

STATEMENT OF WORK

Study of Salmonid Status and Trend Data Collection Work Process

NFFP7100-5-00029

1.0 ORGANIZATION

1.1 Organization -- The Northwest Fisheries Science Center (NWFSC), of the National Marine Fisheries Service (NMFS), National Oceanic & Atmospheric Administration (NOAA), Department of Commerce (DOC) is a government agency charged with the mission of stewardship for living marine resources.

1.2 Background and Objective -- The NWFSC provides scientific and technical support to NMFS for the management, conservation, and wise-use of the Northwest region's marine and anadromous resources. Improved data management is essential in order to be able to use best available data to inform scientific decision making, and in particular, to meet NMFS obligations under the Endangered Species Act (ESA).

Much of the data that is used by NMFS in making determinations to list or de-list salmonid ESUs, to complete recovery planning and monitoring and evaluation or to complete status reviews is not collected directly by NMFS. Rather it is collected by other agencies, states and tribes.

Many different methods and processes are used to collect these data and this variety restricts their use. Other groups are also involved in the collection and compilation of this data before it can be used. The collection system, as it currently exists, is mostly ad-hoc and was not built to conform to an overall plan nor to take advantage of fundamental improvements in data sharing technology that have occurred over the past decade or so. THE NWFSC of NOAAAF has developed a Salmonid Data Base to house this data. To make improvements to that system and to understand what happens to the data before it is consolidated into the SDM it is necessary to understand in detail the existing data management arrangements. Therefore, the primary objective of this project is to develop a logical data-flow map and related descriptions of the data being collected. The product will be a detailed description of how, when and by whom Salmonid data (as defined in this statement of work) is collected, what data checking and quality assurance is completed as a part of this process, what data is being collected and shared, and how it is being managed. Work by Sampson and Crone¹ is similar to what is required for this work, understanding though that this work is more extensive. The results from this project will be used to make decisions and plans to improve data quality, data sharing and data exchange in the region. These goals cannot be accomplished without a detailed understanding of the current data collection arrangements.

¹ Sampson, David B., and Crone, Paul R. (Eds) 1997. Commercial Fisheries Data Collection Procedures for the U.S. Pacific Coast Groundfish. NOAA Technical Memorandum, NMFS-NWFSC-31.

2.0 SERVICES REQUIRED

2.1 Description - The required work is for detailed system analysis and reporting by an experienced data analyst. It will be necessary for the analyst to work independently to contact, and where necessary schedule and conduct, on-site interviews with many individuals involved in the multiple facets of regional salmonid data collection. Experience in completing detailed data management needs assessments is essential for this task. Data collection efforts in the region range widely in scope and scale and the data managers and collectors represent multiple disciplines. Experience working in multidisciplinary environments is therefore essential. It will also be necessary for the analyst to obtain, assemble and accurately document other sources of information concerning regional data management systems (for example internal agency guidelines or written descriptions of operating practices). A critical task will be to use these documents and interviews to carefully record the data management process that is being used. The project will be completed in consultation with the Northwest Environmental Data-Network. Stewart Toshach is a co-coordinator of this Network.

2.2 Deliverables -

2.2.1 A project plan, to be developed in consultation with the Northwest Environmental Data Network, shall be provided no later than two months after the project staffing is in place.

2.2.2 Diagram(s), associated narrative and tables that together clearly detail and identify: the responsible people and organizations; the data process including data manipulation steps and QA/QC; the locations where data collection and processes are completed; the time-line involved in completing these steps; for salmonid populations of interest to NMFS and it's partners.

NMFS is responsible for identifying and documenting the status of Pacific Salmon and steelhead population segments under the ESA. To date, the agency has identified over 50 evolutionary significant units (ESU)s of Salmon and steelhead from California, Oregon, Washington, and Idaho and has listed 26 ESUs as threatened or endangered. The Status Reviews supporting these listings are shown at

<http://www.nwr.noaa.gov/Publications/Biological-Status-Reviews/Salmon.cfm>

Information concerning ESA listing decisions for salmonid species is organized by NMFS in the following hierarchy:

Recovery Domain

ESU's

Populations

Abundance data

Hatchery-Fraction data

Harvest data
Life History and Age-Structure data
Genetic data
Artificial Propagation data

This Statement of Work must develop a detailed description of how the Abundance, Hatchery-Fraction composition, Harvest Information, Life History/Age-Structure, Genetic and artificial propagation data are collected, managed and analyzed for each ESU and each population. Relevant necessary information includes at least the following:

What locations are currently used for data collection?

How are the locations for data collection determined? E.g. stratified random sampling? Convenient access? Etc.

How frequently is the data collected?

Who collects the data?

What data is collected at each location? (Develop a data dictionary list of data elements, and any related details, for example the precision of any data that is collected)

How is the data reported? E.g. on a paper form, on a PDA, on a laptop, or with some other defined method.

What data quality assurance and control is completed?

Is there a structured approach to gather the same pieces of data from year to year? Or does the agency gather all of the data it can from individuals and then re-organize the data to fit it into their system?

What is being done with historical data? Are there attempts to convert historical data into a form that is compatible with current data or is the older data being left as is?

Is the data collection method documented? What is the citation for the documentation and where is it located?

Describe any computation completed on the collected data.

Describe any mathematical formula used in the computation.

Summarize how the data is used.

Describe where the data is stored, when it was collected and or analyzed, and how it can be accessed.

Identify and cite any provide copies of any documents that describe the data collection and analysis process.

Identify whether the data has been collected for this study is from first person interviews or from documents and record the source of information so gathered or derived.

For each ESU and contributing population, develop a data flow diagram that describes, temporally, how the data is collected, validated, managed and analyzed. The diagram will describe the process of data collection from collection through analysis.

For each ESU and each contributing population develop a map that describes the geographic location of available data collection points with respect to the relevant ESU and or population boundaries. Combine these maps into a spatial data product using NMFS ESU and population layers to define the geographic locations of data collection for ESU's and populations.

Identify, from interviews with the collectors, analysts and others associated with developing and managing this data, what if any are the current constraints in developing, managing and maintaining these data sets, and what if any improvements can be made to these data collection and analysis systems.

The findings need to be developed into electronic narratives, summary charts, diagrams, tables, maps and other materials that clearly identify and show the geographic, temporal and logical processes employed to develop these data sets and aggregate them: from multiple collection sites to populations and from populations to ESU's.

In summary, an accounting is needed of the entire data management process for the collection and roll-up of salmonid data in the region - from collected source to repository. The accounting will need to include data dictionary descriptions of discrete data items that are collected as follows: Data element name, data element definition, data element unit of measure and any codes or other pertinent information associated with collected data elements.

Individual entities that are collecting and managing this data will need to be contacted, and in all likelihood visited, to complete this effort. It is expected that much of the information needed to complete this report will be collected from in person interviews with key regional contacts who are personally involved in managing these data collection efforts. It may also be necessary to make contact with individuals who worked on developing relevant data sets but who now work elsewhere. Where critical and possible the contacts in Appendix A will need to be contacted. Other contacts may also be necessary with the following agencies and entities

A list of essential contacts is provided in the attached APPENDIX and is likely to include staff from the following:

- Pacific States Marine Fisheries Commission
- StreamNet and PTAGIS {Steering committee members}
- State fish and wildlife agencies (or their equivalents) {again, StreamNet steering committee members can provide best contacts for each data set and ESU}
- US Bureau of Reclamation

- Bonneville Power Administration
- Federal Energy Regulatory Commission {Keith Kirkendall in our Portland office would know some folks}
- US Army Corps of Engineers
- US Forest Service {contacts will vary by Forest - Scott Woltering might be a good person to start with}
- US Bureau of Land Management {ditto for BLM - might start with Al Doelker}
- US Fish & Wildlife Service {various depending on area e.g., Travis Coley for Columbia River chum. Recommend checking with Howard Schaller}
- Indian Fisheries Commissions (Columbia River Intertribal, Northwest, and Upper Columbia United) and Non-Commission Tribes {recommend checking with Gary Graves or Will Beatty}
- Public and Private Utility Companies with Fish Passage Facilities {Doug Cramer @ PGE for Clackamas projects}
- The NMFS. Andy Albaugh, Tom Good, Steve Stone

All data collected for this project and related metadata will be the property of the NMFS/NWFSC.

2.2.3. A compiled and edited draft and then, a final report including narrative, tables, maps and any completed interview forms. The report will be provided in electronic form in Microsoft Word. Copies of data flow diagrams will be provided in Microsoft Visio.

APPENDIX A (Which needs to be added to).

Type of data	agency	Person	E-mail contact
artprop release	FWS	Tom Kane	Tom_Kane@r1.fws.gov
artprop release	ODFW	John Leppink	John.D.Leppink@STATE.OR.US
artprop release	WDFW	Kelly Henderson	hendeksh@dfw.wa.gov
artprop release	IDFG	Sharon Clark	sclark@idfg.state.id.us
artprop spawn	FWS	Stephen Pastor	Stephen_Pastor@r1.fws.gov
artprop spawn	ODFW	John Leppink	John.D.Leppink@STATE.OR.US
artprop spawn	WDFW	Catie Mains	MAINSCLM@dfw.wa.gov
artprop spawn	IDFG	Laura Story	lstory@IDFG.STATE.ID.US
artprop release	NWIFC, CRITFC (Tribes)	Phil Roger (CRITFC)	Phil Roger <rogp@critfc.org>
artprop spawn	NWIFC, CRITFC (Tribes)	Randy McIntosh (NWIFC)	Randy McIntosh <rmcintos@nwifc.org>
All	NOAAF, NWFSC	Andy Albaugh	Andrew.Albaugh@noaa.gov
All	NOAAF, NWFSC	Tom Good	Tom Good <Tom.Good@noaa.gov>
All	NOAAF, NWRO	Steve Stone	Steve Stone <Steve.Stone@noaa.gov>
All	NOAAF, NWFSC	Rich Kang	Rich Kang <richard.kang@noaa.gov>