MEMORANDUM

TO:   Fish and Wildlife Committee Members

FROM:   Kris Homel

SUBJECT: Pacific Northwest Aquatic Monitoring Partnership: Supporting the Fish & Wildlife Program Since 2004

BACKGROUND:

Presenter: Jen Bayer, Coordinator for the Pacific Northwest Aquatic Monitoring Partnership (PNAMP) through the U.S. Geological Survey, and Co-Lead on the Coordinated Assessments Project

Summary: The Fish and Wildlife Committee will hear a presentation on the resources available to the region through the Pacific Northwest Aquatic Monitoring Partnership (PNAMP), a project of the U.S. Geological Survey. The presentation will include information on how PNAMP resources relate to the Council’s Fish and Wildlife Program and how they are accessed and shared, along with a discussion of emerging tools or innovations.

Relevance: Regional data and information-management projects are critical to supporting the Program’s data management, analysis, access, and communication functions. As part of the Mainstem and Program Support Project Review in 2019, the Council formulated a programmatic issue to address the importance of these projects. The programmatic issue emphasized the need to identify which resources house information derived from Program funded projects and how those resources can be accessed by the public. Over the course of this year, the staff will invite all seven of the data management projects included in the Mainstem and Program Support Review to share similar presentations. The Committee has heard from five projects so far- the Columbia Basin Fish and Wildlife Library, the Inter-tribal Monitoring Data project, Data Access in Real Time,
StreamNet, and the Intermountain Province Subbasin Data Management Project. In October, the committee will hear from the sixth project- PNAMP, which is administered by U.S. Geological Survey under Project #2004-002-00.

Background: A large amount of data is collected throughout the basin by many different projects and having access to that information is critical. This is the role filled by data management projects- they support the Program’s data management, analysis, access, and communication functions. Each project is a little different and each fits different needs for their organizations.

The seven data management projects were reviewed in the 2019 Mainstem and Program Support Project Review. In this review, the ISRP highlighted, and the Council agreed with, the importance of supporting regional and sub-regional data management, storage, and dissemination of information necessary for Program implementation and assessment (please see Programmatic Issue #2, pages 8 and 9). In particular, intentional planning for, and dedication of funding is necessary for (1) sharing information that informs decisions and (2) keeping pace with new technologies and knowledge through workshops and other learning experiences. This requires balancing investments in data collection with investments for data processing (data management, analysis, data steward expertise/support) and communication of information.

In an effort to address the Council recommendation and to advance the Council’s efforts in the assessment of program performance, there is a need to better understand the information and data sharing resources in the basin, which provide the Council and region with critical Program data and information. In the decision document from the 2019 review, the Council recommended that a subcommittee of the Regional Coordination Forum be convened. The tasks of this subcommittee would be to (1) communicate the role of the regional and sub-regional databases/repositories in providing public access to information derived from Program funded projects, (2) identify the primary regional databases/repositories that house information supporting the Program, and (3) address efficient flow of information between regional and subregional databases/repositories, and projects collecting and analyzing data.

Toward this end, the Council has organized a series of presentations on data and information management projects for this and upcoming Fish and Wildlife Committee meetings. The Council developed a set of questions to better understand the specific work each data management project is doing, how they relate to each other, and how they relate to the Council’s Program. Some of these questions are asked of every project during their presentation, and others are specific to individual projects. The presentation on PNAMP will include answers to questions 1 - 4 and 7.
The required questions are:

1. Describe the data and resources that you provide to the region.
2. How do these data and resources relate to the Council's Fish and Wildlife Program?
3. How are these resources accessed and/or shared among organizations?

The additional questions are:

4. What kind of collaborations or relationships exist between your data/repositories/organization, and other data management projects/organizations in the basin (not just within the Program)?
5. As the basin and program continue changing and other information needs arise or change, what opportunities do you have to adapt to these different needs?
6. What do we need to be aware of in the future to continue providing data management for the full suite of work implemented under the program?
7. Are there emerging tools or technologies we should be aware of? New data management needs? Innovations to share?

Through these presentations, we hope to highlight the resources that are available from these projects as they relate to the Program both to better understand the accomplishments of the Program, and to inform the region. Following the series of presentations, the Council will develop a summary of the answers each project provided to their specific questions.

More Info:  https://www.pnamp.org/
Pacific Northwest Aquatic Monitoring Partnership
Supporting the Fish & Wildlife Program Since 2004

Jen Bayer, PNAMP Coordinator, USGS
October 11, 2023

www.PNAMP.org
PNAMP: When, Why, Who?

• Established in 2004 to enhance collaboration among PNW federal, state, and Tribal monitoring programs

• Partnership of 19 charter member entities

• Voluntary participation since 2004 from over 2000 individuals representing more than 350 organizations – all are welcome to participate
Steering Committee Members Set the Stage for PNAMP

John Arterburn (Colville Tribes)
Patty O’Toole (NPCC)
Mike Brown (BLM)
Scott Collyard (WA Ecology)
Tim Copeland (IDFG)
Jeff McLaughlin (USBR)
Chris Hirsch (USDA FS)
Bruce Jones (NWIFC)
Denise Kelsey (CRITFC)
Lisa Kusnierz (EPA)
Jody Lando (alt. Russell Scranton, BPA)
Nancy Leonard (PSMFC)
Courtney Shaff (alt. Ken Fetcho, OWEB)
Dan Rawding (alt. Brodie Cox, WDFW)
Greg Sieglitz (NOAA)
Steve Waste (USGS)
Funding
In-kind Contributions

Hours by Organization Type for 2020-2022

- Federal (18 entities): 31.9%
- State (29 entities): 24.0%
- Local government (16 entities): 2.7%
- University (39 entities): 3.0%
- Unknown: 3.2%
- NGO (34 entities): 4.1%
- Private Sector (51 entities): 9.9%
- Tribe (26 entities): 10.3%
- Other (12 entities): 10.9%
PNAMP: What, How?

Communities of Practice

Host meetings, workshops, work groups to share information about monitoring methods, design and results

Collaborative Projects

Develop strategies for more standardized and coordinated regional monitoring (methods, design, analysis) and improved access to data and information

Tools & Resources

Develop and support users of online tools to support consistent and detailed documentation for projects & datasets
PNAMP Communities of Practice & Projects Support the Fish & Wildlife Program

- Strategies for more standardized and coordinated regional monitoring, data management and dissemination of information necessary for informing decisions
- Meetings and workshops about monitoring methods, design and results to aid in adaptive management and help partners to keep pace with new technologies and knowledge
- Foster collaboration and inclusivity to enhance quality, objectivity, utility, and integrity of data
Communities of Practice

• Coordinated Assessments Partnership (CAP)
• Fish Monitoring Work Group
• Remote Sensing Forum
• CRBRP Toxics Monitoring Subgroup
• Intensively Monitored Watersheds Forum
• Emerging Technologies Information Sessions (ETIS)
Collaborative Projects

- Hatchery fish data exchange (HCAX)
- Stream Habitat Metric Integration (SHMI)
- PIT array and related PIT tag analyses support
- Data mobilization recommendations
PNAMP Learning Opportunities & Products
Support the Fish & Wildlife Program

- Create opportunities for experts to share knowledge to highlight new approaches, promote best practices and encourage standardized methods
- Facilitate new methods to flow information between regional and subregional databases/repositories and projects collecting and analyzing data
- Facilitate development of needed data exchange standards and data documentation

Image: NOAA
CAP: Working Together Improving Access to Salmon Data
Fish Monitoring Work Group Leads Collaboration

Active Tasks
- Carrying Capacity Standards
- Juvenile Density (Snorkel & Electrofishing)
- Rotary Screw Trap (RST) Operations
- PIT Array and Related PIT Tag Analyses
- Support for CAP Workshop

Completed Tasks
- Smolt Estimation & Analytics Workshop
- Data Display Improvements to Dashboards
- CAP DES Juvenile Outmigrant/Define Smolt Equivalent
- MAFAC Dashboard
- Fish Management Units Boundaries and Attributes
FMWG Project: Improving Consistency in Information with Base Layers for Fish Management Units Boundaries and Attributes

**FMWG** developed recommendations for methods to define fish management units (e.g., population, core area, migratory corridor), names, and boundaries.

**StreamNet** updated the data tools with new GIS layers, resulting in better communication of data, which enables more effective, standardized analyses.

Image from recommendation document: Official Bull trout core areas and local populations (USFWS 2017 & 2018) along with ‘probable native range’ dataset derived from StreamNet’s Generalized Fish Distribution layer.
PNAMP Tools and Resources
Support the Fish & Wildlife Program

- Facilitate access to data that is needed for reporting on F&W Program goals, objectives and strategy performance indicators
- Improve access to data by helping partners discover and use appropriate data repositories for domain-specific data and metadata
- Online tools for detailed documentation of projects, supporting metadata for ISRP project reviews
Tools & Resources

- MonitoringResources.org
- StreamNet data access tools
New Products in 2023 and Beyond

MAFAC Stock Natural Abundance Goals and Available CAP Fish HLIs data

Columbia River Basin Screw Traps

Hatchery CAX
MonitoringResources.org Supports Fish & Wildlife Program Needs for Data Documentation and Discovery

Streamlined metadata documentation for Project Sponsors and other PNAMP partners

Refining user interface to make it easier for the user to discover data and metadata.
Documenting Procedures in MonitoringResources.org
Documenting Collection Events in MonitoringResources.org
Data and Metadata Discovery
Data and Metadata Discovery

StreamNet – CAP Fish HLls

Data Collection Event

Site Name: Big Cr. RST
Event Name: N/A
Lat: 45.103597
Long: -114.852495
Date: 2019-05-01T00:00:00-07:00
State: Idaho
County: Valley County
Study Plan Summary: Rotary Screw Trap sampling for wild Chinook Salmon and Steelhead emigrants in Idaho
Protocol: IDFG ROTARY SCREW TRAPPING for wild Chinook Salmon and steelhead emigrants in the Clearwater and Salmon River basins.
Program:
- Overview
- N/A
Organization: N/A

Data Repository: CAP Fish HLls (CAX)

MonitoringExplorer.org
Data Collection Event

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- **Program:**
  - **Overview**
  - **N/A**
- **Organization:** N/A

**Data Repository:** CAP Fish HLIs (CAX)

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**MonitoringExplorer.org**

**StreamNet – CAP Fish HLIs**
Working Together Across Programs
to secure investments, reduce redundancies, and meet FAIR principles

- Pisces Web at CBFish.org
  - proposals
  - contracts/SOW
  - annual reports

- MonitoringResources.org
  - study plans
  - sample designs
  - protocols
  - methods

- StreamNet
  - local trends
  - CAX
  - archived data

- CBF&W Library
  - reports
  - gray literature
  - books
  - access to peer journals
Adapting to Changes and Planning for Future Needs

Support Open Data by Implementing FAIR and Promoting Awareness of CARE

- Build a culture that values data and promotes responsible use
- Sustain foundations for governing, managing, and protecting data
- Provide access to emerging technologies to enable:
  - Machine-to-machine communication and reproducible workflows for efficient flow of information between projects and data repositories
  - Discovery of published datasets and metadata
  - Easier, more reliable reuse of data
Communications and Outreach

- PNAMP.org website
- Monthly newsletter
- YouTube
- Quarterly status reports
- Annual Reports
PNAMP Coordination Team

*Clockwise from top:* Sam Cimino, Meg Dethloff, Quinnell Flanagan, Amy Puls, and Jen Bayer

Learn more:
www.pnamp.org
www.MonitoringResources.org
YouTube Channel
Newsletter Archive
Upcoming Events

- PNAMP Steering Committee and StreamNet Executive Committee Joint Meeting Nov 8-9, 2023
- Fish Monitoring Work Group: Oct 19, Jan 18, Apr 18
- Remote Sensing Forum: October, January, April, July
- Toxics Monitoring Subgroup Workshop: Dec 5 (hybrid; Portland)
- PIT Array and Related PIT Tag Analyses short session at PTAGIS Workshop: Jan 30–Feb 1 (Stevenson, WA; in person only)
- HCAX Workshop: March or April
- IMW Lessons Learned for Restoration Design at RRNW, Feb 6-10 (Stevenson, WA; in person only)
- Fish Monitoring Symposium at WA/BC/ID AFS Joint Chapters Annual Meeting: Apr 29–May 2 (Spokane, WA)
- IMW Workshop 2024 TBD
- Toxics Monitoring Subgroup: March, June, September

Find details at www.PNAMP.org