Forest Aquatic Restoration Project
NEPA Compliance and Implementation Checklist

Lower Wiwaanaytt Meadow Lodgepole Removal

Project Number: 0409-2019 **Date:** 04/18/2019 **Location:** T. 11S., R. 35.5E., S. 34

Category: Category 13: Riparian Vegetation Treatment

Project Description: Remove and hand pile for burning encroaching lodgepole pine in an ~25 acre meadow on Wiwaanyatt Creek. Project complements aquatic restoration completed during the field season of 2018 and will enhance the ability of riparian hardwood planting to expand within Wiwaanaytt Creek.

Heritage (to be completed by heritage specialist)

Y	N	Initial	
☒	☐	RGD	Specific PDC for Heritage addressed (Heritage Surveys; Avoidance areas).

Botany (to be completed by botany specialist)

Y	N	Initial	
☒	☐	JB	Specific PDC for Botany addressed (Sensitive Plant Surveys).
☒	☐	JB	Specific PDC for Nox. Weeds addressed.

Land Management Consistency (is the proposed project within the management area? Check yes or no. If yes, comments should indicate whether proposed actions are consistent with the standards for the management area.)

Y	N	Initial		Y	N	Initial	
☐	☒	JN	4A Big Game Winter range	☐	☒	JN	9 Research Natural Areas
☐	☒	JN	6A & 6BWilderness	☐	☒	JN	10 Semi-Primitive Non-Motorized Recreation Areas
☐	☒	JN	7 Scenic Area	☐	☒	JN	22/22A Wild and Scenic River
☐	☒	JN	8 Special Interest Areas	☐	☒	JN	Inventoried Roadless Areas

Comments:

Table 1. Projects Design Criteria and Forest Plan compliance checklist.

I have reviewed this project and have determined it is compliant with the Forest Plan and Aquatic EA Project Design Criteria identified for my resource.

Resource	**Signature**	**Date**	**Comments** (additional PDCs may be noted if necessary)
Heritage	[signature]	4/25/19	CONTINUE TO FOLLOW HERITAGE PDC'S DESIGNATED IN FCRD AQUATIC RESTO SHPO REPORT
Botany	Juni Burn	4/23/19	
Invasive Plants	Juni Burn	4/23/19	make sure to follow invasives PDCs – CIARY, CIVU, + PORES on site; avoid activities + burning in weed infestations
Wildlife	Jenny Henning	4/25/19	
Fish*	[signature]	4/29/19	Consistent with Project Design Criteria. No concerns
Hydrology*	Hazel Ware	4/25/19	
Range	[signature]	4/25/19	don't pile or place debris within fence right of way - left either side
Soils	Robert C. McKee	4/22/19	NO HEAVY EQUIPMENT USE PLANNED
Recreation	[signature]	4/18/19	
Special Uses	[signature]	4.22.19	See attached
Lands	[signature]	4.22.19	See attached
Mining	[signature]	4-24-19	There are no mining claims in this project area - per Anne Schneider
Engineering	[signature]	04/23/19	
Fuels / Fire	[signature]	4/25/19	No concerns
Silviculture	[signature]	4/25/19	PDCs in place, no issues.

* Ensure that an experienced fisheries biologist or hydrologist is involved in the design of all projects covered by Aquatic Restoration Biological Opinion II. The experience should be commensurate with technical requirements of a project.

District Environmental Coordinator: Renee Holland Date: 4/30/19

Line Officer Signature: [signature] Date: 4/30/19

Implementation Description:

Lower Wiwaanaytt Meadow Lodgepole Removal Project 0409-2019

Category 13: Riparian Vegetation Treatment	Lead Preparer: Jeff Nelson
Applicant: Prairie City Fisheries	NEPA Reference: Decision notice for Aquatic Restoration Project
Location: Prairie City Ranger District	Lease/ /Case File/ Serial NA: Special Use Permit NA:
Begin Date: 3/25/2019	Due Date: 04/30/2019

Purpose/Need:

Please refer to the Aquatic Restoration EA[1] for the Purpose and Need of these actions.

Location:

See Figures below for map within the Malheur National Forest.

TR Location	T. 11S., R. 35.5E., S. 34
USGS quad	*Austin*
Lat/Long	*44.569182 x -118.401851,*
Subwatershed	*170702030106 – Squaw Creek*

T: Pathway

Geospatial information for this project is located here:

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[1] The Aquatic Restoration EA is available online at http://www.fs.usda.gov/detailfull/malheur/landmanagement/?cid=STELPRD3817723&width=full

Implementation Plan

Existing Conditions

Wiwaanaytt Creek (formerly Squaw Creek), together with Summit Creek, forms the headwaters of the Middle Fork John Day River (MFJDR). Wiwaanaytt Creek contains approximately 5.9 miles of MCR (Mid-Columbia River) steelhead critical habitat as designated by the National Marine Fisheries Service (NMFS). Since 2015, Prairie City Ranger District has been conducting sub-watershed scale restoration on Wiwaanaytt Creek with the primary objectives of improving fish passage, increasing frequency of floodplain inundation and expanding reaches which contain perennial flow.

This reach of Wiwaanaytt Creek (see Figure 1) has been degraded by historical land management activities and by the installation of log weirs in the early 1980's. Over time, these log weirs have formed significant plunge pools which act as juvenile fish passage barriers during the low flow summer months, reducing the ability of rearing steelhead to seek thermal refugia higher in the headwaters or near spring and groundwater sources. Juvenile steelhead are instead trapped in the pools created by these weirs as water temperatures rise and stream flow falls. Log weirs have also contributed to channel incision in Wiwaanaytt Creek which reduces the frequency with which Wiwaanaytt Creek accesses its floodplain. Reduced frequency of floodplain activation can cause a loss of stream shading, riparian vegetation, and further increases in water temperature. Over- summer rearing habitat has been identified as a limiting factor for the recovery of Mid-Columbia River steelhead. Restoring juvenile fish passage and increasing in-channel complexity would increase availability of rearing habitat in Wiwaanaytt Creek.

Prairie City Ranger District has been conducting sub-watershed scale restoration activities in Wiwaanaytt Creek since 2015. Barriers to aquatic organism passage (AOP) have been removed by replacing or removing culverts as well as legacy log weirs. Young, encroaching conifers, such as lodgepole pine and grand fir, were removed from the floodplain to increase sunlight to riparian shrubs. The tipped trees were added to the stream and floodplain to capture sediment and naturally aggrade the incised stream channel.

Most recently, in the summer of 2018, approximately 2.5 miles of stream channel were treated to remove legacy log weirs and add large wood as well as to re-activate the floodplain of an ~25 acre meadow. This proposed project will further move the 25 acre meadow towards the desired condition which is one of frequent floodplain inundation and supportive of a diverse community of wetland-obligate plants including riparian hardwoods as well as hydric graminoids.

Even though a number of large trees were tipped out of the floodplain to improve aquatic habitat, a large number of young (15-20 years) lodgepole pines are still present on the floodplain and streambanks. These young conifers decrease the amount of sunlight available for newly planted riparian hardwoods and increase the amount of groundwater

lost to evapotranspiration thereby reducing the amount of groundwater which is available for instream flow.

Desired Conditions

The future desired condition of the meadow within the project area is a riparian meadow with an abundant and diverse collection of hardwoods (including willows, dogwoods, alder and/or cottonwood) to provide forage and habitat for terrestrial wildlife species, to increase stream shade, stream bank stabilization and to create aquatic habitat complexity (increased meander and scour) and to deliver a seasonal pulse of nutrients to the aquatic food web in the form of falling leaf matter in the fall. Hydric graminoids would also be abundant on the floodplain with dense rooting zones which stabilize soils on the streambank and the floodplain. There may be a short term reduction in shade from streamside lodgepole encroachment but this will be replaced quickly by shade from desired hardwoods and sedges.

Implementation Plan:

Hand thinning and piling (25 acres):

- Within the project area boundary, all lodgepole pines with dbh < 9" will be handfelled and all material which exceeds resource objectives will be piled for burning. All western larch and ponderosa pine will be retained. Other conifer species are extremely infrequent within the project area, a small number of grand and/or douglas fir with dbh < 7" may be removed in close proximity to hardwood planting areas. If encountered, all juniper will be removed unless it displays old growth characteristics. All stumps should be cut flat to height no greater than 6 inches above the surrounding terrain or other features.

- No bank stabilizing trees will be removed. Treatment will not cause excessive bank erosion or increase the chance of avulsion. For this project, bank stabilizing trees are defined as being rooted adjacent to the stream at an elevation between that of the streambed and the lowest floodplain surface at that location.

- All handpiles will be at least 30' from stream banks.

- No handpiles will be constructed in low lying areas, secondary flowpaths within the active floodplain, or in locations where hydric graminoids or riparian hardwoods are present. This will reduce the likelihood of sediment delivery to the stream after burning and protect wetland obligate and facultative vegetation.

- Only hand equipment may be used for felling and bucking.

- No handpiles will be constructed within 20' of all existing ponderosa pine and western larch > 9" dbh and within 10 feet of existing ponderosa pine and western larch < 9" dbh. No handpiles will be constructed within 5' of the drip line of

existing Douglas and grand fir trees > 7" dbh. No handpiles will be constructed inside or within 5 feet of newly revegetated areas, including planted hardwoods and areas where native grasses were seeded. These areas are either fenced to protect from wildlife browse or will be flagged.

- No piles will be constructed in floodplain roughness areas (see Figure 3), material within these areas can be lopped and scattered to a fuel bed depth of < 18".

- All hand piles will be approximately 5' x 5' x 6'. Plastic products (polyethylene or polyvinyl chloride) and/or Kraft paper shall be used and placed in the upper 1/3 of the pile to maintain 2/3 of the pile as a dry core comprised with kindling-sized material.

- In addition to the above criteria, all piles must be spaced at least 5 feet from adjacent piles, in areas where all these criteria cannot be met, additional material can be lopped and scattered to a maximum fuel bed depth of 18 inches.

- Windrows (continuous hand piles) shall not occur. Handpiles must not exceed specified dimensions, be staggered and maintain at least 5 feet of separation between piles.

- Coarse and large wood on the floodplain that was placed during recently completed aquatic restoration work will be retained. Only material from newly felled young lodgepole pine will be handpiled.

Pile Burning:

- Average consumption of all ignited piles should be 80%.

- May retain approximately 10% of handpiles for wildlife.

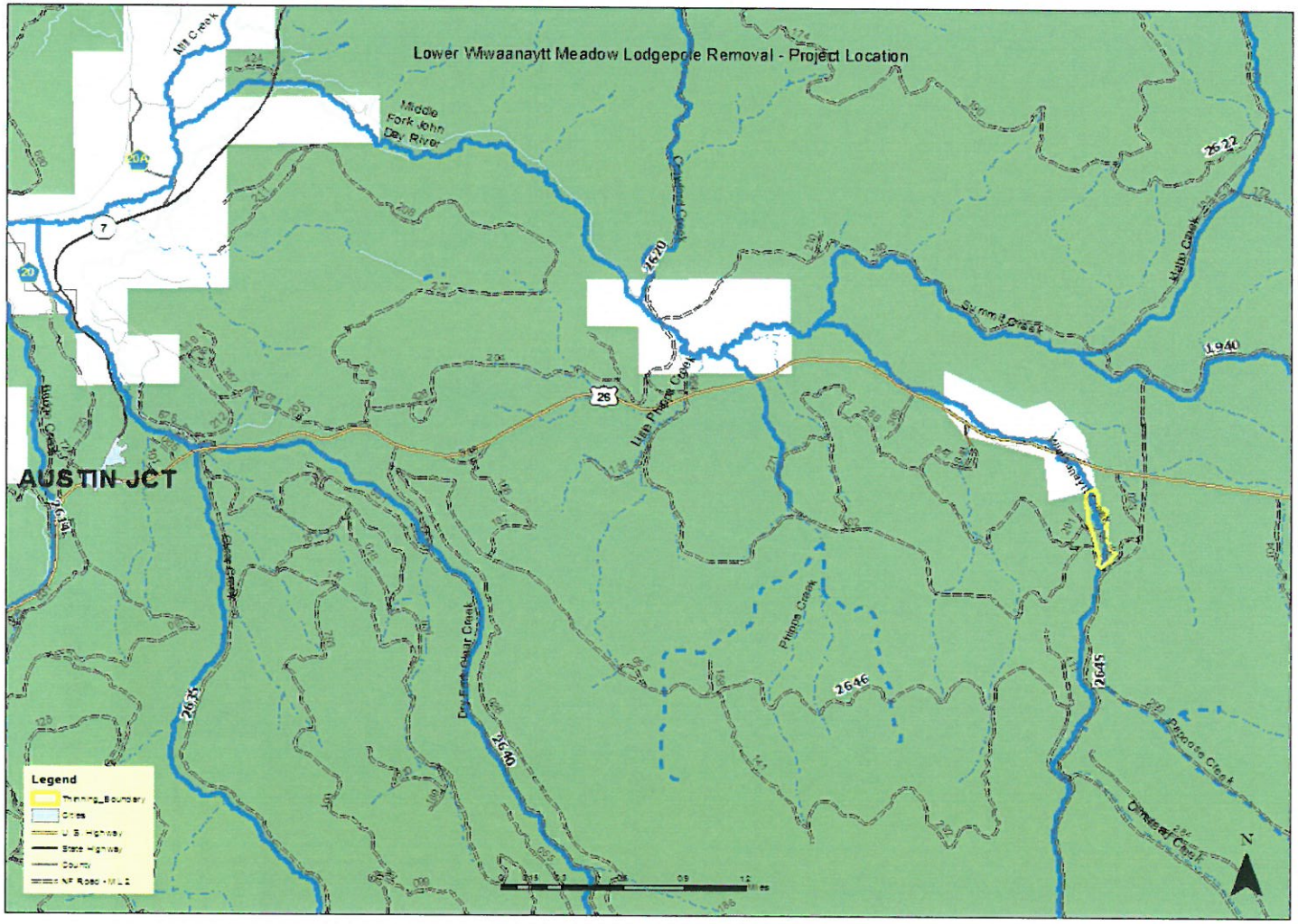


Figure 1: Project Location of Lower Wiwaanaytt Meadow Lodgepole Removal.

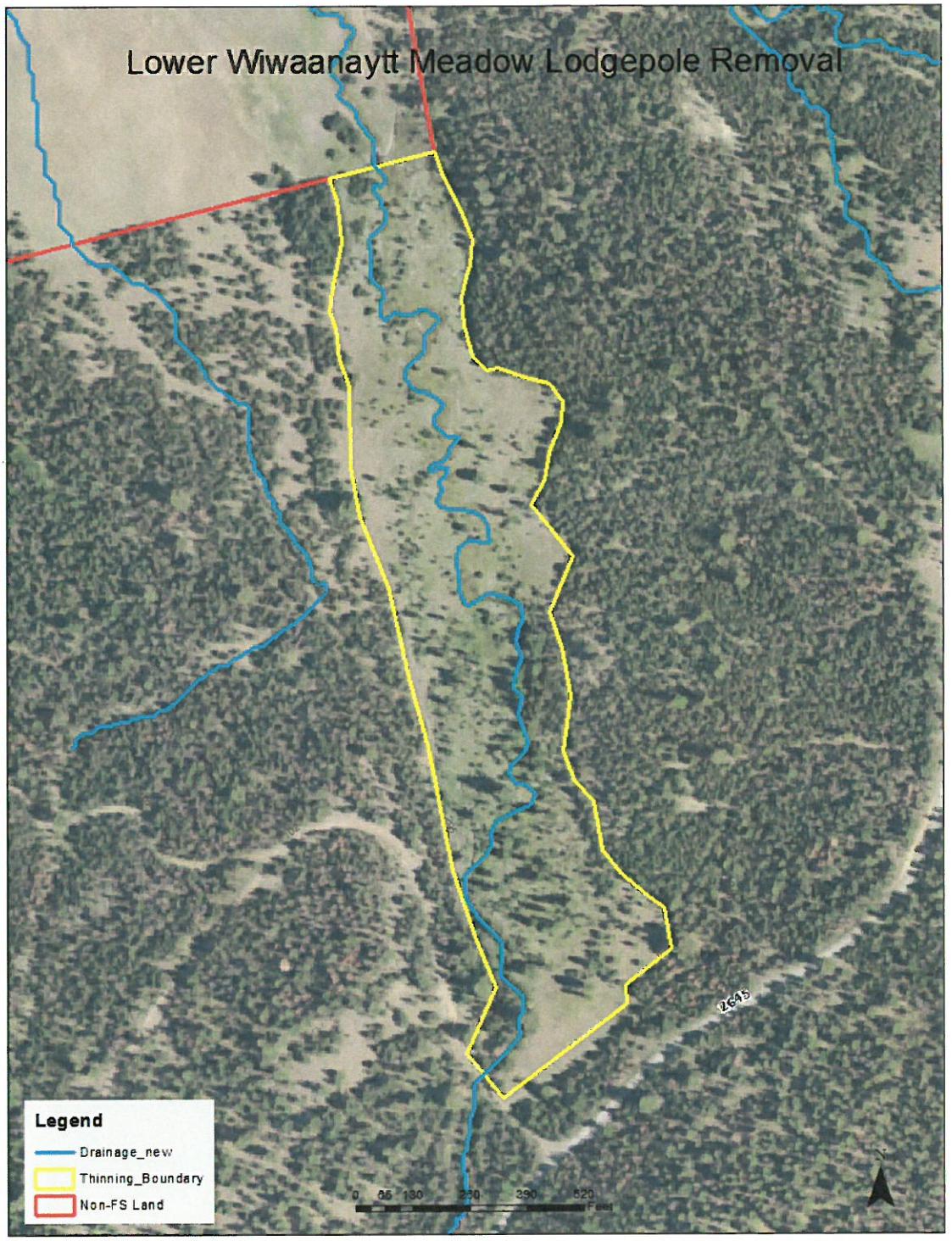


Figure 2: Aerial photo depicting the project area boundary and associated lodgepole pine encroachment.

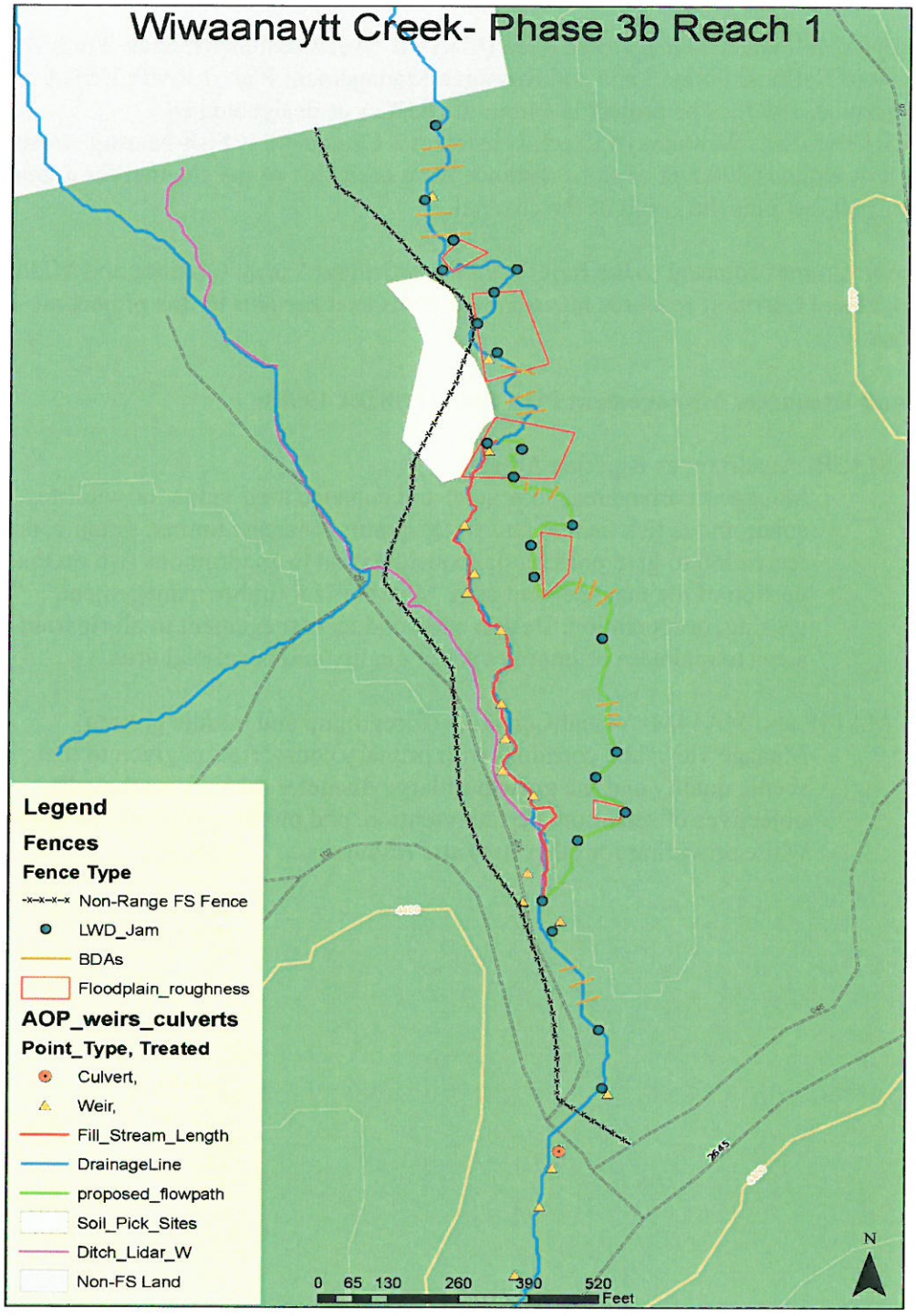


Figure 3: Plan form view of project area depicting floodplain roughness areas from previously completed restoration.

Land Use Plan Conformance:

This projects fall under Management Area (MA) 3B "Anadromous Riparian Areas" of the Malheur National Forest Land and Resource Management Plan (LRMP; USDA Forest Service, 1990). The project is within the RHCA as designated by PACFISH/INFISH. Wiwaanaytt Creek is listed as a Category 1 – Fish-bearing stream. The RHCA extends 300 feet of slope distance from each side of the channel for a total width of 600 feet plus the width of the channel.

Management areas adjacent to the RHCA are Fore-Ground Visual Corridor and Middle Ground Visual Corridor; resource management goals as it pertains to this project are listed below.

Land and Resources Management Plan Goals (USDA 1990):

MA3B- Anadromous Riparian Areas

Manage riparian areas to protect and enhance their value for wildlife, anadromous fish habitat and water quality. Manage timber, grazing, and recreation to give preferential consideration to anadromous fish on that portion of the management area "suitable" for timber management, grazing, or recreation. Design and conduct management in all riparian areas to maintain or improve water quality and beneficial uses.

MA14F and MA14M- Visual Corridors (foreground and middle ground)

Manage viewshed corridors with primary consideration given to their scenic quality and the growth of large diameter trees. Visual quality objectives of retention, partial retention, and modification will be applied while providing for other uses and resources.

Appendices to the Aquatic Restoration EA Implementation Description

Lower Wiwaanaytt Meadow Lodgepole Removal
Project Number: **0409-2019**

Category – Category 13: Riparian Vegetation Treatment

The following information will guide actions for this project that is taking place within the bounds of the Decision Notice for the 2014 Malheur National Forest Aquatic Restoration Environmental Analysis to maintain that all conservation measures, guidelines and project design criteria (PDCs) are met under this guiding document.

Program Administration

1. Integration of project design criteria and conservation measures and terms and conditions into project design and contract language
    a. This document is to outline the conservation measures and PDCs that will be used during project implementation to remain compliant with the aquatic restoration BA as well as ARBO II.
2. Project notification: The following information will be provided to the NMFS Level 1 Aquatics members 30 days prior to implementation as a Project Notification Form 7.
    a. Action identifier- 0409-2019
    b. Project: Lower Wiwaanaytt Meadow Lodgepole Removal
    c. Location-

Project	Lower Wiwaanaytt Meadow Lodgepole Removal
Stream Name	Wiwaanaytt Creek
6th field HUC	170702030101 – Squaw Creek
Latitude (Decimal Degrees)	44.569132
Longitude (Decimal Degrees)	-118.401852

    d. Agency contact- *PCRD Fisheries*
    e. Timing- *Thinning will occur in the field season of 2019. No in-stream work window timing restrictions are applicable, as all of the work will occur on the floodplain and outside the wetted area. Pile burning will occur in spring or fall of 2020-2021.*
    f. Activity category-
        Category 13: Riparian Vegetation Treatment
    g. Project description- *Remove encroachment of young (15-20 year old) lodgepole pine from a recently restored wet meadow area.*
    h. Extent- *thinning will occur within approximately 25 acres of the Wiwaanaytt Creek floodplain.*
    i. Species affected-
        i. Listed species: *Mid-Columbia River steelhead*
        ii. Critical Habitat: Wiwaanaytt Creek is designated critical habitat for Mid-Columbia River steelhead.

j. Date of submittal- *To be completed in 2019, at least 30 day prior to June 1, 2019.*
k. Site assessments- *Assessment for contaminants will not be required on this project*
l. Review- NMFS fish passage review and Restoration Review Team review *are not required.*
m. Verification- _____
n. SOD project notification- _____

3. Minor Variance: No variances from the criteria specified in the aquatic restoration document are being considered.
4. NMFS Fish Passage Review and Approval: This will occur on a project by project basis as required.
5. Restoration Review Team: This work does not require review by the restoration review team.
6. Project Completion Report: To be completed after implementation. This project will be completed within three years of implementation initiation.
7. Annual Program Report: annual reporting will occur in the winter of the fiscal year after work was done before February 15th and occur annually until project completion.

Project Design Criteria

General Aquatic Conservation Measures

1. Technical Skill and Planning Requirements:
    a. An appropriately qualified fisheries biologist or hydrologist will be involved in the design of this project.
    b. The scope of this project is limited in both space and context. Field evaluations and site-specific surveys will require little work. Appropriate time will be allotted for these actions, prior to implementation. Planning and design will involve appropriate expertise.
    c. The assigned fisheries biologist or hydrologist will make sure that any applicable conservation measures and project design criteria are met through the contracting process.
2. Climate Change: Although individual activities only affect small areas of the watershed, the impacts of this work as a whole will improve restistance and resilience of the system and biota to climate change through cold-water storage, enhanced biodiversity and improved habitat.
3. In-Water Work Period: In-stream activities will occur between July 15th and August 15th, and work occurring outside the high flow elevation can occur outside of this window.
4. Fish passage: Fish passage will be addressed on a case-by-case basis depending on the actions within a specific checklist.
5. Site Assessment For Contaminants: In developed or previously developed sites, such as areas with past dredge mines, or sites with known or suspected contamination, a site assessment for contaminants will be conducted on projects that involve excavation of >20 cubic yards of material. The action agencies will complete a site assessment to identify the type, quantity, and extent of any potential contamination. The level of detail and resources committed to such an assessment will be commensurate with the level and type of past or current development at the site. The assessment may include the following:
    a. Review of readily available records, such as former site use, building plans, records of any prior contamination events.
    b. Site visit to observe the areas used for various industrial processes and the condition of the property.
    c. Interviews with knowledgeable people, such as site owners, operators, occupants, neighbors, local government officials, etc.
    d. Report that
6. Pollution and Erosion Control Measures: Implement the following pollution and erosion control measures:
    a. Project Contact: Identify a project contact (name, phone number, an address) that will be responsible for implementing pollution and erosion control measures.
    b. List and describe any hazardous material that would be used at the project site, including procedures for inventory, storage, handling, and monitoring; notification procedures; specific clean-up and disposal

instructions for different products available on the site; proposed methods for disposal of spilled material; and employee training for spill containment.

c. Temporarily store any waste liquids generated at the staging areas under cover on an impervious surface, such as tarpaulins, until such time they can be properly transported to and treated at an approved facility for treatment of hazardous materials.
d. Procedures based on best management practices to confine, remove, and dispose of construction waste, including every type of debris, discharge water, concrete, cement, grout, washout facility, welding slag, petroleum product, or other hazardous materials generated, used, or stored on-site.
e. Procedures to contain and control a spill of any hazardous material generated, used or stored on-site, including notification of proper authorities. Ensure that materials for emergency erosion and hazardous materials control are onsite (e.g., silt fence, straw bales, oil-absorbing floating boom whenever surface water is present).
f. Best management practices to confine vegetation and soil disturbance to the minimum area, and minimum length of time, as necessary to complete the action, and otherwise prevent or minimize erosion associated with the action area.
g. No uncured concrete or form materials will be allowed to enter the active stream channel.
h. Steps to cease work under high flows, except for efforts to avoid or minimize resource damage.

7. Site Preparation
    a. Flagging sensitive areas –Prior to construction, clearly mark critical riparian vegetation areas, wetlands, and other sensitive sites to minimize ground disturbance.
    b. Staging area –Establish staging areas for storage of vehicles, equipment, and fuels to minimize erosion into or contamination of streams and floodplains.
        i. No Topographical Restrictions –place staging area 150 feet or more from any natural water body or wetland in areas where topography does not restrict such a distance.
        ii. Topographical Restrictions –place staging area away from any natural water body or wetland to the greatest extent possible in areas with high topographical restriction, such as constricted valley types.
    c. Temporary erosion controls –Place sediment barriers prior to construction around sites where significant levels of erosion may enter the stream directly or through road ditches. Temporary erosion controls will be in place before any significant alteration of the action site and will be removed once the site has been stabilized following construction activities.
    d. Stockpile materials –Minimize clearing and grubbing activities when preparing staging, project, and or stockpile areas. Any large wood, topsoil, and native channel material displaced by construction will be stockpiled

for use during site restoration. Materials used for implementation of aquatic restoration categories (e.g., large wood, boulders, fencing material) may be staged within the 100-year floodplain.

e. Hazard trees –Where appropriate, include hazard tree removal (amount and type) in project design. Fell hazard trees when they pose a safety risk. If possible, fell hazard trees within riparian areas towards a stream. Keep felled trees on site when needed to meet coarse large wood objectives.

8. Heavy Equipment Use
    a. Choice of equipment – Heavy equipment will be commensurate with the project and operated in a manner that minimizes adverse effects to the environment (e.g., minimally-sized, low pressure tires, minimal hard turn paths for tracked vehicles, temporary mats or plates within wet areas or sensitive soils).
    b. Fueling and cleaning and inspection for petroleum products and invasive weeds
        i. All equipment used for instream work will be cleaned for petroleum accumulations, dirt, plant material (to prevent the spread of noxious weeds), and leaks repaired prior to entering the project area. Such equipment includes large machinery, stationary power equipment (e.g., generators, canes), and gas-powered equipment with tanks larger than five gallons.
        ii. Store and fuel equipment in staging areas after daily use.
        iii. Inspect daily for fluid leaks before leaving the vehicle staging area for operation.
        iv. Thoroughly clean equipment before operation below ordinary high water or within 50 feet of any natural water body or areas that drain directly to streams or wetlands and as often as necessary during operation to remain grease free.
    c. Temporary access roads – Existing roadways will be used whenever possible. Minimize the number of temporary access roads and travel paths to lessen soil disturbance and compaction and impacts to vegetation. Temporary access roads will not be built on slopes where grade, soil, or other features suggest a likelihood of excessive erosion or failure. When necessary, temporary access roads will be obliterated or revegetated. Temporary roads in wet or flooded areas will be restored by the end of the applicable in-water work period. Construction of new permanent roads is not permitted.
    d. Stream crossings – Minimize number and length of stream crossings. Such crossings will be at right angles and avoid potential spawning areas to the greatest extent possible. Stream crossings shall not increase the risk of channel re-routing at low and high water conditions. After project completion, temporary stream
    e. Work from top of bank – To the extent feasible, heavy equipment will work from the top of the bank, unless work instream would result in less damage to the aquatic ecosystem.

f. Timely completion – Minimize time in which heavy equipment is in stream channels, riparian areas, and wetlands. Complete earthwork (including drilling, excavation, dredging, filling and compacting) as quickly as possible. During excavation, stockpile native streambed materials above the bankfull elevation, where it cannot reenter the stream, for later use.

9. Site Restoration
   a. Initiate rehabilitation – Upon project completion, rehabilitate all disturbed areas in a manner that results in similar or better than pre-work conditions through removal of project related waste, spreading of stockpiled materials (soil, large wood, trees, etc.) seeding, or planting with local native seed mixes or plants.
   b. Short-term stabilization – Measures may include the use of non-native sterile seed mix (when native seeds are not available), weed-free certified straw, jute matting, and other similar techniques. Short-term stabilization measures will be maintained until permanent erosion control measures are effective. Stabilization measures will be instigated within three days of construction completion.
   c. Revegetation – Replant each area requiring revegetation prior to or at the beginning of the first growing season following construction. Achieve reestablishment of vegetation in disturbed areas to at least 70% of pre-project levels within three years. Use an appropriate mix of species that will achieve establishment and erosion control objectives, preferably forb, grass, shrub, or tree species native to the project area or region and appropriate to the site. Barriers will be installed as necessary to prevent access to revegetated sites by livestock or unauthorized persons.
   d. Planting manuals – All riparian plantings shall follow Forest Service direction described in the Regional letter to Units, Use of Native and Nonnative Plants on National Forests and Grasslands May 2006 (Final Draft), and or BLM Instruction Memorandum No. OR-2001-014, Policy on the Use of Native Species Plant Material.
   e. Decompact soils – Decompact soil by scarifying the soil surface of roads and paths, stream crossings, staging, and stockpile areas so that seeds and plantings can root.

10. Monitoring

    Monitoring will be conducted by Action Agency staff, as appropriate for that project, during and after a project to track effects and compliance with this opinion.
    a. Implementation
       i. Visually monitor during project implementation to ensure effects are not greater (amount, extent) than anticipated and to contact Level 1 representatives if problems arise.
       ii. Fix any problems that arise during project implementation.
       iii. Regular biologist/hydrologist coordination if biologist/hydrologist is not always on site to ensure contractor is following all stipulations.

b. 401 Certification – To minimize short-term degradation to water quality during project implementation, follow current 401 Certification provisions of the Federal Clean Water Act for maintenance or water quality standards described by the following: Oregon Department of Environmental Quality (Oregon BLM, Forest Service, and BIA); Washington Department of Ecology (Washington BLM); and the Memorandum of Understanding between the Washington Department of Fish and Wildlife and Forest Service regarding Hydraulic Projects Conducted by Forest Service, Pacific Northwest Region (WDFW and USDA-Forest Service 2012); California, Idaho, or Nevada 401 Certification protocols (BLM and Forest Service).
c. Post project – A post-project review shall be conducted after winter and spring high flows.
    i. For each project, conduct a walk through/visual observation to determine if there are post-project affects that were not considered during consultation. For fish passage and revegetation projects, monitor in the following manner:
    ii. Fish Passage Projects – Note any problems with channel scour or bedload deposition, substrate, discontinuous flow, vegetation establishment, or invasive plant infestation.
    iii. Revegetation – For all plant treatment projects, including site restoration, monitor for and remove invasive plants until native plants become established.
    iv. In cases where remedial action is required, such actions are permitted without additional consultation if they use relevant PDC and aquatic conservation measures and the effects of the action categories are not exceeded.

11. Work Area Isolation, Surface Water Withdrawals, and Fish Capture and Release – Isolate the construction area and remove fish from a project site for projects that include concentrated and major excavation at a single location within the stream channel. This condition will typically apply to the following aquatic restoration categories: Fish Passage Restoration; Dam, Tidegate, and Legacy Structure Removal; Channel Reconstruction/Relocation.
    a. Isolate capture area – Install block nets at up and downstream locations outside of the construction zone to exclude fish from entering the project area. Leave nets secured to the stream channel bed and banks until construction activities within the stream channel are complete. If block nets or traps remain in place more than one day, monitor the nets and or traps at least on a daily basis to ensure they are secured to the banks and free of organic accumulation and to minimize fish predation in the trap.
    b. Capture and release – Fish trapped within the isolated work area will be captured and released as prudent to minimize the risk of injury, then released at a safe release site, preferably upstream of the isolated reach in a pool or other area that provides cover and flow refuge. Collect fish in the best manner to minimize potential stranding and stress by seine or dip nets as the area is slowly dewatered, baited minnow traps placed overnight, or electrofishing (if other options are ineffective). Fish must be handled with

extreme care and kept in water the maximum extent possible during transfer procedures. A healthy environment for the stressed fish shall be provided—large buckets (five-gallon minimum to prevent overcrowding) and minimal handling of fish. Place large fish in buckets separate from smaller prey-sized fish. Monitor water temperature in buckets and well-being of captured fish. If buckets are not being immediately transported, use aerators to maintain water quality. As rapidly as possible, but after fish have recovered, release fish. In cases where the stream is intermittent upstream, release fish in downstream areas and away from the influence of the construction. Capture and release will be supervised by a fishery biologist experienced with work area isolation and safe handling of all fish.

c. Electrofishing – Use electrofishing only where other means of fish capture may not be feasible or effective. If electrofishing will be used to capture fish for salvage, NMFS's electrofishing guidelines will be followed (NMFS 2000).
    i. Reasonable effort should be made to avoid handling fish in warm water temperatures, such as conducting fish evacuation first thing in the morning, when the water temperature would likely be coolest. No electrofishing should occur when water temperatures are above 18°C or are expected to rise above this temperature prior to concluding the fish capture.
    ii. If fish are observed spawning during the in-water work period, electrofishing shall not be conducted in the vicinity of spawning fish or active redds.
    iii. Only Direct Current (DC) or Pulsed Direct Current shall be used.
    iv. Conductivity <100, use voltage ranges from 900 to 1100. Conductivity from 100 to 300, use voltage ranges from 500 to 800. Conductivity greater than 300, use voltage to 400.
    v. Begin electrofishing with minimum pulse width and recommended voltage and then gradually increase to the point where fish are immobilized and captured. Turn off current once fish are immobilized. vi. Do not allow fish to come into contact with anode. Do not electrofish an area for an extended period of time. Remove fish immediately from water and handle as described above (PDC 20b). Dark bands on the fish indicate injury, suggesting a reduction in voltage and pulse width and longer recovery time.
    vi. If mortality is occurring during salvage, immediately discontinue salvage operations (unless this would result in additional fish mortality), reevaluate the current procedures, and adjust or postpone procedures to reduce mortality.

d. Dewater construction site –When dewatering is necessary to protect species or critical habitat, divert flow around the construction site with a coffer dam (built with non-erosive materials), taking care to not dewater downstream channels during dewatering. Pass flow and fish downstream

with a by-pass culvert or a water-proof lined diversion ditch. Diversion sandbags can be filled with material mined from the floodplain as long as such material is replaced at end of project. Small amounts of instream material can be moved to help seal and secure diversion structures. If ESA listed-fish may be present and pumps are required to dewater, the intake must have a fish screen(s) and be operated in accordance with NMFS fish screen criteria described below (in part e.iv) of this section. Dissipate flow energy at the bypass outflow to prevent damage to riparian vegetation or stream channel. If diversion allows for downstream fish passage, place diversion outlet in a location to promote safe reentry of fish into the stream channel, preferably into pool habitat with cover. Pump seepage water from the de-watered work area to a temporary storage and treatment site or into upland areas and allow water to filter through vegetation prior to reentering the stream channel.

e. Surface water withdrawals
    i. Surface water may be diverted to meet construction needs, but only if developed sources are unavailable or inadequate. Where ESA-listed fish may be present, diversions may not exceed 10% of the available flow and fish screen(s) will be installed, operated, and maintained according to NMFS's fish screen criteria (NMFS 2011e).
    ii. For the dewatering of a work site to remove or install culverts, bridge abutments etc., if ESA-listed fish may be present, a fish screen that meets criteria specified by NMFS (2011e) must be used on the intake to avoid juvenile fish entrainment. If ESA-listed salmon, steelhead, eulachon, or green sturgeon may be present, the Action Agencies will ensure that the fish screen design is reviewed and approved by NMFS for consistency with NMFS (2011e) criteria if the diversion (gravity or pump) is at a rate greater than 3 cfs. NMFS approved fish screens have the following specifications: a) An automated cleaning device with a minimum effective surface area of 2.5 square feet per cfs, and a nominal maximum approach velocity of 0.4 feet per second (fps), or no automated cleaning device, a minimum effective surface area of 1 square foot per cfs, and a nominal maximum approach rate of 0.2 fps; and b) a round or square screen mesh that is no larger than 2.38 mm (0.094 inches) in the narrow dimension, or any other shape that is no larger than 1.75 mm (0.069 inches) in the narrow dimension.

f. Stream re-watering – Upon project completion, slowly re-water the construction site to prevent loss of surface water downstream as the construction site streambed absorbs water and to prevent a sudden release of suspended sediment. Monitor downstream during re-watering to prevent stranding of aquatic organisms below the construction site.

13. Riparian Vegetation Treatment (controlled burning) includes reintroduction of low and moderate-severity fire into riparian areas to help restore plant species composition and structure that would occur under natural fire regimes in dry forest types east of the Cascade mountains and in southwestern Oregon. Additionally, controlled burns may be implemented in localized lowland areas in western Oregon, i.e., oak woodlands. Conifer thinning may be required to adjust fuel loads for moderate-severity burns to regenerate deciduous trees and shrubs. Equipment would include drip torches and chainsaws, along with fire suppression vehicles and equipment.

a. **Low and Moderate Severity Burns**

i. Experienced fuels specialists, silviculturists, fisheries biologist, and hydrologists shall be involved in designing prescribed burn treatments.

ii. Prescriptions will focus on restoring the plant species composition and structure that would occur under natural fire regimes.

iii. Burn plans are required for each action and shall include, but not be limited to the following: a description of existing and desired future fire classifications, existing and target stand structure and species composition (including basis for target conditions); other ecological objectives, type, severity, area, and timing of proposed burn; and measures to prevent destruction of vegetation providing shade and other ecological functions important to fish habitat.

iv. Low-severity burns will be used except where the objective is to restore deciduous trees, as describe below under part "v.", with a goal of creating a mosaic pattern of burned and unburned landscape. Low severity burns are characterized by the following: Low soil heating or light ground char occurs where litter is scorched, charred, or consumed, but the duff is left largely intact. large wood accumulation is partially consumed or charred. Mineral soil is not changed. Minimal numbers of trees, typically pole/saplings, will be killed.

v. Moderate-severity burns are permitted only where needed to invigorate decadent aspen stands, willows, and other native deciduous species and may be targeted in no more than 20% of the area within RHCAs or Riparian Reserves/6th field HUC/year. Such burns shall be contained within the observable historical boundaries of the aspen stand, willow site, other deciduous species, and associated meadows; additional area outside of the "historical boundaries" may be added to create controllable burn boundaries. Moderate severity are characterized by the following: Moderate soil heating or moderate ground char occurs where the litter on forest sites is consumed and the duff is deeply charred or consumed, but the underlying mineral soil surface is not visibly altered. Light colored ash is present. large wood is mostly consumed, except for logs, which are deeply charred.

vi. Fire lines will be limited to five feet in width, constructed with erosion control structures, such as water bars, and restored to pre-project conditions before the winter following the controlled fire. To the extent possible, do not remove vegetation providing stream shade or other ecological functions that are important to streams.

vii. Ignition can occur anywhere within the Riparian Reserve and RHCAs area as long as project design criteria are met.
viii. Avoid water withdrawals from fish bearing streams whenever possible. Water drafting must take no more than 10% of the stream flow and must not dewater the channel to the point of isolating fish. Pump intakes shall have fish screens consistent with NMFS fish screening criteria (NMFS 2011e).

b. **Non-commercial Thinning Associated with Moderate-severity Burns**
i. Non-commercial tree thinning and slash removal is allowed only as required to adjust fuel loads to implement a moderate-severity burn to promote growth of deciduous trees and shrubs, such as aspen, cottonwood, willow, other deciduous species, and associated meadows.
ii. Thinning is allowed only in dry forest types, i.e., east of the Cascade mountains and southwestern Oregon, and in localized lowland areas in western Oregon, i.e., oak woodlands.
iii. To protect legacy trees, thinning from below is allowed. If conifers are even-aged pole, sapling, or mid-seral with no legacy trees, thin existing trees to the degree necessary to promote a moderate-severity burn.
iv. No slash burning is allowed within 30-feet of any stream. To the extent possible, avoid creating hydrophobic soils when burning slash. Slash piles should be far enough away from the stream channel so any sediment resulting from this action will be unlikely to reach any stream.
v. Apply PDC in National Fire Plan salmonid criteria (USDI-Bureau of Land Management 2005) for limits on mortality to residual overstory vegetation.
vi. Only hand equipment—chain saws, axes, Pulaski's, etc.—may be used for felling.
vii. Where livestock or wildlife grazing could be a threat to restoration of aspen, cottonwood, willow, alder, and other deciduous vegetation and an immediate moderate-severity burn would consume large amounts of felled trees, consider delaying the burn and leaving felled trees in place to create grazing barriers to help assure plant growth.
viii. If in an existing grazing allotment, projects in this category shall be accompanied by livestock grazing practices that promote the attainment of moderate-severity burn objectives.

Project Design Criteria by Resource

Fisheries and Hydrology

Fisheries and Hydrology resources will follow all mitigation measures and project design criteria for aquatic restoration activities as shown in the 'Aquatic Restoration Project Categories, Program Administration, General Aquatic Conservation Measures, and Project Design Criteria for Aquatic Restoration Activity Categories on the Malheur National Forest.'
Additional Aquatic project design criteria were developed for the following elements: Tree Tipping and Felling, Juniper Treatments, Tree Hauling, and Prescribed Burning.

General For Inside Riparian Habitat Conservation Areas

All snags will be maintained within the RHCA unless deemed a hazard to the restoration activity.

Tree Tipping and Tree Felling for Large Wood Projects

Source trees being extracted (either by tipping and or falling) as part of this project for instream restoration will not be harvested from within the primary shade zone.

Table 1 Primary shade zone width, based on adjacent hill slope.

	Hill Slope less than 30%	Hill Slope 30% to 60%	Hill Slope greater than 30%
Primary Shade Zone Width (slope distance	50 ft.	55 ft.	60 ft.

The Temperature Implementation Strategies allow the distances in the above table to be less (but not less than 25 ft.) if any of the following conditions applies:

The trees are located on a south facing slope (175-185 degree azimuth) and therefore do not provide stream shade;

An appropriate level of analysis is completed and documented, such as shade modeling, using site-specific characteristics to determine the primary shade tree width; and or

Field monitoring or measurements are completed to determine the width where optimum Angular Canopy Density (65% or greater) is achieved (see TMDL Implementation Strategies).

If trees are being felled for safety reasons they can be felled towards the stream.

Source trees should come from but are not limited to: over or fully stocked upland and riparian stands, hazard trees, trees generated from administrative sites (maintenance, expansion, or new construction), and hardwood restoration.

There is no DBH (diameter at breast height) restriction for large wood, but consider the following before removing and placing trees:

Diameter

The key to establishing a logjam is utilizing larger diameter wood that resists decay. These pieces of wood are often called "key pieces," and serve as the anchors for the logjam structure. Wood can improve fish habitat only if the wood is large enough to stay, influence flow patterns, and sediment sorting. Larger diameter wood retains its size longer as abrasion and decay occurs over the years. Larger diameter wood is more effective in creating pools and complex channels that improve fish populations. The minimum diameter required for a key piece of wood depends on the bankfull width of the stream is found in the following table.

Table 2 Bankfull widths and minimum diameter of logs to be considered key pieces.

Bankfull Width* - Feet	Minimum Diameter* - Inches
0 to 10	10
10 to 20	16
20 to 30	18
Over 30	22

*This table was taken from '1995 A Guide to Placement of Large Wood in Streams.

Length

The length of the wood is also important to stability. To be considered a key piece a log with a rootwad still attached should be at least one and one-half times (1.5X) the bankfull or a log without a rootwad should be twice (2X) the length of the stream's bankfull width. As the best fish habitat is formed around jams composed of 3 to7 logs, at least 2 key pieces should be used at each structure.

Mimic natural accumulations of large woody debris based on stream type, valley setting, and community type and ensure future large woody debris recruitment

Tailholds as part of tree tipping operations are permitted across perennial, intermittent and ephemeral streams but the use of protective straps will be required to prevent tree damage.

Juniper Treatments

The majority of the juniper treatment areas would be within the riparian habitat conservation areas and adjoining uplands. For each area evaluated for juniper treatments, interdisciplinary teams would discuss the following questions in order to identify the attributes of an area and select the appropriate treatments:

What kind of site (potential natural vegetation, soils)?

Successional state of site?

Components that need to be restored?

How units may fit into the overall landscape mosaic?

Long-term goals and objectives?

Utilize the "Western Juniper Field Guide: Asking the Right Questions to Select the Appropriate Management Actions. (Bates et al. 2007, Circular 1321) http://pubs.usgs.gov/circ/1321/pdf/circ1321.pdf

Tree and Boulder Hauling

Apply mitigation and best management practices for dust abatement (water, lignosulfonate, Calcium and Magnesium Chlorides) dry conditions, and erosion control as directed by physical scientist or road engineer (See Road Maintenance project design criteria #6 for application).

Haul on gravel and native-surface roads will be limited to dry conditions.

Haul Restrictions to Prevent Fine Sediment Delivery to Streams

Haul or maintenance is permitted on roads under the following conditions:

- During haul, weather conditions are monitored daily for the chance of precipitation by the Hydrologist or Fish Biologist.
- No rutting of the road surface is occurring, indicating the subsurface is wet.
- Frozen ground conditions.
- Haul will cease at any time when the travelway of the road is wet and turbid water or fines are observed moving off the road surface to ditchlines that deliver to stream channels regardless of time of year.

<u>Roads Exempt from Haul Restrictions include (Do to no mechanism for sediment delivery):</u>

Paved roads

Surfaced Ridge top roads

Surfaced outsloped roads with no ditch or stream crossings

Prescribed Burning and Related Activities

Mechanical piling and burning of large piles will be restricted to existing roads and landings.

Include all relevant PDC in Silviculture prescriptions and burn plan objectives for all fuel treatment activities within RHCA's.

Use all available fuel treatments and preparation activities as necessary (e.g. multiple entries, slash pull-back; modified ignition methods, locations, timing, and sequence; thinning of small green trees; pruning of green trees and snags, prescribed fire, fire suppression, jack pot burning, etc.) to achieve the specific PDC. Suppression should be used only as a last resort to achieve other PDC.

<u>For perennial and fish-bearing stream channels:</u>

Avoid removing trees along stream banks (e.g. don't cause bank instability or increase erosion)

Within 100' of the stream channel backing fire is preferred.

Within primary shade zone retain 100% of the over-story canopy closure with the exception of hardwood treatment.

<u>For intermittent, non-fish-bearing stream channels:</u>

Within 50' of the stream channel backing fire is preferred.

<u>For the maintenance and use of water sources and draft sites:</u>

Minimize disturbance of existing riparian vegetation to the greatest extent practical; in particular, maintain shade, bank stability, and large woody material recruitment potential.

Use sediment control measures such as straw bales, filter cloth, or sediment fences when conditions warrant.

Maximize maintenance activities during late summer and early fall to best avoid wet conditions.

Do not pump from streams that do not have continuous surface flow. When pumping water in all situations from streams, ensure that at least one-half of the original streamflow remains below the pump site.

Refuel power equipment, or use absorbent pads for immobile equipment, and prepare concrete at least 150 feet (or as far as possible from the water body where local site conditions do not allow a 150 foot setback) from water bodies to prevent direct delivery of contaminants into associated water bodies.

Fisheries, hydrology or other qualified personnel must work with engineering/fire personnel to review proposed activities to minimize potential effects to fish, stream channel conditions, and water quality.

Use and develop off-channel ponds outside of stream channels were feasible and appropriate. Work with fire folks to prioritize and decommission unnecessary in-stream drafting sites.

Water withdrawal equipment must have a fish screen installed, operated and maintained in accordance to NOAA Fisheries guidelines.

Wildlife

Threatened, Endangered or Sensitive Species

If wolves become established (denning) while project implementation is occurring, measures will be taken to avoid activity in that vicinity

If any evidence of wolverines is discovered during project implementation, measures will be taken to provide protection. If a den is found we would protect it from human disturbance.

Raptors

No activities will occur within currently known goshawk or other raptor nest stands. To conserve nesting habitat and to minimize disturbance to nesting individuals, restrictions would be executed according to the requirements of the species involved.

With all newly discovered raptor nests, a buffer zone would be established by the wildlife biologist to restrict activities near the nest area during occupancy.

Where possible, retain trees with inactive nests that may be important to secondary nesters (e.g. Great Gray Owl).

Any snags in riparian areas or uplands will be protected from disturbance, removal, or use in stream restoration activities unless deemed a safety hazard at a specific work site.

Big Game

Within big game winter range a wildlife biologist will be consulted between December 1 and April 1 to determine if activities should be restricted for big game needs.

Botany

Note: Pre-implementation planning project design criteria are identified.

Rare and Sensitive Plants and Habitats

Pre-Implementation: Proposed restoration projects shall be completely surveyed early in the implementation planning process by a qualified botanist or rare plant technician, to identify and assess any sensitive or rare plant populations or habitats.

Pre-Implementation: Proposed restoration projects shall develop restoration plans for degraded sensitive species habitats and/or mitigation plans in areas where sensitive plant populations are documented. This shall be accomplished by a journey-level Forest Service botanist in collaboration with the interdisciplinary team and other stakeholders.

Heavy equipment, vehicle operation, road construction, staging areas, stockpile areas, piling of slash, fence construction, recreation sites, prescribed fires, fire lines, and other operational activities shall not be allowed in any documented sensitive plant sites unless it is for the demonstrated benefit or protection of the site. All sensitive plant populations should be buffered 100 ft. from all operational activities where topography does not restrict such a distance. Sensitive plant sites and associated buffers shall be identified as Areas to Protect (ATPs).

Sensitive and Unique Habitats

The integrity of unique habitats shall be maintained. Unique habitats [may] include meadows, rimrock, talus slopes, cliffs, animal dens, wallows, bogs [fens], seeps and springs. This shall be accomplished by incorporating cover buffers approximately 100 feet in width.

Heavy equipment, vehicle operation, road construction, staging areas, stockpile areas, piling of slash, fence construction, recreation sites, prescribed fires, fire lines, and other operational activities shall not occur within, or at the interface of lithosols (scablands).

Cutting of old-growth juniper shall be prohibited. Old-growth characteristics include: sparse limbs, dead limbed or spiked-tops, deeply furrowed and fibrous bark, branches

covered with bright-green arboreal lichens, noticeable decay of cambium layer at base of tree, and limited terminal leader growth in upper branches.

Groundwater-Dependent Ecosystems

The integrity of groundwater-dependent ecosystems (GDE) shall be maintained. Spring developments shall not dewater GDEs. Spring developments shall not be allowed if the spring is occupied by rare or sensitive plant species, or in peatlands, fens, or where histic soils are present. These sites should be buffered 100 ft. from all operational activities where topography does not restrict such a distance, and be identified as Areas to Protect (ATPs).

Heavy equipment, vehicle operation, road construction, staging areas, stockpile areas, piling of slash, fence construction, fire lines, and other operational activities shall not be allowed in springs, seeps, or any other GDE, unless it is for the benefit or protection of the GDE or development of the spring.

Spring developments should not disturb the spring orifice (point where water emerges). Spring head boxes should be placed in a location that will cause the least amount of disturbance to the soils and vegetation of the GDE. Preferable locations for spring head boxes should be in an established channel downstream from the orifice or a location where flowing water becomes subsurface.

When necessary, construct fenced exclosures around spring developments to prevent damage from wild ungulates and livestock.

Spring developments shall have a return flow system to minimize the diversion of surface and subsurface water from the catchment area. Consider using a float valve or similar device to reduce the amount of water withdrawn from the GDE.

When developing springs, place troughs far enough away from GDEs, wetlands, and other sensitive or unique habitats to prevent erosion, compaction, or degradation to sensitive soils and vegetation due to livestock congregation.

Invasive Plant Species

Pre-Implementation: Proposed restoration projects shall be surveyed for invasive plants early in the implementation planning process by a qualified invasive plant specialist /technician, to identify and assess any undocumented invasive plant infestation.

Pre-Implementation: For project areas that overlap or are adjacent to invasive plant infestations, assure that there is sufficient time prior to develop a long-term site strategy for control, eradication, and revegetation of the site. This shall be accomplished by a qualified invasive plant specialist in collaboration with the interdisciplinary team and other stakeholders.

All activities shall be conducted in a manner as to minimize or prevent the potential spread or establishment of invasive species.

Actions conducted on National Forest System Lands that will operate outside the limits of the road prism, require the cleaning of all heavy equipment (bulldozers, skidders, graders, backhoes, dump trucks, etc.) prior to entering the National Forest. Cleaning will be inspected and approved by the forest officer in charge of administering the project.

Assure that all materials are weed-free. Use weed-free straw and mulch for all projects conducted or authorized by the Forest Service on National Forest System Lands. If State certified straw and/or mulch is not available, individual Forests should require sources certified to be weed-free using the North American Weed Free Forage Program standards or a similar certification process.

Inspect active gravel, fill, sand stockpiles, quarry sites, and borrow material for invasive plants before use and transport. Treat or require treatment of infested sources before any use of pit material. Use only gravel, fill, sand, and/or rock that are judged to be weed free by District or Forest weed specialists.

Prohibit heavy equipment operation, vehicle travel, staging areas, fire-control lines, and any other operational activities in invasive plant infestations, unless the activities are for the express purpose of eradicating the infestation or INV1 and INV2 have been completed.

Conduct post-implementation monitoring for invasive plants. Continue monitoring, treating, and removing invasive plants until all infestations are eradicated and native plant species are well established.

Native Plant Materials and Revegetation

Pre-Implementation: Where the need for native plant materials is anticipated, assure that there is sufficient time for the plant materials specialist to develop a native plant materials plan and/or prescription prior to implementation of planned revegetation, rehabilitation, and restoration projects. This may include allowing for enough time to harvest and store hardwood cuttings, produce suitable quantities of native seed, and/or grow-out container stock.

Locally adapted, genetically appropriate native plant materials are the first choice for use in revegetation, restoration and rehabilitation, where timely natural regeneration of the native plant community is not likely to occur. Use a diverse assemblage of species that have the potential to naturally occur in the project area. Acquire native seed or plant sources as close to the watershed as possible. Examples of areas that may need treatment include: habitat restoration efforts, log decks, staging areas, landing zones, temporary roads, slash piles, culvert replacements, severely burned areas, skid trails, decommissioned roads, invasive species treatments, and other disturbances.

Non-native, non-invasive plant species may be used in the following situations: (1) when needed in emergency conditions to protect basic resource values (e.g., soil stability, water quality, and to help prevent the establishment of invasive species), (2) as an interim, non-persistent measure designed to aid in the re-establishment of native plants, (3) if native plant materials are not available and/or are not economically feasible, and (4) in permanently altered plant communities.

Under no circumstances shall non-native invasive plant species and/or noxious weeds be used for revegetation.

Development, review and/or approval of revegetation, rehabilitation, and restoration prescriptions, including species selection, genetic heritage, growth stage, seed mixes, sowing guidelines, and any needed site preparation, shall be accomplished by a plant materials specialist who is knowledgeable and trained or certified in the plant community type where the revegetation will occur.

Concentrate plantings above the bank-full elevation. Sedge and rush mats should be placed and sized to prevent their movement during high flow events.

Newly planted and/or seeded areas should be protected from animals and activities that may prevent, retard, or slow the establishment and recovery of native vegetation. Site-specific measures may include building fences, piling slash, jackstrawing, closing areas to vehicles, and/or temporarily changing grazing regimes until the desired condition is sufficiently achieved.

Soils

For projects involving heavy machinery off roads, the project proponents shall inspect the site for existing impacts to the soil. If existing impacts appear to be heavy on the Malheur or moderate on the Ochoco, they shall contact a soil scientist, who shall determine what site specific project design criteria are necessary to meet Forest Plan and Forest Service Manual standards and guidelines. (If a soil scientist is not available, a silviculturist or hydrologist can do the work.) If standards and guidelines cannot be met, heavy machinery shall not be used.

Erosion would be minimized by following General Aquatic Conservation Measures and by implementing the appropriate project design criteria based on the type of activity (see appendix A).

Erosion from heavy machinery use would be minimized; by minimizing compaction and puddling, rutting would be minimized.

For Livestock Stream Crossings and Off-Channel Watering Facilities, out-of-channel erosion would be minimized.

For Road Erosion Control, erosion would be minimized.

For Juniper Removal, erosion would be minimized. It is possible that Juniper Removal would increase ground cover within a few years, and thereby reduce erosion.

Prescribed Fire (including for disposal of slash after Juniper removal) can involve only low and moderate severity fire, and erosion from fire lines would be minimized, so erosion from prescribed fire would not be significant.

Additional Soils PDCs added April 2018

Soil Protection Guidance for Aquatic Restoration Projects Using Heavy Equipment Off Roads

Hersh McNeil, Tom Friedrichsen, & Steve Namitz 3-20-18

The following are soil protection practices typically used to minimize adverse effects to the environment, in order to meet desired soil conditions (including Forest Plan standards) as well as Project Design Criteria described in the Aquatic Restoration EA.

Avoid heavy machinery travel ("HMT") on slopes steeper than 35 percent, where feasible.
No heavy equipment shall be allowed on highly erodible soil. "Highly erodible soil" generally means areas larger than 50 feet diameter, and either: (1) steeper than 30 percent, with less than 75 percent ground cover, (2) 20-30 percent slope with less than 50 percent ground cover, (3) 10-19 percent slope with less than 25 percent ground cover, or (4) with signs of current erosion, such as pedestaling or rilling.
For tree-tipping or removal for LWD projects ---- On areas where existing skid trails spaced 100 to 140 feet apart can be reused, reuse the old skid trails. Otherwise, space HMT travel ways about 120 feet apart where practical, using existing skid trails where possible and appropriate. Travel ways ("trails") should average less than 14 feet wide.

Low ground pressure equipment (less than 8.5 pounds per square inch [psi]) can be allowed off trails on dry, snow-covered, or frozen soil. For soil protection practices "dry" means July through September, or obviously dry in 6 of the top 10 inches in other months; "snow-covered" means sufficient snow strength and depth to prevent compaction; "frozen" means the soil is frozen at least through the top 4 inches.
Tree tipping trails shall be covered with slash to reduce runoff and erosion.

Fire and Fuels

Mechanical tools may be necessary to prepare fire control lines for these burns, but would be limited, and typically no heavy equipment would be used. Prescribed burns or wildfires could temporarily affect air quality.

The project design criteria for both Juniper Removal and Riparian Vegetation Treatment (controlled burning) would be followed. National, state, and local policies regarding prescribed fire implementation will be met.

Activities that are expected to create smoke emissions would follow the State of Oregon Smoke Management Plan. Prior to burning, approval will be obtained from the Oregon Department of Forestry, who determines compliance with the Clean Air Act. State smoke forecasts, which predict wind direction and smoke mixing height, will be obtained prior to all burning to ensure smoke intrusions will not occur in the local smoke sensitive receptor areas.

Burning will follow the guidance provided by the Oregon Smoke Management Plan (Directive 1-4-1-601, Operational Guidance for the Oregon Smoke Management Program), which is an agreement between federal land management agencies in northeast Oregon and Oregon Department of Forestry limiting smoke emission amounts. Oregon Department of Forestry monitors activity, and if a limit is reached it will shut down prescribed fire activity.

Heritage Resources

Compliance with Section 106 of the National Historic Preservation Act for activities authorized under this analysis will be completed and concurred with by the Oregon State Historic Preservation Office before any ground disturbing action takes place. For each potential activity the District or Zone archaeologist will determine which of the criteria in the 2004 Programmatic Agreement with the Oregon State Historic Preservation Office best fit the particular project. This will vary somewhat project to project based on the scale of the particular activity, the location on the landscape, and the nature of associated cultural resources, if any.

The District or Zone archaeologist will document their findings on a Programmatic Agreement form with a project description, rationale and location map which will be attached to the Forest Service Heritage Event database. The Forest archaeologist will review and sign off on the Programmatic Review form if concurred with. For appendices A, B and C projects as defined in the 2004 Programmatic Agreement, the Forest will retain the documentation and provide the Oregon State Historic Preservation Office with the annual summary of projects as described in the Preservation Act.

For full inventories the District or Zone archaeologist will complete an inventory report meeting current Oregon State Historic Preservation Office standards which will be reviewed by the Forest archaeologist. The Forest archaeologist will forward the

completed inventory report to the Oregon State Historic Preservation Office for review and concurrence signature or further discussion as appropriate.

Consultation with Native American tribes is conducted under the terms of the Memorandums of Understanding the Forest has with each individual tribe. The Forest regularly consults with the Burns Paiute Tribe, the Confederated Tribes of the Umatilla Indian Reservation and the Confederated Tribes of Warm Springs Reservation.

For work requiring a full inventory under the terms of the 2004 Programmatic Agreement any identified cultural resources sites will generally be avoided. For cases where site avoidance is impractical mitigation procedures will be developed in consultation with the Oregon SHPO before project work begins.

If any previously unidentified cultural resources are located during project implementation, ground disturbing work will be halted until the resources are evaluated by the District or Zone archaeologist. If the cultural resources are determined to be potentially eligible for listing on the National Register of Historic Places work will either be permanently halted or a mitigation plan will be developed in consultation with the Oregon SHPO before work continues.

Recreation

Motorized aquatic restoration methods would not be used within Wilderness, Wild portions of Wild and Scenic Rivers, and Inventoried Roadless Areas.

Mechanized aquatic restoration methods would not be used within Wilderness or Wild portions of Wild and Scenic Rivers.

Grazing

General

Range and Fire Specialists and permittees would coordinate activities including scheduling of burning activities in grazing units.

Utilize the Forest Post-Fire Interim Grazing Guidelines to aid in determining when to resume grazing activities.

Whenever possible, units to be rested would be burned in the spring of the year to be rested or in the fall prior to the rest year.

If a rest period is required following a burn the permittee has the option to exclude cattle grazing from those portions of a pasture that were burned through the use of fencing and could continue to graze the unburned areas of a unit.

Protection of Government and Permittee Investments

All existing structural range improvements (fences, gates, spring developments, etc) and permanent ecological plots would be contractually protected.

Maintain structural integrity of range improvements.

If structural improvements are damaged during project operations they would be repaired to Forest Service standards prior to livestock scheduled use by the party responsible for causing the damage. Repairs would be required of the purchaser if damage were done during thinning or fuel treatment contractors or by force account where appropriate.

Three or more splices to a single wire within a distance of 20 feet will be replaced with a single splice.

Fence right of ways (6ft either side of fence), trails, other developments and access to them would be cleared of slash produced by project activities.

Aspen Restoration

New aspen exclosure fences would have gates installed in proper locations to allow for removal of stray livestock. Aspen fences would be maintained each year and repaired whenever necessary. Plans for aspen exclosures will define when restoration of the protected stand has been achieved and who has responsibility for maintenance of the structure. When fences are no longer needed, aspen fences should be removed.

Alternate livestock water sources to those being used in aspen stands would be developed off-site before fencing aspen or re-evaluate fencing of the aspen site. Coordinate with range specialist and permittee.

Notification

During planning stage of each individual project all potentially impacted grazing permittees will have notice of action and opportunity to provide input that may lessen impacts to their livestock operation well in advance of implementation.

Prior to implementation all potentially impacted grazing permittees will be given notice of dates when work will start.

Lower Wiwaanaytt Meadow Lodgepole Removal

Lands & Special Uses project review & comments

4/18/2019

- Special Use Authorization application currently being reviewed for irrigation ditch within project area boundary.

- Ensure National Forest Boundary Line Policy is reviewed prior to project implementation and adjacent landowners are adequately notified.

- One point of diversion (POD certificate #84049) associated with irrigation ditch located within project boundary.

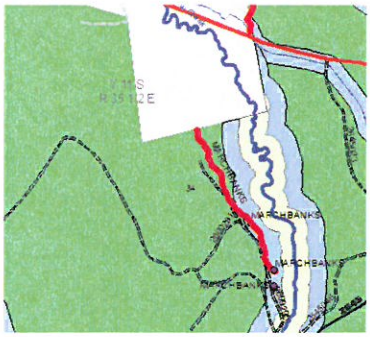
Lower Wiwaanaytt Meadow Lodgepole Removal

Lands & Special Uses project review & comments

4/18/2019

(Internal Documentation)

- Lands SUPs – irrigation ditch currently being reviewed for SUP application.
  - Coordinate with Sheila & David Marchbanks.
    - *Guzman had meeting with them on 3/15/2019.*
- Check with land survey (within a quarter of a mile) of private.
  - *Boundary maintained in 2017 per Robert Moyers email 3/13/2019.*



- No access issues identified.
- OWRD - https://apps.wrd.state.or.us/apps/gis/wr/Default.aspx
  - Anton Elk – Cert# 84049 – irrigation; 09/16/1927 (*associated with Marchbanks irrigation ditch*).

Forest Service 0(
Vas

Washington Office

1400 Independence Avenue, SW
Washington, DC 20250

File Code: 7150 **Date:** March 18, 2016
Route To: 5500; 7150

Subject: National Forest Boundary Line Policy

To: Regional Foresters

The Forest Service Line Officer has a public trust responsibility to efficiently manage, protect and preserve the public estate managed by the Forest Service as National Forest System (NFS) land. This includes the responsibility to ensure any land, resource or restoration project occurring near or adjacent to any Forest Service boundary line does not proceed until the legal NFS boundary lines are properly located and physically marked in the field prior to any management action.

Current Forest Service policy is that all NFS boundary lines shall be located, monumented, marked and posted to prescribed Forest Service boundary marking standards prior to undertaking land management activities planned near or adjacent to any Forest Service boundary line, and that no management activity take place that may create or cause a false or misleading boundary location. This Forest Service policy has been in effect for decades and is currently documented in FSM 7152.03 Policy, Item 3. Land Stewardship. Lands and Realty Management is currently in the process of updating FSM 7150 – Surveying, and issuing direction under a new Boundary Management Chapter and Handbook to be released in the fall of 2016.

The updated direction will require all NFS property line and Special Designated Area boundary lines be surveyed, marked and maintained in their correct legal location in the field prior to undertaking any land, resource and restoration projects occurring within ¼ mile of any NFS boundary line. While the Forest Service national standard is "within ¼ mile of any NFS boundary line," the regional land surveyor and/or forest land surveyors may increase or decrease this distance based upon their professional knowledge of the accuracy and reliability of Forest Service maps, the land net and land surveys of record.

An accurate delineation and location of NFS boundary lines will help prevent boundary disputes and/or loss of valued NFS land and its resources. It is Forest Service policy to fully manage the NFS land and resources to the legal boundary location on the ground. Creating false or miss-leading boundary lines by deliberately offsetting back onto NFS lands from an unknown or an approximated boundary, or adjusting land, resource and restoration project boundaries to avoid the responsibility to mark NFS boundary lines violates Forest Service boundary line policies and is not acceptable.

Geographic Information System (GIS) based coordinates for the land net shall not be used as authorative indicators of legal boundary lines and property corners, unless the GIS coordinate values are derived from direct physical occupation and observation, validated by a state licensed professional land surveyor or an authorized Bureau of Land Management (BLM) cadastral surveyor. In addition fence lines, fence corners and other alleged physical evidence of the lines and corners are not to be used as indicators of boundary lines unless their locations are also validated by a state licensed professional land surveyor or a BLM cadastral surveyor.

Substandard boundary location practices used to locate land, resource and restoration boundaries cause the following problems:

1. Mislead adjoining landowners and promote encroachments by them or by the Forest Service.
2. Neglect our public land stewardship responsibilities.
3. Create unmanaged strips of NFS land and resources.
4. Dramatically increase Federal and possibly personal liability, when Forest Service management actions trespass onto adjoining private lands.
5. Violate the laws and regulations applicable to protection and preservation of Special Management Areas established by Pubic Law, or other special areas established by Executive Order, Proclamations and other establishment procedures and processes.
6. Create litigation, along with the associated expenses to resolve encroachments.

It is against Forest Service policy for any employee other than an individual authorized by the Forest Service or the BLM and acting in their official capacity as a land surveyor to determine and/or mark NFS boundaries. Surveying, locating, marking and maintaining NFS boundaries of any type shall be performed under the direct supervision and responsible charge of a land surveyor working under state or federal land survey authority, whether the survey work is completed by force account or contract.

A Forest Service state licensed professional land surveyor, or a BLM cadastral surveyor, shall be consulted prior to any ground disturbing activity such as a prescribed burn, fire rehabilitation, mechanical thinning, road realignment and construction, facilities improvement or construction, etc. All original corner locations and boundary locations shall be searched, restored and maintained as necessary by a state licensed professional land surveyor or a BLM cadastral surveyor so the expense of perpetuating original corners and original lines to standard is not lost during the management activity. NFS boundaries that have not previously been located and marked shall be surveyed and marked to Forest Service boundary line marking standards. All land surveys and identification of NFS boundary lines shall be completed to Forest Service land surveying standards, as well as appropriate federal and state laws, regulations and guidelines governing the profession of land surveying.

In order to meet our boundary management goals, it is critical we pursue and act upon opportunities to share the financing of project generated boundary work with other programs when appropriate. Unit Line Officers should work collaboratively with their professional land surveyor and other staff areas to identify, approve and prioritize the annual program of work and ensure the project-specific survey and boundary line programs are funded.

/s/ Gregory C. Smith

GREGORY C. SMITH
Director of Lands and Realty Management

Kimbell, Stacia -FS

From: Moyers, Robert - FS
Sent: Wednesday, March 13, 2019 8:57 AM
To: Kimbell, Stacia -FS; Lind, Kenneth A -FS
Cc: Taylor, Allen -FS; Nelson, Jeffrey - FS; Bass, Jordan - FS; Guzman, Edward R -FS
Subject: RE: Boundary Check for 2019 PCRD Aquatics EA proposals

The Forest boundary for Marchbanks was maintained in 2017 and Summit Bosonberg was maintained 2014. I also looked at Little Crane Creek and Clear Creek. Both of these projects are surrounded by green so no boundary work is needed, however, I noticed two errors:

1. The location of Little Crane Creek is in T15S R35½E (plan shows R35E).
2. The location of Clear Creek is T11S R35E, S.34 & T12S R35E, S.3 (plan shows T10S).

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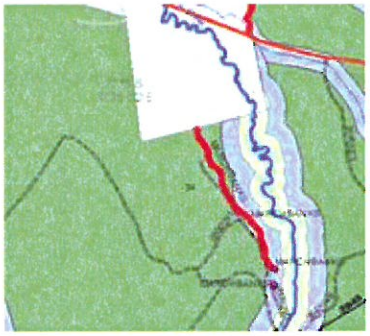
Caring for the land and serving people

From: Kimbell, Stacia -FS
Sent: Tuesday, March 12, 2019 3:26 PM
To: Moyers, Robert - FS <rmoyers@fs.fed.us>; Lind, Kenneth A -FS <klind@fs.fed.us>
Cc: Taylor, Allen -FS <allentaylor@fs.fed.us>; Nelson, Jeffrey - FS <jeffreynelson@fs.fed.us>; Bass, Jordan - FS <jordankoffutt@fs.fed.us>; Guzman, Edward R -FS <eguzman@fs.fed.us>
Subject: Boundary Check for 2019 PCRD Aquatics EA proposals

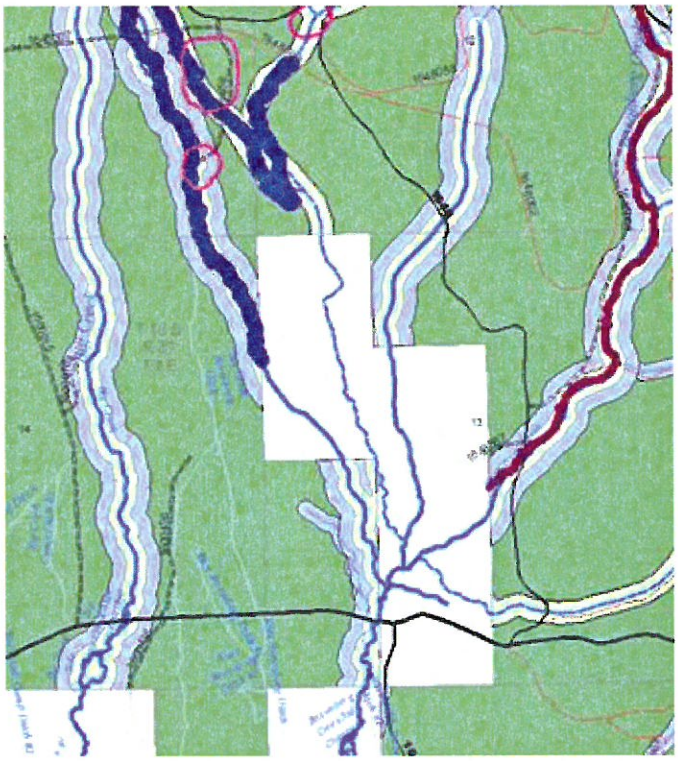
Robert and Ken –

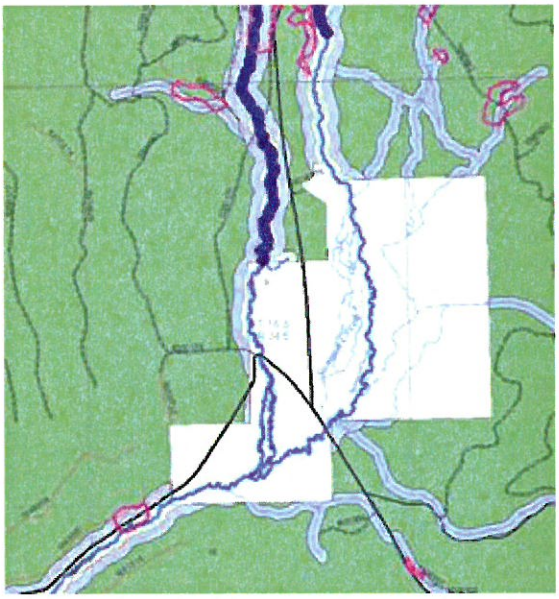
Prairie City Ranger District is proposing to implement the attached Aquatics EA checklist projects this field season. Per my review, I planned to include the *"Ensure National Forest Boundary Line Policy is reviewed prior to project implementation and adjacent landowners are adequately notified"* comment for the following project 2 areas:

- Marchbanks



- Summit Bosonberg





Each project description contains the GIS location data if needed.

Please provide recommendations on boundary verification and I will have the District schedule with you accordingly.

As always, thanks so much!

Stacia Kimbell
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