



Wildlife Program: 600 Capitol Way N, Olympia, Washington 98501-1091 - (360) 902-2534

## ENVIRONMENTAL CHECKLIST

(WAC 197-11-960)

### A. BACKGROUND

#### 1. Name of proposed project, if applicable:

Methow Forest Restoration Project – Bear Creek Block

#### 2. Name of Applicant:

Washington Department of Fish and Wildlife (WDFW) Methow Wildlife Area

#### 3. Address and phone number of applicant and contact person:

Washington Department of Fish and Wildlife  
350 Bear Creek Rd.  
Winthrop, WA 98862  
Contact: Jamie Bass  
Ph # (509-996-2559)

#### 4. Date checklist prepared: September 30, 2015

#### 5. Agency requesting checklist: *Washington Department of Fish and Wildlife*

#### 6. Proposed timing or schedule (including phasing, if applicable):

Commercial Thinning:

- Contract bid date: Proposed October 31, 2015
- Commence road work and thinning operations by November 2015, completed by April 2017
- Follow up with prescription fire within 1-3 years of thinning operation completion

Non-Commercial Thinning:

- Ongoing from Spring 2016-completion, silvicultural thinning / fuels manipulation
- Follow up with prescription fire and pile burning (as needed)

#### 7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

Yes, the following:

- A. Site Cleanup: On steeper sites, unreachable by thinning equipment, trees surviving prescription fire may be felled and pile burned later after mortality rate is assessed to reach target densities.
- B. Continued prescription fire to maintain fire as part of ecosystem. Return interval of prescribed fire will vary from site to site.
- C. Regeneration method (WDNR requirement): Natural Regeneration
- D. Re-close or abandon all temporarily re-opened roads after project completion (including prescribed burns), remove any temporary stream crossings.

#### 8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal:

1. WDFW Priority Species and Habitat Management Recommendations.
2. Department of Natural Resources (DNR) TRAX (Threatened, Rare and Endangered Species).
3. WDFW Heritage Database.
4. GIS generated WAU maps showing: Soil type, erosion potential, soil stability, and hydrologic maturity from NRCS Okanogan County Soil Survey.
5. Prescription Fire fuel measurements, assessment for completion of burn plans at time of prescribed burning.
6. WDNR Site Class Assessment.
7. SWIFD database review on presence of fish species in streams in project area.
8. LANDFIRE Database assessment to assess current forest habitat conditions.
9. Silvicultural Assessment of Methow Wildlife Area completed by Stewardship Forestry LLC.
10. WADNR FPAMT depicting slope stability, streams, site class, etc. for Forest Practices purposes.

**9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.**

None

**10. List any government approvals or permits that will be needed for your proposal, if known.**

- A. DNR Forest Practice Application (FPA).
- B. Road Maintenance and Abandonment Plan (RMAP) for Methow Wildlife Area.
- C. USDI-USFWS/USDC-NOAA Section 7 Informal Consultation.
- D. State and tribal cultural/archaeological clearance.
- E. WDFW Commission Approval for commercial thinning.

**11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page.**

The "Bear Creek Block" of the Methow Forest Rehabilitation Project is located on the Methow Wildlife Area (MWLA) covering approx. 850 assessed acres of forested habitat in the lowlands in the transition between shrub-steppe and forest ecosystem types.

These areas are a high priority for forest health management on WDFW lands due to high-risk of stand replacing wildfire, insect and pathogen outbreaks, and current connected landscape of overstocked stands. Stand-replacing wildfire has been present in and around the project area within the last 10+ years. Reducing and/or restructuring available fuels, tree density, and canopy cover in these stands will decrease the risk of stand-replacing wildfire, and improve forest ecosystem resilience to disturbance. Where feasible, the project will use thinning prescriptions based on the ecological site potential, historic reconstruction surveys, and priority to reduce negative ecosystem impacts from severe wildfire, disease and insect damage, and improve wildlife habitat. All areas, regardless of need for silvicultural treatment, will followed with prescribed fire that will include objectives to reduce logging slash, reduce fuels accumulated over time, and increase regeneration of fire-dependent plant species.

Sampling indicates that 15-42% of trees in most stands are dead or under severe stress from pine beetle or dwarf mistletoe infection, with remaining trees (including relic legacy trees) at risk of further beetle infestation, stand-replacing wildfire, or resource competition. Stand reconstruction sampling on several sites on the MWLA indicate that historic ponderosa pine density in the project area was approximately 11- 30 trees per acre or 35-50 ft<sup>2</sup>/ac basal area (see Table 1). This proposal will use commercial and non-commercial thinning to reduce the density of overstocked, dry conifer stands from the current 200-1,500 trees per acre to 25-50 trees per acre, or 40-60 ft<sup>2</sup>/ac basal area. This leave-tree density assumes a 10-30% post-harvest mortality due to mechanical damage, insects, pathogens, root rot, and prescribed fire that will ultimately leave 35-50 ft<sup>2</sup>/ac basal area. Presently there are essentially two cohorts of conifer trees; pre-fire suppression (> 125 yrs.,

i.e. legacy trees) and post-fire suppression/ post clear-cut logging (<=70-100 yrs). Efforts will be made to try to retain 100% of legacy trees and snags, and enough of the largest of the 70+ year cohort to meet target density in a spatially heterogeneous stand structure resembling historic fire-maintained stocking patterns.

Plot	Acres	Basal Area (ft <sup>2</sup> /ac)	Tree per Acre	Avg. Diameter at BH	Quadratic Mean Diameter	Stand Density Index
Bear Creek	7.8	48	26	17.3	18.4	74
Cougar Creek	7.8	35	16	18.2	19.9	52
Cougar Flat	7.5	37	13	21.2	23.2	53

**Table 1: Sample of historic reconstruction plots established in MWA Forest Rehabilitation units in 2013**

This portion of the Methow Wildlife Area is characterized by flat to rolling benches changing to steep mountain foothills to the east. The project areas lie along the forest edge transition to shrub-steppe. Elevation ranges from 2,300 to 3,400 feet. Precipitation, primarily as snow, ranges from 14 inches to 18 inches. The predominant timber species is ponderosa pine, though mixed conifer (Douglas-fir and ponderosa pine), sites occur at more moist higher elevation sites. In commercial thinning sites, the steepest slopes (approximately 5% of the units) are between 20-35% steep with average slope < 10%.

Prescribed fire will be utilized to re-introduce crucial disturbance to the fire-dependent ecosystem, reduce accumulated natural and activity fuel loading, and minimize stand replacing fire risk.

**Project Objectives:**

**Reduce conifer density to within the historic range of variability to:**

- Improve forest health
- Create resilience to disturbance (wildfire, climate change, epidemic insect and disease, etc.)
- Increase light availability to understory plant species to improve regeneration
- Reduce competition for resources (i.e. water, minerals, nutrients and sunlight) to legacy and retention trees
- Release aspen clones from conifer competition to reestablish growing conditions
- Increase winter snow retention by reducing canopy interference
- Provide sustainable and resilient forested habitat for the wildlife on the MWLA
- Prepare the rehabilitation units for prescribed fire

**Reintroduce fire disturbance via prescribed fire treatments to the ecosystem to:**

- Encourage understory growth of fire-responsive species to improve winter range habitat for mule deer & other wildlife
- Manage forest floor fuels accumulations from 100+ years of fire suppression, logging, and hand thinning operations
- Reduce risk for fire outside the ecosystem’s historic range of variability by reducing stand density, ladder fuels and surface fuels in both the natural and activity fuel components.

**12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.**

The proposal lies within portions of Township 35 North, Range 22 East, Sections 30, 31, 32; Willamette Meridian. The sale area is approximately 3 miles east of Winthrop on WDFW Methow Wildlife Area in Okanogan County.  
(see maps attached)

**B. Environmental Elements**

**1. Earth**

- a. **General description of the site (check one): Flat, X rolling, hilly, steep slopes, mountainous, other\_\_\_\_\_.**

This portion of the Methow Wildlife Area is characterized by flat to rolling benches changing to steep mountain foothills to the east. The project area lies along the forest edge transition to shrub-steppe. Elevation ranges from 2,300 feet to 3,500 feet. Precipitation ranges from 14" to 18" with most falling as snow. The proposed commercial activities are located primarily on the flat to rolling benches.

- b. **What is the steepest slope on the site (approximate percent slope)?**

Commercial Thinning Area: Ground equipment is limited to operating on <35% slopes, with less 5% of the commercial operations area being greater than 35% slope.

Total Project Area: vertical rock cliffs

- c. **What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.**

According to the USDA Soil Survey of Okanogan County the following soils comprise approximately 80% of the project area:

- Kartar ashy sandy loam (20%)
- Newbon gravelly loam (27%)
- Peka-Swakane-Rock Outcrop complex (11%)
- Wapal Stony ashy loam (13%)
- Swakane-Rock outcrop complex (8%)

- d. **Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.**

There is no history of unstable soils in the commercial thinning areas, and aside from one event, the entire project area. The one event refers to the "Pearrygin Creek Washout", which was a mass wasting event in 2011 following the Pearrygin Creek Fire and Tripod Complex (fire extents cover large portion of watershed for Pearrygin Creek) where the mouth of Pearrygin Creek (USFS, not in project area) collapsed and flooded Pearrygin Creek to flood over several acres on the Methow Wildlife Area. No activity except maintaining fire disturbance via prescribed fire treatments is planned for the area in and around Pearrygin Creek.

- e. **Describe the purpose, type and approximate quantities of any filling or grading proposed. Indicate source of fill.**

Approx. 1000 feet of road will be re-graded to improve road bed and drainage. No filling is required.

- f. **Could erosion occur as a result of clearing, construction or use? If so generally describe.**

No erosion should be created as a result of project work. Roads used in the project will be maintained and improved (culvert replacement, water bars, etc.) to reduce erosion. Soil disturbance caused by heavy equipment use will be reseeded with native seed mixes following operations to stabilize soil.

- g. **About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?**

None

- h. **Proposed measures to reduce or control erosion, or other impacts to the earth, if any:**

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Disturbed soil will be seeded with native species to bring back vegetation quickly and prevent invasion of noxious weeds. Culverts in need of replacement will be replaced, drivable water bars will be installed as needed to direct flow to open forest floor. Following project completion abandoned roads will be closed by gates, water bars, boulders, etc. to prevent further vehicle usage.

## 2. Air

- a **What type of emissions to the air would result from the proposal (i.e., dust automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.**

This proposal will involve vehicle emissions logging, yarding and hauling equipment. There should be no significant impact to air quality from logging activities. All prescribed burning will adhere to the State of WA's Smoke Management Implementation Plan.

- b. **Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.**

None known.

- c. **Proposed measures to reduce or control emissions or other impacts to air, if any:**

Insure equipment operators have safety mufflers for emission control. When necessary, require use of vegetable oil in the hydraulic systems to reduce impacts of blown hoses or oil spill.

All burning of forest residues will adhere to Washington State Smoke Management Implementation Plan through the burn permit system.

## 3. WATER

### a. Surface

- 1) **Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes ponds or wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.**

WDNR forest practice base maps indicate 2 Type F streams, Bear and Pearrygin Creeks, 1 unnamed type Np (non-fish perennial) creek, 2 Ns streams (non-fish seasonal) and one 0.32 acre Type B wetland. In addition, the project area has several unconnected seasonal creeks and seeps. (see maps)

- 2) **Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.**  
(see maps and road plan attached)

For Commercial thinning, Riparian Management Zones (RMZs) and Wetland Management Zones (WMZs) as designated by Washington Department of Natural Resources (WADNR) Forest Practices will be managed during the commercial thinning according to Forest Practices Rules. This includes a 100 ft. no-entry, no-harvest buffer on Fish-bearing streams (based on site index), and 50ft. on Non-fish bearing perennial streams based on the site index. Non-fish seasonal streams have a 30 foot equipment limitation buffer. No wetlands are currently WADNR designated within the commercial thinning units.

Areas set aside from commercial thinning in RMZ or WMZs will be treated following commercial thinning to release the riparian areas from conifer encroachment. Due to dense conifer canopy, desirable understory and hardwood species: aspen, cottonwood, service berry, rose, etc. that provide riparian functions, i.e., infiltration, shoreline stability, nutrient recruitment to the stream/wetland, wood recruitment and shade, and shore habitat for streams and wetlands are currently impacted. Prior to or following prescribed fire, select hand-felling may be used to thin from below to reduce competition between conifers and hardwoods. Treatments will be

staggered spatially and temporarily to allow riparian vegetation regeneration (mitigate loss in shade) and be low impact to wildlife. Piling and burning may be utilized during hand-felling to achieve acceptable levels of fuel density prior to or following prescribed fire.

- 3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

None

- 4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No

- 5) Does the proposal lie within a 100-year floodplain?  YES.  NO.  
If so, note location on the site plan.

- 6) Does the proposal involve any discharges of waste material to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No

### 3. WATER

#### b. Ground

- 1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description purpose, and approximate quantities, if known.

No water withdrawals will occur as a result of this project

- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Not applicable

#### c. Water Runoff (including storm water):

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (including quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Spring runoff from snow melt, and rain the rest of the year will be channeled through culverts, cross drains. Runoff intercepted by roads and ditches will be diverted to the undisturbed forest floor, where possible. As there will be no new roads constructed during this project there are no anticipated changes from current conditions.

- 2) Could waste materials enter ground or surface waters? If so, generally describe.

Only from fuel or oil spills associated with equipment operations. Harvesting Contracts will require oil changes and repair work to have catch basin under equipment and to notify sale administrator of any spills.

**d. Proposed measures to reduce or control surface, ground and runoff water impacts, if any:**

Activities associated with this proposal will meet or exceed Forest Practice rules and regulations. Maintain drainage structures during operations, construct erosion bars, re-vegetate with native seed, and hire responsible contractors. When necessary, require the contractors to use vegetable oil in the hydraulic systems to reduce impacts to soil and water.

**4. PLANTS**

**a. Check or circle types of vegetation found on the site:**

deciduous tree: , black cottonwood and quaking aspen, other

evergreen tree: Doug fir, Ponderosa Pine

shrubs: ceanothus, snowberry, oceanspray, wild rose, willow, elderberry, serviceberry

grass: bluebunch wheatgrass, Idaho fescue, Pinegrass

pasture

crop or grain food

wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other

water plants: waterlily, eelgrass, milfoil, other

other types of vegetation

**b. What kind and amount of vegetation will be removed or altered?**

Douglas fir and Ponderosa Pine will be thinned to variable density spacing prescriptions (leaving from 25 to 50 trees per acre). This will reopen the stand. Understory shrubs may be disturbed during operations, but re-opening forest canopy will provide for extensive understory resources. Prescribed fire will also likely burn grass, shrubs, and a portion of deciduous trees. This ecosystem is dependent on fire-disturbance however and will result in a needed regrowth and renewal of understory vegetation to improve wildlife habitat. Any vegetation alteration is intended as part of habitat restoration efforts.

**c. List threatened and endangered species [of plants] known to be on or near the site.**

WDFW contracted a rare plant survey of the project area in 2006. No species of concern were found.

**d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:**

Reseeding of the area with native vegetation. The project proposal was planned to increase native, fire dependent species key to mule deer winter range and blue grouse nesting/brood rearing.

Seed species used to rehab disturbed areas on the Methow WLA include:

Common name	Latin name
Bluebunch wheatgrass	<i>Psuedoroegneria spicata</i>
Sandberg bluegrass	<i>Poa secunda</i>
Idaho fescue	<i>Festuca idahoensis</i>

Prairie junegrass	<i>Koeleria macrantha</i>
Bottlebrush squirreltail	<i>Elymus elymoides</i>
Sand dropseed	<i>Sporobolus cryptandrus</i>
Blue wildrye	<i>Elymus glaucus</i>
Snow buckwheat	<i>Erigeron niveum</i>
Antelope bitterbrush	<i>Purshia tridentata</i>

**5. ANIMALS**

a. Place an x before any birds or animals which have been observed on or near the site or are known to be on or near the site:

**Birds: X northern goshawk, heron, X bald and golden eagle, X songbirds, other: x Ruffed and blue grouse, x Vaux's swift, x prairie falcon .**

**Mammals: X deer, x bear, elk, beaver, x cougar, x coyote, x bobcat.**

**Fish: bass, salmon, x rainbow and cutthroat trout, herring, shellfish, other: \_\_\_\_\_.**

List any threatened or endangered species known to be on or near the site.

c. Is the site part of a migration route? If so, explain.

Yes, the general area is used as mule deer migration route and winter range. This vegetation manipulation proposal is to increase the winter browse for mule deer, thus would increase the area's carrying capacity and importance as a wintering area.

d. Proposed measures to preserve and enhance wildlife, if any:

The primary objective of the project is to reduce fire hazard and fuel buildup with a secondary goal to enhance reproduction and increase vigor of fire dependent species like ceanothus, serviceberry, elderberry, willow, aspen, bitterbrush and snowberry for mule deer winter forage. Snags will be retained as much as possible for cavity nesters. Cull logs will be left in the woods for amphibians, reptiles and small mammals. Prior to the thinning operation, leave trees will be marked and any nesting platforms, cavity nests, or special areas used by wildlife will be protected (bear dens, rub trees, etc.).

The prescriptions focus on maintaining canopy connectivity, include ecological skips, and focus on creating high quality shade habitat for riparian areas and according to WDFW PHS recommendations.

**6. ENERGY AND NATURAL RESOURCES**

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Fuels to operate equipment for harvesting, loading and hauling timber, any related road work, and vehicles and equipment needed for prescribed fire and fuels treatments.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No

**c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:**

Does not apply.

## **7. ENVIRONMENTAL HEALTH**

**a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill or hazardous waste that could occur as a result of this proposal.**

There could be fuel spills when refueling equipment or oil spills while performing equipment maintenance. There is always the risk of fire from equipment operation in the woods. There will be a prescribed burn of the slash produced. Precautions will be taken to consider soil moisture, wind, weather forecasts etc.

Smoke from prescribed burns will be managed in accordance with the Washington State Smoke Implementation Plan through the Washington DNR burn permit process.

### **1) Describe special emergency services that might be required.**

The contractor must maintain firefighting equipment on the job and be in compliance with WDNR fire IFPL restrictions and required precautions.

Washington State Department of Ecology and WDFW will be notified if any spills occur.

All fire protection and suppression duties are the responsibility of Washington State DNR.

### **2) Proposed measures to reduce or control environmental health hazards, if any:**

All equipment will have spark arresters on mufflers. Catch basins under equipment when fueling or doing maintenance.

## **b. Noise**

### **1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?**

Minimal recreational traffic.

### **2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.**

During thinning activities, there will be some noise associated with chainsaws, skidder, loader and trucks. Typically these would be daylight only and weather dependent. Heavy equipment noise can easily exceed 100 decibels and operators wear hearing protection. Commercial noise would only occur during the several months of thinning until completion, short term. Sites are several miles from any private land/residence, and only log and crew trucks transporting to/from site may cause noise near residences during work.

### **3) Proposed measures to reduce or control noise impacts, if any:**

Maintain mufflers on equipment. Ear protection is recommended.

## **8. LAND AND SHORELINE USE**

**a. What is the current use of the site and adjacent properties?**

Forest management, wildlife recreation activities, grazing permits.

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**b. Has the site been used for agriculture? If so describe?**

Livestock grazing, grain farming (pre-1950)

**c. Describe any structures on the site.**

There are developed campgrounds adjacent to the project area.

**d. Will any structures be demolished? If so what?**

No.

**e. What is the current zoning classification of the site?**

Forest land

**f. What is the current comprehensive plan designation of the site?**

Maintain as forest land with emphasis on managing habitat for wildlife and maintain existing grazing leases.

**g. If applicable, what is the current shoreline master program designation of the site?**

Not applicable.

**h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.**

WDFW considers the riparian and wetland areas as sensitive, hence no-entry buffers for harvesting equipment

**i. Approximately how many people would reside or work in the completed project? None**

**j. Approximately how many people would the completed project displace? None**

**k. Proposed measures to avoid or reduce displacement impacts, if any:**

Does not apply

**l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:**

Part of Methow Wildlife Area Plan.

**9. HOUSING**

**a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.**

None

**b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.**

None

**c. Proposed measures to reduce or control housing impacts, if any:**

Does not apply

## 10. AESTHETICS

**a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?**

Does not apply

**b. What views in the immediate vicinity would be altered or obstructed?**

With the reduced density of trees, the sight distances will increase resulting in more area being viewable from a single location.

**c. Proposed measures to reduce or control aesthetic impacts, if any:**

Management prescriptions include leaving all snags and retaining all large diameter Ponderosa pine and Douglas fir which would make good wildlife trees. Disturbed areas (if any are created) will be seeded after the harvest/prescribed burn is complete.

## 11. LIGHT AND GLARE

**a. What type of light or glare will the proposal produce? What time of day would it mainly occur?**

Possibly light or glare from flames during prescribed fire and fuel treatments. Timing will be dependent on weather and ground conditions.

**b. Could light or glare from the finished project be a safety hazard or interfere with views?**

No

**c. What existing off-site sources of light or glare may affect your proposal?**

Does not apply.

**d. Proposed measures to reduce or control light and glare impacts, if any:**

None

## 12. RECREATION

**a. What designated and informal recreational opportunities are in the immediate vicinity?**

Hunting, fishing, camping, hiking, viewing wildlife.

**b. Would the proposed project displace any existing recreational uses? If so, describe.**

Depending on weather conditions and timing of harvest, some forms of recreational activities, like hunting, horse riding or viewing wildlife or use of campgrounds, could be temporarily impacted, but thereafter will be improved by the healthier forest stands.

**c. Proposed measures to reduce or control impacts on recreation, including recreational opportunities to be provided by the project or applicant, if any:**

The public will not be allowed access to the project site while work is in progress.

**d. Positive impacts of the proposal.**

WDFW anticipates increasing the habitat's carrying capacity through this forage development, increased vegetative vigor and diversity, and snag creation.

### **13. Historic and cultural preservation**

**a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe. [help]**

There are several sites which have been recorded during professional archaeological surveys within and near the project (Baldwin 2008; Kelly 2014; Neider 2011). WDFW contracted for additional cultural resources survey in the project to better define the project's potential to affect cultural resources. The survey resulted in the clarification of the extent of previously recorded sites and the identification of several previously unrecorded sites.

**b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources. [help]**

Several recent professional studies (including studies by WDFW's contractor) resulted in the identification of several archaeological sites within and near the project boundary. A Cultural Resources Protection Plan will be developed using the results of WDFW's archaeological survey of the project and any information provided by DAHP and concerned tribes.

**c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc. [help]**

The determination of the probability for historic properties to be located within the proposed project was based largely upon review and analysis of past environmental and cultural contexts and previous cultural resource studies and sites. Consulted sources included review of project files; local geologic data to better understand the depositional environment; archaeological, historic, and ethnographic records made available on the WISAARD database; and selected published local historic records.

The risk analysis provided by the statewide predictive model and regional patterns, indicates there is high risk for encountering cultural resources. A second predictive model was created, using site to topography correlations outlined in Fulkerson (1988). This model, similar to the models utilized in Powell (1987, 2008), among others, served to fine tune the WDFW survey protocol.

Consultation with affected tribe(s) has been initiated; the results will be used to inform project design.

The results of the survey will be provided to DAHP and the affected tribe(s) for review prior to project initiation.

**d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.**

The results of WDFW's contractor's cultural resources survey for the project will be used to inform final project design. Any necessary mitigation and/or avoidance measures will be designed in consultation with the affected tribe(s) and DAHP; these conversations will help inform WDFW's Cultural Resources Protection Plan. Once the project is underway, it will operate under an Inadvertent Discovery Plan; upon discovery of previously unrecorded cultural resources, both plans would be implemented.

### **14. TRANSPORTATION**

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**a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.**

Existing on-site roads will be used to directly access the project area. Hauling off the site will be on USFS Road 100 and the Upper Bear Creek Rd. (see attached maps)

**b. Is site currently served by public transit? If no, what is the approximate distance to the nearest transit stop?**

No, school bus stops approximately 5 miles south at the end of Upper Bear Creek Rd.

**c. How many parking spaces would the completed project have? \_\_\_\_\_  
How many would the project eliminate? \_\_\_\_\_**

The only parking spaces affected are unofficial ones in camping/hunting areas. The numbers shouldn't change after the project is completed.

**d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).**

No road construction will be required, existing roads may be improved (graded, water bars added, culvert replaced etc.) to improve condition and reduce existing issues. All roads are public roads maintained by WDFW or USFS. (see attached road plan map)

**e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.**

No

**f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.**

This proposal should result in no increase in vehicle trips per day upon completion of the timber sale. During the harvest and log hauling, contractors, sale administrators and log truck drivers may exceed 5 vehicles per day. This would be occurring from early morning (2 a.m.) until dark (5 p.m.).

**g. Proposed measures to reduce or control transportation impacts, if any:**

Given the low timber volumes generated by this project and minimal traffic in the vicinity of the project we anticipate no impacts to transportation. Roads will be improved as a result of this project.

## **15. PUBLIC SERVICES**

**a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.**

No.

**b. Proposed measures to reduce or control direct impacts on public services, if any:**

Opening the stand, leaving fire resistant older Ponderosa pine will reduce the fire fuels on the ground, and reduce likelihood of crown fires. Thinning and prescription fire will improve forest health, rehabilitate the forest ecosystem, and increase resilience to disturbance and climate change.

## **16. UTILITIES**

**a. Circle utilities currently available at the site: ELECTRICITY, NATURAL GAS, WATER, REFUSE SERVICE,**

TELEPHONE, SANITARY SEWER, SEPTIC SYSTEM, OTHER.

Campfire pits and permanent restrooms in camping area adjacent to project. An electric line owned by the Okanogan County Electric Co-operative runs through the project, but does not service the project area.

**b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.**

During the felling of trees in the vicinity of the existing powerline, representatives from the Okanogan County Electric Co-op will de-energize the line temporarily to avoid fire risks or impacts. Residents on this line will be notified weeks in advance of the temporary loss in electric service.

**C. SIGNATURE**

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

SIGNATURE: 

DATE SUBMITTED: 9/30/15