



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
**NATIONAL MARINE FISHERIES SERVICE**  
West Coast Region  
1201 NE Lloyd Boulevard, Suite 1100  
Portland, Oregon 97232-1274

<https://doi.org/10.25923/5v3v-qy19>

**Refer to NMFS No: WCRO-2022-01047**

June 1, 2022

Candace McKinley  
Environmental Program Manager  
Columbia-Cascades Area Office  
U.S. Bureau of Reclamation  
1917 Marsh Road  
Yakima, WA 98901-2058

Re: Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion and Magnuson–Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the Kachess Dam Safety of Dams Modification, Kittitas County, Washington.

Dear Ms. McKinley:

This letter responds to your May 9, 2022 request for initiation of consultation with National Marine Fisheries Service (NMFS) pursuant to Section 7 of the Endangered Species Act (ESA) for the subject action. Your request qualified for our expedited review and analysis because it met our screening criteria and contained all required information on, and analysis of, your proposed action and its potential effects to ESA-listed species and designated critical habitat.

We reviewed the Bureau of Reclamation’s (Reclamation) consultation request and related initiation package. Where relevant, we have adopted the information and analyses you have provided and/or referenced but only after our independent, science-based evaluation confirmed they meet our regulatory and scientific standards. We adopt by reference the following sections of Reclamation’s Biological Assessment (BA): Chapter 1 (action area), Chapter 2 (proposed action), Chapter 3 (status of species and critical habitat), Chapter 4 (environmental baseline), and Chapters 5 (effects of the action). We also adopt by reference Appendices A and C of the BA, and the Project Dewatering Plan for the Kachess Dam Safety of Dams Modification Project as part of the Endangered Species Act Consultation (Project Dewatering Plan) as part of the proposed action.

Reclamation submitted a consultation initiation package, including a BA, to NMFS on May 9, 2022 (although the package was dated April 29, 2022). Reclamation also submitted the Project Dewatering Plan associated with the project on May 10, 2022; NMFS considers the dewatering plan as an addendum to the BA. The BA and Project Dewatering Plan included all information necessary to initiate consultation; therefore, consultation was initiated on May 10, 2022.

As described in the BA, Reclamation proposes to modify components of Kachess Dam, which it operates as part of the Yakima Irrigation Project. Work will be conducted pursuant to the



Reclamation Safety of Dams Act to reduce the risk of dam failure by limiting potential for ongoing “internal erosion” along the conduit pipe within the dam. The proposed action includes carrying out construction activities on and around the dam. Reclamation will modify the release schedule of stored water from both Kachess and Keechelus Dams to facilitate construction activities.

We examined the status of Middle Columbia River (MCR) steelhead, which would be adversely affected by the proposed action, to inform the description of the species’ “reproduction, numbers, or distribution” as described in 50 CFR 402.02. We also examined the condition of critical habitat throughout the designated area and discussed the function of the physical and biological features essential to the conservation of the species that create the conservation value of that habitat. Chapter 3 of the BA describes the status of the species and critical habitat and is adopted here. Major risk factors that limit MCR steelhead recovery include reduced quality and quantity of freshwater habitat, predation, regulatory mechanisms that fail to adequately protect habitat, ocean conditions, hatchery fish, and climate change.

“Action area” means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). Chapter 1 of the BA identifies the action area as encompassing Kachess and Keechelus reservoirs and waters downstream of those reservoirs including parts of the Upper Yakima and Kachess rivers downstream to Easton Dam. The action area includes waters that may include a temporary change in reservoir stage or river flow during construction, although the most intense effects of the action will be limited to the portion of the action area in the Kachess River.

The “environmental baseline” refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultations, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency’s discretion to modify are part of the environmental baseline (50 CFR 402.02). Chapter 4 of the BA describes the environmental baseline and is adopted here.

The action area supports spawning, rearing, and migration of the Upper Yakima population of MCR steelhead, within the Yakima River Major Population Group (MPG), one of four MPGs of MCR steelhead. Important physical and biological features (PBFs) in the action area include water quantity and quality, substrate, floodplain connectivity, forage, natural cover, and freedom from obstruction and excessive predation. The action area is the upstream-most extent of habitat accessible to the Upper Yakima population. The ability of the habitat in the action area to support MCR steelhead is primarily limited by alterations of the hydrograph caused by operation of the Yakima Irrigation Project, and possibly by inconsistent passage conditions at Easton Dam.

Under the ESA, “effects of the action” are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not

occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (see 50 CFR 402.17). In our analysis, which describes the effects of the proposed action, we considered 50 CFR 402.17(a) and (b).

The BA provides an assessment of the effects of the proposed action in Chapter 5 of the initiation package, and is adopted here [50 CFR 402.14(h)(3)], and amended in the paragraphs that follow. The BA found that effects would include:

- Increased noise and vibration.
- Increased sedimentation.
- Capture and injury of steelhead during dewatering.

NMFS has evaluated this chapter and, after our independent science-based evaluation, determined it needs the additional information included in the following paragraphs.

The BA identifies construction equipment that will generate noise and vibration from at least 50 feet away from steelhead-occupied waters and concludes that this temporary disturbance may cause a startle response that may result in steelhead fleeing downstream. The analysis indicates sound and vibration levels will be far too low to cause “physiological harm”. The BA concludes that the predicted startle response and fleeing to downstream areas constitutes an adverse effect to steelhead. NMFS believes that the BA overestimates the likelihood of adverse effects from startle and fleeing responses because: (1) the quantitative analysis in the BA does not account for environmental factors that will dissipate sound and vibration, (2) fish most likely to be exposed and startled are in the deep stilling basin and it is unlikely they would flee downstream into very shallow areas of the river with little cover in response to a perceived threat, (3) being startled and fleeing to downstream areas is not itself an adverse effect, and (4) if fish fled to downstream locations temporarily, it is not likely or reasonably certain that moving to adjacent habitat would be harmful and lead to adverse effects. Therefore, NMFS expects that increased sound and vibration during construction will have minimal effects to MCR steelhead and the ability of critical habitat to support steelhead in the action area.

The BA describes in detail that excavation and construction activities will occur on and beneath the river’s concrete outlet works. This work would occur when water is not flowing in or adjacent to the work site at some distance (over 100 feet) from water and multiple measures will be employed to limit the potential for sediment to escape. The BA states that the “minimal sediment generated” has the potential to reach any waters that may be occupied by steelhead or designated as critical habitat. The BA then includes sedimentation as a potential adverse effect without further explanation. NMFS believes that the BA properly concludes that “minimal” sediment may reach the Kachess stilling basin and river, and that the BA incorrectly concludes that a minimal amount of sediment will cause adverse effects. Therefore, NMFS expects that sediment disturbance during construction will have minimal effects to MCR steelhead and the ability of critical habitat to support steelhead in the action area.

The BA describes the potential that a portion of the Kachess River will be fully or partially dewatered for up to 12 hours during construction, and that associated fish rescue operations are expected to result in the capture of some steelhead and injury to a fraction of captured steelhead before release. However, NMFS believes it is likely that some fraction of juvenile steelhead in the affected area may evade capture and then die via suffocation when the area is dewatered. This is an additional mechanism of adverse effect that was not described in the BA.

An unknown number of juvenile steelhead will be affected by fish rescue and dewatering. Dewatering will occur in riffles over an extent of 0.9 miles; though pools in the reach are expected to remain wetted through the duration of dewatering. The area is expected to have low densities of steelhead juveniles. No adult steelhead are expected to be in the action area during project activities. Most of the steelhead that will be present are expected to seek refuge in pools, or to be captured and released safely. A minority of fish present in the area are expected to die by evading rescue and suffocating if they do not find wetted pools or to be injured or killed as a result of fish rescue efforts.

Critical habitat for MCR steelhead will be temporarily affected during construction; specifically the freshwater rearing and freshwater migration PBFs will be impaired by reducing water quantity in the Kachess River during a single dewatering event. In the context of this consultation, dewatering is the reduction of Kachess River flow to less than 10 cubic feet per second.

“Cumulative effects” are those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation [50 CFR 402.02 and 402.17(a)]. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA. Part 5.6.4 of Chapter 5 of the BA describes cumulative effects and is adopted here.

The Integration and Synthesis section is the final step in our assessment of the risk posed to species and critical habitat as a result of implementing the proposed action. In this section, we add the effects of the action to the environmental baseline and the cumulative effects, taking into account the status of the species and critical habitat, to formulate the agency’s biological opinion as to whether the proposed action is likely to: (1) reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing its numbers, reproduction, or distribution; or (2) appreciably diminish the value of designated or proposed critical habitat as a whole for the conservation of the species.

The proposed action is expected to kill or injure a small number of juvenile steelhead during a single dewatering and fish rescue event. Other potential effects of the proposed action, including increased sound, vibration, and sedimentation, will have minimal effects and are not expected to result in take. The status of MCR steelhead is generally poor, mostly as a result of conditions outside the action area, and is compromised within the action area as a result of regulation of the hydrograph by Reclamation’s Yakima Irrigation Project. Cumulative effects may cause a slight degradation of habitat conditions in the action area over the coming decades. A one-time loss of a small number of juveniles caused by the proposed action will not meaningfully affect the abundance or productivity of the Upper Yakima population, and will not affect its diversity or

spatial structure. The likelihood of persistence and recovery potential of the MPG will not be affected because the population will not be meaningfully affected. Similarly, the likelihood of persistence and recovery potential of MCR steelhead as a whole will not be affected, because we expect no change in the viability status of the Yakima River MPG.

The proposed action will temporarily reduce the function of the water quantity PBF during the dewatering event. For up to 12 hours, approximately 0.9 miles of designated critical habitat will not support freshwater rearing and migration functions for MCR steelhead. Although this reach of critical habitat may be essential for recovery in the long term, the temporary impairment of this little used reach will not meaningfully affect its ability to support recovery of the distinct population segment. Therefore, the action will not affect the conservation value of critical habitat at the scale of the designation.

After reviewing and analyzing the current status of the listed species and critical habitat, the environmental baseline within the action area, the effects of the proposed action, the effects of other activities caused by the proposed action, and cumulative effects, it is NMFS' biological opinion that the proposed action is not likely to jeopardize the continued existence of MCR steelhead or destroy, or adversely modify, its designated critical habitat.

### **INCIDENTAL TAKE STATEMENT**

Section 9 of the ESA, and Federal regulations pursuant to section 4(d) of the ESA, prohibit the take of endangered and threatened species, respectively, without a special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined by regulation to include significant habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR 222.102). "Harass" is further defined by interim guidance as to "create the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering." "Incidental take" is defined by regulation as takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant (50 CFR 402.02). Section 7(b)(4) and section 7(o)(2) provide that taking that is incidental to an otherwise lawful agency action is not considered to be prohibited taking under the ESA if that action is performed in compliance with the terms and conditions of this Incidental Take Statement (ITS).

#### **Amount or Extent of Take**

In the opinion, NMFS determined that incidental take of MCR steelhead is reasonably certain to occur as follows: capture, injury, and death resulting from dewatering and fish rescue activities.

We anticipate that the proposed action is likely to result in capture, injury, and death to juvenile MCR steelhead caused by 12 hours of dewatering to less than 10 cubic feet per second over no more than 0.9 miles of the Kachess River. Most affected steelhead are expected to be captured and released safely. A small number of juvenile steelhead are anticipated to be injured or killed during capture and during the de-watering process due to stranding.

## **Incidental Take from In-water Construction**

NMFS anticipates the proposed action will result in capture, injury, and death as a result of dewatering and fish rescue. Estimating the specific number of animals captured, injured or killed is not possible because of the range of responses that individual fish will have, because the numbers of fish present at any time is highly variable, and it is not possible to observe all fish being affected. Although captured fish can be counted, it is difficult to identify and quantify the number of fish with internal injuries. While this uncertainty makes it difficult to quantify take in terms of numbers of animals injured or killed, our best estimate is that a small number of juvenile steelhead will experience injury or death due to fish rescue and dewatering. We anticipate locating and finding all potential injured or killed fish will be impossible and hard to track. However, the extent of dewatering and fish rescue is readily discernible and presents a reliable measure of the extent of take that can be monitored and tracked. Therefore, the estimated extent of dewatering and fish rescue activities represents the extent of take associated with injury and death. The proposed surrogates are causally linked to anticipated take because they describe conditions that will cause take due to dewatering and fish rescue. Specifically, NMFS will consider the extent of take exceeded if the proposed action results in dewatering or fish rescue of more than 0.9 miles of the Kachess River or the dewatering period lasting for longer than 12 hours.

The surrogates described above are measurable, and thus can be monitored and reported. For this reason, the surrogates function as effective reinitiation triggers.

## **Effect of the Take**

In the biological opinion, NMFS determined that the amount or extent of anticipated take, coupled with other effects of the proposed action, is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

## **Reasonable and Prudent Measures**

“Reasonable and prudent measures” (RPMs) are measures that are necessary or appropriate to minimize the impact of the amount or extent of incidental take (50 CFR 402.02).

Reclamation shall minimize incidental take by:

- Minimizing incidental take resulting from dewatering and fish rescue.
- Monitoring the project to ensure that the measures are meeting the objective of minimizing take and that the amount or extent of take is not exceeded.

## **Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the ESA, the Federal action agency must comply (or must ensure that any applicant complies) with the following terms and conditions. Reclamation or any applicant has a continuing duty to monitor the impacts of incidental take and must report the progress of the action and its impact on the species as specified in this ITS (50 CFR 402.14). If the entity to whom a term and condition is directed

does not comply with the following terms and conditions, protective coverage for the proposed action would likely lapse.

1. The following terms and conditions implement RPM 1:
  - a. At least 30 days before the dewatering event:
    - i. Review the Project Dewatering Plan for the Kachess Dam Safety of Dams Modification Project as part of the Endangered Species Act Consultation (Reclamation 2022).
    - ii. Identify a lead fish biologist for the dewatering and fish rescue effort. The lead biologist will have experience in fish rescue during dewatering activities.
    - iii. Ensure the construction schedule allows for at least two days of fish rescue and dewatering activities.<sup>1</sup>
    - iv. Review the dewatering schedule with Reclamation operations and construction personnel.
  - b. At least 14 days before the dewatering event:
    - i. Identify personnel for the 3 teams of 3 people each described in the dewatering plan. Each team should include at least one qualified fish biologist with experience in electrofishing and fish identification.
    - ii. Identify all equipment and supplies needed for dewatering activities, including electrofishers, dipnets, seines, blocknets, buckets, aerators, batteries, etc. in sufficient sizes and numbers to support the dewatering effort.
    - iii. Contact NMFS, U.S. Fish and Wildlife Service (USFWS), and Washington Department of Fish and Wildlife (WDFW) to review implementation details of the dewatering and fish rescue effort.
2. The following terms and conditions implement RPM 2:
  - a. Within 90 days after construction is completed, Reclamation shall provide NMFS a post-project monitoring report including, at a minimum, the following information:
    - i. Project name and NMFS Tracking No: Kachess Dam Safety of Dams Modification, WCRO-2022-01047.
    - ii. Number of *O. mykiss* up to 225 mm fork length that were captured and released without injury. Fork length can be estimated, instead of directly measured, to reduce handling stress for captured fish.

---

<sup>1</sup> Dewatering to less than 10 cfs will be limited to a 12-hour period, as described in the BA. However, the flow will need to be ramped down from the anticipated 30+ cfs to 10-15 cfs over one or more days prior to dewatering.

- iii. Number of *O. mykiss* up to 225 mm fork length that were captured and observed injured or dead. Fork length can be estimated, instead of directly measured, to reduce handling stress for captured fish.
  - iv. Number of *O. mykiss* up to 225 mm fork length that were unable to be captured and observed to be killed by asphyxiation from dewatering.
  - v. Total river length of dewatering and fish rescue.
  - vi. Total hours that Kachess River was dewatered to less than 10 cubic feet per second.
- b. The monitoring report should be delivered to [crbo.consultationrequest.wcr@noaa.gov](mailto:crbo.consultationrequest.wcr@noaa.gov).

### **Reinitiation of Consultation**

Under 50 CFR 402.16(a): “Reinitiation of consultation is required and shall be requested by the Federal agency or by the Service where discretionary Federal agency involvement or control over the action has been retained or is authorized by law and: (1) if the amount or extent of taking specified in the incidental take statement is exceeded; (2) if new information reveals effects of the agency action that may affect listed species, or critical habitat, in a manner, or to an extent, not previously considered; (3) if the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion or written concurrence; or (4) if a new species is listed or critical habitat designated that may be affected by the identified action.”

### **Essential Fish Habitat**

NMFS also reviewed the proposed action for potential effects on essential fish habitat (EFH) designated under the Magnuson–Stevens Fishery Conservation and Management Act (MSA), including conservation measures and any determination you made regarding the potential effects of the action. This review was conducted pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation.

Section 305(b) of the MSA directs Federal agencies to consult with NMFS on all actions or proposed actions that may adversely affect EFH. Under the MSA, this consultation is intended to promote the conservation of EFH as necessary to support sustainable fisheries and the managed species’ contribution to a healthy ecosystem. For the purposes of the MSA, EFH means “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity”, and includes the associated physical, chemical, and biological properties that are used by fish (50 CFR 600.10). Adverse effect means any impact that reduces quality or quantity of EFH, and may include direct or indirect physical, chemical, or biological alteration of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality or quantity of EFH. Adverse effects may result from actions occurring within EFH or outside of it and may include direct, indirect, site-



specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810). Section 305(b) of the MSA also requires NMFS to recommend measures that can be taken by the action agency to conserve EFH. Such recommendations may include measures to avoid, minimize, mitigate, or otherwise offset the adverse effects of the action on EFH [50 CFR 600.0-5(b)].

NMFS determined the proposed action would adversely affect EFH of Pacific salmon as follows:

- Dewatering up to 0.9 miles of the Kachess River to less than 10 feet per cubic second for up to 12 hours.

NMFS determined that measures included in the BA and Project Dewatering Plan for the Kachess Dam Safety of Dams Modification Project as part of the Endangered Species Act Consultation (Reclamation 2022) are sufficient to avoid, minimize, mitigate, or otherwise offsets the impact of the proposed action on EFH.

Reclamation must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations [50 CFR 600. 920(l)].

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The biological opinion will be available through NOAA Institutional Repository at <https://repository.library.noaa.gov/welcome>. A complete record of this consultation is on file at NMFS' Columbia Basin Branch.

Please direct questions regarding this letter to Sean Gross, Columbia Basin Branch, at (509) 856-5442.

Sincerely,



Michael P. Tehan  
Assistant Regional Administrator  
Interior Columbia Basin Office

cc: Judy Neibauer – USFWS  
Scott Kline – WDFW