

*Please provide the following information, and submit to the NOAA DM Plan Repository.*

### **Reference to Master DM Plan (if applicable)**

*As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.*

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

## **1. General Description of Data to be Managed**

### **1.1. Name of the Data, data collection Project, or data-producing Program:**

Estuary-wide genetic stock distribution and salmon habitat use, tidal-fluvial estuary - Columbia River Estuary Tidal Habitats

### **1.2. Summary description of the data:**

The goal of the tidal-fluvial estuary study is to determine the estuary's contribution to the spatial structure and life history diversity of Columbia River salmon stocks and the implications for estuary restoration. The study targets salmon use of tidal-fresh habitats in the estuary from Rkm 75 to Bonneville Dam, and addresses four primary objectives:

1. Characterize the temporal and spatial distribution of Chinook salmon genetic stock groups throughout the estuary (March 2010 - March 2012).
2. Determine stock-specific habitat use, life histories, and performance of juvenile salmon in key habitat complexes to fill data gaps in the tidal fluvial reaches of the estuary (2012-2016).
3. Monitor juvenile salmon life histories and their contributions to adult returns in selected estuary tributaries, including tributary examples where tidal habitats have been restored (2012-2018).
4. Evaluate estuary restoration needs for recovery of all salmon ESUs and account for projected effects of climate change through application of a salmon life-cycle model (2011-2015).

The study, funded by the U.S. Army Corps of Engineers, involves a large team of researchers organized by NOAA Fisheries, including researchers from the Oregon Health and Sciences University, University of Washington, and Washington Department of Fish and Wildlife. The study addresses critical uncertainties identified in the research, monitoring, and evaluation (RME) program for the Federal Columbia River Estuary Program (FCREP). The Estuary Program is intended to conserve and restore the estuary ecosystem to improve the performance of listed salmonid populations. Products from the tidal-fluvial study will include:

1. Descriptions of stock-specific temporal and spatial distributions of Chinook salmon

throughout the estuary.

2. Estimates of variations in Chinook salmon stock composition and stock-specific growth, food habits, consumption rates, and bioenergetic efficiencies within selected tidal-fluvial habitats.

3. Estimated contributions of estuarine life histories among returning adult Chinook salmon from selected populations throughout the Columbia River Basin.

4. A hydrological model quantifying the dynamics of rearing habitat opportunities for juvenile salmon at estuary reach and habitat scales.

5. Improved life-cycle models to account for the estuarine life histories of juvenile salmon and estimating the potential effectiveness of estuary restoration actions on the recovery and viability of selected salmon stocks. These results will directly address information needs to support estuary actions specified in the Federal Columbia River Power System (FCRPS) Biological Opinion for the Columbia River. The tidal-fluvial estuary study is part of an ongoing estuary research program initiated in 2002. The current study expands upon earlier research conducted in the lower 100 km of the estuary from 2002 to 2008. Although all objectives will be addressed by 2018 to correspond with a review of progress implementing the FCRPS Biological Opinion, some sampling activities may extend beyond this date to allow brood-year reconstruction of estuary contributions to adult returns in selected streams (Objective 3).

Bimonthly genetic stock group distribution for juvenile Chinook Salmon collected from 3 habitats each from 6 tidal-fluvial estuary reaches and monthly fish species composition, abundance, and length:weight; Chinook salmon life history and genetic stock ID.

**1.3. Is this a one-time data collection, or an ongoing series of measurements?**

One-time data collection

**1.4. Actual or planned temporal coverage of the data:**

2010-03-31 to 2018-09-30

**1.5. Actual or planned geographic coverage of the data:**

W: -123.9474, E: -123.9474, N: 46.1995, S: 46.1995

Point Adams Field Station

**1.6. Type(s) of data:**

*(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)*

Table (digital)

**1.7. Data collection method(s):**

*(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)*

Instrument: Balance, DNA Sequencer, Length Board, Quantitative PCR Machine,

Temperature Sensor

Platform: Water based Platforms - Watercraft - Manned Watercraft - Boat

Physical Collection / Fishing Gear: Animal and Plant Collection Device

**1.8. If data are from a NOAA Observing System of Record, indicate name of system:**

**1.8.1. If data are from another observing system, please specify:**

**2. Point of Contact for this Data Management Plan (author or maintainer)**

**2.1. Name:**

Northwest Fisheries Science Center (NWFS)

**2.2. Title:**

Metadata Contact

**2.3. Affiliation or facility:**

Northwest Fisheries Science Center (NWFS)

**2.4. E-mail address:**

nmfs.nwfsc.metadata@noaa.gov

**2.5. Phone number:**

206-860-3200

**3. Responsible Party for Data Management**

*Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.*

**3.1. Name:**

Susan Hinton

**3.2. Title:**

Data Steward

**4. Resources**

*Programs must identify resources within their own budget for managing the data they produce.*

**4.1. Have resources for management of these data been identified?**

No

**4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):**

0

**5. Data Lineage and Quality**

*NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.*

**5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible**

*(describe or provide URL of description):*

Lineage Statement:

Data were collected in the field using pencil and paper. Then data were manually inputted to an access data base.

**5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:****5.2. Quality control procedures employed (describe or provide URL of description):**

The access database auto fills certain fields depending on input. Database entries are not checked for accuracy. These data were collected and processed in accordance with established protocols and best practices under the direction of the project's Principal Investigator. Contact the data set Data Manager for full QA/QC methodology.

**6. Data Documentation**

*The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.*

**6.1. Does metadata comply with EDMC Data Documentation directive?**

Yes

**6.1.1. If metadata are non-existent or non-compliant, please explain:****6.2. Name of organization or facility providing metadata hosting:**

NMFS Office of Science and Technology

**6.2.1. If service is needed for metadata hosting, please indicate:****6.3. URL of metadata folder or data catalog, if known:**

<https://www.fisheries.noaa.gov/inport/item/20546>

**6.4. Process for producing and maintaining metadata**

*(describe or provide URL of description):*

Metadata produced and maintained in accordance with the NOAA Data Documentation Procedural Directive: [https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC\\_PD-Data\\_Documentation\\_v1.pdf](https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf)

**7. Data Access**

*NAO 212-15 states that access to environmental data may only be restricted when distribution is*

*explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.*

**7.1. Do these data comply with the Data Access directive?**

Yes

**7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?**

**7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:**

**7.2. Name of organization of facility providing data access:**

Northwest Fisheries Science Center (NWFSC)

**7.2.1. If data hosting service is needed, please indicate:**

No

**7.2.2. URL of data access service, if known:**

[https://www.webapps.nwfsc.noaa.gov/apex/parr/genetic\\_sources/data/page/](https://www.webapps.nwfsc.noaa.gov/apex/parr/genetic_sources/data/page/)

[https://www.webapps.nwfsc.noaa.gov/apex/parr/genetic\\_stock\\_distribution\\_and\\_salmon\\_habitat\\_us](https://www.webapps.nwfsc.noaa.gov/apex/parr/genetic_stock_distribution_and_salmon_habitat_us)

[https://www.webapps.nwfsc.noaa.gov/apex/parr/sampling\\_gear/data/page/](https://www.webapps.nwfsc.noaa.gov/apex/parr/sampling_gear/data/page/)

[https://www.webapps.nwfsc.noaa.gov/apex/parr/sampling\\_species/data/page/](https://www.webapps.nwfsc.noaa.gov/apex/parr/sampling_species/data/page/)

[https://www.webapps.nwfsc.noaa.gov/apex/parr/sampling\\_station/data/page/](https://www.webapps.nwfsc.noaa.gov/apex/parr/sampling_station/data/page/)

[https://www.webapps.nwfsc.noaa.gov/apex/parrdata/inventory/tables/table/genetic\\_sources](https://www.webapps.nwfsc.noaa.gov/apex/parrdata/inventory/tables/table/genetic_sources)

[https://www.webapps.nwfsc.noaa.gov/apex/parrdata/inventory/tables/table/genetic\\_stock\\_distribution](https://www.webapps.nwfsc.noaa.gov/apex/parrdata/inventory/tables/table/genetic_stock_distribution)

[https://www.webapps.nwfsc.noaa.gov/apex/parrdata/inventory/tables/table/sampling\\_gear](https://www.webapps.nwfsc.noaa.gov/apex/parrdata/inventory/tables/table/sampling_gear)

[https://www.webapps.nwfsc.noaa.gov/apex/parrdata/inventory/tables/table/sampling\\_species](https://www.webapps.nwfsc.noaa.gov/apex/parrdata/inventory/tables/table/sampling_species)

[https://www.webapps.nwfsc.noaa.gov/apex/parrdata/inventory/tables/table/sampling\\_station](https://www.webapps.nwfsc.noaa.gov/apex/parrdata/inventory/tables/table/sampling_station)

**7.3. Data access methods or services offered:**

At this time, contact the Data Manager for information on obtaining access to this data set. In the near future, the NWFSC will strive to provide all data resources as a web service in order to meet the NOAA Data Access Policy Directive (<https://nosc.noaa.gov/EDMC/PD.DA.php>).

**7.4. Approximate delay between data collection and dissemination:**

360

**7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:**

Data has to be entered and quality checked before access is granted.

## 8. Data Preservation and Protection

*The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.*

### 8.1. Actual or planned long-term data archive location:

*(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)*

NCEI-MD

#### 8.1.1. If World Data Center or Other, specify:

#### 8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:

### 8.2. Data storage facility prior to being sent to an archive facility (if any):

Northwest Fisheries Science Center - Seattle, WA

### 8.3. Approximate delay between data collection and submission to an archive facility:

365

### 8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

*Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection*

The Northwest Fisheries Science Center facilitates backup and recovery of all data and IT components which are managed by IT Operations through the capture of static (point-in-time) backup data to physical media. Once data is captured to physical media (every 1-3 days), a duplicate is made and routinely (weekly) transported to an offsite archive facility where it is maintained throughout the data's applicable life-cycle.

## 9. Additional Line Office or Staff Office Questions

*Line and Staff Offices may extend this template by inserting additional questions in this section.*