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:
   Predicted channel types - Potential for Habitat Improvement in the Columbia River Basin

   1.2. Summary description of the data:
   Basin-wide analysis of potential to improve tributary habitats in the Columbia River basin through restoration of habitat-forming processes.

   Identification of geomorphological target conditions for river restoration is typically based on locally measured reference conditions, yet few reference sites remain in much of the 630,000 km2 Columbia River Basin, USA. Therefore, we predict reference conditions throughout the basin based on key reach-scale variables, which we empirically derived from a limited number of reference sites. Our typology predicts channel type based primarily on channel slope in confined reaches (floodplain width less than 4 times the bankful channel width) and on slope, drainage area, precipitation, and relative transport capacity in unconfined reaches (floodplain width greater than 4 times channel width). Channel types are cascade, step-pool, plane-bed, and pool-riffle in confined reaches, and braided, island-braided, meandering, and straight in unconfined reaches. Accuracy of channel type prediction in confined reaches is generally high compared to prediction accuracy in unconfined reaches. Lower accuracy in the unconfined reaches is largely due to vertical accuracy of the 10- m digital elevation model (DEM), which is insufficient to accurately estimate channel slope in low relief areas. However, lack of sediment supply information also limits our ability to predict floodplain channel type accurately. Therefore, we evaluate the effect of incorporating an estimate of relative transport capacity to help separate single thread channels (straight and meandering) from multi-thread channels (braided and island-braided) and increase prediction accuracy. Finally, we use existing ecoregion maps to show how channel type distributions vary among geologic regions, and suggest analysis options for mapping reference condition across large river basins.

   We also attempted to develop a GIS data set that depicts pre-settlement riparian vegetation in the Columbia River Basin to guide stream restoration for endangered salmon. To do this, we first created a data layer of historic riparian vegetation information from survey notes that were taken mid 19th to early 20th century during the Public Land Survey System (PLSS) conducted by General Land Office (GLO). Our

reconstructed riparian vegetation data included randomly sampled basin-wide data (drainage area 200,000 km2), as well as intensively reconstructed watershed-level data (3,000 km2). Our modeled output was too inaccurate to be useful.

GIS hydrography layer with multiple stream attributes.

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 2014-01-07

1.5. Actual or planned geographic coverage of the data:
W: -122.3062, E: -122.3062, N: 47.6449, S: 47.6449
Columbia River Basin: The Columbia River Basin is the fourth largest watershed in the United States - it includes area in 7 states (Oregon, Washington, Idaho, Montana, Nevada, Wyoming, and Utah) and one Canadian province.

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:
Northwest Fisheries Science Center (NWFSC)

2.2. Title:
Metadata Contact

2.3. Affiliation or facility:
Northwest Fisheries Science Center (NWFSC)

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:
Tim Beechie

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?
Yes

4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):
5

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:
Multiple GIS processes to assign stream reach attributes; SVM model to classify stream reach types.

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):
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 dataset Data Manager in section 3 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/20560

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.webapps.nwfsc.noaa.gov/apex/parr/columbia_basin_rivers_over_8_meters_bankfull_wi
https://www.webapps.nwfsc.noaa.gov/apex/parrdata/inventory/tables/table/columbia_basin_rivers_

https://www.webapps.nwfsc.noaa.gov/server/rest/services/Hosted/Columbia_River_Basin_Predicted_

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 non-sensitive 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:
0 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

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.