UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
1201 NE Lloyd Blvd., Suite 1100
PORTLAND, OREGON 97232-1274

Refer to NMFS No.: WCRO-2019-03600
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June 12, 2020

Lt. Col. Christian N. Dietz
U.S. Army Corps of Engineers
Walla Walla District
201 North Third Avenue
Walla Walla, Washington 99362

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the Boyer Park Marina Dock Replacement Project, Snake River, HUC 170602090504, Whitman County, Washington

Dear Lt. Col. Dietz:

Thank you for your letter dated May 24, 2019, requesting initiation of consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531 et seq.) for the Boyer Marina Dock Repair Project. Follow-up formal consultation was requested December 17, 2019. The enclosed document contains a biological opinion (Opinion) prepared by NMFS on the effects of your proposed project. In this Opinion, NMFS concludes that the action, as proposed, is not likely to jeopardize the continued existence of Snake River steelhead, Snake River sockeye salmon, Snake River spring/summer Chinook salmon, and Snake River fall Chinook salmon, or result in the destruction or adverse modification of designated critical habitat for these species.

As required by section 7 of the ESA, NMFS provides an incidental take statement (ITS) with the Opinion. The ITS describes reasonable and prudent measures (RPMs) NMFS considers necessary or appropriate to minimize the impact of incidental take associated with this action. The take statement sets forth nondiscretionary terms and conditions, including reporting requirements that the U.S Army Corps of Engineers (COE) and/or any person who performs the action must comply with to carry out the RPMs. Incidental take from actions that meet these terms and conditions will be exempt from the ESA take prohibition.

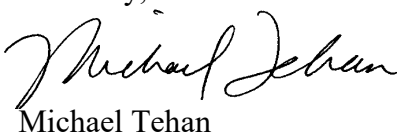
This document also includes the results of our analysis of the action's effects on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and includes four Conservation Recommendations to avoid, minimize, or otherwise offset potential adverse effects on EFH. These Conservation Recommendations are similar but not identical to the ESA Terms and Conditions. Section 305(b)(4)(B) of the MSA

requires federal agencies provide a detailed written response to NMFS within 30 days after receiving these recommendations.

If the response is inconsistent with the EFH Conservation Recommendations, the action agencies must explain why the recommendations will not be followed, including the justification for any disagreements over the effects of the action and the recommendations. In response to increased oversight of overall EFH program effectiveness by the Office of Management and Budget, NMFS established a quarterly reporting requirement to determine how many Conservation Recommendations are provided as part of each EFH consultation and how many are adopted by the action agency. Therefore, in your statutory reply to the EFH portion of this consultation, NMFS asks that you clearly identify the number of Conservation Recommendations accepted.

If you have questions regarding this consultation, please contact Mr. Jim Mital, Northern Snake Branch Office, at (208) 883-8957, or jim.mital@noaa.gov.

Sincerely,



Michael Tehan
Assistant Regional Administrator
Interior Columbia Basin Office

Enclosure

cc: D.Moore – COE
M.Eames – USFWS
M. Lopez – NPT

Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation

Boyer Park Marina Dock Repair Project
Long Hollow Snake River, HUC 170601070802, Whitman County, Washington

NMFS Consultation Number: **WCRO-2019-03600**

Action Agencies: U.S. Army Corps of Engineers

Affected Species and Determinations:

ESA-Listed Species	Status	Is Action Likely to Adversely Affect Species or Critical Habitat?	Is Action Likely to Jeopardize the Species?	Is Action Likely to Destroy or Adversely Modify Critical Habitat?
Snake River Basin steelhead (*Oncorhynchus mykiss*)	Threatened	Yes	No	No
Snake River sockeye salmon (O. nerka)	Endangered	No	No	No
Snake River spring/summer Chinook salmon *(O. tshawytscha*)	Threatened	Yes	No	No
Snake River fall Chinook salmon *(O. tshawytscha)*	Threatened	Yes	No	No

Essential Fish Habitat (EFH):

Fishery Management Plan That Identifies EFH in the Project Area	Does Action Have an Adverse Effect on EFH?	Are EFH Conservation Recommendations Provided?
Pacific Coast Salmon	Yes	Yes

Consultation Conducted by: National Marine Fisheries Service, West Coast Region

Issued By:

Michael Tehan
Assistant Regional Administrator

Date: June 12, 2020

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ACRONYMS

ACRONYM	DEFINITION
ACZA	Ammoniacal Copper Zinc Arsenate
ADA	Americans with Disabilities Act
BA	Biological Assessment
BMP	Best Management Practices
COE	U.S. Army Corps of Engineers
DPS	Distinct Population Segment
DQA	Data Quality Act
EFH	Essential Fish Habitat
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FRP	Fiberglass Reinforced Plastic
HAPC	Habitat Areas of Particular Concern
HDPE	High Density Polyethylene
ITS	Incidental Take Statement
MPG	Major Population Groups
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MSL	Mean Sea Level
NMFS	National Marine Fisheries Service
NPT	Nez Perce Tribe
OHWM	Ordinary High Water Mark
NTU	Nephelometric Turbidity Unit
Opinion	Biological Opinion
PAH	Polycyclic Aromatic Hydrocarbons
PBF	Physical and Biological Features
RMS	Root Mean Squared
RPM	Reasonable and Prudent Measures
SEL	Sound Exposure Level
SPCC	Spill Prevention, Containment and Control
VSP	Viable Salmonid Population

1. INTRODUCTION

This Introduction section provides information relevant to the other sections of this document and is incorporated by reference into Sections 2 and 3 below.

1.1 Background

The National Marine Fisheries Service (NMFS) prepared the biological opinion (Opinion) and incidental take statement (ITS) portions of this document in accordance with section 7(b) of the Endangered Species Act (ESA) of 1973 (16 USC 1531 et seq.), and implementing regulations at 50 CFR 402.

We also completed an essential fish habitat (EFH) consultation on the proposed action, in accordance with section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1801 et seq.) and implementing regulations at 50 CFR 402.

We completed pre-dissemination review of this document using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (DQA) (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). A complete record of this consultation is on file at the NMFS office in Boise, Idaho.

1.2 Consultation History

On May 24, 2019, NMFS received a request for written concurrence with U.S. Army Corps of Engineers (COE) determination for the subject action under section 7(a)(2) of the Endangered Species Act (ESA). The COE proposes to fund or authorize the Port of Whitman's proposal to repair, replace and re-align deteriorating boat docks at the Boyer Park Marina. The marina is within a watershed containing ESA-listed Snake River salmon and steelhead and their designated critical habitat.

The consultation experienced several delays, in part due to workload and also due to unresolved questions about species presence at the site, and the related consideration of whether or not this should be a formal or informal consultation. Also, there were discussions in September 2019 about possible use of zinc-coated pilings (at the request of the contractor) and associated need for additional analysis of project effects. The COE affirmed that pilings will not be zinc-coated.

The COE's biological assessment (BA) concluded that the proposed action is not likely to adversely affect the following listed species and critical habitats: Snake River spring/summer run Chinook salmon, Snake River fall run Chinook salmon, Snake River sockeye salmon, Snake River Basin steelhead, and the designated critical habitat for those species. The COE also determined the proposed action is not likely to adversely affect Chinook salmon Essential Fish Habitat (EFH) established under the Magnuson-Stevens Fishery Conservation and Management Act (MSA). The rationale for the species determinations in the BA rests principally on species being absent during the seasons when the dock replacement activities will occur. NMFS initially agreed with the rationale for those species, except fall Chinook salmon.

After receiving the BA, NMFS searched for information to corroborate the absence of fall Chinook and found instead that subyearling fall Chinook salmon are likely to be present in the action area, and possibly juvenile steelhead and spring/summer Chinook during the proposed work window. As such, NMFS determined that fall Chinook salmon, spring/summer Chinook, and steelhead are likely to be subjected to adverse effects of pile driving and disturbance from in-water activities. After additional discussion with NMFS, the COE requested formal consultation on December 13, 2019, and NMFS initiated the formal consultation on December 17, 2019, after determining that the biological assessment was sufficient.

NMFS had a number of projects in the consultation queue with earlier initiation dates, and workload and resource constraints did not allow NMFS to complete the consultation within the usual timeframe. In informal communications with the Port, NMFS staff communicated that they would strive to complete the consultation sooner than the April 29, 2020, deadline. However, as noted, our workload for other consultations made that impossible.

Because this action has the potential to affect tribal trust resources, NMFS provided copies of the draft proposed action and terms and conditions for this Opinion to the Nez Perce Tribe (NPT) on June 10, 2020. The NPT did not have any comments.

1.3 Proposed Action

"Action" means all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by federal agencies (50 CFR 402.02). Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration (50 CFR 402.02). There are no interrelated or interdependent actions associated with this action.

The Boyer Park and Marina is located on the Snake River about 1.5 miles downstream from the Lower Granite Dam in Whitman County. The Boyer Park and Marina encompasses 56 acres providing RV sites, restaurant, convenience store, boat launch, and a marina with a fuel float and sewage pump out. Presently, the harbor facilities consists of two boat ramps, a floating fuel platform, eight docks, and gangways connecting the docks to the shore, and steel piles anchoring the facilities (Figure 1). The proposed work consists of upgrades to the facilities in the marina harbor, which primarily involves removing obsolete piles and docks, and replacing them with new facilities. The proposed activities consist of the following:

Marine Work below Ordinary High Water Mark (OHWM)

- Removal of floats, piles, and gangways
- Maintenance and repair of existing floating docks
- New fuel float with new sewage pump-out
- New fixed pier, gangway, and floating docks with a new personal watercraft (kayak) float
- Installation of 40 steel piles

Upland Work above OHWM

- Minor excavation, grading, and paving

- New signage
- Installation of two steel piles
- New navigation aid
- New pit restroom

1.3.1 Demolition/Removal Actions

Three of the existing docks and the floating fuel station will be removed, along with associated piles, floats, gangways, and 17 steel piles. Piles will be removed using a vibratory hammer and/or direct pull by crane. All of these structures will be removed from the river using either a crane (operated from the uplands or on a barge) or will be floated to the boat launch and removed with and excavator operated above the OHWM. Removed materials will be disposed of at an approved disposal site, sold to a recycler, or transferred to a new owner for reuse. The demolition would result in the removal of approximately 5,880 ft^2 of overwater structure and the removal of 17 steel piles.

1.3.2 Maintenance and Repair of Existing Floating Docks

Three of the existing docks will be repaired. The repair on these docks will not include new piles or new utilities (water and electrical). Repair work includes replacing deteriorated timber whalers, repairing concrete decking, replacing missing hardware, and installation of plastic sleeves around existing piles that will remain in place. The floats will be replaced at a later time when funding is available. All wood will be either untreated or ammoniacal copper zinc arsenate (ACZA) treated wood that meets the Western Wood Preservers Institute BMPs. Design measures help prevent abrasion of the treated wood and are intended to reduce the potential for the release of contaminants into the aquatic environment.

Where needed, the concrete deck surface will be cleaned and repaired, including crack-sealing and spall repairs. In areas with extensive concrete surface damage the concrete surface may be sawcut, removed, and will be replaced with new concrete and/or an epoxy repair compound. Since the existing docks are concrete, the proposal is to replace the surface with concrete. The extent of repair to the existing concrete to each of the docks is estimated to be between 10-15% of the surface area. The replacement of missing hardware includes the replacement of the rubber rubstrips, replacement of moorage cleats, repairing pile hoops, and repair/replacement of electrical and water lines. All repair work at the existing docks will be done with the floats in the water, and only components or parts of the floats above water will be repaired. Existing utility lines above deck will be painted, to reduce potential corrosion, improve aesthetics, and to make them more visible for safety. The existing steel piles will be sleeved with high density polyethylene (HDPE) pipes then filled with concrete and capped.

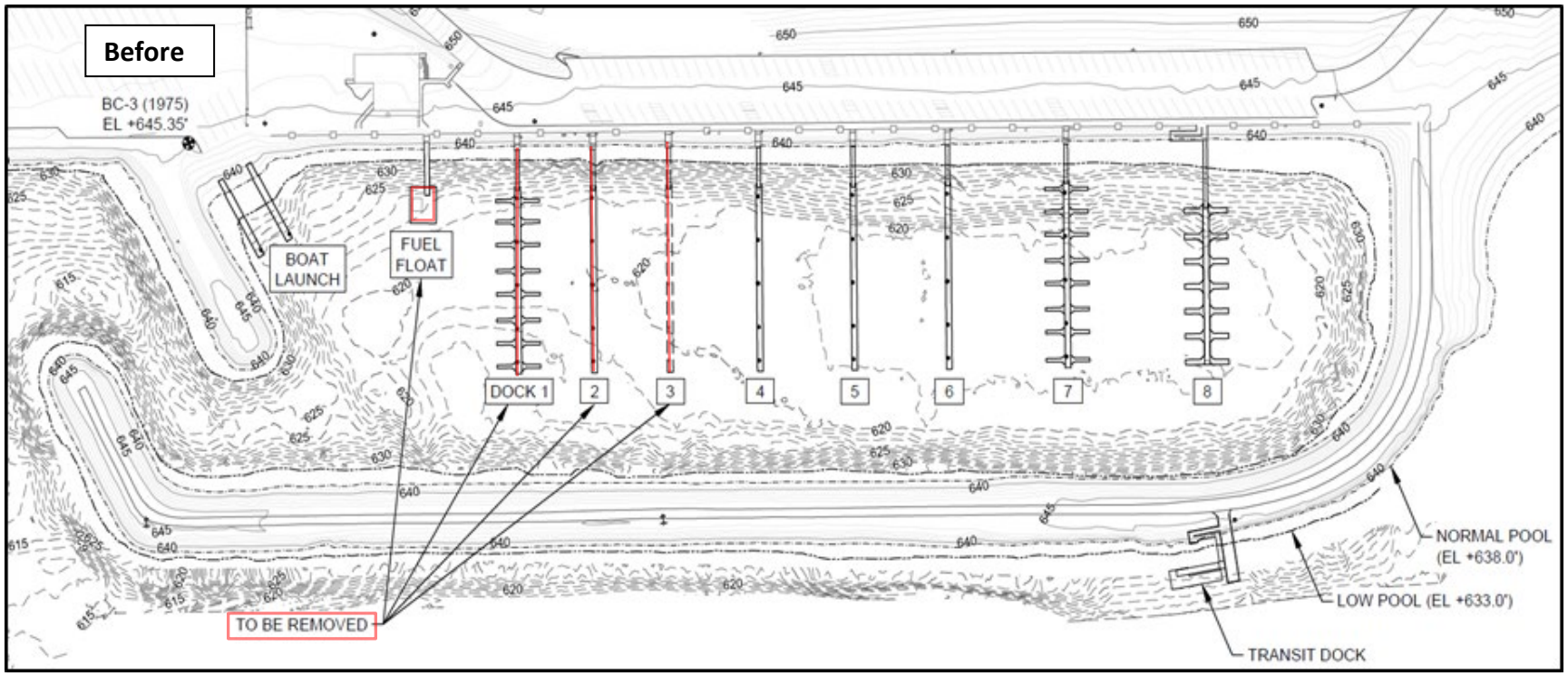

Figure 1. Existing Boyer Park Marina Facilities. The facilities highlighted in red will be removed.

Instead of repairing Dock 7, it will be replaced with Dock 1, which will be moved from its present location. Both docks are identical and the relocation of Dock 1 to the Dock 7 location will result in no change in overwater coverage or additional long term impacts to the aquatic environment. In order to swap the two docks, the existing five steel piles anchoring the existing Dock 7 will be removed. As a result, the relocation of Dock 1 will require the installation of five new 12.75-inch steel pipe piles. The new piles will be bare steel covered with HDPE plastic sleeves. Anti-perching caps will be installed on all piles.

1.3.3 Floating Fuel Platform with New Sewage Pump-Out

The proposed fuel platform will be 17 feet by 40-feet (680 ft^2), which is smaller than the existing platform. The installation of the new fuel float would result in the reduction of 328 ft^2 of overwater structure and the installation of three steel piles. The new platform will be installed in roughly the same location as the existing fuel platform. The existing gangway and concrete abutment will be retained. The fuel platform will consist of a fuel pump, waste pump-out station, safety and informational signage, and equipment shed. Spill prevention materials and fire suppression supplies will be stored in the equipment shed.

The float will be constructed offsite and consist of an aluminum frame with fully encapsulated foam-filled HDPE float drums. Framing for the platform will be as open as possible with between 40-45% functional open area (portion of the float not covered by framing and floatation). Approximately 85% of the surface of the platform will be constructed of fiberglass reinforced plastic (FRP) grate decking with greater than 60% open area. The exceptions to this would be the areas occupied by the fuel pump, solid grating covering the utility lines (fuel line and pump-out lines), and the storage shed. The fuel platform will be anchored by three 12.75-inch steel piles.

The piles will be bare steel covered with HDPE sleeves. Anti-perching caps will be installed on all piles. The fuel platform will include the installation of a new fueling system, piping, and upland connections, and also include space for a new sewage pump-out, with piping and connection to an existing upland on-site septic system. The piping for both the fuel and sewage will be located immediately upriver of the existing gangway.

1.3.4 New Dock Installation

The proposed dock will consist of a fixed pier gangway, a headwalk, and two floating docks (Figure 2).

Fixed Pier Gangway
The land side of the fixed pier will be located approximately 12 feet above the OHWM and will be accessed from the existing paved walkway. The fixed pier will extend horizontally approximately 26-feet out from the OHWM. The fixed pier will be aluminum and 100% of the surface will be covered with ADA compliant FRP grating (open area greater >60%). The fixed pier will be anchored with a total of eight 12.75-inch steel pipe piles, two of which will be installed above the OHWM to anchor the landward end of the fixed pier. The piles will be bare steel (not galvanized or painted) but covered with HDPE plastic sleeves to reduce corrosion,

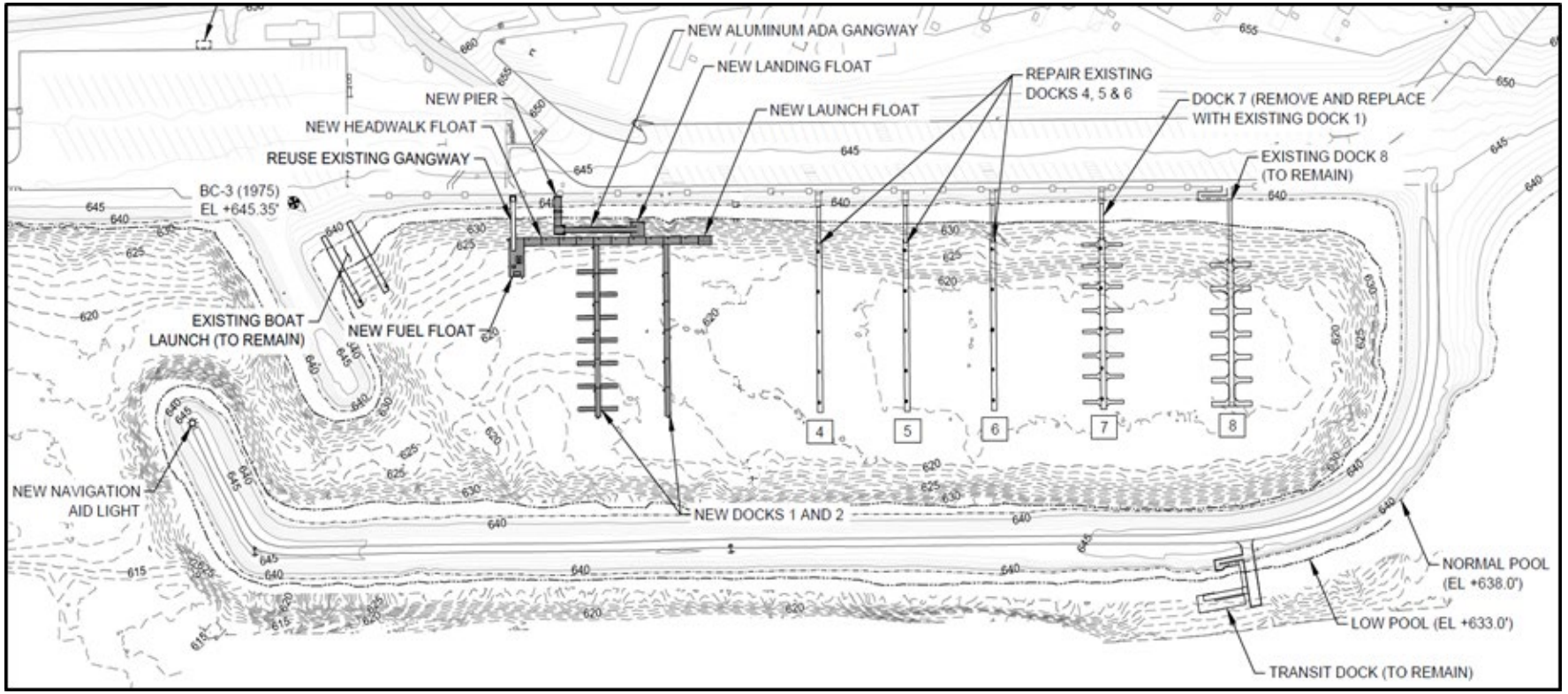

Figure 2. Proposed Boyer Park Marina Facilities. The facilities shaded in dark gray will added to the marina and will use a different configuration than present. When completed, the new marina will have one less dock than present.

reduce friction between the pile and pile hoops and improve the appearance. The HDPE plastic sleeves will be black color to prevent UV light damage. Anti perching caps will be installed on all piles.

Access to the floating portion of the dock will be provided by a six-feet wide (internal walking surface) by 80-feet long gangway oriented parallel to the OHWM. The gangway will be aluminum and 100% of the surface will be covered with grating that has an open area greater >60%). The gangway will be anchored to the fixed pier at the northern end and the southern end of the gangway will rest on a 16-foot by 16-foot landing float. The landing float will provide a connection to the headwall. Framing for the landing float will be aluminum and floatation will be provided by fully encapsulated foam filled HDPE float drums (white or black in color), as required. Framing for the float will be as open as possible with between 45-50% functional open area (portion of the float not covered by framing and floatation). The floatation will allow the top of the float to be elevated approximately 1.5 feet above the OHWM. The entire surface of the float will be covered with ADA compliant FRP grating (open area greater >60%)

The landward edge of the landing float will be located approximately 18-feet horizontally from the OHWM at a water depth of approximately six-feet. The location of the landing float was selected in order to ensure that the float will not ground out during low pool elevation 633-feet above mean sea level (MSL). The landward edge of the landing float will be at an elevation of approximately 632-feet MSL. The landing float will be anchored with two 12.75- inch piles installed on the landward edge of the float. The piles will be bare steel (not galvanized or painted), but covered with HDPE plastic sleeves to reduce corrosion, reduce friction between the pile and pile hoops, and improve the appearance. The HDPE plastic sleeves will be black color to prevent UV light damage. Anti-perching caps will be installed on all piles. The waterward edge of the landing float will be connected to the headwalk.

Headwalk

The proposed headwalk would be eight feet wide and 200-feet long (ten, eight foot wide by 20-foot long sections) and will be oriented parallel to the OHWM. The headwalk will provide access to the new dock and to the fuel float. The headwalk will be aluminum and floatation will be provided by fully encapsulated foam filled HDPE float drums (white or black in color), as required. Framing for the float will be as open as possible with between 50-55% functional open area (portion of the float not covered by framing and floatation). The floatation will allow the top of the float to be elevated approximately 1.5 feet above the OHWM. The entire surface of the float will be covered with ADA compliant FRP grating (open area greater >60%). The headwalk will be installed approximately 34-feet waterward out from the OHWM at a depth of approximately 13-feet below the OHWM.

At minimum pool elevation, the landward edge of the headwalk will be in approximately eight feet of water. The headwalk will be anchored with ten 12.75-inch piles installed on the landward edge of the float. The piles will be bare steel (not galvanized or painted) but covered with HDPE plastic sleeves to reduce corrosion, reduce friction between the pile and pile hoops and improve the appearance. The HDPE plastic sleeves will be black color to prevent UV light damage. Anti-perching caps will be installed on all piles.

The northern end of the headwalk will be connected to the new fuel float and a new kayak float will be attached to the southern end of the headwalk. The kayak float will be 10-feet wide by 15-feet long and will provide two launch lanes for kayaks. The kayak float will be a low-freeboard plastic float that will be anchored to the headwalk.

Floating Docks

The final elements are two docks that will extend perpendicular to the headwalk. Dock 1 will be installed north of the landing float and Dock 2 will be installed south of the landing float. Dock 1 will be installed approximately 38-feet north of the landing float.

Dock 1 will consist of a six foot wide by 180-foot long mainwalk and 14 finger floats (seven on each side) and will provide a total of 30 slips. The finger floats will be four-feet wide and 20-feet long and will be spaced approximately 20-feet apart. Dock 1 will be anchored with a total of seven piles.

Dock 2 will be installed approximately 24-feet south of the landing float. Dock 2 will be six-feet wide and 180-feet long and will provide linear moorage. This dock will be anchored with a total of seven piles.

The mainwalk and finger floats will be aluminum and floatation will be provided by fully encapsulated foam filled HDPE float drums (white or black in color). The floats will be modular to allow for easier construction, transportation, and installation. Framing for the floats will be as open as possible with between 35-40% functional open area for the finger floats and between 45-50% functional open area for the mainwalk (portion of the float not covered by framing and floatation). The floatation will allow the top of the floats to be elevated approximately 1.5 feet above the OHWM.

The entire surface of the floats will be covered with ADA compliant FRP grating (open area greater >60). The two dock will extend approximately 222-feet waterward on the OHWM, which is consistent with the remaining docks in the marina. Water depths below these docks will range between 15 and 18 feet below the OHWM. The proposed docks will not ground out during low pool; however, any existing rocks or debris below the docks that may interfere with the floats or vessels during low pool will be removed. No dredging is proposed, rather any large rock or debris will be lifted out of the water with a crane or excavator.

All piles will be bare steel (not galvanized or painted) but covered with HDPE plastic sleeves to reduce corrosion, reduce friction between the pile and pile hoops and improve the appearance. The HDPE plastic sleeves will be black color to prevent UV light damage. Anti-perching caps will be installed on all piles. The entrance to each dock will include a gate that can be locked, and new potable water and electric power will be provided to both docks.

Overall, the installation of the new dock will result in the installation of approximately 6,030 ft^2 of overwater structure and the installation of 42 steel piles (40 of which will be below the OHWM).

Pile Installation

All piles will be installed either from land or using a floating barge with a vibratory hammer or impact hammer. For piles that do not obtain the design penetration depth, an impact hammer may be utilized to complete pile installation. Pile installation is expected to encounter boulders, cobbles, and shallow bedrock. If bedrock is encountered, rock sockets and drilling will likely be required to reach a minimum 10 feet of embedment into the bedrock. If a rock socket is utilized, all tailings from the drilling operation would be contained within the interior of the pile or collected and disposed of at an upland disposal site.

1.3.5 Upland Proposed Actions

Minor Excavation, Grading, and Paving

Upland site activities include minor excavation, grading, and asphalt repairs. The repairs will not result in an increase in impervious surfaces. Best Management Practices (BMP) will be applied to eliminate potential run-off into the river. Excavated material will be reused as backfill or for grading whenever possible; any excess excavation material will be disposed of at an approved upland location.

New Signage

New signage will be installed adjacent to the existing parking lot to inform the public of marina safety warnings and guidance for its use.

New Navigation Aid

Navigation on the Snake River will not be impacted by the proposed project. However, to increase the safety of the marina a new solar-powered navigation aid light will be installed at the northwestern tip of the existing rock breakwater.

New Pit Restroom

A new pre-fabricated pit restroom will be installed east of the boat ramp parking lot. The work will include excavation and a concrete pad. The new restroom will be located outside of the 200-feet shoreline zone (greater than 200-feet from the OHWM).

1.3.6 Boating Use of the Reservoir

The proposed project would provide 132 moorage slips for recreational boats and a fuel dock. The moorage of boats is expected to be temporary as the docks are mostly used by campground patrons. The proposed docks would be used year round with peak use primarily between Memorial Day through Labor Day. Use would be limited during the non-peak portion of the year based on air and water temperatures. Minimal use would occur during the period between September and May. The use during the summer months would primarily be fishing, water skiing, pleasure boating, and temporary moorage for houseboats. The use during fall through spring would primarily be fishing and moorage for houseboats. Boating would occur primarily in waters deeper than 25-feet as there are shallow areas within the river that are hazards to navigation. These areas are more frequent along the sides of the reservoir and in shallower water. The primary boating use of the entire reservoir occurs towards the center of the river, in deeper water (greater than 25-feet). Boats that utilize the docks would only use the fuel dock for

fueling and maintenance. No fueling or maintenance activities would occur at the moorage docks.

1.3.7 Conservation Measures

The COE proposes the following conservation measures to minimize the impacts of the proposed action on ESA-listed fish and their habitat:

Design Features
The project has incorporated a number of design approaches to avoid and to minimize potential adverse impacts of the project. The following features have been incorporated into the project design to minimize the potential for the project to impact listed species:

- The size and number of piles have been reduced to the minimum necessary to support the gangway and floats.
- Piles will be installed using a vibratory hammer as much as possible. An impact hammer will be used, if needed, to achieve the 10-foot depth.
- The surface of the ramp and floats will consist of 100% functional grating material to reduce shading, allowing at least 60% light penetration to the water.
- Construction of the float would be designed to allow for between 40-55% functional grating (based on width of the float).
- The gangway would extend from the concrete abutment at an elevation approximately four feet above the OHWM.
- Exposed pile tops would be fitted with anti-perching caps to discourage avian predation on juvenile salmonids.
- The grated surfaces of the dock would not be used for storage or any other activities that would inhibit light penetration.

Best Management Practices (BMPs)
The proposed action includes BMPs to help avoid and/or minimize adverse effects to salmonids during construction. BMPs are employed to reduce the potential for construction-related impacts on species and habitats. The following BMPs will be followed for this project:

- Extreme care will be taken to prevent any petroleum products, chemicals, or other toxic or deleterious materials from entering the water. If a spill were to occur, work would be stopped immediately, steps would be taken to contain the material, and appropriate agency notifications would be made.
- Fueling within the marina will only occur at the fuel dock.
- All equipment operating waterward of the OHWM will be inspected daily for fluid leaks. Leaking equipment will be repaired prior to resuming operation.
- The Contractor will develop and implement a site-specific spill prevention, containment, and control (SPCC) plan, and is responsible for containment and removal of any toxicants released.
- All exposed or disturbed areas, including upland staging areas, will be stabilized to prevent erosion.

- All erosion control devices will be inspected during construction to ensure that they are working adequately.
- Grated surfaces will not be used for storage or other purposes that would reduce natural light penetration through the structure.

2. ENDANGERED SPECIES ACT: BIOLOGICAL OPINION AND INCIDENTAL TAKE STATEMENT

The ESA establishes a national program for conserving threatened and endangered species of fish, wildlife, plants, and the habitat upon which they depend. As required by section 7(a)(2) of the ESA, each federal agency must ensure that its actions are not likely to jeopardize the continued existence of endangered or threatened species, or adversely modify or destroy their designated critical habitat. Per the requirements of the ESA, federal action agencies consult with NMFS and section 7(b)(3) requires that, at the conclusion of consultation, NMFS provides an Opinion stating how the agency's actions would affect listed species and their critical habitats. If incidental take is reasonably certain to occur, section 7(b)(4) requires NMFS to provide an ITS that specifies the impact of any incidental taking and includes non-discretionary reasonable and prudent measures (RPMs) and terms and conditions to minimize such impacts.

2.1 Rangewide Status of the Species and Critical Habitat

2.1.1 Status of Species

This Opinion considers the status of four species: Snake River Basin steelhead, Snake River sockeye salmon, Snake River spring/summer Chinook salmon, and Snake River fall Chinook salmon. The Snake River spring/summer Chinook salmon evolutionarily significant unit (ESU) and the Snake River Basin steelhead distinct population segment (DPS) are composed of multiple populations, which spawn and rear in different watersheds across the Snake River basin. However, the Snake River fall Chinook salmon and Snake River sockeye salmon ESUs each comprise only one extant population. Having multiple viable populations makes an ESU or DPS less likely to become extinct from a single catastrophic event (ICBTRT 2010).

NMFS expresses the status of an ESU or DPS in terms of the status and extinction risk of its individual populations, relying on McElhaney et al.'s (2000) description of a viable salmonid population (VSP). The four parameters of a VSP are abundance, productivity, spatial structure, and diversity. The recovery plans for Snake River spring/summer Chinook salmon and Snake River Basin steelhead (NMFS 2017a), Snake River fall Chinook salmon (NMFS 2017b), and Snake River sockeye salmon (NMFS 2015) describe these four parameters in detail and the parameter values needed for persistence of individual populations and for recovery of the ESU or DPS.

The status of each species is determined by the level of extinction risk that the listed species faces, based on parameters considered in documents such as the recovery plan, status reviews, and listing decisions. This informs the description of the species' likelihood of both survival and recovery. The condition of critical habitat throughout the designated area is determined by the

current function of the essential physical and biological features (PBFs)[1] that help to form that conservation value.

Table 1 summarizes the status and available information on the Snake River Basin steelhead DPS, the Snake River sockeye salmon ESU, the Snake River spring/summer Chinook salmon ESU, and the Snake River fall Chinook salmon ESU, based on the detailed information on the status of individual populations, and the species as a whole provided by the recovery plans referenced above and the *Status review update for Pacific salmon and steelhead listed under the Endangered Species Act: Pacific Northwest* (NWFSC 2015). These four documents are incorporated by reference here. All species remain threatened or endangered with extinction since the time of their listing. Almost all of the individual populations these species comprise are not meeting recovery plan abundance and/or productivity targets. The proposed action will occur in the Lower Snake River.

Table 1. Most recent listing classification and date, status summary (including recovery plan reference and most recent status review), and limiting factors for species considered in this Opinion.

Species	Listing Status	Status Summary	Limiting Factors
Snake River Spring/summer Chinook Salmon	Threatened 6/28/05	This ESU comprises 28 extant and four extirpated populations, organized into five major population groups (MPGs), none of which are meeting the viability goals laid out in the recovery plan (NMFS 2017a). All except one extant population (Chamberlin Creek) are at high risk of extinction (NWFSC 2015). Most populations will need to see increases in abundance and productivity in order for the ESU to recover. Several populations have a high proportion of hatchery-origin spawners—particularly in the Grande Ronde, Lower Snake, and South Fork Salmon MPGs—and diversity risk will also need to be lowered in multiple populations in order for the ESU to recover (ICBTRT 2010; NWFSC 2015).	• Adverse effects related to the mainstem Columbia and Snake River hydropower system and modifications to the species' migration corridor. • Degraded freshwater habitat, including altered streamflows and degraded water quality. • Harvest-related effects. • Predation in the migration corridor. • Potential effects from high proportion of hatchery fish on natural spawning grounds.
Snake River Sockeye Salmon	Endangered 6/28/05	This ESU comprises one extant and four extirpated populations, all within one MPG, the Sawtooth Valley Lakes MPG. However, historical sockeye production occurred in the five Sawtooth Valley lakes, Warm Lake, and the Payette Lakes in Idaho and Wallowa Lake in Oregon. The one extant population is currently at a high risk of extinction (NMFS 2015). The species remains at high risk across all four VSP parameters (spatial structure, diversity, abundance, and productivity). Although the	• Adverse effects related to the mainstem Columbia and Snake River hydropower system and modifications to the species' migration corridor. • Harvest-related effects. • Degraded freshwater habitat, including altered streamflows and degraded water quality.

[1] We use the term PBF to mean primary constituent element; the shift in terminology does not change the approach used (81 FR 7414).

Species	Listing Status	Status Summary	Limiting Factors
		captive brood program has been highly successful in producing hatchery sockeye, substantial increases in survival rates across all life history stages must occur in order to reestablish sustainable natural production (NWFSC 2015). In particular, juvenile and adult losses during travel through the Salmon, Snake, and Columbia River migration corridors continue to present a significant threat to species recovery (NMFS 2015).	• Predation in the migration corridor. • Active eradication of sockeye from some lakes in the 1950s and 1960s.
Snake River Fall Chinook Salmon	Threatened 6/28/05	This ESU comprises one extant population of fish spawning in the mainstem of the Snake River and the lower reaches of the associated major tributaries including the Tucannon, Grande Ronde, Clearwater, Salmon, and Imnaha Rivers. Historically, a single extirpated population spawned and reared able the Hells Canyon Dam. The ESU also includes four artificial propagation programs (NMFS 2017b). Therefore the population has a high proportion of hatchery-origin spawners. The population is considered viable, but will need to see an increase in productivity combined with a reduction in diversity risk for the ESU to recover (ICBTRT 2010; NWFSC 2015).	• Adverse effects related to the mainstem Columbia and Snake River hydropower system and modifications to the species' migration corridor. • Historical harvest-related effects. • Potential effects from high proportion of hatchery fish on natural spawning grounds.
Snake River Basin Steelhead	Threatened 1/5/06	This DPS comprises 24 populations organized into five MPGs. Currently, five populations are tentatively rated at high risk of extinction, 17 populations are rated at moderate risk of extinction, one population is viable, and one population is highly viable. Although abundance has increased since the time of listing, four out of the five MPGs are not meeting the population viability goals laid out in the recovery plan (NMFS 2017a). In order for the species to recover, more populations will need to reach viable status through increases in abundance and productivity. Additionally, the relative proportion of hatchery fish spawning in natural spawning areas near major hatchery release sites remains uncertain and may need to be reduced (NWFSC 2015, most recent species status review).	• Adverse effects related to the mainstem Columbia and Snake River hydropower system and modifications to the species' migration corridor. • Genetic diversity effects from out-of-population hatchery releases. Potential effects from high proportion of hatchery fish on natural spawning grounds. • Degraded fresh water habitat. • Harvest-related effects, particularly B-run steelhead. • Predation in the migration corridor.

For sockeye salmon, this section of the Salmon River is used only as migratory corridor by the Sawtooth Valley Lakes MPG. This MPG remains at a very high risk of extinction in terms of natural production (NMFS 2015). Currently, the Snake River sockeye salmon run is highly dependent on a captive broodstock program operated at the Sawtooth and Eagle Hatcheries. Although the captive broodstock program rescued the ESU from the brink of extinction, diversity risk remains high without sustainable natural production (NWFSC 2015). The species remains at

high risk across all four risk parameters: spatial structure, diversity, abundance, and productivity (NMFS 2015).

For fall Chinook salmon, this section of the Snake River may be occupied by all freshwater life stages of the Lower Snake River population, which is the single extant population for the ESU. This population includes fish spawning in the mainstem of the Snake River and lower reaches of several associated tributaries (NMFS 2017b). The population is currently rated at low risk for abundance and productivity, moderate risk for spatial structure, moderate risk for diversity, and has an overall rating of "viable" (NMFS 2017b). The Snake River fall Chinook ESU as a whole is not meeting the recovery goals described in the recovery plan for the species. The recovery plan describes three possible scenarios for recovery, which all require the Lower Snake River population to have a status of "highly viable," i.e., a one percent or lower risk of extinction within 100 years (NWFSC 2015).

For spring/summer Chinook salmon, this section of the Snake River is used by all Snake River spring/summer Chinook salmon populations as a migratory route, and juveniles belonging to the Tucannon River population of the Lower Snake River MPG may use shallow portions of the mainstem of the Snake River and areas near the mouths of tributaries for rearing. The population includes returns from large-scale hatchery releases but some of its side tributary spawning sites likely have low hatchery contributions (NMFS 2017a). This population is currently rated at high risk for abundance and productivity, but low risk for spatial structure and diversity (NMFS 2017a). These combined ratings indicate that viability ratings remain at high risk for the population (NMFS 2017a). For the ESU as a whole, the average number of adult returns in the past decade is less than half the peak numbers observed in 2001.

For steelhead, this section of the Snake River is used by all Snake River Basin steelhead salmon populations as a migratory route and is occupied by the Tucannon River population of the Lower Snake River MPG. This area is also used by adult steelhead in the fall and winter, where they hold in pools before dispersing into tributaries for spawning. Juvenile steelhead may also use shallow portions of the mainstem Snake River and side tributaries for rearing. The population has high potential for hatchery contributions in natural spawning areas (NMFS 2017a) which can reduce diversity. The Tucannon River population is currently rated at moderate risk for abundance and productivity, and moderate risk for spatial structure and diversity. These combined ratings indicate that the population has an extinction risk that is less than 25 percent in 100 years (NMFS 2017a). Overall, the number of adult steelhead returning to the Snake River has been declining since peak returns in 2009, and present returns are approaching the numbers that were last observed before the fish were listed.

2.1.2 Status of Critical Habitat

In evaluating the condition of designated critical habitat, NMFS examines the condition and trends of physical and biological features (PBFs) which are essential to the conservation of the ESA-listed species because they support one or more life stages of the species. The designation(s) of critical habitat for (species) use(s) the term primary constituent element (PCE) or essential features. The 2016 critical habitat regulations (50 CFR 424.12) replaced this term with physical or biological features (PBFs). The shift in terminology does not change the

approach used in conducting a ‘‘destruction or adverse modification’’ analysis, which is the same regardless of whether the original designation identified PCEs, PBFs, or essential features. In this Opinion, we use the term PBF to mean PCE or essential feature, as appropriate for the specific critical habitat. Proper function of these PBFs is necessary to support successful adult and juvenile migration, adult holding, spawning, incubation, rearing, and the growth and development of juvenile fish. Modification of PBFs may affect freshwater spawning, rearing or migration in the action area. Generally speaking, sites required to support one or more life stages of the ESA-listed species (i.e., sites for spawning, rearing, migration, and foraging) contain PBFs essential to the conservation of the listed species (e.g., spawning gravels, water quality and quantity, side channels, or food) (Table 2).

Table 2. Types of sites, essential physical and biological features, and the species life stage each PBF supports.

Site	Essential Physical and Biological Features	Species Life Stage
Snake River Basin Steelhead [a]		
Freshwater spawning	Water quality, water quantity, and substrate	Spawning, incubation, and larval development
Freshwater rearing	Water quantity & floodplain connectivity to form and maintain physical habitat conditions	Juvenile growth and mobility
	Water quality and forage[b]	Juvenile development
	Natural cover[c]	Juvenile mobility and survival
Freshwater migration	Free of artificial obstructions, water quality and quantity, and natural cover[c]	Juvenile and adult mobility and survival
Snake River Spring/Summer Chinook Salmon, Fall Chinook, & Sockeye Salmon		
Spawning & Juvenile Rearing	Spawning gravel, water quality and quantity, cover/shelter (Chinook only), food, riparian vegetation, space (Chinook only), water temperature and access (sockeye only)	Juvenile and adult
Migration	Substrate, water quality and quantity, water temperature, water velocity, cover/shelter, food[d], riparian vegetation, space, safe passage	Juvenile and adult

[a] Additional PBFs pertaining to estuarine, nearshore, and offshore marine areas have also been described for Snake River steelhead and Middle Columbia steelhead. These PBFs will not be affected by the proposed action and have therefore not been described in this Opinion.
[b] Forage includes aquatic invertebrate and fish species that support growth and maturation.
[c] Natural cover includes shade, large wood, log jams, beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.
[d] Food applies to juvenile migration only.

Table 3 summarizes designated critical habitat for Snake River Basin steelhead, Snake River sockeye salmon, Snake River spring/summer Chinook salmon, and Snake River fall Chinook salmon, based on the detailed information on the status of critical habitat throughout the designation area provided in the recovery plan for each species (NMFS 2017a; NMFS 2017b, NMFS 2015), which is incorporated by reference here. NMFS describes critical habitat in terms of essential PBFs of that habitat to support one or more life stages (e.g., sites with conditions that support spawning, rearing, migration, and foraging).

Across the designations, the current ability of PBFs to support the species varies from excellent in wilderness areas to poor in areas of intensive human land use.

Table 3. Critical habitat, designation date, Federal Register citation, and status summary for critical habitat considered in this opinion.

Species	Designation Date and Federal Register Citation	Critical Habitat Status Summary
Snake River Spring/summer Chinook Salmon	10/25/99 64 FR 57399	Critical habitat consists of river reaches of the Columbia, Snake, and Salmon Rivers, and all tributaries of the Snake and Salmon rivers (except the Clearwater River) presently or historically accessible to this ESU (except reaches above impassable natural falls, and Dworshak and Hells Canyon Dams). Habitat quality in tributary streams varies from excellent in wilderness and roadless areas, to poor in areas subject to heavy agricultural and urban development (NMFS 2017a). Reduced summer stream flows, impaired water quality, and reduced habitat complexity are common problems.
Snake River Fall Chinook Salmon	12/28/93 58 FR 68543	Critical habitat consists of all Columbia River estuarine areas, as well as river reaches upstream to the confluence of the Columbia and Snake Rivers, and all Snake River reaches from the confluence of the Columbia River upstream to Hells Canyon Dam. It also includes lower portions of the Palouse, Tucannon, Clearwater, and North Fork Clearwater, Grande Ronde, Imnaha, and Salmon Rivers. Habitat quality in all reaches is influenced by various land uses, especially irrigated agriculture, in terms of heavy sediment and nutrient loading from irrigation returns (NMFS 2017b).
Snake River sockeye salmon	12/28/93 58 FR 68543	Critical habitat consists of river reaches of the Snake and Salmon Rivers; Alturas Lake Creek; Valley Creek, Stanley Lake, Redfish Lake, Yellowbelly Lake, Pettit Lake, Alturas Lake; all inlet/outlet creeks to those lakes. Habitat quality in tributary streams varies from excellent in wilderness and roadless areas, to poor in areas subject to heavy agricultural and urban development (NMFS 2015). Reduced summer stream flows, impaired water quality, and reduced habitat complexity are common problems.
Snake River Basin steelhead	9/02/05 70 FR 52630	Critical habitat encompasses 25 subbasins in Oregon, Washington, and Idaho. Habitat quality in tributary streams varies from excellent in wilderness and roadless areas, to poor in areas subject to heavy agricultural and urban development (NMFS 2017a). Reduced summer stream flows, impaired water quality, and reduced habitat complexity are common problems.

The construction and operation of water storage and hydropower projects in the Columbia River basin have altered biological and physical attributes of the mainstem migration corridor for all four ESA-listed species addressed in this Opinion. These alterations have affected juvenile migrants to a much larger extent than adult migrants. However, changing temperature patterns have created passage challenges for summer migrating adults in recent years, requiring new structural and operational solutions (i.e., cold water pumps and exit "showers" for ladders at Lower Granite and Lower Monumental Dams).

Actions taken since 1995 that have reduced negative effects of the hydrosystem on juvenile and adult migrants include: (1) Minimizing winter drafts to increase flows during peak spring passage; (2) releasing water from storage to increase summer flows; (3) releasing water from Dworshak Dam to reduce peak summer temperatures in the lower Snake River; (4) constructing

juvenile bypass systems to divert smolts, steelhead kelts, and adults that fall back over the projects away from turbine units; (5) providing spill at each of the mainstem dams for smolts, steelhead kelts, and adults that fall back over the projects; (6) constructing "surface passage" structures to improve passage for smolts, steelhead kelts, and adults falling back over the projects; and, (7) maintaining and improving adult fishway facilities to improve migration passage for adult salmon and steelhead.

2.1.3 Climate Change Implications for ESA-listed Species and their Critical Habitat

One factor affecting the ESA-listed species and critical habitat is climate change. Likely changes in temperature, precipitation, wind patterns, and sea-level height have implications for survival of Snake River Basin steelhead, Snake River spring/summer Chinook salmon, Snake River fall Chinook salmon, and Snake River sockeye salmon in both their freshwater and marine habitats. As the climate changes, air temperatures in the Pacific Northwest are expected to increase 2°C to 8°C by the 2080s (Mantua et al. 2009). While total precipitation changes are uncertain, increasing air temperature will result in more precipitation falling as rain rather than snow in watersheds across the basin (NMFS 2017a). In general, these changes in air temperatures, river temperatures, and river flows are expected to cause changes in salmon and steelhead distribution, behavior, growth, and survival, although the magnitude of these changes remains unclear.

Climate change could affect Snake River Basin steelhead and Snake River spring/summer Chinook salmon in the following ways: (a) Winter flooding in transient and rainfall-dominated watersheds may reduce overwintering habitat for juveniles; (b) reduced summer and fall flows may reduce the quality and quantity of juvenile rearing habitat, strand fish, or make fish more susceptible to predation and disease; (c) timing of smolt migration may change due to a modified timing of the spring freshet; and (d) lethal water temperatures may occur in the mainstem river migration corridor or in holding tributaries resulting in higher mortality rates (NMFS 2017a).

Climate change could affect Snake River fall Chinook salmon in the following ways: (a) Higher water temperatures during adult migration may lead to increased mortality or reduced spawning success; (b) if water temperatures accelerate the rate of egg development, it could lead to earlier fry emergence and dispersal, which could be either beneficial or detrimental, depending upon location and prey availability; (c) warmer temperatures will increase metabolism, which may increase or decrease juvenile growth rates and survival, depending upon availability of food; (d) increases in water temperatures in Snake and Columbia River reservoirs could increase consumption rates and growth rates of predators and, hence, predation-related mortality on subyearling fall Chinook salmon; and (e) reduced flow in late spring and summer may lead to delayed migration of juvenile fall Chinook salmon and higher mortality passing dams (NMFS 2017b).

Climate change could affect Snake River sockeye salmon in the following ways: (a) Higher temperatures during adult migration in late summer may lead to increased mortality or reduced spawning success due to lethal temperatures, delay, increased fallback at dams, or increased susceptibility to disease and pathogens; (b) Low late-summer flows in tributaries below natal lakes may preclude adult passage to spawning areas; and (c) modified timing of the spring freshet may alter timing of smolt migration, such that there is a mismatch with ocean conditions

and predators. Reduced flow in late spring may lead to delayed migration and higher mortality passing dams. Effects of climate change on the limnology of natal lakes in the Salmon River is uncertain, so effects of climate change on Snake River sockeye salmon spawning, emergence, and juvenile rearing are currently unknown (NMFS 2015).

Climate factors will likely reduce suitable rearing areas and limit run timing under warmer future conditions, and thereby make it more challenging to increase abundance and recover these species.

2.2 Action Area

"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).

The action area includes the immediate area of the existing marina and downstream areas from the marina entrance where impacts may extend approximately 300-feet downstream. The action area includes the entire marina, an area of approximately 383,500 ft^2, and extends downstream 300-feet from the marina entrance where turbidity effects may occur. Impacts from impact pile installation generally extend approximately 700-feet around each pile, but due to the enclosed nature of the marina, noise impacts are limited to the marina itself. This is the line of sight area (i.e., not blocked by land) where in-water cumulative sound exposure level (cSEL) from impact pile driving could be elevated above the injury threshold level of 183 dB (re: 1 µPa2"sec) 2 for salmonids.

The action area is designated critical habitat for Snake River spring/summer-run Chinook salmon, Snake River fall-run Chinook salmon, and Snake River steelhead (70 FR 52630; September 2, 2005). The action area is also designated as EFH for Chinook salmon and coho salmon (PFMC 2014).

2.3 Environmental Baseline

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 consultation, and the impact of state or private actions which are contemporaneous with the consultation in process (50 CFR 402.02).

We are unaware of any fish surveys in the main portion of the action area (marina) specifically, but it does overlap with the migration corridor for all four species and likely serves as rearing habitat for juvenile Snake River spring/summer run Chinook salmon, Snake River fall run Chinook, and potentially juvenile Snake River steelhead. An occasional adult salmonid could migrate into the marina in which the proposed action would occur. Little Goose Dam has created reservoir conditions in the action area, with daily fluctuations in water level. These alterations have reduced rearing habitat suitability (e.g., less habitat complexity, reduced forage base), reduced spring water velocities (which hampers downstream migration by smelts), and created better habitat for juvenile salmonid predators (e.g., birds, and native and non-native fish).

Shoreline development for recreation and other purposes contributes to on-going impacts from bank stabilization, riparian zone landscaping, and overwater cover from docks. These factors further limit habitat function by reducing cover, attracting predators and reducing foraging efficiency for juvenile salmonids. Overall, baseline conditions in the action area are low with low habitat complexity, reduced rearing habitat suitability, reduced forage base, and better habitat for juvenile salmonid predators.

2.4 Effects of the Action

"Effects of the action" is defined at 50 CFR 402.02.

2.4.1 Effects to Species

The in-water portion of the proposed action may take place from September 1 to February 28. The COE estimates that the actual work will take approximately 3 months, with all of the pile driving occurring within approximately 4 weeks. Table 4 summarizes potential salmonid species and life stage presence in the Lower Snake River during the project work window.

Table 4. Periodicity of species and life stages of salmonids in the Lower Snake River subbasin (adapted from BLM 2017).

Life Stage/Activity/Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Upstream Adult Migration												
Steelhead												
Spr/sum Chinook salmon												
Fall Chinook salmon												
Sockeye salmon												
Adult Holding/Overwintering												
Steelhead												
Spr/sum Chinook salmon												
Fall Chinook salmon												
Sockeye salmon												
Spawning												
Fall Chinook salmon												
Egg Incubation through Fry Emergence												
Fall Chinook salmon												
Juvenile Rearing												
Steelhead												
Spr/sum Chinook salmon												
Fall Chinook salmon												
Sockeye salmon												
Downstream Smolt Migration												
Steelhead												
Spr/sum Chinook salmon												
Fall Chinook salmon												
Sockeye salmon												

Salmonids present in the action area during the project implementation period could experience the following adverse effects from the proposed action:

- Exposure to short-term turbidity
- Exposure to construction noise, pile driving noise, and disturbance

Long term effects after construction is completed include:

- Altered cover used by fish that prey on salmonids
- Continued recreational boat usage

In addition to adverse effects from those aspects of the action, fuels/chemicals will be associated with the action but are unlikely to cause adverse effects in this instance, as discussed in the Chemical Contamination subsection, below.

2.4.1.1 Turbidity

The proposed action will disturb bottom sediments and generate suspended sediment during the removal of the old piles and installation of new steel piles. Suspended sediment from watercraft use of the marina is not expected due to a water depth of 15-18 feet, which is much greater than the depth where sediments might be disturbed by boat propellers or water jets. Quantitative information on suspended sediment generated by pile driving is limited. In one example in (FHWA 2012), the suspended sediment concentration from pile driving was monitored in the San Francisco Bay as part of a bridge maintenance project, where the average suspended concentration was found to be 2 mg/L. This suspended sediment concentration provides a ballpark estimate of expected suspended sediment concentrations likely to occur from the proposed action, which may result in suspended sediment concentrations that are slightly higher or lower. In addition the removal of wooden piles may produce greater amounts of suspended sediment than pile driving, since sediment adhered to the wood may loosen and slough off into the water as the pile is lifted up through the water column.

The entire marina is likely to become turbid as suspended sediments disperse within the marina. All but the finest fraction of suspended sediments from each pile installation or removal will rapidly settle out of the water column, while finer clays will remain suspended for a longer period. Using a settling rate of 0.002 feet per second for clays cited in Schroeder (2014) and median depth of 16.5 feet in the marina, all materials in suspension will settle out of the water column in less than 2.5 hours. Consequently, most of the suspended sediment will settle at roughly the same rate that piles can be driven, but not necessarily allowing enough time for the finer sediments to settle completely before the next pile is driven or removed. Finer sediments are likely to remain in suspension for extended periods of time during the days of in-water work, particularly when pile driving occurs in succession. As such, fish in the marina are likely encounter continuous exposure to suspended sediment for up to 12 hours in each day that pile driving or pile removal occurs. Between 5 to 10 piles may be driven per day and a similar amount of time is assumed for removing old piles. Thus, the removal of 17 piles and installation of 42 new piles would expose fish to suspended sediment for 6 to 12 days intermittently over a 4 week period.

Recognizing the uncertainty about suspended sediment concentrations from the proposed action, suspended sediment concentrations of 20 mg/l (one order of magnitude higher than average suspended sediment in the San Francisco Bay) are used to assess potential effects using Newcombe and Jensen's (1996) risk assessment procedure. Continuous exposure to a suspended sediment concentration of 20 mg/l for up to 12 hours would result in a severity rating of four (4). With the expected severity, listed fish are likely to exhibit avoidance behavior and short-term reductions in feeding rates and feeding success. These behavioral changes are likely to cause reduced growth rates of juvenile steelhead and Chinook salmon.

Adverse effects to fish from suspended sediment are unlikely to occur outside the marina. Since the marina has no current to transport suspended sediments downstream and the marina is nearly completely closed except for a narrow opening, nearly all suspended sediment is likely to be contained within the marina. Minor amounts of suspended sediment may escape the marina, but they are likely to rapidly disperse from currents in the Snake River.

Measurement of suspended sediment concentrations in real time is impractical since it requires drying the sediment before weighing it. Consequently, turbidity is typically used as a real-time surrogate measure of suspended sediment. Schroeder (2014) determined the relationship between suspended sediment concentrations and turbidity in the Lower Snake River is 1.4 mg/L TSS to one nephelometric turbidity unit (NTU). Using a TSS concentrations of 20 mg/l and the relationship to turbidity from Schroeder (2014), pile driving and pile removal may increase turbidity by 28 NTUs above background.

2.4.1.2 Noise and Disturbance

A total of forty 12.75-inch diameter steel pipe piles will be installed below OHWM, primarily with a vibratory hammer. If the piles do not obtain a sufficient penetration depth with the vibratory hammer, an impact hammer will be used to complete pile installation. Impact hammers use forceful strikes that produce bursts of high-energy sound that can readily harm or kill fish if measures are not taken to reduce sound generation or exposure. Vibratory hammers use rapid strikes at high frequency and low energy, which produces continuous sound that may disrupt normal behavior, but is unlikely to cause physical injury to fish. Sound effects from pile driving will be contained within the marina enclosure. The marina opening is flanked by a jetty that is oriented at roughly 45 degrees, which reflects primary sound waves back into the marina. Sound that travels outside the marina will be reflected sound that is attenuated to the point where it is far below levels that would adversely affect fish. Within the marina, all fish will be exposed to sound levels that can cause adverse effects.

Three different measures of sound energy (peak and root-mean-squared (RMS) pressures, and accumulated Sound Exposure Level [SEL]) are used in this opinion to assess effects of sound on listed fish based on recommendations and criteria by Buehler et al. et al. (2015). The criteria used for the onset of physical injury and adverse behavioral effects are listed in Table 5 below. The onset of physical injury uses dual criteria - peak pressure and SEL. The onset of physical injury is expected if either of these criteria are exceeded. The criterion for accumulated SEL is based upon the mass of the fishes under consideration. If fishes smaller than 2 grams are present, then the more conservative 183 dB SEL criterion may be required. At sound levels

below thresholds for injury, 150 dB RMS sound is used as a threshold for adverse behavioral effects. Vibratory hammers are not expected to exceed the 150 dB RMS sound threshold, based on a monitoring report (Buehler et al. 2015).

The sound generated by an impact hammer and the thresholds for injury are shown in Table 5. Expected sound levels in Table 5 are based on the assumptions that: (1) Each pile would require up to 191 strikes with an impact hammer to embed; (2) up to 10 piles would be driven in one day; and (3) pile driving would not occur 24 hours per day, allowing for fish to recover from sublethal sound effects overnight. Adverse effects of pile driving with an impact hammer are managed primarily by limiting the diameter of the piles to 12.75 inches. A steel pile with a dimeter of 12.75 inches can generate up to 184 dB RMS without attenuation measures (Illingworth and Rodkin 2007). This sound level is below the thresholds where fish would experience physical injury, but all fish in the marina will be exposed to average sound levels that exceed 150 dB RMS threshold for sublethal effects (Table 5). Expected sound pressure levels from pile driving would be in excess of 150 dB RMS (approximately 184 DB RMS) and would cause temporary behavioral changes, such as elicitation of a startle response, disruption of feeding, or avoidance of an area. These behavioral changes can increase the risk of predation and reduce foraging or spawning success (Stadler and Woodbury 2009), which can reduce the survival, growth, or reproduction of the affected fish.

There are limited data on physical effects of vibratory hammer use on fish; adverse physical effects are not apparent from casual observation. In one example where sound from a vibratory hammer in a river was monitored, sound pressure levels were not distinguishable from background sound created by the current, which was roughly 150 dB (Buehler et al. 2015). Since fish apparently exhibit normal behavior at background noise levels of 150 dB RMS, this sound level is used as a threshold for sublethal effects. Assuming that a vibratory hammer produces noise of 150 dB_{RMS}, or less sound from the vibratory hammer is roughly one order of magnitude lower than thresholds where adverse behavioral effects are likely to occur.

The sound generated by an impact hammer exceed the RMS threshold for adverse behavioral effects, but is likely to remain below thresholds that cause physical injury (Table 5). Expected sound levels in Table 5 are based on the assumptions that: (1) Each pile would require up to 191 strikes with an impact hammer to embed; (2) up to 10 piles would be driven in one day; and (3) pile driving would not occur 24 hours per day, allowing for fish to recover from sublethal sound effects overnight. Adverse effects of pile driving with an impact hammer are managed primarily by limiting the diameter of the piles to 12.75 inches. A steel pile with a dimeter of 12.75 inches can generate up to 184 dB RMS without attenuation measures (Illingworth and Rodkin 2007). This sound level is below the thresholds where fish would experience physical injury, but all fish in the marina will be exposed to average sound levels that exceed 150 dB RMS threshold for sublethal effects (Table 5). Expected sound pressure levels from pile driving would be in excess of 150 dB RMS (approximately 184 DB RMS) and would cause temporary behavioral changes, such as elicitation of a startle response, disruption of feeding, or avoidance of an area. These behavioral changes can increase the risk of predation and reduce foraging or spawning success (Stadler and Woodbury 2009), which can reduce the survival, growth, or reproduction of the affected fish.

Table 5. Expected sound levels from use of an impact hammer in Boyer Park Marina, based on maximum pile diameter of 12.75 inches, and the expected biological effects.

Biological Effect	Metric	Fish Weight	Effect Threshold	Expected Sound Level
Onset of physical injury	Peak pressure	N/A	206 dB	200 dB
	Accumulated Sound Exposure Level (SEL)	≥ 2 grams	187 dB	174 dB
		< 2 grams	183 dB	
Adverse behavioral effects	Root Mean Square Pressure (RMS)	N/A	150 dB	184 dB

In this document, Peak (dBpeak) and Root Mean Squared (dBRMS) pressures are referenced to 1 micropascal (1 μPa). Cumulative Sound Exposure Levels (SEL) are referenced at 1 μPa*sec .

Pile driving will occur between September 1 and February 28, and will likely affect juvenile steelhead and Chinook salmon. Between 5 to 10 piles may be driven per day, which would expose fish to effects of pile driving noise for a total of 4 to 8 days, intermittently over a 4 week period during the work window. Any adult salmon and steelhead in this portion of the Snake River will not be in the marina and can readily move away from disturbance at the entrance area, so we do not anticipate adverse effects on adults. NMFS does not have specific data on the number of juvenile fish that will be present near each of the proposed structures during in-water work window, however, the majority of steelhead and spring-run Chinook salmon smolts will have already migrated past the project areas by the time the window for in-water work begins. However, rearing/overwintering fall Chinook salmon are likely to be present in the action area during the in-water work period.

The number of juvenile fish affected by the action is difficult to estimate due to a lack of information on fish densities in an enclosed marina, and uncertainty over the applicability of fish density data from other types of environments. Juvenile Chinook salmon and steelhead as a rule do not seek deep waters that lack current, as found in a marina and the marina has relatively steep, riprapped banks that do not resemble the shallow, near-shore areas that are used by juvenile salmon in the Snake River. Therefore, habitat conditions in the marina are not favored by listed fish and few listed fish are expected to be in the marina. Limited data exist regarding juvenile salmon and steelhead densities within the Lower Snake River reservoirs, especially during the fall and winter. Mullan et al. (1992) reported that juvenile steelhead and spring-run Chinook salmon densities in tributary habitats of the Columbia River averaged 2.5 individuals of each species per thousand square feet or 109 fish per acre surface area. Based on the fish densities observed Mullan et al. (1992), the number of fish within the entire 8-acre area marina would be as much as 872 juvenile Chinook salmon and 872 juvenile steelhead. Noise effects from pile driving would result in moderate risk of behavioral impacts to steelhead and salmonids.

Watercraft Noise/Disturbance

The existing moorage has been in place at Boyer Park since the early 1970's when Little Goose Dam was constructed. The proposed action would likely extend the life of the moorage system,

and associated recreation use, for at least that length of time into the future. It is expected that overall impacts to fish behavior and abundance would be low.

The marina is open year-round for motorboat launching and mooring. As such, the proposed action indirectly affects fish through exposure to noise and disturbance from watercraft in the marina. Boat engine noise, prop movement, the physical presence of boat hulls, and humans can disturb fish and/or cause fish to leave an area (Mueller 1980), or cause other behavioral changes that can disrupt feeding or expose fish to increased or decreased predation. Since the marina structures may benefit fish that prey on salmonids, boating activity that displaces fish from the marina may reduce predation risk. These responses to noise and disturbance from boats are likely to be experienced by juvenile Chinook salmon or steelhead that reside temporarily in the marina, and continue at levels that presently exist under the environmental baseline. Overall impacts from boating disturbance are expected to be low, with small numbers of juvenile salmon and steelhead using the marina to begin with, and very few of that small number of fish being displaced by boat activity such that they are killed by predator fish. This is likely to occur in a small number of instances affecting a small number of fish during the decades of extended marina use enabled by the action.

2.4.1.3 Chemical Contamination

Additional impairment of water quality will result from accidental releases of fuel, oil, and other contaminants that can harm aquatic organisms. Such releases, while uncommon, are reasonably likely to occur from watercraft use at the permitted structures, but impacts are expected to be minimal due to the small amounts involved. Chemical leaching from ACZA treated wood, which meets the Western Wood Preservers Institute BMPs is expected to be minimal.

Petroleum-based contaminants, such as fuel, oil, and some hydraulic fluids, contain polycyclic aromatic hydrocarbons (PAHs), which can kill salmon at high levels of exposure, and can cause sublethal, adverse effects at lower concentrations (Meador *et al.* 2006). Fuels leakage and spills will be minimized through the implementation of measures in the SPCC plan. Spill containment kits will be present at the fuel float. We anticipate PAH releases of only very small quantities (ounces) are likely with each accidental release or spill, and rapid dilution of these small quantities to very low, if even detectable, concentrations where the juvenile fish occur. Therefore effects to fish are likely to be minimal. Overall impact from chemical contamination is expected to be low due to the low likelihood of spills and releases of these types of materials.

2.4.1.4 Altered Cover

The proposed dock replacement/modifications will add new over- and in-water cover to the marina, increasing the shade/hiding cover for a variety of fish species. These structures may attract smallmouth bass, northern pikeminnow, and other species which prey on juvenile salmonids in the Columbia River system (Vigg et al. 1991; Tabor et al. 1993; Zimmerman 1999; Fritts and Pearsons 2004). We are unaware of studies directly linking juvenile salmonid predation by predators associated with over- and in-water structures. However, studies have documented use, and sometimes selection, of in and overwater structures by smallmouth bass and northern pikeminnow (Pribyl et al. 2004; Celedonia et al. 2008), and these species are well known to prey upon juvenile salmonids in the Snake and Columbia Rivers (NMFS 2019).

Shading from the dock floats, along with human activity at the launch site, could have behavioral effects on juvenile salmonids. We anticipate that few juvenile salmon and steelhead would use the marina area; however, for the fish that do occupy it at least temporarily, the effects of the action could change their foraging and movement patterns, resulting in a higher energy expenditure, or making them more susceptible to predation (Nightingale and Simenstad 2001; Rondorf et al. 2010). Higher light transmission levels (>60%) for the new dock materials will likely reduce use by, and effectiveness of predators on juvenile salmon and steelhead.

Based on the available science, and erring on the side of caution, we expect that during its lifespan, the dock modifications will indirectly cause the death or decreased reproductive success of a few juvenile Snake River spring/summer-run Chinook salmon, fall-run Chinook salmon, and steelhead each year, mainly due to predation. However, increased light transmission through the docks installed as part of the proposed action will reduce predation impacts. Therefore, we believe there will be no overall adverse impacts from altered cover.

2.4.2 Effects to Critical Habitat

Implementation of the proposed project is likely to affect freshwater rearing and migration habitat for ESA-listed salmonids. The PBFs affected by the proposed action are water quality, substrate, natural cover, forage, and safe passage. Each of these effects are described in more detail below.

2.4.2.1 Water Quality

The proposed action could negatively affect water quality through chemical contamination or short-term increases in turbidity.

As described previously, we expect that proposed BMPs will reduce the risk of leaks or spills from machinery from entering the Snake River, so expected impacts would be minimal.

In-water work (e.g., removal of the old docks and other structures, excavation, pile driving) will increase suspended sediment concentrations and turbidity. Adverse effects from increases in turbidity (below 50 NTU) from the proposed action are expected to be of short duration and would occur within the marina. This attribute will not be affected long enough to change the conservation value of the critical habitat for more than a very brief period.

As noted above in the Species Effects section, project effects on the water quality PBF will be very small for chemical contamination and small and temporary for turbidity. None of the effects are expected to permanently change the function of the water quality PBF.

2.4.2.2 Substrate

Substrate will be minimally affected by activities associated with the proposed action, and will likely remain in a condition similar to existing conditions. Pile driving impacts would have temporary disturbance to the area around each of the 40 piles, but substrate would remain

essentially the same. Overall impacts to the substrate PBF from the proposed action would be low.

2.4.2.3 Natural Cover

The proposed action will have minimal detrimental effects to riparian and nearshore habitat elements. The riparian vegetation in the action area is already significantly altered due to the construction of the original marina, with the reservoir (Lake Bryan) estimated to have only 10% of the shoreline in riparian type habitat. The proposed action, which allows minimal impacts to riparian habitat, will have low impacts to natural cover. The action will not change the function of this PBF as it presently is but will extend the duration of the existing reduction in shoreline habitat in this area, which is a very small proportion of the habitat used by salmon and steelhead in the Snake River.

2.4.2.4 Forage

Substrate-disturbing activities will kill or displace some benthic invertebrates, slightly decreasing potential juvenile salmonid forage. The disturbance will occur during the time of year when the fewest juvenile salmonids will be present in the action area. By the spring following construction, when higher numbers of juvenile salmonids may be using the action area, benthic invertebrates will be re-colonizing the disturbed areas.

Benthic production may also decrease slightly in the shade footprint of the new floats. Increased benthic productivity in the substrate currently covered or shaded by the derelict structures will help offset potential loss of benthic production due to the new floats. Thus, this PBF will not be affected long enough to change the conservation value of the critical habitat.

2.4.2.5 Safe Passage

The proposed action is intended to repair the existing deteriorating dock at the Boyer Park Marina on the Snake River downstream from Lower Granite Dam. The proposed action may alter outmigration routes of juvenile salmon to a minor degree, primarily subyearlings out-migrating down the Columbia River to the ocean. The new dock may result in increased predation on salmon because the structures may increase rearing and spawning areas for pikeminnow, bass, and other piscivores. However, the new dock materials will have higher light transmission characteristics (>60%) than the existing dock, so the project will have minimal effects to safe passage for juvenile salmonids and adult steelhead that use the nearshore for migration or rearing. The safe passage PBF will be reduced to a minor extent in a small area restricted to the marina location.

2.5 Cumulative Effects

“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). 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.

The COE owns the shoreline land surrounding the action area. As most activities waterward of the OHWM require a COE permit, NMFS anticipates that future actions within the action area will require an ESA consultation. We anticipate that non-federal activities occurring under the environmental baseline (various recreational uses) will continue, and we did not identify any added future non-federal activities that are reasonably certain to occur within the action area.

2.6 Integration and Synthesis

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 (Section 2.4.1) to the environmental baseline (Section 2.3) and the cumulative effects (Section 2.5), taking into account the status of the species and critical habitat (Section 2.4.2), 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 for the conservation of the species.

The proposed action will likely have short-term adverse species effects primarily due to noise disturbance impacts from short-term pile driving actions and short-term increases in turbidity. These impacts will be contained within the marina with no adverse impacts expected in the main Snake River. Long-term adverse effects from the project have to do with extending the life of the marina and associated predation risks to the few juvenile fish that use this area, as summarized below by species.

The Snake River fall run Chinook salmon population is currently rated at low risk for abundance and productivity, moderate risk for spatial structure, moderate risk for diversity, and has an overall rating of “viable” (NMFS 2017b). The proposed construction activities and associated noise/disturbance and turbidity could result in sublethal adverse effects, such as reduced feeding and growth, on up to 872 juvenile Chinook salmon (both spring/summer and fall run Chinook salmon). The long-term effects of the action include continuing enabling the concentration of boating activity and associated displacement of fish, and extending the duration of the overwater structures and thereby perpetuating increased predation opportunity and incidence on the small number of juvenile Chinook salmon that use this area. Those one-time project installation effects and the long-term effects on the small number of juvenile fish would not likely reduce the number of fall Chinook salmon adult returns. Considering the environmental baseline and cumulative effects, NMFS has determined that those effects on the juvenile fish should not appreciably reduce the likelihood that the Snake River fall Chinook salmon population will achieve its desired status of highly viable. Because the effects will not be substantial enough to negatively influence VSP criteria at the population scale, the proposed action would also not likely reduce viability of the Snake River ESU.

The Snake River spring/summer run Chinook salmon populations generally are currently rated at high risk for abundance and productivity, but low risk for spatial structure and diversity (NMFS

2017a). The proposed construction activities and associated noise/disturbance and turbidity could result in sublethal adverse effects, such as reduced feeding and growth, on up to 872 juvenile Chinook salmon (both spring/summer and fall run Chinook salmon). The long-term effects of the action include continuing enabling the concentration of boating activity and associated displacement of fish, and extending the duration of the overwater structures and thereby perpetuating increased predation opportunity and incidence on the small number of juvenile Chinook salmon that use this area. Those one-time project installation effects and the long-term effects on the small number of juvenile fish would not likely reduce the number of fall Chinook salmon adult returns. Considering the environmental baseline and cumulative effects, NMFS has determined that those effects on the juvenile fish should not appreciably reduce the likelihood that the Snake River spring/summer Chinook salmon populations will persist and achieve recovery plan objectives. Because the effects will not be substantial enough to negatively influence VSP criteria at the population scale, the proposed action would also not likely reduce viability of the Snake River ESU.

The Snake River steelhead populations generally are currently rated at moderate risk for abundance, productivity, spatial structure, and diversity. The proposed construction activities and associated noise/disturbance and turbidity could result in sublethal adverse effects, such as reduced feeding and growth, on up to 872 juvenile steelhead. The longer-term effects of the action include continuing enabling the concentration of boating activity and associated displacement of fish, and extending the duration of the overwater structures and thereby perpetuating increased predation opportunity and incidence on the small number of juvenile steelhead that use this area. Those one-time project installation effects and the longer-term effects on the small number of juvenile fish would not likely reduce the number of steelhead adult returns. Considering the environmental baseline and cumulative effects, NMFS has determined that those effects on the juvenile fish should not appreciably reduce the likelihood that the Snake River steelhead populations will persist and achieve recovery plan objectives. Because the effects will not be substantial enough to negatively influence VSP criteria at the population scale, the proposed action would also not likely reduce viability of the Snake River basin steelhead DPS.

Because adverse impacts of the proposed action to critical habitat water quality, substrate, forage, and safe passage PBFs will be minor and of short duration, it is unlikely to appreciably diminish the value of designated critical habitats for the conservation of the species. Safe passage PBFs may be affected both negatively by slightly increasing dock are, and positively by increased light transmission (>60%) of the deck materials.

The conservation measures summarized in Section 1.3.7 should ensure that negative impacts are minimized to the greatest extent possible.

The entire action area is on land managed by the COE and no additional state or private activities are likely to occur. Coupling the potential effects of the proposed action with the baseline condition and cumulative effects within the action area, NMFS concludes that the proposed action is not likely to appreciably diminish the function and conservation role of the PBFs within the action area.

2.7 Conclusion

After reviewing the current status of the listed species and their designated critical habitat, the environmental baseline within the action area, the effects of the proposed action, and cumulative effects, it is NMFS' Opinion that the proposed action is not likely to jeopardize the continued existence of Snake River Basin steelhead, Snake River spring/summer Chinook salmon, and Snake River fall Chinook salmon or destroy or adversely modify their designated critical habitats.

2.8 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). "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).

2.8.1 Amount or Extent of Take

In the Opinion, NMFS determined that incidental take of Snake River spring/summer Chinook salmon, Snake River fall Chinook salmon, and Snake River steelhead is reasonably certain to occur due to exposure to increased turbidity and noise/disturbance and due to increased predation. Only the juvenile (young-of-year and yearling) life stages will be adversely affected.

We estimated the amount of expected take from construction/installation activities based on available data and studies on those types of effects in this setting, and based on expected juvenile densities in the action area. The estimates of up to 872 juvenile fish of each species sublethally affected are general estimates and not possible to verify through actual sampling. Similarly the long-term effects of the project--extending the life of the marina and associated disturbance/predation risks on juvenile fish cannot be quantified, but are expected to be small given the likely small numbers of juvenile fish of these species that would use this area. Because take cannot be verified in terms of actual effects on certain numbers of fish, NMFS used a surrogate measure of the take caused by this action: the amount/extent and duration of key aspects of the activities themselves, as noted below.

Pile driving sound and turbidity effects will be mainly contained within the marina. The amount of take associated with this activity will increase if pile driving occurs during additional time or involves more piles than analyzed in this Opinion. Therefore, the amount of take is identified by the pile driving time (4 weeks) and number (40 piles below OHWM), the effects of which have

been analyzed in this Opinion. The COE shall reinitiate consultation if pile driving will occur for more than 4 weeks, or if more than 40 piles are installed below the OHWM. For the long term take associated with extending the life of the marina and associated disturbance of fish/predation risks, NMFS uses the extent of the dock installations as a surrogate for take of fish. If the dock installations exceed the increase in existing overwater structure by more than 830 square feet (the amount proposed), that would exceed the take NMFS identified and will require that COE reinitiates consultation, as noted in the Reinitiation of Consultation section, below.

2.8.2 Effect of the Take

In the 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.

2.8.3 Reasonable and Prudent Measures

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

Full application of conservation measures included as part of the proposed action, together with use of the RPMs and terms and conditions described below, are necessary and appropriate to minimize the likelihood of incidental take of Snake River spring/summer Chinook salmon, Snake River fall Chinook salmon, and Snake River Basin steelhead due to completion of the proposed action.

The COE shall minimize incidental take by:

1. Monitoring the project to ensure that the conservation measures are meeting the objective of minimizing take and that the amount and extent of take is not exceeded.
2. Minimize incidental take from construction activities and implement all of the proposed conservation measures.

2.8.4 Terms and Conditions

The terms and conditions described below are non-discretionary, and the COE must comply with them in order to implement the RPMs (50 CFR 402.14). The COE 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. To implement RPM 1 (monitoring of conservation measures) the COE shall ensure the following:

a. Within 90 days following the completion of the proposed construction project, the COE shall report all monitoring items to include, at a minimum, the following:
    i. Project identification
        1. Project name: Boyer Park Doc Replacement; NMFS Tracking Number: WCRO-2019-03600.
        2. COE contact person: David Moore.
    ii. Construction details
        1. Date of pile driving.
        2. Total number of piles installed below OHWM.
        3. Daily hours of pile installation.
        4. Area of floating inwater structures. Report the surface area of the over water structure constructed in the Snake River River/Boyer Park Marina, including the docks, fuel float, and maximum surface area that could be covered by boats tied to the structure.
        5. Piling removal. Describe the type of equipment used to remove the piling.

b. If more than 40 piles are installed, pile installation exceeds 12 hours/day or occurs over more than 4 weeks, or if overwater structure installation will exceed the proposed 830 square foot increase, COE will contact NMFS promptly to determine a course of action.

c. All reports will be sent to National Marine Fisheries Service, Northern Snake Branch, Attention Jim Mital, 1848 South Mountain View Suite 5, Moscow, Idaho 83843. NOTICE: To follow inactive projects and, if necessary, withdraw the Opinion for an incomplete project, the COE shall provide an annual report even if no actual work was completed in a particular year.

2. To implement RPM 2 (minimization of incidental take and implementation of conservation measures) the COE shall ensure the following:

a. The COE shall require applicants to report the number of piles driven for each project and compile number of piles permitted under this program.

b. The COE shall require impact pile driving to occur only during the September 1 to February 28-pile driving work window.

c. The COE shall require the use of sound attenuation measures, as noted below, if an impact hammer (e.g., drop, hydraulic, diesel, or sledge hammer) is used to drive or proof steel piles.
One of the following sound attenuation methods shall be employed if an impact hammer is used:
    i. Placement of a 6-inch-thick piece of wood or similar material between the hammer and pile.
    ii. Use of a bubble curtain that distributes air bubbles around 100% of the perimeter of the piles over the full depth of the water column.

2.9 Conservation Recommendations

Conservation recommendations are defined at 50 CFR 402.02, and, for this consultation, are as follows:

1. Require that the construction contractor place a silt curtain/fence at the marina entrance to minimize turbidity into the Snake River.
2. If pile driving is done with an impact hammer, limit operation to less than 12 hours/day.

2.10 Reinitiation of Consultation

This concludes formal consultation for the Boyer Park Marina Dock Replacement Project.

As 50 CFR 402.16 states, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been retained or is authorized by law and if: (1) The amount or extent of incidental taking specified in the ITS is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this Opinion; (3) the agency action is subsequently modified in a manner that causes an effect on the listed species or critical habitat that was not considered in this Opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

3. MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT ESSENTIAL FISH HABITAT RESPONSE

Section 305(b) of the MSA directs federal agencies to consult with NMFS on all actions or proposed actions that may adversely affect EFH. The MSA (Section 3) defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." 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 on EFH may result from actions occurring within EFH or outside of it and may include site-specific or EFH-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810). Section 305(b) also requires NMFS to recommend measures that can be taken by the action agency to conserve EFH. This analysis is based, in part, on the EFH assessment provided by the COE and descriptions of EFH for Pacific Coast salmon (PFMC 2014) contained in the fishery management plans developed by the Pacific Fishery Management Council and approved by the Secretary of Commerce.

3.1 Essential Fish Habitat Affected by the Project

The project will affect EFH for Pacific Coast salmon including Chinook salmon and coho salmon (PFMC 2014). Freshwater EFH for Chinook and coho salmon consists of four major components: (1) spawning and incubation, (2) juvenile rearing, (3) juvenile migration corridors,

and (4) adult migration corridors and holding habitat. Freshwater EFH depends on lateral (e.g., floodplain, riparian), vertical (e.g., hyporheic) and longitudinal connectivity to create habitat conditions for spawning, rearing, and migration including: (1) water quality (e.g., dissolved oxygen, nutrients, temperature); (2) water quantity, depth, and velocity; (3) riparian-stream-marine energy exchanges; (4) channel gradient and stability; (5) prey availability; (6) cover and habitat complexity (e.g., large wood, pools, aquatic and terrestrial vegetation); (7) space; (8) habitat connectivity from headwaters to the ocean (e.g., dispersal corridors); (9) groundwater-stream interactions; and (10) substrate composition.

3.2 Adverse Effects on Essential Fish Habitat

The proposed project will have the following adverse effects on EFH:

1. Underwater sound affects the physical properties of the aquatic habitat used by fishes. Impact pile driving sound will alter the physical properties of the habitat, temporarily reducing the quality of the habitat in the action area.
2. Construction activities will produce sediment reducing the quality of the habitat in the action area.
3. Installation and repair of the docks will extend the life of the overwater structures, reducing safe passage aspects of the EFH for the few Chinook and coho salmon that use this area.

3.3 Essential Fish Habitat Conservation Recommendations

1. To minimize effects to Chinook salmon and coho salmon EFH, the COE should impose the following permitting conditions to ensure:

    a. The construction contractor's equipment should be cleaned of external oil and grease prior to arrival at the project site. The construction contractor's equipment should be inspected daily for leaks and accumulation of grease, and any identified problems should be corrected prior to equipment contact with water.
    b. In-water work should be confined to the work window of September 1-February 28.
    c. Bubble curtains should be used to reduce effects of impact pile driving.
    d. A silt fence/curtain should be placed at the entrance to the marina to reduce turbidity in the Snake River.

We are not aware of any additional practical measures to improve water quality and habitat connectivity at the project site. Fully implementing these EFH conservation recommendations would protect, by avoiding or minimizing the adverse effects described in Section 3.2, above, approximately 8.8 acres of designated EFH for Pacific Coast salmon.

3.4 Statutory Response Requirement

As required by section 305(b)(4)(B) of the MSA, the COE must provide a detailed response in writing to NMFS within 30 days after receiving an EFH Conservation Recommendation. Such a

response must be provided at least 10 days prior to final approval of the action if the response is inconsistent with any of NMFS' EFH Conservation Recommendations unless NMFS and the federal agency have agreed to use alternative timeframes for the federal agency response. The response must include a description of measures proposed by the agency for avoiding, minimizing, mitigating, or otherwise offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the Conservation Recommendations, the federal agency must explain its reasons for not following the recommendations, including the scientific justification for any disagreements with NMFS over the anticipated effects of the action and the measures needed to avoid, minimize, mitigate, or offset such effects (50 CFR 600.920(k)(1)).

In response to increased oversight of overall EFH program effectiveness by the Office of Management and Budget, NMFS established a quarterly reporting requirement to determine how many conservation recommendations are provided as part of each EFH consultation and how many are adopted by the action agency. Therefore, we ask that in your statutory reply to the EFH portion of this consultation, you clearly identify the number of conservation recommendations accepted.

3.5 Supplemental Consultation

The COE 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)).

4. DATA QUALITY ACT DOCUMENTATION AND PRE-DISSEMINATION REVIEW

Section 515 of the Treasury and General Government Appropriations Act of 2001 (Public Law 106-554) (DQA) specifies three components contributing to the quality of a document. They are utility, integrity, and objectivity.

4.1 Utility

"Utility" principally refers to ensuring that the information contained in this consultation is helpful, serviceable, and beneficial to the intended users.

This ESA consultation concludes that the proposed action will not jeopardize the affected listed species and will not destroy or adversely modify designated critical habitat for the listed species. Therefore, the COE can issue a CWA 404 permit for the proposed action. The intended users of this Opinion are the COE, and any of their cooperators, contractors, or permittees. A copy of this Opinion was provided to the COE. This consultation will be posted on NMFS West Coast Region website (http://www.westcoast.fisheries.noaa.gov). The format and naming adheres to conventional standards for style.

4.2 Integrity

This consultation was completed on a computer system managed by NMFS in accordance with relevant information technology security policies and standards set out in Appendix III,

"Security of Automated Information Resources," Office of Management and Budget Circular A-130; the Computer Security Act; and the Government Information Security Reform Act.

4.3 Objectivity

Information Product Category: Natural Resource Plan.

Standards: This consultation and supporting documents are clear, concise, complete, and unbiased; and were developed using commonly accepted scientific research methods. They adhere to published standards including the NMFS ESA Consultation Handbook, ESA regulations, 50 CFR 402.01, et seq., and the MSA implementing regulations regarding EFH, 50 CFR 600.

Best Available Information: This consultation and supporting documents use the best available information, as referenced in the References section. The analyses in this Opinion/EFH consultation contain more background on information sources and quality.

Referencing: All supporting materials, information, data and analyses are properly referenced, consistent with standard scientific referencing style.

Review Process: This consultation was drafted by NMFS staff with training in ESA and MSA implementation, and reviewed in accordance with West Coast Region ESA quality control and assurance processes.

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