

# **Finding of No Significant Impact**

## **Headcut Stabilization**

NEPA Register Number DOI-BLM-OR-P000-2011-0024-EA

US Department of the Interior, Bureau of Land Management

Prineville Field Office, Oregon

### **Introduction**

The Bureau of Land Management (BLM) has completed an Environmental Assessment (EA No. DOI-BLM-OR-P000-2011-0024-EA) that analyzes the effects of one action alternative to improve watershed health district-wide by halting the advancement of headcuts up stream corridors. The alternative proposes a combination of large rock or wood placement and bioengineering methods in order to stabilize the headcuts. Actions could occur on up to 10 headcuts per year but would likely encompass approximately two per year within the district due to budget constraints. The EA is incorporated by reference in this Finding of No Significant Impact (FONSI).

The Council on Environmental Quality (CEQ) regulations state that the significance of impacts must be determined in terms of both context and intensity (40 CFR 1508.27).

### **Context**

The Proposed Action would occur throughout the BLM, Prineville district and would have local impacts on affected interests, lands, and resources similar to and within the scope of those described and considered in the Upper Deschutes Resource Management Plan and Record of Decision (2005), the Brothers / La Pine Resource Management Plan (1989), The John Day Resource Management Plan and Record of Decision (1985), The Two Rivers Resource Management Plan Record of Decision and Rangeland Program Summary (1986), and the Baker Resource Management Plan Record of Decision and Rangeland Program Summary (1989). The actions described represent anticipated program implementation within the scope and context of the RMPs. The treatment of up to 10 headcuts per watershed annually would not have international, national, regional, or state-wide importance not previously considered in the NEPA analysis for these RMPs.

## **Intensity**

We have considered the potential intensity and severity of the impacts anticipated from implementation of a Decision on this EA relative to each of the ten areas suggested for consideration by the CEQ. With regard to each:

**1. Would any of the alternatives have significant beneficial or adverse impacts (40 CFR 1508.27(b)(1))?**

No.

**Rationale:** The proposed action would impact resources as described in the EA. Mitigations to reduce impacts to the ground were incorporated in the design of the proposed action. These best management practices are outlined in Chapter 2 - Alternatives of the EA. None of the environmental effects discussed in detail in the EA are considered significant, nor do the effects exceed those described in the relevant RMP/EISs.

**2. Would any of the alternatives have significant adverse impacts on public health and safety (40 CFR 1508.27(b)(2))?**

No.

**Rationale:** The proposed action is designed to improve riparian habitat by stabilizing active headcuts within BLM administered lands within the Prineville District. There are no known effects to public health or safety.

**3. Would any of the alternatives have significant adverse impacts on unique geographic characteristics (cultural or historic resources, park lands, prime and unique farmlands, wetlands, wild and scenic rivers, designated wilderness or wilderness study areas, or ecologically critical areas (ACECs, RNAs, significant caves)) (40 CFR 1508.27(b)(3))?**

No.

**Rationale:** A cultural resource clearance will be completed prior to any restoration activities. Any recommendations therein will be followed. Any resource of concern identified to be at risk from the project activities will be protected from damage or disturbance. Any project implemented within a wild and scenic river or wetland would have beneficial impacts to these areas by preserving the streams connectivity with its floodplain and thus maintaining water quality and riparian vegetation upstream of the headcut. Any project occurring within a designated wilderness or wilderness study area would occur without the aid of mechanical treatments and would ensure that wilderness characteristics are maintained.

**4. Would any of the alternatives have highly controversial effects (40 CFR 1508.27(b)(4)?**

No.

**Rationale:** The effects that are expected are heavily documented and studied within the relevant literature and are not highly controversial in nature.

**5. Would any of the alternatives have highly uncertain effects or involve unique or unknown risks (40 CFR 1508.27(b)(5)?**

No.

**Rationale:** There are no unique or unusual risks. The many different federal, state, local, and private entities have implemented similar actions in similar areas. The environmental effects are fully analyzed in the EA. There are no predicted effects on the environment that are considered to be highly uncertain or involve unique or unknown risks.

**6. Would any of the alternatives establish a precedent for future actions with significant impacts (40 CFR 1508.27(b)(6)?**

No.

**Rationale:** Similar restoration projects have occurred numerous times for many years. There is no evidence that this action has potentially significant environmental effects. This management activity does not commit the BLM to pursuing further actions, and as such would not establish a precedent or decision for future actions with potentially significant environmental effects.

**7. Are any of the alternatives related to other actions with potentially significant cumulative impacts (40 CFR 1508.27(b)(7)?**

No.

**Rationale:** The actions considered in the proposed action were considered by the interdisciplinary team within the context of past, present, and reasonably foreseeable future actions. Significant cumulative effects are not predicted. An analysis of the effects of the proposed action is described in the EA.

**8. Would any of the alternatives have significant adverse impacts on scientific, cultural, or historic resources, including those listed or eligible for listing on the National Register of Historic Resources (40 CFR 1508.27(b)(8))?**

No.

**Rationale:** The project will not adversely affect scientific, cultural, or historic resources, including those eligible for listing in the National Register of Historic Places. Any cultural or historic resource identified within the project area would be avoided so that the project would not result in any adverse impacts to that resource.

**9. Would any of the alternatives have significant adverse impacts on threatened or endangered species or their critical habitat (40 CFR 1508.27(b)(9))?**

No.

**Rationale:** Mitigations to reduce impacts to special status species have been incorporated into the design of the proposed action. These best management practices are outlined in Chapter 2 of the EA. Both a wildlife and botanical clearance will be completed prior to any restoration activities. Any recommendations therein will be followed. Any resource of concern identified to be at risk from the project activities will be protected from damage or disturbance.

**10. Would any of the alternatives have effects that threaten to violate Federal, State, or local law or requirements imposed for the protection of the environment (40 CFR 1508.27(b)(10))?**

No.

**Rationale:** The project does not violate any known Federal, State, Local or Tribal law or requirement imposed for the protection of the environment. State, local, and tribal interests were given the opportunity to participate in the environmental analysis process.

## **Finding**

On the basis of the information contained in the EA, the consideration of intensity factors described above, all other information available to us, it is our determination that: (1) implementation of the alternative would not have significant environmental impacts beyond those already addressed in Upper Deschutes Proposed Resource Management Plan and Record of Decision (2005), the Brothers / La Pine Resource Management Plan (1989), The John Day Resource Management Plan and Record of Decision (1985), The Two Rivers Resource Management Plan Record of Decision (1986), and the Baker Resource Management Plan Record of Decision (1989); (2) the alternative would not constitute a major federal action having a significant effect on the human environment. Therefore, an EIS or a supplement to the existing EIS is not necessary and will not be prepared.

H.F. "Chip" Faver

H. F. "Chip" Faver  
Field Manager, Central Oregon Resource Area

1/26/12

Date

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Field Manager, Deschutes Resource Area

1/26/12

Date

# Decision Record

**NEPA Register Number:** DOI-BLM-OR-P000-2011-0024-EA

**Title of Action:** Headcut Stabilization

**BLM Office:** Prineville District Office, Prineville, Oregon.

## 1. Decision

It is our decision that up to 10 headcuts per year may be stabilized within the Prineville District. The stabilization methods could include the placement of large rock or wood or the use of bioengineering methods such as coir fiber nets or willow mats using either heavy machinery or hand tools.

## 2. Compliance

This action is in conformance with the Endangered Species Act by following guidelines set out in the Aquatic Restoration Biological Opinion as well as the Implementation of Interim Strategies for Managing Anadromous Fish-Producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California (PACFISH), by “maintaining and restoring water quality, stream channel integrity, channel processes, sediment regime,... and natural timing and variability of the water table elevations in meadows and wetlands” (p. 15).

This action is also in compliance with the Federal Water Pollution Control Act by “restoring and maintaining the chemical, physical, and biological integrity of the Nation’s waters” (p. 3). The approved action also conforms to the following Land Use Plans utilized on the district:

### **Draft John Day Basin Resource Management Plan and Environmental Impact Statement (2008)**

The proposed action would meet the objectives identified within the proposed John Day Basin RMP, a plan still in progress but expected to be completed in 2012, by helping to “move all perennial, perennial interrupted, and intermittent streams toward Properly Functioning Condition” (p. 59) and by “conserving and restoring, within existing site capability and natural disturbance regimes, water quality to provide beneficial uses and stable and productive riparian and aquatic ecosystems” (p. 62) as well as “stream channel integrity, channel processes, and sediment regimes” (p. 63). In addition, the project will help to “conserve and restore... surface to groundwater

interactions that support healthy riparian and wetland areas, aquatic habitats, and physical functions of stream channels” (p. 65).

**Two Rivers Resource Management Plan Record of Decision and Rangeland Program Summary (1986)**

The proposed project complies with the Two Rivers RMP by helping riparian areas to reach their full potential by enacting measures to protect or restore their natural function (p. 10).

**Upper Deschutes Resource Management Plan Record of Decision (2005)**

The proposed project complies with the watershed/hydrologic function and water quality objective of the Upper Deschutes RMP by “ensuring that water quality influenced by BLM activities a) achieves or is making significant progress toward achieving established BLM objectives for watershed function, and b) complies or is making progress toward achieving State of Oregon water quality standards for beneficial uses as established per stream by the Oregon Department of Environmental Quality ” (p. 42).

**Record of Decision: John Day River Management Plan, Two Rivers, John Day, and Baker Resource Management Plan Amendments (2001)**

The proposed project complies with the John Day River Management Plan by protecting “water quality by mitigating, diminishing, or eliminating sources of water pollution originating on public lands” and by protecting and enhancing riparian vegetation (p. 3).

**Baker Resource Management Plan Record of Decision and Rangeland Program Summary (1989)**

The proposed project complies with the Baker RMP by maintaining, restoring, or improving “riparian areas to achieve a healthy and productive ecological condition for maximum long-term multiple use benefits and values” (p. 16).

**Brothers/LaPine Resource Management Plan, Record of Decision and Rangeland Program Summary (1989)**

The proposed project complies with the Brothers/LaPine RMP by providing for “watershed rehabilitation to areas where deterioration of the watershed values due to accelerated erosion and runoff has been significant” (p. 14).

### 3. Proposed or Selected Alternative

Our decision is to select Alternative 2 from the EA. The proposed action is to stabilize up to 10 headcuts per year that are occurring throughout the district. Stabilization efforts would be site specific and the required clearances would be performed for each instance. Ground disturbing activities would likely encompass less than two acres per site, including actions such as equipment access and material staging. The stabilization methods could include the placement of large rock or wood or the use of bioengineering methods such as coir fiber nets or willow mats using either heavy machinery or hand tools.

One method of headcut stabilization would be the introduction of some large roughness elements into the stream channel, such as boulders or log jams. In many stream systems within the Pacific Northwest, large wood and boulders provide natural grade control in the form of channel spanning log jams or debris flow deposits. Hence, the designed rock and wood structures should mimic natural colluvial features, such as debris flow or landslide deposits, that provide this base level control or grade stabilization in areas where the risk of headcut migration exists. This technique is applicable to a wide range of stream types, from low gradient meandering streams to high gradient cascade channels. The goal of using large roughness elements is not to completely halt the incision process, but rather to slow it down and spread the elevation change over a greater length of channel. Since log jams are porous structures, not all of the sediment would be held in place; however, sediment inputs would be spread out over time rather than introduced to the stream as one large pulse. A log jam is also self-maintaining as long as more large wood is available in the stream system. Rock and wood would be sized so that it is not mobile during the design flood. Buoyancy calculations to determine appropriate ballast requirements would be completed for structures that would be completely inundated. Logs utilized within the logjams may be recruited from riparian areas by tipping or falling conifers less than 21 inches in diameter if they are fully stocked along the stream channel and are outcompeting native riparian species.

A second method of addressing stream degradation may be the construction of log or rock weirs. Rock and log weirs are very low channel spanning structures that are often used to stabilize streambeds and halt channel incision. These weirs are used in low gradient (generally less than 2 percent) streams. The weirs are 'V' shaped, oriented with the apex upstream, and are lower in the center to direct flows to the middle of the channel. A series of V weirs would help to stabilize stream gradient, dissipate energy, provide some level of bank protection, and would maintain fish passage. Weirs would be keyed into the stream bed by a minimum of 2.5 times their exposure height to

minimize structure undermining due to scour. The weir would also be keyed into both banks a minimum of eight feet. If several structures would be used in series, weir spacing would be no closer than the net drop divided by the channel slope (for example, a one-foot-high weir in a stream with a 2 percent gradient would have a minimum spacing of 50 feet.) Weirs can fail if flow goes subsurface below the weir material. If placed material is coarse and unconsolidated, it is possible that upstream flows would go subsurface and reemerge at the downstream end of the structure, effectively causing a complete passage barrier. Careful consideration of the subsurface flow is therefore required before weir construction. The inclusion of fine material in the sediment mix and construction techniques that include washing material into place to seal the weir to the channel bed would be preferred.

Bioengineering techniques, such as coir fiber nets or willow mats, could be used in very low energy settings, such as along overflow channels of low gradient streams, in order to stabilize a headcut as well. This technique would attempt to reduce flow velocities and resulting shear stress by adding roughness, i.e. vegetation, to the channel and incorporating a stabilizing mat of root mass along the headcut itself.

In coordination with any headcut stabilization method employed, it would be necessary that riparian plantings occur in the disturbed area as well. A vigorous riparian community is crucial for increasing channel roughness, trapping sediments, and retaining organic debris. If there is adequate soil moisture, wetland herbaceous species, such as sedges and rushes, can be planted. Woody vegetation like willows and cottonwoods can oftentimes be planted as cuttings as long as the water table is within reach of the plant roots. A temporary fence may need to be constructed around the disturbed area so that riparian vegetation has the opportunity to become established. Fenced off areas would likely encompass approximately two acres in size and the length of fence that would need to be constructed would likely be approximately 1,200 feet.

Post project monitoring would follow the completion of any stabilization method. Monitoring would likely entail the performance of surveying channel cross sections and longitudinal profiles to ensure that the headcut has not continued to migrate upstream and that the channel geometry is remaining consistent with what would be expected at that site. In addition, vegetative recovery would be monitored to verify complete recovery of the project site. If stabilization efforts are determined to not be effective, additional efforts would be employed to either perform the necessary maintenance on the project or to redesign and reconstruct a new stabilization technique.

A number of best management practices (BMPs) will also be implemented in conjunction with the proposed action. They are designed to reduce undesirable effects and include practices that dictate how and where structures associated with headcut stabilizations will be constructed, protocols for reducing impairment to water quality and the spread of invasive species, as well as measures designed to protect fish, wildlife, and cultural resources. A full list of the BMPs associated with this project can be found on pages 8 through 12 of the EA.

#### **4. FONSI Reference**

Based on the information contained in the EA, the consideration of the context and intensity factors described in the Finding Of No Significant Impact (FONSI), and all other information available, it is determined that:

- 1) Implementation of the proposed actions would not have significant environmental impacts beyond those already addressed in the Draft John Day Basin Resource Management Plan and Environmental Impact Statement, the Two Rivers Resource Management Plan and Rangeland Program Summary, the Upper Deschutes Resource Management Plan Record of Decision, the Record of Decision: John Day Management Plan, Two Rivers, John Day, and Baker Resource Management Plan Amendments, the Baker Resource Management Plan Record of Decision and Rangeland Program Summary, and the Brothers/LaPine Resource Management Plan, Record of Decision and Rangeland Program Summary;
- 2) The proposed actions are in conformance with the aforementioned resource management plans, and;
- 3) The proposed action would not constitute a major federal action having a significant effect on the human environment. Therefore, an EIS or supplement to the existing EISs is not necessary and will not be prepared.

#### **5. Public Involvement**

Letters were sent to the listed interested public and the Confederated Tribes of the Warm Springs Reservation, the Burns Paiute Tribe, the Confederated Tribes of the Umatilla, and the Klamath Tribe. A public scoping period of 1 month was provided during which time no comments were received.

#### **6. Rationale for the Decision**

As a headcut migrates up a water course, the stream becomes disconnected from its floodplain and the water table is lowered so that what was once a thriving riparian

community becomes an upland terrace. The resulting downcut stream then represents an ecosystem in which habitat diversity and niche potential are reduced, and the quality and functions of the species occupying the system are changed.

It becomes necessary to stabilize headcuts in order to conserve and restore, within the existing site capability and natural disturbance regimes, stream channel integrity, channel processes, sediment regimes, surface to groundwater interactions, diversity and productivity of native riparian and aquatic plant communities, and riparian and aquatic habitats for locally important fish stocks by stabilizing headcuts. The selected alternative is designed to prevent their migration upstream which would undermine agency efforts through previous planning and management activities at maintaining healthy and diverse riparian areas on public lands.

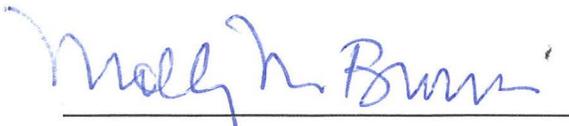
The proposed action was considered by the BLM interdisciplinary team within the context of past, present, and reasonably foreseeable actions and significant cumulative effects are not predicted.

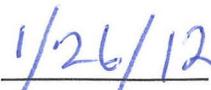
## 7. Protest and Appeal Opportunities

This decision constitutes our final decision and may be appealed to the Interior Board of Land Appeals, Office of the Secretary, in accordance with the regulations contained in 43 CFR, Part 4 and the enclosed Form 1842-1. If an appeal is taken, your notice of appeal must be filed in this office (3050 N.E. Third Street, Prineville, OR 97754) within 30 days from receipt of this decision. Notice of appeal must be sent certified mail. The appellant has the burden of showing that the decision appealed from is in error. Any request for stay of this decision in accordance with 43 CFR 4.21 must be filed with your appeal.

  
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H. F. "Chip" Faver  
Field Manager, Central Oregon Resource Area

  
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Date

  
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Field Manager, Deschutes Resource Area

  
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Date