

## Forest Aquatic Restoration Project NEPA Compliance and Implementation Checklist

**Project Number:** 01082017

**Date:** 3/28/2017

**Title & Category:** Butte Fence Category 9: Livestock fencing, stream crossings and off-channel livestock watering

**Location:** T. 11 S., R. 33 E., sec. 2, 11, 12 and T.11 S. R. 34 E., sec. 7, 8, 9, 17.

**Project Description:** The project will authorize the construction of 6 miles of fence in the Butte pasture.

**Heritage**

- Specific PDC for Heritage addressed (Heritage Surveys; Avoidance areas). *- n/a*

**Botany**

- Specific PDC for Botany addressed (Sensitive Plant Surveys).

- Specific PDC for Nox. Weeds addressed.

**Land Management Consistency**

- |                                  |                        |                             |   |
|----------------------------------|------------------------|-----------------------------|---|
| <input type="checkbox"/> 4A      | Big Game Winter range  | <input type="checkbox"/> 9  | Research Natural Areas                        |
| <input type="checkbox"/> 6A & 6B | Wilderness             | <input type="checkbox"/> 10 | Semi-Primitive Non-Motorized Recreation Areas |
| <input type="checkbox"/> 7       | Scenic Area            | <input type="checkbox"/> 22 | Wild and Scenic River                         |
| <input type="checkbox"/> 8       | Special Interest Areas | <input type="checkbox"/>    | Inventoried Roadless Areas                    |

**Comments:**

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

I have reviewed this project and have determined it is within the Project Design Criteria identified for my resource.			
Resource	Signature	Date	Comments
Heritage	<i>Katee White</i>	<i>05/09/2017</i>	<i>see PA report - no effect to historic properties</i>
Botany	<i>Joe Paine</i>	<i>4/24/2017</i>	<i>No impact if PDCs followed</i>
Wildlife	<i>Michael</i>	<i>5/3/2017</i>	<i>see attached PDCs to avoid impacts</i>
Fish*	<i>John Jay</i>	<i>4/11/2017</i>	<i>Fence will increase effectiveness of livestock exclusion from steel head redds.</i>
Hydrology*	<i>Mark Wally</i>	<i>4/11/17</i>	<i>Follow PDCs.</i>
Range	<i>Robert</i>	<i>4-11-17</i>	
Soils	<i>Robert C. Mihal</i>	<i>4-28-17</i>	<i>NO HEAVY EQUIPMENT</i>
Recreation	<i>Dixon</i>	<i>7/26/2017</i>	<i>No effects</i>
Lands and Special Uses <i>MINERALS</i>	<i>David Halverson</i>	<i>4/12/17</i>	<i>No lands special uses identified w/ project area. Nearby mine claim w/ 1/4 mile (map attached) away, not likely to affect. wire gates or cattle guards need to be installed on open road crossings - fence needs to be constructed above &amp; below cut &amp; fill slopes and min 20' outside hoag prism. see attachment.</i>
Engineering	<i>John Sedwick</i>	<i>4-17-17</i>	
Fuels / Fire	<i>John Jay</i>	<i>7/26/17</i>	
Silviculture	<i>Amanda Sunday</i>	<i>4/17/17</i>	<i>no effects</i>

\* 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.

Line Officer Signature: *David Halverson*

Date: *5-8-17*

**Implementation Description:**  
**Butte Fence Project**

<b>Category 9:</b> Livestock fencing, stream crossings and off-channel livestock watering	<b>Lead Preparer:</b> Amanda Rainey
<b>Applicant:</b> Blue Mountain Range	<b>NEPA Reference:</b> DN For Aquatic restoration EA ( <a href="http://www.fs.usda.gov/detailfull/malheur/landmanagement/?cid=STELPRD3817723&amp;width=full">http://www.fs.usda.gov/detailfull/malheur/landmanagement/?cid=STELPRD3817723&amp;width=full</a> )
<b>Location: (T/R, sec.)</b> T. 11 S. R. 33 E., sec. 2, 11 and 12; T. 11 S. R. 34 E., sec. 7, 8, 17, 9.	<b>Lease/ /Case File/ Serial #:</b> N.A. <b>(Reference #):</b> N.A.
<b>Begin Date:</b> February 21, 2017	<b>Due Date:</b> May 1, 2017

**Purpose/Need:**

The Butte pasture in the South Middle Fork Grazing Allotment is located in the Northeast corner of the Blue Mountain Ranger District. This pasture is approximately 13,334 acres. A pasture of this size makes it extremely difficult to obtain proper cattle distribution. With current pasture boundaries the cattle generally congregate in the lower elevation portions of the pasture which is also the critical habitat and most sensitive riparian area (MSRA) sections of the stream and require significant riding to distribute cattle with limited success. By dividing this pasture into an Upper and a Lower pasture we will more effectively be able to manage the MSRA portions of the stream, improve distribution, increase the utilization in the uplands, and decrease the likelihood of retarding the recovery of MCR Steelhead critical habitat. The development upland water sources in the Upper and Lower pastures, which would be authorized under a different project proposal, would also help with the distribution of cattle. The division of this pasture will open more rotation possibilities and provide the ability to develop a rest rotation in which the Lower pasture can be rested or flash grazed allowing quicker recovery in the MSRA portions of Butte and Ruby Creeks which both contain high value spawning habitat. After the pastures are divided the upper pasture will be approximately 10,000 acres and the lower pasture will be approximately 3,334 acres.

**Land Use Plan Conformance:**

The project falls under Management Area (MA) 3B “Anadromous Riparian Areas” of the Malheur National Forest Land and Resource Management Plan (LRMP). The goal of MA3B is to “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 riparian dependent species 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” (USDA Forest Service, 1990). Beaver Creek, Ragged Creek, Ruby Creek, Butte Creek and Little Butte Creek are all within a Category 1 Riparian Habitat Conservation Area (fish-bearing stream) as designated by PACFISH/INFISH and are listed as designated critical habitat for Mid-Columbia River steelhead by the National Marine Fisheries Service (NMFS).

**Proposed Action:**

Six miles of fence will be built to divide the Butte pasture into two smaller pastures; the Upper Butte pasture would be approximately 10,000 acres in size and the Lower Butte pasture would be approximately 3,334 acres in size and include all of the MSRA in the pasture.

**Implementation Plan:**

Fence construction on the west side of the Butte pasture will begin at the boundary fence separating the Sunshine and Butte pastures; approximately 90 feet from FS road 2045458. It will follow topography in an easterly direction for approximately 6 miles. At which point, the fence will tie into the division fence between the Butte and Deerhorn pastures near the Middle Fork John Day River; approximately 80 feet northwest of the confluence of Little Butte Creek and the Middle Fork John Day River. See Figure 1.

- Fence design will follow the Montana fence specifications from “A Landowner’s Guide to Wildlife Friendly Fences.” Second Edition. Private Land Technical Assistance Program, Montana Fish, Wildlife & Parks.
- Project Design Criteria (PDC) Category 9 supplies implementation criteria being used in this project (Project Design Criteria. Appendix A – Livestock Fencing, Stream Crossings and Off-Channel Livestock Watering Facilities, p. 167.)
- Fence maintenance clearing will be in accordance with Part 3 of grazing permits 0604010035.
  - The fence right-of-way is 6 feet wide and 10 feet high on each side of the fence.
  - All logs, trees, limbs, slash, brush and other material will be removed from the right-of-way unless otherwise specified.

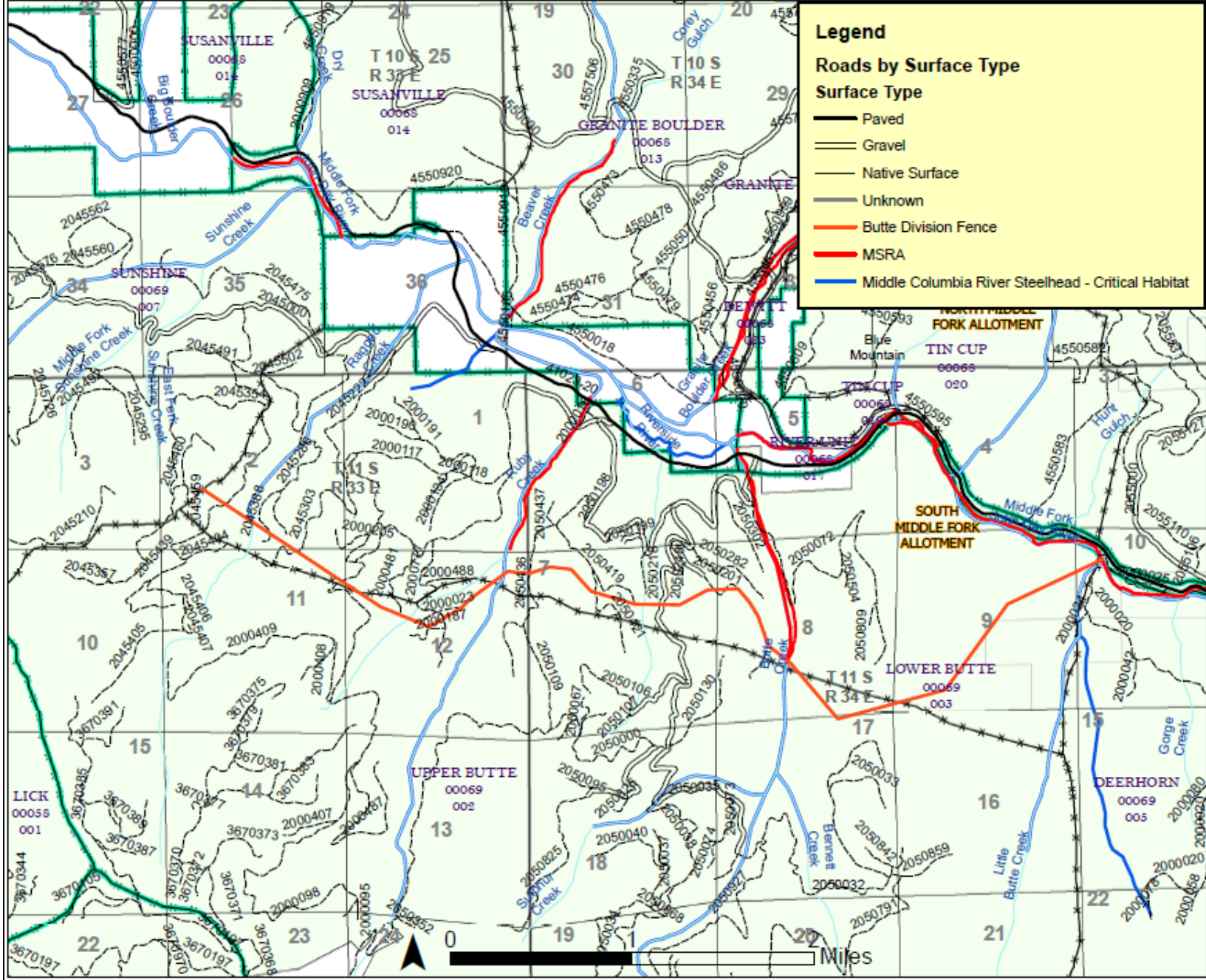


Figure 2: Butte Pasture – Proposed Butte Division Fence

**Appendix to the Aquatic Restoration EA  
Implementation Description**

**Project Title: South Middle Fork Fence Project**  
**Project Number: 01082017**

**Category 9:** Livestock fencing, stream crossings and off-channel livestock watering

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 - 01082017
  - b. Project name - North/South Middle Fork Riparian Fence Project
  - c. Location -

<b>Project</b>	South Fork Fence Project
<b>Stream Name</b>	Ragged Creek, Ruby Creek and Butte Creek
<b>6<sup>th</sup> field HUC</b>	170702030203
<b>Latitude (Decimal Degrees)</b>	
<b>Longitude (Decimal Degrees)</b>	

- d. Agency contact - Nick Stiner, [nstiner@fs.fed.us](mailto:nstiner@fs.fed.us) (541) 575-3496, or Isaac Whitman, [iwhitman@fs.fed.us](mailto:iwhitman@fs.fed.us) (541) 575-3313.
- e. Timing - This project is proposed to start in the spring of 2017 when the conditions on the ground will not be disturbed by fence construction activities.
- f. Activity category -
  - Category 9: Livestock fencing, stream crossings and off-channel livestock watering
- g. Project description - Project description is available in the Implementation Description under the section "Implementation Plan" above.
- h. Species affected -
  - i. Listed species: Mid-Columbia River Steelhead
  - ii. Critical Habitat: Mid- Columbia River Steelhead
  - iii. MIS Species: Mid- Columbia River Steelhead

- i. Date of submittal – To be completed in Spring of 2017, at least 30 day prior to implementation
  - j. Site assessments – Assessment for contaminants is not required at these locations.
  - k. Review – NMFS fish passage review and Restoration Review Team review are not required.
  - l. Verification – \_\_\_\_\_
  - m. SOD project notification – \_\_\_\_\_
3. Minor Variance: No variances are proposed for this project.
  4. NMFS Fish Passage Review and Approval: This work does not require review by the NFMS level 1 team member.
  5. Restoration Review Team: This work does not require review by the restoration review team.
  6. Project Completion Report: To be completed after implementation
  7. Annual Program Report: This project will be completed within one year, completion and annual reporting will occur in the winter of FY17 before February 15<sup>th</sup>.

## General Aquatic Conservation Measures

8. Technical Skill and Planning Requirements:
  - a. An appropriately qualified fisheries biologist or hydrologist will be involved in the design, review and implementation 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.
9. Climate Change: due to the small scale of this work, future climate changes impacts will not have dramatic effects on this work.
10. In-Water Work Period: Instream work will not be done until after the 15<sup>th</sup> of July.
11. Fish passage: Not applicable.
12. 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 includes an assessment of the likelihood that containments are present at the site

13. 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.

14. 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.

#### 15. 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.

#### 16. 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.

#### 17. Monitoring

Monitoring will be conducted by Action Agency staff, as appropriate for this 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.

18. 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.

## Applicable Project Design Criteria

### Project Design Criteria for Aquatic Restoration Activity Categories

9. Livestock fencing, stream crossings and off-channel livestock watering facilities projects will be implemented by constructing fences to exclude riparian grazing, providing controlled access for walkways that livestock use to transit across streams and through riparian areas, and reducing livestock use in riparian areas and stream channels by providing upslope water facilities. Equipment such as excavators, bull dozers, dump trucks, front-end loaders, and similar equipment may be used to implement projects.
  - a. **Livestock Fencing**
    - i. Fence placement must allow for lateral movement of a stream and to allow establishment of riparian plant species. To the extent possible, fences will be placed outside the channel migration zone.
    - ii. Minimize vegetation removal, especially potential large wood recruitment sources, when constructing fence lines.
    - iii. Where appropriate, construct fences at water gaps in a manner that allows passage of large wood and other debris.
  - b. **Livestock Stream Crossings**
    - iv. The number of crossings will be minimalized.
    - v. Locate crossings or water gaps where streambeds are naturally low. Livestock crossings or water gaps must not be located in areas when compaction or other damage can occur to sensitive soils and vegetation (e.g. wetlands) due to congregating livestock.
    - vi. To the extent possible, crossings will not be placed in areas where ESA listed species spawn or are suspected of spawning (e.g. pool tailouts where spawning may occur), or within 300 feet upstream of such areas.
    - vii. Existing access roads and stream crossings will be used whenever possible, unless new construction would result in less habitat disturbance and the old trail or crossing is retired.
    - viii. Access roads or trails will be provided with a vegetative buffer that is adequate to avoid or minimize runoff of sediment and other pollutants to surface waters.
    - ix. Essential crossings will be designed and constructed or improved to handle reasonably foreseeable flood risks, including associated bedload and debris and to prevent the diversion of streamflow out of the channel and down the trail if the crossing fails.
    - x. If necessary, the streambank and approach lanes can be stabilized with native vegetation or angular rock to reduce chronic sedimentation. The stream crossing or water gap should be armored with sufficient sized rock (e.g. cobble-size rock) and use angular rock if natural substrate is not of adequate size.
    - xi. Livestock crossings will not create barriers to the passage of adult and juvenile fish. Whenever a culvert or bridge—including bridges constructed from flatbed railroad cars, boxcars or truck flatbeds—is used to create the crossing, the structure width will tier to project design criteria listed for Stream Simulation Culvert and Bridge Projects under Fish Passage Restoration (PDC 21).
    - xii. Stream crossings and water gaps will be designed and constructed to a width of 10 to 15 feet in the upstream-downstream direction to minimize the time livestock will spend in the crossing or riparian area.
    - xiii. When using pressure treated lumber for fence posts, complete all cutting/drilling offsite (to the extent possible) so that treated wood chips and debris do not enter water or flood prone areas.

- i. Riparian fencing is not to be used to create livestock handling facilities or riparian pastures.
- c. Off-channel Livestock Watering Facilities**
- xiv. The development of a spring is not allowed if the spring is occupied by ESA-listed species.
- xv. Water withdrawals must not dewater habitats or cause low stream flow conditions that could affect ESA-listed fish. Withdrawals may not exceed 10% of the available flow.
- xvi. Troughs or tanks fed from a stream or river must have an existing valid water right. Surface water intakes must be screened to meet the most recent version of NMFS fish screen criteria (NMFS 2011e), be self-cleaning or regularly maintained by removing debris buildup. A responsible party will be designated to conduct regular inspection and as-needed maintenance to ensure pumps and screens are properly functioning.
- xvii. Place troughs far enough from stream or surround with a protective surface to prevent mud and sediment delivery to the stream. Avoid steep slopes and areas where compaction or damage could occur to sensitive soils, slopes or vegetation due to congregating livestock.
- xviii. Ensure that each livestock water development has a float valve or similar device, a return flow system, a fenced overflow area or similar means to minimize water withdrawal and potential runoff and erosion.
- xix. Minimize removal of vegetation around springs and wet areas.
- xx. When necessary, construct a fence around the spring development source to prevent livestock damage.

### 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.’

#### *General for Inside Riparian Habitat Conservation Areas*

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

#### *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.

## ***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.

### **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 shall be maintained. Spring developments shall not dewater Groundwater dependent ecosystems. 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.

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 groundwater dependent ecosystem, unless it is for the benefit or protection of the groundwater dependent ecosystems 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 groundwater dependent ecosystems. 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 enclosures 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 groundwater dependent ecosystems.

When developing springs, place troughs far enough away from Groundwater dependent ecosystems, 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.

## **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.

## ***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.

## ***Grazing***

### **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.

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## **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.

## Project design criteria for Butte Fence Project

Forest Aquatic Restoration Project Number: 01082017

Design criteria are necessary for this particular project because of the location of the fence, slope of the proposed location, the frequent travel and use of big game in the area, the proportion of the fence in MA4a (big game winter range) and know critical calving and fawning areas associated with the proposed location. Fence described below is referenced as the “ideal wildlife friendly fence” in the Montana Fish, Parks and Wildlife fencing guide (2012).

- 1) A top wire or rail (PVC acceptable) preferably smooth wire and preferably 40” with a maximum of 42” above the ground.
- 2) 12” between top two wires
- 3) Smooth bottom wire 16-18” above the ground, with 18” being preferred on steeper slopes greater than 30% (slope increases barrier – Figure A).
- 4) Preferably no stays – if stays are necessary do not use wire stays that are easily bent.
- 5) Install wildlife passage designs (described below) at locations where big game frequently concentrate or cross, as identified through coordination of BMRD wildlife staff or ODFW wildlife biologist.
- 6) Passage design could also consist of identified sections of fence where top and bottom wire are combined and covered with black PVC rail.
- 7) Gates installed in the fence should be left opened when affected pasture is not occupied by cattle.
- 8) Identify any fences/wire from old fences in the allotment that can be removed to also help mitigate new fence construction.

Description of wildlife passage designs – in areas identified as needing additional wildlife passage measures, a section of fence between two posts will have the top wire removed after fence is stretched, tightened and secure – preferably spanning at least 10 posts in either direction of the passage section. The next highest wire (second from top) will be covered in black PVC to facilitate easier passage.

If preferred, locations could be determined prior to fence construction and where solid wooden passage structures could be installed and built as part of the fence (Figure C). Specs for such passage designs can be provided upon request.

Figure A.

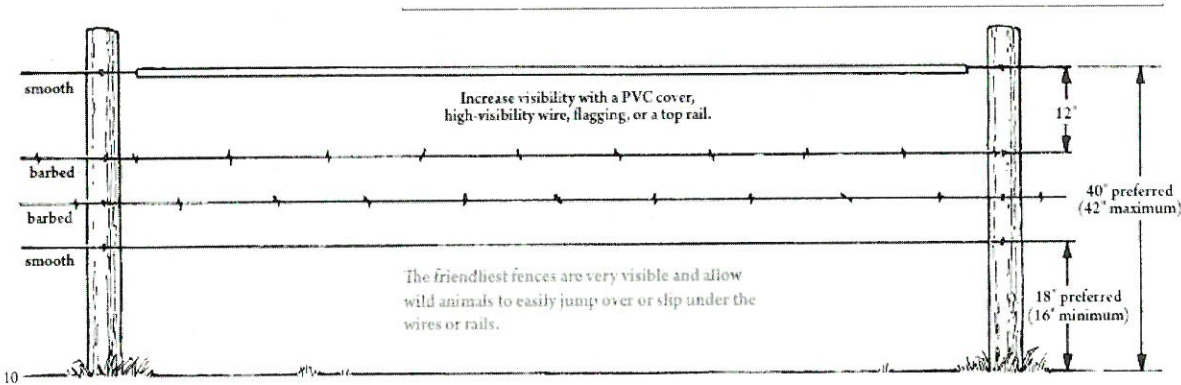


Figure B.

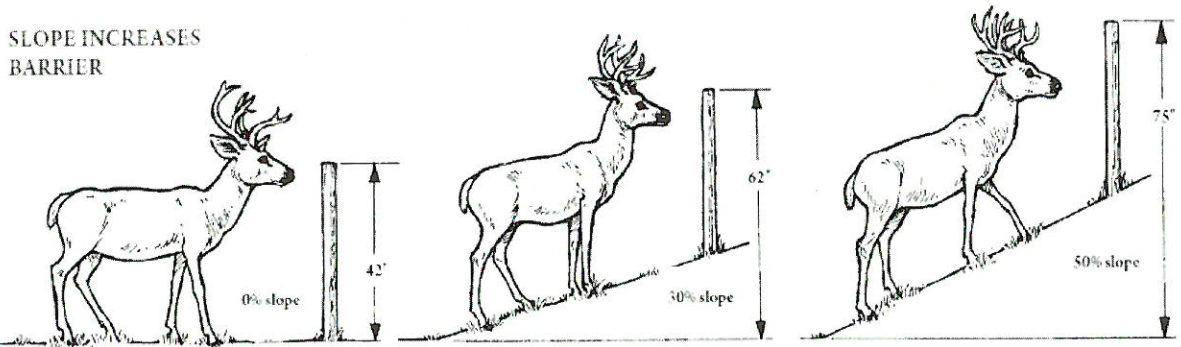
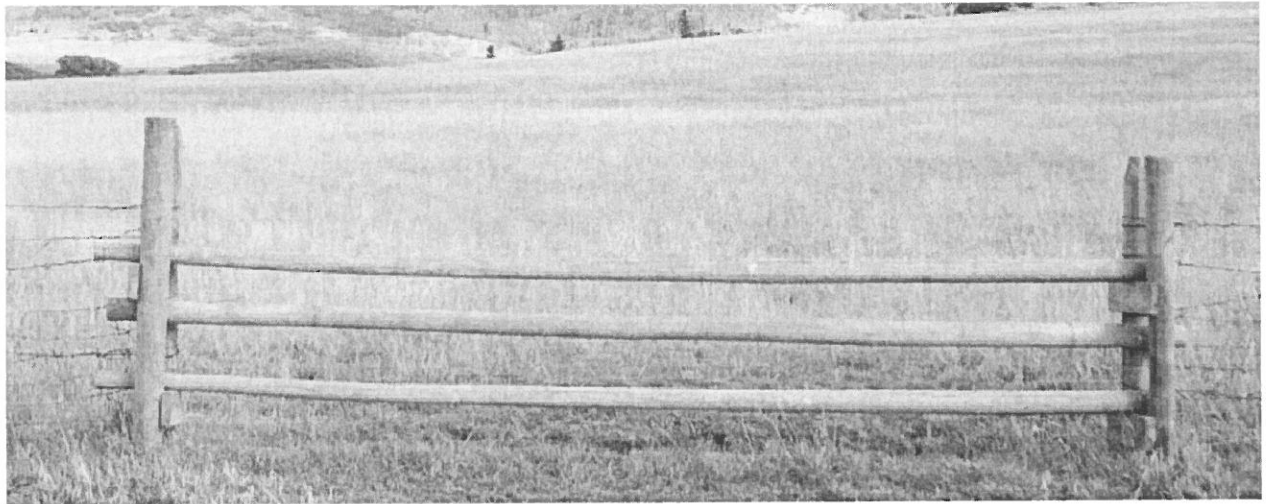


Figure C.



## Butte Fence Project – Engineering Report

Engineering Contact – John La Liberte

4/17/2017

Fences should NOT be placed between ditches and road shoulders which interfere with road maintenance or reestablishing road way for project work. Fences along road ways need to be place 20 feet from the road prism (top of cut bank, toe of fill slope, basically edge of road disturbance). Wire gates or permanent cattlguards should be installed on all open roads. Temporary cattleguards or solid fences across any roads restricting road access needs to be approved by engineering.