# DECISION NOTICE

## FINDING OF NO SIGNIFICANT IMPACT AND DECISION TO IMPLEMENT CONSERVATION EFFORTS FOR ARCTIC GRAYLING – RED ROCK LAKES NATIONAL WILDLIFE REFUGE

June 5, 2023

**ACTION**

Decision Notice (DN). Montana Fish, Wildlife & Parks (MFWP) shall prepare a DN for the proposed action. The DN must identify the agency decision, the reasons for the decision, and any special conditions surrounding the decision or its implementation.

An Environmental Assessment (EA) was prepared jointly by the United States Department of the Interior's U.S. Fish and Wildlife Service (USFWS) and MFWP to evaluate the effects associated with the proposed action. The EA complies with the National Environmental Policy Act (NEPA) in accordance with Council on Environmental Quality regulations (40 Code of Federal Regulations [CFR] 1500– 1508) and U.S. Department of the Interior (43 CFR Part 46; 516 DM 8) and U.S. Fish and Wildlife Service (550 FW 3) regulations and policies, and the Montana Environmental Policy Act (MEPA) (75-1-101, et. seq, Montana Code Annotated (MCA) and its implementing rules (ARM 12.2.429, et. seq)). NEPA and MEPA require an examination of the effects of proposed actions on the natural and human environment.

With this action, MFWP hereby adopts the Joint EA, as modified, and the Finding of No Significant Impact (FONSI) and approves Alternative D—Shambow Pond Diversion Pipeline. The final EA and FONSI are available for review on the USFWS website at: https://www.fws.gov/refuge/red-rock-lakes/library

**AUTHORITY: MONTANA ENVIRONMENTAL POLICY ACT**

According to the applicable requirements of MEPA and its implementing rules, before a proposed action may be approved, environmental review must be conducted to identify, consider, and disclose any potential impacts of the proposed action on the affected human environment. *Title 75, Chapter 1, Parts 1 through 3, Montana Code Annotated (MCA).* Whenever the agency proposes or participates in an action that requires preparation of an EA under both NEPA and MEPA, the EA must be prepared in compliance with both statutes and associated rules and regulations. *ARM 12.2.443(3) and (4), Joint Environmental Impact Statements and EA's.*

Based on these factors, the USFWS and MFWP jointly prepared an EA to evaluate the effects associated with the proposed action. Further, FWP must consider any substantive comments received in response to an EA and proceed in accordance with one of the following steps: determine the EA did not adequately reflect the issues raised by the proposed action and issue an Environmental Impact Statement or EIS; determine the EA did not adequately reflect the issues raised by the proposed action and issue a supplemental EA; or determine the Draft EA adequately addressed the issues raised by the proposed action and make a final decision, with appropriate modification resulting from the analysis provided in the Draft EA and the analysis of any substantive public comments received.

In accordance with all applicable federal and state rules and regulations, MFWP determined the EA, as modified, adequately addressed the issues raised by the proposed action. See *FONSI* and *Decision* linked above.

**PUBLIC PARTICIPATION PROCESS**

A Draft EA was made available through the USFWS for a 15-day public review and comment period, from February 28 through March 14, 2023. In response to requests for an extension, the comment period was extended through March 28th. Comments received on March 29th through 31st were accepted as well. A total of 3,313 comments were received during the public comment period.

The proposal has been thoroughly coordinated with the USFWS and all other interested and/or affected parties.

**PURPOSE AND NEED**

Arctic grayling (Thymallus arcticus; grayling) are a freshwater holarctic species of salmonid that reside in the Upper Missouri River (UMR) drainage in southwestern Montana. The Centennial Valley, located in the UMR, contains one of four remaining populations of Arctic grayling in the contiguous United States still exhibiting the full spectrum of life history behaviors present in historical grayling population (USFWS 2020). The population of Arctic grayling in the Centennial Valley are one of nineteen populations that are collectively referred to as UMR grayling. The primary winter habitat for grayling within the Centennial Valley is in Upper Red Rock Lake (URRL) within Red Rock Lakes National Wildlife Refuge (RRLNWR or Refuge). High winter mortality of grayling within URRL during periods of hypoxia (low dissolved oxygen) has been identified as the primary limiting factor for grayling in the Centennial Valley (Warren et al. 2022).

The USFWS and MFWP are proposing to improve over-winter habitat for Arctic grayling in URRL which will ensure long-term, self-sustaining persistence of UMR grayling in accordance with the 2022 Arctic Grayling Conservation Strategy (Montana Arctic Grayling Workgroup 2022). The proposed action would increase dissolved oxygen levels in deeper portions of URRL in Red Rock Lakes National Wildlife Refuge where grayling over-winter, improve grayling winter survival and maintain existing grayling genetic variation. This will involve creating enough suitable winter habitat, which would consist of water greater than or equal to 1 meter (m) in depth below the ice and with greater than or equal to 4 parts per million of dissolved oxygen, to support a grayling population greater than 400 breeding-age individuals (USFWS and MFWP 2017).

## DESRIPTION OF PROPOSED ACTION

### Alternative D—Shambow Pond Diversion Pipeline

Alternative D will use a buried, gravity flow diversion pipeline to deliver oxygenated water to URRL during winter months to improve conditions for grayling. The Shambow Pond Diversion Pipeline will convey water from East Shambow Creek and Shambow Pond to the center of URRL. Based on stream monitoring during 2021, winter flow available for this alternative is on the order of two cubic feet per second (cfs). Shambow Pond is a created and actively managed wetland feature located southwest of URRL and serves as a suitable diversion point for the proposed pipeline.

An engineered, subsurface, screened intake and gate structure is recommended at the pond outlet for conveying pond water to the lake through a high-density polyethylene (HDPE) pipeline. Gating would allow the pipeline to be closed when not in use (e.g., late spring, summer, and early fall) so that flow can be returned to the natural channel. The end of the pipeline would contain two lateral lines of perforated PVC or, alternatively, diffuser ports for distribution of tributary water. The pipeline would be 5,300 ft in total length, with 3,300 ft on land and the remaining 2,000 ft in URRL. Engineering design indicates 5,300 ft of 14 in diameter HDPE pipeline would be required along with appurtenant intake, regulation, and aeration vault structures. Visible infrastructure will include a vault (20in x 6in x 16in) on the north side of the lake to control flow, some minor infrastructure (below 8in in height) near Shambow Pond, and multiple cleanouts along the pipeline. All will be at ground level and placed in such a way that natural topography will reduce the visibility of any structures.

In addition, the ongoing actions to benefit grayling that have been implemented in the past and were described under the No Action Alternative will continue. Those actions include Widgeon Pond releases, beaver dam notching, and fishing closures.

This alternative was selected over the other alternatives due to the following:

- Unlike Alternative B-Electric Powered Splashers or Diffusers, which primarily rely on atmospheric oxygen transfer by opening a polynya to oxygenate water, this alternative would funnel already oxygenated water to the center of URRL in addition to potentially creating a polynya. The water supply in Shambow Pond is reliable and expected to deliver between 0.9 and 2.3 cfs throughout winter. Monitoring during a dry year suggested approximately 2 cfs would be delivered. An estimated 1.5 ha of habitat would be created. While 1.5 ha is less habitat than recommended in the Adaptive Management Plan, research has shown that lakes in Utah and Wyoming have reported thousands of fish surviving in less than half a hectare of habitat. The creation of any reliable, suitable habitat for overwintering grayling in URRL would provide refugium and lower the probability of grayling extinction. Modeling shows that the pipeline would significantly decrease the possibility of extinction compared to the No Action Alternative.

- Grayling have been shown to survive harsh winter conditions by taking refuge in small areas of oxygenated water. A study in Alaska found that 21 radio tagged grayling occupied areas with ice thickness of 0.4-1.4 m (1.3-4.6 ft) overlying 0.06-0.52 m (0.2-1.7 ft) of water. All grayling occupied much shallower winter habitats than expected. By the end of December, radio-tagged movements were confined to stream sections less than 100 m in length for the rest of the winter. Of the 40 ground relocations during February-March, 26 grayling moved 0-1 m, 8 moved 1-10 m, and 6 moved 11-91 m. Overwinter areas were typically occupied by many other untagged grayling

(Lubinski, B.R. 1995. Winter habitat of Arctic grayling in an interior Alaska stream. Master's Thesis. University of Alaska Fairbanks. Fairbanks, Alaska).

- This alternative has a reasonable likelihood of success in the Centennial Valley (CV). Several instances of similar pipeline projects in Utah have been shown to successfully prevent or reduce winterkill in other high elevation mountain lakes, even when there is lower flow and less created habitat (Unpublished data, Utah Division of Wildlife Resources). A 0.5-mile-long buried pipeline on Narrows Creek (north end of CV) has conveyed between 0.2 and 4 cfs year-round with a shallower bury depth and has required no additional maintenance for the past 10 years. Fisheries managers who have piloted or installed several of the proposed technologies consider the pipeline option as the best aeration alternative.

- Under this alternative there is less required maintenance and less chance of failure compared to the other alternatives. Additionally, the Shambow Pipeline has lower construction and maintenance costs. There are no mechanical components, electrical service requirements, or ongoing electrical costs, unlike alternatives B and C. Because of the simplicity of this alternative, only annual maintenance checkups would be required and chances of mechanical failure are low.

- Finally, of the action alternatives, the Shambow Pipeline has the least long-term impacts to wilderness and minimal visible infrastructure or ongoing auditory disruptions. Impacts to wilderness from the pipeline would be short-term and only last during the construction phase.

## ALTERNATIVES ANALYZED

### Alternative A—Widgeon Pond Releases, Beaver Dam Notching, and Seasonal Fishing Closures (No Action Alternative)

Under Alternative A (the No Action Alternative), the current management strategies, including water releases from Widgeon Pond into URRL, beaver dam notching, and seasonal fishing closures, would continue. While the No Action Alternative would result in relatively few environmental impacts, it was not selected because there is a high probability of extirpation for the CV Arctic grayling population operating solely under this alternative.

### Alternative B—Electric Powered Splashers or Diffusers

This alternative would result in the installation of splashers or diffusers in URRL, a hose running from the aerators to the campground, compressors in the campground, and the construction of an electrical line to the campground. All construction would happen in previously disturbed areas and would result in some disturbance to wilderness quality and water resources, specifically URRL. In the winter of 2023, a smaller-scale pilot test of the diffuser alternative was implemented and monitored in URRL. Results from monitoring showed that even with a polynya, dissolved oxygen in the area surrounding the diffusers remained too low to support grayling, likely due to the shallowness of the lake and the heavy oxygen demand of the lake's sediment layer outpacing atmospheric oxygen transfer, and the fact that the alternative was implemented at a time when anoxic conditions had already developed in the lake. This alternative was not selected based on those results.

### Alternative C—Electric Generators with Pumped Aeration

This alternative would involve the installation of a pumped aerator in the campground, pipes running from the center of the lake to the aerator, electric generators, and the construction of an electrical line to the campground. All construction would happen in previously disturbed areas and would result in some disturbance to Wilderness quality and water resources, specifically URRL. This alternative was not selected because of likelihood of mechanical and electrical failure due to potential for freezing, need for daily checks and repeated maintenance, ongoing electricity costs, and the higher impacts on wilderness character due to visible infrastructure and continuous noise through the winter. If there was a mechanical failure during the winter, repairs would be difficult and expensive, or even impossible due to the lack of accessible roads.

**Alternative E—Permanent Barrier from Elk Springs Creek to the Lake Center**

The implementation of this alternative would result in the construction of a permanent barrier within URRL. This barrier would run from the mouth of Elk Springs Creek to the center of URRL in order to funnel oxygenated water to the deeper parts of the Lake. The most prominent adverse impacts of this alternative would be to water resources, soil, and wilderness character. Disturbance to each resource would primarily occur during the construction period, but some negative impacts would continue even after construction due to the permanence of the structure within URRL. While the U.S. Geological Survey Structured Decision Making (SDM) technical report showed this alternative best met the objectives of both the Service and Montana Fish, Wildlife and Parks (MTWP), this alternative was not selected due to the predicted negative impacts to wilderness and the unknown outcome associated with an untested alternative.

**Alternative F—Dredge and Berm Elk Springs Creek**

This alternative would involve dredging the mouth of Elk Springs Creek to create usable habitat for grayling. Dredged material would be used to create a berm, which could channel oxygenated water deeper into the lake center. While the SDM technical report showed dredging to be one of the most effective alternatives for grayling persistence, this alternative was not selected because of the impacts to Wilderness and other resource areas, cost, and need for repetition or maintenance due to sedimentation. Compared to the other alternatives, the dredge and berm alternative would have the most negative impacts on the analyzed resources areas due to the length of construction and invasiveness of dredging. Furthermore, it is likely that dredging would have to be repeated every few years based on the sedimentation rates in URRL, creating long term negative impacts to wilderness and other resources.

## PUBLIC COMMENT AND RESPONSE

A total of 3,313 comments were received during the public comment period. Public comments and agency responses are contained in the *FONSI* and *Decision*. See link above.

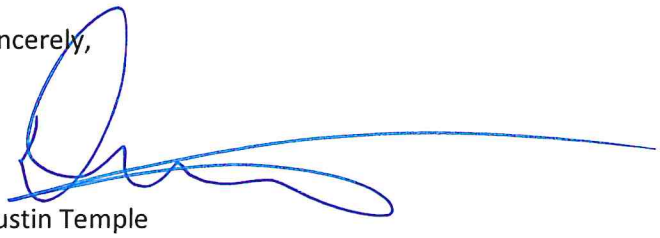
## DECISION

Based upon a review and evaluation of the information contained in the EA as well as other documents and actions of record affiliated with this proposal, the USFWS and MFWP have jointly determined that the proposal to implement conservation efforts for Arctic grayling on Red Rock Lakes National Wildlife Refuge does not constitute a major federal or state action significantly affecting the quality of the human environment under the meaning of section 102 (2) (c) of the National Environmental Policy Act of 1969 (as

amended), the Council on Environmental Quality's NEPA Implementing Regulations (40 CFR Parts 1500-1508), Department of Interior Regulations (43 CFR. Part 46), Department of the Interior Policy (516 DM 1-4; 516 DM 8), Service's Policy (550 FW 3), the Montana Environmental Policy Act (75-1-101, et. seq, Montana Code Annotated (MCA) and its implementing rules (ARM 12.2.429, et. seq)). As such, an environmental impact statement is not required.

With this action, FWP hereby adopts the Joint EA, as modified, and the FONSI, and approves Alternative D for the installation of a pipeline from Shambow Pond to Upper Red Rock Lake for grayling conservation.

Sincerely,



Dustin Temple
Director