sources become available. Grasses, sedges, and herbs provide important spring forage for grizzly bears. Within the project area, these resources exist in riparian habitats along major streams, in small wetlands, and in homestead meadows such as Fourth of July Meadow. Shrub fields that provide berry crops are important late summer / fall foraging sites for bears. There are a few acres of discrete berry-producing shrub fields in the project area. Many forest stands in the Hanlon project area contain modest amounts of buffaloberry, huckleberries and other berry-producing shrubs. Rotting tree stumps and large down logs often provide bears with ants and other insects. These are uncommon in the project area. Occasional winter-killed deer or elk might be available in early spring.

Within the LeClerc BMU, high percentages of the available habitat types important to bears are located within 1/4 mile of open roads (USDA, 1997). For example, 80 percent of the wet meadow habitats and 64 percent of the riparian shrub fields lie near open roads. Bears may not be able to use these food resources as effectively as habitat lying further from open roads.

Den Sites – Dens are typically "dug by bears, or occur in natural cavities in subalpine, montane, and rock community groups" (USDA et al, 2000). Timbered habitats above 4,000 feet or so could also be used for denning. The Hanlon Project Area lies at lower elevations and does not contain any habitats that appear particularly suited for grizzly denning.

Road Densities / Core Habitat – The table below displays the existing condition of the LeClerc BMU relative to road densities and core habitat for grizzlies. Only 64 percent of the BMU is public land. Most of the private land in the BMU is owned by Stimson Lumber Company, but there are other forestland owners and private residences. Because less than 75 percent of the BMU is public land, forest management projects on public lands should not result in a net increase in open and total road densities, or a decrease in core habitat.

Table 13: LeClerc BMU - Existing grizzly bear habitat data

BMU	% Federal Land	Open Roads >1 mi/sq. mi.	Total Roads >2 mi/sq. mi	% Core
LeClerc	64%	38%	59%	26%

Most of the Hanlon Project Area is well-roaded. One larger block of core habitat exists in the Fourth of July Creek drainage. This area contains the upper reaches of Fourth of July Creek and associated riparian shrub fields. Fourth of July Meadow is located in this area. Another block of core habitat extends down into the northern portion of the project area in the West Branch of LeClerc Creek drainage. This area contains a 0.75 mile long segment of the West Branch itself, but only modest amounts of bear forage plants. Other small islands of core habitat exist in the area. All of these are less than 200 acres in size.

3. Project Effects

Effects to Forage

Alternative A - Within the Hanlon Project Area, existing berry-producing shrubs in forest stands would continue to provide some fall foraging opportunities, so long as enough sunlight reaches them under the forest canopy. Spring forage would continue to be available for the foreseeable future within discrete wetlands, and in the alder/willow shrub fields associated with major creeks. By the time trees growing in plantations are 15-20 years old, spring forage plants would be increasingly shaded out on those sites.

Ground and ladder fuels would continue to accumulate in forest stands across the project area. The potential for a large, hot fire to occur in the area would increase. Such a fire could consume entire forest stands, resulting in a dramatic increase in sunlight on the forest floor. Most of the existing shrubs, grasses, and forbs in burned over areas would quickly re-sprout from their root systems. The quantity and quality of green forage would be improved for several years following the burn. Berry-producing shrubs would take additional years to bear fruit, but could become more vigorous and productive than their present condition.

High intensity burns are the most likely to provide good growing conditions for noxious weeds. Hot wildfires remove more overhead canopy, consume more duff, and consume more living vegetation that could provide competition for newly established weeds. In areas of heavy weed infestation, existing native plants could be replaced, including those eaten by bears. Large infestations could reduce the area of suitable foraging habitat.

Alternative B - Timber harvest proposed with this alternative would reduce the overhead tree canopy in many stands that are typically densely stocked with immature trees. Russet buffaloberry and other shrub species growing on these sites should benefit from the increase in available sunlight. Harvest prescriptions that create openings (such as shelterwood harvest) have the greatest potential to benefit berry-producing shrubs. There would be roughly 912 acres of openings created with Alternative B.

Alternative B would employ low-intensity burns to reduce forest fuel loads. Treated areas would be a mosaic of burned and un-burned sites, relative to the amount of surface fuels present. Prescribed

fires would thin out dense areas of conifer regeneration and consume litter and down wood on the forest floor. A "pulse" of nutrients would be released into the soil. As a result, green forage should become more palatable and productive for a few years following burning. It would take a number of years for burned, berry-producing shrubs to bear fruit again. Over the long run, berry production could be enhanced in burned areas.

Timber harvest and prescribed fire could expose soils and provide opportunities for the expansion of noxious weeds. New roads could provide pathways for the spread of noxious weed seeds. If weeds become locally established due to this project, they could out-compete existing bear forage plants (particularly native grasses and forbs). This risk would be greatest along new road and equipment corridors, and where there is a nearby seed source.

A number of factors would work to minimize the potential for noxious weed spread in the project area. Almost all of the timber harvest proposed in recovery habitat would occur in the winter. Winter logging minimizes the exposure of forest soils. Prescribed burns would be completed during optimum weather and fuel moisture conditions in order to ensure low-intensity fire behavior. Thus, most of the forest duff should be maintained in burned areas and very little soil should be exposed. The project would incorporate routine weed control measures such as seeding exposed soils at log landings, skid trails and burn piles. Herbicides would be sprayed on roadside noxious weed infestations prior to the project. In addition, the ranger districts would continue to use herbicides to combat weed infestations in meadows and other openings.

Effects to Hiding Cover

Alternative A – Hiding cover would slowly increase in extent and quality throughout the project area as young confers continue to grow. Fuel loading and ladder fuels would continue to build up in the project area over time. The potential for a large, intense fire to remove conifer cover would continue to increase over the long run. In such an event, hiding cover would be removed in areas of high intensity burns and degraded in mixed or low severity burn areas. Bears moving through an area where fire has removed forest cover could be vulnerable to human-caused disturbance or mortality, particularly near open roads.

Alternative B – All forest cover would be removed within new rock pits and within the new FR 1935 corridor. This new infrastructure would impact roughly 12 acres of forest habitat with the Hanlon project, and up to 24 additional acres as the rock pits reach their full development after many years. Rock pits would be located on open roads. They would be reclaimed with stockpiled topsoil, and re-vegetated once the rock is played out.

Within equipment corridors and areas proposed for shelterwood harvest, hiding cover would be mostly removed for perhaps 10 - 15 years. If necessary, forested cover blocks would be left uncut within created openings (shelterwood harvest) to ensure that no point in the opening is further than 600 feet from hiding cover. These cover blocks would be at least 600 feet wide. Thus, a bear traversing or foraging in the newly created opening would have concealing cover nearby to move into, if disturbed. Where the opportunity exists, patches / strips of shrubs, seedlings, saplings, and pole-sized trees would be maintained within created openings adjacent to open roads. These roadside "buffer strips" have been very effective in maintaining existing line-of-sight distances from roads into harvest units on the ranger districts.

Hiding cover would be degraded (but not removed) within areas proposed for thinning or selection harvest for five or more years. After that time, stand understories should have grown to the point where good horizontal cover is restored. Pre-commercial thinning would have negligible impacts to hiding cover.

Post-project fuels treatments would occur within harvest units. Mechanical treatments would use rubber tired or track-mounted machines and would occur on slopes < 35 percent. In units that are grapple piled, the impacts to hiding cover should be small since this treatment would mostly impact smaller diameter down material. Hiding cover would be reduced in units that are masticated or where biomass is removed, since these treatments would remove whips and other small trees. However, thrifty regeneration would be retained, and shrubs in the understory are likely to become more robust in a few growing seasons. Cover patches left along open roads and in the center of larger created openings would be left intact.

Low-intensity prescribed fires should have mostly minor, short-lived (1-5 years) impacts to hiding cover. Owing to discontinuous fuels at the stand level, there would be many areas of unburned, "fire skips". Even in areas that are well blackened, some degree of horizontal cover would be provided by the skeletons of shrubs and young trees, partially burned logs, and live and dead tree boles. Upland shrubs, grasses, and forbs would quickly re-sprout from the roots and regain much of their above-ground biomass in one or two growing seasons. Efforts would be made to keep fire out of cover patches reserved from harvest.

Effects of the Middle Branch Road Relocation (*Alternative B*)
With Alternative B, a 3.2 mile segment of the Middle Branch of LeClerc Creek Road (Forest Road 1935) would be re-routed. Presently this road segment lies within close proximity to the creek and affects the drainage patterns of several adjacent wet areas. The existing road bed would be ripped, seeded, and planted with native shrubs and trees. Old drainage patterns would be re-established. Several culverts which are presently barriers to fish passage would be removed. Both ends of the abandoned road segment would be blocked with boulders, earthen berms, or other means. Based on a similar project recently completed on the ranger districts, the abandoned road would be effectively closed to all motor vehicles and would no longer function as a road.

The new road segment would be constructed on an upland area west of the creek. The new road would permanently remove roughly 5 acres of forested habitats including minor amounts of berry-producing shrubs and green forage. The majority of the new road segment would lie within 0.25 mile of the creek. Thus, grizzly bears foraging in the riparian strip along the creek could still be prone to disturbance from vehicle traffic on the road. However, the new road should be well screened from the creek by vegetation and topography. The present road location is entirely visible from the creek. This project should result in net gains in riparian shrub and sedge wetland habitats over time. Foraging opportunities for bears should be improved within the stream corridor.

Project-Related Disturbance (*Alternative B*)
Spring - Following den emergence, bears must quickly replenish body fat lost during hibernation. From about April 1 to July 1 it is important that animals have access to key spring foraging sites, free from human disturbance. With the Hanlon project, no timber harvest, road work, or other heavy

equipment operation would occur from April 1 to July 1 in the LeClerc BMU. It might be necessary to complete some post-harvest work such as prescribed burning or tree planting during the spring. These activities would be managed to minimize vehicle entries on restricted roads.

Summer / fall - Some Hanlon project activities would occur after July 1. Construction of the new segment of the FR 1935 must necessarily occur during the summer / fall months. Rock pit development must necessarily occur during the summer / fall. Mechanical fuels treatments (mastication, grapple piling, bio fuel) could occur on up to 2,482 acres during the summer / fall. Bears are likely to avoid areas where any of these loud, heavy equipment operations are occurring. However, a number of factors would reduce the potential for the project to disturb and displace grizzly bears:

- There would likely be at most two machines completing mechanical fuels treatments at any given time in the sale area. Disturbance would be localized to one or two harvest units at a time.
- Rock pit development would occur directly adjacent to open or restricted roads. Blasting would take a few hours; drilling would take a few days; crushing would take up to one month to complete.
- Bears are increasingly likely to be found at elevations higher than the Hanlon Project Area from about mid-August on, as they follow the progressive green-up of forage plants and the ripening of berry crops up slope.
- There would be no net loss of core habitat in the BMU. Core areas would be free from motorized disturbances (see the next section).

Effects to Road Densities / Core Habitat (*Alternative B*)
Prior to the Hanlon project (summer / fall of 2009) the Forest Service would make several restricted roads within the LeClerc BMU un-drivable. The Forest's backhoe operator would excavate earthen berms on the road entrances. Hand crews would plant the berms with grasses, shrubs, and trees. Slash might be pulled into the road prism behind the berms. The intent of this work would be to create additional acres of core habitat in the BMU. About 432 acres would be added to the largest existing block of core habitat within the BMU, in the northern portion of the BMU.

Project Alternative B was designed to minimize impacts to core habitat. Virtually all of the timber harvest proposed in the BMU would occur from November 15 to April 1; the period when bears should be in the den. Temporary road construction or reconstruction of brushed-in roads would occur in the winter as well. The Forest Service would render these roads un-drivable prior to April 1. These winter operations would not impact grizzly bear core habitat.

Roughly 83 acres of core habitat would be permanently lost with the re-location of FR 1935. This area of core habitat is a small, isolated island that has much less value to grizzlies than the large blocks of habitat that exist in the BMU. The relocation of FR 1935 would result in a 1% increase in open road densities in the BMU during the life of that project. This is because the old road must remain open to the public while the new segment is under construction.

The table below displays core habitat acres and road densities over the life of the project.

Table 14: LeClerc BMU - Grizzly bear habitat data with Alternative B

Time Period	Open Roads >1 mi/sq. mi.	Total Roads >2 mi/sq. mi	Core Habitat
present	29,790 acres 38%	45,820 acres 59%	20,570 acres 26%
Pre-project – with road entrance obliteration work in the BMU	29,765 acres 38%	45,331 acres 58%	21,002 acres 27%
During project – reflects re-location of FR 1935	29,997 acres 39%	45,548 acres 59%	20,919 acres 27%
Post-project – reflects road closure work	29,263 acres 38%	45,098 acres 58%	20,919 acres 27%

Cumulative Effects - In 1975 grizzly bears were listed as a threatened species under the Endangered Species Act of 1973. At that time, grizzlies persisted at very low numbers in the Selkirk Mountains Recovery Area. The population has slowly increased to the present level of 40 – 50 bears (personal comm. with W. Wakinnen). Biologists evaluate and monitor habitat for grizzly bears at the scale of individual grizzly bear management units (BMUs). The BMU is the appropriate analysis area for cumulative effects.

Cumulative Effects to Hiding Cover – Forest management projects on all ownerships in the LeClerc BMU have permanently removed hiding cover within new rock pits and road prisms. Recent timber harvest on private lands has removed or degraded large acreages of hiding cover. The Hanlon project would add to these reductions in cover in the BMU. However, there is constant recruitment of hiding cover across all ownerships in the BMU as young trees in harvested areas grow with each passing year.

On February 1, 2000, Stimson Lumber Company, the Colville National Forest, and the USDI Fish and Wildlife Service entered into a conservation agreement that prescribes guidelines for forest management in the LeClerc BMU. The intent of the agreement is to conserve habitat for grizzly bears and other listed species on both Stimson and NFS lands in the BMU. On both ownerships, hiding cover must now be maintained according to guidelines in the conservation agreement. Vegetative or topographic screening must be maintained along open roads. No point in a created opening can lie further than 600 feet from cover. Hiding cover should be maintained around streams courses, wetlands, shrub fields, and other important foraging habitats for bears. At least 40 percent of the BMU should be in hiding cover at all times. The Hanlon project would adhere to these practices. These practices should ensure that enough cover exists in the BMU to keep the landscape highly permeable to dispersing bears over time.

Cumulative Effects to Forage - By the early 1940s, virtually all the main roads within the LeClerc BMU were in place. In the following decades, many miles of secondary roads were built to access stands of timber for harvest. As was commonly the case, new roads were often built in prime bear habitats such as riparian areas. The main road network in the BMU closely parallels the major branches of LeClerc Creek. Construction of these roads directly removed some riparian habitat along the creeks. The presence of these roads (and associated human disturbance) reduced grizzly bear

access to significant amounts of spring forage in the BMU that were once readily available along the creeks. The Hanlon project would relocate a portion of FR 1935 (Middle Branch of LeClerc Creek Road) onto an upland area, away from the creek. This action should improve riparian habitats over time, as well as the ability of bears to forage along the creek.

Recent timber sales on all ownerships in the BMU have improved growing conditions for sun-loving green forage plants and berry-producing shrubs. These benefits are usually greatest in areas of regeneration harvest that are subsequently broadcast burned. However, even partial harvests (thinning, selection prescriptions) can improve growing conditions for existing forage plants. The Hanlon Timber Sale would contribute to these effects. Broadcast burning is not normally prescribed on non-federal ownerships in the LeClerc BMU.

As described earlier, the Hanlon project could contribute to the spread of noxious weeds in the LeClerc BMU. To minimize this potential, the Forest Service would spread grass seed on soils exposed by equipment, and effectively close some existing roads. Contractors would use herbicides to kill weeds growing on roadsides and other areas, prior to the project. These actions have been very effective in many areas of the ranger districts. Active weed spraying programs will be necessary so long as forest management, grazing, and forest recreation continues in the BMU. Noxious weeds are likely to increase on private lands in the BMU over time, due to an apparent low level of commitment to prevention, treatment, and monitoring.

Habitat improvement work proposed with the Hanlon Timber Sale would compliment recent projects the CNF has undertaken to improve forage habitats. These projects have included using prescribed fire to rejuvenate upland shrub fields (East and Middle Branches of LeClerc Creek), removing small conifers encroaching into old homestead meadows (Fourth of July Meadows), and fencing riparian sites over-used by cattle (Middle Branch of LeClerc Creek).

Cumulative Effects to Seclusion – In the first several decades of road construction in the BMU, opportunities for human / bear encounters, and the risk of bear mortality increased. In 1979 a grizzly bear was shot by a black bear hunter on an open road in the area. By the mid 1980s the open road density was about two miles per square mile over large portions of the BMU. Core habitat for bears was greatly fragmented and reduced in acreage compared to pre-settlement times.

Only since the late 1980s / early 1990s has the open road density decreased in the BMU. During that time, the FS gated most of the secondary roads in the area, to provide seclusion for grizzly bears. Almost all new roads built on all ownerships in the BMU have been similarly closed. Starting in the mid 1990s, the FS replaced many gates on restricted roads with earthen berms / boulders, and plantings. This was done to make more effective closures, and increase the area of core habitat in the BMU. In spite of these management actions on NFS lands, the total road density (open and closed) in the BMU has increased substantially since the early 1990s, and the total acres of core habitat has decreased, due to road building on private lands.

The Hanlon project would not contribute to any cumulative reductions in core habitat resulting from forest management across the BMU. In fact, the project would increase core habitat in the BMU by installing earthen berms on several closed road entrances. Projects on private or state lands are not

bound by the "no net loss of core habitat" constraint. The Hanlon project would not increase total road densities in the BMU. Projects on private or state lands are not bound by this constraint.

Some Hanlon project activities would occur during the active bear season. Thus, the Hanlon project could cumulatively contribute to the risk of bears being disturbed and displaced by forest management occurring in the BMU. However, the potential for the Hanlon project to disturb bears during the critical spring period would be small, due to project timing restrictions. Most activities that would occur during the active bear season would be outside core habitat areas, where animals are already prone to human disturbance. From about August 15 on, bears are increasingly likely to be found at elevations higher than the Hanlon Project Area.

4. Effects Determination - Alternative A would maintain existing habitats for grizzlies over the short-term. Forage opportunities for bears would slowly decline as young trees grow within existing plantations. The risk of high-intensity fires in the area would increase over time. Such fires could remove forest cover over large areas and potentially increase berry crops and green forage production for bears. The interiors of large burns may be under-utilized by bears.

Timber harvest and prescribed burning proposed with Alternative B could improve the forage resources for bears in the short to mid-term. Alternative B would move the project area towards a more historic fire regime. Forage could be maintained at more stable levels over time.

The project would not cause a net increase in total road density in the BMU. Open road density would increase slightly (1%) for the life of the project with the relocation of FR 1935. However, moving the road out of the creek bottom would reconnect old drainage patterns and increase the extent of riparian habitats along the creek over time. The ability of bears to access spring forage plants along the creek would be enhanced, since the relocated road would be screened from the creek by vegetation and topography. These permanent habitat gains should offset the impacts of the temporary increase in open road density. A small patch of core habitat would be permanently lost with Alternative B, due to the relocation of FR 1935. This loss would be more than offset with the gains in core habitat resulting from proposed road entrance obliteration work in the BMU.

Most project activities proposed with Alternative B would occur during the period bears are in the den. No motorized activities would occur during the critical spring period. During the life of the project, individual bears discovered in the area would be protected according to direction in existing management / recovery plans, and by a standard timber sale contract clause. Based on this discussion, the alternatives as proposed may affect, but are not likely to adversely affect grizzly bears.

Risk Analysis – Alternative A
Likelihood of adverse effects = 1
Consequence of adverse effects = 5
Risk index value = 1 x 5 = 5

Alternative B
Likelihood of adverse effects = 1
Consequence of adverse effects = 10

Risk index value = 1 x 10 = 10

C. woodland caribou (endangered)

1. Management Framework - The Selkirk Mountains Woodland Caribou Recovery Plan (USDI, 1994), the Forest Plan, and the Amended Biological Opinion for the Continued Implementation of the Forest Plan (USDI, 2001) all provide direction for caribou management. On the Colville National Forest (CNF), the Selkirk Mountains Woodland Caribou Recovery Area lies east of the Pend Oreille River and above 4,000 feet in elevation. Appendix I of the Forest Plan describes seasonal habitats important to caribou and provides prescriptions for managing these habitats in the recovery area. There is no direction for managing habitats for caribou outside of the recovery area, although animals that occur there are protected.

2. Existing Condition – Over the last five years, the Selkirk Mountains caribou population has numbered about 40 - 45 animals. The center of activity of the herd has been in the vicinity of Stagleap Provincial Park, located a few miles north of the international border in British Columbia.

Based on past telemetry and census locations, caribou have used habitats that are fairly well distributed across the Colville National Forest's portion of the recovery area. However, no animals or tracks have been documented south of Pass Creek Pass in Washington State in more than five years (personal comm. with W. Wakinnen). A handful of caribou appear to be spending at least part of the year in the northeastern portion of the Salmo Priest Wilderness, north of Pass Creek Pass.

The Hanlon Project Area lies below 3,500 feet in elevation and about 0.75 mile south of the caribou recovery area. The project area is roughly ten miles south of the Salmo Priest Wilderness. There are no known records of caribou from the project area.

In their mountain habitats, woodland caribou move up or down slope with the changing seasons. In the early winter months they use mid-elevation, cedar / hemlock forest stands and stands on the ecotone with subalpine fir / spruce habitats. Mature and old stand conditions and good canopy closure (70 percent +) are important habitat components (USDI, 1994). In late winter, caribou use high-elevation timber stands dominated by mature to over-mature subalpine fir, spruce, and whitebark pine with 10-50 percent canopy closure (USDA, 1988). These stands are typically found along subalpine ridge systems. During the rest of the year, caribou seek out specific habitats between their early and late winter ranges. Mature, mesic stands of cedar / hemlock or subalpine fir / spruce seem to be the preferred stand types at any time of the year.

Very few acres of mature cedar / hemlock or subalpine fir / spruce stands exist in the project area. Young, typically dense stands of these types are fairly common on northerly aspects and in pockets of cold air drainage. Stands on more exposed aspects are usually dominated by Douglas fir, ponderosa pine, grand fir, or western larch. There are also extensive areas of lodgepole pine. These drier stand types do not provide good habitat conditions for woodland caribou due to a lack of available forage and / or for other reasons. The Hanlon Project Area does not contain any subalpine ridge systems that provide caribou with late winter habitats and calving sites.

One of the significant threats to the continued existence of the Selkirk caribou herd is predation. In their amended biological opinion for the Forest Plan (USDI, 2001) the USDI Fish and Wildlife Service stated "Forest management activities within and adjacent to caribou habitat, combined with the effects of wildfires have increased habitat fragmentation beyond historic levels, creating habitat conditions favorable to large ungulates other than caribou. Consequently, increased habitat use by these ungulates, particularly white-tailed deer, may have altered the predatory / prey relationships in this ecosystem to favor an increase in predators such as mountain lions (Paquet 1997, Simpson et al 1997)".

The Hanlon Project Area is located in an area of checkerboard ownership, with alternating sections of national forest and private timber lands. The private parcels have been heavily logged resulting in many open foraging sites for big game and extensive edge habitat.

In recent years the state and provincial game management agencies have increased hunting opportunities for cougars in the South Selkirk Ecosystem. Coincidentally, the caribou population has stabilized and has actually been slowly increasing for several years. Whether the increased hunting pressure on cougars has led to the improvement in caribou numbers is unknown.

In 2009 a wolf pack became established in the lower LeClerc Creek Watershed. Wolves are presently listed as an endangered species by the state of Washington. They are listed as a sensitive species for the Colville National Forest.

3. Effects of This Project

Both Alternatives - The Hanlon project would be located outside the caribou recovery area and thus, would have no affect on forest habitats thought to be necessary for the recovery of the species.

Alternative B - Timber harvest proposed with this alternative would create edge habitat and open foraging sites for big game within one mile of the caribou recovery area. About 912 acres of openings would be created on NFS lands with the Hanlon project. This additional big game foraging habitat would be cumulative to that created by recent timber harvest on private lands in the area. These improvements in habitat conditions could lead to increases in local populations of ungulates other than caribou. In theory, increases in prey animals could lead to more predators such as mountain lions, potentially putting the small caribou population at greater risk.

Big game foraging sites created by timber harvest are transient. Open plantations become dense stands of saplings / poles within about 15 years in the Hanlon Project Area. Most of the private forest land in the area has been harvested within the last 20 years. Within about ten years, the majority of the private land acreage will be in dense cover, and no longer providing good foraging opportunities for big game. These lands will remain in forested cover for several decades, until they are harvested once again. Thus, even with the openings created with the Hanlon project, open foraging habitat for big game should be dramatically reduced from the present situation in ten years or less.

In the caribou recovery area, the Forest Service continues to manage for more historic habitat conditions (i.e. large, unbroken tracts of mature forest). These conditions are better suited to caribou and much less suited for deer and elk.

Caribou have not been sighted in the LeClerc Creek basin since the reintroduction efforts of the mid 1990s. Upon release, transplanted animals tended to move far and wide before joining the population around Stagleap Park. Presently the Selkirk Mountains caribou population uses habitat more than 12 miles north of the Hanlon Project Area.

There are no plans on the part of the state and provincial game management agencies to reduce hunting opportunities for cougars in the Selkirk Mountains. Hunting pressure on lions is likely to remain high for the foreseeable future.

4. Effects Determination – Alternative A would have no effect on habitat or animals since no forest management would occur. Alternative B would improve habitat for big game near the southern edge of the caribou recovery area. This could lead to local increases in big game numbers and over time, corresponding increases in large predators. More predators in the ecosystem could put the small caribou population at risk. However, improvements in big game habitat resulting from the Hanlon project would be swamped in ten years by forest succession on private lands. The remnant caribou population has been confined to a portion of the recovery area located more than 12 miles north of the Hanlon project. Save for a sudden, large increase in caribou numbers, there is no reason to believe this pattern of habitat use will change anytime soon. Hunting pressure on cougars is likely to remain high in the ecosystem; potentially limiting the risk of incidental predation on caribou. Because of these considerations, Alternative B may affect, but is not likely to adversely affect, woodland caribou.

Risk Analysis –Alternative A
Likelihood of adverse effects = none
Consequence of adverse effects = none
Risk index value = 0 x 0 = 0

Risk Analysis –Alternative B
Likelihood of adverse effects = low
Consequence of adverse effects = moderate
Risk index value = 1 x 5 = 5

VI. EFFECTS OF THE PROJECT TO SENSITIVE SPECIES

A. bald eagle (FS sensitive)

1. Management Framework – The Bald and Golden Eagle Protection Act (Eagle Act) and the Migratory Bird Treaty Act protect bald eagles from a variety of harmful actions and impacts. On August 8, 2007, the USDI Fish and Wildlife Service (FWS) removed bald eagles from the threatened and endangered species list. Upon de-listing, the FWS developed the National Bald Eagle Management Guidelines “to advise landowners, land managers, and others who share public and private lands with bald eagles when and under what circumstances the protective provisions of the Eagle Act may apply to their activities” (USDI, 2007). Recommendations in the guidelines pertaining to forestry practices include:

Nest Stand Protection – Clear cutting or overstory tree removal should not occur within 330 feet of a nest. Forest management designed to conserve or enhance habitat should not occur during the breeding season.

Seclusion - Timber harvest operations and road construction should not occur during the breeding season within 660 feet of a nest. In open areas, this distance may need to be larger if no landscape buffers are present.

2. Existing Conditions

Essential Habitats **-** The most important component of habitat used by eagles is a foraging area that provides adequate food with a minimum of disturbance from humans (Stalmaster, 1987). Foraging areas are typically along rivers or on lakes and marshes larger than 40 acres. Fish and carrion are the primary foods of this bird. The Pend Oreille River and its shoreline habitats provide bald eagles with foraging and reproductive sites. The river is the western boundary of the Hanlon Project Area. Eagles have never been documented using water bodies in the project area other than the river.

Nest, perch, and roost trees selected by eagles are commonly among the largest in the stand, often towering above the main forest canopy (Stalmaster, 1987). Roost sites are often located in areas that have protected microclimates, such as on a slope that is sheltered from the wind. Nest and perch trees are typically located within close proximity to a foraging area. The best potential nest, perch and roost trees in the Hanlon Project Area exist adjacent to the river. The nearest known active bald eagle nest is on the west shore of the Pend Oreille River, about 1,000 feet across the river from the project area. This nest is located in a stand of black cottonwood trees on private land.

Bald eagles often use old growth forest stands as winter roost sites. The tall, spreading tree canopies of these stands can provide the birds with insulating cover during very cold weather. In the Hanlon Project area, there are no stands that appear suitable as roost sites. No evidence of an active winter roost has been discovered in the area.

Seclusion – Eagles can be sensitive to human disturbance during the breeding season and at foraging or sheltering sites. Disturbance at the nest can lead to nest abandonment, or cause adults to leave eggs or young unattended long enough to make them vulnerable to the elements (USDI, 2007). Human disturbances at foraging areas can interfere with feeding and can also result in reduced productivity (number of young successfully fledged).

3. Effects of This Project

Effects to Essential Habitats

Alternative A – No forest management would be initiated in the project area. Over long periods of time, more large trees that bald eagles require for nesting and perching could be recruited in those stands where trees have ample growing space. Dense, stagnated stands of small diameter trees are unlikely to ever produce significant numbers of large trees. In many stands, dense understories of shade tolerant trees would continue to grow into the canopies of dominant ponderosa pine, western larch, and Douglas fir trees. Because of these fuel ladders, the risk of a fire ascending into the crowns of mature trees would continue to increase. Over time, mature lodgepole pine (LP) trees would become more susceptible to insect and disease attack across the project area. Large die-offs of

LP would lead to heavy concentrations of fuels as they fall to the ground, increasing the risk of stand replacing fires. A hot fire resulting from these processes could remove potential large tree habitat across the project area.

Alternative B – No timber harvest would occur within any old growth stands, or designated habitat areas for old growth associated species. No large, dominant trees growing along the Pend Oreille River corridor would be impacted. The only large trees (21+ inches in diameter) that would be harvested anywhere in the project area would be those few that exist within new equipment or road corridors (personal comm. with J. Powell) landings, or rock pits. It is standard practice for the Forest Service to utilize old equipment corridors to the extent possible.

Commercial thinning would occur near the river (Units 1, 2 and 3). Smaller diameter, suppressed, intermediate and co-dominant trees would be targeted for removal (a "thin from below"). The vigor and growth of the residual trees in these stands should be improved, potentially accelerating their growth. Only selection harvest would be used within a 300 foot Riparian Habitat Conservation Area adjacent to the river.

Prescribed fire would be used as a tool to reduce fuel loads and work towards restoring the historic fire regime in the area. Brush, smaller fuels, and dense clumps of conifers would be targeted for removal with these under-burns. Treated areas would be a mosaic of burned and un-burned sites. Up to 50 percent of the total area proposed for burning would likely be blackened. Some trees (particularly thin-barked species such as grand fir) could be killed immediately or become stressed from scorching and die at a later date. This might occur to individual trees or dense clumps of trees and should not be widespread in the treated areas. In burned areas, there should be less than 30 percent mortality for trees 8-12 inches in diameter, and less than 10 percent mortality for trees over 12 inches in diameter (low percentages would be expected). Large diameter, thick barked trees are the most likely to survive these low-intensity fires. These trees are the ones normally selected by eagles for nesting. Overall impacts to potential bald eagle habitats from prescribed fires should be insignificant or discountable.

Effects to Seclusion (Alternative B)
Harvest operations in Unit 3 would occur within 1,000 feet of the active nest stand at the mouth of Lost Creek. Because the nest is located in a tree growing on the west bank of the river, harvest operations in Unit 3 on the east bank of the river could be seen and heard at the nest. For this reason, harvest operations in Unit 3 would not be allowed from December 1 to August 31. This measure would ensure that the project does not disturb the active nest or eagles wintering on the river.

Cumulative Effects – Pend Oreille County includes extensive bald eagle habitat along the Pend Oreille River, and on Calispel and Sullivan Lakes. A reasonable cumulative effects analysis area is the county, which includes the entire portion of the Pend Oreille River in Washington State and all of the Newport-Sullivan Lake Ranger Districts.

Since pre-settlement times, many large cottonwood and ponderosa pine trees that once grew near the river and Calispel and Sullivan Lakes were lost to reservoir construction, timber harvest, intense wildfires of the 1920s and 1930s, and development. However, these water bodies and adjacent hardwood and conifer forest stands still provide high quality bald eagle habitats.

Most National Forest System (NFS) lands in the county lie further than one mile from the river. The inventory of large tree habitats on NFS lands was greatly diminished in the 20th century due to timber harvest, white pine blister rust, and the intense wildfires of the 1920s and 1930s. Since the mid 1990s, the Colville National Forest has not marked trees that are 21+ inches in diameter for harvest (Lowe, 1995) with the exception of those trees located within new equipment or road corridors, landings, or rock pits. Black cottonwoods, which are the preferred bald eagle nest tree in the county, are not be marked for harvest on NFS lands. Very few large trees are likely to be killed in areas proposed for under-burning on NFS lands. This is particularly true of thick-barked species such as Douglas fir, ponderosa pine, and western larch. With any forest management activities, the Forest Service would follow the National Bald Eagle Management Guidelines (USDI, 2007) for managing essential habitats, and limiting disturbance to eagles.

The Hanlon project would promote the growth of large trees near the Pend Oreille River through stand stocking control. These treatments would compliment habitat improvement projects the Forest Service recently initiated on NFS lands along the river. Last fall a FS hand crew removed small (non-commercial) conifers growing under the canopies of scattered, dominant ponderosa pine trees. A few neighboring trees were turned into snags. The intent of this work is to reduce inter-tree competition, and remove fuel ladders that could provide a pathway for forest fires to travel from the ground up into the overstory canopy. In this way, large tree habitat should be maintained on the landscape over time. The project will be completed this year and is a cooperative effort with the Public Utility District #1 of Pend Oreille County (PUD).

Even with ongoing development of private land along the river, the number of active bald eagle nests in the county has steadily increased in recent years. In 2006 alone, a total of seven new nests were documented along the river (personal comm. with S. Zender). Active nest territories will reach a saturation point, and potentially decline with further conversion of land to residential uses. Conservation lands in the river corridor including those managed by the Forest Service, USDI Fish and Wildlife Service, the Kalispel Tribe of Indians, and the PUD, are the most likely to provide secure nesting habitat over the long term.

4. Effects Determination – Alternative A would maintain all habitats over the short term, but would not address the increasing risk of a high-intensity fire removing large tree habitat over substantial areas. Alternative B could remove some large trees within new road and equipment corridors, and areas that are under-burned. The likelihood of adverse effects would be low since relatively few large trees are likely to be lost. All large trees along the Pend Oreille River would be maintained. Harvest of Unit 3 located adjacent to the river would occur outside the breeding season for bald eagles. Thus, the active nest on the opposite shore of the river would not be disturbed. The alternatives as proposed may impact individual eagles, but would not lead to a trend towards federal listing or a loss of viability of the species.

B. common loon (FS sensitive)

1. Management Framework - There is no specific Forest Plan direction for managing habitat for loons. Loons should benefit from existing provisions for the maintenance / improvement of shoreline vegetation and fish habitats in the Forest Plan and the Inland Native Fish Strategy (USDA, 1995).

2. Existing Conditions - Loons are totally dependant on water and prefer to nest on the edges of larger lakes and rivers. They select the most secluded shoreline habitat available for nesting and are prone to abandoning an active nest if disturbed by human activity. Nests are typically placed in concealing vegetation not far from the water's edge. Loons are awkward on land so a gentle grade to the shoreline is necessary for nesting purposes.

During migrations, loons sometimes use the Pend Oreille River, Sullivan Lake, and other large lakes in Pend Oreille County as temporary stop-over sites. In recent times, nesting has been confirmed at two sites in the county; Yocum Lake and Big Meadow Lake. The lack of nesting on other water bodies is likely due to one or more of the following reasons; 1) large fluctuations of reservoir levels during the nesting period (Pend Oreille River, Sullivan Lake), 2) the lack of adequate fish resources in some lakes, 3) loss of shoreline habitat to development, and 4) the lack of seclusion from human disturbance (boating, fishing, residences, etc.).

Loons apparently began to nest on Yocum Lake within the last several years. They have had mixed success on this lake. Two broods were raised in separate years, but nesting attempts have failed in other years. There is anecdotal evidence that a loon nest on the lake was destroyed by people a few years ago. This year one chick was hatched on the lake, but the body of one adult has recently been found and the chick appears to have disappeared. Shooting was the cause of death of the adult bird. The case is under investigation by the Washington Department of Fish and Wildlife (WDFW).

Yocum Lake is stocked with trout by the WDFW. It is a very popular fishing lake with county residents. If the lake were not stocked it is possible the fish population would be inadequate to support a loon pair with young. In 2007, Pend Oreille County restricted boat operation on Yocum Lake to boats with electric motors only.

The lake basin is a popular destination for off-highway vehicle (OHV) riders who live in small communities in Dry Canyon to the east, and along the Pend Oreille River to the west. Forest Road 1900096 accesses the National Forest System (NFS) parcel that includes the north half of the lake. This road is closed to OHVs. The county road which accesses the county-owned parcel on the south half of the lake is open to OHVs. When they are operated in the lake basin, OHVs can be heard throughout the basin.

Because the Yocum Lake area is popular with fishers, campers, OHV riders, target shooters, and hunters, it can hardly be considered as providing seclusion for nesting loons. However, almost all of the human activity is confined to the west side of the lake; the loons have nested on the densely forested east side. There is evidence that loons are adapting more to human disturbances on their natal waters.

NFS lands in the Yocum Lake basin are included within a designated core habitat area for pine marten. No scheduled timber harvest can occur in the area.

Other lakes in the Hanlon Project Area do not have adequate fish populations to support nesting by loons. Loons have never been documented on these lakes. The west edge of the Hanlon Project Area borders the Pend Oreille River. The shoreline on this parcel is either too steep for loons to negotiate or lacks vegetative cover to conceal a nest.

3. Effects of This Project

Alternative A – There would be no impacts to the suitability of the project area for loons, since no forest management would occur. Existing recreational uses of Yocum Lake would continue. Loons nesting on the lake would be prone to disturbance or harassment from boaters, campers, fishers, and OHV riders.

Alternative B – No timber harvest, mechanical fuels treatments, or prescribed burning would occur in the Yocum Lake basin. There should be no impacts to nesting loons resulting from those activities.

With Alternative B, the following recreation management projects would occur at Yocum Lake;

- Gate FR 1900096 at it's origin on County Road 9325 (LeClerc Road). FR 1900096 accesses the north side of Yocum Lake.
- Rip the upper portion of FR 1900096 (above the private land access), and create a non-motorized trail in the road prism.
- Construct a small loop road with parking slots and five associated campsites on the west central side of the lake. These defined campsites and access road would be closed to OHVs. They would replace the existing, user-created sites and roads in the same location.
- Construct a new road to the campsite loop. This road would originate from the county road that accesses the south side of the lake.
- Remove user-created boat launches.
- Install a boat portage trail from the loop road to the lake.
- Install a pre-fabricated, cement CXT toilet at the site.
- Obliterate other non-system roads and OHV trails in the lake basin.

The intent of these projects would be to define and control recreational use of the lake, improve sanitation, and make the site more family-friendly. A single access road (as opposed to the two existing roads) would assist law enforcement efforts in the basin. If these improvements work as intended, recreational use of the lake could become more focused on fishing and camping, and less on motorized uses and shooting. Such an outcome would reduce the potential for disturbance or harassment to loons using on the lake.

Road and other construction work would be confined to outside the nesting season for loons (April 1 to July 1).

Cumulative Effects – In 2008, the Colville National Forest published its first Motor Vehicle Use Map (MVUM) which defines which Forest Roads are open to off-highway vehicle (OHV) operation. Off-road travel is forbidden, except to access existing campsites within 300 feet of open roads. All Forest

Roads and NFS lands in the Yocum Lake basin are closed to OHVs and the closure is being enforced. Over time, the enforcement of the MVUM, the prohibition of outboard motors on the lake, and completion of the recreation projects described earlier might result in greater security for loons nesting on the lake.

4. Effects Determination – No timber harvest or fuels treatments would occur in the Yocum Lake basin with either alternative. Recreation uses of the lake basin would not change with Alternative A. Problems with sanitation and law enforcement would continue. Recreation projects proposed with Alternative B would occur outside the nesting season for loons and would be intended to define and better control recreational uses of the lake. The alternatives as proposed may impact individual loons, but should not lead to a trend towards federal listing or a loss of viability of the species.

C. fisher (FS sensitive)

1. Management Framework - The Forest Plan has no specific direction for managing fisher habitat. However, it does provide for a forest-wide network of "core" reproductive habitat areas for other old growth associated species (pine marten, pileated woodpeckers, and barred owls). Where these areas are located in low to mid-elevation, moist forest stands, they could provide essential habitats for fishers.

Forested corridors are necessary for furbearers to move across a managed forest landscape and make full use of available blocks of habitat. The Forest Plan (as amended by Lowe in 1995) requires that at least two corridors be maintained between neighboring core habitat areas and other suitable stands. These corridors must be at least 400 feet wide. Medium or larger diameter trees in these areas should be common, and canopy closure should be within the top third of site potential. If stands meeting these criteria are not available, the next best stands should be used for connections.

In the west "Fishers are closely associated with forested riparian areas which are used extensively for foraging, resting, and as travel corridors" (Heinmeyer and Jones, 1994). Thus, direction in the Inland Native Fish Strategy (USDA, 1994) for the protection and maintenance of Riparian Habitat Conservation Areas (RHCAs) along forest streams could benefit this large member of the weasel family.

2. Existing Conditions – Fisher sightings are rare in northeast Washington. I observed what I believed to be fisher tracks in the northwest corner of the project area in the winter of 2007 / 2008. In the late 1990s, a fisher was sighted by a FS employee on FR 1936, north of the area.

Forest Habitats - Fishers prefer landscapes that have a high degree of mature forest cover. There is some evidence that they use habitats based more on the physical structure of the forest, and the prey associated with forest structures, rather than a specific forest type. Good overhead canopy closure, a diversity of tree sizes and shapes, and dead, downed wood are all important components of reproductive habitat (Powell and Buskirk, in Ruggerio, et al, 1994). In addition, it appears that fishers appear to select "areas with a low canopy layer that occur in lowland habitat with dense overall canopy cover" (Kelly, in Ruggerio, et al, 1994).

Large (21+ inches in diameter) live and dead trees, and down logs provide fishers with foraging, resting, and den sites. Most timber stands in the project area are approaching 80 years old. Large live trees are below historic levels in the area due to intense wildfires that occurred in the late 1920s, subsequent logging of the remaining large trees, and the loss of white pine trees to blister rust. Because of these reductions in large live trees, large snags and logs are not common and are likely being recruited at a decreasing rate.

Old growth forest and other late successional stage stands provide the best reproductive and resting habitats for fishers. Old growth stands do not exist in the project area, although there are pockets of old growth trees in some stands. There are approximately 166 acres of late and old structural stage stands (SS6) in the area. Stands in the middle stages of succession are typically deficient in large live and dead tree habitat. In the Hanlon Project Area, stands in middle structural stages are presently more common than they were historically. The same is true for lodgepole pine (LP) dominated stands. Stands dominated by LP typically have lower overhead canopy closures (50 percent or less) and lack a low canopy layer. The table below displays the relative availability of habitats in the Hanlon Project Area.

Table 15: Hanlon Project Area - Existing condition of potential habitat for fishers

Potential Habitat	Acres (% of project area)
suitable habitat (SS 6)	166 (1 %)
Low quality habitat (mixed conifer, cedar hemlock stands in SS 4)	3,964 (28%)
low quality habitat (mixed conifer, cedar hemlock stands in SS 5)	4,653 (33%)
marginal / unsuitable (SS 1, 2, 3, 7, lodgepole dominated stands, grass, shrubs, rock, water)	5,488 (38%)

Habitat Connectivity – As they move across the landscape, fishers tend to avoid non-forested areas such as recent clearcuts, meadows, and areas above timberline. In these openings they are more vulnerable to predation. We mapped potential travel corridors for pine marten between designated core habitat areas and other stands of suitable habitat in the Hanlon Project Area. We attempted to avoid all natural or created openings as well as forest stands with open canopies. Natural travel routes such as stream corridors and ridgelines were selected to the extent possible. Fishers could potentially use these corridors to disperse between areas of suitable habitat.

The project area contains a patchwork of land ownerships. As a rule, private forest lands are intensively managed, and most late and old structural stage stands have been logged. Most of the over-story trees have been removed over large swaths or entire sections of private ownerships. The absence of overhead tree canopy could make it difficult for fishers and other furbearers to freely move across these areas.

3. Effects of This Project

Effects to Forest Habitats

Alternative A - No forest management would be initiated in the Hanlon Project Area. Over long periods of time, more large trees that fishers require for den and rest sites could be recruited in those stands where trees have ample growing space. Over-stocked, stagnated stands of small diameter trees are unlikely to ever produce many large trees. In many stands, dense understories of shade tolerant trees would continue to grow into the canopies of dominant ponderosa pine, western larch, and Douglas fir trees. Because of these fuel ladders, the risk of a wildfire ascending into the crowns of mature trees would continue to increase. Over time, mature lodgepole pine (LP) trees would become more susceptible to insect and disease attack across the project area. Large die-offs of LP would lead to heavy concentrations of fuels as they fall to the ground. These processes would increase the risk of a large, stand-replacing fire occurring in the project area. Such a catastrophic disturbance could remove large tree habitats, and late and old structural stage stands, at a watershed scale.

Alternative B - All forest cover would be removed within new rock pits and within the new FR 1935 corridor. This new infrastructure would impact roughly 12 acres of forest habitat with the Hanlon project, and up to 24 additional acres as the rock pits reach their full development many years. Rock pits would be located on open roads. They would be reclaimed with stockpiled topsoil, and re-vegetated once the rock is played out.

No timber harvest would occur within old growth forest stands (none exist) or within any structural stage 6 stands (multi-storied with large trees). No timber harvest would occur within designated core habitat areas for old growth associated species. The only large trees that would be harvested would be those that might exist within new road or equipment corridors. To the extent feasible, the Forest Service would require old equipment corridors to be re-used, and larger trees would be avoided as possible, when laying out new corridors.

No snags 10 inches in diameter or larger would be harvested. Some of these trees would need to be cut down within new road or equipment corridors, or where they compromise worker safety. Felled trees would be left on site where necessary to contribute to down log levels.

The table below displays the proposed commercial timber harvest within potential fisher habitats.

Table 16: Hanlon Project Area - Commercial timber harvest in middle and late / old structural stage stands.

Harvest Prescription	Acres harvested (percent of acres in project area)		
	SS4 – stand re-initiation	SS 5 – multi-stratum without large trees	SS6 – multi-stratum with large trees
created openings	388 (10%)	496 (11%)	0
commercial thin / selection harvest	683 (17%)	2,335 (50%)	0

Shelterwood harvest would be applied on roughly 912 acres in the project area in even-aged stands of lodgepole pine or stands that are predominantly lodgepole pine. These stands could provide marginal habitat for fishers at best. The intent of regenerating these stands would be to establish a new cohort of early seral tree seedlings, capable of growing toward late structural stages.

Commercial thinning and selection harvest would reduce tree stocking levels over hundreds of acres of stands in middle structural stages. These are predominantly mixed conifer or cedar / hemlock stands. Suppressed, intermediate and co-dominant trees would be targeted for harvest ("thin from below"). The healthiest appearing, fullest crowned trees would be retained, including all trees 21+ inches in diameter.

In a western Oregon study, researchers compared unthinned Douglas fir / western hemlock stands, to stands that were thinned between 1969 and 1984 (Bailey and Tappeiner, in OR Dept. of Forestry, 2008). They found that the live crown ratio of trees in thinned stands was greater than in unthinned or in old growth stands. They concluded that thinning young Douglas fir stands will improve the growth of advanced understory regeneration and lead to the recruitment of new conifer regeneration; thereby promoting multi-storied stands. A growing body of research has shown that thinning reduces the inter-tree competition for sunlight, water, and soil nutrients in the harvested stand (OR Dept. of Forestry, 2008). Thinning followed by underburning reduces fuel ladders and surface fuels, reducing surface fire intensity and the potential for crown fires.

The initial reduction in tree canopy biomass in a thinned stand could make a fisher using the area more vulnerable to avian predators such as goshawks. In 15-20 years, tree crowns should grow to the point that the overhead canopy resembles pre-harvest levels. Thinning should promote multiple canopy layers and large diameter trees; stand conditions preferred by fishers.

Prescribed fire would be used to reduce fuel loads and work towards restoring the historic fire regime across thousands of acres in the project area. Dense clumps of regeneration and smaller ground fuels would be targeted for removal with these under-burns. Treated areas would be a mosaic of burned and un-burned sites. There would be places that the fires "skip" due to discontinuous fuels and moister forest types (ex. cedar / hemlock). In burned areas, 90 percent of the small fuels (0-1.0 inch diameter) would be consumed. Larger diameter fuels (1.0-3.0+ inches) would be consumed in relation to their diameter and moisture content. The lower the moisture content of the larger fuels, the greater the mass consumed. Some larger down logs are likely to be at least partially consumed, as are some standing snags.

Immediate, post-fire mortality of the overstory would be less than 10 percent of the tree basal area per acre (a low percentage would be expected). Some thin-barked, fire sensitive trees would be killed. A small pulse of snags would be created in burned areas. After a decade or so, most of these trees would have fallen to the ground to provide additional down log habitat. There would be some degree of scorch damage on up to 40 percent of the live trees (a low percentage would be expected). Trees injured but not killed by these fires could develop heart rot or other defects. Over time, these injuries could result in hollows / cavities fishers could exploit. Overstory tree canopy might be greatly reduced in small pockets, but overall impacts at the stand level should be small.

Effects to Habitat Connectivity

Alternative A - All potential travel routes for fishers would be maintained in their present state over the short term. Dependant on the tree stocking level and other factors, the suitability of travel routes could improve over time as younger trees in these areas grow and overhead cover increases. Due to past fire suppression practices and the resultant build-up of fuels, the potential for a large, hot wildfire is increasing in the Hanlon Project Area. Such a fire could remove potential travel corridors and create large openings that would be avoided by fishers.

Alternative B- Intermediate timber harvest (thinning, selection harvest) and prescribed burning would occur within mapped travel corridors. This would result in a reduction in tree canopy biomass and might make fishers more vulnerable to avian predators such as goshawks. Enough tree basal area would be retained to meet the canopy closure requirement in Lowe (1995). In 15-20 years, tree crowns should grow to the point that the overhead canopy is restored to pre-harvest levels.

Low severity fires would mostly remove brush, conifer regeneration, and smaller fuels within mapped travel corridors. As a rule, horizontal cover would be degraded but not removed in areas that are under-burned. Many patches of conifer regeneration and shrubs should survive the fires, owing to discontinuous fuel concentrations. Even in well-burned areas, the line-of-sight visibility would still be broken up by dead and scorched regeneration, partially consumed logs, re-sprouting shrubs, and tree boles. Overhead canopy closure is unlikely to be much affected by these burns.

Cumulative Effects – The LeClerc Creek Watershed contains a few lower elevation, mature, mesic forest stands and miles of forested streamside habitats. The watershed is large enough to support several breeding pairs of fishers and is an adequate analysis area for cumulative effects.

Historically there were many more acres of mesic, late and old structural stage stands in the LeClerc Creek Watershed (see Table 6). The intense wildfires of the 1920s and subsequent timber harvest removed most of these stands. Timber sales on all ownerships were designed to remove larger trees and old forest stands, and replace them with fast growing plantations of mostly seral tree species. The depletion of large tree habitat is likely to continue on private lands in the watershed.

With the adoption of the Eastside Screens for Timber Sales (Lowe, 1995), timber sales on NFS lands are now designed to move watersheds closer to their historic range of variability for stand structural stages. In practice, this has normally meant that existing late and old structural stage stands have not been managed, since there are presently fewer acres of these stands than existed historically in most watersheds. Timber harvest on NFS lands is now mostly focused on moving mid-successional stage stands towards late and old structure, mainly through commercial thinning. In the short-term, these timber sales could negatively affect fisher habitat by reducing overhead canopy closure, and low canopy biomass. However, in the long-term, thinned stands would contain healthier, more vigorously growing trees, and multiple canopy layers. Suitable reproductive habitat for fishers should be developed more rapidly in harvested stands than if they were left unmanaged. The risk of high-intensity wildfires should be reduced. Dead wood habitats would be maintained at levels prescribed in Lowe (1995) at a minimum. No standing dead trees 10+ inches in diameter would be marked for harvest with the Hanlon project. With any forest management project on NFS lands, forested corridors for furbearers would be identified and maintained.

Wetlands and other riparian habitats important to fishers would receive protection on private lands according to Washington State Forest Practices regulations. Buffers of standing trees would be left adjacent to these habitats, although the number and size of these trees would be much less than within designated riparian habitat conservation areas (RHCAs) on NFS lands.

5. Effects Determination
In recent times, fishers have been documented in the LeClerc Creek watershed on two occasions. Reproduction has never been documented. Large blocks of low elevation, mature, moist forest stands with structural complexity are rare in the watershed. Alternative A would have no immediate impact to potential fisher habitat. This alternative would not address the increasing risk of catastrophic wildfire occurring in the area. Such fires could remove suitable den / resting structures and entire stands of suitable habitat. Alternative B would not impact the few acres of presently suitable reproductive habitat in the Hanlon Project Area. Alternative B would have short-term negative impacts to low quality / marginal habitats but would also initiate long-term positive trends in habitat development. The project would be designed to retain as much existing large, live and dead tree habitat as feasible. The alternatives as proposed may impact individual fishers but are not likely to lead to a trend towards federal listing or loss of viability of the species.

D. gray wolf (FS sensitive)

1. Management Framework - The Northern Rocky Mountains Wolf Recovery Plan (USDI 1987) identifies three areas for wolf recovery; the Greater Yellowstone Ecosystem, northwest Montana, and central Idaho. Currently, there are no plans for wolf recovery in Washington State. Forest Plan direction for wolf management is to investigate sightings and protect any documented animals.

In the northern Rocky Mountains, wolves prey mainly on deer and elk (Hansen, 1986). Providing quality winter range is a key aspect of maintaining healthy big game herds. East of the Pend Oreille River (including the Hanlon Project Area), the Forest Plan emphasizes elk winter range management. The objective for elk winter range in the Forest Plan (page 4-106) is to "Manage for cover / forage ratios approaching 50:50 dispersed to provide for a maximum utilization of forage." At least 20 percent of the cover component should be thermal cover and the rest can be either thermal or hiding cover. Thermal cover for elk is provided by evergreen trees that are at least 40 feet tall, and that have an overhead crown cover of 70 percent or more. Elk thermal cover blocks should be at least 30 acres in size. Hiding cover is provided by vegetation capable of concealing 90 percent of an animal at a distance of 200 feet. The distance between cover blocks should not exceed 600 feet.

Operating seasons for logging and post-sale work should be restricted when necessary to limit disturbance to wintering big game. The management objective for open road densities on elk winter range is 0.4 miles per square mile, during the season of use.

2. Existing Conditions - A wolf pack is basically a family unit, containing an adult pair (the pack's leaders), this year's pups, and oftentimes young of past years (Mech, 1991). The presence of a pack means that breeding is occurring and a pack territory has been established. Biologists have recently confirmed the presence of a pack of wolves using the LeClerc Creek Watershed. The exact makeup of the pack is unknown but is thought to include at least the breeding pair and five pups. This is only

the second documented pack of wolves in WA State in about 70 years. DNA analysis of hair samples collected from one of the adults confirmed the animal is a wild wolf that probably emigrated here from northwest Montana.

Prey – Wolf prey animals that might occur within the Hanlon Project Area include white-tailed deer, mule deer, elk, moose, and small mammals. The project area contains about 4,006 acres of designated elk winter range (Forest Plan Management Areas 6 and 8). Within these areas, there are a few stands on more sheltered aspects that are providing thermal cover. The majority of the winter range is providing hiding cover for big game. The best foraging habitats are located in riparian shrub / forb fields, old homestead meadows, recently created plantations, and open forest stands. A few upland shrub fields exist in the area.

The table below displays the existing habitat components on designated big game winter range. For each stand, we assigned the habitat component that ***best*** described the stand using the following criteria:

- Forage – meadows, wetlands, shrub fields, and forest stands in structural stages (SS) 1, 2, or 7 (see page 7 for stand structural stage definitions). Forage plants are common.
- Thermal cover – stands in SS 3, 4, and 5 with at least 70 percent canopy cover.
- Snow intercept thermal cover - stands in SS 6 with at least 70 percent canopy cover.
- Hiding cover – typically stands in SS 3, 4, 5.

As a rule, stands typed as thermal or snow intercept thermal cover are also providing hiding cover on the Newport-Sullivan Lake Ranger Districts. Some stands typed as forage may also be providing hiding cover.

Table 17: Hanlon Project Area - Existing acres of big game habitat components on designated elk winter range (Management Areas 6 and 8)

Winter Range Habitat Component	Existing Acres (percent)	Forest Plan Goal Acres (percent)
Forage	973 (24%)	2003 (50%)
Thermal Cover	63 (2%)	801 (20%)
Snow intercept cover	0	
Hiding cover	2967 (74%)	1202 (30%)
Other (e.g., rock)	3 (<1%)	NA
Total Winter Range	4006 (100%)	4006 (100%)

As displayed in the table above, designated winter range in the project area is low in forage (24 percent) and exceeds cover goals (76 percent). Only about 2 percent of the designated winter range is providing thermal cover.

Recent research conducted in the Blue Mountains of Oregon and Washington has shown that there is "little justification for retaining thermal cover as a primary component of habitat evaluation models

for elk" (Cook, et al, 2004). These authors stated that elk likely derive benefits from forest cover such as "enhanced security, reduced snow depth, and perhaps under some conditions, a better foraging environment." However, the thermo-regulatory properties of dense tree canopies have much less importance to elk than was originally thought. Providing quality forage, hiding cover, and seclusion from human disturbance are now thought to be much more important management objectives.

Deer are able to use cover patches down to about three acres in size. Dense pockets in some stands typed as hiding cover in the table above might also provide thermal cover for deer. Such inclusions are difficult to accurately map.

Den and Rendezvous Sites – Wolf dens in the Northern Rocky Mountains are commonly dug out in well-drained soils, on southerly aspects, and on moderately steep slopes. The sites are usually within 0.25 mile of surface water and overlooking surrounding low-lying areas. The wolf pack presently using the LeClerc Creek drainage likely denned in the Hanlon Project Area this year. An active den site has not been found to date. There are a number of apparently suitable south-facing slopes in the project area. There are no known caves that could be used for denning. There are some rock outcrops, but no suitable den sites have been identified in those sites. Literature from the 1970s and 1980s indicated that wolf packs were sensitive to human disturbance near den sites and may abandon the den as a result of disturbance. Recent information suggests that wolves have become more adapted to human activities.

Rendezvous sites usually consist of complexes of meadows and adjacent hillside timber, with surface water nearby (streams, bogs, old beaver ponds) (Mech, 1991). The size of these areas may vary, but most are about one acre. Wolves will move the location of rendezvous sites during the summer as their pups grow. Much of the riparian shrub field habitat along the major streams in the project area could provide suitable rendezvous habitat, as could several scattered wetlands. As of this writing we strongly suspect there is an active rendezvous site in the Hanlon Project Area. We will investigate the area later this summer, once the animals have moved off the site.

Seclusion - Wolves could use all habitats on the Colville National Forest that provide an adequate prey base. However, they may be limited by the amount of use an area receives by humans. To provide adequate seclusion habitat for wolves, Hansen (1986) recommended that open road densities not exceed one mile per square mile on National Forests in northern Idaho and northeast Washington. A wolf using an area of high open road density is more prone to being struck by a vehicle, shot by a legal hunter mistaking it for a game animal (coyote), or simply poached.

The existing open motorized route density in the project area is 1.41 miles per square mile. On National Forest System (NFS) lands only, the open route density is 0.71 mile per square mile.

During the winter months, certain roads are groomed for snowmobiles in the project area. County-owned road segments are plowed in the winter. The open road density on designated winter range is 0.98 miles per square mile.

3. Effects of This Project

Effects to Wolf Prey Animals

Alternative A – This alternative should have no immediate effect on big game or their habitats since no forest management would occur. Over time, certain younger stands of trees would mature and attain the necessary height and crown closure of thermal cover. Other stands that are over-stocked with trees are likely to stagnate and never develop a dense enough overhead canopy to provide thermal cover.

On National Forest System (NFS) lands, forage plants in plantations and open forest stands would slowly decline in vigor as growing conifers shade them out. Winter ranges in the project area would accumulate more cover, while forage would decline. Ground and ladder fuels would continue to accumulate in forest stands across the project area. The potential for a large, intense wildfire would increase over the long run. If such an event occurred, the resultant increase in sunlight on the forest floor would promote the growth of upland shrubs, grasses, and other big game forage plants. However, high-intensity fires have the potential to burn large expanses of forest and create very large openings. Species associated with forest edge habitats (such as big game) may make little use of the interiors of such large openings, owing to the absence of nearby cover.

Noxious weeds are most likely to successfully establish where there is full sun, bare soil, and few native plants. Large, hot wildfires may produce these conditions. Such fires can result in the wholesale removal of overhead canopy, understory vegetation, and duff. If weeds heavily infest these areas, native plants can be replaced, including those eaten by big game animals. Large weed infestations can effectively reduce the area of suitable forage habitat for big game, and could change the way animals use the landscape.

Alternative B – All forest cover would be removed within new rock pits and the within the new FR 1935 corridor. This new infrastructure would impact roughly 12 acres of forest habitat with the Hanlon project, and up to 24 additional acres as the rock pits reach their full development many years. Rock pits would be located on open roads. They would be reclaimed with stockpiled topsoil, and re-vegetated once the rock is played out.

Commercial timber harvest would remove or degrade forest cover. Shelterwood harvest would convert hiding cover to open forage habitat for 15+ years. Existing forage plants in these units should become more palatable and vigorous; particularly in units that are broadcast burned. Shelterwood harvest would create additional forest edge habitat. Alternative B would move the cover / forage ratio on elk winter range closer to the desired 50 / 50. If necessary, hiding cover blocks would be retained within the larger created openings to ensure that the distance to cover does not exceed 600 feet. Hiding cover would also be retained along open roads, where the opportunity exists.

Where partial harvest prescriptions (commercial thinning, selection) are used, hiding cover would be locally degraded for five years or more, and essentially removed for at least that long within new skid trails. Based on past partial harvests completed on the ranger districts, there should be enough understory vegetation retained to provide hiding cover at the stand level.

Commercial thinning and selection harvests would target the removal of suppressed, intermediate, and co-dominant trees. The fullest crowned and most vigorous appearing trees would be retained

(including all large trees). There would be less inter-tree competition for light, water, and soil nutrients in the residual stand. These treatments should promote the development of larger, full crowned trees sooner than had no treatment occurred. High quality thermal cover could be developed in these stands over the long run.

Stands that are presently thermal cover would not be harvested. Where pockets / inclusions of thermal cover at least three acres in size exist, they would be excluded from harvest.

The following table displays the changes in winter range habitat composition that would result from timber harvest in the project area.

Table 18: Hanlon Project Area - Acres of habitat components on designated elk winter range (MAs 6 and 8) by alternative

Winter Range Habitat component	Alternative A (existing condition) Acres (percent)	Alternative B Acres (percent)	Forest Plan Goal Acres (percent)
Forage	973 (24%)	1,493 (37 %)	2,003 (50%)
Thermal cover	63 (2%)	63 (2%)	801 (20%)
Snow inter. cover	0	0	
Hiding cover	2,967 (74%)	2,447 (61 %)	1,202 (30%)
Other	3 (<1%)	3 (<1%)	NA
Total winter range	4,006 (100%)	4,006 (100%)	4,006 (100%)

Timber harvest, mechanical fuels treatments, and prescribed fires would reduce surface and ladder fuels. As a result, future wildfires that start in treated areas should burn cooler and be more likely to remain on the forest floor. The risk of a hot crown fire removing forest cover over large areas would be reduced in the project area.

In many harvest units, the Forest Service would use low-intensity prescribed fire to remove logging slash and reduce forest fuel loads. These fires would release a “pulse” of nutrients into the soil. The above-ground portions of many upland shrubs and grasses would be burned off. These plants evolved with fire and should respond with vigorous sprouting from their root systems. Thus, the quantity and quality of forage for big game animals should be improved in burned areas for several years following burning.

Noxious weeds could colonize soils that are exposed by logging equipment and prescribed fire. However, a number of factors would limit the potential for noxious weeds to spread within the project area. Prescribed fires would be completed during optimum weather and fuel moisture conditions in order to ensure low-intensity fire behavior. Most of the forest duff should be maintained in burned areas and very little soil should be exposed. Most timber harvest would occur in the winter. Winter logging minimizes the exposure of forest soils. Log landings, skid trails and burn piles would be seeded with an approved grass seed mix. Prior to the project, a Forest Service contractor would use herbicides to treat weed infestations on roads in the project area.

Most of the commercial timber harvest proposed with Alternative B would occur during the winter in order to limit disturbance to grizzly bears using the area. Winter logging has the potential to disturb and displace elk and moose; indirectly impacting predators such as gray wolves. Several factors would help to ameliorate these potential impacts. Units located on the west side of Dry Ridge (outside recovery habitat for grizzly bears) would be logged outside the wintering period. The Hanlon project would be broken up into at least two major timber sales. This should have the effect of staggering the disturbance so that logging is not occurring in all drainages at once. Wintering big game animals could find secluded blocks of habitat in designated old growth species habitat areas. WA Department of Natural Resources (DNR) lands adjacent to the Hanlon Project Area could also provide areas of wintertime seclusion. Winter harvest operations would not occur on those lands. Lastly, deer should not be appreciably affected by project-related disturbance. It is not unusual to observe deer foraging on lichens and conifer needles made available by timber harvest, while logging is occurring (personal observation and personal communication with J. Powell).

Effects of the Middle Branch Road Relocation (Alternative B)
With Alternative B, a 3.2 mile segment of the Middle Branch of LeClerc Creek Road (Forest Road 1935) would be re-routed. Presently this road segment lies within close proximity to the creek and affects the drainage patterns of several adjacent wet areas. The existing road bed would be ripped, seeded, and planted with native shrubs and trees. Old drainage patterns would be re-established. A total of five culverts which are presently barriers to fish movement would be removed. Both ends of the abandoned road segment would be blocked with boulders, earthen berms, or other means. Based on similar projects completed on the ranger districts in the past, the abandoned road would be effectively closed to all motor vehicles and would no longer function as a road.

The new road segment would be constructed on an upland area to the west of the creek. The majority of the new road segment would lie within 0.25 mile of the creek. Thus, elk foraging in the riparian strip along the creek would still be prone to disturbance from vehicle traffic on the road. However, the new road should be mostly, if not entirely screened from the creek by vegetation and topography. The present road location is entirely visible from the creek. This project should result in net gains in riparian shrub and sedge wetland habitats over time. Foraging opportunities for big game animals should be improved within the stream corridor. The potential for big game animals to use the riparian habitat along the creek for calving and fawning should improve.

Effects to Seclusion (Alternative B)
The level of human disturbance in the project area would increase for the duration of the project. Wolves might avoid the immediate areas of ongoing project activities; particularly where heavy equipment is being operated or hand crews are working. On the other hand, the wolf pack presently using the LeClerc Creek drainage apparently established a rendezvous site adjacent to a restricted road that was being used for a timber sale on private land. As the loggers drove back and forth from the timber sale each day, they observed this pack for at least two weeks, sometimes in the road itself. Log trucks, pickup trucks, and logging equipment were driven on the closed road, and the wolves continued to use the site.

While the Hanlon project is active, the open road mileage in the project area would be increased with the relocation of FR 1935. This would be the only new system road segment built for the sale. The

old segment of FR 1935 would be effectively closed once the new route is complete; restoring the existing open road density in the project area. Temporary roads and roads brushed out for the project would only be used in the winter. At no time would these roads be drivable during the warm months.

Once all road and trail closure work is complete, the open motorized route density in the project planning area would decrease from 1.41 miles per square mile (present condition) to 1.18 miles per square mile. The risk of a wolf being struck by a vehicle or shot from an open road would be reduced.

Effects to Den and Rendezvous Sites
Both alternatives – The FS would cooperate with state wildlife agencies in surveying for active den and rendezvous sites of the newly established pack within the LeClerc Creek Watershed.

Alternative A – No forest management would occur with this alternative. The suitability of potential wolf denning or rendezvous habitat in the project area would be maintained.

Alternative B – No heavy equipment operation or other motorized project activities would occur from April 1 to July 1 within the LeClerc Creek Watershed. Most of the timber harvest proposed with the project would occur during the winter months. This would reduce the potential for project activities to disrupt wolf breeding activities. The timber sale and post-sale fuels reduction contracts would provide the means to protect any individual wolf, den site, or rendezvous site found during the life of the project. If an active den or rendezvous site is discovered in the project area, the FS would take any necessary steps to protect the habitat values of the site. This might include retaining adequate forest cover around the site, and / or imposing timing restrictions on nearby project activities so that wolves are not disturbed while a site is being used.

Cumulative Effects - Wolf pack territories have ranged in size from 20 square miles in Minnesota to at least 685 square miles in Alberta (USDI, 1987). Thus, a cumulative effects analysis could be made at the level of Pend Oreille County, which includes all of the Newport-Sullivan Lake Ranger Districts.

Due to human persecution, gray wolves were extirpated from Washington State sometime in the 1930's. Over the past decade, wolves and wolf sign have been reported numerous times in Pend Oreille County by members of the public and agency biologists. A female, radio collared wolf from Montana wolf spent a few days in the county in 2002. This year marks the first confirmed presence of a wolf pack in NE Washington in about 70 years.

Cumulative Effects to Wolf Prey – Since 1989, forest management projects on the ranger districts have followed Forest Plan standards and guidelines for big game winter ranges. The Hanlon project would contribute to the long term objective of providing optimum amounts of forage and cover habitat on NFS lands. The project would compliment big game habitat improvements the Forest Service continues to implement in the county. These projects include prescribed burning to rejuvenate upland shrub fields, spraying noxious weeds on roadsides and in meadows, maintaining meadows by removing encroaching conifers, and protecting / restoring aspen stands. Big game predators such as wolves could indirectly benefit from these projects.

The Hanlon project could contribute to the spread of noxious weeds in the county. The Forest Service would employ all the management practices described earlier to minimize this potential. These actions are standard procedures for timber sales on the ranger districts. Active weed spraying programs will be necessary so long as forest management, grazing, and forest recreation continues.

Winter ranges on most private lands are unlikely to be managed with the needs of wintering big game in mind. Providing a mosaic of cover and forage blocks is unlikely to be a consideration. Noxious weeds are likely to increase on private lands over time, due to an apparent low level of commitment to prevention, treatment, and monitoring.

Cumulative Effects to Seclusion – See the section on grizzly bears for a discussion of cumulative impacts to this habitat requirement.

Cumulative Effects to Den and Rendezvous Sites – If an active wolf den or rendezvous site is discovered in the Hanlon Project Area, the FS would take necessary steps to protect the habitat values of the site. There should be no cumulative impacts to these sites or wolves using the sites.

5. Effects Determination – The project area lies outside of designated recovery habitat for wolves. This means that habitats in the area are not needed for the survival and recovery of the Northern Rocky Mountains population of gray wolves.

Alternative A would maintain existing habitats for wolves and their prey over the short-term. Forage opportunities for big game animals would slowly decline as young trees grow within existing plantations. This trend could be reversed where wildfires occur in the project area. The risk of high-intensity fires in the area would increase incrementally over time. Such fires could remove forest cover over large areas and dramatically increase browse and green forage production for big game. The interiors of large burns may be under-utilized by ungulates.

Timber harvest and prescribed burning proposed with Alternative B would improve the forage component of big game winter ranges. Alternative B would move the project area towards a more historic fire regime. Big game forage could be maintained at more stable levels over time. While the project is active, there would be an increase in the local open road density resulting from the relocation of FR 1935. However, the old road would be effectively closed to motorized vehicles post-project. Wolves and some prey animals might be displaced from local areas where project activities are ongoing; particularly where heavy equipment is being used. Most project activities would occur during the winter. There would be no motorized project activities from April to July 1 in the LeClerc Watershed. This would reduce the risk of the project affecting potential wolf denning activities. Any wolf, wolf den, or rendezvous site discovered during the life of the project would be protected with a standard clause included in FS timber sale contracts. Based on this discussion, the alternatives as proposed may affect individual wolves, but are not likely to lead to a trend toward Federal listing or loss of viability of the species.

E. great gray owl (FS sensitive)

1. Management Framework - Forest Plan (page 4-40) direction for raptors is to "manage the nest sites and surrounding areas to insure their continued usefulness to the respective species". The Forest Plan also provides for a forest-wide network of "core" reproductive habitat areas for old growth associated species (pine marten, pileated woodpeckers, and barred owls). These areas could provide reproductive habitats for great gray owls.

Management direction in the Inland Native Fish Strategy (USDA, 1995) within Riparian Habitat Conservation Areas (RHCAs), is to prohibit timber harvest except to "acquire desired vegetation characteristics where needed to attain Riparian Management Objectives". This direction is designed to maintain the integrity of streamside riparian and wetland habitats, and should benefit prey species such as red-backed voles.

2. Existing Conditions – Great gray owl sightings are rare in northeast Washington. A few reliable observations of this species are on file from the Newport-Sullivan Lake Ranger Districts. Nesting has never been documented. One great gray owl record exists from the Hanlon project planning area. This sighting was during the fall migration period. We did not find evidence of this raptor during specific surveys for goshawks, or during general field review of stands proposed for harvest.

Great gray owls may utilize large, broken-topped snags or large mistletoe brooms for nesting. They often occupy the abandoned nests of other raptors such as goshawks or red-tailed hawks. In British Columbia, breeding habitats for great gray owls primarily include Douglas fir forests with patches of aspen, but also Douglas fir / lodgepole pine cover types and lodgepole / spruce cover types. Nest stands are located in the vicinity of hunting habitats that include marshes, lakes, muskegs, wet meadows and pastures. Nest stands in the northwestern U.S. are strongly associated with extensive meadow systems, clear-cuts, and other forest openings (Hayward and Verner, 1994).

Within the project area there are roughly 166 acres of stands in structural stage (SS) 6. These stands are the most likely to provide the large live trees that are selected by the larger hawks for nesting. Such stands are also where large, broken-topped snags are most likely to be found. Potential nest structures might also be provided on a portion of the roughly 6,757 acres of SS 4 and 5 stands in the area.

Great gray owls forage for voles and other rodents in open, grassy habitats. In northeast Oregon, this owl may prefer to forage in open forests that have a heavy grass under-story (Hayward and Verner, 1994). Within the Hanlon Project Area, the best potential foraging habitat likely occurs within existing wetlands, old homestead meadows, and in areas of more recent regeneration timber harvest.

3. Effects of This Project

Effects to Nest Habitat

Alternative A – Large tree habitat would be recruited in the project area according to natural processes. Over-stocked, stagnated stands of small diameter trees are unlikely to ever produce many large trees. Ground and ladder fuels would continue to accumulate in forest stands throughout the project area. The risk of an uncharacteristically hot wildfire occurring in the area would increase

incrementally over time. Such a fire could remove suitable nest structures and entire nest stands for great gray owls.

Alternative B – No timber harvest would occur within old growth stands (none exist in the area) or within stands in structural stages 6 (multi-stratum with large trees) or 7 (single stratum with large trees). No timber harvest would occur within designated habitat areas for old growth associated species. Thus, the best potential nest stands in the project area would not be affected by timber harvest.

Timber harvest would focus on smaller diameter, suppressed, intermediate, and co-dominant trees or stands of stagnated trees. The vigor and growth of the residual trees in thinned stands should be improved, potentially accelerating the development of larger trees and late and old stand structure. The only large trees (21+ inches in diameter) that would be harvested anywhere in the project area would be those few that might exist within new road or equipment corridors, landings, or rock pits. To the extent possible, it is standard practice to utilize old equipment corridors, and avoid marking large trees in new corridors (personal comm. with J. Powell).

Existing snags 10+ inches in diameter would be retained within harvest units with the exception of those necessary to be felled within new equipment corridors, or for worker safety.

In areas proposed for prescribed burns, there would be untouched islands / pockets where there is not enough fuel to carry a fire. Some trees (particularly thin-barked species such as grand fir) could be killed immediately or become stressed from scorching and die at a later date. This might occur to individual trees or dense clumps of trees and should not be widespread in the treated areas. In burned areas, there should be less than 30 percent mortality for trees 8-12 inches in diameter, and less than 10 percent mortality for trees over 12 inches in diameter (low percentages would be expected). Large diameter, thick barked trees are most likely to survive these low-intensity fires. A few large diameter snags are likely to be lost. Overall impacts to large tree habitats at the stand level should be small.

Effects to Foraging Habitat

Both Alternatives – Over time, trees in existing plantations would grow into sapling and pole-sized conifers. These areas would then lose what value they presently have as potential great gray owl foraging habitat. Conifers would continue to encroach into old homestead meadows and other openings that are potential foraging areas for great gray owls. Livestock grazing would retard, but not halt this process. These meadows would require periodic maintenance to keep them in an open condition.

Alternative A - The forest canopy on NFS land would continue to close, decreasing habitat for voles and pocket gophers, the primary prey of great gray owls. Ground and ladder fuels would continue to accumulate in forest stands, elevating the potential for stand replacing wildfires to occur in the project area. In such an event, the increase in sunlight on the forest floor could stimulate the growth of grasses, forbs and shrubs, where their root systems are not entirely killed. Owl prey species could benefit from these increases in green forage.

Alternative B – Shelterwood harvest proposed with this alternative would open up forest canopies and allow more sunlight to reach the forest floor. This would stimulate the growth of grasses and other

ground vegetation, potentially benefiting rodent populations in the short term. The understories of harvested units or burned areas would be more open, improving hunting effectiveness for large-bodied birds of prey.

Habitat improvement work proposed with the Hanlon project could potentially enhance foraging habitat for prey species. These projects include conifer removal to maintain homestead meadows, and fencing over-used riparian sites to exclude livestock.

Cumulative Effects - The LeClerc Creek Watershed contains several small homestead meadows, natural openings, and thousands of acres of regeneration harvest that could provide foraging habitats for great gray owls. Potential nest structures are rare. The watershed is large enough to support several breeding pairs of this species. Thus, the watershed is a reasonable area to use for cumulative effects analysis.

Cumulative Effects to Nesting Habitat – See the section on fishers for a discussion of cumulative effects to large tree habitat.

Cumulative Effects to Foraging Habitat – The Hanlon project would create new forest openings on NFS lands through shelterwood timber harvest. These effects would be cumulative to those resulting from recent regeneration harvest on all ownerships in the watershed. Habitat improvement work proposed with the Hanlon project would contribute to the maintenance of open, grassy habitats on NFS lands.

4. Effects Determination – At this time, great gray owls appear to be infrequent visitors to the ranger districts during migrations. Nesting has not been documented. Alternative A would maintain potential habitats for great gray owls over at least the short-term. This alternative would not address the increasing risk of a high-intensity fire removing nest structures and nest stands over large areas. Alternative B would reduce the risk of future, intense fires in the project area, and improve forage resources for rodents over the short term. Vegetation management with this alternative would be designed to accelerate the development of late and old stand structural stages. The alternatives as proposed may affect individual great gray owls, but are not likely to lead to a trend toward Federal listing or loss of viability of the species.

F. harlequin duck (FS sensitive)

1. Management Framework - The Forest Plan provides no direction for managing habitat specifically for this species. Management direction in the Inland Native Fish Strategy (INFISH; USDA, 1995) is to prohibit vegetation management within Riparian Habitat Conservation Areas (RHCAs) except to "acquire desired vegetation characteristics where needed to attain Riparian Management Objectives". This direction should work to protect breeding habitats of harlequin ducks.

2. Existing Conditions – "During their nesting season (April – June), adult harlequin ducks require fast flowing water with loafing sites nearby. Streams usually have a substrate that ranges from cobble to boulder, with adjacent vegetated banks" (Lewis and Kraege, 2003). Harlequins are

typically found in stream reaches that are more secluded (> 50 meters from roads and trails) and with mature or old growth forest cover.

Most stream reaches within the Hanlon Project Area appear to be unsuitable for harlequin duck nesting due to one or more of the following reasons;

- they lie in close proximity to roads,
- forest cover is immature,
- stream gradient is lower (lower water velocity),
- stream size is too small.

On the Newport-Sullivan Lake Ranger Districts, harlequin ducks have been documented nesting on Sullivan Creek, Outlet Creek (below Sullivan Lake Dam), and lower Harvey Creek. A pair of harlequins was observed on the West Branch of LeClerc Creek on May 7, 2009 (personal communication with T. Shuhda). This pair was likely resting during migration. Streams in the Hanlon Project Area have been extensively surveyed for fish habitats, and most reaches have been electro-shocked. Harlequins have not been sighted during these field surveys. No ducks were found during specific searches for the species conducted in June / July of 2009.

3. Effects of This Project

Alternative A – There would be no change in potential habitats for harlequin ducks in the project area, at least in the short term. Over time, mature forest cover could be recruited along major streams in the project area. This process could be reversed through future stand-replacing wildfires.

Alternative B - Riparian Habitat Conservation Areas (RHCAs) would be designated along streams by the forest fish biologist according to guidelines in INFISH. Some upland portions of RHCAs might be selectively logged or thinned. Timber harvest would only be prescribed in RHCAs to "acquire desired vegetation characteristics where needed to attain Riparian Management Objectives" (USDA, 1995). Virtually all of the existing overhead canopy along streams should be maintained.

With Alternative B, a 3.2 mile segment of the Middle Branch of LeClerc Creek Road (Forest Road 1935) would be re-routed. Presently this road lies within close proximity to the creek and affects the drainage patterns of several adjacent wet areas. The existing road bed would be ripped, seeded, and planted with native shrubs and trees. Old drainage patterns would be re-established. This project has the potential to make the creek more secluded from human disturbance, as well as improve the condition of riparian habitats, over time.

Alternative B would use prescribed fire to reduce forest fuel loads and work towards restoring the historic fire regime in the area. Forested riparian zones tend to be mesic and can act as barriers to low intensity ground fires. It is possible that controlled burns might creep or back into riparian areas at some locations but the fires are unlikely to impact riparian vegetation appreciably. Sedges, herbs and riparian shrubs should quickly re-sprout from their underground root systems are regain most of their above-ground biomass in one growing season.

Most project activities would occur from November 15 to April 1. No timber harvest, road work, or mechanical fuels reduction would occur from April 1 to July 1 in the LeClerc Creek Watershed.

Thus, the potential for the project to disturb harlequin ducks during the critical portion of their reproductive period is small.

Cumulative Effects – The Hanlon project would not affect stream substrates, gradients, or harlequin loafing habitats. The project should have insignificant or discountable effects to overhead cover along streams. Thus, the project should not contribute to any cumulative effects related to forest management within the project area, or the larger LeClerc Creek Watershed.

4. Effects Determination – There is one recent record of harlequin ducks from the Hanlon Project Area. It is likely these birds just stopped over in the area and will not nest, since streams in the project area do not appear particularly suited for use by this species. Timber harvest in any Riparian Habitat Conservation Area would be guided by a fish biologist and would meet all INFISH guidelines for riparian management objectives. Alternatives A and B should have no impact on this species.

G. northern leopard frog, eared grebe (FS sensitive)

1. Management Framework - The Forest Plan provides no direction for managing habitat specifically for these species. Management direction in the Inland Native Fish Strategy (USDA, 1995) is to prohibit vegetation management within Riparian Habitat Conservation Areas (RHCAs) except to "acquire desired vegetation characteristics where needed to attain Riparian Management Objectives". This direction should work to protect breeding habitats of these two species.

2. Existing Conditions
northern leopard frogs - In a 1995 survey, northern leopard frogs were found a few miles from the Hanlon Project Area on the east side of the Pend Oreille River (McAllister, et al, 1999). The Kalispel Tribe reported an animal found roughly two miles south of that location in 2003 (personal comm. with R. Entz, 2003). In the summer of 2003, the Forest Service completed surveys of the major wetlands and lakes in the project area with help from L. Hallock, Washington Department of Natural Resources Herpetologist. No leopard frogs were found during these surveys (Hallock, 2003).

Northern leopard frogs prey upon insects, spiders, sowbugs, leeches, fish, amphibians, snakes, and small birds (Leonard et al, 1993). They require temporary ponds with abundant concealing cover, for breeding. Breeding ponds in Minnesota have a maximum depth of 5-6 feet, do not support fish, are not connected to other bodies of water, and dry up periodically (Merrell, 1977, in McAllister, et al, 1999). After breeding, adult frogs may move far away from water to a variety of nearby habitats. They tend to avoid wooded areas, open areas without vegetation or heavily grazed or mowed areas. In Minnesota they prefer moving through vegetation that is 6-12 inches tall (Merrell, 1977 in McAllister et al, 1999). This frog hibernates on the bottom of permanent, deepwater ponds and slow moving streams. Over-wintering sites are typically located within one mile of breeding ponds.

eared grebes – The ranger districts have no records of this bird from the Hanlon Project Area or the larger LeClerc Creek watershed. Grebes are duck-like diving birds with flat, lobed toes, thin necks, and a tail-less appearance. Eared grebes nest in colonies on prairie lakes or marshes. The nearest known nest colony is located at Turnbull National Wildlife Refuge, many miles south of the project area. Individuals of this species are occasionally sighted outside the nesting season on large lakes

and rivers in northeast Washington. They have been sighted on the Pend Oreille River in the large pool above Metaline Falls.

The following table displays the acres of potential habitats in the Hanlon Project Area for these species. Note that the west edge of the project area lies adjacent to the Pend Oreille River.

Table 19: Hanlon Project Area - Summary of potential lake / wetland habitats
(from USDI, 2009).

Wetland Habitat (Class)	Water Regime	Acres
lake (open water)	permanent	54.9
pond (open water)	permanent	11.3
wetland (aquatic bed)	permanent	0.7
wetland (emergent)	seasonally flooded	28.9
wetland (emergent)	semi-permanent	19.4
wetland (deciduous forest)	seasonally flooded	28.4
wetland (deciduous shrub/scrub)	seasonally flooded	192.8

3. Effects of This Project

All Alternatives - All potential habitats for leopard frogs and eared grebes would be maintained in the project area, at least in the short term. Over time, certain wetlands and ponds in the area might be lost to natural forest succession, reducing the availability of these sites to amphibians and waterfowl. This process could be reversed through water impoundments created by beavers.

Alternative B - No timber harvest or mechanical fuels reduction would occur within 50 feet of any wetland less than one acre in size or within 100 feet of wetlands larger than one acre. Riparian Habitat Conservation Areas (RHCAs) would be designated along streams by the forest fish biologist according to guidelines in INFISH. Some upland portions of RHCAs might be selectively logged. Timber harvest would only be prescribed in RHCAs to “acquire desired vegetation characteristics where needed to attain Riparian Management Objectives” (USDA, 1995).

With Alternative B, a 3.2 mile segment of FR 1935 (Middle Branch of LeClerc Creek Road) would be re-routed. Presently this road lies within close proximity to the creek and affects the drainage patterns of several adjacent wet areas. The existing road bed would be ripped, seeded, and planted with native shrubs and trees. Old drainage patterns would be re-established. This project has the potential to modestly increase wetland acreage and significantly improve the condition of riparian habitats along the creek, over time.

Alternative B would use prescribed fire to reduce forest fuel loads and work towards restoring the historic fire regime in the area. Brush, dense clumps of regeneration, and smaller fuels would be targeted for removal. Aquatic and emergent vegetation is too wet to be impacted by these low intensity fires. The above-ground parts of riparian plants could be removed or scorched in some local areas. However, these plants should re-sprout from their root systems and fully recover within one or two growing seasons.

Most project activities would occur from November 15 to April 1. No timber harvest, road work, or mechanical fuels reduction would occur from April 1 to July 1 in the LeClerc Creek Watershed. Thus, the potential for the project to disturb leopard frogs or eared grebes during their reproductive period is slight. There would be a small chance that leopard frogs dispersing overland could perish due to heavy equipment operation or prescribed burning.

Cumulative Effects – The LeClerc Creek watershed contains hundreds of acres of ponds, wetlands and meadows that could provide essential habitats for these species. The watershed is a logical unit of land to use for predicting cumulative effects.

The Hanlon project should protect the essential habitats of these species mainly by avoidance. With ongoing and planned timber sales on NFS lands in the watershed, wetlands and ponds would be buffered in the same manner as the Hanlon project. On private lands, these habitats would receive protection according to Washington State Forest Practices regulations. Standing trees would be left adjacent to these habitats, although the numbers and sizes of trees would be much less than that required for harvest units on NFS lands.

There is a slight chance that individual dispersing leopard frogs could be crushed by the operation of heavy equipment or perish in prescribed burns proposed with the Hanlon project. These potential impacts could be cumulative to those resulting from other forest management activities on all ownerships in the watershed.

4. Effects Determination – There are no known records of northern leopard frogs and eared grebes from the Hanlon Project Area. Leopard frogs were not found during specific searches of suitable habitat. Alternative A would have no impact on these two species or their habitats. Timber harvest and road construction proposed with Alternative B would avoid essential riparian habitats to the extent feasible. Selection harvest might occur in upland portions of RHCAs. Any project operations within RHCAs would be reviewed / designed by a fish biologist. Any riparian vegetation that is impacted by prescribed fires should quickly recover. Most project activities would occur in the winter and heavy equipment operation would not occur in the spring. This would reduce the likelihood of the project disturbing individual animals. Alternative B as proposed may impact individuals of these two species, but are not likely to result in a trend to federal listing or loss of viability of the species.

H. pygmy shrew (FS sensitive)

1. Management Framework - The Forest Plan provides no specific management direction for this species.

2. Existing Conditions – The habitat requirements of this species are poorly understood. Long (in WDFW, 1991) stated “Dense ground vegetation and interspersion of wet and dry soils may be important habitat elements”. This author found pygmy shrews in swamps and marshes in the spring, and areas of dry soils in the summer. He thought the species might also be associated with “disturbed, seral habitats such as cutover forests, flooded areas, and cultivated lands”. Perhaps the

best habitats for these animals in the Hanlon Project Area would be near forested wetlands where there is both dense vegetation and wet and dry soils. There are no sighting records of pygmy shrews on the ranger districts.

3. Effects of This Project – Because there is so little known about the habitat requirements of this species, predicting project related effects to pygmy shrews is a difficult task. Forest management could potentially impact this species through the removal of ground vegetation, compaction of soils by heavy equipment, and direct mortality through crushing or burning. Timber harvest and other activities associated with the Hanlon project would avoid wetlands and streams. Most of the timber harvest would occur in the winter months. This would tend to reduce soil compaction and impacts to ground vegetation. Old skid trails would be re-used to the extent feasible, limiting the total area of compacted ground in harvest units. Ground vegetation could be uprooted, crushed, or otherwise injured wherever heavy equipment is operated. Prescribed fire would tend to kill the above ground portions of plants, but usually leave underground root systems intact. In most areas affected by forest management, grasses, forbs, and upland shrubs should re-sprout and regain most of their above-ground biomass in one or two growing seasons. Understory vegetation is likely to become more robust in harvested / burned areas than before treatment, owing to the increase in solar radiation striking the forest floor. Any soils exposed by heavy equipment would be seeded with grasses and legumes.

4. Effects Determination – Alternative A would have no impact to pygmy shrews. Alternative B may impact individual pygmy shrews but would not be likely to cause a trend to federal listing of the species.

I. white-headed woodpecker (FS sensitive)

1. Management Framework – The Regional Forester's Forest Plan Amendment #2 Revised Interim Standards for Timber Sales on Eastside Forests (Lowe, 1995) contains direction for the retention of all live trees and snags that are 21+ inches in diameter within stands proposed for harvest activities. Open, park-like stand conditions should be maintained where this condition occurred historically, and vegetation should be manipulated to "encourage the development and maintenance of large diameter, open canopy structure. This direction should benefit white-headed woodpeckers over time.

2. Existing Conditions – White-headed woodpeckers require mature, dry forests (especially ponderosa pine) for their survival (WDFW, 1991). Large trees should make up 40 - 70 percent of the overstory canopy. This species nests in snags that are at least ten inches in diameter. They forage on insects in large (> 24 inch) snags and on pine seeds in the winter. They regularly drink water, and so a water source may be required within their 20 acre, average home range. The ranger districts have no records of white-headed woodpeckers from the Hanlon Project Area.

The project area contains about 25 acres of mature, park-like stands of Douglas fir and ponderosa pine. As a rule, decades of fire suppression has allowed dry site stands to develop dense understories of firs and other conifers and caused a drastic reduction in open, park-like conditions. The stand understories are often providing continuous fuel ladders for a wildfire to ascend from the ground up into the crowns of the overstory trees.

3. Effects of This Project

Alternative A - This alternative should have no immediate effect on white-headed woodpecker habitats since no forest management would occur. Over time, certain younger stands of Douglas fir / ponderosa pine could mature and begin to become useful to this species.

Ground and ladder fuels would continue to accumulate in dry forest stands across the project area. The potential for a large, intense wildfire would increase over time. Such fires could remove dry forest stands and create very large openings.

Alternative B

Effects to Large Tree Habitat - Within drier stands of ponderosa pine / Douglas fir, commercial thinning and post-harvest fuels treatments would be used to restore open, park-like conditions. Douglas fir, ponderosa pine and western larch would be the priority species to retain in these stands. The largest, most vigorous appearing trees would be retained while small-crowned, weaker or suppressed trees would be removed (a "thin from below"). No trees 21 inches or larger would be marked for harvest, with the exception of those existing within new equipment corridors. Old corridors would be re-used where they exist.

In a study of restoration thinning in pre-settlement ponderosa pines, the thinning "improved the condition of the trees by increasing canopy growth and the uptake of water, nitrogen and carbon" (Stone and others, in Oregon Dept. of Forestry, 2008). A study of thinned, second growth ponderosa pine found that foliar physiology and several measures of tree resistance to insect attack can be improved by reducing tree stocking levels (Kolb and others, in Oregon Dept. of Forestry, 2008). Commercial thinning should accelerate the diameter and crown growth of the remaining trees in the stand. The residual trees should develop thicker bark and become more fire-resistant. Over the long term, greater numbers of large trees could be recruited in thinned areas, then if no treatment had occurred. Commercial thinning and fuels reduction work would reduce surface and ladder fuels at the stand level. The risk of a wholesale loss of overstory trees to wildfire would be reduced from the present situation.

Effects to Snags and Logs – All existing snags greater than 10 inches in diameter would be retained within harvest units except those necessary to be felled within new equipment corridors, or for worker safety. Old equipment corridors would be re-used to the extent feasible (pers. comm. with J. Powell). Occasionally, live reserve trees would be injured during felling and skidding operations. These injuries might provide forest pathogens access into the tree bole; potentially resulting in defective live trees or snags over a few years.

Thinning out the less vigorous or suppressed trees in a stand would remove the trees that might have otherwise died and provided snag habitat over the short to mid term. However, these trees would predominantly be of smaller diameter and virtually all would be less than 21inches in diameter. Commercial thinning would accelerate the growth of green trees in the residual stand. Larger diameter snags and down logs would likely be recruited in thinned stands at a quicker rate than had no treatment occurred.

Existing down logs that are 14 inches or larger would be retained within harvest units. Some overstory trees could be wind-thrown following harvest, owing to the reduction in tree stocking and greater exposure to strong wind gusts. Wind-thrown trees would contribute to down log levels.

Where prescribed fire is employed, some larger diameter snags and down logs may be lost. Post-burn surveys conducted on the ranger districts have revealed that more snags have been created from under-burning on the ranger districts than are typically lost (personal comm. with E. Trimble).

Project Timing - Most project activities would be confined to the winter months. No heavy equipment would operate in the LeClerc Creek Watershed from April 1 to July 1. This would reduce the potential for the project to disrupt any nesting attempts by white-headed woodpeckers.

Cumulative Effects - The LeClerc Creek watershed contain thousands of acres of warm, dry site stands that could provide essential habitats for white-headed woodpeckers. The watershed is a logical unit of land to use for analyzing cumulative effects.

Historically, from 30 – 75 percent of the warm, dry site stands in the watershed were in an open, park-like state with large trees common. The intense wildfires of the 1920s and subsequent timber harvest removed most of these stands. New wildfire starts in the watershed have been aggressively contained for many decades. In the absence of fire, warm, dry site stands tended to develop dense understories of firs. Today only about 4 percent of the warm, dry stands in the watershed are in an open, park-like condition with large trees.

Since the adoption of the Eastside Screens for Timber Sales (Lowe, 1995), forest management on the Colville National Forest has been designed to move watersheds closer to their historic range of variability for stand structural stages. With the Hanlon project, no existing stands in structural stage 7 (dry site, park-like stands with late and old structure), would be harvested since there are presently fewer acres of these stands than existed historically in the LeClerc watershed. Thus, the project would not result in any cumulative effects to existing, suitable white-headed woodpecker habitat. The Hanlon project and future timber sales on NFS lands would be intended to move warm, dry site stands towards structural stage 7, as described earlier. Over time, habitat conditions for white-headed woodpeckers should improve in the watershed as a result. Restoring open, park-like stands would not likely be a forest management emphasis on private ownerships.

4. Effects Determination – Alternative A would not address the continued growth of young firs in warm, dry forest stands, leading to the loss of park-like conditions and increased risk of high-intensity fires. In the event of a large scale wildfire, forest cover could be removed over large areas, dramatically increasing browse and green forage production. The interiors of large burns may be under-utilized by big game.

Based on the preceding discussion, Alternative B as proposed could beneficially affect white-headed woodpeckers.

J. wolverine (FS sensitive)

1. Management Framework - The Forest Plan provides no specific management direction for wolverines. Suitable habitat is probably "best defined in terms of adequate food supplies in large, sparsely inhabited wilderness areas" (Kelsall, in Ruggerio, et al, 1994). Forest Plan management direction for wilderness and semi-primitive non-motorized areas could potentially benefit wolverines. The provision of seclusion habitat for grizzly bears and for wintering big game animals could also benefit wolverines.

2. Existing Conditions – A few documented sightings of wolverines exist from the Newport-Sullivan Lake Ranger Districts, mostly from high elevation habitats like the Salmo-Priest Wilderness. Recent reports of potential wolverine sightings have come from north of the Hanlon Project Area, in the Sullivan Creek drainage.

Wolverines are extremely rare in northeast Washington, but they may find suitable habitat throughout the Colville National Forest. Wolverines frequent boreal woodlands but may use almost any habitat type. Krantz, et al, (1991) cited studies in Montana where wolverines frequently used subalpine fir, lodgepole pine, and western larch stands. Large areas of medium or scattered mature timber and ecotonal areas associated with cliffs, rock slides, swamps, and meadows were particularly important. Travel was generally along timbered ridges and creek bottoms. The Hanlon Project Area contains a few acres of surface rock features such as talus slopes or outcrops, and there are a number of forested wetlands and wet meadows. High elevation habitats do not exist in the area.

Den Habitat – Wolverines construct their dens in various sites including the cavities of hollow trees and logs, under the roots of upturned trees, or among boulders and rock ledges (Ruggerio et al, 1994). Females appear to prefer high-elevation, north-facing talus slopes, for natal denning (Heinmeyer et al, 2001). Dens are often located in glacial cirque basins. In the winter of 2007 we used a geographic information system (GIS) to map potential wolverine den habitat on the ranger districts based on the den habitat model developed by Heinmeyer et al (2001). The selection criteria we used included:

- north and east aspects (320 to 130 degrees),
- elevations above 5500 feet,
- concave and flat slopes,
- rock and / or herbaceous cover types present,
- patch size at least six hectares (14.5 acres).

We mapped no den basins within the Hanlon Project Area. The nearest mapped potential habitat is located several miles away on the north side of Molybdenite Ridge.

Foraging Habitat - Wolverines are opportunistic scavengers that consume a wide variety of plant and animal food, with carrion (especially big game animals) serving as the mainstay of their winter diet. They can kill big game animals under certain conditions such as in deep snow. Hornocker and Hash (1981) have suggested that timber harvest could improve habitat for big game and small mammal populations, thereby providing more prey for wolverines. Big game habitats have been described in the previous section on gray wolves. In late summer and fall, berry crops can be important to wolverines. There are few acres of discrete berry shrub fields in the Hanlon Project Area. Individual fruit-bearing shrubs are present in many forest stands.

Travel Corridors – Hornocker and Hash (1981) found no difference in the movements, habitat use, or behavior of wolverines that inhabited logged vs. un-logged habitats in their study site. In Idaho, wolverines commonly crossed natural openings and areas with little overhead tree canopy such as burned areas, meadows, and alpine areas (Copeland, 1996). In Washington they have been found in sagebrush habitats.

We mapped travel corridors for furbearers in the Hanlon Project Area according to guidelines in Lowe (1995). All natural or created openings were avoided. Forest stands with open canopies were avoided to the extent feasible. Mapped corridors typically follow stream courses and ridgelines; natural routes of dispersal for furbearers.

Seclusion - See the previous section on gray wolves for a discussion of this habitat.

3. Effects of This Project

Effects to Foraging Habitat / Seclusion – See the sections on gray wolves and grizzly bears for a discussion of project effects to ungulates, berry crops, and seclusion from human disturbance.

Effects to Travel Corridors

Alternative A – All potential overland travel routes would be maintained in their existing condition over the short term. Fuel loading and ladder fuels would continue to build up in the project area over time. The potential for a large, intense fire to remove conifer cover would continue to increase over the long run. In such an event, hiding cover would be removed in areas of high intensity burns and degraded in mixed or low severity burn areas. Wolverines moving through a large burned area could be vulnerable to human-caused disturbance or mortality, particularly near open roads.

Alternative B - Intermediate timber harvest (thinning, selection harvest) and low-intensity burning would occur with the Hanlon project in mapped travel corridors for pine marten (see the section on fishers, earlier in this document). Overhead and horizontal cover would be maintained as required by Lowe (1995).

Cumulative Effects - Because of their huge home range requirements, a logical area to use for a characterization of cumulative effects to wolverines would be Pend Oreille County, which includes the Newport-Sullivan Lake Ranger Districts in their entirety.

Cumulative Effects to Foraging / Seclusion Habitats – See the sections on gray wolves and grizzly bears for a discussion of cumulative effects to these habitats.

Cumulative Effects to Travel Corridors – In the mid 1990s, the CNF adopted guidelines to maintain effective travel corridors for furbearers (Lowe, 1995). Travel corridors in the Hanlon project area have been mapped and would be further fine-tuned on the ground during unit layout. The Hanlon project would contribute to the network of corridors identified across NFS lands in the county. Although these corridors would provide cover for dispersing wolverines along preferred routes (streams, ridgelines) they are likely not entirely necessary for effective dispersal of these animals.

Private timber lands would continue to be converted to agriculture, residential, and other uses. The human population of the county would increase, as would vehicle traffic on state highways and county roads. The ability of wolverines to safely cross lands in the Pend Oreille River Valley would decrease over time.

4. Effects Determination
The likelihood of a wolverine establishing a den in the low elevation Hanlon Project Area is remote.

Alternative A would maintain existing foraging habitats for wolverines and their prey over the short-term. Forage opportunities for big game and small mammals would slowly decline as forest cover continues to grow. The risk of high-intensity fires in the area would increase incrementally over time. In the event of a large scale wildfire, forest cover could be removed over large areas, dramatically increasing browse and green forage production. The interiors of large burns may be under-utilized by big game.

Timber harvest and prescribed burning proposed with Alternative B would improve forage production for wolverines and prey animals over the short term. Alternative B would move the project area towards a more historic fire regime; one where forage would be maintained at more stable levels over time. Proposed road entrance obliteration work would result in additional acres of core habitat for grizzly bears in the LeClerc BMU, potentially benefiting wolverines. Thus, the alternatives as proposed may impact individual wolverines, but would not lead to a trend towards federal listing or a loss of viability of the species.

K. sensitive invertebrates

1. Management Framework - The Forest Plan provides no specific management direction for these species.

2. Existing Conditions - The habitat requirements of all the sensitive invertebrates listed for the Colville National Forest (CNF) are poorly understood. Table 3 contains a description of habitats thought to be important to these creatures. The CNF contracted an etymologist to survey potentially suitable habitats for the butterfly species this year. He found numerous specimens of Rosner's hairstreak butterflies in the areas he surveyed. As a consequence, this species may be removed from the sensitive list for the forest in the future. To date, none of the other invertebrate species have been documented on the ranger districts.

The Hanlon Project Area contains a few meadows associated with historic sites such as Fourth of July Meadow, the meadow at the old Hanlon Guard Station, and the West Branch LeClerc Creek Meadow. These sites and small openings in more open pine stands could provide habitats for meadow fritillaries. Wetlands and kettle lakes in the project area could provide habitats for masked dusky snails and magnum mantleslugs. These riparian habitats are quantified in Table 19. Openings and edges in stands having a western red cedar component could provide habitats for Rosner's hairstreak butterflies. Small areas of talus and rock outcrops in the project area could provide habitat for fir pinwheels. The undersides of down logs and other woody debris throughout the project area could be utilized by the snail and slug species.

3. Effects of This Project – Because there is so little known about the habitat requirements of the sensitive invertebrate species, predicting project related effects to these species is a difficult task.

There should be no direct, indirect, or cumulative impacts to talus or rock outcrop habitats, since project activities would avoid those areas.

Timber harvest and fuel reduction work should have minimal impacts to Riparian Habitat Conservation Areas (RHCAs) around lakes, wetlands, and streams since those areas would be mostly avoided (see the section on northern leopard frogs /eared grebes). Habitat improvement work proposed with the Hanlon project could enhance riparian habitats in the project area. Some riparian vegetation could be crushed or removed with heavy equipment operation associated with the relocation of FR 1935, the placement of coarse woody debris or boulders in creeks, and other in-stream work planned. There is a potential for individual, sensitive slugs and snails to be impacted by these activities.

Habitat improvement work proposed could enhance meadow habitats in the project area. These forest openings would be maintained by cutting down, piling, and burning small, encroaching conifers that would otherwise convert the sites to forest over time.

Larger down logs might be disturbed by heavy equipment operation and might be lost or degraded where units are under burned. These impacts would be cumulative to those resulting from timber harvest on other land ownerships. However, with the Hanlon project, heavy equipment operation would be confined to existing skid trails where they exist. Most existing down logs 14+ inches in diameter would be retained within areas of commercial timber harvest.

4. Effects Determination – Based on the above, Alternative B may impact individual sensitive invertebrates, but would not be likely to cause a trend to federal listing for any species listed for the forest.

VII. SUMMARY OF EFFECTS

The following table provides a summary of the effects of the proposed project on threatened, endangered, and sensitive species (TES) including brief rationale for each determination.

Table 20: Summary of effects of the Hanlon Project to TES species

Species	Alternative	Determination	Rationale for Determination
Canada lynx (threatened)	A and B	no affect	Project lies outside primary lynx range. Activities would not occur within the vicinity of any known lynx den site. Project is consistent with Lynx Conservation Assessment and Strategy.
grizzly bear (threatened)	A	may effect, not likely to adversely affect	Increasing fuel loads would continue to elevate the risk of forest cover loss to future, hot fires. Such fires could promote forage.
	B		Project is within recovery habitat. Hiding cover blocks maintained in created openings and where it exists along open roads. Potential for local improvements in forage from burning and timber harvest. Project activities would mostly occur during the winter denning period. No motorized activities during the spring period. Project design would result in a net gain of core habitat. There would be no net increase in total road densities.
woodland caribou (endangered)	A	no effect	Project lies outside caribou recovery habitat. No impacts to essential habitats or animals.
	B	may effect, not likely to adversely affect	Presently no direction to manage habitat outside the recovery area. Project might indirectly increase mountain lion numbers due to improvements in big game (prey) habitat. Harvest levels apparently keeping lion numbers suppressed in the ecosystem.
bald eagle (FS sensitive)	A	not likely to cause a trend to federal listing	No immediate impacts to any existing habitats. Increasing fuel loads would continue to elevate the risk of large tree loss along the Pend Oreille River to future, high intensity crown fires.
	B		No large trees marked for harvest. Large tree habitat promoted through thinning. Project timing restriction along river would protect known nest.
common loon (FS sensitive)	A	not likely to cause a trend to federal listing	No change in human use of the Yocum Lake basin. Potential for disturbance / harassment of nesting birds unchanged.
	B		Forest habitats around Yocum Lake protected through avoidance. Recreation projects in the Yocum Lake basin intended to control recreational use and improve law enforcement. Projects would occur outside the nesting season.
fisher (FS sensitive)	A	not likely to cause a trend to federal listing	Small amounts of potential habitat. No immediate impacts to potential habitats but increasing fuel loads would continue to elevate the risk of habitat loss to future, hot wildfires.
	B		No impacts to presently suitable habitat. Reduction in canopy closure and horizontal cover in harvest units for at least 15 years. Large trees reserved from harvest. Large tree habitat promoted through thinning.
gray wolf (FS sensitive)	A	not likely to cause a trend to federal listing	Increasing fuel loads would continue to elevate the risk of forest cover loss to future, hot fires. Such fires could promote big game forage.
	B		Project is outside recovery habitat. Hiding cover blocks maintained in created openings and where feasible along open roads. Reduction in ground and ladder fuels would lower the risk of fires removing big game cover over large areas. Potential for local improvements in green forage/ upland shrub growth from timber harvest and under-burning. Potential for disturbance to wintering elk and moose. Any newly found wolf den / rendezvous site protected with timber sale contract clause.
great gray owl (FS sensitive)	A and B	not likely to cause a trend to fed. listing	Same as for fishers.

Species	Alternative	Determination	Rationale for Determination
harlequin duck (FS sensitive)	A and B	no impact	Low habitat suitability in project area. Essential habitats (fast moving mountain streams) avoided.
northern leopard frog, eared grebe (FS sensitive)	A	no impact	Species not found during field surveys. No known records from the area. Essential habitats (wetlands, ponds, etc.) avoided.
	B	not likely to cause a trend to fed. listing	
pygmy shrew (FS sensitive)	A	no impact	No known records from the project area. Wetlands and other riparian habitats avoided. Ground vegetation reduced but should quickly re-grow in harvested units.
	B	not likely to cause a trend to fed. listing	
white-headed woodpecker (FS sensitive)	A	no impact	No known records from the project area. Low habitat suitability in project area.
	B	may beneficially impact	Essential habitat (open, park-like pine forests with mature trees) promoted through commercial thinning and prescribed burning.
wolverine (FS sensitive)	A and B	not likely to cause a trend to federal listing	Same as for gray wolves.
sensitive invertebrates	A	no impact	No known records from the project area. Wetlands, talus, and kettle lakes protected by avoidance.
	B	not likely to cause a trend to fed. listing	

Section 4.3.2 of the Environmental Management System for the Colville National Forest requires that applicable legal requirements are applied during project analyses. By signature below, I certify that this analysis follows the applicable direction found in Forest Service Manual 2620 and 2630.

_____ _____

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Newport-Sullivan Lake Ranger Districts

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Appendix A

Risk Assessment Procedure (for threatened and endangered species**)**
Forest Service (Region 6) Supplement 2600-90-5, FSM 2672.24b-2676.17e

Likelihood of Adverse Effects

None:	Activity will not affect habitat or population (no further risk assessment is needed)
Low:	Activity controllable by seasonal or spatial restrictions and not likely to affect habitat or populations.
Moderate:	Activity not completely controllable or intense administration of project needed to prevent adverse effects on habitat or populations.
High:	Activity not controllable and adverse effects on habitat or populations likely to occur.

NOTE: Any adverse affects to federally listed species will require initiation of consultation process.

Consequence of Adverse Effects

Low:	None, or questionable adverse effect on habitat or population. No cumulative effects expected.
Moderate:	Possible adverse effects in habitat or on population. Cumulative effects possible.
High:	Obvious adverse effects on habitat or population. Cumulative effects probable.

Risk Index

None=0
Low=1
Moderate=5
High=10

Multiply Likelihood value times Consequence value to determine Risk value.

Risk Value/Action

0	Proceed with project
1-10	Proceed as planned.
10-50	Modify project if feasible to reduce risk.
50-100	Project must be modified, cancelled or have further analysis done.

NOTE: Subsequent activities in the assessment area with index of 25 or more must be modified if previous effects have not been mitigated.

Appendix B – Project Operations Timing

Unit	acres	logging season	mechanical fuels season	BMU	Core habitat	elk winter range	Comments
0	624	July 1 - Dec 1		yes	no		Pre-commercial thinning
1	124	April 1 - Dec 1	April 1 - Dec 1	no	no	yes	Elk winter range restriction
2	109	April 1 - Dec 1	April 1 - Dec 1	no	no	yes	Elk winter range restriction
3	23	Aug 31 - Dec 1	Aug 31 - Dec 1	no	no	yes	Active eagle nest across river
4	19	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
5	4	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
6	62	Nov 15 - April 1	Oct 15 - April 1	yes	yes	yes	
7	22	Nov 15 - April 1	Oct 15 - April 1	yes	yes	yes	
8	33	Nov 15 - April 1	July 1 - April 1	yes	no	no	
9	4	Nov 15 - April 1	July 1 - April 1	yes	no	no	
10	25	Nov 15 - April 1	July 1 - April 1	yes	no	no	
11	120	Nov 15 - April 1	Oct 15 - April 1	yes	yes	yes	
12	65	Nov 15 - April 1	Oct 15 - April 1	yes	yes	yes	
13	63	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
14	114	Nov 15 - April 1	Oct 15 - April 1	yes	yes	yes	
15	18	Nov 15 - April 1	Oct 15 - April 1	yes	yes	yes	
16	27	Nov 15 - April 1	Oct 15 - April 1	yes	yes	no	
17	81	Nov 15 - April 1	Oct 15 - April 1	yes	yes	no	
18	63	Nov 15 - April 1	Oct 15 - April 1	yes	yes	no	
19	149	Nov 15 - April 1	Oct 15 - April 1	yes	yes	no	
20	107	Nov 15 - April 1	Oct 15 - April 1	yes	yes	no	
21	61	April 1 - Dec 1	April 1 - Dec 1	no	no	yes	Elk winter range restriction
22	83	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
23	31	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
24	36	Nov 15 - April 1	July 1 - April 1	yes	no	no	
25	38	Nov 15 - April 1	July 1 - April 1	yes	no	no	
26	29	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
27	35	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
28	14	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
29	27	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
30	132	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
31	52	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
32	34	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
33	45	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
34	29	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
35	62	Nov 15 - April 1	July 1 - April 1	yes	no	no	
37	61	Nov 15 - April 1	July 1 - April 1	yes	no	no	
38	44	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
39	17	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
40	15	Nov 15 - April 1	July 1 - April 1	yes	no	yes	

Unit	acres	logging season	mechanical fuels season	BMU	Core habitat	elk winter range	Comments
41	175	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
42	44	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
43	110	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
44	19	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
45	9	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
46	38	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
47	35	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
48	17	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
49	5	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
50	28	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
51	26	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
52	54	Nov 15 - April 1	July 1 - April 1	yes	no	no	
53	25	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
55	0			yes	yes	yes	Unit dropped
56	62	Nov 15 - April 1	Oct 15 - April 1	yes	yes	no	
57	79	Nov 15 - April 1	Oct 15 - April 1	yes	yes	no	
58	135	Nov 15 - April 1	Oct 15 - April 1	yes	yes	no	
59	44	Nov 15 - April 1	Oct 15 - April 1	yes	yes	no	
60	117	Nov 15 - April 1	July 1 - April 1	yes	no	no	
61	8	Nov 15 - April 1	July 1 - April 1	yes	no	no	
62	15	Nov 15 - April 1	July 1 - April 1	yes	no	no	
63	41	Nov 15 - April 1	July 1 - April 1	yes	no	no	
64	139	Nov 15 - April 1	July 1 - April 1	yes	no	no	
65	22	Nov 15 - April 1	July 1 - April 1	yes	no	no	
66	42	Nov 15 - April 1	July 1 - April 1	yes	no	no	
67	42	Nov 15 - April 1	Oct 15 - April 1	yes	yes	no	
68	9	Nov 15 - April 1	Oct 15 - April 1	yes	yes	no	
69	67	Nov 15 - April 1	Oct 15 - April 1	yes	yes	no	
70	18	Nov 15 - April 1	Oct 15 - April 1	yes	yes	no	
71	25	Nov 15 - April 1	Oct 15 - April 1	yes	yes	no	
72	22	Nov 15 - April 1	Oct 15 - April 1	yes	yes	no	
73	129	Nov 15 - April 1	Oct 15 - April 1	yes	yes	no	
74	8	July 1 - April 1	July 1 - April 1	yes	no	no	No impact to core habitat
75	34	Nov 15 - April 1	July 1 - April 1	yes	no	no	
76	44	Nov 15 - April 1	July 1 - April 1	yes	no	no	
77	37	Nov 15 - April 1	July 1 - April 1	yes	no	no	
78	44	Nov 15 - April 1	July 1 - April 1	yes	no	no	
79	37	Nov 15 - April 1	July 1 - April 1	yes	no	no	
80	30	Nov 15 - April 1	July 1 - April 1	yes	yes	no	permanent loss of core habitat resulting from FR 1935 relocation
81	24	Nov 15 - April 1	July 1 - April 1	yes	yes	no	
82	14	Nov 15 - April 1	July 1 - April 1	yes	yes	no	
83	60	Nov 15 - April 1	July 1 - April 1	yes	yes	no	
84	57	Nov 15 - April 1	July 1 - April 1	yes	no	no	

Unit	acres	logging season	mechanical fuels season	BMU	Core habitat	elk winter range	Comments
85	9	Nov 15 - April 1	July 1 - April 1	yes	no	no	
86	8	Nov 15 - April 1	July 1 - April 1	yes	no	no	
87	9	Nov 15 - April 1	July 1 - April 1	yes	no	no	
88	16	Nov 15 - April 1	July 1 - April 1	yes	no	no	
89	24	Nov 15 - April 1	Oct 15 - April 1	yes	yes	no	
90	33	Nov 15 - April 1	Oct 15 - April 1	yes	yes	no	
91	52	Nov 15 - April 1	July 1 - April 1	yes	no	yes	
92	22	Nov 15 - April 1	Oct 15 - April 1	yes	yes	yes	
93	41	Nov 15 - April 1	Oct 15 - April 1	yes	yes	yes	
94	71	Nov 15 - April 1	Oct 15 - April 1	yes	yes	yes	
95	106	Nov 15 - April 1	Oct 15 - April 1	yes	yes	yes	
96	48	Nov 15 - April 1	Oct 15 - April 1	yes	yes	no	
97	79	Nov 15 - April 1	Oct 15 - April 1	yes	yes	no	
98	0			yes	yes	no	Unit dropped
100	14	Nov 15 - April 1	July 1 - April 1	yes	no	yes	pre-commercial thinning / biomass removal
101	40	Nov 15 - April 1	Oct 15 - April 1	yes	yes	no	

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Washington Fish and Wildlife Office
Eastern Washington Field Office
11103 East Montgomery Drive
Spokane, Washington 99206

December 3, 2009

Rodney D. Smoldon, Forest Supervisor
Colville National Forest
Headquarters Office
765 South Main
Colville, WA 99114

Subject: Hanlon Timber Sale Project; FWS Reference 1-9-09-I-0099
(File #118.0300)

Dear Mr. Smoldon:

This responds to your September 1, 2009, letter requesting informal consultation on the Hanlon Timber Sale Project in the LeClerc Creek drainage in Pend Oreille County, Washington. We understand that the project involves commercial timber harvest, pre-commercial thinning, prescribed burning and mechanical fuel treatments. Approximately 4,647 acres of National Forest System lands are proposed for commercial treatments (and subsequent fuels treatments), and pre-commercial treatments will affect 624 acres. The project requires 3 miles of new road construction (road relocation) and 1.9 miles of minor road reconstruction (removing brush to allow use). Recreation projects at Yocum Lake are also included in the proposed action and include; gating the north access road to the lake (Forest Road (FR) 1900096), construction of a new spur road to access the existing dispersed campsites on the west shore of the lake, definition of the camping area including a pre-fabricated toilet, installation of a boat portage from the camp area, and ripping and re-vegetating user-created trails and roads. In addition, wildlife habitat improvement projects are included in the proposed action. These projects consist of aspen maintenance/protection, forage seeding in under-burned shelterwood harvest units, and meadow maintenance consisting of removal of small conifers in old homestead meadows and burning to remove future encroachment of conifers and rejuvenate grasses. Several stream protection/enhancement projects consisting of road obliteration and stream crossings for fish habitat improvement are also included in the proposed action. However, effects from these activities have been previously evaluated under the 2007 Programmatic Biological Opinion (BO) for the USDA Forest Service, USDI Bureau of Land Management and the Coquille Indian Tribe for Aquatic Habitat Restoration Activities in Oregon and Washington That Affect ESA-listed Fish, Wildlife, and Plant Species and their Critical Habitats, and will not be addressed in this consultation.

TAKE PRIDE IN AMERICA

Your letter, with a biological evaluation (BE), was received in this office on September 3, 2009, and requested our concurrence with your determinations of effect for grizzly bear, woodland caribou, and bull trout and designated bull trout critical habitat. Since that time, numerous conversations have occurred between the U.S. Fish and Wildlife Service (Service) and the U.S. Forest Service (FS) with regards to project activities, and a site visit was conducted to sufficiently evaluate potential effects to listed species from these activities.

The Service concurs that the proposed project, as described in the BE, is not likely to adversely affect grizzly bears, woodland caribou, and bull trout and designated bull trout critical habitat. This decision is based on the following rationale.

Grizzly Bear

The majority of the project activities will occur within the LeClerc Bear Management Unit (BMU), an already degraded, sub-standard BMU. There are only occasional reports of grizzly bear sightings in the LeClerc BMU; however, most sightings have not been confirmed. In the early 1990s, there was a confirmed sighting of a grizzly bear in the project area by a Forest Service employee. In 2006, a radio-collared grizzly utilized the East Branch of LeClerc Creek in the project area and Molybdenite Ridge (approximately 5 miles north of the project area) for several weeks and, in 2008, a grizzly bear track was photographed in the same drainage. The project lies at lower elevations and does not contain any habitats that appear particularly suited for grizzly bears.

Most project activities proposed will occur during the denning period for grizzly bears, and no motorized activities will occur during the critical spring period. Timber harvest activities will adhere to the spring timing restriction and will occur from November 15 to April 1 during the non-active bear season. This includes helicopter logging that will occur from December 1 to March 1. An exception to the spring timing restriction was allowed for commercial thinning activities occurring in the southern portion of the LeClerc BMU. These activities may begin as early as October 15. After numerous discussions between the Service and the FS, this decision was made based on the fact that the likelihood of bear presence in the area is negligible during this time of year as they are already moving to higher elevations in preparation for denning.

Small portions (roughly 83 acres) of core habitat in the southern portion of the BMU will be lost with the re-location of FR 1935. This area of core habitat is a small, isolated island that has much less value to grizzly bears than the large blocks of habitat that exist elsewhere in the BMU. In addition, this southern portion of the BMU is not considered productive spring habitat as it is largely fragmented due to increased road densities. These core habitat losses will be offset with a 432-acre addition to core habitat in the northern portion of the BMU that will meet seasonal habitat needs for bears. This increase of core habitat will be created with several road closures in the BMU. Earthen berms will be excavated at these road entrances and will be planted with grasses, shrubs and trees, in addition to pulling slash into the road prisms behind the berms. Therefore, project activities will not result in a decrease in grizzly bear core habitat.

Open road density would increase slightly (1%) for the life of the project with the relocation of FR 1935. This temporary increase will occur between 2011 when the bypass road is constructed and continue until the spring of 2013. In the summer of 2013, the existing FR 1935 will be ripped, seeded and planted with native vegetation. The ability of bears to access spring forage plants along LeClerc Creek would be enhanced, since the relocated road would be screened from the creek by vegetation and topography. Project activities will not result in a net long-term increase in open and total road densities in the LeClerc BMU. Effects to grizzly bears from project activities are anticipated to be discountable due to the fact that the majority of project activities will occur during the non-bear season, and bears are expected to be at higher elevations during the commercial thinning activities beginning October 15. In addition, the construction of the new bypass road (FR 1935) will result in insignificant effects to bears due to the fact that it will be screened from the creek by vegetation and topography.

The Service and FS discussed the possibility of short-term (1-2 weeks) temporary road construction during the summer months to access various areas of the project area. This activity was not addressed in the BE, and the FS wildlife biologist indicated that this activity is not likely to occur. An increase in road densities in grizzly bear core habitat, along with road construction activities during the active bear season, would be considered an adverse effect to bears and would require formal consultation. Should this activity become a part of the project, the FS will re-initiate consultation at that time, and the Service will re-evaluate effects to grizzly bears from this action.

Woodland Caribou

The Hanlon project area lies below 3,500 feet in elevation, about 0.75 mile south of the caribou recovery area, and roughly ten miles south of the Salmo Priest Wilderness. There are no known records of caribou from the project area. Very few acres of mature cedar/hemlock or subalpine fir/spruce stands for caribou exist in the project area. It also does not contain subalpine ridge systems that provide caribou with late winter habitats and calving sites. The project area is located in an area of checkerboard ownership between national forest and private timber lands. The remnant caribou population has been confined to a portion of the recovery area located more than 12 miles north of the project area; therefore, the likelihood of presence in the project area is discountable. Project activities will occur in unsuitable caribou habitat and outside the caribou recovery area, therefore, the Service has determined project effects to be insignificant.

Bull Trout

The relative abundance of bull trout in the LeClerc watershed is unknown. Bull trout have been documented in the East and West Branches of LeClerc Creek watershed, although these observations are outside the project area. The population presently found in LeClerc Creek consists of only a few individuals. The majority of the proposed harvest activities will occur outside of the adjacent Riparian Habitat Conservation Area (RHCA), and any timber harvest within the RHCA will occur above existing roads and above topographic breaks outside of the riparian zone of influence. Sediment levels are not expected to increase over existing levels during harvest activities since these activities are not located within RHCAs.

The obliteration of the existing FR 1935 is covered under the 2007 Programmatic BO. A new bypass road will be constructed along the middle branch of LeClerc Creek and is addressed in this consultation. This road will not be constructed within the RHCA. There will be a minor amount of vegetation removal and soil disturbance associated with these activities; however, these activities will occur in an upland area west of the present road location. The Service expects effects to bull trout and designated bull trout critical habitat from project activities to be discountable due to the fact that activities will occur in the upland area and out of the riparian zone of influence.

This concludes informal consultation pursuant to section 7(a)(2) of the Endangered Species Act of 1973, as amended (Act). Concurrence by the Service is contingent upon implementing the project as described in the BE. In addition, this project should be re-analyzed if new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not considered in this consultation; if the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this consultation; and/or, if a new species is listed or critical habitat is designated that may be affected by this project.

If you have further questions about this letter or your responsibilities under the Act, please contact Carrie Cordova of this office at 509-893-8022.

Sincerely,

Suzanne Audet

for Ken S. Berg, Manager
Washington Fish and Wildlife Office

c: WDFW, Region 1
WFWO, Carolyn Scafidi