Finding of No Significant Impact

Stranger Creek 2023 Forest Management Project
Colville Reservation, Ferry County, Washington

Based on the attached final Environmental Assessment's (EA) for the Stranger Creek 2023 Forest Management Project for a proposal to harvest 15.4 million board feet of timber on approximately 1,153 acres of tribally owned and tribally allotted lands in the Inchelium District of the Colville Reservation in Ferry County, Washington, I have determined that by implementation of the agency proposed action and environmental mitigation measures as specified in the EA, the proposed Stranger Creek 2023 Forest Management Project, will have no significant impact on the quality of the human environment. In accordance with Section 102 (2) (c) of the National Environmental Policy Act of 1969, as amended, an Environmental Impact Statement will not be required.

This determination is supported by the following:

1. Agency and Tribal Interdisciplinary Team involvement was conducted and environmental issues related to development of the Stranger Creek 2023 Forest Management Project were identified. Alternative courses of action and mitigation measures were developed in response to environmental concerns and issues. Tribal community outreach was conducted (Colville Tribes Plan for Integrated Resource Management (PIRM) (2001) and associated Final Environmental Impact Statement (FEIS)(2000); a public field tour was conducted of the project area in June of 2022 (EA section 1.6).

2. The EA discloses the environmental consequences of the "proposed action" and "no action" alternatives.

3. Protective measures will be levied to protect air (Clean Air Act as amended 42 USC 7401 et seq.), noise, and water quality (Clean Water Act of 1977, 33 U.S.C. 1251 et seq.), as outlined in the Mitigation Measures (Section 4 of EA), CCT Forest Practices Handbook (Colville Tribal Law and Order Code Title 4-7), CCT PIRM and associated FEIS.

4. The proposed action will not jeopardize threatened and endangered species (Threatened and Endangered Species Act of 1983, as amended, 16 U.S.C. 1531 et seq.) (Colville PIRM (2001) and associated FEIS (2000); EA Section 4.4, and Appendix B).

5. There are no adverse effects on historic properties (National Historic Preservation Act, as amended 16 U.S.C. 470) for the purpose of 36 CFR 800.9 (b) by preserving archeological value through conduct of appropriate research in accordance with applicable standards and guidelines. Should undiscovered archeological remains be encountered during project ground-disturbing activities, work will stop in the area of discovery and the stipulations 36 CFR 800.11 be followed. The BIA Regional Archaeologist and Tribal Historic Preservation Officer (THPO) were consulted for this project (Colville PIRM and associated FEIS; EA Appendix B).

6. The proposed action will not affect public health or safety.

7. The proposed action will not cause a significant effect to energy resources (Energy Policy Act of

2005), water resources, wetlands (E.O. 11990), or flood plains (E.O. 11988). The Stranger Creek 2023 Forest Management Project will not result in discharge of pollutants into waters of the U.S. or in surface water quality issues (Clean Water Act, as amended, 33 U.S.C. 1251 et seq.) (Colville Tribes (PIRM) (2001) and associated FEIS (2000); EA section 4.3).

8. The cumulative effects to the environment are mitigated to avoid or minimize effects of implementation of the proposed project (Colville Tribes PIRM (2001) and associated FEIS (2000); EA Section 4).

9. The proposed action will improve the economic and social conditions of the effected Indian community.

10. The proposed action will not affect unique characteristics of the geographic area such as the proximity to park lands, wild and scenic rivers, or ecologically critical areas.

There are approximately 877 acres of prime farmland within the commercial harvest blocks of this project. It is unlikely that timber harvesting would have any detrimental effect on the functional integrity of the land classification and the CTCR does not have future plans to develop the prime farmland within this project area (Section 4.2 of EA).

There are approximately 451 acres of mapped wetlands within the project area footprint. All wetlands and surface water are buffered to minimize impacts of the project to these water systems (CTCR Chapter 4-7 Forest Practices, Section 4.3 of EA).

The Stranger Creek 2023 Forest Management Project will not have significant impacts on natural and unique geographic features such as historic or cultural resources; park, recreation, or refuge lands; wilderness areas; wild and scenic rivers; national natural landmarks; sole or prime drinking water aquifers; national monuments; eagles and migratory birds, and other ecologically significant areas.

11. The proposed action will not produce highly controversial effects on the quality of the human environment and will not have unresolved conflicts concerning alternate uses of available resources.

12. The proposed action will not have highly uncertain effects on the human environment or involve unique or unknown risks.

13. The proposed action will not establish a precedent for future actions with significant effects or represent a decision in principle about a consideration.

14. The Stranger Creek 2023 Forest Management Project is not related to other actions with individual insignificant but cumulatively significant environmental effects.

15. There will be no disproportionately high and adverse human health or environmental effects on minority or low-income communities (Environmental Justice E.O. 12898; Title VI of the Civil Rights Act of 1964).

16. The proposed action will not affect American Indian Religious Freedom (42 U.S.C. 1996). The action will not limit access to, and ceremonial use of, Indian sacred sites on federal lands, by Indian

religious practitioners, and/or adversely affect the physical integrity of such sites (Native American Graves Protection and Repatriation Act, 25 U.S.C. 32).

17. Logging and related activities can introduce new invasive species to a site via uncleaned equipment and soil disturbing activities or cause currently present invasive species to spread more rapidly. In order to insure the action will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area, or promote the introduction, growth, or expansion of the range of such species, cleaning equipment prior to using on site, washing equipment in a centralized area, re-seeding heavily disturbed sites such as skid trails and landings is required. The use of biological controls on large weed infestations and herbicides is recommended as needed primarily along roadsides. If borrow pits or fill material are used from offsite, it is recommended that these materials be weed free to reduce the spread of invasive species. (EA Section 4.6)

18. The proposed action will not contribute to the disposal of solid or hazardous waste (Resource Conservation and Recovery Act of 1976; 43 U.S.C. 6901, et seq.).

19. The proposed action will not be a violation of federal, state, local, or tribal law or requirements imposed for the protection of the environment.

_____ _____

Date

Randall Friedlander, Superintendent
Colville Agency
Bureau of Indian Affairs
U.S. Department of the Interior

DEPARTMENT OF THE INTERIOR

Bureau of Indian Affairs

Final Environmental Assessment for the proposed Stranger Creek 2023 Forest Management Project on the Colville Reservation, Ferry County, Washington

AGENCY: Bureau of Indian Affairs

ACTION: Notice of Availability

SUMMARY: This notice is to advise interested parties that the Bureau of Indian Affairs (BIA) as lead federal agency, with the Confederated Tribes of the Colville Reservation, has prepared a final Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for the Stranger Creek 2023 Forest Management Project on the Colville Reservation, Ferry County, Washington. This notice also announces the EA is now available in hard copy at the addresses below.

ADDRESSES: You may request a hard copy of the EA and FONSI by writing the BIA Colville Agency, PO BOX 150, Nespelem, Washington, 99155, and the Colville Tribe, PO BOX 111, Nepelem, Washington, 99155.

FOR FURTHER INFORMATION CONTACT: Randall Friedlander, BIA Colville Agency Superintendent, at (509) 634-2316 and Chasity Swan, Colville Tribe Integrated Resource Management (IRMP) Coordinator, at (509) 675-8361.

SUPPLEMENTAL INFORMATION: The Colville Tribe, through contractual obligations to the BIA, has proposed the Stranger Creek 2023 Forest Management Project. The activities under the agency proposed action to harvest approximately 15.4 million board feet of timber on approximately 1,153 acres of tribally owned and tribal allotted lands within the Inchelium District of the Colville Reservation in Ferry County, Washington. The activities will occur under guidelines in the Plan for Integrated Resource Management (PIRM)(Klock 2001) and associated Final Environmental Impact Statement (FEIS)(Klock 2000).

Authority: This notice is published pursuant to 43 CFR 46.305 of the Department of Interior Regulations (43 CFR Part 46), the procedural requirements of the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4371 et seq.), and is in accordance with the exercise of authority delegated to the Assistant Secretary – Indian Affairs by 209 DM 8.

_____ _____

Randall Friedlander Date
Colville Agency Superintendent
Bureau of Indian Affairs
U.S. Department of the Interior

Stranger Creek 2023 Forest Management Project

Environmental Assessment

The Bureau of Indian Affairs and the Colville Confederated Tribes of the Colville Indian Reservation

Proposed Action: The Bureau of Indian Affairs and the Confederated Tribes of the Colville Indian Reservation proposes the Stranger Creek Forest Management Project. The objective of this project would be to harvest approximately 15.4 million board feet of timber on approximately 1,153 acres of tribal trust lands within the Inchelium District.

Official Decision Maker: Randal Friedlander, Superintendent, Colville Agency, BIA

For further information:

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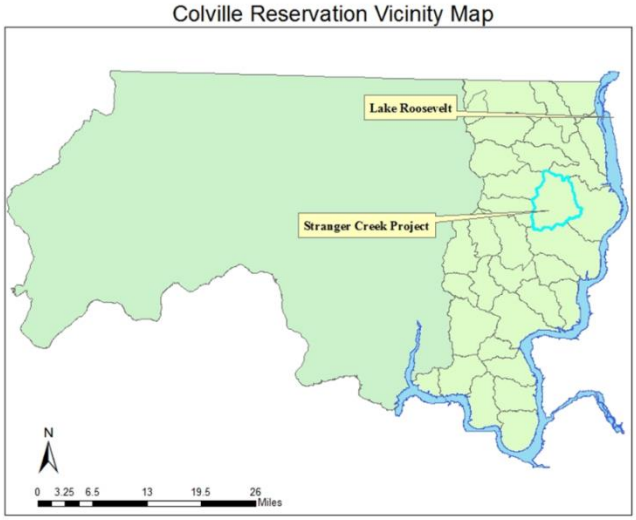
January 11, 2023



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1.0 Purpose and Need

1.1 Introduction

The Bureau of Indian Affairs (BIA) and the Confederated Tribes of the Colville Indian Reservation (CTCR) propose the harvest of approximately 15.4 MMBF of timber from approximately 1,153 acres of Tribal land on the Inchelium District. This harvest would require about 5 miles of road construction and about 15 miles of road reconstruction.

The federal action (40 CFR 1508.18) is the BIA approval of the Stranger Creek Project, which triggers BIA compliance with the National Environmental Policy Act (NEPA; 42 USC §4321-375) and associated regulations (40 CFR 1500-1508, 43 CFR 46). This Environmental Assessment is prepared to meet the BIA's NEPA responsibilities. The purpose of the action is to be able to implement the activities under the federal action to meet the primary need of revenue for the tribe.

1.2 Purpose and Need for Action

The federal action (40 CFR 1508.18) is the BIA approval of the Stranger Creek 2023 Forest Management Project, which triggers BIA compliance with the National Environmental Policy Act (NEPA; 42 USC § 4321-4375) and associated regulations (40 CFR 1500-1508, 43 CFR 46). This Environmental Assessment is prepared to meet the BIA's NEPA responsibilities. The purpose of the action is to be able to implement the activities under the federal action to meet the primary need of revenue for CTCR.

The Confederated Tribes of the Colville Reservation is in the business of growing timber for profit. Timber growing, harvesting, and processing are major sources of income for the Colville Tribe, the tribal membership and other groups in the local population.

The Colville Reservation's Plan for Integrated Resource Management (PIRM) (Klock 2001) calls for an annual harvest of 77.1 MMBF of timber. The PIRM also stresses the need for a healthy forest ecosystem with habitat that would contribute toward and support populations of native species, particularly those associated with cultural use.

The Stranger Creek Project Area contains stands of timber that present a high risk of sustaining losses to several forest insect and disease agents. The most notable of these are Dwarf Mistletoe, Fir Engraver beetle (high mortality), and Armillaria root disease. Harvest of the stands with the most hazard for these agents – either by: (1) removing the damaged & most susceptible trees or (2) by regenerating the stand to trees of the most well adapted species, or (3) by some combination of 1 or 2 – would reduce the risk of mortality loss.

Another aspect relating to overall forest health has arisen because of past management practices. Fire and grazing exclusion from the area has resulted in generally unhealthy stands in the Douglas-fir (*Pseudotsuga menziesii*) and Grand fir (*Abies grandis*) zones. These practices resulted in overcrowded stands with more onsite mortality (heavy fuels accumulation), multi-layered canopies (fire ladders), and species less well adapted to the sites. This has resulted in stands of poor vigor (and therefore higher insect/disease susceptibility) that are greatly at hazard for losses from severe wildfire.

The Proposed Action also fulfills the need for forest regulation. The PIRM (Klock 2001) cites the National Indian Forest Resources Management Act (P.L. 101-630, Title III) which requires

that Reservation lands be managed for sustained yield. Sustained yield is accomplished through regulation of the forest. In other words, forest regulation is the establishment and maintenance of size classes in such proportions and consistent growth such that an approximately equal annual yield is obtained in perpetuity (Davis 1966). This goal is attained by harvesting timber, providing for regeneration, and subsequent and current stand culture activities.

1.3 Issues, Concerns and Objectives

Forestry

Forest Health and Timber Regulation

Most forested ecosystems in the ponderosa pine, Douglas-fir, and grand fir zones on the Colville Reservation exhibit stocking levels and species compositions that have never before existed. The result is an unstable condition of the fuel and vegetation that threatens the ability of the ecosystems to provide the resources desired by the CTCR on a long term basis. This is also true of the Stranger Creek Project Area.

An abundance of insect and disease mortality agents are present in the forested area within the project area. Any one of these, under certain conditions, could cause rapid increases in tree mortality (e.g. epidemics of bark beetles or defoliators). Stand treatments applied judiciously can reduce the likelihood of sudden increases in mortality due to these organisms.

Implementation of the Proposed Action would help fill the need to bring the ecosystem into a balanced condition.

The concept of timber regulation requires that all land in the timber base produce (grow) timber at an acceptable level. Since managed timberlands are more productive than unmanaged lands, the more timberland brought under management, the closer we are to meaningful regulation of the timber harvest and therefore to a sustained yield condition.

1. To reduce the risk of loss of timber to insects, disease and fire.
2. To improve general forest health.
3. To expand forest regulation.

Indicator:

A. Acres treated by each alternative.

Income for the CTCR, Support of Tribal Businesses and Employment for the Tribal Membership

The income from the sale of timber accrues directly to the Tribal Government and, through that governing body, to the Tribal membership. It is therefore in the best interest of the Tribes to realize income from the sale of Reservation timber.

The Colville Tribal Sorting Yard (owned by the Colville Tribal Federal Corporation) and businesses owned by Tribal members in the region rely on the sale of timber from Tribal lands. These and other wood-based businesses also employ Tribal members. These firms are engaged in logging, transporting, milling, marketing, and processing of timber into dimension lumber and other products.

1. To provide income for the Colville Tribes.

Indicator:

A. Estimated stumpage produced by each alternative.

1. To provide employment for the tribal membership.
2. To provide profit for tribally owned businesses.

Indicator:

A. Estimated volume of timber harvested per alternative.

Soil Resource Objectives

1. To avoid causing detrimental soils conditions on more than 25% of the treatment (logged) area.

Indicators:

A. Displacement: movement or removal of topsoil.
B. Compaction: topsoil is noticeably compressed or flattened, decreasing several inches in depth in contrast to nearby undisturbed soils of similar character.
C. Fire damage: most of the topsoil is consumed and the top layer of mineral soil has changed color.
D. Rutting of soil in the bottom of swales and draws.

Hydrology Objectives

1. To minimize erosion and sediment delivery to surface waters and prevent streambank/wetland disturbance.

Indicators:

A. Road construction and use.
B. Road density by watershed.
C. Road construction/use within 200ft of surface water.
D. Harvest within 200ft of surface water.
E. Harvest on vulnerable soils.

Fish and Wildlife Objectives

1. To maintain and restore critical forest structure; old growth forests, deciduous stands, wetlands, large woody debris, etc. (Klock 2001).

Indicator:

A. Wetland and stream adjacency acres.

2. To reduce alterations to fish and wildlife habitat in order to sustain viable populations and communities through maintained thermal, forage and travel cover and reduction of habitat fragmentation (Klock 2001).

Indicators:

A. Block size and adjacency, acres.
B. Road density, mi/mi^2.
C. Miles of new road construction.

3. To maintain or increase the quantity and quality of habitat necessary to sustain and restore fish populations through high quality habitat and water (Klock 2001).

Indicators:

A. Miles of new road construction.
B. Density of stream crossings (new, existing, removed).
C. Miles of stream adjacency.

1.4 Compliance with Other Codes and Regulations

This project is designed to be compliant with CTCR Forest Practices Code (208), CTC 4-9: Hydraulic Project Permitting, 4-10: Water Resources Use and Permitting, the Endangered Species Act, Clean Water Act, National Environmental Policy Act, Tribal Forest Protection Act, National Indian Forest Resources and Management Act, National Historic Preservation Act, Clean Air Act and other applicable Tribal and Federal Regulations.

1.5 Determination

The Colville Agency BIA Superintendent with the concurrence of the Colville Business Council (CBC) would determine which alternative is selected for implementation.

a) To take no action (Alternative A).

b) To approve the proposed action (Alternative B).

c) To direct an additional alternative be created.

The BIA Superintendent would also determine whether the environmental consequences are significant and prepare either a Finding of No Significant Impact (FONSI) or determine that Environmental Impact Statement (EIS) would be required.

1.6 Public Involvement

During the development of the CTCR PIRM numerous "visioning sessions" with the Tribal membership occurred and detailed input by Tribal staff and management utilized to develop goals for management of natural resources. In July of 2001 the ROD and PIRM were approved by the CBC. The ROD outlines a 15 year implementation plan in which the cumulative effects were analyzed in Alternative 7 of the Final Environmental Impact Statement (FEIS)(Klock 2000).

The Stranger Creek Forest Management Project was presented to the 3P Team in March of 2022. The 3P Team and public also had a field tour of the project area in June of 2022. This project is a part of that 15-year plan for Forest Resource Management on the Reservation (Klock 2001).

2.0 Alternatives Considered

2.1 General Discussion: Alternative Design

The National Environmental Policy Act (NEPA) and the Council on Environmental Quality (CEQ), the Department of the Interior (DOI) and the BIA have developed regulations that require that a reasonable range of alternatives be considered in NEPA documentation, including the "Proposed Action" and "No Action" alternatives.

For this project, Alternative A (No Action) is included to fulfill the requirements of NEPA and to provide baseline values by which to measure the effects of other alternatives. For the purposes of this document, "no action" means that no harvest or other resource manipulation would occur if this alternative were adopted.

Alternative B (the Proposed Action) was constructed to fulfill the purpose and need. That is, Alternative B was designed to:

- Reduce risk of loss of timber to insects, disease and fire,
- Provide stumpage income for the Tribal Government of the Colville Tribes,
- Provide employment for tribal members,
- Provide opportunity for profit for tribally owned businesses,
- Improve general forest health,
- Expand forest regulation.

All alternatives are designed to meet all legal and procedural requirements to which the CTCR and the BIA must adhere.

2.2 Alternative A: No Action

The "No Action Alternative" includes the BIA not approving the Stranger Creek Forest Management Project at this time and/or the BIA and CTCR not implementing activities under the project. Under this alternative no timber harvest, road reconstruction, or other manipulation of resources would take place.

2.3 Alternative B: Proposed Action

The Proposed Action Alternative includes the BIA approving the Stranger Creek Forest Management Project and the BIA and CTCR implementing the activities under the proposal. This Alternative does meet the Purpose and Need of the project. This alternative was proposed by Inchelium Forestry District (IFD) to meet forest health needs, and provide volume for the Annual Allowable Cut (AAC) of 77.1 MMBF outlined in the PIRM.

Foresters of the Inchelium District of the CTCR propose harvest of approximately 15.4 MMBF of timber from about 1,153 acres, with 91 acres of pre-commercial thinning (PCT) and 1,051 (53 ac site prep, 998 fuel reduction) acres of prescribed burning in the Stranger Creek Project Area. There would be an estimated 1,101 acres of acres of mechanical site preparation (MSP). This harvest would require about 5 miles of road construction and about 15 miles of road reconstruction and 5 miles fireline construction.

Table 1. Prescription Summary for Alternative B.

Prescription	Acres
Commercial Thinning	130
Overstory Removal	132
Removal w/Reserve	53
Seed Tree	518
Shelterwood	320

Total Harvest Prescription	**1,153**
Girdle/PCT	91
Prescribed Burn	998
Totals	**2,242**

The harvest system acres are shown in Table 2. The acres are estimated. Operational decisions would be made on the ground to determine how each acre would be harvested. Generally, areas over 35% slope would be cable logged, but there are small, steep inclusions that may be harvested using a ground-based system such as tractor or forwarder. Tether/cable assisted logging method can be used to aide ground based machines to harvest and skid on steeper inclines of 40% to 70% slopes that would be normally considered unsafe for equipment or damaging to soils. Non-commercial thinning units are not included in these estimates because no logging equipment would be used for those treatments.

Table 2. Alternative B harvest systems.

Logging Method	Acres
Ground Based	931
Tether-Assisted Ground Based	222
Total	**1,153**

Table 3. Alternative B road construction and reconstruction.

Roads	Miles
New Construction	5
Reconstruction	15
Fireline Construction	5

Road Closure Plan

All newly constructed roads would be closed following past-harvest activities.

Other Project Design Features

When timber harvest takes place, Best Management Practices (BMP's) outlined in the Colville Confederated Tribes Forest Practices Handbook (208 Handbook) would be employed. Timber contract compliance by the Timber Sale Officer (TSO) would be the foremost method ensuring that the BMP's are followed and implemented. Proper maintenance of roads and skid trails after logging operations would be implemented to reduce erosion. Designated skid trails and cable logging would help reduce impacts to the soil resources.

3.0 Affected Environment

3.1 Forestry

Affected Environment

General Discussion

The Stranger Creek Forest Management Project would take place on the Inchelium District of the Colville Indian Reservation located in southern Ferry County. The project area is located at the Twin Lakes area. There are approximately 17,829 acres within the project area, with 13,597 acres being part of the commercial timber cut base.

Forest Health

The past management practices of fire suppression and single tree selection had the cumulative effect of creating a forest that is very different ecologically than the historically. These issues were covered in previous section Issues, Concerns and Objectives.

Another aspect of forest health is that of direct damage to trees by insects, diseases, and parasitic plants is apparent in this area:

Dwarf Mistletoe

Dwarf mistletoe is the most common disease affecting forest health in the project area. Dwarf mistletoe is indigenous to the reservation, but is more abundant due to past management practices.

The understory of predominantly Douglas-fir (*Pseudotsuga menziesii*) that developed after selective harvesting and fire suppression became heavily infected with mistletoe. Many of the Douglas-fir (*Pseudotsuga menziesii*) seedlings and saplings are possibly infected by dwarf mistletoe but most infections are latent due to shading from tall edge trees.

Armillaria Root Rot

Armillaria root rot pockets of various sizes and infection rates were found scattered throughout the project area.

Bark Beetles

There are several bark beetles found throughout the Inchelium District. Beetles are currently found at endemic levels, killing small pockets of trees throughout the area. There is no widespread epidemic, but the potential exists for many trees to be killed, particularly in areas of high density, where trees are weakened by dwarf mistletoe, and where pockets of Armillaria root rot exist. The high density and stocking of many stands and the increased level of dwarf mistletoe infection and Armillaria over the last several decades has led to increased bark beetle mortality in the district.

Many recent beetle attacks were observed scattered throughout the district, killing pockets of 10 to 20 trees of large diameter Ponderosa pine (*Pinus ponderosa*) and Douglas fir (*Pseudotsuga menziesii*). The Douglas fir (*Pseudotsuga menziesii*) encroachment and increased tree density has weakened many trees, especially ponderosa pine, putting them at risk to beetle attacks.

Some of the beetles found throughout the district include:

• Western pine beetle- attacks Ponderosa pine (*Pinus ponderosa*), often killing larger diameter trees.

• Douglas fir beetle- Was observed killing larger Douglas fir (*Pseudotsuga menziesii*) trees, usually already weakened by root rot and mistletoe.

• Mountain pine beetle- Was observed attacking and killing pockets of Lodgepole pine (*Pinus contorta*).

• Fir Engraver beetle - Was observed attacking and killing individual Grand fir (*Abies grandis*) trees.

Generally, thinning the forest to a healthy density, removing the Douglas-fir/Grand fir competition from the understory, and removing trees infected with dwarf mistletoe, can help trees defend themselves from beetle attacks and help maintains an endemic level of bark beetles across the landscape.

Road Conditions

• Washed out culverts

• Poor water drainage off roads

• Over grown vegetation

3.2 Soils

The landscape throughout the project area is dominated by hillslopes and mountain slopes. Soils are formed predominantly from residuum and colluvium, glacial till, volcanic ash, and loess. Soil parent materials largely derived from glacial till with a mantle of volcanic ash and residuum and colluvium derived from metamorphic rock. Table 4 shows the general soil types and their landscape characteristics. Soils data for the Colville Indian Reservation comes from the detailed soil survey of the Colville Indian Reservation (NRCS 2002).

Table 4. General soil types and their landscape characteristics of the project area.

General Soil Types	Map Unit Names	Landform
Silt Loam/Silt Loams Association	Aits, Apex, Scrabblers, Martella, Newbell	Hillslopes, Mountain Slopes
Rock Outcrop/Rock Outcrop Complex	Mineral, Raisio, Oxerine, Nevine	Mountain Slopes
Loam	Borgeau, Centrealpeak, Republic	Hillslopes, Mountain Slopes

3.3 Hydrology

The project area contains the Cornstalk Creek and Upper Stranger Creek Watershed Management Units (WMUs). The area is bounded to the north by the Hall Creek Resource Management Unit, which flows east before joining the Columbia River. Stranger Creek continues eastward into the Lower Stranger Creek WMU, before the confluence with the Columbia River. Nez Perce Creek and Stray Dog Canyon drain away from Stranger Creek to the south. Upstream of the timber sale area, North and South Twin Lakes drain directly; this watershed is additionally fed by Beaver Dam and Granite Creeks.

Table 5. Hydrologic features within project area footprint.

Hydrologic Feature	Potentially Affected Size
Mapped Streams	41.18 mi
Mapped Wetlands	450.88 ac

3.4 Fish and Wildlife

Wildlife

The Stranger Creek Project Area supports habitat for a variety of birds including Northern goshawks, great gray owls, other raptors, pileated woodpeckers and other cavity nesters, gold and bald eagles, owls, and a wide range of songbirds. Habitat components that provide requirements for the highest concentration of birds are found in and around riparian areas and areas with deciduous vegetation. Other critical habitat components include large diameter trees, snags and an abundance of large woody debris.

Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act

The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), of 1940, as amended, and Migratory Bird Treaty Act (16 U.S.C. 703-712), of 1918, as amended, prohibits anyone, without a permit, from "Taking" eagles or any bird, including their parts, nests, or eggs. Within this Act, eagles/nests/eggs/young are not to be "Disturbed" including agitated or bothered. Aerial surveys have been conducted in the past by the Colville Tribe to identify eagle and raptor nests. All known nests are buffered and have seasonal restrictions.

Other Species

The Northern goshawk (*Accipiter gentilis)* is a large forest raptor, strongly associated with mature forests where there is dense and closed canopy cover, open understory for flyways, and multiple canopy layers for protection. These attributes are critical for nesting and foraging Northern goshawks. Great gray owls (*Strix nebulosi)* share similar habitat requirements as the Northern goshawk with the additional requirement of open meadows for hunting. Pileated woodpeckers (*Hylatomus pileatus*) and white-headed woodpeckers (*Picoides albolarvatus*) are residents of the project area. Woodpeckers seek habitat that contains large diameter trees and mature stands of timber with an abundance of woody debris.

The Stranger Creek Project Area contains habitat that meets the life requirements of a variety of mammal species including snowshoe hares (*Lepus americanus*), mice (*Cricetidae spp.*), voles (*Cricetidae spp.*), beaver (*Castor canadensis*), several species of bat (*Chiroptera spp.*), coyotes (*Canus latrans*), black bears (*Ursus americanus*), bobcats (*Lynx rufus*) and cougars (*Puma concolor*). Reptiles and amphibians are also residents of the project area and are sensitive to habitat changes. Areas used for reproduction are among the most important areas to protect for these species. Each of these species would react differently to the impacts of logging operations but maintaining species diversity and structural complexity would ensure the continuance of the greatest suite of species.

Mule deer (*Odocoileus hemionus*), White-tailed deer (*Odocoileus virginianus*), Rocky mountain elk *(Cervus elaphus nelsoni)*, and Moose (*Alces alces)* are culturally significant species to tribal members for both subsistence and ceremonial uses and are found within and adjacent to the project area throughout the year. Additionally, aerial big game surveys have documented winter range for elk, white-tailed deer, mule deer, and moose within the perimeter of the project area. Mule deer can be found throughout the area from steep forested ridges to lowland shrub-steppe habitat at all elevations. White-tailed deer are primarily found using riparian associated habitat adjacent to streams, rivers, meadows or agriculture at elevations below 3,500 feet. Elk are known to use portions of the area throughout the year, including calving grounds and winter range.

The Colville Reservation is currently home to eight known wolf packs. Gray wolves (*Canis lupus*) as an apex predator play an important role in ecosystem function, preying primarily on

ungulates such as deer, elk and moose. Currently, there is a wolf pack utilizing the Stranger Creek area, with habitat and prey existing to support wolves. This area provides travel habitat and movement for resident and migrant wolves. Wolves in Eastern Washington are state threatened species, but not a federal listed species.

It is unlikely that Canada lynx (*Lynx canadensis*) are present in the Stranger Creek Project Area due to its elevation and habitat type. Additionally, pine marten (*Martes martes*), wolverine (*Gulo gulo luscus)*, and fishers (*Pekania pennant*) historically have been documented on the Colville Reservation. These rare forest carnivores are extremely susceptible to logging and harvesting of old growth forests. Snags are used for denning sites and the bigger snags should be left when possible.

Fish

Within the Stranger Creek Project Area Stranger Creek, Sucker Creek, Cedar Creek, and Cornstalk Creek and all of their tributaries are part of the Stranger Creek watershed. Stranger Creek is a tributary to Lake Roosevelt. These streams are an important and vital system for our resident fish species. Fish species present in these streams are Eastern Brook Trout (*Salvelinus fontinalis*), Redband Rainbow Trout (*Oncorhynchus mykiss gairdneri*), Dace species (Rhinichthys spp.), native minnows (Cyprinidae), and Sculpins (Cottidae).

Additionally, the Lake Roosevelt drainage area is included in the Northeast Washington Research Needs Area of the Mid-Columbia Recovery Unit for bull trout *(S. confluentus*; USFWS 2002). Bull trout Threatened and Endangered Species federal status is currently listed as "threatened" while Washington State considers bull trout a candidate for listing. Bull trout in the Stranger Creek Project Area and surrounding areas are extremely rare and believed to be extirpated. Historically, populations likely occurred in several tributaries to the Columbia River above Grand Coulee Dam (Lake Roosevelt). However, currently no spawning populations exist within the Northeast Washington Research Needs Area. Since 2011, fewer than 25 bull trout have been documented in the mouths of tributaries to Lake Roosevelt or in Lake Roosevelt/Columbia River itself. The majority of observations occur in the north end of Lake Roosevelt near the Canadian border with infrequent observations in the mouths of tributaries. In 2012, a single adult bull trout was documented in the lower Sanpoil River Arm of Lake Roosevelt. Bull trout observation data within the Northeast Washington Research Needs Area is not well tracked, is sporadic, and often anecdotal, although they are rarely encountered during large-scale standardized fishery surveys. Bull trout present in the Northeast Washington Research Needs Area likely derive from local populations in the Coeur d'Alene/Spokane River or Pend Oreille River basins, or from tributaries to the Columbia River in Canada and have been entrained over dams. While bull trout are rarely encountered in Lake Roosevelt, a natural gradient barrier below the culvert on the Gifford Ferry Road near the mouth of Stranger Creek further reduces the likelihood of their presence in the project area and therefore bull trout are very unlikely to be impacted.

Federally Threatened or Endangered Species

Federally Threatened or Endangered Species: Section 7 of the Endangered Species Act (ESA; 16 U.S.C. 1531 et seq.) of 1973 as amended, and its implementing regulations found at 50 CFR 402, require federal agencies to insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or

threatened species or result in the destruction or adverse modification of habitat. The project would not directly or indirectly impact on any living resources.

Information for Planning and Conservation was acquired from the United States Department of Interior Fish and Wildlife Service (USDOI-FWS) for Endangered Species Act Species List. An Official Species List from the United States Department of Interior Fish and Wildlife Service (USDOI-FWS), is included as Appendix B.

Species	Scientific Name	Status
Canada Lynx	*Lynx canadensis*	Threatened
Yellow-billed Cuckoo	*Coccyzus americanus*	Threatened
Monarch Butterfly	*Danaus plexippus*	Candidate
Bull Trout	*Salvelinus confluentus*	Threatened

Table 6. US-DOI-Fish and Wildlife Service: Official Species List.

Habitat

The project area supports a variety of cottonwood and aspen (*Populus spp.*) stands possessing multiple stand characteristics. Riparian areas within the project area are associated with seeps and springs, intermittent and perennial streams, and wetlands. There are many seeps and springs in this area that may not be visible until the ground is disturbed; this along with soil type and slope could result in washouts and landslides. Deciduous trees and shrubs are present in the lower elevations of the project and in the saddles and draws of the higher elevations; these areas are considered riparian habitat if they are linked to a seasonal or perennial water source.

Within the project there are areas that contain sufficient woody debris both in the uplands and riparian habitats. These areas would be impacted by the removal of large recruitment trees, the reduction of snags and the removal of downed wood due to site prep and equipment operation.

3.5 Cultural Resources

National Historic Preservation Act (NHPA)

Section 106 of the National Historic Preservation Act (NHPA) as amended, and its implementing regulations found at 36 CFR Part 800, require federal agencies to identify cultural resources for federal action. The significance of the resource must be evaluated using established criteria outlined at 36 CFR 60.4. If a resource is determined to be a historic property, Section 106 of the NHPA requires that effects of the undertaking on the resource be determined. A historic property is "…any prehistoric or historic district, site, building, structure or object included in, or eligible for inclusion in the National Register of Historic Places, including artifacts, records, and material remains related to such a property…" (NHPA, 16 USC 470w, Sec. 301[5]).

The Stranger Creek Forestry Project is within the ancestral lands of the Sanpoil and Colville Tribes, who can identify their ancestry, back over a thousand years in this area. The languages of the twelve tribes comprising the Confederated Tribes of the Colville Reservation have been grouped into general Salishan and Sahaptian language families. The majority spoke the Interior Salish languages of nxaʔamcín and nsləxcín, though the Sahaptian languages of the Nez Perce (nímípuʔ) and Palus (palús) were also spoken. The language of the Sanpoil and Colville is nsləxcín.

For the purposes of consultation with the Tribal Historic Preservation Officer (THPO) under Section 106 of the National Historic Preservation Act, the 2,242 acre timber treatment areas and attendant landings, any road construction and road reconstruction as well as all existing roads utilized for logging operations shall be considered the Area of Potential Effect (APE).

Approximately 393 acres were previously surveyed within and immediately adjacent to the Stranger Creek Forestry Project area (Meyer 2004 a & b; Marchand 2013; Oosahwee-Voss 2013). These inquiries have resulted in documentation one archaeological site and one historic Indian cemetery within or immediately adjacent to the Stranger Creek Forestry area and a review of the Colville Confederated Tribe History/Archaeology Program documented five Traditional Cultural Properties (TCPs) within the project area (Table 7) for a total of seven cultural resources.

A search of Bureau of Land Management/General Land Office (BLM/GLO) records indicates that there are sixty-one historic Indian allotments and five land patents issued within, or adjacent to the project area. For the current project, a predictive model was used to select areas within the Stranger Creek Project area for a cultural resource survey.

Table 7. Cultural Resources Recorded within and adjacent to the Stranger Creek Project Area*.

Site ID Number	Site Name	Site Description
45FE736	Moon Mountain	Historic Logging Property
CEM-WA-FE-4	Meteor Cemetery	Historic Cemetery
CCT-WA-FE-460	Twin Lakes Fishing Location	TCP – Fishing Location
CCT-WA-FE-470	S. Twin Huckleberry Area	TCP – Gathering Area
CCT-WA-FE-468	Meteor Valley	TCP – Place Name
CCT-TCP-202	Place of Indian Hellebore	TCP – Gathering Area
CCT-TCP-104	yaksmˀ əlˀ ȧʕlaʔxʷ (Clay Ground)	TCP- Place Name

*Archaeological and sacred site locations are not provided in this document because disclosure of site locations may put these resources at risk to vandalism and looting (see the National Historic Preservation Act of 1966, Section 304a; and the Archaeological Resources Protection Act of 1979, Section 9a) or jeopardize their access, integrity and ceremonial use (see Executive Order No. 13007).

Five of the seven cultural resources identified within/adjacent to the entire project area are located within the APE for the current project. These sites have been recorded as CCT-WA-FE-460, CCT-WA-FE-470, CCT-TCP-104 and CCT-TCP-202 which are Traditional Cultural Properties (TCPs), and 45FE476, and archeological site. These sites may be considered eligible for the National Register of Historic Places, as described in 36 CFR Part 60.4.

All TCPs and archaeological sites must meet at least one of the following criteria to be considered eligible for evaluation to the National Register: A) they must be associated with

events that have made a significant contribution to the broad patterns of history, B) they must be associated with the lives of persons significant to our past, C) they must embody the distinctive characteristics of a type, period, or method of construction or they represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components make individual distinction, or D) they must have yielded, or be likely to yield, information important in prehistory or history. Additionally, to be a "property" a TCP must have tangible boundaries (36 CFR 60.4; Parker & King 1998).

Shannon and Moura (2007) have aptly observed that due to the unique nature of TCPs, the standards identified above must also be evaluated with perception of Native American history. When reviewing TCPs for continued use of at least 50 years, for instance, it must be recalled that federal and state policies common in the 1800s restricted, regulated and denied access to property to Tribal people which had previously been in their exclusive territory. Oftentimes, Indian people may shift their area of use to adjacent or nearby locations if a previously utilized property suddenly (and beyond Tribal control) became unavailable. Therefore, a location may still retain value and continue to be a TCP when access is restored (Shannon & Moura 2007).

In pre-contact and historic times, the knowledge of these TCPs and their locations and use provided people with a means for subsistence and important cultural items for personal use or trade, cultural practices which continue to this day. Additionally, the nature of these sites and their close proximity to other documented cultural resources, including pre-contact, historic and additional TCP sites increases their potential to yield information important to the CCT.

Oral history accounts of the region identify the general areas of Twin Lakes, Moon Mountain, Stranger Creek Round Lake and Cornstalk Creek as possessing traditional value in addition to those locations observed during the archaeological survey. It is the position of the CCT that "A place is significant due to its location and the meaning assigned to it, not the language of the name by which it is known. While recording place names in the original languages is of immeasurable value, the places would continue to have meaning and significance regardless of the language used to describe them (George 2011).

It is likely that cairns, rock alignments, and other rock features may be found throughout the area due to the prominent landscape of the mountains in the area. Small pre-contact camps may be present on the upland areas adjacent to springs or creeks, or in sheltered canyons, where people would have camped while taking advantage of upland resources. Evidence of early historic-period occupation, logging and mining features and\or graves may be present within the project area. It is also likely that eagle feather collection areas are utilized by current Tribal members, given the proximity to the Columbia River.

The project area is located within the Twin Lakes Watershed, which contains all or portions of North Twin Lake, South Twin Lake, Round Lake, Stranger Creek, Carson Creek, Cornstalk Creek, Beaver Dam Creek, Granite Creek, Camille Lake, Apex Lake and Borgeau Lake. Land-based cultural activities occur in the summer and fall within this watershed, with the most prevalent use during the summer. Traditional use of sweathouses perpetuates within the Twin Lakes watershed, as do harvest of culturally significant plant species across the landscape. Fourteen locations within the watershed have been documented as important areas for water-related resources and legendary landscapes. Some of these areas include Twin Lakes, Hall Creek, Camille Lake, Cornstalk Creek, Butler Flat, Apex Lake and Borgeau Lake. The project area falls within a portion of the watershed which is documented as a principle gathering location for at

least thirty-one native plant species for consumption, construction, weaving, and religious purposes (Table 8).

Table 8. Traditional Cultural Plants gathered within the project area (Marker et al. 2011).

Black Cottonwood, *Populus trichocarpa*	**Ponderosa Pine,** *Pinus ponderosa*	**Serviceberry,** *Amelanchier alnofolia*
Narrow-leaved cattail, *Typha angustifolia*	**Lichen,** *Bryoria femontii*	**Chokecherries,** *Prunus spp*
Tall Oregongrape, *Berberis aquifolium*	**Elderberry (Blue or Red),** *Sambucus spp*	**Huckleberry,** *Vaccinium spp*
Wild raspberry, *Rubus spp*	**Foamberry,** *Shepherdia canadensis*	**Wild blackberry,** *Rubus spp*
Sages, *Artemisia spp*	**Indian potato,** *Claytonia lanceolata*	**Wild thimbleberry,** *Rubus spp*
Red Willow (Dogwood), *Conrus stolonifera*	**Fir,** *Multiple Species*	**Wild strawberry,** *Fragaria vesca*
Green Willow,	**Gray Willow,**	**Cedar,** *Thuja plicata*
Lodgepole Pine, *Pinus contorta*	**Western Larch,** *Larix occidentalis*	**Buckbrush**, *Ceanothus*
Buckbrush, *Ceanothus*	**Bunchgrass,**	**Birch (including river birch)**, *Betulaceae*
Ocean spray (aka Ironwood), *Holodiscus discolor*	**Yew,** *Taxus brevifolia*	**Reed Canary Grass,** *Phalaris arundinacea*
Tule (aka bulrush), *Schoenoplectus acutus*		

3.6 Range Management

The forest treatment blocks in the Stranger Creek forest project are within Range Unit 71. This range unit has active permits issued and may have livestock present from May 15 to October 31.

Fences would most likely be encountered along the northern fringe of the 058 blocks. Other blocks that may be influenced by some fencing are 1 and 603. Cattle guards can be found throughout the project area. The CTCR Range Program asks that when encountered, infrastructure such as cattle guards, watering facilities, and fences be avoided if possible. If range infrastructure is damaged during project activity the project proponent would be responsible for notifying the range program and seeing that damage is repaired in a timely manner. Fences are of particular concern in that if they are along or near a roadway and are damaged, they need to be repaired immediately during the time livestock are expected to be present. Containment of livestock is of particular concern on the western boundary of the range unit where residential areas around the Twin Lakes are located. The range program also requests notification of when harvest activities would commence in an area so we can notify permittees. It would be necessary to keep gates closed during the grazing season May 15 to October 31.

4.0 Environmental Consequences

Summary Table of Issues Indicators

Table 9. Summary table of issue indicators for PIRM goals and objectives.

Resource	Issue	Issue Indicator	Alt. A	Alt. B
Vegetation /Timber	**Forest Health**	**Acres Treated**	0	1,443 ac
	Support of Tribal Wood Processing	**Timber Volume for Processing**	0	15.4 MMBF
	Tribal Income	**Projected Stumpage**	$0	$2,644,000
Hydrology Fish & Wildlife	**Sediment Delivery/Erosion Habitat**	**Road Construction**	0 miles	5 miles new construction 15 miles reconstruction
Hydrology	**Sediment Delivery to Surface Water**	**Road construction/reconstruction/use within 200 ft. of Surface Water**	NA	2.3 mi
Hydrology	**Sediment Delivery to Surface Water**	**Harvest within 200 ft of Surface Water**	na	199 acres
Fish and Wildlife Road Density		Upper Stranger Creek	5.08 (mi/mi^2)	5.39 (mi/mi^2)

4.1 Forestry

Impacts to Forestry Resources Alternative A: No Action

- No profits for Colville Tribe and the AAC of 77.1 MMBF would not be met.
- Forest management would not receive the 10% funds.
- No timber industry employment would be generated.
- Forest health would decline, increased risk to disease, insects, drought and wildfire would occur.
- No improvements in forest roads.
- Area would move farther away from the Desired Future Condition's in the Integrated Resource Management Plan.
- No new acres would be added to the regulated forest.
- Reforestation would not occur or be diminished.
- Wildfire prevention/mitigation would not occur, would not meet the goals of the National Fire Plan.

Under this alternative, no conifer trees would be harvested. No timber stumpage revenue would be generated. No Forest Management Deduction (10%) funds would be generated. No logging industry employment would be generated. No silvicultural treatments would be implemented. Forest health issues and concerns could possibly worsen, and the desired objectives would not be achieved in regards to Desired Future Condition's, identified in the (PIRM). Overstocking of forest stands; predominance of climax tree species, over mature trees, tree mortality, competing vegetation, forest insects and diseases problems and other current forest conditions would continue to affect the overall forest health. The potential forest site-productivity may never be achieved on some locations.

Fire suppression activities would continue as in the past. Any fires that occur in the project area would be actively suppressed. Fuels treatments would not take place.

The effect of Alternative A would be to allow site conditions to continue to depart from the normal historic range and further increase the probability of a wildfire scenario that would likely cause stand replacement on a considerable portion of the project area. When a stand replacing fire occurs, a substantial loss of revenue to the Tribe, wildlife habitat, and cultural practices would result.

Forest roads would not be maintained and/or reconstructed, and potentially upgraded by culvert installation and erosion control which would affect the access and use of resources by the Colville Tribe and public. Under-sized culverts and plastic culverts would not be replaced.

"No Action" on the Stranger Creek Forest Management Project could put the pressure of achieving the projected stumpage revenue onto other project areas and natural resources. Specifically, the "No Action" alternative could be detrimental to forest health.

Impacts to Forestry Resources Alternative B: Proposed Action

- $2,664,000 of profit for the Colville Tribe with a harvest of 15.4 MMBF.
- Species composition on 1,154 acres would be shifted to Ponderosa pine and Western larch.

- Forest health would improve, diseased trees would be removed and disease resistant species would be regenerated naturally and with planting.
- Understory Douglas-fir/Grand fir encroachment would be piled and/or burned, reducing the likelihood of catastrophic fire.
- Density would be reduced in thick stands, creating a healthier forest.
- Desired Future Condition's outlined in the IRMP would be met over time.
- 5.08 miles of new road construction to facilitate logging. 15.16 miles of existing road would be improved. All newly constructed roads would be closed following post-harvest activities.
- 1,050 acres hazard fuel reduction, reducing wildfire risk to homes and other Tribal property/resources.
- **All of these things cumulatively would create a faster growing, disease resistant, more productive forest landscape that would yield much higher volumes and value in the future.**

In terms of vegetation management, the implementation of Alternative B would improve forest health. The result of management would be to: increase stand and individual tree vigor, increase insect and disease resistance, reduce the fuel quantity, and provide more fire-resistant fuel arrangement in timber stands. The Proposed Action would move a substantial portion of the vegetation in the project area toward the stand structure distributions and size/age classes outlined as the desired condition (Klock 2001). This alternative would also achieve the goals for regulation of the long-term timber supply, supply of wood to processing facilities, and stumpage return to the Tribal Government and to Tribal Members.

Prescribed treatments would result in reducing the risk of catastrophic fire from occurring by moving stand density, structure and species composition toward the normal historic range. The broadcast burn treatments would reduce fuel loading while reintroducing fire. Smoke and associated pollutants would be generated from burning fuels.

Some of the potential negative impacts that a timber sale may create, include the following: visual landscape changes or disturbances, man-made "signs" (ribbon, tags, paint), noise and dust, vegetation is temporarily disturbed, skid trails and landings are created and woody slash material would be created.

4.2 Soils

Impacts to Soil Resources Alternative A: No Action

The "no action" alternative would have no impact on the soil resource within the project area.

Impacts to Soil Resources Alternative B: Proposed Action

Soil would be impacted by ground-based logging, cable or cable assisted logging, excavator piling and broadcast burning. Approximately 931 acres would undergo ground-based logging. Blocks that are cable logged, comprising approximately 222 acres, typically have fewer significant soil impacts. If tethered logging is used instead of cable, soil impacts would vary depending upon localized conditions, but tend to improve overall safety. Approximately 1,051 acres would undergo broadcast burning, 1,101 acres would be excavator piled, 91 acres would

undergo pre-commercial thinning, and 158 acres would undergo lop and scatter. Approximately 877 acres (39%) of potential prime farmland exist within the commercial harvest blocks. Prime farmland within the project area is located within forested land that is part of the CTCR designated commercial timber base. It is unlikely that timber harvesting would have any detrimental effect on the functional integrity of the land classification and CTCR does not have future plans to development the prime farmland within this project area.

Generally, areas with slopes exceeding 35% are less well suited to use of ground-based machinery and soil impacts would be greater. According to data obtained from ArcGIS Online, 9.6 percent of the total 902 ground-based logging acres of the proposed blocks in this project have slopes exceeding 35%, meaning the total ground-based treatment area with slopes exceeding 35% would be 86 acres. Anticipated soil impacts include displacement of topsoil, rutting, compaction, and erosion or soil loss. Ratings of potential for soil degradation are provided by the Natural Resources Conservation Service. Table 10 shows the number of acres of ground-based harvest classified by soil displacement, rutting, compaction, and erosion hazard ratings:

Table 10. Ground-based harvest acres with soil degradation ratings.

Soil Degradation Type	High Potential Acres	Moderate Potential Acres	Low Potential Acres
Displacement	97.3	800.6	0.1
Rutting	814.4	4.3	79.4
Compaction	814.4	83.7	0.5
Erosion	Null/Not Rated in NRCS Web Soil Survey With steep slopes, erosion could become an issue with severe precipitation events.		

The Natural Resources Conservation Service rates most soils with slopes exceeding 20% as poorly suited or unsuited for surface mechanical site preparation. Approximately 58 percent of the total harvest acres blocks in this project have slopes exceeding 20%. The primary factor limiting suitability is hill slope. Anticipated soil impacts include displacement of topsoil and erosion.

Skid trails and pile burning generally cause severe impact to the upper soil layer (Cooley 2004). Skid trail impacts include compaction, rutting, and erosion or soil loss. Pile burning consumes most soil organic matter, nutrients, while changing the texture of soil surface layers.

1,051 acres are proposed for prescribed broadcast burning. Of the entire project area 67 percent of the total area is considered by NRCS to be highly susceptible to fire damage and 23 percent moderately susceptible, primarily due to subsequent water and wind erosion. Higher impact is associated with higher burn severity, with low severity burns posing less risk of soil damage.

Any new road construction likely involves clearing and grubbing, excavation, and compaction of multiple acres of soil depending on the mileage of new road. According to the project proposal sheet, approximately 5 miles of new road construction and 15 miles of road reconstruction would occur. With a total of 20 miles of new road construction and road reconstruction, approximately 80.68 acres of soil disturbance would occur.

Standard Operating Procedures and Mitigation Measures

All applicable Best Management Practices (BMP) specified in Tribal Code CTC 4-7 Forest Practices are required to limit soil damage (CTCR 2015). Some notable provisions follow:

Overall, activities should be performed when soil conditions are not likely to result in excessive erosion or soil movement, considering soil types, slopes, and climatic conditions.

Increased soil impact is associated with higher burn severity; therefore, implementation of broadcast burning should maintain low severity burns in order to reduce soil damage.

4.3 Hydrology

Impacts to Hydrology Resources Alternative A: No Action

The no action alternative would allow for the natural ecological process to continue. Stream channel hydraulics and associated riparian vegetation would not be impacted by harvest related activities. Effective ground cover and hydraulic roughness would remain, continuing to provide overland flow attenuation and prevent nonpoint source pollutant delivery to downslope watercourses. Retention of mature vegetation would continue to provide canopy interception and reduced rain splash erosion. Infiltration would remain high, and rill and scour erosion would remain minimal. Additionally, soil structure would be maintained in the current state. All methods of timber harvest, ground- or cable-based, result in some amount of soil disturbance. Soil compaction generally occurs in locations where machinery tracks have traveled (particularly in wet conditions), while destruction of soil structure and subsequent sediment mobilization generally occurs as a result of ground-based operation on steep slopes and a lack of traction. Transport of trees by logging equipment also results in soil disturbance and transportation. These effects would be avoided through Alternative A, maintaining soil structure, density, and productivity.

Road density would be maintained at the current level in Alternative A. Existing road densities in the Cornstalk, and Upper Stranger Creek WMUs are higher than the desired condition outlined in the IRMP, but lower than the density that would be achieved as a result of Alternative B. Alternative A would also not involve reconstruction of any existing roads, allowing existing vegetative cover and stability to be maintained. Maintaining the lowest road density (i.e. the existing condition) would provide the closest approximation of natural hydrologic conditions, between the two scenarios. High road densities are detrimental to watershed hydrology primarily due to the interception and diversion of water from natural flow paths. When water flowing down a hillslope is intercepted by a road prism, ditch, blocked or undersized culvert, or other infrastructure, that water is generally diverted or lost to evaporation, rather than continuing as overland, shallow subsurface, or groundwater flow. As climate change advances, it becomes increasingly important to retain water on the landscape. High road density contributes to the loss of water on the landscape through decreased infiltration and increased evaporation, and each additional road increases these effects.

Existing roads in the Stranger Creek project area are maintained to various levels of stability. 242 existing segments were identified for review within the project area; segments were selected for review if they were within or adjacent to swales, draws, wetlands, streams, or other aquatic resources. Under Alternative A, none of these segments would be reconstructed, and use would not increase. However, segments that have not been maintained would continue to be at risk of failure, and crossings obstructing flow and fish passage would continue to do so.

Impacts to Hydrology Resources Alternative B: Proposed Action

- 5 miles of new road construction and 15 miles of road reconstruction
- 0.1 miles of new construction and 2.2 miles of reconstruction within 200ft of surface water
- Harvest activities within 200ft of surface water – 199 ac

All road construction and use associated with proposed timber harvest activities would lead to soil disturbance and loss as well as alteration of watershed hydrology (Hunner 2014). Specifically, road miles within 200ft of surface water are statistically likely to deliver sediment/erosion to surface water (Dubé et al 2004). Road reconstruction and new construction effects on water quality, hydrologic processes, and aquatic habitat would be the longest-on-going, longest-lasting, and highest-degree negative impacts resulting from the proposed action. The use of heavy machinery to create and redo roads would result in immediate sediment delivery to adjacent waterbodies. Additionally, reconstruction results in soil compaction and disturbance, both of which are significant causes of decreased soil health, eventual runoff channelization and continued erosive losses. Repeated improper reconstruction procedures that fail to reincorporate disturbed material into the road prism create linear features that channel water away from natural water features. When these features are created adjacent to streams, heavy flow events can cause the relocation of the active channel into the road prism, creating a safety hazard, and drastically altering the natural hydrology of the area. Proposed reconstruction and new construction in the Stranger Creek project area would occur on 20.24 miles of road, with as many as 40.09 additional miles of potential road use on BIA and county roads. High road densities detrimentally affect water retention on the landscape, creating interception points that redirect flow from reaching creeks, streams, and wetlands. Abandonment and revegetation of roads can mitigate some of the effects of high road density, improving infiltration and decreasing overland flow, but retention of road prisms, nonnative road bed material, and artificial crossing structures such as culverts would continue to alter hillslope hydrology regardless of vegetation establishment.

The proposed project plan also includes 199 acres of planned harvest activities within 200ft of surface water. Harvest operations, including the use of heavy machinery to fell and skid timber, cause soil compaction and erosion; additionally, as a result of decreased vegetation, interception, infiltration and water use are decreased, and a greater volume of water occurs as overland flow. This can result in great sediment transportation to downslope streams and wetlands, resulting in decreased water quality. Additionally, harvest operations create linear features such as skid trails. If oriented parallel to the slope, or located in swales and topographic low points, these linear features channelize water, and lead to rill and gully erosion, sediment transportation, and road failure. These effects can be minimized by locating skid trails perpendicular to slope direction, and through the use of cable logging rather than ground based harvest systems, particularly on steeper slopes. Tethered logging, a harvest system new to the Reservation, which involves the use of a winch for assistance in machinery operation of slopes, is proposed for 222 acres of blocks. Existing Tribal Code does not allow for operation of ground based harvest systems on slopes over 35% due to potential soil impacts; however, tethered logging is in the process of being adopted for use on steeper slopes to increase efficiency and decrease costs of harvest. Where any ground based harvest system is used on vulnerable soils, the potential for compaction and erosion is increased. When these factors are combined with steep slopes and proximity to aquatic resources, the potential for sediment delivery and resource damage is significant.

Mitigation and Monitoring Requirements

Operators must ensure that all Best Management Practices (BMP) and standards for timber harvest identified in Colville Tribal Code (CTC) Chapter 4-7: Forest Practices are followed in order to minimize hydrologic disturbance resulting from actions taken under this alternative. During road construction and reconstruction Planners and Operators must ensure that new/re-constructed roads meet the BMPs and standards for roads identified in CTC Chapter 4-7: Forest Practices, and CTC Chapter 4-9 Hydraulic Projects if doing any culvert/bridge work. By meeting these BMPs Planners and Operators would minimize the water quality, hydrologic process, and aquatic habitat degradation associated with roads as a result of the actions taken under this alternative. The transportation plan developed by the Inchelium Forest Roads Engineer incorporated input from the Environmental Trust Department regarding stream adjacent roads, new road locations, and culvert sizing and placement. The Forest Roads Engineer should continue to work with the Watershed Restoration Program to remove any unnecessary road construction, and determine where roads can be closed or decommissioned to reduce road density.

Road segment FID 5632, from the "inch_roads83" layer provided on 10/3/22, is located in the buffer of a stream and mapped wetland. This location was visited in the field, and erosion and water quality impacts were documented. The road to access blocks 123 and 169 would be located upslope of this segment, and segment 5632 would not be used.

Road segment FID 282 is stream and wetland adjacent, resulting in water related issues during the spring and fall. This road segment should only be used under frozen conditions to prevent additional issues.

Road segment FID 283 was visited in person, and determined to be detrimental to the point of removal from the transportation plan.

Road segments FID 188, 5687, and 5688 are located in a swale, and continue to have drainage issues. Drainage should be added, if use is necessary.

Road segment FID 5776 is stream adjacent. After field discussion, this segment was thrown out to prevent further water quality issues.

A number of crossings were field identified for replacement or improvement as well. The shapefile provided on 12/7/22 titled "ETD_Crossing_Replacements" identifies crossings that were discussed and agreed upon between ETD and Forestry during the field season. This shapefile may not encompass all crossings in the sale area. Any crossings added after the final Forestry shapefiles have been distributed would require review prior to implementation.

Several blocks were also identified for tethered logging as a harvest system. Tethered logging is not covered in Colville Tribal Code 4-7 Forest Practices; the Colville Business Council developed resolution 2022-695.nrc, stating

"That the attached regulations be approved and enforced regarding tether assisted logging. The Tribal Code does not include provisions related to tether assisted logging. Due to the risks associated with this activity, a formalized process is necessary. It is further recommended that the Natural Resources division work with the Code Reviser and the Office of the Reservation Attorney to update the Tribal Code to address tether assisted logging. This applies only to existing projects. No new projects proposing tethered logging should be approved before the code is updated."

In the case that CTC 4-7 is not updated prior to initiation of harvest in this sale, all blocks identified to be tether logged should be cable logged. The blocks identified for tethered logging system use were assessed using Web Soil Survey layers identifying soils vulnerable to compaction, erosion, and rutting. Additionally, soils with low saturated hydraulic conductivity were identified. 196.7 acres slated for tethered logging system use were identified as having severe risk of compaction, erosion, rutting, or some combination of the three.

If tethered logging is codified prior to the beginning of this sale, the following restrictions should be adhered to for harvest systems, to reduce damage to soils from compaction, as well as risks to aquatic resources from sediment mobilization and transportation to surface water.

Table 11. Potential blocks that would require seasonal restriction if tethered harvest system is used.

Comp	Block	Proposed Harvest System	ETD Mitigations
457	32	C/CA	Cable harvest only
457	716	C/CA	Cable harvest preferred
457	717	C/CA	Cable harvest preferred
457	718	C/CA	Cable harvest preferred
457	719	C/CA	Cable harvest preferred
457	720	C/CA	Cable harvest preferred
457	720	C/CA	Cable harvest preferred

Planners and Operators should develop practices that would effectively mitigate for the increased road surface erosion. Such practices should include a plan for permanent road decommissioning to meet the IRMP objectives and comply with CTC Forest Practices Code.

Upon completion of harvest or haul operations the following maintenance & monitoring actions shall be performed:

- Clear all drainage improvements of obstructions
- Stabilize or remove unstable material and forest debris with potential to block drainage improvements
- Repair or replace all damaged drainage improvements to fully restore their function
- Leave road surface in a condition that would prevent subsequent erosion, and keep runoff within natural drainages, by outsloping, removing berms from the outside of roads, providing drain dips, waterbars, rolling grade or other methods

4.4 Fish and Wildlife

Impacts to Fish and Wildlife Resources Alternative A: No Action

The "no action' alternative would not have adverse effects on fish and wildlife habitat in the project area. Leaving the timber intact would allow the area to follow natural succession patterns and would benefit wildlife species both terrestrial and aquatic. Fires and/or insect/disease die offs could affect the project area but the timing and severity of these disturbances is not known. Natural disturbances may even benefit fish and wildlife species by increasing habitat values. Overstocked and diseased stands may show a decline in value for some species of wildlife.

Impacts to Fish and Wildlife Resources Alternative B: Proposed Action

Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act

Within the Stranger Creek Project boundary there is no known bald eagle (*Haliaeetus leucocephalus)* or golden eagle (*Aquila chrysaetos)* territories. Per code 4-7-68 a minimum of two reserve trees per acre, well distributed, shall be left standing (CTCR 2006). Due to this being suitable habitat for eagle species it is requested that these reserve trees consist of the largest diameter and tallest living trees. If during harvest activities a bald or golden eagle nest is thought to have been found please contact the 3P Wildlife Biologist immediately.

Within the project area there is no known active great gray owl or Northern goshawk territories. If a great gray or goshawk nest is located, a no harvest activity buffer of 750 feet would be put into place, with a 0.5 mile seasonal (March 1- August 31) buffer to protect fledging activates. With the timbered habitat bordering open habitat there is the available structure to support both great gray owls and goshawks. If at any time during harvest activities goshawk or great gray owls are observed the 3P Wildlife Biologist should be contacted.

Other Fish and Wildlife Species

The Proposed Action would have impacts on fish and wildlife species and habitat within the project area. Removal of timber from 1,153 acres could have negative impacts on wildlife populations that use the habitat in the project area to meet their life requirements. Impacts to the habitat within the project area would include but are not limited to: an increase in soil compaction and ground disturbance, an increase and introduction of noxious weeds, the creation of large openings, a decrease in water quality, degradation of instream and riparian habitats, a reduction and loss of large diameter snags, future snags and large diameter downed wood, a deterioration or loss of mature and old growth coniferous forest, a loss of large diameter trees, a decline or loss of wildlife travel corridors, a decrease in hiding, escape and thermal cover, and a reduction in canopy cover. However when timber management occurs it opens the forest floors increasing sunlight and precipitation to grass, forb and shrub species amplifying forage opportunities for several wildlife species.

These changes to the habitat structures and functions within the project area would have effects on a variety of wildlife species. The implementation of this project would decrease effective wintering, calving and summer/fall range for resident and migrant big game species, reduce the amount of suitable habitat for pileated and white headed woodpeckers, reduce the quality and quantity of instream and riparian habitat and impact the ecological function of aspen stands wetlands, seeps, and springs.

Infrastructure (culverts) should allow for passage of fish, flow, sediment, and debris. Undersized culverts may lead to channel avulsion, head cutting, and/or failure of the structure completely. Constricting flow through undersized culverts may contribute to velocity barriers limiting

instream movement of resident fish at early or all life stages. The failure of inadequately sized structures typically occurs long after work has been completed.

Protection Measures

Wildlife buffers create travel corridors for wildlife, along with maintaining blocks of habitat designed as thermal cover. There are a total of five wildlife buffers, all of which act as travel corridors and help provide cover for larger open areas. The area of wildlife buffers roughly totals 27 acres (Appendix F).

In the Stranger Creek Project Area there is approximately 493 acres of blocks that are adjacent to streams; that is of the 41 blocks in the Stranger Creek Project Area, 18 (44%) contain or are adjacent to streams. These bodies of water include but are not limited to Stranger Creek, Sucker Creek, and all contributing streams in each watershed. Harvesting close to or near these bodies of water would allow for increased sedimentation, temperature, decreased supply of woody debris for invertebrates, an increase in turbidity, all of which would lead to a reduction in fish habitat as well as water quality. These streams and their associated riparian habitat have some of the highest fish and wildlife richness and diversity and are very susceptible to any change in the environment.

The proposed action of the Stranger Creek Project falls within only one of the Reservation WMUs which is the Upper Stranger Creek WMU. The CTCR IRMP states that total road density would be reduced to less than 4 mi/mi^2, with open road density to be reduced to less than 1.5 mi/ mi^2 wherever feasible across the Reservation. Road densities on the reservation are calculated using the WMU boundaries; Table 12 depicts the road density for the affected WMU's.

Table 12. Road Density by WMU.

WMU	Roads (mi)	WMU (ac)	WMU (mi^2)	Proposed New Rd (mi)	Post Sale Roads (mi)	Pre-Sale Road Density (mi/mi^2)	Post-Sale Road Density (mi/mi^2)
Upper Stranger Creek	83.9	10,551	16.49	**5.06**	88.96	5.08	**5.39**

Currently the Stranger Creek WMU exceeds the IRMP objective of 4.0 mi/mi^2 total road density with an average of 1.08 mi/mi^2 over the set goal. Alternative B proposes roughly 5 miles of new construction and 15 miles of reconstruction which would increase both open road and total road densities further exceeding the Tribes goal of 1.5 mi/mi^2 of open roads.

It is the suggestion of the Fish and Wildlife Department that unnecessary segments and select reconstructed roads should be closed to adhere to the IRMP goal of 4.0 mi/mi^2 total road for Upper Stranger Creek WMU along with 1.5 mi/mi^2 of open road densities.

The department is proposing 13 road closures by double tank trapping to eliminate vehicle use (Appendix F). Forest road systems fragment wildlife habitat, reduce available habitat and create barriers for population movement. New construction and reconstruction of roads also have the potential to affect the surrounding fish habitat and water quality/quantity.

Federally Threatened and Endangered Species

The BIA and CTCR Wildlife Biologist determined that the proposed actions and associated activities would have 'No Effect' to threatened or endangered species, or candidate or proposed species, or suitable or critical habitat within the action area. Documentation is found in Appendix B.

Mitigation for Fish and Wildlife, Alternative B: "Proposed Action"

Mitigating for the loss and reduction of habitat structures and functions discussed above would minimize the negative impacts to wildlife habitats and species in the Stranger Creek Project Area. The following mitigation efforts are requested by the Fish and Wildlife department for any alternative that is chosen and implemented:

- Fawning/calving habitat: all areas of deciduous trees within wet areas and draws should be protected from disturbances.
- All native fruit bearing shrub and tree species should be protected and retained.
- Multilayered cover should be left along all access roads that have high vehicular use.
- Minimize the amount of use on stream adjacent roads and prioritize them for permanent or seasonal closure.
- Leaving more than the required 2 snags per acre would help mitigate some of the losses of large woody debris and recruitment trees.
- Wildlife corridors should be setup to allow for natural movement between seasonal and daily habitats.
- Snags in harvest units would be retained in clumps with their associated understory vegetation intact to insure their retention after site preparation.
- Green leave trees would be identified and retained as future snags in all areas. The majority of large diameter trees should be left standing. Blocks that would be treated under the RRT prescription should have more than 2 trees per acre after the harvest.
- All large diameter woody debris should be left on the ground to insure habitat for a wide range of species.
- All wetlands should be protected with maximum RMZ lengths and should all be protected from equipment entry.
- Implementation of bank stabilization, sediment traps and road surface improvements to decrease risk of sediment delivery and runoff into surrounding watersheds.
- Areas where there is considerable soil disturbance should be planted to reduce encroachment and establishment of noxious weeds.
- If at any time during harvest a bald or golden eagle nest is found, cease work within .25 miles of nest and contact the 3P Wildlife Biologist; all timber harvest is prohibited within 660 feet of active bald eagle nests (Klock 2001).
- If at any time during harvest a Northern Goshawk or Great Gray nest and/or territory are thought to have been found, cease work within 750 feet and please contact the 3P Wildlife Biologist.
- Infrastructure (culverts/bridges) should allow for passage of all life stages of fish, and for water, sediment, and wood/debris during Q_{100} flow events.

4.5 Cultural Resources

Impacts to Cultural Resources Alternative A: No Action

Although there may be a number of direct and indirect effects to the Reservation's resources from the implementation of Alternative A, it is important to recognize that cultural resources are, for the most part, non-renewable resources. The 'No Action' alternative would have a number of various effects to the known cultural resources identified within the project area.

The historic exclusion of fire on the Reservation has resulted with an overabundance of vegetation. Although Alternative A would leave the timber intact and allow for natural succession patterns; overstocked and diseased stands have increased ladder fuels which must be addressed by current management practices.

Potential impacts of Alternative A include vegetation encroachment to sites which exhibit surface features. This encroachment may reduce visibility of the site, potentially affecting its integrity and increasing the likelihood of adverse effects to it from wildland or prescribed fire. Invasive non-native plant species within this area would likely perpetuate and increase, competing with native plant species of traditional and cultural significance. The 'No Action' alternative may also cause physical damage to sites from snags or trees falling upon them, dismantling, destroying or otherwise impacting surface features. Fallen trees may also expose buried subsurface cultural materials, which otherwise would have remained intact.

Impacts to Cultural Resources Alternative B: Proposed Action

There are currently seven known cultural resource sites recorded in the Stranger Creek Forestry Project Area. An official determination of National or Colville Register eligibility for these sites has not been made, but most of these sites appear to be eligible. Five sites are located within the APE of Alternative B; they have been documented as CCT-WA-FE-460, CCT-WA-FE-470, CCT-TCP-104, CCT-TCP-202 and 45FE476. The 'Proposed Action' would result in no adverse effects to these sites. These sites may be considered eligible for the National Register of Historic Places, as described in 36 CFR Part 60.4.

The Resource Archaeologist would brief the TSO and others working in the Stranger Creek Forestry Project area regarding the steps to be taken to identify and report cultural resources. If resources are found, the TSO shall insure that all work stops in the vicinity of the find, that steps are taken to protect the find, and that the Resource Archaeologist is called immediately. No work shall resume until the Tribal Historic Preservation Officer (THPO) has approved a management plan.

4.6 Range Management

Impacts to Range Resources Alternative A: No Action

This alternative would have no impact on the current ecological condition as no mechanical disturbance activity would happen. Although, no action would also not correct the identified forest health issues the project would address.

Impacts to Range Resources for Alternative B: Proposed Action

Forest understory recovery after logging activities is a resource concern. The area where the project blocks are located range from 19 to 21 inches of precipitation annually. This range of average annual precipitation would likely promote natural understory recovery in a reasonably short time depending on soil disturbance levels. This area is variable with respect to forest ecological sites. The grand fir/northern twinflower ecosite dominates in the southwestern blocks

while Douglas fir sites are more prevalent in the northeastern blocks. Pinegrass is the most common species found throughout the project area with bluebunch wheatgrass and Idaho fescue also occurring in a noticeable amount in the northeastern blocks. Columbia brome and blue wildrye are also listed in the plant species list throughout but in lesser amounts. Dominant brush species associated with the Douglas fir sites are snowberry and mallow ninebark both of which generally recover well after disturbance. Pinegrass being the grass plant being the most represented and being a highly resilient species would likely not need help recovering except in the most highly disturbed sites. Columbia brome generally occurs along with pinegrass and blue wildrye can be found in wetter sites. Depending on circumstances these associated grass species may need assistance while recovering becoming more competitive against invasive weeds. The differences in plant communities and their ecology would need to be considered if seeding for highly disturbed sites is desired. Landings, skid trails, roads, and pile burns can result in a high degree of soil disturbance which can create a competitive advantage for invasive plants over more desirable plants. This area having a good amount of precipitation should recover a suitable forest understory in a reasonable amount of time but if monitoring determines a need, inputs in the form of herbicide treatment and native plant seeding should be considered to assist in that recovery. Intermediate wheatgrass and Siberian wheatgrass should not be used as they are nonnative and highly competitive against native grass species. If something is needed to quickly provide ground cover, there are alternatives to consider. If the project manager determines a need for seeding or spraying activities the Land Operations department can offer suggestions for herbicide treatment and seed type if assistance is needed.

Invasive Plants

Logging and related activities can introduce new invasive species to a site via uncleaned equipment and soil disturbing activities or cause currently present invasive species to spread more rapidly. The surrounding project area contains the following weed species: diffuse and spotted knapweed, scotch thistle, dalmatian toadflax, yellow toadflax, sulfur cinquefoil, common St. Johnswort, hoary alyssum, rush skeletonweed, and likely others that haven't been recorded. Land Operations recommends the following: cleaning equipment prior to using on site, washing equipment in a centralized area, re-seeding heavily disturbed sites such as skid trails and stacking sites, the use of biological controls on large weed infestations and herbicides as needed primarily along roadsides. If borrow pits or fill material are used from offsite, it is recommended that these materials be weed free to reduce the spread of invasive species. The Land Operations Program recommends that loggers, Forestry and Land Operations/Range staff work together to reduce the amount of weed infestations and treat disturbed areas post harvests. Seeding is recommended in highly disturbed areas to reduce the amount of invasive species regrowth following road closures. Recommend use of an approved seed mix that would be highly competitive with currently present invasive species.

4.7 Cumulative Impacts

Cumulative impacts are addressed in the FEIS for the Colville Indian Reservation Integrated Resource Management Plan (Klock 2000). Activities in this area that can result in cumulative impacts include domestic cattle grazing, fire management activities, road construction and forest management activities. These activities combined could result in soil disturbance often associated with soil degradation and increased sediment delivery to surface waters. The vegetation removal can also decrease soil stability and lead to increased water temperatures. All of these impacts can impact resident fish and aquatic life. These activities could also result in

establishment of noxious weeds in the area, which can push out native species and decrease wildlife habitat quality.

5.0 List of Preparers

Name	Contributions
Levi Simmons	Forestry
Tyrone Rock	Soils
Urisha Marconi	Fuels/Fire Management
Elizabeth Odell	Fish and Wildlife
Dennis Moore	Fish and Wildlife
Kerry Wilson	Range/Noxious Weeds
Charlotte Axthelm	Hydrology
Stacy King	Hydrology
Guy Moura	History/Archaeology
Amanda Hoke	History/Archaeology
Chasity Swan	Editor

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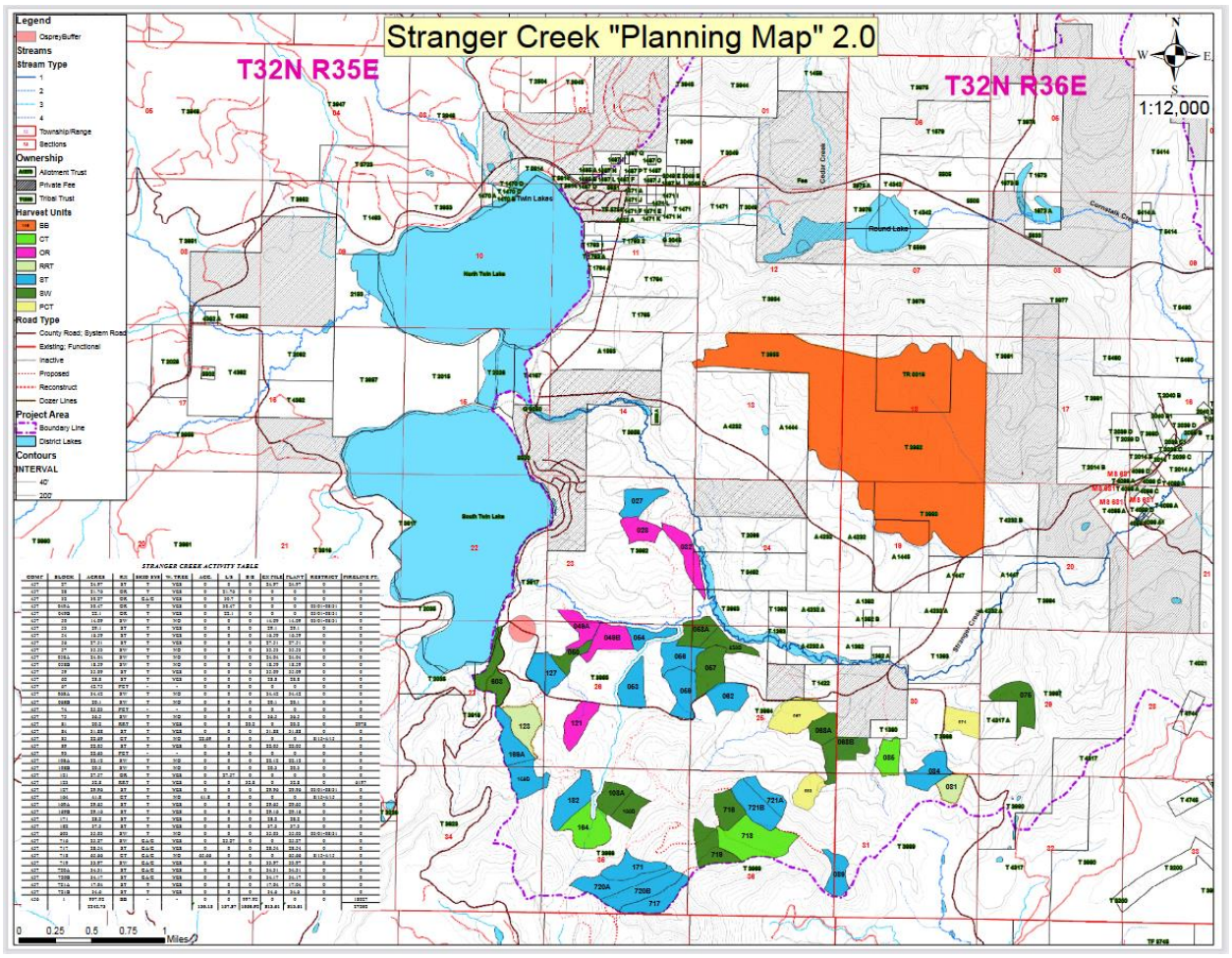
7.0 Appendices

7.1 Appendix A: Map and Activity Table

STRANGER CREEK ACTIVITY TABLE												
COMP	**BLOCK**	**ACRES**	**RX**	**SKID SYS**	**W. TREE**	**ACC.**	**L/S**	**B/B**	**EX PILE**	**PLANT**	**RESTRICT**	**FIRELINE FT.**
457	27	24.97	ST	T	YES	0	0	0	24.97	24.97	0	0
457	28	21.76	OR	T	YES	0	21.76	0	0	0	0	0
457	32	30.27	OR	CA/C	YES	0	29.47	0	0	0	0	0
457	049A	30.47	OR	T	YES	0	27.39	0	0	0	03/01-08/31	0
457	049B	22.1	OR	T	YES	0	18.17	0	0	0	03/01-08/31	0
457	50	14.09	SW	T	NO	0	0	0	19.36	19.36	03/01-08/31	0
457	53	29.1	ST	T	YES	0	0	0	36.2	36.2	0	0
457	54	16.59	ST	T	YES	0	0	0	33.4	33.4	0	0
457	56	27.51	ST	T	YES	0	0	0	26.3	26.3	0	0
457	57	35.53	SW	T	NO	0	0	0	35.53	35.53	0	0
457	058A	24.04	SW	T	NO	0	0	0	24.04	24.04	0	0
457	058B	18.59	SW	T	NO	0	0	0	18.59	18.59	0	0
457	59	35.09	ST	T	YES	0	0	0	35.15	35.15	0	0
457	62	28.8	ST	T	YES	0	0	0	28.8	28.8	0	0
457	67	42.75	PCT	-	-	0	0	0	0	0	0	0
457	068A	34.42	SW	T	NO	0	0	0	34.42	34.42	0	0
457	068B	20.1	SW	T	NO	0	0	0	20.1	20.1	0	0
457	74	25.23	PCT	-	-	0	0	0	0	0	0	0
457	75	36.5	SW	T	NO	0	0	0	40.5	40.5	0	0
457	81	20.2	RRT	T	YES	0	0	20.2	0	20.2	0	2978
457	84	31.88	ST	T	YES	0	0	0	31.88	31.88	0	0
457	85	22.69	CT	T	NO	22.69	0	0	0	0	8/15-4/15	0
457	89	22.05	ST	T	YES	0	0	0	19.4	19.4	0	0
457	93	22.63	PCT	-	-	0	0	0	0	0	0	0
457	108A	22.12	SW	T	NO	0	0	0	22.12	22.12	0	0
457	108B	20.3	SW	T	NO	0	0	0	20.3	20.3	0	0
457	121	27.57	OR	T	YES	0	27.57	0	0	0	0	0
457	123	32.8	RRT	T	YES	0	0	32.8	0	32.8	0	6197
457	127	29.96	ST	T	YES	0	0	0	29.96	29.96	03/01-08/31	0
457	164	41.8	CT	T	NO	43.82	0	0	0	0	8/15-4/15	0
457	169A	29.65	ST	T	YES	0	0	0	29.65	29.65	0	0
457	169B	29.16	ST	T	YES	0	0	0	29.16	29.16	0	0
457	171	28.2	ST	T	YES	0	0	0	28.2	28.2	0	0
457	182	37.3	ST	T	YES	0	0	0	40.2	40.2	0	0
457	603	35.03	SW	T	NO	0	0	0	28.71	28.71	03/01-08/31	0
457	716	25.27	SW	CA/C	YES	0	25.3	0	0	25.3	0	0
457	717	28.54	ST	CA/C	YES	0	0	27.6	0	27.6	0	0
457	718	65.66	CT	CA/C	NO	65.66	0	0	0	65.66	8/15-4/15	0
457	719	33.97	SW	CA/C	YES	0	0	0	33.97	33.97	0	0
457	720A	34.31	ST	CA/C	YES	0	0	34.27	0	34.27	0	0
457	720B	34.17	ST	CA/C	YES	0	0	33.53	0	33.53	0	0
457	721A	17.04	ST	T	YES	0	0	0	17.04	17.04	0	0
457	721B	34.6	ST	T	YES	0	0	0	34.6	34.6	0	0
456	1	997.92	BB	-	-	0	0	0	0	0	0	18027
		2242.73					**149.66**	**148.4**		**742.55**		**27202**


Stranger Creek "Planning Map" 2.0
T32N R35E
T32N R36E
1:12,000
Legend
OspreyBuffer
Streams
Stream Type
Township/Range
Sections
Ownership
Allotment Trust
Private Fee
Tribal Trust
Harvest Units
BB
CT
OR
RRT
ST
SW
PCT
Road Type
County Road; System Road
Existing: Functional
Inactive
Proposed
Reconstruct
Dozer Lines
Project Area
Boundary Line
District Lakes
Contours
INTERVAL
40'
200'
STRANGER CREEK ACTIVITY TABLE
North Twin Lake
South Twin Lake
Round Lake
Cedar Creek
Stranger Creek
0 0.25 0.5 0.75 1 Miles

7.2 Appendix B: Consultation

REQUEST FOR COMMENTS FROM THE
CONFEDERATED TRIBES OF THE COLVILLE RESERVATION
TRIBAL HISTORIC PRESERVATION OFFICER (THPO)
ON
DETERMINATION OF EFFECT

Project Name: 22pp42 Stranger Creek Forest Management Project.

Proponent(s): Inchelium Forestry District, Colville Confederated Tribes

Legal Description: T 33N, R 35E, Sec(s) 25, 26, 35 and 36;
T 33N, R 36E, Sec(s) 31 and 32;
T 32N, R 35E, Sec(s). 1, 2, 11-15, 22-27, and 34-36;
T 32N, R 36E, Sec(s). 4-9, 15-22, and 27-32

The sections of 36 CFR 800 that address effects to historic properties have been applied to the proposed undertaking. This has been done in order to determine if any effects might occur to properties eligible for, or listed on, the National Register of Historic Places or the Colville Register of Historic Places. I have determined that the proposed undertaking will have:

____ **No effect**, the undertaking will not effect historic properties

XX **No adverse effect**, the undertaking will affect one or more historic properties, but the effect will not be harmful

____ **Adverse effect**, the undertaking will harm one or more historic properties

Signed: Chasity Swan (responsible agency official) Title: IRMP Coordinator Date: 11/23/2022

Provide documentation to support the Determination of Effect for Tribal Historic Preservation Officer review and comment.

FOR TRIBAL HISTORIC PRESERVATION OFFICER USE ONLY

I concur with the determination of the Responsible Agency Official. 22pp42 Stranger Creek Forest Management Project

Comments/Conditions of Approval:

Implementation of the project is not expected to result in any effects to cultural resources. Mitigation efforts will be implemented in the event of an inadvertent discovery of cultural resources.

Signed: [signature] for Guy Moura (Tribal Historic Preservation Officer) Date: 11/23/2022

Colville Confederated Tribes
Fish and Wildlife Department
M E M O R A N D U M

11-17-22

To: Chasity Swan
IRMP Coordinator

From: Elizabeth Odell
Assistant District Wildlife Biologist

Subject: Stranger Creek Project Listed Species Memo

This memo is being submitted as a requirement of the U.S. Fish and Wildlife Service (Service) section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

The following list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

- Canada Lynx *Lynx Canadensis*, Threatened
- Grizzly Bear Ursus arctos horribilis, Threateneed
- North American Wolverine Gulo gulo luscus, proposed Threatened
- Yellow-billed Cuckoo *Coccyzus americanus,* Threatened

The above species are not found within the project boundary and the Stranger Creek Project is not expected to have adverse effects on any of them or their habitat.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
Phone: (360) 753-9440 Fax: (360) 753-9405

In Reply Refer To:
Project Code: 2022-0062214
Project Name: Stranger Creek

November 15, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
(360) 753-9440

Project Summary

Project Code: 2022-0062214
Project Name: Stranger Creek
Project Type: Timber Sale
Project Description: Stranger Creek Timber Sale
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@48.26399085,-118.32061053043327,14z

Counties: Ferry County, Washington

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Fishes

NAME	STATUS
Bull Trout *Salvelinus confluentus* Population: U.S.A., conterminous, lower 48 states There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8212	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency: Confederated Tribes of the Colville Reservation
Name: Elizabeth Odell
Address: PO BOX 150
City: Nespelem
State: WA
Zip: 99155
Email elizabeth.odell.fnw@colvilletribes.com
Phone: 5097227660

7.3 Appendix C: Preliminary Transportation Analysis

The Confederated Tribes of the Colville Reservation
Office of Environmental Trust
Watershed Restoration Program
P.O. Box 150, Nespelem, WA 99155 (509) 634-2261

Tuesday, April 05, 2022

To: **Levi Simmons, Inchelium Forestry Forester**
Lance Lelone, Inchelium Forestry Forester
Dusty Ensminger, Inchelium Forestry Roads Engineer
Rob Mallery, Inchelium Forestry District Officer

cc: **Phil Wapato, Assistant Forest Manager**
Darnell Sam, NPS Management Coordinator
Joseph Ezell, Restoration Program Manager
Stacy King, Wetland Specialist
Dennis Moore, Resident Fish Biologist
Elizabeth Odell, Assistant District Biologist
Chasity Swan, IRMP Coordinator

From: **Charlotte Axthelm, Watershed Analyst**

Subject: **Stranger Creek Timber Sale 2023 Preliminary Transportation Memo**

Levi, Lance, Dusty, and Rob
I have attached a map showing roads in the Stranger Creek Timber Sale project area that have the potential to impact water quality, stream habitat and riparian management zones. This identification should be considered **preliminary** and used to guide the transportation plan included in the Stranger Creek Timber Sale PPF.

Important features to note in regards to the Stranger Creek transportation plan include the following:

- Any current or proposed stream crossings will need to be reviewed by CCT Fish & Wildlife and CCT Environmental Trust to ensure they are appropriately sized and installed for fish/aquatic organism passage and site specific hydrologic flows.
- Cornstalk Creek has been identified as potentially requiring fish passage, but proposed locations will need to be field verified. Culverts proposed on Stranger Creek should include fish passage.
- There are road segments that need to be field assessed for watershed impact. The attached map identifies existing road segments in Riparian Management Zones (RMZs), wetlands, floodplains, or swales, but is not necessarily a comprehensive assessment of every road with the potential to detrimentally affect water or soil resources. Roads within the project area intended for use should still be assessed on a case-by-case basis.

Additionally:

- The Forest Practices Code and Hydraulic Practices Code—along with specific site conditions—will determine final usage of road segments and stream crossings or treatments necessary to mitigate impacts to Tribal resources.
- This preliminary identification includes the entire sale area and does not account for specific blocks that may be used as part of the sale.
- Determine which crossings and road segments overlap with the sale and proposed haul routes and identify what steps will be taken to address potential impacts to Tribal resources from those crossings and segments.
- As the planning process continues, it is possible that blocks and/or treatments will change and these road segments and stream crossings will need to be reviewed to ensure resource protection.

The Watershed Restoration Program supports timber management and a road network that allows access for forest practices, wildfire fighting, ranching and membership hunting, fishing, gathering, firewood cutting, etc. Each timber sale allows us the opportunity to improve and maintain roads that are needed for management and membership while addressing those that are impacting Tribal waters and other resources. Let me know if you have any questions regarding this preliminary identification.

Thanks,
Charlotte

Shapefiles are for entire timber sale area. Please refer to the WRKNG_ID in the attribute table for each road segment.

Roads—1 shapefile

These are a combination of the Duck Creek data and Forestry's LiDAR roads data. They have been updated with any info from ETD's projects and/or inventories.

These roads **have the potential** to impact water quality and quantity. Forestry will need to ensure they meet standards for continued use or reconstruction.

Identify which road segments in attached shapefiles overlap with Forestry's planned transportation network.

1) Stranger2023Review

These roads have the potential to impact water quality if reopen or reconstructed. Forestry will need to field verify to ensure that Forest Practice Codes are met.

a. Possible mitigation treatments:
    i. Abandon road
    ii. Realign road
    iii. Erosion control
        1. Drivable dips, water bars, out-sloping, berm removal, ditching, cross drains, rock-armoring, gravel surfacing, magnesium chloride, realignment, post-sale closure, etc.

7.4 Appendix D: Army Corp of Engineers BMPs

Road Exemption Summary

FARM, FOREST, OR TEMPORARY MINING ROADS

Pursuant to Section 404 of the Clean Water Act (33 USC 1344) and Federal Regulations (33 CFR 323.4), certain discharges have been exempted from requiring a Section 404 permit. Included in this exemption is construction or maintenance of farm roads, forest roads, or temporary roads for moving mining equipment. To meet this exemption, such roads must be constructed and maintained in accordance with the best management practices (BMPs) to assure that flow and circulation patterns and chemical and biological characteristics of waters of the United States are not impaired, that the reach of the waters of the United States is not reduced, and that any adverse effect on the aquatic environment will be otherwise minimized.

The following best management practices must be followed in order for the activity to be exempted from requiring a permit:

(1) Permanent roads (for farming or forestry activities), temporary access roads (for mining, forestry, or farm purposes) and skid trails (for logging) in waters of the U.S. shall be held to the minimum feasible number, width, and total length consistent with the purpose of specific farming, silvicultural or mining operations, and local topographic and climatic conditions.

(2) All roads, temporary or permanent, shall be located sufficiently far from streams or other water bodies (except for portions of such roads which must cross water bodies) to minimize discharges of dredged or fill material into waters of the U.S.

(3) The fill shall be bridged, culverted, or otherwise designed to prevent the restriction of expected flood flows.

(4) The road fill shall be properly stabilized and maintained during and following construction to prevent erosion.

(5) Discharges of dredged or fill material into waters of the United States to construct a road fill shall be made in a manner that minimizes the encroachment of trucks, tractors, bulldozers, or other heavy equipment within waters of the U.S. (including adjacent wetlands) that lie outside the lateral boundaries of the fill itself.

(6) In designing, constructing, and maintaining roads, vegetative disturbance in the waters of the U.S. shall be kept to a minimum.

(7) The design, construction, and maintenance of the road crossing shall not disrupt the migration or other movement of those species of aquatic life inhabiting the water body.

(8) Borrow material shall be taken from upland sources whenever feasible.

(9) The discharge shall not take, or jeopardize the continued existence of, a threatened or endangered species as defined under the Endangered Species Act, or adversely modify or destroy the critical habitat of such species.

(10) Discharges into breeding and nesting areas for migratory waterfowl, spawning areas, and wetlands shall be avoided if practical alternatives exist.

(11) The discharge shall not be located in the proximity of a public water supply intake.

(12) The discharge shall not occur in areas of concentrated shellfish production.

(13) The discharge shall not occur in a component of the National Wild and Scenic River System.

(14) The discharge of material shall consist of suitable material free from toxic pollutants in toxic amounts.

(15) All temporary fills shall be removed in their entirety and the area restored to its original elevation.

A Section 404 permit is required if either of the following occurs:
(1) Any discharge of dredged or fill material resulting from the above activities which contains any toxic pollutant listed under Section 307 of the Clean Water Act shall be subject to any applicable toxic effluent standard or prohibition, and shall require a permit.

(2) Any discharge of dredged or fill material into waters of the United States incidental to the above activities must have a permit if it is part of an activity whose purpose is to convert an area of the waters of the United States into a use to which it was not previously subject, where the flow or circulation of waters of the United States may be impaired or the reach of such waters reduced. Where the proposed discharge will result in significant discernible alterations to flow or circulation, the presumption is that flow or circulation may be impaired by such alteration. For example, a permit will be required for the conversion of a wetland from silvicultural to agricultural use when there is a discharge of dredged or fill material into waters of the United States in conjunction with construction of dikes, drainage ditches, or other works or structures used to effect such conversion. A discharge which elevates the bottom of waters of the United States without converting it to dry land does not thereby reduce the reach of, but may alter the flow or circulation of, waters of the United States.

If the proposed discharge satisfies all of the above restrictions and the best management practices, it is automatically exempted and no further permit action from the Corps of Engineers is required. If any of the restrictions of this exemption will not be complied with, a permit is required and should be requested using ENG Form 4345 (Application for a Department of the Army permit). A nationwide permit authorized by the Clean Water Act may be available for the proposed work. State or local approval of the work may also be required.

7.5 Appendix F: Fish and Wildlife Proposed Wildlife Buffers and Road Closures