

**DEPARTMENT OF DEFENSE
DEPARTMENT OF THE ARMY
JOINT BASE LEWIS-McCHORD**

**DRAFT FINDING OF NO SIGNIFICANT IMPACT FOR THE CHAMBERS LAKE WEIR
REMOVAL AT JOINT BASE LEWIS- McCHORD, WASHINGTON**

Pursuant to the Council on Environmental Quality regulations (40 Code of Federal Regulations (CFR) Parts 1500-1508) implementing the National Environmental Policy Act and Army regulations (32 CFR Part 651), the Department of the Army (Army) gives notice that an Environmental Assessment (EA) was prepared, and an Environmental Impact Statement (EIS) is not required for the Chambers Lake weir removal at Joint Base Lewis-McChord (JBLM), Washington.

Purpose and Need: The purpose of the proposed work is to remove the Chambers Lake weir in order to restore the natural flow patterns downstream and eliminate an impedance to fish migration. Removal of the structure will also eliminate the need for personnel to monitor and manually adjust the water control structure, eliminate the potential for liability under the Endangered Species Act if a critical adjustment is missed, and restore the natural fluctuations of the water in Chambers Lake.

Proposed Action: The Army proposes to remove the Chambers Lake weir structure, restore the demolition area to natural habitat conditions, and to restore the natural hydrology of Muck Creek at the site. The goal of the project is to restore the free-flowing stream, which would restore upstream fish passage at the structure, decrease the risk of exposure of fish to high water temperatures during summer months, and decrease the risk of predation during juvenile fish outmigration. Removal of the weir, with its associated structures and restoration of the demolition site is expected to take approximately six months. In-water work would be completed 1 July to 15 September to minimize impacts to the fish. In addition to the in-water work, construction may occur when the project area within Muck Creek is typically dry due to the ephemeral nature of the stream (through October or early November).

Existing Conditions: After consideration of the anticipated impacts associated with the Proposed Action and alternatives, the following resource topics were carried forward and analyzed in the EA:

- Geology and Soils
- Water Resources and Water Quality
- Vegetation and Wetlands
- Fish and Wildlife
- Threatened and Endangered Species
- Cultural Resources
- Recreation

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Alternatives Analyzed: The EA initially analyzed four alternatives, a No Action Alternative and three weir removal alternatives.

No Action Alternative: CEQ and Army regulations mandate an analysis of the No Action Alternative. Under this alternative, the Chambers Lake structure would be left in place, and existing conditions are expected to continue.

Weir Removal Alternatives: All three alternatives would remove the entire weir and foundation material (including all concrete rubble in the channel), import suitable streambed material that would be compacted and shaped to restore channel topography, add streambank stabilization measures (rounded rock, large wood, soil lifts), and revegetate disturbed areas with native plants.

- **Alternative 1: Restore Pre-weir Hydrology.** The channel topography would be restored to pre-weir hydrology and channel conditions. The design cross section for the restoration is based on the channel dimensions of the natural channel 150 feet downstream of the weir. Ordinary high water (OHW) would decrease by 28 surface acres, and ordinary low water (OLW) would negligibly decrease by 0.1 surface acres.
- **Alternative 2: Higher Streambed.** The restored outlet channel will consist of a two percent gradient engineered fish passable riffle and have an upstream sill elevation of 323 feet. The restored outlet channel will have a five foot higher bed elevation than existing conditions between Chambers Lake and downstream ford to maximize lake elevations and reduction in wetland acreage post-restoration. This alternative would likely cause an increase in flooding upstream of the restored channel by a foot or more under very large floods (50 year or greater). Because of the higher wintertime flood levels, and higher summer time normal water level, the amount of seasonal wetland area would decrease and convert to open water, as the OLW would increase by 64.7 surface acres.
- **Alternative 3: Lower Streambed.** The restored outlet channel will be the same as Alternative 1; however two isolated, relatively small (one to two-feet high), flow-obstructing vegetated gravel bars downstream of the weir will be graded to match adjacent channel elevations between the lake and ford, in order to maximize Muck Creek base streamflows out of the lake post-restoration in an attempt to increase the duration of active streamflow. Wetlands conditions from this alternative would become significantly dryer in the summer, and during peak wintertime flooding the maximum inundated acreage would be reduced as the OHW would decrease by 39 surface acres.

After analysis of the three weir removal alternatives as documented in the EA Alternative 1 was carried forward as the preferred alternative.

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Environmental Effects: The following summarizes the environmental consequences of the Proposed Action.

Geology and Soils. Approximately 986 cubic yards (CY) of material would be removed from the site and disposed off-site in an environmentally acceptable location. This material consists of approximately 390 CY concrete rubble and 596 CY soils. Approximately 8,821 CY streambed material consisting of small rounded boulders, cobble, gravel, and sand would be used to restore the channel. Approximately 10,314 CY imported topsoil would be used to restore the channel banks and to support plantings

Water Resources and Water Quality. Muck Creek flood discharges are unlikely to change with the preferred alternative (Alternative 1); however, seasonal discharges may be altered slightly because of the interaction with the shallow aquifer around the lake. Downstream of Chambers Lake, including Roy, WA, streamflows in the spring and summer may decline after removal because of loss of the seasonal impoundment of Chambers Lake, but the strong influence of groundwater and complex geology makes this unlikely. With weir removal, Dailman Lake and Chambers Lake elevations will be lower during flood season, which allows for some of the high flows on Muck Creek to divert into Dailman Lake, attenuating downstream flood peaks. During prolonged high water periods of very large floods, however, Dailman Lake and Chambers Lake would rise to the same elevations as under existing conditions. Effects to water quality are expected to be minimal. Constructing timing during the dry months and best management practices will limit the risk of increased downstream turbidity. Removal of the weir and restoration of the area impacts waters of the U.S. subject to permitting by the U.S. Army Corps of Engineers (USACE).

Vegetation and Wetlands. Impacts to wetlands and riparian habitat would be avoided and minimized. During construction, disturbance would be limited to staging areas, the weir removal site, and approximately 150 feet downstream from the weir so the stream channel can be reshaped and banks planted with native vegetation. Disturbance to the project area is expected to be temporary and should return to pre-construction function after the native vegetation plantings have been established, approximately 3-10 years. In addition, the approximately 150 feet of stream that would be reshaped during the in-water work window and/or typically dry period of the year is a small proportion of the overall stream habitat available and is not likely to constitute a substantial disturbance. Removal of the weir impacts jurisdiction wetlands, and is subject to USACE permitting.

Fish and Wildlife. Fish passage is expected to improve at the outlet of Chambers Lake following weir removal because the current weir is poorly maintained and requires frequent adjustment. The highest velocities at the weir during floods would drop to match those of the natural stream channel downstream, allowing for upstream adult and juvenile fish migration during flood flows and normal flows.

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Threatened and Endangered Species. The proposed project may affect, but is not likely to adversely affect bull trout because they may use Muck Creek as foraging, migration, and overwintering habitat, although it is unlikely based on the low numbers of observed bull trout in the Nisqually River system. The proposed project would have no effect on bull trout priority habitat because there is none in the action area. The proposed project may affect, but is not likely to adversely affect steelhead or their priority habitat due to the habitat and passage improvements, minor or beneficial changes to Muck Creek hydraulics, and the use of best management practices to isolate the project area. The proposed project may affect, but is not likely to adversely affect Chinook salmon due to their distance from the project area and minimal changes to the hydraulics of lower Muck Creek where they are typically found. The proposed action would have no effect on Chinook salmon priority habitat because there is none within the action area. The proposed action may affect, but is unlikely to adversely affect Oregon spotted frogs based on their unlikely presence within the project area, their ability to move with water fluctuations, and minor changes to habitat. There would be no effect to Oregon spotted frog priority habitat because there is none located in the project area. Due to the minimal effect to wetlands and dynamic, ephemeral habitat preferred by water howellia, the proposed project may affect, but is not likely to adversely affect water howellia. In a letter dated DD MONTH 2019, United States Fish and Wildlife Service [finding] with this determination.

Cultural Resources. JBLM determined that the Chambers Lake Weir is not eligible as a historic property, and no other historic or archeological sites occur in the Area of Potential Effect. In a letter dated DD MONTH 2019, Washington State Historic Preservation Office [finding] with this determination.

Recreation. With the weir removed, the seasonal elevation would change slightly compared to existing conditions. At ordinary high water, the surface area of the lake will be reduced by 28 acres, from 175 surface acres to 147 surface acres. However, as the lake is shallow and used by small watercraft, the change should not be noticeable. Camping, picnicking, wildlife observation, and other recreation uses in the area are not expected to change.

Public Involvement: A Notice of Availability of the EA and Finding of No Significant Impact (FNSI) was published on [PLACEHOLDER: Insert dates as finalized] in the Tacoma News Tribune and The Olympian. The EA and draft FNSI were made available for public review on the Public Works Directorate at Joint Base Lewis-McChord website at <https://home.army.mil/lewis-mcchord/index.php/my-Joint-Base-Lewis-Mcchord/all-services/public-works-environmental-division/environmental-impact-analysis>. The public comment period on the EA and FNSI were from [PLACEHOLDER: Insert dates as finalized], and [PLACEHOLDER: Insert public comment information as finalized] public comments were received.

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Finding: I have considered the results of the analysis referenced above, comments received, and Army mission requirements. In review of the resource areas potentially impacted by the Proposed Action, I find that implementing the Chambers Lake Weir Removal will have no significant environmental impacts on the natural or human environment. Based on this documentation, which has incorporated or referenced the best information available, I have taken a hard look at known impacts and determined that the implementation of the weir removal will not significantly affect the environment, and, therefore, an EIS is not warranted.

Date

Nicole M. Lucas
Colonel, US Army
Commanding