

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:

Barged/In-river steelhead migrant data - Evaluation of methods to reduce straying rates of barged juvenile steelhead

1.2. Summary description of the data:

The goals of this study are to develop methods to reduce wandering and straying of steelhead (*Oncorhynchus mykiss*) that are collected and barged from the Snake River to below Bonneville Dam. Salmon and steelhead that stray and spawn in non-natal streams are a significant conservation concern, because they may confound accurate assessment of the VSP parameters of recovering native populations and decrease the productivity of these populations through genetic introgression or ecological competition. These issues are a particular concern for listed mid-Columbia River stocks because salmon that are collected and barged downstream as juveniles have shown higher stray rates into these watersheds as returning adults relative to in-river migrants.

However, while barging may contribute to elevated stray rates, there are substantial benefits from barging because transported Snake River steelhead consistently have higher smolt-to-adult returns than steelhead left to migrate in-river. Therefore, it is important to identify and develop strategies for reducing the stray rates of transported steelhead while maintaining the survival benefits consistently observed for barged steelhead. The specific aims of this proposal are as follows:

- 1) Conduct an analysis of existing coded wire (CWT) and PIT tag data to identify causative factors associated with straying by Columbia River salmonids, particularly as it relates to natural rates of straying and straying associated with transport.
- 2) Assess imprinting of barged and in-river migrants by monitoring imprinting associated changes in physiological function and gene expression as indicators of imprinting success.
- 3) Identify key environmental parameters (e.g. orienting current, water exchange rate, novel tributary water) that are important for imprinting barged fish and develop barging protocols to optimize imprinting success and thereby minimize straying using a controlled laboratory study.
- 4) Initiate tests of a modified barge protocol designed to maintain survival benefits while

reducing wandering, delay, and straying behavior of returning adults. The work is being conducted by NWFSC scientists in collaboration with the University of Washington.

Products for this project will include annual reports, peer-reviewed publications, presentation of results at local and national meetings, and consultation with the FCRPS managers.

Physiological and field data on barged and in-river migrant steelhead.

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:

2010-01-01 to 2016-12-31, 2010-01-01 to 2016-12-31

1.5. Actual or planned geographic coverage of the data:

W: -121.3293, E: -121.3293, N: 45.6834, S: 45.6834

Columbia River: Columbia River

W: -122.7813, E: -122.7813, N: 47.6501, S: 47.6501

Big Beef Creek hatchery: Big Beef Creek hatchery

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.)

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:

Metadata Contact

2.2. Title:

Metadata Contact

2.3. Affiliation or facility:

2.4. E-mail address:

nmfs.nwfsc.metadata@noaa.gov

2.5. Phone number:

(206) 860-3433

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:

Andrew Dittman

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"):

1%

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:

Statistical analysis.

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):

Checked data entry and analysis. These data were collected and processed in accordance with established protocols and best practices under the direction of the projects Principal Investigator. Contact the dataset 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?

No

6.1.1. If metadata are non-existent or non-compliant, please explain:

Missing/invalid information:

- 1.7. Data collection method(s)

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/17955>

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

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.ncei.noaa.gov>

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:

720 days

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

No Delay

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 days

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.