

**Excerpt from the Mainstem Systemwide Review Team project review summary, final recommendations to Northwest Power and Planning Council, July 27, 2006 (<http://www.nwcouncil.org/fw/budget/2007/ms/0727.pdf>).**

Regional Data Management:

The recent completion of the Council's subbasin planning effort highlighted the need for consistency and uniformity in fish, wildlife, and habitat data management for use in monitoring and evaluation at the Columbia Basin scale. Several independent efforts to accumulate information from the subbasin assessments have been incorporated into coordinated efforts to develop standardized protocols for collection and management of data for larger regional efforts. Although the subbasin plans were useful for planning purposes at the local subbasin scale, they do not guide basinwide decision making (budget allocation and species prioritization) or provide opportunities for the "roll-up" of population specific information (comprehensive benefits). In addition there are frequent reports, for example by StreamNet, of challenges inherent in more consistent use of standards and protocols by states, tribes, and others.

Projects currently exist in the Columbia River Basin, funded by Bonneville, which provide data collection, data management, and information dissemination services. These projects address the data management issue from two perspectives from a fish and wildlife status, trends, and goals standpoint. First, a series of projects have been recently initiated to provide guidance and develop protocols for data collection to support broader monitoring and evaluation efforts within the Columbia River basin and across the Pacific Northwest. These projects were initiated, partially, in response to reviews by the Independent Science Review Panel (ISRP) and the NPCC's 2000 Fish and Wildlife Program and the 2003 Mainstem Amendment. The BPA is currently funding portions of three projects that are well coordinated and addressing the issue of common data collection and data sharing protocols. A second group of projects, funded by BPA, focus on collecting and accumulating fish and wildlife monitoring data. These projects range from on-the-ground data collection projects, to data management projects, up to basinwide reporting efforts. Through the development of FY 2007-2009 NPCC funding recommendations, the NPCC has the opportunity, with the assistance of the Mainstem Systemwide Review Team (MSRT), to build a sound suite of projects to insure that data management is well coordinated and addresses key management questions identified in the NPCC's Draft Guidance for Developing Monitoring and Evaluation as a Program Element of the Fish and Wildlife Program.

The Council's draft monitoring and evaluation plan was guided by draft high level indicators developed by the Pacific Northwest Aquatic Monitoring Partnership (PNAMP), and identified key management questions that regional reporting should begin to address in the future. These key management questions are being used to guide the FY 2007-2009 project selection process to ensure that BPA funded fish and wildlife monitoring is coordinated and targeted on key data for regional reporting.

**Existing Monitoring and Evaluation Protocols/ Guidance Projects**

Pacific Northwest Aquatic Monitoring Partnership (PNAMP)

- Formal organization that includes a Charter signed by 19 state, federal, tribal and regional entities in 2004
- Drafted "Considerations for Monitoring in Sub-basin Plans" for the Fish and Wildlife Program and completed a strategic plan (PNAMP Strategy for

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Coordinating Monitoring of Aquatic Environments in the Pacific Northwest) in 2005

- Implement monitoring protocol comparison projects and served as forum for coordination of monitoring across programs
- Currently conducting aquatic monitoring inventories with BPA funding in Columbia River subbasins
- Will continue to facilitate discussions among technical experts and between scientists, managers, and liaison groups for the collective evaluation and interpretation of current and new knowledge regarding issues in need of management or research attention to insure data standards and integrity among and between various monitoring programs. CSMEP is implementing the Columbia River Basin portion of the fish monitoring strategy for PNAMP

Collaborative Systemwide Monitoring and Evaluation Project (CSMEP)

- Conducted metadata inventories and identified strengths and weaknesses of fish population data for 13 Columbia River subbasins by working collaboratively with StreamNet and has developed a web accessible database for these data (this effort continues in additional subbasins)
- Developed preliminary monitoring and evaluation study designs for status and trends of fish populations and effectiveness of habitat, harvest, hydro and hatchery actions currently being implemented in the Salmon River Pilot Project
- CSMEP plans to continue to collaboratively design improved monitoring and evaluation study designs that will fill information gaps and provide better answers to key management questions in the future through multi-agency collaboration and pilot testing of study designs

Northwest Environmental Data Network (NED)

NED is a state, federal, tribal and non-profit consortium of 13 entities with an interest and commitment to developing plans and agreements and where necessary promoting technologies needed to improve the quality, quantity and timeliness of data for monitoring and other environmental programs. Development of standards for reporting and exchanging information is a part of the NED mission. The NED has initiated its web portal to disseminate metadata describing and locating monitoring data sets, completed a set of Best Practices for Reporting Location and Time Related Data, developed a solution for collecting disparate subbasin planning data and successfully completed a second workshop which helped bring various groups together to discuss how to share data once it is acquired. The CBFWA Status of the Resource Project intends to work closely with NED to establish web access protocols for the data used to generate annual reports.

The PNAMP and CSMEP projects address issues related to what data are needed, how they should be collected, and what data gaps exist that should be filled by additional sampling programs - key aspects that are most appropriate for biologic specialists. Members of these projects are also well positioned to work with data management specialists to develop and agree on data definitions and formats across the region. The NED project, with collaboration from data collection and reporting projects, will help facilitate the efficient transfer of data between regional programs.

**Existing Monitoring and Evaluation Reporting Projects**

#### StreamNet

StreamNet is a data development and dissemination project that provides data related services to the Fish and Wildlife Program and the region's fish and wildlife agencies. StreamNet exists specifically to facilitate transfer of data from multiple agencies for regional use in research, monitoring, management, public education, policy and decision-making. Data are obtained from field agencies and BPA funded projects. The primary data sets are standardized to a consistent format across agencies, quality assessed, and geo-referenced. The data are made available publicly through an on-line data query system and through interactive map interfaces, accessible through the internet and metadata will be available through the NED portal. This makes data available from many agencies that are not able to make data available via the web themselves. The project has also developed an online searchable archive capable of housing data from a wide variety of sources, including BPA funded projects, and making them available over the internet. StreamNet provides indirect support to a variety of management, restoration and monitoring efforts that are designed to protect, enhance, and restore fish populations, and is an active participant in both PNAMP and NED. StreamNet performs the task of posting monitoring data from the management agencies on the internet in regionally consistent format, a function the agencies are currently not structured or tasked to do. Posting data on the internet is a prerequisite for the data to be available through any anticipated distributed database system or portal.

#### Fish Passage Center Functions

The Fish Passage Center functions continue to be needed, now and into the future. The monitoring and data management functions consist of mainstem fish passage data collection, data management, and internet accessibility. The project also collects and stores data for the Smolt Monitoring Program and the Gas Bubble Trauma project and other historical data sets including resident fish data. The data is available via the internet.

#### Data Access in Real Time (DART)

The project provides single-point, internet-based access to a subset of Columbia Basin mainstem information to guide and support BPA's independent decisions pertaining to its responsibilities under the Power Act and Endangered Species Act, as well as tools for data analysis. DART is a second tier data management project that acquires data from other data projects for display and analysis through its online tools.

#### Habitat and Biodiversity Information System For Columbia River Basin (IBIS)

This project operates and maintains an internet website to 1) disseminate habitat and biodiversity information for eco-provinces and subbasins, and 2) create performance tools to support subbasin and basinwide decision making. Northwest Habitat Institute staff also attends meetings (including PNAMP and NED), makes presentations, develops and hands out professional material, as well as writes peer reviewed publications about the information and tools developed for this project. This project addresses the wildlife portion of basinwide data needs.

#### PIT Tag Information System (PITAGIS)

PTAGIS is the central repository for all PIT tag information for the Fish and Wildlife Program. This information is available to all entities through the internet. The PTAGIS project provides computer software that facilitates the standard data collection of mark, release and recovery information for PIT tagged fish. The Columbia Basin PIT Tag

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Steering Committee establishes the data collection standards and methods employed by the PTAGIS project.

Status of the Resource Project – CBFWA

The Council recently approved a within year budget modification request to support CBFWA's Status of the Resource Project. The CBFWA Status of the Resource Project will be the interactive web based interface to fish and wildlife status, trends, and goals data, and it will address the specific responsibilities such as identifying data gaps, coordinating data reporting, and making data available via the internet. The state, Tribal, and federal fish and wildlife managers will, through CBFWA, be responsible for ensuring that the important data are available, reliable and adequately documented. The project will develop, produce, and distribute an annual resource status and trends report of focal species (fish and wildlife) relative to biological objectives in subbasin plans. In addition, the project will develop (i.e., summarize existing data and analyses from existing reports and personal interviews), produce, and distribute a project implementation report that tracks and assesses the implementation and success of fish and wildlife projects funded through Fish and Wildlife Program. The primary responsibility that CBFWA brings to the data management realm is the commitment by its Members to assist in developing a regional level report of fish and wildlife data in a consistent and transparent manner through a web site and annual report. A significant portion of the fish and wildlife status and trends data necessary to provide a comprehensive data package for the basin is not funded through BPA but is the responsibility of the Tribes, and state and federal fish and wildlife management entities. The Status of the Resource website may provide the value added feature of accessing data from projects and processes outside of the Fish and Wildlife Program if managers find this to be a useful tool

Using data protocols developed by the Collaborative Systemwide Monitoring and Evaluation Project (CSMEP) and the Pacific Northwest Aquatic Monitoring Partnership (PNAMP), data collection projects will be asked to collect data that is consistent with regional needs. The BPA will be asked to enforce, through project contracting, the implementation of regionally developed data collection and reporting protocols. The data management projects should then be provided clear guidance on which data are most important to have in a uniform format, and tasked to work with NED to insure that data are accessible and available. These requirements should be met and maintained to feed into the regional reporting required to support the CBFWA Status of the Resource Project and other regional data portals available on the web.

Projects should focus on development, quality assurance and maintenance of priority data bases and insure that data continues to be readily accessible via the internet. We support the recommendations from the recent ISRP review that called for clear direction to StreamNet on their data management activities. There is a particular interest in improving both the quality and timeliness of data from StreamNet. The NPCC should also urge BPA to require all fish and wildlife monitoring projects to make their data accessible electronically through the internet, StreamNet or other web based portals. Metadata should be available from all BPA funded projects on the NED portal.

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Data management projects

The following projects address regional data management needs. The MSRT anticipates a workshop or meeting involving the StreamNet steering committee, other core program project sponsors, and regional managers to define StreamNet's and other database manager's role and functions for FY 2007-2009. A meeting will be scheduled to coincide with the NED workshop in May to begin discussion on this topic. Resolution will require CSMEP, PNAMP, NED, CBFWA, and program manager's input. Currently there is not a requirement in BPA contracts to report non-tagging fish data to StreamNet or other data management entities, consequently, it appears that there may be substantial non-reporting of fish data to these databases by data collection projects funded by BPA. Input to the Council's M&E Framework could help define information needs for regional data management, an ISRP Retroactive Report recommendation.

**198810804 - StreamNet (CIS/NED)**

**Sponsor:** Pacific States Marine Fisheries Commission (PSMFC)

**FY07:** \$2,901,154 **FY08:** \$3,040,961 **FY09:** \$3,198,011

**MSRT Recommended FY07:** \$2,500,000 **FY08:** \$2,500,000 **FY09:** \$2,500,000

**Category:** Data Mgmt **Prioritization Category:** Core Program

**General comments:** A Streamnet project is a Core Program need. The MSRT is not certain that this is the core Streamnet project that is needed. There are four additional Streamnet proposals related to CSMEP, harvest, hatchery, and habitat project data which need to be considered in addition to this core project. Streamnet's role and functions need be defined within an M&E framework for the Program. The project has requested guidance on priorities for data types needed by the Program. The MSRT anticipates a workshop or meeting involving the Streamnet steering committee and regional managers to define Streamnet's role and functions for FY 2007-2009. We do not have a specific recommendation to make that happen. Some ideas include discussions at the upcoming NED workshop, Remand RME workgroup, CSMEP, and others. There is currently not a requirement in BPA contracts to report non-tagging fish data to Streamnet. It appears that there may be substantial non-reporting of fish data to Streamnet by data collection projects funded by BPA. Input to the Council's M&E Framework could help define information needs for regional data management (ISRP Retrospective Report recommendation).

**Budget comments:** StreamNet and IBIS should be well coordinated. This project should be coordinated with the Data Management Placeholder, in case additional funding is required. Any discussions of a regional data center should also occur in the context of the data management proposals. CBFWA should host a workshop to develop priorities for the data management projects.

For the funding period FY 2007-2009, the MSRT recommends that StreamNet focus on developing a hierarchical geographic data structure that directly supports subbasin planning information and Columbia Basin recovery planning. An emphasis should be placed on assisting data collectors (generally fish and wildlife managers) with tools for making their data standardized, consistent, and web-accessible through the StreamNet website or through distributed data systems. The data framework should be organized at the fish population scale, with an emphasis on population abundance and trend data. It is not anticipated that StreamNet would perform any secondary data analysis. The primary focal species for the purpose of regional reporting should be consistent with those identified in the NPCC's subbasin plans. For each of the populations, StreamNet should build the capacity to provide access to the data types identified in Table 2 either on the StreamNet web site or through distributed data access. A workshop involving CBFWA, the management agencies, regional data users and StreamNet staff is needed to finalize these preliminary priorities and to determine how far down the priority list is feasible on available funding. StreamNet should continue to work with PNAMP, CSMEP

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and NED to insure consistent implementation of data standards and protocols. StreamNet should continue to provide data related services to support and improve efficiency of data capture and management within the management agencies; to respond to data needs from management agencies, the FWP and regional-scale entities (e.g., universities, NOAA, FWS, etc.); and to disseminate information on data sources and fish and wildlife literature through the StreamNet Library.

StreamNet should work closely with the CBFWA Status of the Resource Project to help obtain access to information needed by that project. That effort will help scope the scale and depth of information available in the region, and identify data gaps in the regional data framework.

StreamNet should also begin working with a select group of projects within the Fish and Wildlife Program to develop methods and tools to efficiently transfer information from BPA funded projects to the StreamNet database, or assist in making their data web accessible.

Generally, the highest priority should be placed on projects that capture data necessary to estimate VSP parameters (abundance, productivity, diversity, spatial structure) as used by the NOAA Technical Recovery Teams.

In order to help facilitate restructuring the StreamNet project, CBFWA should be used to facilitate workshops to align the biologists with the data managers within the fish and wildlife management agencies to more clearly define the specific data requirements that StreamNet and IBIS will be expected to provide.

#### **200307200 - Habitat and Biodiversity Information System For Columbia River Basin**

**Sponsor:** Northwest Habitat Institute

**Requested FY07:** \$997,107 **FY08:** \$1,068,287 **FY09:** \$1,030,199

**MSRT Recommended FY07:** \$440,000 **FY08:** \$440,000 **FY09:** \$440,000

**Category:** Data Mgmt **Prioritization Category:** Core Program

**General comments:** Significant increase in proposed budget should be evaluated against regional needs. Guidance for this project should be included in the Streamnet discussions. This project focuses on habitat information. One member expressed a desire for improvements in data accuracy and better technology for query and data acquisition.

**Budget comments:** IBIS should be closely coordinated with StreamNet. This project should be coordinated with the Data Management Placeholder, in case additional funding is required.

Any discussions of a regional data center should also occur in the context of the data management proposals. CBFWA should host a workshop to develop priorities for the data management projects.

The MSRT recommends that the IBIS proposal be limited to providing hierarchical mapping of wildlife habitats to support future subbasin planning and to be included in the CBFWA Status of the Resource Project. If funding allows, the IBIS project should also develop spatial distributions of wildlife species and described in their proposal. The data collected through this project should be closely coordinated with CBFWA and NED to provide regional access and availability. CBFWA should be used to facilitate workshops to align the biologists with the data managers within the fish and wildlife management agencies to more clearly define the specific data requirements that StreamNet and IBIS will be expected to provide.

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