HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: December 16, 2020
Project End Date: February 28, 2022

Permit Number: 2020-1-269+02
FPA/Public Notice Number: N/A
Application ID: 23449

PERMITTEE	AUTHORIZED AGENT OR CONTRACTOR
Port of Clarkston ATTENTION: Wanda Keefer 849 Port Way Clarkston, WA 99403	

Project Name: Port of Clarkston's 14th Street Dock Auxiliary Float

Project Description: An auxiliary float will be attached to the western-most existing dolphin that is part of the freight dock facility owned by the Port of Clarkston at the northern end of 14th Street. This float is expected to be 30' X 30' and will assist in transfer of passengers on and off the cruise boats via the boats' bow ramps to jet boats. (The trip by passengers up Hells Canyon National Recreation Area-accessible only by boat-is one of the highlights of the week-long cruise.) The auxiliary float will be the transition platform.

This will help mobility-constrained cruise boat passengers by increasing the ease with which they can jet boats and return to the cruise boat at the end of the tour. The amount of time involved in the transfer will lessen significantly, allowing them to be at less risk of a fall and to have more time for experiences. The alternative to the auxiliary float for boats calling at the 14th Street dock is to transfer the regular and mobility constrained passengers onto jet boats by busing them to the 7th Street dock and taking up limited staging and dock space at that location.

Having this auxiliary float will take pressure off the Port of Clarkston's 7th Street dock. With the auxiliary float, passengers and support buses relating to the boats calling at 14th Street dock are less likely to interfere with activities of other cruise lines at 7th Street dock which frequently occurs at the same time this transfer is needed. (This is a problem because there may be as many as four cruise boats calling within the same period of time, creating congestion.) The auxiliary float is expected to ease the pressure to such a degree that

a) the 7th Street dock will not require immediate expansion, and b) more working space for buses and businesses serving the boats does not need to be carved out of the culturally sensitive Nez Perce site recorded as 45AS99 in 1978. This float will provide increased safety for all passengers.

PROVISIONS

1. TIMING LIMITATIONS: The project may begin December 1, 2021and shall be completed by February 28, 2022.

2. If at any time, as the result of project activities, water quality problems develop (including equipment leaks or spills), fish life is observed in distress, or a fish kill occurs, all operations shall cease and both the Department of Fish and Wildlife (509-575-2740) and the Washington Military Department (800-854-5406 or 800-562-6108) shall be notified of the problem immediately. Work in the stream shall not resume until further approval is given by the Department of Fish and Wildlife. Additional measures to mitigate work-related impacts may be required.

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

HYDRAULIC PROJECT APPROVAL

Issued Date: December 16, 2020
Project End Date: February 28, 2022

Permit Number: 2020-1-269+02
FPA/Public Notice Number: N/A
Application ID: 23449

GENERAL
3. Work shall conform to plans and specifications submitted with the hydraulic project application AND approved addendums and submitted modifications to the application, except as modified by this approval. A copy of those plans and specifications, and the application, must be on site during construction.

4. No existing habitat features shall be altered or removed from the shore or aquatic environment (i.e. woody debris, native emergent plants, substrate materials). If other native shoreline vegetation is moved or destroyed, it must be replaced with an approved functional native equivalent during site restoration.

5. Equipment shall not enter below the ordinary high water mark. Petroleum products must not be leaked into the river and all equipment shall avoid contact with the stream bed.

6. The float shall be positioned as depicted in the plans.

7. The entire float must be located over water that is always at least 36 inches deep, unless an exception was granted and mitigated in coordination with the USACE. "Float" includes any floating portion of a dock and what it supports, except for a single ramp.

8. The float shall not exceed 900 sq. ft.

9. Flotation materials shall be permanently encapsulated to prevent breakup into small pieces and dispersal in water (e.g., rectangular float tubs).

10. Grating shall cover 100% of the surface area of the float(s). The open area of the grating shall be no less than 50%, as rated by the manufacturer.

11. Functional grating will cover no less than 50% of the float.

12. No skirting will be placed along the edges of floats. The float structure must be designed such that the maximum amount of ambient light penetrates from the sides under the deck.

13. Painting and other preservative treatments shall never be performed on any dock components waterward of the ordinary high water mark.

14. Neither permanent fixtures, nor stationary, moveable objects shall be located on the dock in such a manner that they reduce the design natural light penetration under the structure.

LOCATION #1:	100 14th St., Clarkston, WA 99403					
WORK START:	January 1, 1900			WORK END:	December 31, 2020	
WRIA		Waterbody:			Tributary to:	
35 - Middle Snake		Snake River			Columbia River	
1/4 SEC:	Section:	Township:	Range:	Latitude:	Longitude:	County:
SE 1/4	17	11 N	46 E	46.426114	-117.065516	Asotin

HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: December 16, 2020
Project End Date: February 28, 2022

Permit Number: 2020-1-269+02
FPA/Public Notice Number: N/A
Application ID: 23449

Location #1 Driving Directions		
From Bridge Street in Clarkston, turn north on 14th Street. Drive until the street ends. Then enter the property at 100 14th Street through a secure gate and view the dolphins from the freight dock (asphalt or concrete) area.		

APPLY TO ALL HYDRAULIC PROJECT APPROVALS

This Hydraulic Project Approval pertains only to those requirements of the Washington State Hydraulic Code, specifically Chapter 77.55 RCW. Additional authorization from other public agencies may be necessary for this project. The person(s) to whom this Hydraulic Project Approval is issued is responsible for applying for and obtaining any additional authorization from other public agencies (local, state and/or federal) that may be necessary for this project.

This Hydraulic Project Approval shall be available on the job site at all times and all its provisions followed by the person (s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work.

This Hydraulic Project Approval does not authorize trespass.

The person(s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work may be held liable for any loss or damage to fish life or fish habitat that results from failure to comply with the provisions of this Hydraulic Project Approval.

Failure to comply with the provisions of this Hydraulic Project Approval could result in civil action against you, including, but not limited to, a stop work order or notice to comply, and/or a gross misdemeanor criminal charge, possibly punishable by fine and/or imprisonment.

All Hydraulic Project Approvals issued under RCW 77.55.021 are subject to additional restrictions, conditions, or revocation if the Department of Fish and Wildlife determines that changed conditions require such action. The person(s) to whom this Hydraulic Project Approval is issued has the right to appeal those decisions. Procedures for filing appeals are listed below.

HYDRAULIC PROJECT APPROVAL

Issued Date: December 16, 2020
Project End Date: February 28, 2022
Permit Number: 2020-1-269+02
FPA/Public Notice Number: N/A
Application ID: 23449

MINOR MODIFICATIONS TO THIS HPA: You may request approval of minor modifications to the required work timing or to the plans and specifications approved in this HPA unless this is a General HPA. If this is a General HPA you must use the Major Modification process described below. Any approved minor modification will require issuance of a letter documenting the approval. A minor modification to the required work timing means any change to the work start or end dates of the current work season to enable project or work phase completion. Minor modifications will be approved only if spawning or incubating fish are not present within the vicinity of the project. You may request subsequent minor modifications to the required work timing. A minor modification of the plans and specifications means any changes in the materials, characteristics or construction of your project that does not alter the project's impact to fish life or habitat and does not require a change in the provisions of the HPA to mitigate the impacts of the modification. If you originally applied for your HPA through the online Aquatic Protection Permitting System (APPS), you may request a minor modification through APPS. A link to APPS is at http://wdfw.wa.gov/licensing/hpa/. If you did not use APPS you must submit a written request that clearly indicates you are seeking a minor modification to an existing HPA. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the APP ID number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, and the requestor's signature. Send by mail to: Washington Department of Fish and Wildlife, PO Box 43234, Olympia, Washington 98504-3234, or by email to HPAapplications@dfw.wa.gov. You should allow up to 45 days for the department to process your request.

MAJOR MODIFICATIONS TO THIS HPA: You may request approval of major modifications to any aspect of your HPA. Any approved change other than a minor modification to your HPA will require issuance of a new HPA. If you originally applied for your HPA through the online Aquatic Protection Permitting System (APPS), you may request a major modification through APPS. A link to APPS is at http://wdfw.wa.gov/licensing/hpa/. If you did not use APPS you must submit a written request that clearly indicates you are requesting a major modification to an existing HPA. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the APP ID number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, and the requestor's signature. Send your written request by mail to: Washington Department of Fish and Wildlife, PO Box 43234, Olympia, Washington 98504-3234. You may email your request for a major modification to HPAapplications@dfw.wa.gov. You should allow up to 45 days for the department to process your request.

APPEALS INFORMATION

If you wish to appeal the issuance, denial, conditioning, or modification of a Hydraulic Project Approval (HPA), Washington Department of Fish and Wildlife (WDFW) recommends that you first contact the department employee who issued or denied the HPA to discuss your concerns. Such a discussion may resolve your concerns without the need for further appeal action. If you proceed with an appeal, you may request an informal or formal appeal. WDFW encourages you to take advantage of the informal appeal process before initiating a formal appeal. The informal appeal process includes a review by department management of the HPA or denial and often resolves issues faster and with less legal complexity than the formal appeal process. If the informal appeal process does not resolve your concerns, you may advance your appeal to the formal process. You may contact the HPA Appeals Coordinator at (360) 902-2534 for more information.

A. INFORMAL APPEALS: WAC 220-660-460 is the rule describing how to request an informal appeal of WDFW actions taken under Chapter 77.55 RCW. Please refer to that rule for complete informal appeal procedures. The following information summarizes that rule.

HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: December 16, 2020
Project End Date: February 28, 2022

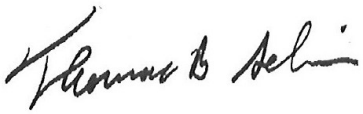
Permit Number: 2020-1-269+02
FPA/Public Notice Number: N/A
Application ID: 23449

A person who is aggrieved by the issuance, denial, conditioning, or modification of an HPA may request an informal appeal of that action. You must send your request to WDFW by mail to the HPA Appeals Coordinator, Department of Fish and Wildlife, Habitat Program, PO Box 43234, Olympia, Washington 98504-3234; e-mail to HPAapplications@dfw.wa.gov; fax to (360) 902-2946; or hand-delivery to the Natural Resources Building, 1111 Washington St SE, Habitat Program, Fifth floor. WDFW must receive your request within 30 days from the date you receive notice of the decision. If you agree, and you applied for the HPA, resolution of the appeal may be facilitated through an informal conference with the WDFW employee responsible for the decision and a supervisor. If a resolution is not reached through the informal conference, or you are not the person who applied for the HPA, the HPA Appeals Coordinator or designee may conduct an informal hearing or review and recommend a decision to the Director or designee. If you are not satisfied with the results of the informal appeal, you may file a request for a formal appeal.

B. FORMAL APPEALS: WAC 220-660-470 is the rule describing how to request a formal appeal of WDFW actions taken under Chapter 77.55 RCW. Please refer to that rule for complete formal appeal procedures. The following information summarizes that rule.

A person who is aggrieved by the issuance, denial, conditioning, or modification of an HPA may request a formal appeal of that action. You must send your request for a formal appeal to the clerk of the Pollution Control Hearings Boards and serve a copy on WDFW within 30 days from the date you receive notice of the decision. You may serve WDFW by mail to the HPA Appeals Coordinator, Department of Fish and Wildlife, Habitat Program, PO Box 43234, Olympia, Washington 98504-3234; e-mail to HPAapplications@dfw.wa.gov; fax to (360) 902-2946; or hand-delivery to the Natural Resources Building, 1111 Washington St SE, Habitat Program, Fifth floor. The time period for requesting a formal appeal is suspended during consideration of a timely informal appeal. If there has been an informal appeal, you may request a formal appeal within 30 days from the date you receive the Director's or designee's written decision in response to the informal appeal.

C. FAILURE TO APPEAL WITHIN THE REQUIRED TIME PERIODS: If there is no timely request for an appeal, the WDFW action shall be final and unappealable.

Habitat Biologist	Thomas.Schirm@dfw.wa.gov		for Director
Tom Schirm	509-382-1266		WDFW

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, SEATTLE DISTRICT
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

Regulatory Branch November 27, 2020

Ms. Wanda Keefer
Port of Clarkston
849 Port Way
Clarkston, Washington 99403

Reference: NWS-2020-326
Port of Clarkston
(14th Street Dock Auxiliary Float)

Dear Ms. Keefer:

We have reviewed your application to install a 576 square foot float with grated decking to an existing dolphin to aid in the safe transfer of cruise passengers on the Snake River near Clarkston, Asotin County, Washington. Based on the information you provided to us, Nationwide Permit (NWP) 39, Commercial and Institutional Developments (Federal Register January 6, 2017, Vol. 82, No. 4), authorizes your proposal as depicted on the enclosed drawings dated June 29, 2020.

In order for this authorization to be valid, you must ensure the work is performed in accordance with the enclosed *NWP 39, Terms and Conditions* and the following special conditions:

a. This U.S. Army Corps of Engineers (Corps) permit does not authorize you to take a threatened or endangered species, in particular Chinook, Sockeye and Steelhead. In order to legally take a listed species, you must have a separate authorization under the Endangered Species Act (ESA; e.g., an ESA Section 10 permit, or ESA Section 7 consultation Biological Opinion (BO) with non-discretionary "incidental take" provisions with which you must comply). The enclosed BO(s) prepared by the National Marine Fisheries Service (NMFS) dated November 4, 2020, contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with the specified "incidental take" in the BO(s) (NMFS Reference Number WCRO-2020-02242). Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the enclosed BO(s). These terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO(s), where a take of the listed species occurs, would constitute an unauthorized take, and it

would also constitute non-compliance with your Corps permit. The NMFS is the appropriate authority to determine compliance with the terms and conditions of its BO and with the ESA.

b. You must implement and abide by the Endangered Species Act (ESA) requirements and/or agreements set forth in the Biological Assessment (BA) for the *14th Street Dock – Auxiliary Float, Port Of Clarkston* dated August 6, 2020 in its entirety. The U.S. Fish and Wildlife Service (USFWS) provided the enclosed LOC with a finding of "may affect, not likely to adversely affect" based on this document on November 27, 2020 (USFWS Reference Number 01EWFW00-2020-I-1755). Both agencies will be informed of this permit issuance. Failure to comply with the commitments made in this consultation constitutes non-compliance with the ESA and your U.S. Army Corps of Engineers permit. The USFWS is the appropriate authority to determine compliance with ESA.

We have reviewed your project pursuant to the requirements of the Endangered Species Act, the Magnuson-Stevens Fishery Conservation and Management Act and the National Historic Preservation Act. We have determined this project complies with the requirements of these laws provided you comply with all of the permit general and special conditions.

The authorized work complies with the Washington State Department of Ecology's (Ecology) Water Quality Certification (WQC) requirement for this NWP. No further coordination with Ecology for WQC is required.

The Snake River is a water of the U.S. If you believe this is inaccurate, you may request a preliminary or approved jurisdictional determination (JD). If one is requested, please be aware that we may require the submittal of additional information to complete the JD and work authorized in this letter may not occur until the JD has been completed.

Our verification of this NWP authorization is valid until March 18, 2022, unless the NWP is modified, reissued, or revoked prior to that date. If the authorized work has not been completed by that date and you have commenced or are under contract to commence this activity before March 18, 2022, you will have until March 18, 2023, to complete the activity under the enclosed terms and conditions of this NWP. Failure to comply with all terms and conditions of this NWP verification invalidates this authorization and could result in a violation of Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act. You must also obtain all local, State, and other Federal permits that apply to this project.

You are cautioned that any change in project location or plans will require that you submit a copy of the revised plans to this office and obtain our approval before you begin work. Deviating from the approved plans could result in the assessment of criminal or civil penalties. Please note that we may need to reinitiate consultation with the National Marine Fisheries Service and/or U.S. Fish and Wildlife Service in order to authorize any work not already included in the enclosed plans.

Upon completing the authorized work, you must fill out and return the enclosed *Certificate of Compliance with Department of the Army Permit*. Thank you for your cooperation during the permitting process. We are interested in your experience with our Regulatory Program and encourage you to complete a customer service survey. These documents and information about our program are available on our website at www.nws.usace.army.mil, select "Regulatory Branch, Permit Information" and then "Contact Us." If you have any questions, please contact me at david.j.moore@usace.army.mil or (206) 316-3166.

Sincerely,

David Moore, Project Manager
Regulatory Branch

Enclosures

cc: Washington Department of Ecology, Federal Permit Coordinator at: ecyrefedpermits@ecy.wa.gov
U.S. Fish and Wildlife Service, wfwoctap@fws.gov
National Marine Fisheries Service, dana.hunter@noaa.gov

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Eastern Washington Field Office
11103 East Montgomery Drive
Spokane Valley, WA 99206

In Reply Refer to:
01EWFW00-2020-I-1755

Michelle Walker
Chief, Regulatory Branch
U.S. Army Corps of Engineers
ATTENTION: David Moore
P.O. Box 3755
Seattle, Washington 98124-3755

Dear Ms. Walker:

Subject: 14th Street Dock – Auxiliary Float Project (NWS-2020-326)

This letter responds to your request for informal consultation on the 14th Street Dock - Auxiliary Float Project in Asotin County, Washington. The U.S. Fish and Wildlife Service (Service), Eastern Washington Field Office received your cover letter and Biological Assessment (BA) electronically on August 6, 2020, and initiated informal consultation in accordance with Section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*). The U.S. Army Corps of Engineers (The Corps) has requested concurrence on the determination "may affect, not likely to adversely affect" bull trout (*Salvelinus confluentus*) and its critical habitat.

Project Description

The Corps proposes to permit a new auxiliary float/dock to an existing pier at an existing freight dock to better accommodate the river cruise industry. The Port of Clarkston has been providing moorage services for the cruise boat industry for 33 years and has had exclusive responsibility for services during the past seven years. The existing cruise boat dock, the 7th Street Dock, is inadequate to serve the number of boats currently traveling the Columbia/Snake River route. With the auxiliary float in place, passengers will disembark from bow ramps onto the auxiliary float and from there be transferred to other watercraft (i.e., jet boats for established Hells Canyon tours) and other amenities. The proposed dock may be used year-round, however, the heaviest use will occur between April and November each year. The Corps does not expect an increase in baseline boat traffic on the Snake River as a result of this dock.

The project site is located within Asotin County, within the city limits of Clarkston, Washington, on the south side of the Snake River near Red Wolf Bridge (Figure 1). It is approximately at River Mile (RM) 137.9. The L-shape float will wrap around the west side of the existing pier/dolphins for a total footprint of 576 square feet and will be at water depths of at least three meters. The auxiliary dock will be constructed offsite. Installation will occur over a one-week period during the in-water work window between December 15th to February 28th.

Installation will require some underwater welding for a horizontal beam, two 10-foot steel pipes and quad-rollers. The Action Area extends radially 870 feet from the project site in the air, and up to 300 feet out into the river channel and downstream of the project site in underwater environments (see Figure 2). Additional construction details can be found in the BA.

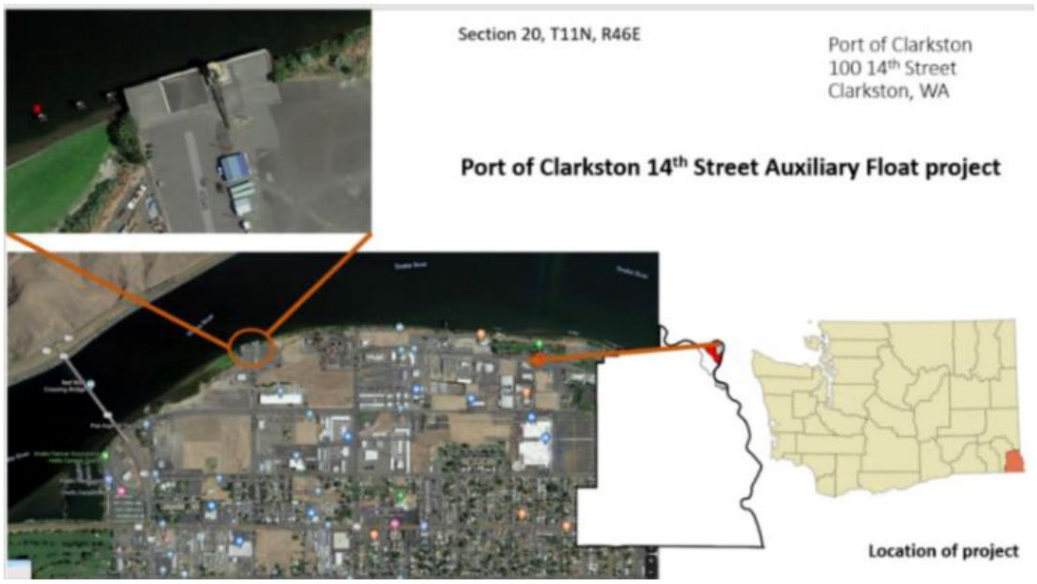


Figure 1. Location of dock and auxiliary float project

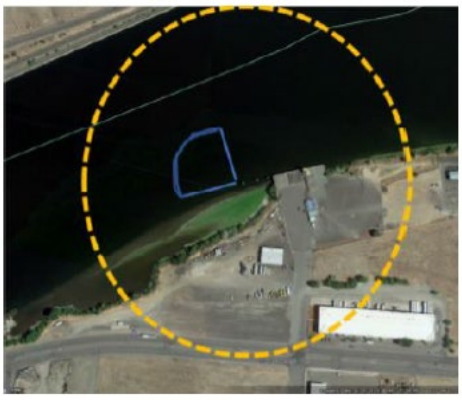


Figure 2. Action area – orange dotted line: in-air and noise; blue solid line: in-water

Project Effects to Bull Trout and Bull Trout Critical Habitat

Bull trout use the Snake River as foraging, migrating and overwintering (FMO) habitat. The Action Area does not occur within a bull trout core area, but it is close to the Asotin Creek and Tucannon River core areas. The Asotin Creek core area consists of one very small population where seasonal conditions may limit movement of migratory bull trout. Recent data suggest that nine populations of both resident and migratory bull trout exist in the Tucannon River watershed (Barrows 2016). It is unknown to what extent migratory forms of bull trout use the Snake River between these two core areas. From 1994 to 1996, 27 bull trout passed the adult fish counting station (mainly in April and May) at Little Goose dam (RM 7). At least six bull trout passed counters at Lower Monumental (RM 70.3) and Little Goose dam in 1990 and 1992. However, fish counts examined at Lower Granite dam (RM 107.5) quantify bull trout passage through the dam at zero for each of these years: 2015, 2016, 2017, 2018, and 2019 (DART 2020). Data suggest that total abundance at any one time appears to be low but the mainstem continues to provide important FMO habitat. Migratory subadult and adult bull trout may be present in the Action Area during construction and long-term use of the proposed dock.

The construction effects of the proposed action will occur over a short period of time between December 15th to February 28th. Any FMO bull trout in the Snake River at the time of the Project would be able to avoid the Action Area by using the deeper waters bull trout prefer for traveling and foraging. The long-term effects of predatory fish using the dock as cover are unlikely to increase predation risk to migratory subadult bull trout given the footprint of the dock (576 sq. ft.) is relatively small compared to the area of available FMO habitat. The dock will be 60 percent penetrable by sun thus minimizing predator occupation; and bull trout are more likely to seek refugia near the substrate than the surface. The Service considers the effects of the Project to bull trout to be insignificant.

The Snake River within the action area is designated as FMO critical habitat for bull trout. Several primary constituent elements (PCE) are not functional or present within the action area including abundant food (PCE #3), complex habitat (PCE #4), suitable substrates for spawning (PCE #6), a natural hydrograph (PCE #7), or low levels of predatory or competitive fish (PCE #9). Predatory fish may occupy the space beneath the dock but are unlikely to increase predation or competition to bull trout as outlined above. Migration (PCE #2) and the PCE related to water quality and quantity (PCE #8) are present near the action area. The dock will be constructed off-site, it will be pulled into location by a boat and welded (underwater) to the existing pier and therefore it is unlikely to increase turbidity to levels that will be detectable. Should any change to water quality occur during installation, it is likely to be short term. The new dock will introduce a very minor impediment within migration habitat (PCE #2); however, it will not preclude bull trout movement through the area, either during or after construction. Therefore, the Service believes the proposed project will have no meaningfully measurable effect on designated critical habitat and will be insignificant.

Conclusion

This concludes consultation pursuant to the regulations implementing the Endangered Species Act (50 CFR 402.13). Our review and concurrence with your effect determination is based on the implementation of the project as described in the BA. It is the responsibility of the federal action agency to ensure that projects they authorize or carry out are in compliance with the regulatory permit and/or the Endangered Species Act, respectively. If a permittee or the federal action agency deviates from the measures outlined in a permit or project description, the federal action agency has the obligation to reinitiate consultation and comply with section 7(d). This project should be re-analyzed and re-initiation may be necessary if: 1) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent, not considered in this consultation; 2) if the action is subsequently modified in a manner that causes an effect to a listed species or critical habitat that was not considered in this consultation; and/or 3) a new species is listed or critical habitat is designated that may be affected by this project.

This letter constitutes a complete response by the U.S. Fish and Wildlife Service to your request for informal consultation. A complete record of this consultation is on file at the Eastern Washington Fish and Wildlife Office, in Spokane, Washington. If you have any questions about this letter or our joint responsibilities under the Endangered Species Act, please contact Abby Sage (509)-665-3508, extension 1882 (abigail_sage@fws.gov) or Sierra Franks at (509) 665-3508, extension 1880 (sierra_franks@fws.gov).

Sincerely,

MICHELLE EAMES

Digitally signed by MICHELLE EAMES
Date: 2020.11.27 11:22:36 -08'00'

for Brad Thompson, State Supervisor
Washington Fish and Wildlife Office

cc:
The Corps, Spokane, WA (D. Moore)

LITERATURE CITED

Barrows, M.G., D.R. Anglin, P.M. Sankovich, J.M. Hudson, R.C. Koch, J.J. Skalicky, D.A. Wills and B.P. Silver. 2016. Use of the Mainstem Columbia and Lower Snake Rivers by Migratory Bull Trout. Data Synthesis and Analyses. Final Report. U.S. Fish and Wildlife Service, Columbia River Fisheries Program Office, Vancouver, WA.

DART, Columbia Basin Research, University of Washington, 2020. Adult Passage Daily Counts: http://www.cbr.washington.edu/dart/query/adult_daily.

Port of Clarkston. 2020. Biological Assessment on the 14th street dock - auxiliary float. Port of Clarkston, 849 Port Way, Clarkston, WA 99403. August 2020. 32 pp. + attachments.

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

https://doi.org/10.25923/m3m8-ha32

November 4, 2020

Refer to NMFS No: WCRO-2020-02242

Michelle Walker
Seattle District Regulatory Branch Chief
US Army Corps of Engineers
PO Box 3755
Seattle, WA 98124-3755

Re: Endangered Species Act Section 7(a)(2) Biological Opinion, and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the 14th Street dock in the Port of Clarkston in Asotin County, Washington.

Dear Ms. Walker:

Thank you for your letter of August 7, 2020, requesting initiation of informal consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531 et seq.) for the 14th Street Dock Auxiliary Float. NMFS did not concur with your "not likely to adversely affect" determination, as explained in our September 8, 2020 letter to the U.S. Army Corps of Engineers (COE). NMFS did agree, however, that the COE's biological assessment (BA) was complete and considered August 7, 2020, to be the date that formal consultation was initiated. This consultation was conducted in accordance with the 2019 revised regulations that implement section 7 of the ESA (50 CFR 402, 84 FR 45016).

In the enclosed biological opinion (Opinion), NMFS concludes that the action, as proposed, is not likely to jeopardize the continued existence of Snake River spring/summer Chinook salmon, Snake River fall Chinook salmon, Snake River sockeye salmon, and Snake River Basin steelhead. NMFS also determined the action will not destroy or adversely modify designated critical habitat for Snake River spring/summer Chinook salmon, Snake River fall Chinook salmon, Snake River sockeye salmon, and Snake River Basin steelhead. Rationale for our conclusions is provided in the Opinion.

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 COE, and any permittee who performs any portion of the action must comply with to carry out the RPMs. Incidental take from actions that meeting 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 one Conservation Recommendation to avoid, minimize, or otherwise offset potential adverse effects on EFH. This Conservation Recommendation is a non-identical set of 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 this recommendation.

If the response is inconsistent with the EFH Conservation Recommendation, the COE must explain why the recommendation 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.

Please contact Mr. Dennis Daw, Northern Snake Branch, at 208-378-5698 or dennis.daw@noaa.gov if you have any questions concerning this consultation, or if you require additional information.

Sincerely,

Michael Tehan
Assistant Regional Administrator
Interior Columbia Basin Office

Enclosure

cc:

D. Moore – COE
M. Walker – COE
M. Eames - USFWS
K. Sarensen – USFWS
M. Lopez – NPT

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

Endangered Species Act Section 7(a)(2) Biological Opinion, and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the 14th Street dock in the Port of Clarkston in Asotin County, Washington

14th Street Dock

NMFS Consultation Number: WCRO-2020-02242

Action Agency: U.S. Army Corps of Engineers

Affected Species and NMFS' Determinations:

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

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: November 4, 2020

TABLE OF CONTENTS

FIGURES

TABLES

ACRONYMS

BA	Biological Assessment
BMP	Best Management Practices
COE	U.S. Army Corps of Engineers
CWA	Clean Water Act
dB	Decibel
DPS	Distinct Population Segment
DQA	Data Quality Act
ESA	Endangered Species Act
ESU	Evolutionarily Significant Units
BA	Biological Assessment
CFR	Code of Federal Regulations
CRSO	Columbia River System Operations
DART	Columbia Basin Data Access in Real Time
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FCRPS	Federal Columbia River Power System
FR	Federal Register
GSRO	Washington Governor's Salmon Recovery Office
HAPC	Habitats of Particular Concern (HAPC)
HPA	Hydraulic Project Approval
HUC	Hydrologic Unit Code
ICBTRT	Interior Columbia Basin Technical Recovery Team
ICTRT	Interior Columbia Technical Recovery Team
ITS	Incidental Take Statement
MPG	Major Population Group
MSA	Magnuson-Stevens Fishery Management Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic & Atmospheric Administration
NWFSC	Northwest Fisheries Science Center
Opinion	Biological opinion
PBF	Physical or Biological Features
PCE	Primary Constituent Element
PFMC	Pacific Fishery Management Council
PIT	Passive Integrated Transponder (tags)
PORT	Port of Clarkston
RM	River Mile
RPM	Reasonable Prudent Measures

USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VSP	Viable Salmonid Population
WDFW	Washington Department of Fish and Wildlife
WRIA	Water Resources Inventory Area

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, as amended.

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 600.

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). The document will be available within 2 weeks at the NOAA Library Institutional Repository [https://repository.library.noaa.gov/welcome]. A complete record of this consultation is on file at Snake River Basin Office, Boise Idaho.

1.2. Consultation History

The NMFS received the U.S. Army Corps of Engineers (COEs) biological assessment (BA) and letter requesting informal consultation for the 14th Street Dock Auxiliary Float project on August 7, 2020. During the review of the BA, NMFS concluded that we could not concur with the Not Likely to Adversely Affect determination for Snake River spring/summer Chinook salmon, Snake River fall Chinook salmon, Snake River sockeye salmon, and Snake River Basin steelhead and their designated critical habitats. The NMFS informed the COE of this decision in a letter dated September 8, 2020. In this letter, NMFS informed the COE that we determined that the action would Likely Adversely Affect Snake River spring/summer Chinook salmon, Snake River fall Chinook salmon, Snake River sockeye salmon, and Snake River Basin steelhead and their designated critical habitats, due to an increase in predation on juvenile salmonids, and an increase in over-water structure. We also informed the COE that we felt the information in the BA was sufficient to initiate formal consultation as of August 7, 2020, when the BA was received. On September 14, 2020, NMFS and COE discussed the project, and NMFS further explained why there are likely adverse effects from this action.

1.3. Proposed Federal Action

Under the ESA, "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). The COE is proposing to permit the authorization for, the Port of Clarkston to construct a dock, under the authority to administer Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act.

The Port of Clarkston is proposing to connect a new auxiliary float/dock to an existing pier at an existing freight dock to better accommodate increasing use by the cruise boat industry. The project will occur within the geographic boundaries and habitats of all four Snake River anadromous ESA-listed salmonids.

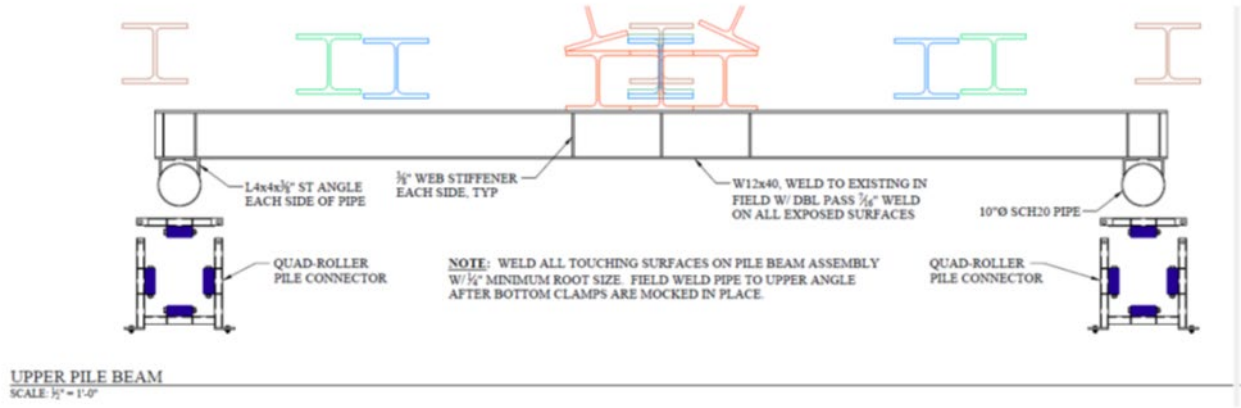
We considered whether or not the proposed action would cause any other activities and determined that it would not.

The BA explained that the Port of Clarkston (Port) has been providing moorage services within Clarkston, WA and Lewiston, ID for the cruise boat industry for 33 years. The Port has had exclusive responsibility for these services for the past seven years. Due to the growth of the cruise boat industry, the single cruise boat dock, the 7th Street Dock, has been inadequate to serve the number of cruise boats traveling the Columbia/Snake River route. Sediment deposition in the navigation channel and decreased river depth have also necessitated increased use of the Port's 14th Street freight dock. Since the Lewis-Clark Valley (i.e., Clarkston, WA) is the terminus for the typical cruise itinerary, stays at the Port's facilities are longer than at most other locations on the Columbia and Snake Rivers. Presently, cruise passengers disembarking at the 14th Street dock must be loaded into busses and driven to the 7th Street Dock for access to jet boat tours. This process requires availability of vehicles, carbon emissions, and transfers of passengers, some of whom are mobility impaired. With the proposed auxiliary float in place, passengers will disembark from bow ramps onto the auxiliary float, which allows direct access to the jet boats for an excursion up Hells Canyon National Recreation Area, North America's deepest gorge. The new dock will decrease the need for busses and parking.

As explained in the BA, the new auxiliary float has the potential to be used year-round (except when the Snake River dam locks are closed for maintenance), but the heaviest use is expected April through November. Having this auxiliary float at the 14th Street dock will also take pressure off the Port's 7th Street dock, where some direct transfers from cruise ships to jet boats occur. The auxiliary float at the 14th Street dock is expected to ease the pressure to such a degree that: a) the 7th Street dock itself will not require immediate expansion, and b) more working space for buses and businesses serving the boats will not need to be developed at the 7th Street site, a culturally sensitive Nez Perce Tribe site. The proposed float will provide increased safety for all passengers, as well as protection of cultural assets.

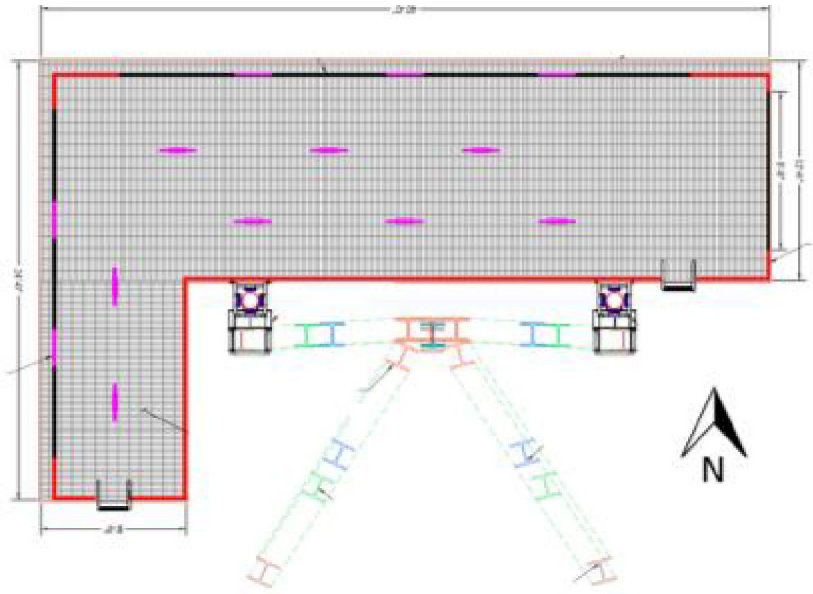
The Port is proposing attachment of the auxiliary float or dock to the western-most existing dolphin pilings that are part of the freight dock facility owned by the Port at the northern end of 14th Street. A steel beam will be welded to the existing two piles. Attached to that will be two 10" steel pipes. (Figure 1) Quad-roller pile connectors will allow the float/dock to move with the water level variations. No new piles are needed.

Figure 1: New beam Schematic



The dock will be L-shaped. The L-shape wraps around the west side of the two existing pilings to which the float/dock is attached. The main section of the new float/dock is 40 feet long by 12 feet wide, and the smaller section is 12 feet long by 8 feet wide. The float's larger part of the "L" (Figure 2), is expected to be over water that is 12 – 14' deep (the depth required for draft by cruise boats). The smaller, wrap-around portion of the "L" is expected to be over water that is 8 – 12' deep. The total footprint of the overwater portion of the project is 576 square feet.

Figure 2: Layout around existing pier and dolphin



Project Tasks:

- Construct auxiliary dock/float offsite.
- Transport dock from preconstruction location to installation location.
- Install during in-water work window of December 15 2020-Feburary28, 2021.

Construction Equipment:

- A jet boat will be used to maneuver the pre-fabricated dock in place and assist in-water welders.
- Appropriate in-water welding equipment will be used.

Construction Materials:

- Surface: 1' Eco62 grating
- Steel frame, beam and pipes
- Eighteen (18) 2' X 4' X 20" Polyfloats, black in color
- Three (3) 4' X 8' X 20" Polyfloats, black in color
- Other miscellaneous: fascia, bullrail, guardrail, grab posts, two (2) life rings, and two (2) safety ladders

Installation:

The following work will be completed in-water: a) A horizontal beam will be welded to the existing pile in the field (some underwater welding will be required); b) two vertical 10" steel pipes will be attached to the ends of the horizontal beam; and c) via quad-roller pile connectors, the pre-fabricated float/dock will be moved into place and attached to the pipes with the aid of a jet boat.

Project Timing and Minimization Measures

Construction of the project will be timed to coincide with the approved in-water work window (December15, 2020-Feburary 28, 2021) associated with COE and Washington Department of Fish and Wildlife (WDFW) permits. The project will obtain and comply with conditions that will be outlined in the Hydraulic Project Approval (HPA) permit issued for the project by WDFW and the Clean Water Act Section 404 Permit issued by COE.

- In-water installation is expected to take less than one week and will be scheduled during the work window, when few juvenile or adult fish are migrating.

- The construction/install firm will be selected based on experience with similar projects in order to minimize the amount of time needed for in-water work.

- The constructed float/dock will be grated to allow a functional 60+percent light penetration.

- Construction activities will be performed during daylight hours, which are expected to be from 7 a.m. to 8 p.m. Monday through Friday and 9 a.m. to 7 p.m. Saturday.

- Equipment staging will be limited to the asphalted area of the 14th Street Dock and will not disturb vegetated surfaces. Jet boat support will launch from a commercial launch site.

- A Spill Prevention Control and Countermeasure Plan will be prepared, approved, and implemented by the contractor. The plan will be site-specific and cover the project scope of work.

- A Construction Stormwater Pollution Prevention Plan will be implemented only if required by local permits.

- Any equipment used for this project shall be free of external petroleum-based fluids while the work is performed in the water. Any boats used shall be free of aquatic invasive species.

- Work will be in compliance with all other applicable local, state and federal regulations and restrictions.

In addition, the Port will remove non-native or noxious species of vegetation (example: black-cap raspberries) along 200 feet of the nearby shoreline and replace them with native vegetation.

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 provide 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. Analytical Approach

This Opinion includes both a jeopardy analysis and an adverse modification analysis. The jeopardy analysis relies upon the regulatory definition of "jeopardize the continued existence of" a listed species, which is "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR402.02). Therefore, the jeopardy analysis considers both survival and recovery of the species.

This Opinion relies on the regulatory definition of "destruction or adverse modification," which "means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species" (50 CFR 402.02).

The designation(s) of critical habitat for Snake River fall Chinook salmon, Snake River spring/summer Chinook salmon, Snake River Sockeye salmon, and Snake River Basin steelhead 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.

The 2019 regulations define effects of the action using the term "consequences" (50 CFR 402.02). As explained in the preamble to the regulations (84 FR 44977), that definition does not change the scope of our analysis and in this Opinion we use the terms "effects" and "consequences" interchangeably.

We use the following approach to determine whether a proposed action is likely to jeopardize listed species or destroy or adversely modify critical habitat:

- Evaluate the rangewide status of the species and critical habitat expected to be adversely affected by the proposed action.
- Evaluate the environmental baseline of the species and critical habitat.
- Evaluate the effects of the proposed action on species and their habitat using an exposure-response approach.
- Evaluate cumulative effects.
- In the integration and synthesis, add the effects of the action and cumulative effects to the environmental baseline, and, in light of the status of the species and critical habitat, analyze whether the proposed action is likely to: (1) Directly or indirectly reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species; or (2) directly or

indirectly result in an alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species.

- If necessary, suggest a reasonable and prudent alternative to the proposed action.

2.2. Rangewide Status of the Species and Critical Habitat

This Opinion examines the status of each species that would be adversely affected by the proposed action. The status is determined by the level of extinction risk that the listed species face, based on parameters considered in documents such as recovery plans, status reviews, and listing decisions. This informs the description of the species' likelihood of both survival and recovery. The species status section also helps to inform the description of the species' "reproduction, numbers, or distribution" as described in 50 CFR 402.02. The Opinion also examines the condition of critical habitat throughout the designated area, evaluates the conservation value of the various watersheds and coastal and marine environments that make up the designated area, and discusses the function of the PBFs that are essential for the conservation of the species. Table 1 describes the Federal Register notices and notice dates for the species under consideration in this Opinion.

Table 1: Listing status, status of critical habitat designation and protective regulations and relevant Federal Register decision notices for ESA-listed species considered in this Opinion

Species	Listing Status	Critical Habitat	Protective Regulations
Chinook salmon *(Oncorhynchus tshawytscha)*			
Snake River spring/summer-run	T 6/28/05; 70 FR 37160	10/25/99; 64 FR 57399	6/28/05; 70 FR 37160
Snake River fall-run	T 6/28/05; 70 FR 37160	12/28/93; 58 FR 68543	6/28/05; 70 FR 37160
Sockeye salmon *(O. nerka)*			
Snake River	E 6/28/05; 70 FR 37160	12/28/93; 58 FR 68543	ESA section 9 applies
Steelhead (*O. mykiss*)			
Snake River Basin	T 1/05/06; 71 FR 834	9/02/05; 70 FR 52630	6/28/05; 70 FR 37160

Note: Listing status: 'T' means listed as threatened under the ESA; 'E' means listed as endangered.

2.2.1 Status of the Species

This section describes the present condition of the Snake River spring/summer Chinook salmon, Snake River fall Chinook salmon, and Snake River sockeye salmon evolutionarily significant units (ESUs), and the Snake River Basin steelhead distinct population segment (DPS). NMFS expresses the status of a salmonid ESU or DPS in terms of likelihood of persistence over 100 years (or risk of extinction over 100 years). NMFS uses McElhaney et al.'s (2000) description of a viable salmonid population (VSP) that defines "viable" as less than a 5 percent risk of extinction within 100 years and "highly viable" as less than a 1 percent risk of extinction within 100 years. A third category, "maintained," represents a less than 25 percent risk within 100 years (moderate risk of extinction). To be considered viable, an ESU or DPS should have multiple viable populations so that a single catastrophic event is less likely to cause the ESU/DPS to become extinct and so that the ESU/DPS may function as a metapopulation that can withstand and sustain population-level extinction and recolonization processes (ICTRT 2007). The risk level of the ESU/DPS is built up from the aggregate risk levels of the individual populations and major population groups (MPGs) that make up the ESU/DPS.

Attributes associated with a VSP are: (1) Abundance (number of adult spawners in natural production areas); (2) productivity (adult progeny per parent); (3) spatial structure; and (4) diversity. A VSP needs sufficient levels of these four population attributes in order to: safeguard the genetic diversity of the listed ESU or DPS; enhance its capacity to adapt to various environmental conditions; and allow it to become self-sustaining in the natural environment (ICTRT 2007). These viability attributes are influenced by survival, behavior, and experiences throughout the entire salmonid life cycle, characteristics that are influenced in turn by habitat and other environmental and anthropogenic conditions. The present risk faced by the ESU/DPS informs NMFS' determination of whether additional risk will appreciably reduce the likelihood that the ESU/DPS will survive or recover in the wild.

2.2.1.1 Snake River Spring/Summer Chinook salmon

The Snake River spring/summer Chinook salmon ESU was listed as threatened on April 22, 1992 (57 FR 14653). This ESU occupies the Snake River basin, which drains portions of southeastern Washington, northeastern Oregon, and north/central Idaho. Several factors led to NMFS' conclusion that Snake River spring/summer Chinook were threatened: (1) Abundance of naturally produced Snake River spring and summer Chinook runs had dropped to a small fraction of historical levels; (2) short-term projections were for a continued downward trend in abundance; (3) hydroelectric development on the Snake and Columbia Rivers continued to disrupt Chinook runs through altered flow regimes and impacts on estuarine habitats; and (4) habitat degradation existed throughout the region, along with risks associated with the use of outside hatchery stocks in particular areas (Good et al. 2005). On May 26, 2016, in the agency's most recent 5-year review for Pacific salmon and steelhead, NMFS concluded that the species should remain listed as threatened (81 FR 33468).

Life History. Snake River spring/summer Chinook salmon are characterized by their return times. Runs classified as spring Chinook salmon are counted at Bonneville Dam beginning in early March and ending the first week of June; summer runs are those Chinook adults that pass Bonneville Dam from June through August. Returning adults will hold in deep mainstem and tributary pools until late summer, when they move up into tributary areas and spawn. In general, spring-run type Chinook salmon tend to spawn in higher-elevation reaches of major Snake River tributaries in mid- through late August; and summer-run Chinook salmon tend to spawn lower in Snake River tributaries in late August and September (although the spawning areas of the two runs may overlap).

Spring/summer Chinook salmon follow a "stream-type" life history characterized by rearing for a full year in and near their natal areas and migrating in early to mid-spring as age-1 smolts (Healey 1991). Eggs are deposited in late summer and early fall, incubate over the following winter, and hatch in late winter and early spring of the following year. Juveniles rear through the summer, and most overwinter and migrate to sea in the spring of their second year of life. Depending on the tributary and the specific habitat conditions, pre-smolt juveniles may migrate extensively from natal reaches into alternative summer-rearing or overwintering areas. Snake River spring/summer Chinook salmon return from the ocean to spawn primarily as 4- and 5-year-old fish, after 2 to 3 years in the ocean. A small fraction of the fish return as 3-year-olds, which are mostly males ("jacks") (Good et al. 2005).

Spatial Structure and Diversity. The Snake River ESU includes all naturally spawning populations of spring/summer Chinook salmon in the mainstem Snake River (below Hells Canyon Dam) and in the Tucannon River, Grande Ronde River, Imnaha River, and Salmon River subbasins (57 FR 23458), as well as the progeny of 15 artificial propagation programs (70 FR 37160). The hatchery programs include the South Fork Salmon River (McCall Hatchery), Johnson Creek, Lemhi River, Pahsimeroi River, East Fork Salmon River, West Fork Yankee Fork Salmon River, Upper Salmon River (Sawtooth Hatchery), Tucannon River (conventional and captive broodstock programs), Lostine River, Catherine Creek, Lookingglass Creek, Upper Grande Ronde River, Imnaha River, and Big Sheep Creek programs. The historical Snake River ESU likely also included populations in the Clearwater River drainage and extended above the Hells Canyon Dam complex.

Within the Snake River ESU, the Interior Columbia Technical Recovery Team (ICTRT) identified 28 extant and 4 extirpated or functionally extirpated populations of spring/summer-run Chinook salmon, listed in Table 2 (ICTRT 2003; McClure et al. 2005). The ICTRT aggregated these populations into five MPGs: Lower Snake River, Grande Ronde/Imnaha Rivers, South Fork Salmon River, Middle Fork Salmon River, and Upper Salmon River. For each population, Table 2 shows the current risk ratings that the ICTRT assigned to the four parameters of a VSP (spatial structure, diversity, abundance, and productivity).

Spatial structure risk is low to moderate for most populations in this ESU (NWFSC 2015) and is generally not preventing the recovery of the species. Spring/summer Chinook salmon spawners are distributed throughout the ESU albeit at very low numbers. Diversity risk, on the other hand, is somewhat higher, driving the moderate and high combined spatial structure/diversity risks shown in Table 2 for some populations. 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 need to be lowered in multiple populations in order for the ESU to recover (ICTRT 2007; ICTRT 2010; NWFSC 2015).

Abundance and Productivity. Historically, the Snake River drainage is thought to have produced more than 1.5 million adult spring/summer Chinook salmon in some years (Matthews and Waples 1991), yet in 1994 and 1995, fewer than 2,000 naturally produced adults returned to the Snake River (ODFW and WDFW 2019). From the mid-1990s and the early 2000s, the population increased dramatically and peaked in 2001 at 45,273 naturally produced adult returns. Since 2001, the numbers have fluctuated between 32,324 (2003) and 4,425 (2017), and the trend for the most recent five years (2014-2018) has been generally downward (ODFW and WDFW 2019). Although most populations in this ESU have increased in abundance since listing, 27 of the 28 extant populations remain at high risk of extinction due to low abundance/productivity, with one population (Chamberlin Creek) at moderate risk of extinction (NWFSC 2015). Furthermore, the most recent returns indicate that all populations in the ESU were below replacement for the 2013 brood year (Felts et al. 2019)[1] which reduced abundance across the ESU. All currently extant populations of Snake River spring/summer Chinook salmon will likely have to increase in abundance and productivity in order for the ESU to recover (Table 2).

[1] The return size is not known until five years after the brood year. Preliminary results for the 2019 redd counts indicate that the 2014 brood year will be below replacement for the vast majority (possibly all) of the populations in the Snake River spring/summer Chinook salmon ESU.

Table 2: Summary of viable salmonid population parameter risks and overall current status of each population in the Snake River spring/summer Chinook salmon ESU. (NWFSC 2015)

MPG	Population	VSP Risk Parameter		Overall Viability Rating
		Abundance/ Productivity	Spatial Structure/ Diversity	
South Fork Salmon River (Idaho)	Little Salmon River	*Insf. data*	Low	High Risk
	South Fork Salmon River mainstem	High	Moderate	High Risk
	Secesh River	High	Low	High Risk
	East Fork South Fork Salmon River	High	Low	High Risk
Middle Fork Salmon River (Idaho)	Chamberlain Creek	Moderate	Low	Maintained
	Middle Fork Salmon River below Indian Creek	*Insf. data*	Moderate	High Risk
	Big Creek	High	Moderate	High Risk
	Camas Creek	High	Moderate	High Risk
	Loon Creek	High	Moderate	High Risk
	Middle Fork Salmon River above Indian Creek	High	Moderate	High Risk
	Sulphur Creek	High	Moderate	High Risk
	Bear Valley Creek	High	Low	High Risk
	Marsh Creek	High	Low	High Risk
Upper Salmon River (Idaho)	North Fork Salmon River	*Insf. data*	Low	High Risk
	Lemhi River	High	High	High Risk
	Salmon River Lower Mainstem	High	Low	High Risk
	Pahsimeroi River	High	High	High Risk
	East Fork Salmon River	High	High	High Risk
	Yankee Fork Salmon River	High	High	High Risk
	Valley Creek	High	Moderate	High Risk
	Salmon River Upper Mainstem	High	Low	High Risk
	Panther Creek			***Extirpated***
Lower Snake (Washington)	Tucannon River	High	Moderate	High Risk
	Asotin Creek			***Extirpated***
Grande Ronde and Imnaha Rivers (Oregon/ Washington)	Wenaha River	High	Moderate	High Risk
	Lostine/Wallowa River	High	Moderate	High Risk
	Minam River	High	Moderate	High Risk
	Catherine Creek	High	Moderate	High Risk
	Upper Grande Ronde River	High	High	High Risk
	Imnaha River	High	Moderate	High Risk
	Lookingglass Creek			***Extirpated***
	Big Sheep Creek			***Extirpated***

The Snake River spring/summer Chinook salmon ESU has suffered from a variety of human caused perturbations. These include mainstem passage due to hydropower infrastructure, alterations from a free flowing river to a series of reservoirs, and increased predation from native and non-native piscivorous fish. The reservoirs increase the amount of time it takes for the out-migrating salmon to reach the ocean. The piscivorous fish species include northern pikeminnow, walleye, and smallmouth bass.

Spring/summer Chinook salmon do not spawn within, and only briefly rear within the action area. Adult Snake River spring/summer Chinook salmon pass through the action area enroute to upstream spawning areas, while out-migrating juveniles use the area for passage and resting as they migrate to the ocean.

2.2.1.2 Snake River Fall-run Chinook Salmon

The Snake River fall Chinook salmon ESU was listed as threatened on April 22, 1992 (57 FR 14653). This ESU occupies the Snake River basin, which drains portions of southeastern Washington, northeastern Oregon, and north/central Idaho. Snake River fall Chinook salmon have substantially declined in abundance from historic levels, primarily due to the loss of primary spawning and rearing areas upstream of the Hells Canyon Dam complex (57 FR 14653). Additional concerns for the species have been the high percentage of hatchery fish returning to natural spawning grounds and the relatively high aggregate harvest impacts by ocean and in-river fisheries (Good et al. 2005). On May 26, 2016, in the agency's most recent 5-year review for Pacific salmon and steelhead, NMFS concluded that the species should remain listed as threatened (81 FR 33468).

Life History. Snake River fall Chinook salmon enter the Columbia River in July and August, and migrate past the lower Snake River mainstem dams from August through November. Spawning takes place from October through early December in the mainstem of the Snake River, primarily between Asotin Creek and Hells Canyon Dam, and in the lower reaches of several of the associated major tributaries including the Tucannon, Grande Ronde, Clearwater, Salmon, and Imnaha Rivers (Connor and Burge 2003; Ford 2011). Spawning has occasionally been observed in the tailrace areas of the four mainstem dams (Dauble et al. 1999; Dauble et al. 1995; Dauble et al. 1994; Mueller 2009). Juveniles emerge from the gravels in March and April of the following year.

Until relatively recently, Snake River fall Chinook salmon were assumed to follow an "ocean-type" life history (Dauble and Geist 2000; Good et al. 2005; Healey 1991; NMFS 1992) where they migrate to the Pacific Ocean during their first year of life, normally within 3 months of emergence from spawning substrate as age-0 smolts, to spend their first winter in the ocean. Ocean-type Chinook salmon juveniles tend to display a "rear as they go" rearing strategy in which they continually move downstream through shallow shoreline habitats their first summer and fall until reaching the ocean by winter (Connor and Burge 2003; Coutant and Whitney 2006). However, several studies have shown that another life history pattern exists in which a significant number of smaller Snake River fall Chinook juveniles overwinter in Snake River reservoirs prior to out-migration. These fish begin migration later than most, arrest their seaward migration and overwinter in reservoirs on the Snake and Columbia Rivers, then resume migration and enter the ocean in early spring as age-1 smolts (Connor and Burge 2003; Connor et al. 2002; Connor et al. 2005; Hegg et al. 2013). Connor et al. (2005) termed this life history strategy "reservoir-type." Scale samples from natural-origin adult fall Chinook salmon taken at Lower Granite Dam have indicated that approximately half of the returns overwintered in freshwater (Ford 2011). Tiffan and Connor (2012) showed that subyearling fish favor water less than six feet deep.

Spatial Structure and Diversity. The Snake River fall Chinook salmon ESU includes one extant population of fish spawning in the mainstem of the Snake River and the lower reaches of several of the associated major tributaries including the Tucannon, Grande Ronde, Clearwater, Salmon, and Imnaha Rivers. The ESU also includes four artificial propagation programs: the Lyons Ferry Hatchery and the Fall Chinook Acclimation Ponds Program in Washington; the Nez Perce

Tribal Hatchery in Idaho; and the Oxbow Hatchery in Oregon and Idaho (70 FR 37160). Historically, this ESU included one large additional population spawning in the mainstem of the Snake River upstream of the Hells Canyon Dam complex, an impassable migration barrier (NWFSC 2015). Four of the five historic major spawning areas in the Lower Snake population currently have natural-origin spawning. Spatial structure risk for the existing ESU is therefore low and is not precluding recovery of the species (NWFSC 2015).

There are several diversity concerns for Snake River fall Chinook salmon, leading to a moderate diversity risk rating for the extant Lower Snake population. One concern is the high proportion of hatchery fish spawning naturally; between 2010 and 2014, only 31percent of spawners in the population were natural-origin, and hatchery-origin returns are widespread across the major spawning areas within the population (NWFSC 2015). The moderate diversity risk is also driven by changes in major life history patterns; shifts in phenotypic traits; high levels of genetic homogeneity in samples from natural-origin returns; selective pressure imposed by current hydropower operations; and cumulative harvest impacts (NWFSC 2015). Diversity risk will need to be reduced to low in order for this population to be considered highly viable, a requirement for recovery of the species. Low diversity risk would require that one or more major spawning areas produce a significant level of natural-origin spawners with low influence by hatchery-origin spawners (NWFSC 2015).

Abundance and Productivity. Historical abundance of Snake River fall Chinook salmon is estimated to have been 416,000 to 650,000 adults (NMFS 2006), but numbers declined drastically over the 20th century, with only 78 natural-origin fish (Joint Columbia River Management Staff 2014) and 306 hatchery-origin fish (FPC 2019) passing Lower Granite Dam in 1990. Artificial propagation of fall Chinook salmon occurred from 1901 through 1909 and again from 1955 through 1973, but those efforts ultimately failed and by the late 1970s, essentially all Snake River fall Chinook salmon were natural-origin. The large-scale hatchery effort that exists today began in 1976, when Congress authorized the Lower Snake River Compensation Plan (LSRCP) to compensate for fish and wildlife losses caused by the construction and operation of the four lower Snake River dams. The first hatchery fish from this effort returned in 1981 and hatchery returns have comprised a substantial portion of the run every year since. From 2007 to 2016, the proportion of hatchery-origin fish has averaged about 70 percent, based on post-harvest, post-broodstock estimates above Lower Granite Dam (NWFSC 2015).

After 1990, abundance increased dramatically and in 2014, the 10-year geometric mean (2005-2014) was 22,196 total adult returns (FPC 2019) and 6,148 natural-origin adult returns (NWFSC 2015). This is well above the minimum abundance of 4,200 natural-origin spawners needed for highly viable status. However, the productivity estimate for the 1990–2009 brood years is 1.5, which is below the 1.7 minimum needed for highly viable status. From 2015 through 2018, annual returns steadily decreased (Personal Communication, Bill Young, Nez Perce Tribe Hatchery Evaluations Coordinator, October 17, 2019), but in spite of this recent decrease, the geometric mean abundance for 2009-2018 was actually slightly higher than for 2005-2014. However, due to the declining trend, the current productivity estimate is slightly less than 1.5, with substantial uncertainty due to large numbers of hatchery-origin fish reaching spawning habitat. Regardless, an increase in productivity will likely be needed to achieve highly viable

status. This could possibly be achieved by reducing mortality during specific life stages, such as a reduction in harvest impacts on adults, currently at 40–50 percent, or improvements in juvenile survivals during downstream migration (NWFSC 2015).

Fall Chinook salmon use the lower Snake River for migration, spawning, and rearing, though spawning in the reach that includes the action area is likely fairly limited. Most fall Chinook spawning occurs further upstream in the Snake River, and in the Clearwater River. There is potential for rearing to occur within the action area. Changes in habitat due to hydropower infrastructure has favored native and non-native piscivorous fish that prey on juvenile ESA-listed salmonids. Predator habitat enhancement created by over-water structures can add to the predation-limiting factor for juvenile fall Chinook salmon in the Lower Snake River.

2.2.1.3 Snake River Sockeye Salmon

This ESU includes all anadromous and residual sockeye salmon from the Snake River basin in Idaho, as well as artificially propagated sockeye salmon from the Redfish Lake captive propagation program. The ESU was first listed as endangered under the ESA in 1991, and the listing was reaffirmed in 2005 (70 FR 37160). Reasons for the decline of this species include high levels of historic harvest, dam construction including hydropower development on the Snake and Columbia Rivers, water diversions and water storage, predation on juvenile salmon in the mainstem river migration corridor, and active eradication of sockeye from some lakes in the 1950s and 1960s (56 FR 58619; ICTRT 2003). On May 26, 2016, in the agency's most recent 5-year review for Pacific salmon and steelhead, NMFS concluded that the species should remain listed as endangered (81 FR 33468).

Life History. Snake River sockeye salmon adults enter the Columbia River primarily during June and July, and arrive in the Sawtooth Valley peaking in August. The Sawtooth Valley supports the only remaining run of Snake River sockeye salmon. The adults spawn in lakeshore gravels, primarily in October (Bjornn et al. 1968). Eggs hatch in the spring between 80 and 140 days after spawning. Fry remain in the gravel for three to five weeks, emerge from April through May, and move immediately into the lake. Once there, juveniles feed on plankton for one to three years before they migrate to the ocean, leaving their natal lake in the spring from late April through May (Bjornn et al. 1968). Snake River sockeye salmon usually spend two to three years in the Pacific Ocean and return to Idaho in their 4th or 5th year of life.

Spatial Structure and Diversity. Within the Snake River ESU, the ICTRT identified historical sockeye salmon production in five Sawtooth Valley lakes, in addition to Warm Lake and the Payette Lakes in Idaho and Wallowa Lake in Oregon (ICTRT 2003). The sockeye runs to Warm, Payette, and Wallowa Lakes are now extinct, and the ICTRT identified the Sawtooth Valley lakes as a single MPG for this ESU. The MPG consists of the Redfish, Alturas, Stanley, Yellowbelly, and Pettit Lake populations (ICTRT 2007). The only extant population is Redfish Lake, supported by a captive broodstock program. Hatchery fish from the Redfish Lake captive propagation program have also been outplanted in Alturas and Pettit Lakes since the mid-1990s in an attempt to reestablish those populations (Ford 2011). With such a small number of populations in this MPG, increasing the number of populations would substantially reduce the risk faced by the ESU (ICTRT 2007). The Northwest Fisheries Science Center (NWFSC) (2015)

reports some evidence of very low levels of early-timed returns in some recent years from out-migrating naturally-produced Alturas Lake smolts, but the ESU remains at high risk for spatial structure.

Currently, the Snake River sockeye salmon run is highly dependent on a captive broodstock program operated at the Sawtooth Hatchery and Eagle Hatchery. Although the captive brood program rescued the ESU from the brink of extinction, diversity risk remains high without sustainable natural production (Ford 2011; NWFSC 2015).

Abundance and Productivity. Prior to the turn of the 20th century (ca. 1880), around 150,000 sockeye salmon ascended the Snake River to the Wallowa, Payette, and Salmon River basins to spawn in natural lakes (Evermann 1896, as cited in Chapman et al. 1990). The Wallowa River sockeye run was considered extinct by 1905, the Payette River run was blocked by Black Canyon Dam on the Payette River in 1924, and anadromous Warm Lake sockeye in the South Fork Salmon River basin may have been trapped in Warm Lake by a land upheaval in the early 20th century (ICTRT 2003). In the Sawtooth Valley, the Idaho Department of Fish and Game eradicated sockeye from Yellowbelly, Pettit, and Stanley Lakes in favor of other species in the 1950s and 1960s, and irrigation diversions led to the extirpation of sockeye in Alturas Lake in the early 1900s (ICTRT 2003), leaving only the Redfish Lake sockeye. From 1991 to 1998, a total of just 16 wild adult anadromous sockeye salmon returned to Redfish Lake. These 16 wild fish were incorporated into a captive broodstock program that began in 1992 and has since expanded so that the program currently releases hundreds of thousands of juvenile fish each year in the Sawtooth Valley (Ford 2011).

With the increase in hatchery production, adult returns to Sawtooth Valley have increased, ranging from 91 to 1,516 during the most recent 5-year period (2014-2018) (Baker et al. 2015; Baker et al. 2016; Baker et al. 2017; Baker et al. 2018; Phillips 2019). The increased abundance of hatchery reared Snake River sockeye reduces the risk of immediate loss, yet levels of naturally produced sockeye returns remain extremely low (NWFSC 2015). The ICTRT's viability target is at least 1,000 naturally produced spawners per year in each of Redfish and Alturas Lakes and at least 500 in Pettit Lake (ICTRT 2007). Very low numbers of adults survived upstream migration in the Columbia and Snake Rivers in 2015 due to unusually high water temperatures. The implications of this high mortality for the recovery of the species are uncertain and depend on the frequency of similar high water temperatures in future years (NWFSC 2015).

The species remains at high risk across all four-risk parameters (spatial structure, diversity, abundance, and productivity). Although the captive brood program has been highly successful in producing hatchery *O. nerka*, 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 corridor continue to present a significant threat to species recovery (NMFS 2015).

Sockeye salmon have been adversely affected by a variety of human caused perturbations. These include mainstem infrastructure at dams, alterations from a free flowing river to a series of reservoirs, and increased predation from native and non-native piscivorous fish. The reservoirs increase the amount of time it takes for the out-migrating sockeye salmon to reach the ocean.

Sockeye salmon do not spawn or rear within the action area. Adult sockeye salmon pass through the action area enroute to upstream spawning areas (specifically Redfish Lake), while out-migrating juveniles use the area for passage and resting as they migrate to the ocean.

2.2.1.4 Snake River Basin Steelhead

The Snake River Basin steelhead was listed as a threatened ESU on August 18, 1997 (62 FR 43937), with a revised listing as a DPS on January 5, 2006 (71 FR 834). This DPS occupies the Snake River basin, which drains portions of southeastern Washington, northeastern Oregon, and north/central Idaho. Reasons for the decline of this species include substantial modification of the seaward migration corridor by hydroelectric power development on the mainstem Snake and Columbia Rivers, and widespread habitat degradation and reduced streamflows throughout the Snake River basin (Good et al. 2005). Another major concern for the species is the threat to genetic integrity from past and present hatchery practices, and the high proportion of hatchery fish in the aggregate run of Snake River Basin steelhead over Lower Granite Dam (Good et al. 2005; Ford 2011). On May 26, 2016, in the agency's most recent 5-year review for Pacific salmon and steelhead, NMFS concluded that the species should remain listed as threatened (81 FR 33468).

Life History. Adult Snake River Basin steelhead enter the Columbia River from late June to October to begin their migration inland. After holding over the winter in larger rivers in the Snake River basin, steelhead disperse into smaller tributaries to spawn from March through May. Earlier dispersal occurs at lower elevations and later dispersal occurs at higher elevations. Juveniles emerge from the gravels in 4 to 8 weeks, and move into shallow, low-velocity areas in side channels and along channel margins to escape high velocities and predators (Everest and Chapman 1972). Juvenile steelhead then progressively move toward deeper water as they grow in size (Bjornn and Rieser 1991). Juveniles typically reside in fresh water for 1 to 3 years, although this species displays a wide diversity of life histories. Smolts migrate downstream during spring runoff, which occurs from March to mid-June depending on elevation, and typically spend 1 to 2 years in the ocean.

Spatial Structure and Diversity. This species includes all naturally-spawning steelhead populations below natural and manmade impassable barriers in streams in the Snake River basin of southeast Washington, northeast Oregon, and Idaho, as well as the progeny of six artificial propagation programs (71FR834). The hatchery programs include Dworshak National Fish Hatchery, Lolo Creek, North Fork Clearwater River, East Fork Salmon River, Tucannon River, and the Little Sheep Creek/Imnaha River steelhead hatchery programs. The Snake River Basin steelhead listing does not include resident forms of *O. mykiss* (rainbow trout) co-occurring with steelhead.

The ICTRT identified 24 extant populations within this DPS, organized into five MPGs (ICTRT 2003). The ICTRT also identified a number of potential historical populations associated with watersheds above the Hells Canyon Dam complex on the mainstem Snake River, a barrier to anadromous migration. The five MPGs with extant populations are the Clearwater River, Salmon River, Grande Ronde River, Imnaha River, and Lower Snake River. In the Clearwater River, the historic North Fork population was blocked from accessing spawning and rearing

habitat by Dworshak Dam. Current steelhead distribution extends throughout the DPS, such that spatial structure risk is generally low. For each population in the DPS, Table 3 shows the current risk ratings for the parameters of a VSP (spatial structure, diversity, abundance, and productivity).

The Snake River Basin DPS steelhead exhibit a diversity of life-history strategies, including variations in fresh water and ocean residence times. Traditionally, fisheries managers have classified Snake River Basin steelhead into two groups, A-run and B-run, based on ocean age at return, adult size at return, and migration timing. A-run steelhead predominantly spend 1-year in the ocean; B-run steelhead are larger with most individuals returning after 2 years in the ocean. New information shows that most Snake River populations support a mixture of the two run types, with the highest percentage of B-run fish in the upper Clearwater River and the South Fork Salmon River; moderate percentages of B-run fish in the Middle Fork Salmon River; and very low percentages of B-run fish in the Upper Salmon River, Grande Ronde River, and Lower Snake River (NWFSC 2015). Maintaining life history diversity is important for the recovery of the species.

Diversity risk for populations in the DPS is either moderate or low. Large numbers of hatchery steelhead are released in the Snake River, and the relative proportion of hatchery adults in natural spawning areas near major hatchery release sites remains uncertain. Moderate diversity risks for some populations are thus driven by the high proportion of hatchery fish on natural spawning grounds and the uncertainty regarding these estimates (NWFSC 2015). Reductions in hatchery-related diversity risks would increase the likelihood of these populations reaching viable status.

Abundance and Productivity. Historical estimates of steelhead production for the entire Snake River basin are not available, but the basin is believed to have supported more than half the total steelhead production from the Columbia River basin (Mallet 1974, as cited in Good et al. 2005). The Clearwater River drainage alone may have historically produced 40,000 to 60,000 adults (Ecovista et al. 2003), and historical harvest data suggests that steelhead production in the Salmon River was likely higher than in the Clearwater (Hauck 1953). In contrast, at the time of listing in 1997, the 5-year geomean abundance for natural-origin steelhead passing Lower Granite Dam, which includes all but one population in the DPS, was 11,462 adults (Ford 2011). Abundance began to increase in the early 2000s, with the single year count and the 5-year geomean both peaking in 2015 at 45,789 and 34,179, respectively (ODFW and WDFW 2019). Since 2015, the numbers have declined steadily with only 10,717 natural-origin adult returns counted in 2018 (ODFW and WDFW 2019). Even with the recent decline, the 5-year geomean abundance for natural-origin adult returns was 23,100 in 2018 (ODFW and WDFW 2019) which is more than twice the number at listing and substantially greater than the 5-year geomean of 18,847 tabulated in the most recent status review (i.e., Ford 2011).

Population-specific abundance estimates exist for some but not all populations. Of the populations for which we have data, three (Joseph Creek, Upper Grande Ronde, and Lower Clearwater) are meeting minimum abundance/productivity thresholds and several more have likely increased in abundance enough to reach moderate risk. Despite these recent increases in abundance, the status of many of the individual populations remains uncertain, and four out of the five MPGs are not meeting viability objectives (NWFSC 2015). In order for the species to

recover, more populations will need to reach viable status through increases in abundance and productivity.

Adult steelhead migrate through the action area to spawning grounds further upstream in either the Snake or Clearwater Rivers. Juveniles migrate through, and some rear and overwinter within, the action area. Particularly for juvenile steelhead that rear within the action area, increased over water structure could lead to increased predation on individual fish.

Table 3: Summary of viable salmonid population parameter risks and overall current status for each population in the Snake River Basin steelhead DPS. (NWFSC 2015 Risk rating with "?" are based on limited or provisional data series.

MPG	Population	VSP Risk Parameter		Overall Viability Rating
		Abundance/ Productivity	Spatial Structure/ Diversity	
Lower Snake River	Tucannon River	High?	Moderate	High Risk?
	Asotin Creek	Moderate?	Moderate	Maintained?
Grande Ronde River	Lower Grande Ronde	N/A	Moderate	Maintained?
	Joseph Creek	Very Low	Low	**Highly Viable**
	Wallowa River	N/A	Low	Maintained?
	Upper Grande Ronde	Low	Moderate	**Viable**
Imnaha River	Imnaha River	Moderate?	Moderate	Maintained?
Clearwater River (Idaho)	Lower Mainstem Clearwater River*	Moderate?	Low	Maintained?
	South Fork Clearwater River	High?	Moderate	High Risk?
	Lolo Creek	High?	Moderate	High Risk?
	Selway River	Moderate?	Low	Maintained?
	Lochsa River	Moderate?	Low	Maintained?
	North Fork Clearwater River			*Extirpated*
Salmon River (Idaho)	Little Salmon River	Moderate?	Moderate	Maintained?
	South Fork Salmon River	Moderate?	Low	Maintained?
	Secesh River	Moderate?	Low	Maintained?
	Chamberlain Creek	Moderate?	Low	Maintained?
	Lower Middle Fork Salmon R.	Moderate?	Low	Maintained?
	Upper Middle Fork Salmon R.	Moderate?	Low	Maintained?
	Panther Creek	Moderate?	High	High Risk?
	North Fork Salmon River	Moderate?	Moderate	Maintained?
	Lemhi River	Moderate?	Moderate	Maintained?
	Pahsimeroi River	Moderate?	Moderate	Maintained?
	East Fork Salmon River	Moderate?	Moderate	Maintained?
	Upper Mainstem Salmon R.	Moderate?	Moderate	Maintained?
Hells Canyon	Hells Canyon Tributaries			*Extirpated*

*Current abundance/productivity estimates for the Lower Clearwater Mainstem population exceed minimum thresholds for viability, but the population is assigned moderate risk for abundance/productivity due to the high uncertainty associated with the estimate.

2.2.2 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. 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 PBF essential to the conservation of the listed species (e.g., spawning gravels, water quality and quantity, side channels, or food) (Table 4).

Table 4: Types of sites, essential physical and biological features (PBFs), 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 5 describes the geographical extent within the Snake River of critical habitat for each of the four ESA-listed salmon and steelhead species. Critical habitat includes the stream channel and water column with the lateral extent defined by the ordinary high-water line, or the bankfull elevation where the ordinary high-water line is not defined. In addition, critical habitat for the three salmon species includes the adjacent riparian zone, which is defined as the area within 300 feet of the line of high water of a stream channel or from the shoreline of a standing body of water (58 FR 68543). The riparian zone is critical because it provides shade, streambank stability, organic matter input, and regulation of sediment, nutrients, and chemicals.

Table 5: Geographical extent of designated critical habitat within the Snake River for ESA listed salmon and Steelhead.

ESU/DPS	Designation	Geographical Extent of Critical Habitat
Snake River sockeye salmon	58 FR 68543; December 28, 1993	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.
Snake River spring/summer Chinook salmon	58 FR 68543; December 28, 1993. 64 FR 57399; October 25, 1999.	All Snake River reaches upstream to Hells Canyon Dam; all river reaches presently or historically accessible to Snake River spring/summer Chinook salmon within the Salmon River basin; and all river reaches presently or historically accessible to Snake River spring/summer Chinook salmon within the Hells Canyon, Imnaha, Lower Grande Ronde, Upper Grande Ronde, Lower Snake-Asotin, Lower Snake-Tucannon, and Wallowa subbasins.
Snake River fall Chinook salmon	58 FR 68543; December 28, 1993	Snake River to Hells Canyon Dam; Palouse River from its confluence with the Snake River upstream to Palouse Falls; Clearwater River from its confluence with the Snake River upstream to Lolo Creek; North Fork Clearwater River from its confluence with the Clearwater River upstream to Dworshak Dam; and all other river reaches presently or historically accessible within the Lower Clearwater, Hells Canyon, Imnaha, Lower Grande Ronde, Lower Salmon, Lower Snake, Lower Snake–Asotin, Lower North Fork Clearwater, Palouse, and Lower Snake–Tucannon subbasins.
Snake River Basin steelhead	70 FR 52630; September 2, 2005	Specific stream reaches are designated within the Lower Snake, Salmon, and Clearwater River basins. Table 21 in the Federal Register details habitat areas within the DPS's geographical range that are excluded from critical habitat designation.

Spawning and rearing habitat quality in tributary streams in the Snake River varies from excellent in wilderness and roadless areas to poor in areas subject to intensive human land uses (NMFS 2015; NMFS 2017a). Critical habitat throughout much of the Interior Columbia (which includes the Snake River and the Middle Columbia River) has been degraded by intensive agriculture, alteration of stream morphology (i.e., channel modifications and diking), riparian vegetation disturbance, wetland draining and conversion, livestock grazing, dredging, road construction and maintenance, logging, mining, and urbanization. Reduced summer streamflows, impaired water quality, and reduction of habitat complexity are common problems for critical habitat in non-wilderness areas. Human land use practices throughout the basin have caused streams to become straighter, wider, and shallower, thereby reducing rearing habitat and increasing water temperature fluctuations.

In many stream reaches designated as critical habitat in the Snake River basin, streamflows are substantially reduced by water diversions (NMFS 2015; NMFS 2017a). Withdrawal of water, particularly during low-flow periods that commonly overlap with agricultural withdrawals, often increases summer stream temperatures, blocks fish migration, strands fish, and alters sediment transport (Spence et al. 1996). Reduced tributary streamflow has been identified as a major limiting factor for Snake River spring/summer Chinook and Snake River Basin steelhead in particular (NMFS 2017a).

Many stream reaches designated as critical habitat for these species are listed on the Clean Water Act 303(d) list for impaired water quality, such as elevated water temperature (IDEQ 2011). Many areas that were historically suitable rearing and spawning habitat are now unsuitable due to high summer stream temperatures, such as some stream reaches in the Upper Grande Ronde. Removal of riparian vegetation, alteration of natural stream morphology, and withdrawal of water for agricultural or municipal use all contribute to elevated stream temperatures. Water quality in spawning and rearing areas in the Snake River has also been impaired by high levels of sedimentation and by heavy metal contamination from mine waste (e.g., IDEQ and USEPA 2003; IDEQ 2001).

The construction and operation of water storage and hydropower projects in the Columbia River basin, including the run-of-river dams on the mainstem lower Snake and lower Columbia Rivers, have altered biological and physical attributes of the mainstem migration corridor. 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:

- Minimizing winter drafts (for flood risk management and power generation) to increase flows during peak spring passage;
- Releasing water from storage to increase summer flows;
- Releasing water from Dworshak Dam to reduce peak summer temperatures in the lower Snake River;
- Constructing juvenile bypass systems to divert smolts, steelhead kelts, and adults that fall back over the projects away from turbine units;
- Providing spill at each of the mainstem dams for smolts, steelhead kelts, and adults that fall back over the projects;
- Constructing “surface passage” structures to improve passage for smolts, steelhead kelts, and adults falling back over the projects; and,
- Maintaining and improving adult fishway facilities to improve migration passage for adult salmon and steelhead.
- The above listed measures are helping to progress towards recovery.

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

Climate change is affecting aquatic habitat and the rangewide status of Snake River salmon and steelhead. The U. S. Global Change Research Program reports average warming of about 1.3°F from 1895 to 2011, and projects an increase in average annual temperature of 3.3°F to 9.7°F by

2070 to 2099 (Climate Change Science Program 2014). Climate change has negative implications for ESA listed anadromous fishes and their habitats in the Pacific Northwest (CIG 2004; Scheuerell and Williams 2005; Zabel et al. 2006; ISAB 2007). According to the Independent Science Advisory Board (ISAB 2007), climate change will cause the following:

- Warmer air temperatures will result in diminished snowpack and a shift to more winter/spring rain and runoff, rather than snow that is stored until the spring/summer melt season;

- With a smaller snowpack, watersheds will see their runoff diminished earlier in the season, resulting in lower flows in the June through September period, while more precipitation falling as rain rather than snow will cause higher flows in winter, and possibly higher peak flows; and,

- Water temperatures are expected to rise, especially during the summer months when lower flows co-occur with warmer air temperatures.

These changes will not be spatially homogeneous across the entire Pacific Northwest. Low-lying areas are likely to be more affected. Climate change may have long-term effects that include, but are not limited to, depletion of important cold-water habitat, variation in quality and quantity of tributary rearing habitat, alterations to migration patterns, accelerated embryo development, premature emergence of fry, and increased competition among species.

Climate change is predicted to cause a variety of impacts to Pacific salmon (including steelhead) and their ecosystems (Mote et al. 2003; Crozier et al. 2008a; Martins et al. 2012; Wainwright and Weitkamp 2013). The complex life cycles of anadromous fishes, including salmon, rely on productive freshwater, estuarine, and marine habitats for growth and survival, making them particularly vulnerable to environmental variation. Ultimately, the effects of climate change on salmon and steelhead across the Pacific Northwest will be determined by the specific nature, level, and rate of change and the synergy between interconnected terrestrial/freshwater, estuarine, nearshore, and ocean environments.

The primary effects of climate change on Pacific Northwest salmon and steelhead include:

- Direct effects of increased water temperatures on fish physiology.

- Temperature-induced changes to streamflow patterns.

- Alterations to freshwater, estuarine, and marine food webs; and,

- Changes in estuarine and ocean productivity.

While all habitats used by Pacific salmon will be affected, the impacts and certainty of the change vary by habitat type. Some effects (e.g., increasing temperature) affect salmon at all life stages in all habitats, while others are habitat-specific, such as streamflow variation in freshwater, sea-level rise in estuaries, and upwelling in the ocean. How climate change will

affect each stock or population of salmon also varies widely depending on the level or extent of change, the rate of change, and the unique life-history characteristics of different natural populations (Crozier et al. 2008b). For example, a few weeks' difference in migration timing can have large differences in the thermal regime experienced by migrating fish (Martins et al. 2011).

Temperature Effects. Like most fishes, salmon are poikilotherms (cold-blooded animals); therefore, increasing temperatures in all habitats can have pronounced effects on their physiology, growth, and development rates (see review by Whitney et al. 2016). Increases in water temperatures beyond their thermal optima will likely be detrimental through a variety of processes, including increased metabolic rates (and therefore food demand), decreased disease resistance, increased physiological stress, and reduced reproductive success. All of these processes are likely to reduce survival (Beechie et al. 2013; Wainwright and Weitkamp 2013; Whitney et al. 2016).

By contrast, increased temperatures at ranges well below thermal optima (i.e., when the water is cold) can increase growth and development rates. Examples of this include accelerated emergence timing during egg incubation stages, or increased growth rates during fry stages (Crozier et al. 2008a; Martins et al. 2011). Temperature is also an important behavioral cue for migration (Sykes et al. 2009), and elevated temperatures may result in earlier-than-normal migration timing. While there are situations or stocks where this acceleration in processes or behaviors is beneficial, there are also others where it is detrimental (Martins et al. 2012; Whitney et al. 2016).

Freshwater Effects. Climate change is predicted to increase the intensity of storms, reduce winter snow pack at low and middle elevations, and increase snowpack at high elevations in northern areas. Middle and lower-elevation streams will have larger fall/winter flood events and lower late summer flows, while higher elevations may have higher minimum flows. How these changes will affect freshwater ecosystems largely depends on their specific characteristics and location, which vary at fine spatial scales (Crozier et al. 2008b; Martins et al. 2012). For example, within a relatively small geographic area (the Salmon River basin in Idaho), survival of some Chinook salmon populations was shown to be determined largely by temperature, while in others it was determined by flow (Crozier and Zabel 2006). Certain salmon populations inhabiting regions that are already near or exceeding thermal maxima will be most affected by further increases in temperature and, perhaps, the rate of the increases. The effects of altered flow are less clear and likely to be basin-specific (Crozier et al. 2008b; Beechie et al. 2013). However, flow is already becoming more variable in many rivers, and this increased variability is believed to negatively affect anadromous fish survival more than other environmental parameters (Ward et al. 2015). It is likely this increasingly variable flow is detrimental to multiple salmon and steelhead populations, and to other freshwater fish species in the Columbia River basin.

Stream ecosystems will likely change in response to climate change in ways that are difficult to predict (Lynch et al. 2016). Changes in stream temperature and flow regimes will likely lead to shifts in the distributions of native species and provide "invasion opportunities" for exotic

species. This will result in novel species interactions, including predator-prey dynamics, where juvenile native species may be either predators or prey (Lynch et al. 2016; Rehage and Blanchard 2016). How juvenile native species will fare as part of "hybrid food webs," which are constructed from natives, native invaders, and exotic species, is difficult to predict (Naiman et al. 2012).

Estuarine Effects. In estuarine environments, the two big concerns associated with climate change are rates of sea level rise and water temperature warming (Wainwright and Weitkamp 2013; Limburg et al. 2016). Estuaries will be affected directly by sea-level rise: as sea level rises, terrestrial habitats will be flooded and tidal wetlands will be submerged (Kirwan et al. 2010; Wainwright and Weitkamp 2013; Limburg et al. 2016). The net effect on wetland habitats depends on whether rates of sea-level rise are sufficiently slow that the rates of marsh plant growth and sedimentation can compensate (Kirwan et al. 2010).

Due to subsidence, sea-level rise will affect some areas more than others, with the largest effects expected for the lowlands, like southern Vancouver Island and central Washington coastal areas (Verdonck 2006; Lemmen et al. 2016). The widespread presence of dikes in Pacific Northwest estuaries will restrict upward estuary expansion as sea levels rise, likely resulting in a near-term loss of wetland habitats (Wainwright and Weitkamp 2013). Sea-level rise will also result in greater intrusion of marine water into estuaries, resulting in an overall increase in salinity, which will also contribute to changes in estuarine floral and faunal communities (Kennedy 1990). While not all anadromous fish species are highly reliant on estuaries for rearing, extended estuarine use may be important in some populations (Jones et al. 2014), especially if stream habitats are degraded and become less productive. Preliminary data indicate that some Snake River Basin steelhead smolts actively feed and grow as they migrate between Bonneville Dam and the ocean (Beckman 2018), suggesting that estuarine habitat is important for this DPS.

Marine Effects. In marine waters, increasing temperatures are associated with observed and predicted poleward range expansions of fish and invertebrates in both the Atlantic and Pacific Oceans (Lucey and Nye 2010; Asch 2015; Cheung et al. 2015). Rapid poleward species shifts in distribution in response to anomalously warm ocean temperatures have been well documented in recent years, confirming this expectation at short time scales. Range extensions were documented in many species from southern California to Alaska during unusually warm water associated with "the blob" in 2014 and 2015 (Bond et al. 2015; Di Lorenzo and Mantua 2016) and past strong El Niño events (Pearcy 2002; Fisher et al. 2015). For example, recruitment of the introduced European green crab (Carcinus maenas) increased in Washington and Oregon waters during winters with warm surface waters, including 2014 (Yamada et al. 2015). Similarly, the Humboldt squid (Dosidicus gigas) dramatically expanded its range northward during warm years of 2004–09 (Litz et al. 2011). The frequency of extreme conditions, such as those associated with El Niño events or "blobs" is predicted to increase in the future (Di Lorenzo and Mantua 2016), further altering food webs and ecosystems.

Expected changes to marine ecosystems due to increased temperature, altered productivity, or acidification will have large ecological implications through mismatches of co-evolved species and unpredictable trophic effects (Cheung et al. 2015; Rehage and Blanchard 2016). These

effects will certainly occur, but predicting the composition or outcomes of future trophic interactions is not possible with current models.

Wind-driven upwelling is responsible for the extremely high productivity in the California Current ecosystem (Bograd et al. 2009; Peterson et al. 2014). Minor changes to the timing, intensity, or duration of upwelling, or the depth of water-column stratification, can have dramatic effects on the productivity of the ecosystem (Black et al. 2015; Peterson et al. 2014). Current projections for changes to upwelling are mixed: some climate models show upwelling unchanged, but others predict that upwelling will be delayed in spring and more intense during summer (Rykaczewski et al. 2015). Should the timing and intensity of upwelling change in the future, it may result in a mismatch between the onset of spring ecosystem productivity and the timing of salmon entering the ocean, and a shift toward food webs with a strong sub-tropical component (Bakun et al. 2015).

Columbia River anadromous fishes also use coastal areas of British Columbia and Alaska and mid-ocean marine habitats in the Gulf of Alaska, although their fine-scale distribution and marine ecology during this period are poorly understood (Morris et al. 2007; Pearcy and McKinnell 2007). Increases in temperature in Alaskan marine waters have generally been associated with increases in productivity and salmon survival (Mantua et al. 1997; Martins et al. 2012), thought to result from temperatures that are normally below thermal optima (Gargett 1997). Warm ocean temperatures in the Gulf of Alaska are also associated with intensified downwelling and increased coastal stratification, which may result in increased food availability to juvenile salmon along the coast (Hollowed et al. 2009; Martins et al. 2012). Predicted increases in freshwater discharge in British Columbia and Alaska may influence coastal current patterns (Foreman et al. 2014), but the effects on coastal ecosystems are poorly understood.

In addition to becoming warmer, the world's oceans are becoming more acidic as increased atmospheric carbon dioxide is absorbed by water. The North Pacific is already acidic compared to other oceans, making it particularly susceptible to further increases in acidification (Lemmen et al. 2016). Laboratory and field studies of ocean acidification show that it has the greatest effects on invertebrates with calcium-carbonate shells, and has relatively little direct influence on finfish; see reviews by Haigh et al. (2015) and Mathis et al. (2015). Consequently, the largest impact of ocean acidification on salmon will likely be the influence on marine food webs, especially the effects on lower trophic levels (Haigh et al. 2015; Mathis et al. 2015). Marine invertebrates fill a critical gap between freshwater prey and larval and juvenile marine fishes, supporting juvenile salmon growth during the important early-ocean residence period (Daly et al. 2009, 2014).

Uncertainty in Climate Predictions. There is considerable uncertainty in the predicted effects of climate change on the globe as a whole, and on the Pacific Northwest in particular. Many of the effects of climate change (e.g., increased temperature, altered flow, coastal productivity, etc.) will have direct impacts on the food webs that species rely on in freshwater, estuarine, and marine habitats to grow and survive. Such ecological effects are extremely difficult to predict even in fairly simple systems, and minor differences in life-history characteristics among stocks of salmon may lead to large differences in their response (e.g. Crozier et al. 2008b; Martins et al. 2011, 2012). This means it is likely that there will be "winners and losers," meaning some

salmon populations may enjoy different degrees or levels of benefit from climate change while others will suffer varying levels of harm. Climate change is expected to impact anadromous fishes during all stages of their complex life cycle. In addition to the direct effects of rising temperatures, indirect effects include alterations in flow patterns in freshwater and changes to food webs in freshwater, estuarine, and marine habitats. There is high certainty that predicted physical and chemical changes will occur; however, the ability to predict bio-ecological changes to fish or food webs in response to these physical/chemical changes is extremely limited, leading to considerable uncertainty. In additional to physical and biological effects, there is also the question of indirect effects of climate change and whether human "climate refugees" will move into the range of salmon and steelhead, increasing stresses on their respective habitats (Dalton et al. 2013; Poesch et al. 2016).

Summary. Climate change is expected to impact Pacific Northwest anadromous fishes during all stages of their complex life cycle. In addition to the direct effects of rising temperatures, indirect effects include alterations in stream-flow patterns in freshwater and changes to food webs in freshwater, estuarine, and marine habitats. There is high certainty that predicted physical and chemical changes will occur; however, the ability to predict bio-ecological changes to fish or food webs in response to these physical/chemical changes is extremely limited, leading to considerable uncertainty. As we continue to deal with a changing climate, management actions may help alleviate some of the potential adverse effects (e.g., hatcheries serving as a genetic reserve and source of abundance for natural populations, increased riparian vegetation to control water temperatures, etc.).

Climate change is expected to make recovery targets for salmon and steelhead populations more difficult to achieve. Climate change is expected to alter critical habitat by generally increasing temperature and peak flows and decreasing base flows. Although changes will not be spatially homogenous, effects of climate change are expected to decrease the capacity of critical habitat to support successful spawning, rearing, and migration. Habitat action can address the adverse impacts of climate change on salmon and steelhead. Examples include restoring connections to historical floodplains and freshwater and estuarine habitats to provide fish refugia and areas to store excess floodwaters, protecting and restoring riparian vegetation to ameliorate stream temperature increases, and purchasing or applying easements to lands that provide important cold water habitat and cold water refugia (Battin et al. 2007; ISAB 2007).

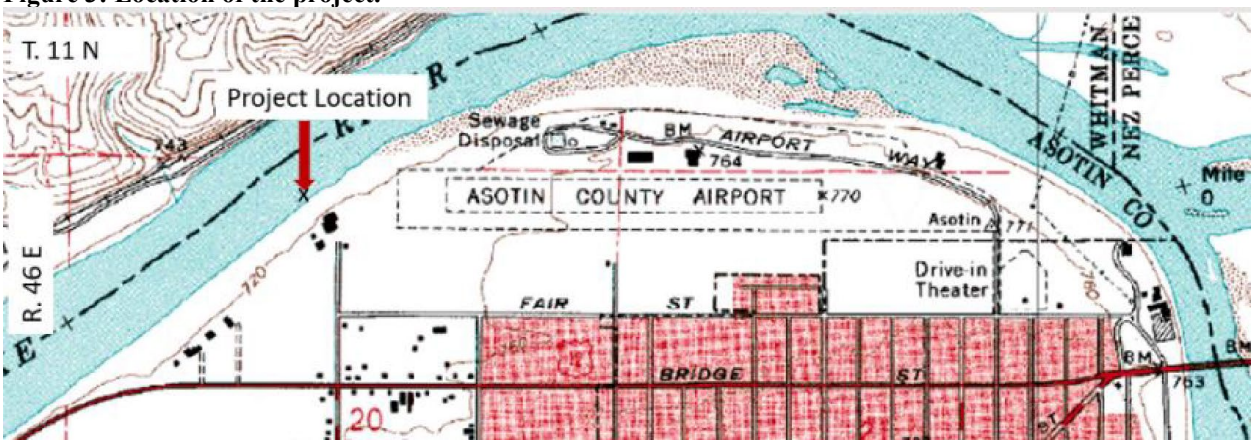
The proposed dock will help facilitate the growing cruise boat industry and will be in place for the foreseeable future. The proposed action will increase the amount of over-water structure, which will increase the habitat for piscivorous fish that prey upon ESA-listed Snake River salmonids. Warmer water temperature in the future will be more favorable to the native and non-native piscivorous fish that are negatively affecting ESA-listed species. These effects will therefore likely occur while climate change-related effects are becoming more evident within the range of the Snake River salmon and steelhead.

2.3. 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 project site is located within the city limits of Clarkston, Asotin County, Washington, on the south side of the Snake River near Red Wolf Bridge. It is in Section 20[2], Township 11 North, Range 46 East of the Willamette Meridian, as shown in Figure 3 (USGS map). It is approximately at River Mile (RM) 137.9.

Figure 3: Location of the project.



The project is located within the Water Resources Inventory Area (WRIA) 35 (Middle Snake) and Hydrologic Unit Code 17060107 (Lower Snake-Tucannon River)[3]. The shoreline at this location was developed for commerce on the Snake River and is adjacent to the navigation channel. Figure 3 (upper left, red arrow pointing to "X") shows the project location entirely within the Snake River. The project begins in the river channel, approximately 38 feet south of the southern boundary of the navigation channel.

The action area extends radially up to 300 feet out into the river channel and downstream of the project site in underwater environments. The 300 feet is the area that will be affected by the installation process, specifically the movements and noise of the jet boat assisting in installation.

The action area is used by all freshwater life history stages of threatened Snake River fall Chinook salmon and Snake River Basin steelhead. It also is used by migratory life stages of spring/summer Chinook salmon and sockeye salmon. The Snake River within the action area is designated critical habitat for Snake River fall Chinook salmon, spring/summer Chinook salmon, sockeye salmon, and Snake River Basin steelhead.

[2] The JARPA incorrectly listed the location as being in Section 17, rather than Section 20.

[3] The JARPA incorrectly identified the HUC as 17060103.

2.4. Environmental Baseline

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

Dams and irrigation systems, many miles upriver of the action area, have had major negative impacts by diverting large quantities of water, stranding fish, and acting as barriers to passage. Further habitat degradation has occurred through livestock grazing and urbanization, which produces returning effluents containing chemicals and fine sediments that collect, to some extent, in the depositional zone of the Snake River in the upper sections of Lower Granite reservoir.

The Snake River HUC containing the action area is identified in the Washington State Department of Ecology 303(d) list as Category 5 (impaired) for pH, temperature, and dissolved oxygen for the action area, which is within WRIA 35 – Middle Snake (https://apps.ecology.wa.gov/ApprovedWQA/ApprovedPages/ApprovedSearchResults.aspx).

In addition to those alterations of river conditions in the action area (from upstream and nearby sources), the influence of climate change has resulted in unusual precipitation patterns (including low snow pack), increased forest fires (and resultant suspended sediment increases) and water temperature warming[4]. The BA assessed conditions in the action area in terms of habitat parameters and their functions, as summarized below (Table 6). Many of the parameters listed below are not properly functioning.

[4] Ambient (air) temperatures in the region have warmed about 1.5° F (.8°C) since the 1970s. They are expected to warm another 1 to 4 degrees F (.6 to 2.2°C) by the 2030s (RMJOC 2018).

Table 6: List of habitat parameters for ESA-listed salmonids

Pathways Indicators	Environmental Bassline		
	Properly Functioning	At Risk	Not Functioning Properly
Temperature			X
Suspended sediment			X
Chemical contamination			X
Physical Barriers		X	
Substrate			X
Large woody debris	NA		
Pool quality			X
Off-channel habitat			X
Habitat refugia			X
Stream bank stability			X
Flood plain connectivity			X
Road density and location			X
Disturbance history riparian reserves			X

The habitat within the action area has been degraded by a variety of human impacts. Due to hydropower infrastructure and the shipping industry, much of the habitat has been altered from a free flowing river to a series of reservoirs. The Snake River in the action area has increased water temperature, decreased dissolved oxygen, is listed as impaired, and most habitat parameters required for healthy salmonid populations are not functioning properly.

The substrate below the proposed dock is sandy silt and the water is 8-14 feet deep. The action area is within the headwaters of Lower Granite Reservoir and therefore the upstream impacts mentioned above are effecting the immediate action area. These parameters make the action area unlikely rearing or spawning habitat for salmonids. However, some unknown proportion of migrating juvenile salmonids that pass this site would be close enough to the existing dock to encounter increased exposure to predator fish, and some of those juveniles would be killed because of the hiding cover the proposed dock affords predators.

2.5. Effects of the Action

Under the ESA, "effects of the action" are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved

in the action (see 50 CFR 402.17). In our analysis, which describes the effects of the proposed action, we considered 50 CFR 402.17(a) and (b).

2.5.1 Effects on the Species

Fall Chinook are most reliant on the action area for rearing and migration. It is possible that a few fall Chinook salmon may utilize the river near the action area as spawning habitat, but the majority of adults moving through the reach are destined for upriver spawning sites. Similarly, the juvenile fish in the action area will have emerged from redds in upstream reaches of the Snake, Clearwater, Salmon, Grande Ronde, or Imnaha Rivers. Juvenile fall Chinook salmon typically emerge from redds in March – May. Many of the juvenile fall Chinook salmon out-migrating from the Clearwater and Snake rivers spend time in shoreline areas (less than 9.8 feet [3 meters] in depth) in the Lower Granite reservoir and less time in downriver reservoirs, where they prefer sandy-substrate areas (Curet 1993, Bennett et al. 1997). However, by mid-late May in warm years and by early July in cool years, water temperatures increase in nearshore areas and most juvenile salmonids may move away from shallowest shorelines and begin dispersing offshore (Curet 1993; Fresh 2000; Connor et al. 2015). In large rivers and reservoirs during summer, rearing juveniles may be difficult to observe because they are spread out over large areas in deeper water habitats (Tabor et al. 2006). This dispersion to deeper water potentially puts juvenile salmonids in close proximity to the deeper water (14 feet) associated with the new dock in the action area. The water depth under the proposed dock should be between 8-14 feet deep, with a silty sand substrate.

Juvenile spring/summer Chinook salmon, sockeye salmon, and steelhead use the action area for migrating and limited rearing and resting during out-migration. Adults of all species are not likely to be present during the work window.

We expect effects to rearing juveniles related to the construction and installation of the dock to be very small. This is because the only disturbance below the OHWM will be the installation of the dock and the underwater welding required for the installation. The disturbance by divers in the water and the noise and site disturbance of underwater welding has the potential to displace any fish within the immediate area. This disturbance is expected to move fish only a short distance and to similar habitat. Further, the in-water disturbance will be short-lived and last for a few hours a day for less than a week.

The river substrate in this location is sandy silt. There will be underwater welding involving existing pilings during installation; however, the depth under the dock is sufficient that the welding activities will not likely disturb river substrate and will not cause suspension of sediment. There is a very small possibility that a small amount of sediment will be stirred up from the bottom during installation. A jet boat will be used to move and hold the dock in position during installation. This disturbance should be very minor, because the water depth where the jet boat will be positioned is 10 or more feet deep (depending on reservoir pool level), which should be deep enough that the water disturbance from the jet boat should not disturb the sediment. The new dock is being connected to an existing dolphin (a cluster of pilings) so there will not be any disturbance to the riverbank, and there are no new piles required for the installation.

Delivery of toxic chemicals to the river is also unlikely because of the brief period and type of installation, with the dock constructed offsite and moved into position and installed using a jet boat. Also, the COE or applicant will apply the following conservation measures when using machinery to install the dock:

- Equipment staging will be limited to the asphalted area of the 14th Street Dock and will not disturb vegetated surfaces.

- Jet boat support will launch from a commercial launch site, and a Spill Prevention Control and Countermeasure Plan will be prepared, approved, and implemented by the contractor. The plan will be site-specific and cover the project scope of work.

- A Construction Stormwater Pollution Prevention Plan will be implemented if required by local permits.

- Any equipment used for this project shall be free of external petroleum-based products while the work is performed in the water.

The anticipated adverse impact from the proposed action will be the creation of additional over-water structure at this site, leading to an increase in predation mortality for subyearling and yearling fall and spring/summer Chinook salmon, juvenile sockeye salmon, and juvenile steelhead. The NMFS recovery plans for all four species identify mortality from predator fish as limiting factors for recovery of the species (NMFS 2015, NMFS 2017a, NMFS 2017b). Connor et al. (2015) estimated that smallmouth bass found in shoreline areas of the free-flowing Snake River consumed more than 600,000 subyearling fall Chinook salmon in 2014. These same researchers found that smallmouth bass diets were mainly composed of salmonids from March through May, which coincides with the timing of juvenile salmonid downriver migration. After the Juvenile migration is completed, these researchers found that smallmouth bass diets were composed mainly of crayfish. In the Columbia River basin, studies have found predation from smallmouth bass and other piscivorous fish to be most intense upon subyearling Chinook salmon (Chapman 2007, Connor et al. 2015).

Smallmouth bass and other native and non-native piscivorous fish have a strong affinity for in-water structures such as docks (Carrasquero 2001), where they can hide in the shadows to prey upon juvenile salmonids. In Lake Washington, Washington, 68% of all adult smallmouth bass were seen within two meters of a dock (Fresh et al. 2003). As light levels decrease (e.g., underneath docks), predation on juvenile salmonids by piscivorous fishes may increase due to a diminished ability for the juvenile salmonids to detect predators (Rondorf et al. 2010). The proposed dock will be designed with a functional 60% light penetration, which will help decrease the shading and in turn reduce predation. However, we expect that the proposed dock would enhance habitat for native and non-native piscivorous fish, particularly northern pikeminnow and smallmouth bass, and therefore increase predation upon ESA listed juvenile salmonids.

Quantifying the increase in predation from the proposed dock is not possible due to the range of responses that individual predator and prey fish will have to the changed habitat. The footprint

of the proposed added dock section is small (576 square feet) within this wide reach of the Snake River. Under the environmental baseline, some unknown proportion of migrating juvenile salmonids that pass this site would be close enough to the existing dock to encounter increased exposure to predator fish, and some of those juveniles would be killed because of the hiding cover the existing dock affords predators. The new dock section may simply move the location of that existing exposure area a little farther offshore and not result in any appreciable increase in predation on migrating juvenile fish; however, the increased area of over-water structure may foster a few more predator fish at this site and may thus somewhat increase the exposure risk and predation of migrating juvenile salmon and steelhead.

For juvenile fall Chinook salmon in particular, in the spring through mid-summer early rearing fish (alevin/fry lifestage) will be in shallower water than where the new dock is located. That lifestage favors water less than six feet deep (Tiffan and Connor 2012), whereas the depths at the new dock are 8-14 feet. As such, the new dock will not give predators additional advantages in catching the fall Chinook salmon fry; however, the addition of the dock could concentrate a few more bass and pikeminnow in the area and those predators may at times hunt in the shallower waters where the fry occur. Late summer/fall/winter rearing juvenile "reservoir type" fall Chinook salmon will tend to be farther offshore, at depths comparable to those at the new dock site. However, the vast majority of the reservoir type fall Chinook salmon, however, will be farther downstream in the reservoirs when they reach that life stage.

The potential increase in predation of juvenile fish caused by the new section of dock is expected to be relatively small compared to the predation already associated with the site. The predation increase would be extremely small relative to the total predation mortality from piscivorous fish across all salmonid habitat in the Snake River. Due to the difficulty of actually enumerating the increase in salmon and steelhead juveniles preyed upon yearly because of the new section of dock, we will use the size of the dock as a surrogate for quantifying those adverse effects. We anticipate that the proposed dock would be in place for the foreseeable future, so the increase in predation associated with the dock would also occur for the foreseeable future. There will also be an increase in overwater structure when the boats are present. The primary use season for the cruise boat industry does overlap the migration of ESA-listed salmonid out migration. However, the cruise ships will only be moored temporarily, so this effect will be intermittent and short-lived. In future decades, climate change will likely cause increased water temperatures, which could increase predator fish consumption rates and growth rates (NMFS 2015). The creation of enhanced predator habitat could therefore have greater adverse effects upon ESA-listed salmonids in future years.

The adverse effect from the proposed action on Snake River ESA-listed salmonids will be from the increased predation by native and non-native piscivorous fish species that prefer and are advantaged by over-water structures, such as docks. This increase in predation will likely be small annually but the adverse effect will be cumulative over the life of the dock.

2.5.2 Effects on Critical Habitat

The action area includes designated critical habitat for Snake River spring/summer Chinook salmon, fall Chinook salmon, sockeye salmon, and steelhead. The proposed action has the

potential to affect the following PBFs: Water quality, and safe passage. Any modification of these PBFs may affect freshwater migration or rearing in the action area. Proper function of these PBFs is necessary to support successful adult and juvenile migration, adult holding, spawning, rearing, and the growth and development of juvenile fish.

The following discussion on PBFs applies to freshwater rearing and migration sites for fall and spring/summer Chinook salmon, sockeye salmon, and steelhead within the action area.

2.5.2.1 Water Quality

Although machinery will be used to install the 14th street dock, the risk of chemical contamination is very small. As specified in the project description by COE, the fuel storage and equipment fueling will be required to be within areas that cannot reach the river or will be within a containment area. The measures likely eliminate or at least greatly reduce the likelihood of water contamination. Equipment will be cleaned and inspected prior to arrival onsite, minimizing the potential of leaks or drips. Spill containment and cleanup materials will also be on hand to address any spills as quickly as possible. A jet boat will be used to move and hold the dock while it is being attached, and this activity will be brief (several hours within a one-week period) and not likely to appreciably affect the water quality PBF. Together, these measures and project features will result in only a very small likelihood of chemical contamination, and ensure that chemical contamination that does occur will be so small in scale that it will not meaningfully reduce the conservation value of the PBF.

2.5.2.2 Safe passage

The proposed new dock will increase the amount of over-water structure at the larger, already existing dock by 576 square feet. As discussed in the Effects on the Species section, above, there is likely to be a small increase in predation on migrating and rearing juveniles at the dock site because the dock will enhance habitat for native and non-native piscivorous fish. This effect could be amplified somewhat over the life of the dock, as climate change may favor further proliferation and feeding rates of non-native predators including smallmouth bass and northern pikeminnow. The function of the safe passage PBF at the site will likely be somewhat reduced; however, the effects on the function of the PBF for the river reach as a whole will be very small.

2.6. 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 and 402.17(a)). Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA.

Some continuing non-federal activities are reasonably certain to contribute to climate effects within the action area. However, it is difficult if not impossible to distinguish between the action area's future environmental conditions caused by global climate change that are properly part of the environmental baseline *vs.* cumulative effects. Therefore, all relevant future climate-related

environmental conditions in the action area are described in the environmental baseline (Section 2.4).

The entire action is within the Port of Clarkston area, which is used by barge and recreation traffic. Over the past few years, there has been an increase in the cruise line industry in the Columbia and Snake Rivers. With the growing population of the Pacific Northwest, it can be assumed that the growth of the cruise line industry and activity within this particular Port area will continue steadily in the future. .

2.7. 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 2.5) to the environmental baseline (Section 2.4) and the cumulative effects (Section 2.6), taking into account the status of the species and critical habitat (Section 2.2), to formulate the agency's Opinion as to whether the proposed action is likely to: (1) Reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing its numbers, reproduction, or distribution; or (2) appreciably diminish the value of designated or proposed critical habitat as a whole for the conservation of the species.

The ESA-listed Snake River salmon and steelhead species primarily use the action area as a small portion of their migration corridor in this reach of the Snake River. Both adults and juveniles of the four species pass through this area. There may be some limited spawning by fall Chinook salmon in the mainstem Snake River within a few miles upstream of the action area; and there is likely some rearing use of the action area, particularly by subyearling and yearling fall Chinook salmon and 1-3 year-old pre-smolt steelhead. The migration corridor of the Columbia and Snake Rivers is highly altered by hydropower infrastructure. These changes have favored many native and non-native piscivorous fish species that prefer reservoir type habitats rather than free flowing river habitats. These native and non-native piscivorous fish species prey upon rearing and migrating juvenile ESA-listed salmonids and are likely a limiting factor in the recovery of ESA-listed Snake River salmonids.

The habitat within the action area has been degraded by a variety of human impacts. Due to hydropower infrastructure and the shipping industry, much of the habitat has been altered from a free flowing river to a series of reservoirs. The impaired habitat functions in the Snake River also include decreased dissolved oxygen and increased water temperature, which will be exacerbated by climate change over the period of effects of the action (lifespan of the new section of dock).

For cumulative effects, the entire action is within the Port, which is heavily dominated by barge traffic and dredging of the shipping channels. Over the past few years, there has been an increase in the cruise line industry in the Columbia and Snake Rivers. With the growing population of the northwest, it can be assumed that the growth of the cruise line industry will continue in the future. This growth will continue to require the use of the port and dock which will have continuing effect on ESA-listed salmonids.

As noted above in the discussion of the effects of the proposed action, the new section of dock will likely result in a small increase in adverse effects on Snake River ESA-listed salmon and steelhead. Those adverse effects will be from the increased predation of juvenile salmon and steelhead by native and non-native piscivorous fish. The predator fish prefer, and are advantaged by over-water structures such as docks. The increase in predation associated with the proposed action will likely be small annually, but the adverse effects will continue for the many-year life of the dock. The function of the designated critical habitat safe passage PBF will be similarly affected: There will be a small, localized decrease in that PBF function, due to the small addition to the over-water structure and the associated increase in predator fish and instances of successful predation on juvenile salmon and steelhead. Both of these affects will be very small and will not appreciable decrease the ability of the species to recover.

2.8. Conclusion

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

2.9. 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 ITS.

2.9.1 Amount or Extent of Take

In the Opinion, NMFS determined that incidental take is reasonably certain to occur as follows: The proposed dock will modify habitat under and immediately adjacent to the existing dock site on the Snake River shoreline. Juvenile fish are likely to encounter predator fish attracted by this modified habitat provided by the proposed dock. These encounters will result in killing individual fall Chinook salmon, spring/summer Chinook salmon, sockeye salmon, and steelhead juveniles each year.

Estimating the specific number of fish killed by this habitat-modifying activity is difficult if not impossible, despite the use of the best available scientific and commercial data, because of the large range of responses that individual predator and prey fish will have to the changed habitat. While this uncertainty makes it impossible to quantify take in terms of numbers of fish killed, the extent of habitat change to which present and future generations of fish will be exposed is readily discernible, is proportionate to the amount of harm, and presents a reliable measure of the extent of take that can be monitored and tracked. Therefore, we will use a habitat surrogate for take associated with the proposed action. Specifically, the surrogate for incidental take associated with the modified habitat is a maximum of 576 square feet of added over-water dock structure in the action area. Although this surrogate is coextensive with the proposed action, it nevertheless functions as an effective reinitiation trigger for the reasons outlined above.

2.9.2 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

2.9.3 Reasonable and Prudent Measures

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

The COE shall:

- Monitor the proposed action to ensure that the incidental take surrogate is not exceeded.

2.9.4 Terms and Conditions

The terms and conditions described below are non-discretionary, and the COE or any applicant must comply with them in order to implement the RPMs (50 CFR 402.14). The COE or any applicant has a continuing duty to monitor the impacts of incidental take and must report the progress of the action and its impact on the species as specified in this ITS (50 CFR 402.14). If the entity to whom a term and condition is directed does not comply with the following terms and conditions, protective coverage for the proposed action would likely lapse.

1. The following terms and conditions implement RPM 1:

    a. Confirm that the installed floating dock structure does not exceed 576 square feet. The COE shall contact the NMFS Snake Basin Office immediately if the completed structure exceeds this square footage.

    b. NOTICE: If a steelhead or salmon becomes sick, injured, or killed as a result of project-related activities, and if the fish would not benefit from rescue, the finder should leave the fish alone, make note of any circumstances likely causing the death

or injury, location and number of fish involved, and take photographs, if possible. If the fish in question appears capable of recovering if rescued, photograph the fish (if possible), transport the fish to a suitable location, and record the information described above. Adult fish should generally not be disturbed unless circumstances arise where an adult fish is obviously injured or killed by proposed activities, or some unnatural cause. The finder must contact NMFS Law Enforcement at (206) 526-6133 as soon as possible. The finder may be asked to carry out instructions provided by Law Enforcement to collect specimens or take other measures to ensure that evidence intrinsic to the specimen is preserved.

2.10. Conservation Recommendations

Section 7(a)(1) of the ESA directs federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Specifically, conservation recommendations are suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information (50 CFR 402.02).

The following recommendations are discretionary measures that NMFS believes are consistent with this obligation and therefore should be carried out by COE:

1. Through its permitting, funding, and public outreach, the COE should encourage and require grating on dock floats in order to increase the transmission of light through the structures and thus create less desirable and advantageous habitat for predator fish.

2.11. Reinitiation of Consultation

This concludes formal consultation for the 14th Street Dock Auxiliary Float.

As 50 CFR 402.16 states, reinitiation of consultation is required and shall be requested by the federal agency or by the NMFS 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 identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological Opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

The amount of take will be considered exceeded if the square footage of the floating dock is greater than 576 square feet.

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. Under the MSA, this consultation is intended to promote the conservation of EFH as necessary to support sustainable fisheries and the managed species' contribution to a healthy ecosystem. For the purposes of the MSA, EFH means "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity", and includes the physical, biological, and chemical properties that are used by fish (50 CFR600.10).

Adverse effect means any impact that reduces quality or quantity of EFH, and may include direct or indirect physical, chemical, or biological alteration of the waters or substrate and loss of (or injury to) benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality or quantity of EFH. Adverse effects 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. Such recommendations may include measures to avoid, minimize, mitigate, or otherwise offset the adverse effects of the action on EFH [CFR 600.905(b)].

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 (PFMC) and approved by the Secretary of Commerce.

3.1. Essential Fish Habitat Affected by the Project

- The Habitats of Particular Concern (HAPC) for salmon are: complex channel and floodplain habitat, spawning habitat, thermal refugia, estuaries, and submerged aquatic vegetation (see descriptions of salmon HAPCs in Appendix A to the Pacific Coast Salmon FMP, https://www.pcouncil.org/documents/2019/08/salmon-efh-appendix-a.pdf/.

3.2. Adverse Effects on Essential Fish Habitat

Adverse effects to EFH in the action area are identical to adverse effects to critical habitat described in the Opinion. The proposed action will decrease safe passage conditions for salmon EFH beneath and immediately adjacent to the dock structure.

3.3. Essential Fish Habitat Conservation Recommendations

NMFS determined that the following conservation recommendation is necessary to avoid, minimize, mitigate, or otherwise offset the impact of the proposed action on EFH.

1. Through its permitting, funding, and public outreach, the COE should encourage and require grating on dock floats in order to increase the transmission of light through the structures and thus create less desirable and advantageous habitat for predator fish.

Fully implementing this EFH conservation recommendation would protect, by avoiding or minimizing the adverse effects described in section 3.2, above, for Pacific Coast salmon.

3.4. 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

The DQA specifies three components contributing to the quality of a document. They are utility, integrity, and objectivity. This section of the Opinion addresses these DQA components, documents compliance with the DQA, and certifies that this Opinion has undergone pre-dissemination review.

4.1. Utility

Utility principally refers to ensuring that the information contained in this consultation is helpful, serviceable, and beneficial to the intended users. The intended users of this Opinion are the COEs. Other interested users could include the Port of Clarkston. Individual copies of this Opinion were provided to the COE. The document will be available within 2 weeks at the NOAA Library Institutional Repository [https://repository.library.noaa.gov/welcome]. 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 and 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.

5. REFERENCES

Asch, R. 2015. Climate change and decadal shifts in the phenology of larval fishes in the California Current ecosystem. PNAS:E4065-E4074, 7/9/2015.

Baker, D. J., T. G. Brown, and R. Brown. 2015. Snake River Sockeye Salmon Captive Broodstock Program Hatchery Element. Annual Progress Report, January 1, 2014-December 31.2014. IDFG Report Number 15-10 March 2015. 30 pp.

Baker, D. J., T. G. Brown, and W. Demien. 2016. Snake River Sockeye Salmon Captive Broodstock Program Hatchery Element. Annual Progress Report, January 1, 2015-December 31.2015. IDFG Report Number 16-4. March 2016. 31 pp.

Baker, D. J., T. G. Brown, and W. Demien. 2017. Snake River Sockeye Salmon Captive Broodstock Program Hatchery Element. Annual Progress Report, January 1, 2016-December 31.2016. IDFG Report Number 17-8. March 2017. 31 pp.

Baker, D. J., T. G. Brown, and W. Demien. 2018. Snake River Sockeye Salmon Captive Broodstock Program Hatchery Element. Annual Progress Report, January 1, 2017-December 31.2017. IDFG Report Number 18-15. June 2018. 29 pp.

Bakun, A., B. A. Black, S. J. Bograd, M. García-Reyes, A. J. Miller, R. R. Rykaczewski, and J. Sydeman. 2015. Anticipated Effects of Climate Change on Coastal Upwelling Ecosystems. Current Climate Change Reports 1:85-93. DOI: 10.1007/s40641-015-0008-4, 3/7/2015.

Battin, J., and coauthors. 2007. Projected impacts of climate change on salmon habitat restoration. Proceedings of the National Academy of Sciences of the United States of America 104(16):6720-6725.

Beckman, B. 2018. Estuarine growth of yearling Snake River Chinook salmon smolts. Progress report. Northwest Fisheries Science Center, Seattle, Washington, 7/3/2018.

Beechie, T., H. Imaki, J. Greene, et al. 2013. Restoring Salmon Habitat for a Changing Climate. River Research and Application 29:939-960.

Bennett, D.H., M. Madsen, and T.J. Dresser, Jr. 1997. Habitat use, abundance, timing, and factors related to the abundance of subyearling chinook salmon rearing along the shorelines of lower Snake River pools. Completion report to the U.S. Army Corps of Engineers, Walla Walla District prepared by University of Idaho, Department of Fish and Wildlife Resources. Walla Walla: U.S. Army Corps of Engineers

Bjornn, T. C. and D. W. Reiser. 1991. Habitat requirements of salmonids in streams. Pages 83–138 in W.R. Meehan, editor. Influences of forest and rangeland management on salmonid fishes and their habitats. American Fisheries Society, Special Publication 19. Bethesda, Maryland.

Bjornn, T. C., D. R. Craddock, and D. R. Corley. 1968. Migration and survival of Redfish Lake, Idaho, sockeye salmon, Oncorhynchus nerka. Transactions of the American Fisheries Society. 97:360-373.

Black, B., J. Dunham, B. Blundon, J. Brim Box, and A. Tepley. 2015. Long-term growth-increment chronologies reveal diverse influences of climate forcing on freshwater and forest biota in the Pacific Northwest. Global Change Biology 21:594-604. DOI: 10.1111/gcb.12756.

Bograd, S., I. Schroeder, N. Sarkar, X. Qiu, W. J. Sydeman, and F. B. Schwing. 2009. Phenology of coastal upwelling in the California Current. Geophysical Research Letters 36:L01602. DOI: 10.1029/2008GL035933.

Bond, N. A., M. F. Cronin, H. Freeland, and N. Mantua. 2015. Causes and impacts of the 2014 warm anomaly in the NE Pacific. Geophysical Research Letters 42:3414–3420. DOI: 10.1002/2015GL063306.

Carrasquero, J. 2001. Over-Water Structures: Freshwater Issues. Washington State Department of Fish and Wildlife.

Chapman, D., W. Platts, D. Park and M. Hill. 1990. Status of Snake River sockeye salmon. Final Report to PNUCC, June 26. Don Chapman Consultants Inc.: Boise, Idaho. 96 p.

Chapman, D. W. 2007. Effects of Docks in Wells Dam Pool on Subyearling Summer/Fall Chinook Salmon. Douglas County Public Utility District. 19 p .

Cheung, W., N. Pascal, J. Bell, L. Brander, N. Cyr, L. Hansson, W. Watson-Wright, and D. Allemand. 2015. North and Central Pacific Ocean region. Pages 97-111 in N. Hilmi, D. Allemand, C. Kavanagh, and et al, editors. Bridging the Gap Between Ocean Acidification Impacts and Economic Valuation: Regional Impacts of Ocean Acidification on Fisheries and Aquaculture. DOI: 10.2305/IUCN.CH.2015.03.en.

Climate Change Science Program (CCSP). 2014. Climate Change Impacts in the United States. Third National Climate Assessment. U.S. Global Change Research Program. DOI:10.7930/J0Z31WJ2.

Climate Impacts Group (CIG). 2004. Overview of Climate Change Impacts in the U.S. Pacific Northwest, 7/29/2004.

Connor, W. P., H. L. Burge, R. Waitt, and T. C. Bjornn. 2002. Juvenile life history of wild fall Chinook salmon in the Snake and Clearwater Rivers. North American Journal of Fisheries Management 22:703-712.

Connor, W. P., and H. L. Burge. 2003. Growth of wild subyearling fall Chinook salmon in the Snake River. North American Journal of Fisheries Management 23:594-599.

Connor, W. P., J. G. Sneva, K. F. Tiffan, R. K. Steinhorst, and D. Ross. 2005. Two alternative juvenile life history types for fall Chinook salmon in the Snake River Basin. Transactions of the American Fisheries Society 134:291-304.

Connor, W.P., F. Mullins, K. Tiffan, R. Perry, J.M. Erhardt, S.J. St. John, B.K. Bickford, and T.N. Rhodes. 2015. Research, Monitoring, and Evaluation of Emerging Issues and Measures to Recover the Snake River Fall Chinook Salmon ESU, BPA Project Number 199102900. 79 p.

Coutant, C. C., and R. R. Whitney. 2006. Hydroelectric system development: effects on juvenile and adult migration. Pages 249-324 in R. N. Williams, editor. Return to the River- Restoring Salmon to the Columbia River. Elsevier Academic Press, Amsterdam.

Curet, T.D. 1993. Habitat use, food habits and the influence of predation on subyearling chinook salmon in Lower Granite and Little Goose pools, Washington. Master's thesis, University of Idaho.

Crozier, L. and R. W. Zabel. 2006. Climate impacts at multiple scales: evidence for differential population responses in juvenile Chinook salmon. Ecology 75:1100-1109. DOI: 10.1111/j.1365-2656.2006.01130.x.

Crozier, L. G., R. W. Zabel, and A. F. Hamlet. 2008a. Predicting differential effects of climate change at the population level with life-cycle models of spring Chinook salmon. Global Change Biology 14:236-249. DOI: 10.1111/j.1365-2486.2007.01497.x.

Crozier, L. G., A. P. Hendry, P. W. Lawson, T. P. Quinn, et al. 2008b. Potential responses to climate change for organisms with complex life histories: evolution and plasticity in Pacific salmon. Evolutionary Applications 1:252-270. DOI: 10.1111/j.1752-4571.2008.00033.x.

Dalton, M., P. W. Mote, and A. K. Stover. 2013. Climate change in the Northwest: implications for our landscapes, waters and communities. Island Press, Washington, D.C.

Daly, E. A., R. D. Brodeur, and L. A. Weitkamp. 2009. Ontogenetic Shifts in Diets of Juvenile and Subadult Coho and Chinook Salmon in Coastal Marine Waters: Important for Marine Survival? Transactions of the American Fisheries Society 138(6):1420-1438.

Daly, E. A., J. A. Scheurer, R. D. Brodeur, L. A. Weitkamp, B. R. Beckman, and J. A. Miller. 2014. Juvenile Steelhead Distribution, Migration, Feeding, and Growth in the Columbia River Estuary, Plume, and Coastal Waters. Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science 6(1):62-80.

Dauble D.D., R. L Johnson, R. P. Mueller, C. S. Abernethy, B. J. Evans, and D. R. Geist. 1994. Identification of Fall Chinook Salmon Spawning Sites Near Lower Snake River Hydroelectric Projects. Prepared for U.S. Army Corps of Engineers Walla Walla Disnict Walla Walla by Pacific Northwest Laboratory

Dauble, D.D., R.L. Johnson. R.P. Mueller. and C.S Abernethy. 1995. Spawning of Fall Chinook Salmon Downstream of Lower Snake River Hydroelectric Projects 1994. Prepared forU.S Anny Corps of Engineers Walla Walla District,by Pacific Northwest Laboratory

Dauble D.D., L R. Johnson and A. P. Garcia. 1999. Fall Chinook Salmon Spawning in the Tailraces of Lower Snake River Hydroelectric Projects. Transactions of the American Fisheries Society, 128:4, 672-679

Dauble, D. D. and D. R. Geist. 2000. Comparisons of mainstem spawning and habitats for two populations of fall Chinook salmon in the Columbia River Basin. Regulated Rivers: Research and Management 16:345-361.

Di Lorenzo, E. and N. Mantua. 2016. Multi-year persistence of the 2014/15 North Pacific marine heatwave. Nature Climate Change 1-7. DOI:10.1038/nclimate3082, 7/11/2016.

Ecovista, Nez Perce Tribe Wildlife Division, and Washington State University Center for Environmental Education. 2003. Draft Clearwater Subbasin Assessment, Prepared for Nez Perce Tribe Watersheds Division and Idaho Soil Conservation Commission. 463 p. http://www.nwcouncil.org/fw/subbasinplanning/clearwater/plan/Default.htm

Everest, F. H. and D. W. Chapman. 1972. Habitat selection and spatial interaction by juvenile Chinook salmon and steelhead trout in two Idaho streams. Journal of the Fisheries Research Board of Canada 29(1):91-100.

Felts, E. A., B. Barnett, M. Davison, C. J. Roth, J. R. Poole, R. Hand, M. Peterson, and E. Brown. 2019. Idaho adult Chinook Salmon monitoring. Annual report 2018. Idaho Department of Fish and Game Report 19-10.

Fish Passage Center (FPC). 2019. Chinook salmon adult return data downloaded from the Fish Passage Center website (www.fpc.org) in October 2019.

Fisher, J., W. Peterson, and R. Rykaczewski. 2015. The impact of El Niño events on the pelagic food chain in the northern California Current. Global Change Biology 21: 4401-4414. DOI: 10.1111/gcb.13054, 7/1/2015.

Fresh, K.L. 2000. Use of Lake Washington by juvenile Chinook salmon, 1999 and 2000. Proceedings of the Chinook salmon in the greater Lake Washington Watershed workshop, Shoreline, Washington, November 8-9, 2000, King County, Seattle, Washington.

Fresh, K.L., D. Rothaus, K.W. Mueller, and C. Waldbillig. 2003. Habitat utilization by smallmouth bass in the littoral zones of Lake Washington and Lake Union/Ship Canal. 2003 Lake Washington Chinook salmon workshop. King County Department of Natural Resources, January 24, 2003. Shoreline, WA.

Ford, M.J. (ed.). 2011. Status review update for Pacific salmon and steelhead listed under the Endangered Species Act: Pacific Northwest. U.S. Dept. Commer., NOAA Tech. Memo. NMFS-NWFSC-113, 281 p. http://www.westcoast.fisheries.noaa.gov/publications/status_reviews/salmon_steelhead/multiple_species/5-yr-sr.pdf

Foreman, M., W. Callendar, D. Masson, J. Morrison, and I. Fine. 2014. A Model Simulation of Future Oceanic Conditions along the British Columbia Continental Shelf. Part II: Results and Analyses. Atmosphere-Ocean 52(1):20-38. DOI: 10.1080/07055900.2013.873014.

Gargett, A. 1997. Physics to Fish: Interactions Between Physics and Biology on a Variety of Scales. Oceanography 10(3):128-131.

Good, T.P., R.S. Waples, and P. Adams (editors). 2005. Updated status of federally listed ESUs of West Coast salmon and steelhead. U.S. Dept. Commerce, NOAA Tech. Memo. NMFS-NWFSC-66, 598 p.

Haigh, R., D. Ianson, C. A. Holt, H. E. Neate, and A. M. Edwards. 2015. Effects of Ocean Acidification on Temperate Coastal Marine Ecosystems and Fisheries in the Northeast Pacific. PLoS ONE 10(2):e0117533. DOI:10.1371/journal.pone.0117533, 2/11/2015.

Hollowed, A. B., N. A. Bond, T. K. Wilderbuer, W. T. Stockhausen, Z. T. A'mar, R. J. Beamish, J. E. Overland, et al. 2009. A framework for modelling fish and shellfish responses to future climate change. ICES Journal of Marine Science 66:1584-1594. DOI:10.1093/icesjms/fsp057.

Hauck, F. R. 1953. The Size and Timing of Runs of Anadromous Species of Fish in the Idaho Tributaries of the Columbia River. Prepared for the U.S. Army, Corps of Engineers by the Idaho Fish and Game Department, April 1953. 16 pp.

Healey, M. C. 1991. Life history of chinook salmon (Oncorhynchus tshawytscha). Pages 80 in C. Groot, and L. Margolis, editors. Pacific salmon life histories. University of British Columbia Press, Vancouver, Canada.

Hegg, J., B. Kennedy, P. Chittaro, and R. Zabel. 2013. Spatial structuring of an evolving life-history strategy under altered environmental conditions. Oecologia: 1-13.

Independent Scientific Advisory Board (ISAB). 2007. Climate change impacts on Columbia River Basin fish and wildlife. ISAB Climate Change Report, ISAB 2007-2, Northwest Power and Conservation Council, Portland, Oregon.

Interior Columbia Technical Recovery Team (ICTRT). 2003. Working draft. Independent populations of Chinook, steelhead, and sockeye for listed evolutionarily significant units within the Interior Columbia River domain. NOAA Fisheries. July.

ICTRT. 2007. Viability Criteria for Application to Interior Columbia Basin Salmonid ESUs, Review Draft March 2007. Interior Columbia Basin Technical Recovery Team: Portland, Oregon. 261 pp. https://www.nwfsc.noaa.gov/research/divisions/cb/genetics/trt/trt_documents/ictrt_viability_criteria_reviewdraft_2007_complete.pdf

ICTRT. 2010. Status Summary – Snake River Spring/Summer Chinook Salmon ESU. Interior Columbia Technical Recovery Team: Portland, Oregon.

Idaho Department of Environmental Quality (IDEQ). 2001. Middle Salmon River-Panther Creek Subbasin Assessment and TMDL. IDEQ: Boise, Idaho. 114 p.

IDEQ. 2011. Idaho's 2010 Integrated Report, Final. IDEQ: Boise, Idaho. 776 p.

IDEQ and U.S. Environmental Protection Agency (EPA). 2003. South Fork Clearwater River Subbasin Assessment and Total Maximum Daily Loads. IDEQ: Boise, Idaho. 680 p.

Independent Scientific Advisory Board (ISAB). 2007. Climate change impacts on Columbia River Basin fish and wildlife. ISAB Climate Change Report, ISAB 2007-2, Northwest Power and Conservation Council, Portland, Oregon.

Joint Columbia River Management Staff. 2014. 2014 Joint Staff Report: Stock Status and Fisheries for Fall Chinook, Coho Salmon, Chum Salmon, Summer Steelhead, and White Sturgeon, January 14, 2014. Oregon Department of Fish & Wildlife, Washington Department of Fish and Wildlife. 88 p. Jones, K. K., T. J. Cornwell, D. L. Bottom, L. A. Campbell, and S. Stein. 2014. The contribution of estuary-resident life histories to the return of adult Oncorhynchus kisutch. Journal of Fish Biology 85:52–80. DOI:10.1111/jfb.12380.

Jones K. K., K.A. Dunn, P.S. Jacobsen, M. Strickland, .L Tennant, S.E. Tippery. 2014. Effectiveness of Instream Wood Treatments to Restore Stream Complexity and Winter Rearing Habitat for Juvenile Coho Salmon. Transactions of the American Fisheries Society. 143:2, 334-345

Kennedy, V. S. 1990. Anticipated Effects of Climate Change on Estuarine and Coastal Fisheries. Fisheries 15(6):16-24.

Kirwan, M. L., G. R. Guntenspergen, A. D'Alpaos, J. T. Morris, S. M. Mudd, and S. Temmerman. 2010. Limits on the adaptability of coastal marshes to rising sea level. Geophysical Research Letters 37:L23401. DOI: 10.1029/2010GL045489, 12/1/2010.

Lemmen, D. S., F. J. Warren, T. S. James, and C. S. L. Mercer Clarke (Eds.). 2016. Canada's Marine Coasts in a Changing Climate. Ottawa, ON: Government of Canada.

Limburg, K., R. Brown, R. Johnson, B. Pine, R. Rulifson, D. Secor, K. Timchak, B. Walther, and K. Wilson. 2016. Round-the-Coast: Snapshots of Estuarine Climate Change Effects. Fisheries 41(7):392-394, DOI: 10.1080/03632415.2016.1182506.

Litz M. N., A. J. Phillips, R. D. Brodeur, and R. L. Emmett. 2011. Seasonal occurrences of Humboldt Squid in the northern California Current System. California Cooperative Oceanic Fisheries Investigations Report. December 2011 Vol. 52: 97-108.

Lucey, S. and J. Nye. 2010. Shifting species assemblages in the Northeast US Continental Shelf Large Marine Ecosystem. Marine Ecology Progress Series, Marine Ecology Progress Series 415:23-33. DOI: 10.3354/meps08743.

Lynch, A. J., B. J. E. Myers, C. Chu, L. A. Eby, J. A. Falke, R. P. Kovach, T. J. Krabbenhoft, T. J. Kwak, J. Lyons, C. P. Paukert, and J. E. Whitney. 2016. Climate Change Effects on North American Inland Fish Populations and Assemblages. Fisheries 41(7):346-361. DOI: 10.1080/03632415.2016.1186016, 7/1/2016.

Mantua, N. J., S. Hare, Y. Zhang, et al. 1997. A Pacific interdecadal climate oscillation with impacts on salmon production. Bulletin of the American Meteorological Society 78:1069-1079, 1/6/1997.

Martins, E. G., S. G. Hinch, D. A. Patterson, M. J. Hague, S. J. Cooke, K. M. Miller, M. F. Lapointe, K. K. English, and A. P. Farrell. 2011. Effects of river temperature and climate warming on stock-specific survival of adult migrating Fraser River sockeye salmon (Oncorhynchus nerka). Global Change Biology 17(1):99–114. DOI:10.1111/j.1365-2486.2010.02241.x.

Martins, E. G., S. G. Hinch, D. A. Patterson, M. J. Hague, S. J. Cooke, K. M. Miller, D. Robichaud, K. K. English, and A. P. Farrell. 2012. High river temperature reduces survival of sockeye salmon (Oncorhynchus nerka) approaching spawning grounds and exacerbates female mortality. Canadian Journal of Fisheries and Aquatic 69:330–342. DOI: 10.1139/F2011-154.

Mathis, J. T., S. R. Cooley, N. Lucey, S. Colt, J. Ekstrom, T. Hurst, C. Hauri, W. Evans, J. N. Cross, and R. A. Feely. 2015. Ocean acidification risk assessment for Alaska's fishery sector. Progress in Oceanography 136:71-91.

Matthews, G. M., R. S. Waples. 1991. Status Review for Snake River Spring and Summer Chinook Salmon. U.S. Dept. of Commerce, NOAA Tech. Memo., NMFS-F/NWC-200. https://www.nwfsc.noaa.gov/publications/scipubs/techmemos/tm201/

McClure, M., T. Cooney, and ICTRT. 2005. Updated population delineation in the interior Columbia Basin. May 11, 2005 Memorandum to NMFS NW Regional Office, Co-managers, and other interested parties. NMFS: Seattle, Washington. 14 p.

McElhany, P., M.H. Ruckelshaus, M.J. Ford, T.C. Wainwright, and E.P. Bjorkstedt. 2000. Viable salmonid populations and the recovery of evolutionarily significant units. U.S. Department of Commerce, NOAA Technical Memorandum NMFS-NWFSC-42, Seattle, Washington, 156 p.

Morris, J. F. T., M. Trudel, J. Fisher, S. A. Hinton, E. A. Fergusson, J. A. Orsi, and J. Edward V. Farley. 2007. Stock-Specific Migrations of Juvenile Coho Salmon Derived from Coded-Wire Tag Recoveries on the Continental Shelf of Western North America. American Fisheries Society Symposium 57:81-104.

Mote, P. W., E. A. Parson, A. F. Hamlet, et al. 2003. Preparing for Climatic Change: The Water, Salmon, and Forests of the Pacific Northwest. Climatic Change 61:45-88.

Mueller, R.P. 2009. Survey of Fall Chinook Salmon Spawning Areas Downstream of Lower Snake River Hydroelectric Projects, 2008. Prepared for the U.S. Army Corps of Engineers, Walla Walla District Walla Walla, by Battelle Pacific Northwest Division

Naiman, R. J., J. R. Alldredge, D. A. Beauchamp, P. A. Bisson, J. Congleton, C. J. Henny, N. Huntly, R. Lamberson, C. Levings, E. N. Merrill, W. G. Pearcy, B. E. Rieman, G. T. Ruggerone, D. Scarnecchia, P. E. Smouse, and C. C. Wood. 2012. Developing a broader scientific foundation for river restoration: Columbia River food webs. Proceedings of the National Academy of Sciences of the United States of America 109(52):21201-21207.

National Marine Fisheries Service (NMFS). 1992. Federal Register Notice: Threatened status for Snake River spring–summer Chinook salmon, threatened status for Snake River fall Chinook salmon. Federal Register 57:78(22 April 1992):14653–14663.

NMFS. 2006. National Marine Fisheries Service's comments and preliminary recommended terms and conditions for an application for a major new license for the Hells Canyon hydroelectric project (FERC No. 1971). National Marine Fisheries Service, Seattle, Washington. January 24, 2006.

NMFS. 2015. ESA Recovery Plan for Snake River Sockeye Salmon (Oncorhynchus nerka), June 8, 2015. NOAA Fisheries, West Coast Region. 431 p. http://www.westcoast.fisheries.noaa.gov/publications/recovery_planning/salmon_steelhead/domains/interior_columbia/snake/snake_river_sockeye_recovery_plan_june_2015.pdf

NMFS (National Marine Fisheries Service). 2016a. 2016 5-Year Review: Summary & Evaluation of Snake River Sockeye, Snake River Spring-Summer Chinook, Snake River Fall-Run Chinook, Snake River Basin Steelhead. National Marine Fisheries Service West Coast Region, Portland, OR.

NMFS. 2017a. ESA Recovery Plan for Snake River Spring/Summer Chinook & Steelhead. NMFS. http://www.westcoast.fisheries.noaa.gov/publications/recovery_planning/salmon_steelhead/domains/interior_columbia/snake/Final%20Snake%20Recovery%20Plan%20Docs/final_snake_river_spring-summer_chinook_salmon_and_snake_river_basin_steelhead_recovery_plan.pdf

NMFS. 2017b. ESA Recovery Plan for Snake River Fall Chinook Salmon (Oncorhynchus tshawytscha). http://www.westcoast.fisheries.noaa.gov/publications/recovery_planning/salmon_steelhead/domains/interior_columbia/snake/Final%20Snake%20Recovery%20Plan%20Docs/final_snake_river_fall_chinook_salmon_recovery_plan.pdf

NMFS (National Marine Fisheries Service). 2020. Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Continued Operation and Maintenance of the Columbia River System. WCRO 2020-00113. National Marine Fisheries Service West Coast Region, Portland, OR.

Northwest Fisheries Science Center (NWFSC). 2015. Status review update for Pacific salmon and steelhead listed under the Endangered Species Act: Pacific Northwest. 356 p.

Oregon Department of Fish and Wildlife and Washington Department of Fish and Wildlife (ODFW and WDFW). 2019. 2019 Joint Staff Report: Stock Status and Fisheries for Spring Chinook, Summer Chinook, Sockeye, Steelhead, and other Species. Joint Columbia River Management Staff. 97 pp.

Pearcy, W. G. 2002. Marine nekton off Oregon and the 1997–98 El Niño. Progress in Oceanography 54:399–403.

Pearcy, W. G. and S. M. McKinnell. 2007. The Ocean Ecology of Salmon in the Northeast Pacific Ocean-An Abridged History. American Fisheries Society 57:7-30.

Peterson, W., J. Fisher, J. Peterson, C. Morgan, B. Burke, and K. Fresh. 2014. Applied Fisheries Oceanography Ecosystem Indicators of Ocean Condition Inform Fisheries Management in the California Current. Oceanography 27(4):80-89. 10.5670/oceanog.2014.88.

PFMC. 2014. Appendix A to the Pacific Coast Salmon Fishery Management Plan, as modified by Amendment 18. Identification and description of essential fish habitat, adverse impacts, and recommended conservation measures for salmon.

Phillips, R. 2019. Midway through the run, very few sockeye are returning to Idaho. July 8, 2019 Idaho Department of Fish and Game press release. https://idfg.idaho.gov/press/midway-through-run-very-few-sockeye-are-returning-idaho

Poesch, M. S., L. Chavarie, C. Chu, S. N. Pandit, and W. Tonn. 2016. Climate Change Impacts on Freshwater Fishes: A Canadian Perspective. Fisheries 41:385-391.

Rehage J. S. and J. R. Blanchard. 2016. What can we expect from climate change for species invasions? Fisheries 41(7):405-407. DOI: 10.1080/03632415.2016.1180287.

Rondorf, D.W., G.L. Rutz, and J.C. Charrier. 2010. Minimizing Effects of over-Water Docks on Federally Listed Fish Stocks in Mcnary Reservoir: A Literature Review for Criteria.

Rykaczewski, R., J. P. Dunne, W. J. Sydeman, et al. 2015. Poleward displacement of coastal upwelling-favorable winds in the ocean's eastern boundary currents through the 21st century. Geophysical Research Letters 42:6424-6431. DOI:10.1002/2015GL064694.

Scheuerell, M. D. and J. G. WIlliams. 2005. Forecasting climate-induced changes in the survival of Snake River spring/summer Chinook salmon (Oncorhynchus tshawytscha). Fisheries Oceanography 14(6):448–457.

Spence, B., G. Lomnicky, R. Hughes, and R.P. Novitski. 1996. An ecosystem approach to salmonid conservation. TR-4501-96-6057. ManTech Environmental Research Services Corp.: Corvallis, Oregon.

Sykes, G. E., C. J. Johnson, and J. M. Shrimpton. 2009. Temperature and Flow Effects on Migration Timing of Chinook Salmon Smolts. Transactions of the American Fisheries Society 138:1252-1265.

Tabor, R. A., Gearns, H. A., McCoy III, and C. M. and S. Camacho. 2006. Nearshore habitat use by Chinook salmon in lentic systems of the Lake Washington basin. Lacy, Washington: U.S. Fish and Wildlife Service.

Tiffan, K. F., and W. P. Connor. 2012. Seasonal Use of Shallow Water Habitat in the Lower Snake River Reservoirs by Juvenile Fall Chinook Salmon. 2010–2011 Final Report of Research to U.S. Army Corps of Engineers Walla Walla District.

Verdonck, D. 2006. Contemporary vertical crustal deformation in Cascadia. Tectonophysics 417(3):221-230. DOI: 10.1016/j.tecto.2006.01.006.

Wainwright, T. C. and L. A. Weitkamp. 2013. Effects of Climate Change on Oregon Coast Coho Salmon: Habitat and Life-Cycle Interactions. Northwest Science 87(3):219-242.

Ward, E. J., J. H. Anderson, T. J. Beechie, G. R. Pess, and M. J. Ford. 2015. Increasing hydrologic variability threatens depleted anadromous fish populations. Global Change Biology 21(7):2500-2509.

Whitney, J. E., R. Al-Chokhachy, D. B. Bunnell, C. A. Caldwell, et al. 2016. Physiological Basis of Climate Change Impacts on North American Inland Fishes. Fisheries 41(7):332-345. DOI: 10.1080/03632415.2016.1186656.

Yamada, S., W. T. Peterson, and P. M. Kosro. 2015. Biological and physical ocean indicators predict the success of an invasive crab, Carcinus maenas, in the northern California Current. Marine Ecology Progress Series 537:175-189. DOI: 10.3354/meps11431

Zabel, R. W., M. D. Scheuerell, M. M. McClure, et al. 2006. The Interplay Between Climate Variability and Density Dependence in the Population Viability of Chinook Salmon. Conservation Biology 20(1):190-200, 2/1/2006.

US Army Corps of Engineers
Seattle District

NATIONWIDE PERMIT 39
Terms and Conditions

Effective Date: March 19, 2017

In addition to any special condition that may be required on a case-by-case basis by the District Engineer, the following terms and conditions must be met, as applicable, for a Nationwide Permit (NWP) authorization to be valid in Washington State.

A. DESCRIPTION OF AUTHORIZED ACTIVITIES

Commercial and Institutional Developments. Discharges of dredged or fill material into non-tidal waters of the United States for the construction or expansion of commercial and institutional building foundations and building pads and attendant features that are necessary for the use and maintenance of the structures. Attendant features may include, but are not limited to, roads, parking lots, garages, yards, utility lines, storm water management facilities, wastewater treatment facilities, and recreation facilities such as playgrounds and playing fields. Examples of commercial developments include retail stores, industrial facilities, restaurants, business parks, and shopping centers. Examples of institutional developments include schools, fire stations, government office buildings, judicial buildings, public works buildings, libraries, hospitals, and places of worship. The construction of new golf courses and new ski areas is not authorized by this NWP.

The discharge must not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. The discharge must not cause the loss of more than 300 linear feet of stream bed, unless for intermittent and ephemeral stream beds the district engineer waives the 300 linear foot limit by making a written determination concluding that the discharge will result in no more than minimal adverse environmental effects. The loss of stream bed plus any other losses of jurisdictional wetlands and waters caused by the NWP activity cannot exceed 1/2-acre. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity. (See general condition 32.) (Authorities: Sections 10 and 404)

Note: For any activity that involves the construction of a wind energy generating structure, solar tower, or overhead transmission line, a copy of the PCN and NWP verification will be provided to the Department of Defense Siting Clearinghouse, which will evaluate potential effects on military activities.

B. CORPS NATIONAL GENERAL CONDITIONS FOR ALL NWPs

To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division

engineer or district engineer. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation. (b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States. (c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must

not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. (a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. (b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. The permittee shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status. (c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: http://www.rivers.gov/.

17. Tribal Rights. No NWP activity may cause more than minimal adverse effects on tribal rights (including treaty rights), protected tribal resources, or tribal lands.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless ESA section 7

consultation addressing the effects of the proposed activity has been completed. Direct effects are the immediate effects on listed species and critical habitat caused by the NWP activity. Indirect effects are those effects on listed species and critical habitat that are caused by the NWP activity and are later in time, but still are reasonably certain to occur. (b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA. (c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed activity or that utilize the designated critical habitat that might be affected by the proposed activity. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have "no effect" on listed species or critical habitat, or until ESA section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps. (d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWPs. (e) Authorization of an activity by an NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.
(f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required. (g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.nmfs.noaa.gov/pr/species/esa/ respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for ensuring their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied. (b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act. If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106. (c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect. Where the non-Federal applicant has identified historic properties on which the activity might have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed. (d) For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps. (e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after

consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment. (a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters. (b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal: (a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site). (b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal. (c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects. (d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation to ensure that the activity results in no more than minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)). (e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In

some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. Restored riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses. (f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation. (2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f)). (3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation. (4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). (5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided. (6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs. (h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have

marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management. (i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature: "When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

_____

(Transferee)

_____

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include: (a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions; (b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and (c) The signature of the permittee certifying the completion of the activity and mitigation. The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. Activities Affecting Structures or Works Built by the United States. If an NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a "USACE project"), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission is not authorized by NWP until the appropriate Corps office issues the section 408 permission to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained.

Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed activity;

(3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;

(4) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures. For single and complete linear projects, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-Federal permittees, if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed activity or utilize the designated critical habitat that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

(8) For non-Federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the "study river" (see general condition 16); and

(10) For an activity that requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from the Corps office having jurisdiction over that USACE project.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is an NWP PCN and must include all of the applicable information required in paragraphs (b)(1) through (10) of this general condition. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals. (d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity's adverse environmental effects so that they are no more than minimal. (2) Agency coordination is required for: (i) all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of stream bed; (iii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iv) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes. (3) When agency coordination is required, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or e-mail that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5. (4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act. (5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

District Engineer's Decision: 1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project

proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the individual crossings of waters of the United States to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51, 52, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects. For those NWPs that have a waivable 300 linear foot limit for losses of intermittent and ephemeral stream bed and a 1/2-acre limit (i.e., NWPs 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52), the loss of intermittent and ephemeral stream bed, plus any other losses of jurisdictional waters and wetlands, cannot exceed 1/2-acre. 2. When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by NWP and whether those cumulative adverse environmental effects are no more than minimal. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional or condition assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse environmental effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns. 3. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for NWP activities with smaller impacts, or for impacts to other types of waters (e.g., streams). The district engineer will consider any proposed compensatory mitigation or other mitigation measures the applicant has included in the proposal in determining whether the net adverse environmental effects of the proposed activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are no more than minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure the NWP activity results in no more than minimal adverse environmental effects. If the net adverse environmental effects of the NWP activity (after consideration of the mitigation proposal) are determined by the district engineer to be no more than minimal, the district engineer will provide a timely written response to the applicant. The response will state that the NWP activity can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer. 4. If the district engineer determines that the adverse

environmental effects of the proposed activity are more than minimal, then the district engineer will notify the applicant either: (a) that the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the activity is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or (c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse environmental effects, the activity will be authorized within the 45-day PCN period (unless additional time is required to comply with general conditions 18, 20, and/or 31, or to evaluate PCNs for activities authorized by NWPs 21, 49, and 50), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

Further Information: 1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP. 2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law. 3. NWPs do not grant any property rights or exclusive privileges. 4. NWPs do not authorize any injury to the property or rights of others. 5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

C. CORPS SEATTLE DISTRICT REGIONAL GENERAL CONDITIONS: The following conditions apply to all NWPs for the Seattle District in Washington State, unless specified.

1. Project Drawings: Drawings must be submitted with pre-construction notification (PCN). Drawings must provide a clear understanding of the proposed project, and how waters of the U.S. will be affected. Drawings must be originals and not reduced copies of large-scale plans. Engineering drawings are not required. Existing and proposed site conditions (manmade and landscape features) must be drawn to scale.

2. Aquatic Resources Requiring Special Protection: Activities resulting in a loss of waters of the United States in mature forested wetlands, bogs and peatlands, aspen-dominated wetlands, alkali wetlands, vernal pools, camas prairie wetlands, estuarine wetlands, wetlands in coastal lagoons, and wetlands in dunal systems along the Washington coast cannot be authorized by a NWP, except by the following NWPs:

NWP 3 – Maintenance
NWP 20 – Response Operations for Oil and Hazardous Substances
NWP 32 – Completed Enforcement Actions
NWP 38 – Cleanup of Hazardous and Toxic Waste

In order to use one of the above-referenced NWPs in any of the aquatic resources requiring special protection, prospective permittees must submit a PCN to the Corps of Engineers (see NWP general condition 32) and obtain written authorization before commencing work.

3. New Bank Stabilization in Tidal Waters of Puget Sound: Activities involving new bank stabilization in tidal waters in Water Resource Inventory Areas (WRIAs) 8, 9, 10, 11 and 12 (within the areas identified on Figures 1a through 1e on Corps website) cannot be authorized by NWP.

4. Commencement Bay: The following NWPs may not be used to authorize activities located in the Commencement Bay Study Area (see Figure 2 on Corps website):

NWP 12 – Utility Line Activities (substations)
NWP 13 – Bank Stabilization
NWP 14 – Linear Transportation Projects
NWP 23 – Approved Categorical Exclusions
NWP 29 – Residential Developments
NWP 39 – Commercial and Institutional Developments
NWP 40 – Agricultural Activities
NWP 41 – Reshaping Existing Drainage Ditches
NWP 42 – Recreational Facilities
NWP 43 – Stormwater and Wastewater Management Facilities

5. Bank Stabilization: All projects including new or maintenance bank stabilization activities require PCN to the Corps of Engineers (see NWP general condition 32). For new bank stabilization projects only, the following must be submitted to the Corps of Engineers:

a. The cause of the erosion and the distance of any existing structures from the area(s) being stabilized.
b. The type and length of existing bank stabilization within 300 feet of the proposed project.
c. A description of current conditions and expected post-project conditions in the waterbody.
d. A statement describing how the project incorporates elements avoiding and minimizing adverse environmental effects to the aquatic environment and nearshore riparian area, including vegetation impacts in the waterbody.

In addition to a. through d., the results from any relevant geotechnical investigations can be submitted with the PCN if it describes current or expected conditions in the waterbody.

6. Crossings of Waters of the United States: Any project including installing, replacing, or modifying crossings of waters of the United States, such as culverts or bridges, requires submittal of a PCN to the Corps of Engineers (see NWP general condition 32). If a culvert is proposed to cross waters of the U.S. where salmonid species are present or could be present, the project must apply the stream simulation design method from the Washington Department of Fish and Wildlife located in the *Water Crossing Design Guidelines* (2013), or a design method which provides passage at all life stages at all flows where the salmonid species would naturally seek passage. If the stream simulation design method is not applied for a culvert where salmonid species are present or could be present, the project proponent must provide a rationale in the PCN sufficient to establish one of the following:

a. The existence of extraordinary site conditions.
b. How the proposed design will provide equivalent or better fish passage and fisheries habitat benefits than the stream simulation design method.

If a culvert is proposed to cross waters of the U.S. where salmonid species are present or could be present, project proponents must provide a monitoring plan with the PCN that specifies how the proposed culvert will be assessed over a five-year period from the time of construction completion to ensure its effectiveness in providing passage at all life stages at all flows where the salmonid species would naturally seek passage. Culverts installed under emergency authorization that do not meet the above design criteria will be required to meet the above design criteria to receive an after-the-fact nationwide permit verification.

7. Stream Loss: A PCN is required for all activities that result in the loss of any linear feet of stream beds. No activity shall result in the loss of any linear feet of perennial stream beds or the loss of greater than 300 linear feet of intermittent and/or ephemeral stream beds. A stream may be rerouted if it is designed in a manner that maintains or restores hydrologic, ecologic, and geomorphic stream processes, provided there is not a reduction in the linear feet of stream bed. Streams include brooks, creeks, rivers, and historical waters of the U.S. that have been channelized into ditches. This condition does not apply to ditches constructed in uplands. Stream loss restrictions may be waived by the district engineer on a case-by-case basis provided the activities result in net increases of aquatic resource functions and services.

8. Mitigation: Pre-construction notification is required for any project that will result in permanent wetland losses that exceed 1,000 square feet. In addition to the requirements of General Condition 23 (Mitigation), compensatory mitigation at a minimum one-to-one ratio will be required for all permanent wetland losses that exceed 1,000 square feet. When a PCN is required for wetland losses less than 1,000 square feet, the Corps of Engineers may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation for impacts to marine waters, lakes, and streams will be determined on a case-by-case basis. If temporary impacts to waters of the U.S. exceed six months, the Corps of Engineers may require compensatory mitigation for temporal effects.

9. Magnuson-Stevens Fishery Conservation and Management Act – Essential Fish Habitat
Essential Fish Habitat (EFH) is defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. If EFH may be adversely affected by a proposed activity, the prospective permittee must provide a written EFH assessment with an analysis of the effects of the proposed action on EFH. The assessment must identify the type(s) of essential fish habitat (i.e., Pacific salmon, groundfish, and/or coastal-pelagic species) that may be affected. If the Corps of Engineers determines the project will adversely affect EFH, consultation with NOAA Fisheries will be required. Federal agencies should follow their own procedures for complying with the requirements of the Magnuson-Stevens Fishery Conservation and Management Act. If PCN is required for the proposed activity, Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

10. Forage Fish: For projects in forage fish spawning habitat, in-water work must occur within designated forage fish work windows, or when forage fish are not spawning. If working outside of a designated work window, or if forage fish work windows are closed year round, work may occur if the work window restriction is released for a period of time after a forage fish spawning survey has been conducted by a biologist approved by the Washington State Department of Fish and Wildlife (WDFW). Forage fish species with designated in-water work windows include Pacific sand lance (*Ammodytes hexapterus*), Pacific herring (*Clupea pallasi*), and surf smelt (*Hypomesus pretiosus*). This RGC does not apply to NWP 48, *Commercial Shellfish Aquaculture Activities*. Please see specific regional conditions for NWP 48.

11. Notification of Permit Requirements: The permittee must provide a copy of the nationwide permit authorization letter, conditions, and permit drawings to all contractors and any other parties performing the authorized work prior to the commencement of any work in waters of the U.S. The permittee must ensure all appropriate contractors and any other parties performing the authorized work at the project site have read and understand relevant NWP conditions as well as plans, approvals, and documents referenced in the NWP letter. A copy of these documents must be maintained onsite throughout the duration of construction.

12. Construction Boundaries: Permittees must clearly mark all construction area boundaries before beginning work on projects that involve grading or placement of fill. Boundary markers and/or construction fencing must be maintained and clearly visible for the duration of construction. Permittees should avoid and minimize removal of native vegetation (including submerged aquatic vegetation) to the maximum extent possible.

13. Temporary Impacts and Site Restoration
a. Temporary impacts to waters of the U.S. must not exceed six months unless the prospective permittee requests and receives a waiver by the district engineer. Temporary impacts to waters of the U.S. must be identified in the PCN.

b. No more than 1/2 acre of waters of the U.S. may be temporarily filled unless the prospective permittee requests and receives a waiver from the district engineer (temporary fills do not affect specified limits for loss of waters associated with specific nationwide permits).
c. Native soils removed from waters of the U.S. for project construction should be stockpiled and used for site restoration. Restoration of temporarily disturbed areas must include returning the area to pre-project ground surface contours. If native soil is not available from the project site for restoration, suitable clean soil of the same textural class may be used. Other soils may be used only if identified in the PCN.
d. The permittee must revegetate disturbed areas with native plant species sufficient in number, spacing, and diversity to restore affected functions. A maintenance and monitoring plan commensurate with the impacts, may be required. Revegetation must begin as soon as site conditions allow within the same growing season as the disturbance unless the schedule is approved by the Corps of Engineers. Native plants removed from waters of the U.S. for project construction should be stockpiled and used for revegetation when feasible. Temporary Erosion and Sediment Control measures must be removed as soon as the area has established vegetation sufficient to control erosion and sediment.
e. If the Corps determines the project will result in temporary impacts of submerged aquatic vegetation (SAV) that are more than minimal, a monitoring plan must be submitted. If recovery is not achieved by the end of the monitoring period, contingencies must be implemented, and additional monitoring will be required.

This RGC does not apply to NWP 48, *Commercial Shellfish Aquaculture Activities*. Please see specific regional conditions for NWP 48.

D. CORPS REGIONAL SPECIFIC CONDITIONS FOR THIS NWP:

1. Pre-construction notification must identify if the project is an individual lot within a subdivision or part of a multiphase development.

E. ECOLOGY 401 CERTIFICATION: GENERAL CONDITIONS

In addition to all the Corps National and Seattle Districts' Regional permit conditions, the following State General Section 401 Water Quality Certification (Section 401) conditions apply to all Nationwide Permits whether **certified** or **partially certified** in the State of Washington.

1. **For in-water construction activities**. Ecology Section 401 review is required for projects or activities authorized under NWPs that will cause, or may be likely to cause or contribute to an exceedance of a State water quality standard (Chapter 173-201A WAC) or sediment management standard (Chapter 173-204 WAC). State water quality standards and sediment management standards are available on Ecology's website. Note: In-water activities include any activity within a wetland and/or activities below the ordinary high water mark (OHWM).

2. **Projects or Activities Discharging to Impaired Waters**. Ecology Section 401 review is required for projects or activities authorized under NWPs if the project or activity will occur in a 303(d) listed segment of a waterbody or upstream of a listed segment and may result in further exceedances of the specific listed parameter. To determine if your project or activity is in a 303(d) listed segment of a waterbody, visit Ecology's Water Quality Assessment webpage for maps and search tools.

3. **Application**. For projects or activities that will require Ecology Section 401 review, applicants must provide Ecology with a Joint Aquatic Resources Permit Application (JARPA) along with the documentation provided to the Corps, as described in National General Condition 32, Pre-Construction Notification, including, when applicable: (a) A description of the project, including site plans, project purpose, direct and indirect adverse environmental effects the project would cause, best management practices (BMPs), and any other Department of the Army or federal agency permits used or intended to be

used to authorize any part of the proposed project or any related activity. (b) Drawings indicating the Ordinary High Water Mark (OHWM), delineation of special aquatic sites and other waters of the state. Wetland delineations must be prepared in accordance with the current method required by the Corps and shall include Ecology's Wetland Rating form. Wetland rating forms are subject to review and verification by Ecology staff. Guidance for determining the OHWM is available on Ecology's website. (c) A statement describing how the mitigation requirement will be satisfied. A conceptual or detailed mitigation or restoration plan may be submitted. See State General Condition 5 for details on mitigation requirements. (d) Other applicable requirements of Corps Nationwide Permit General Condition 32, Corps Regional Conditions, or notification conditions of the applicable NWP. (e) Within 180 calendar days from receipt of applicable documents noted above **and** a copy of the final authorization letter from the Corps providing coverage for a proposed project or activity under the NWP Program Ecology will provide the applicant notice of whether an individual Section 401 will be required for the project. If Ecology fails to act within a year after receipt of **both** of these documents, Section 401 is presumed waived.

4. **Aquatic resources requiring special protection**. Certain aquatic resources are unique, difficult-to-replace components of the aquatic environment in Washington State. Activities that would affect these resources must be avoided to the greatest extent possible. Compensating for adverse impacts to high value aquatic resources is typically difficult, prohibitively expensive, and may not be possible in some landscape settings. Ecology Section 401 review is required for activities in or affecting the following aquatic resources (and not prohibited by Seattle District Regional General Condition): (a) Wetlands with special characteristics (as defined in the Washington State Wetland Rating Systems for western and eastern Washington, Ecology Publications #14-06-029 and #14-06-030):

- Estuarine wetlands.
- Wetlands of High Conservation Value.
- Bogs.
- Old-growth and mature forested wetlands.
- Wetlands in coastal lagoons.
- Interdunal wetlands.
- Vernal pools.
- Alkali wetlands.

(b) Fens, aspen-dominated wetlands, camas prairie wetlands. (c) Marine water with eelgrass (*Zostera marina*) beds (except for NWP 48). (d) Category I wetlands. (e) Category II wetlands with a habitat score ≥ 8 points. This State General Condition does not apply to the following Nationwide Permits:
NWP 20 – *Response Operations for Oil and Hazardous Substances,* NWP 32 – *Completed Enforcement Actions*

5. Mitigation. Applicants are required to show that they have followed the mitigation sequence and have first avoided and minimized impacts to aquatic resources wherever practicable. For projects requiring Ecology Section 401 review with unavoidable impacts to aquatics resources, adequate compensatory mitigation must be provided.

(a) Wetland mitigation plans submitted for Ecology review and approval shall be based on the most current guidance provided in Wetland Mitigation in Washington State, Parts 1 and 2 (available on Ecology's website) and shall, at a minimum, include the following:

i. A description of the measures taken to avoid and minimize impacts to wetlands and other waters of the U.S.
ii. The nature of the proposed impacts (i.e., acreage of wetlands and functions lost or degraded).
iii. The rationale for the mitigation site that was selected.
iv. The goals and objectives of the compensatory mitigation project.
v. How the mitigation project will be accomplished, including construction sequencing, best management practices to protect water quality, proposed performance standards for measuring success and the proposed buffer widths.

vi. How it will be maintained and monitored to assess progress towards goals and objectives. Monitoring will generally be required for a minimum of five years. For forested and scrub-shrub wetlands, 10 years of monitoring will often be necessary.

vii. How the compensatory mitigation site will be legally protected for the long term.

Refer to Wetland Mitigation in Washington State – Part 2: Developing Mitigation Plans (Ecology Publication #06-06-011b) and Selecting Wetland Mitigation Sites Using a Watershed Approach (Ecology Publications #09-06-032 (Western Washington) and #10-06-007 (Eastern Washington)) for guidance on selecting suitable mitigation sites and developing mitigation plans. Ecology encourages the use of alternative mitigation approaches, including credit/debit methodology, advance mitigation, and other programmatic approach such as mitigation banks and in-lieu fee programs. If you are interested in proposing use of an alternative mitigation approach, consult with the appropriate Ecology regional staff person. Information on alternative mitigation approaches is available on Ecology's website.

(b) Mitigation for other aquatic resource impacts will be determined on a case-by-case basis.

6. Temporary Fills. Ecology Section 401 review is required for any project or activity with temporary fill in wetlands or other waters of the state for more than 90 days, unless the applicant has received written approval from Ecology. Note: This State General Condition does not apply to projects or activities authorized under NWP 33, *Temporary Construction, Access, and Dewatering*

7. Stormwater pollution prevention: All projects that involve land disturbance or impervious surfaces must implement stormwater pollution prevention or control measures to avoid discharge of pollutants in stormwater runoff to waters of the State.

(a) For land disturbances during construction, the applicant must obtain and implement permits (e.g., Construction Stormwater General Permit) where required and follow Ecology's current stormwater manual.

(b) Following construction, prevention or treatment of on-going stormwater runoff from impervious surfaces shall be provided.

Ecology's Stormwater Management and Design Manuals and stormwater permit information are available on Ecology's website.

8. State Section 401 Review for PCNs not receiving 45-day response from the Seattle District. In the event the Seattle District Corps does not issue a NWP authorization letter within 45 calendar days of receipt of a **complete** pre-construction notification, the applicant must contact Ecology for Section 401 review prior to commencing work.

F. ECOLOGY 401 CERTIFICATION: SPECIFIC CONDITIONS FOR THIS NWP:

Certified subject to conditions. Ecology Section 401 review is required for projects or activities authorized under this NWP if:

The project or activity affects ¼ acre or more of waters of the State.

G. COASTAL ZONE MANAGEMENT CONSISTENCY RESPONSE FOR THIS NWP:
(Note: This is only applies in the following counties: Clallam, Grays Harbor, Island, Jefferson, King, Kitsap, Mason, Pacific, Pierce, San Juan, Skagit, Snohomish, Thurston, Wahkiakum and Whatcom)

Response: Ecology concurs that this NWP is consistent with the CZMP, subject to the following condition: An individual Coastal Zone Management Consistency Determination is required for project or activities under this NWP if State Section 401 review is required.

General Conditions: For Non-Federal Permittees

1. Necessary Data and Information. A Coastal Zone Management Program "Certification of Consistency" form is required for projects located within a coastal county. "Certification of Consistency" forms are available on Ecology's website. The form shall include a description of the proposed project or activity and evidence of compliance with the applicable enforceable policies of the Washington Coastal Zone Management Program (CZMP). Also, a map of the site location is required.
2. Timing. Within 6 months from receipt of the necessary data and information, Ecology will provide a federal consistency determination for the proposed project or activity. If Ecology fails to act within the 6 month period, concurrence with the CZMP is presumed.

General Conditions: For Federal Permittees (Agencies)
1. Necessary Data and Information. Federal agencies shall submit the determination, information, and analysis required by 15 CFR 930.39 to obtain a federal consistency determination.
2. Timing. Within 60 days from receipt of the necessary data and information, Ecology will provide a federal consistency determination for the proposed project or activity. If Ecology fails to act within the 60 day period, concurrence with the CZMP is presumed.

Exhibit A

PORT OF CLARKSTON
INADVERTENT DISCOVERY OF CULTURAL RESOURCES POLICY

Purpose:

Under state law, Executive Order 0505 (GEO 05-05), the Port of Clarkston has an obligation to protect cultural resources. Establishing policies and procedures during construction work for inadvertent discoveries will provide guidance to contractors, consistent treatment when unknown occasions occur, and assure that appropriate steps are taken when discoveries are made. A companion to this document will be a form titled "Inadvertent Discovery Cultural Resources Procedures."

Definition of INADVERTENT DISCOVERY – This policy shall apply if construction work brings into the open any of the following cultural resources:

- Native American cultural artifacts – flakes, arrowheads, stone tools, bone tools, pottery, etc.
- Historic era artifacts – building foundations, homesteads, shipwrecks, mining camps, etc.
- Human skeletal remains and bone fragments

Process and procedures:

Contractors, when coming across something that may be an artifact or is a bone that may be human in origin, must immediately discontinue all ground-disturbing activity. They should not touch or move the objects and maintain the confidentiality of the site.

If construction leads to the inadvertent discovery of human remains DAHP protocols will be employed, as follows:

- If ground disturbing activities encounter human skeletal remains during the course of construction, then all activity ***will*** cease that may cause further disturbance to those remains.
- The area of the find will be secured and protected from further disturbance.
- The finding of human skeletal remains ***will*** be reported to the county medical examiner/coroner ***and*** local law enforcement in the most expeditious manner possible.
- The remains will not be touched, moved, or further disturbed. The county medical examiner/coroner will assume jurisdiction over the human skeletal remains and make a determination of whether those remains are forensic or non-forensic.
- If the county medical examiner/coroner determines the remains are non-forensic, then they will report that finding to the Department of Archaeology and Historic Preservation (DAHP) who will then take jurisdiction over the remains.
- The DAHP will notify any appropriate cemeteries and all affected tribes of the find.
- The State Physical Anthropologist will make a determination of whether the remains are Indian or Non-Indian and report that finding to any appropriate cemeteries and the affected tribes.
- The DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

CULTURAL RESOURCES DISCOVERY CHECKLIST FOR CONTRACTORS:

- ☐ Stop any ground disturbing activity immediately. This may be a crime scene. When bone fragments or possible Native American artifacts are found, study the objects WITHOUT disturbing, touching, or moving them. Removing bone fragments, artifacts, and other items from any archaeological site, without proper authorization, is against the law.
- ☐ Contact Port of Clarkston staff immediately at 509-758-5272. The Port will then follow its procedures, listed below.
- ☐ Contact your direct supervisor & the project manager.
- ☐ Secure the area.
- ☐ **Do not draw attention to the area with any obvious flagging or markers.** Maintain confidentiality concerning the discovery of the cultural resource, and do not discuss with anyone other than the contact people listed above.
- ☐ If you are a supervisor, you should obtain guidance from Port of Clarkston staff and the named archaeologist, if so instructed. This protects the artifacts and sites, and limits the Port's liability and your personal liability.

As of the writing of this policy, key contacts for appropriate jurisdictions are as follows:

- Dr. Lee Sappington, Archaeologist (208-885-6480),
- Nez Perce Tribe Cultural Resource Program (Pat Baird, 208-621-3851),
- Confederated Tribes of the Umatilla Indian Reservation (Catherine Dickson and Carey Miller, 541-429-7230),
- Colville Confederated Tribes (Guy Moura, 509-634-2695), and/or
- Washington Department of Archaeology and Historic Preservation (DAHP, 360-586-3065)

RESOLUTION NO. 2019-10, Formalizing Inadvertent Discovery Procedures Policy

A RESOLUTION FORMALIZING STEPS TO PROTECT CULTURAL RESOURCES IN THE EVENT OF INADVERTENT DISCOVERY DURING CONSTRUCTION

WHEREAS, the Port of Clarkston has established and consistently applied procedures and policies to protect cultural resources during construction projects in accordance with Executive Order 05-05; and,

WHEREAS, the Port of Clarkston wishes to establish these procedures more formally through a resolution of the Board of Commissioners; and,

WHEREAS, the Port Commissioners find the adoption of this resolution to be in the public's interest,

NOW THEREFORE, based on the foregoing, the Port of Clarkston hereby resolves and adopts the following Inadvertent Discovery Policy as described in Exhibit "A," attached hereto and incorporated herein by this reference, for the benefit of the district's cultural resources.

Adopted this 3rd day of October, 2019

Mark Brigham, Commissioner

Wayne Tippett, Commissioner

Marvin Jackson, Commissioner