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August 15, 2023

MEMORANDUM

TO: **Fish and Wildlife Committee**

FROM: **Kris Homel**

SUBJECT: **Update on StreamNet Program: supporting the Fish and Wildlife Program's information needs since 1988**

BACKGROUND:

Presenter: Dr. Nancy Leonard, Program Manager for StreamNet through the Pacific States Marine Fisheries Commission, 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 StreamNet, a project of the Pacific States Marine Fisheries Commission. The presentation will include information on how StreamNet 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 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 three projects so far- the Columbia Basin Fish and Wildlife Library, the Inter-tribal Monitoring Data project, and Data Access in Real Time. In

August, the committee will hear from the fourth project- StreamNet, which is administered by Pacific States Marine Fisheries Commission under Project # 1988-108-04.

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 StreamNet will provide answers to questions 1-7.

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.streamnet.org/

StreamNet
Fish Data for the Northwest

StreamNet Program

Supporting the Fish & Wildlife Program's Information Needs Since 1988

BPA Project # 1988-108-04

A FISHERIES DATA PROJECT OF
THE PACIFIC STATES MARINE FISHERIES COMMISSION

Today's Topics

- What is StreamNet
- Resources and data
- Supporting the Council's F&W Program
- Relationships with other data projects
- Adapting to changes and future needs
- *Preview:* new in 2023 and beyond

StreamNet

www.streamnet.org

A cooperative data management and dissemination project

Focused on fisheries and aquatic data and data-related services for the Pacific Northwest, with a Columbia River Basin emphasis

StreamNet Committee Members

States

Tribes & Tribal Consortium

Government

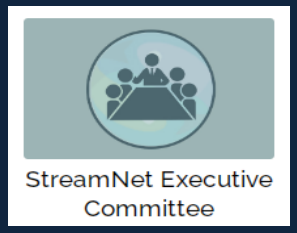
Interstate Compacts

Bonneville Power Administration

pacific northwest aquatic monitoring partnership

US Geological Survey

StreamNet's Structure for Success



Policy-level guidance and decision-making
(added per 2012/2013 NPCC recommendation)

Implementation support and guidance

Technical aspects of data exchange

Standards for data sharing time series and public query

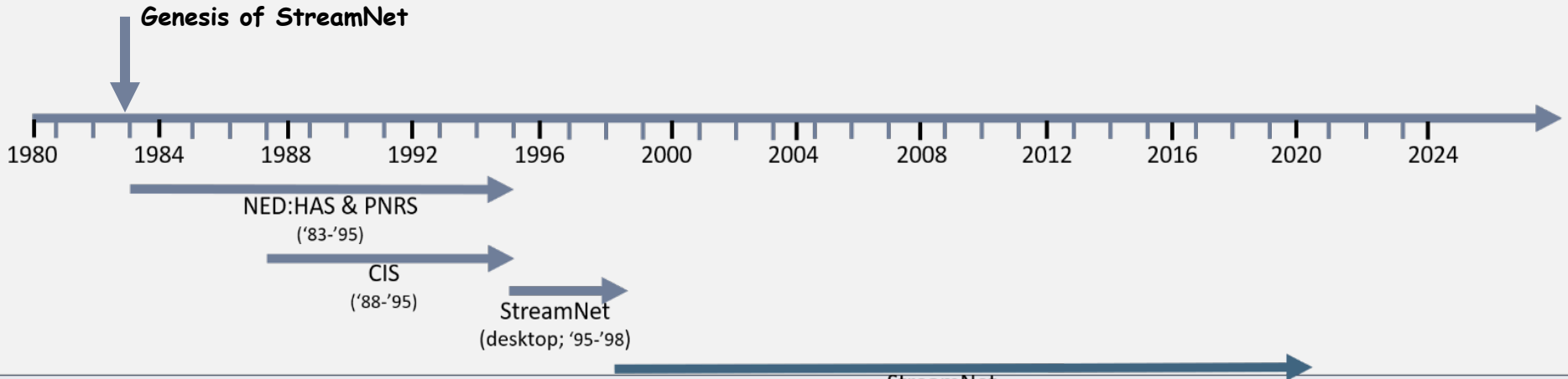
Standards for data sharing CAP Fish HLIs and public queries

Coordination and facilitation
(proposals, workshops, newsletters)

Teams include representation from non-StreamNet member organizations

StreamNet is Dynamic

Evolving with the Region and the Fish and Wildlife Program



2003

Interactive Mapper *to view/query data Is a custom ARCIMS application*

2004

Data Store *archives any datasets*

2005

Critical Habitat Mapper *(NOAA-F funded)*

2006

Posted Subbasin Planning Data *CRITFC consolidated data to be archived*

2010

Enhanced Data Query & Coordinated Assessment (CA) Project initiated *(coordinated by PNAMP & StreamNet)*

2012

CA eXchange (CAX) *1st Data Exchange Standard (DES) adopted to display on the Fish HLI (CAX Query) webtool*

2013

Integrated Query System *Tabular and map query options*

The mapper was moved to 'off the shelf' ARCGIS platform for easier maintenance

2021-2023

HCAX *Development of hatchery indicators and DES to display on the Fish HLI query webtool*

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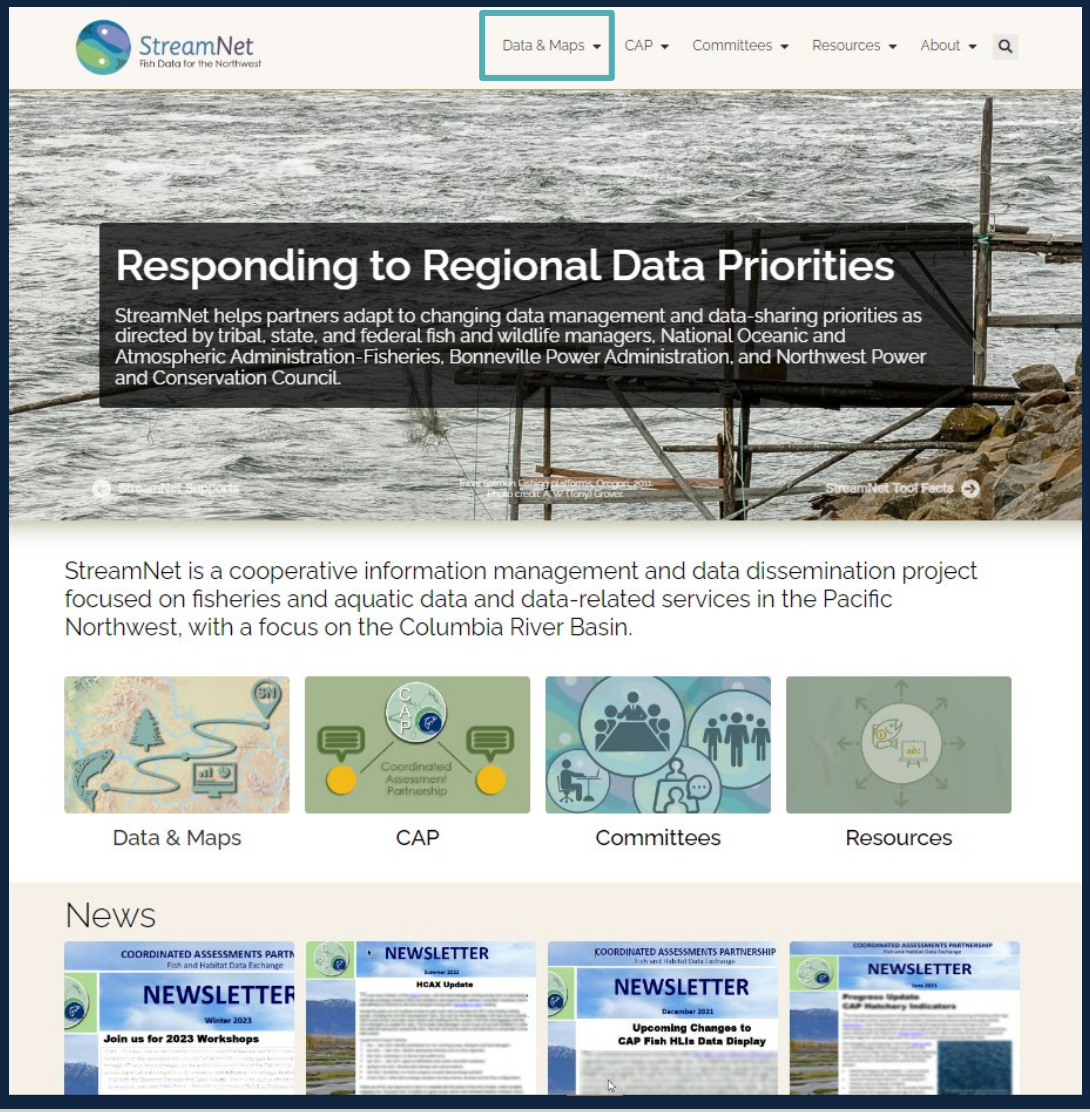
Resources and Data

Assist partners with building sharing capacity to exchange with StreamNet

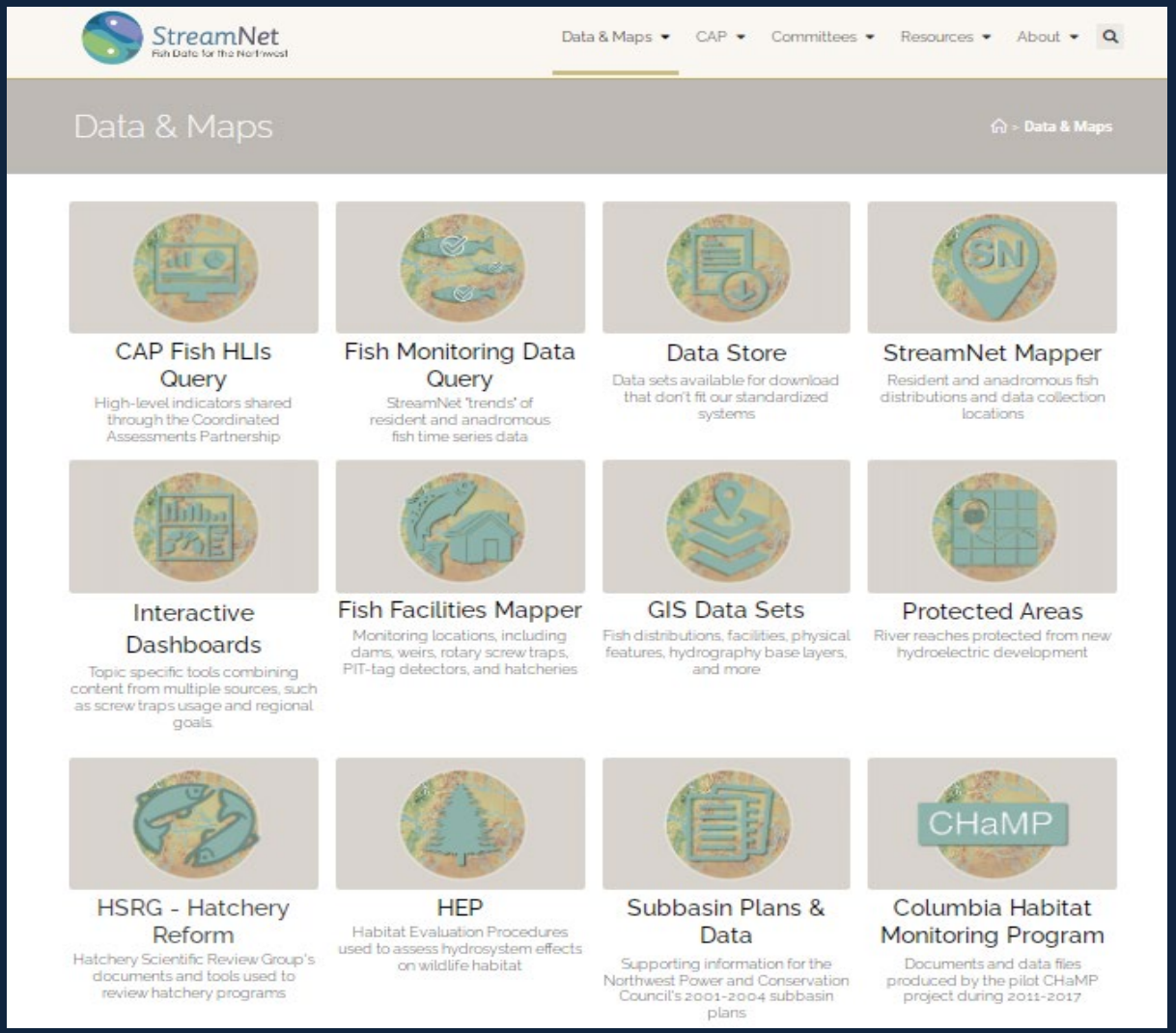
Resources and Data

Content and Access



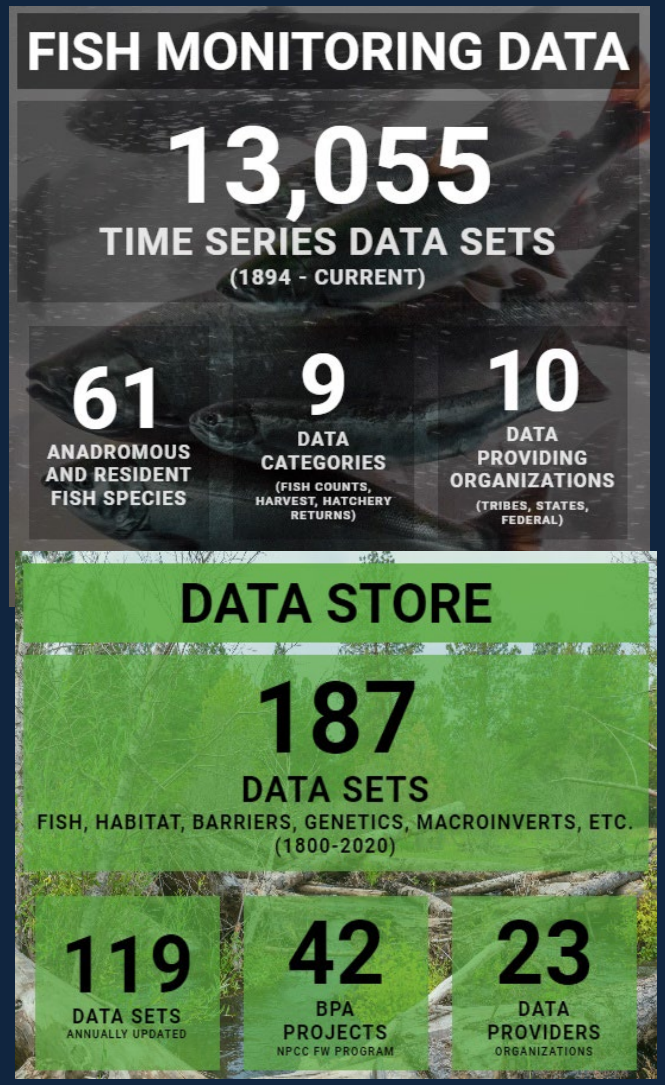
Resources and Data

Content and Access



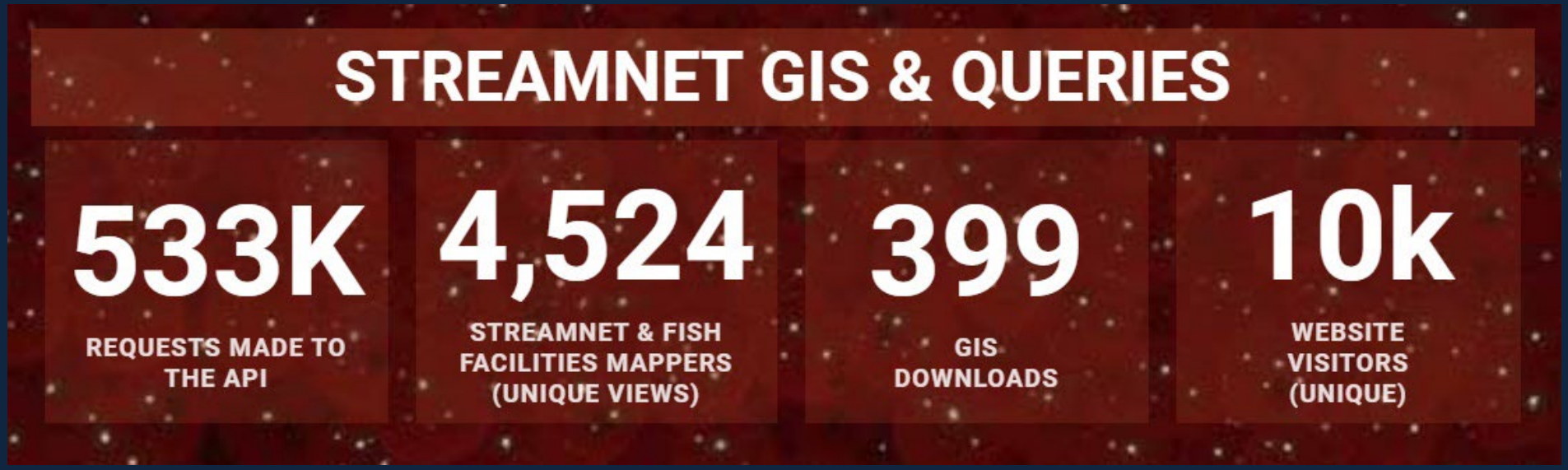
Resources and Data

Data Content in Actively Updated Data Systems



Resources and Data

Accessed by Agencies, Tribes, Public others
(2022 usage example)



Resources and Data

New: **NOAA staff using CAP Fish HLI webservice to automate review analysis**

Today's Topics

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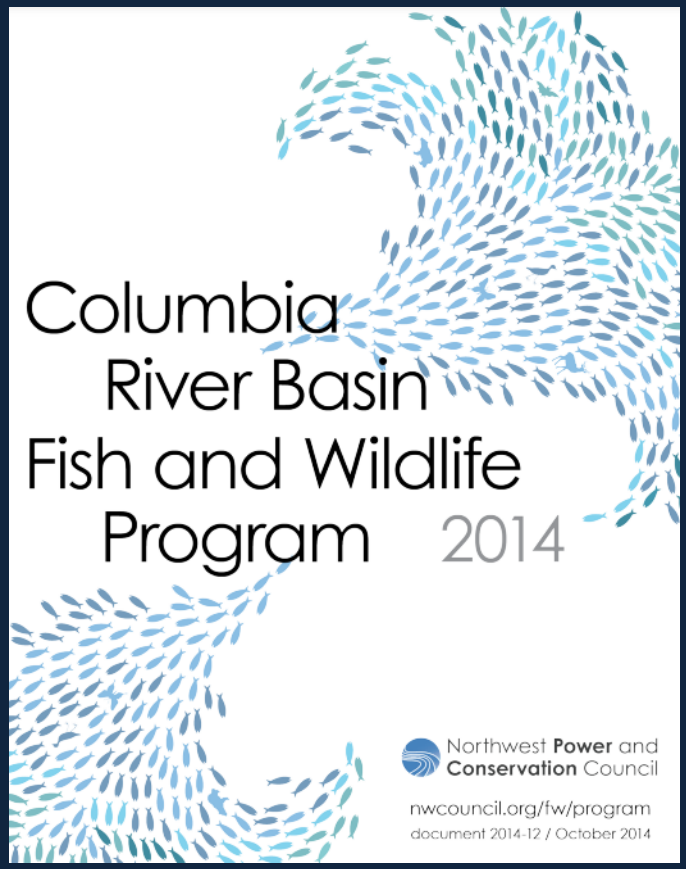
Support the Council's F&W Program

2014/2020 Program: Adaptive Management Section – Data Management Principles

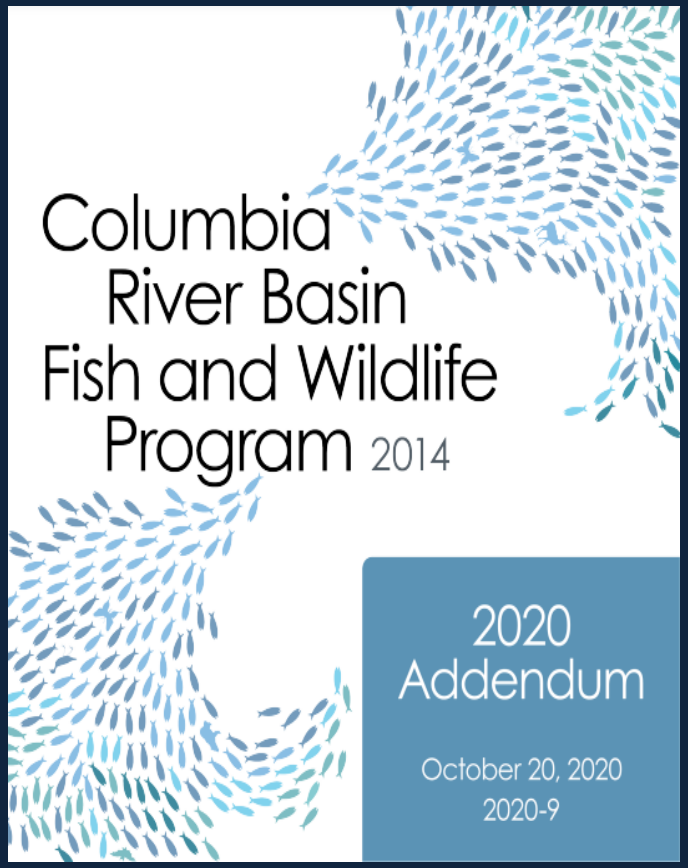
StreamNet follows these principles

- Public accessibility, search-ability, and usability of data in consistent formats to all interested parties.
- Program reporting relies on data sharing systems that provide access to data from federal and state agencies and tribes, and other entities.
- Coordinated data management systems guided by program evaluation and reporting needs.



Support the Council's F&W Program

2020 Addendum
Part 1: Strategy Performance Indicators (SPI)
Part 2 B. Assessing, Monitoring, and Reporting

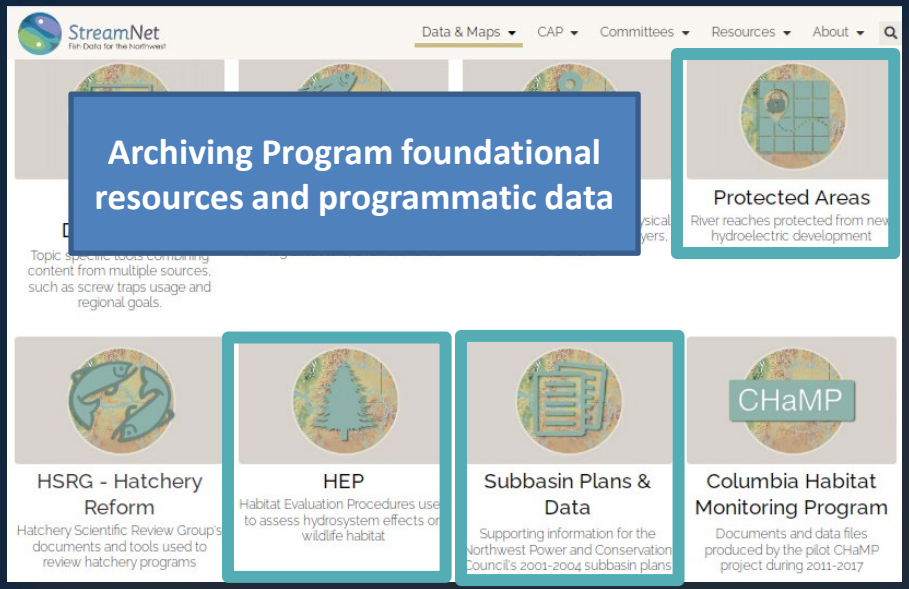


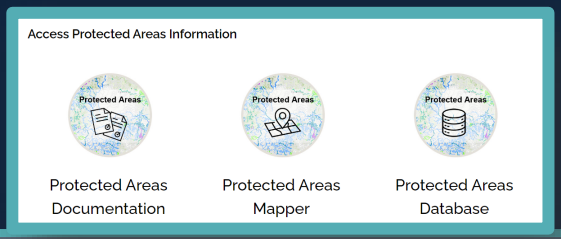
StreamNet currently provides:

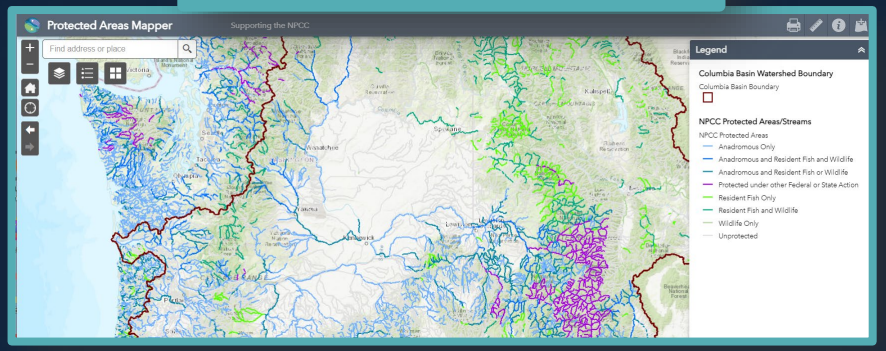
- Data for Strategy Performance Indicators
- Public access through centralized databases
- Data for reporting program goals, objectives, strategy performance indicators, and other
- Collaborative development and use of standards to improve access to data
- Maintenance of historical and current program data in a structured manner that facilitates public access.

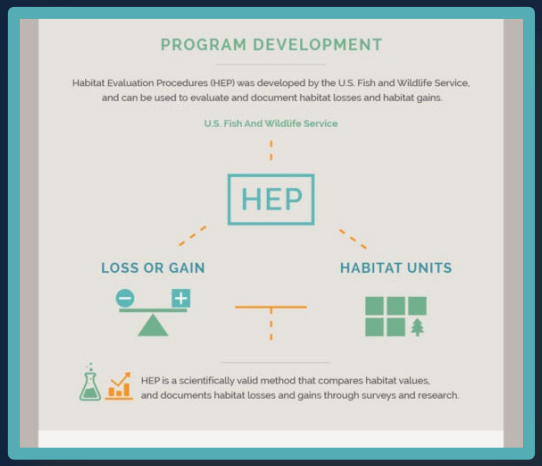
Support the Council's F&W Program

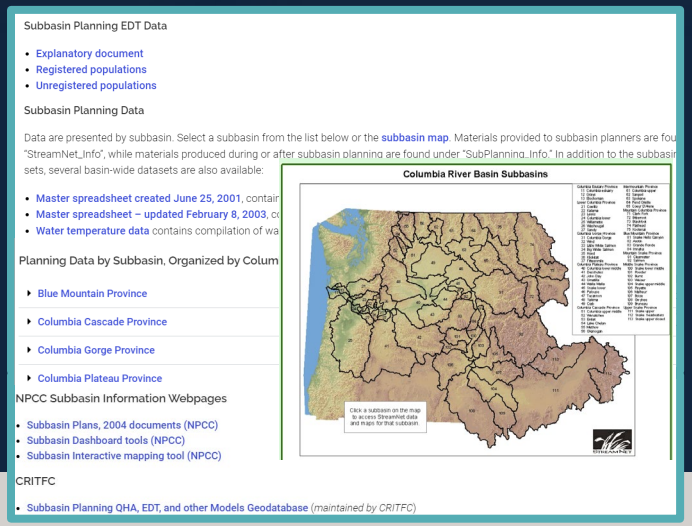
Resources and Data





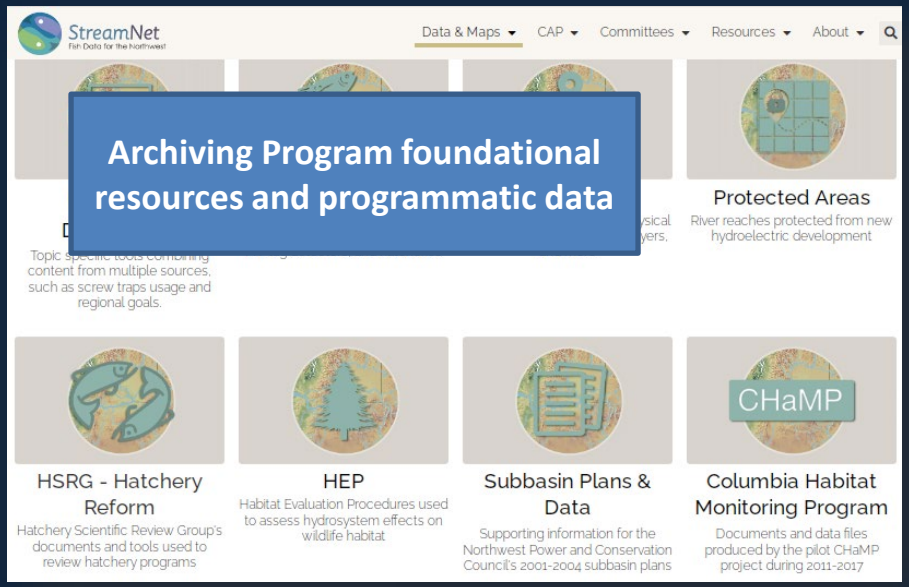






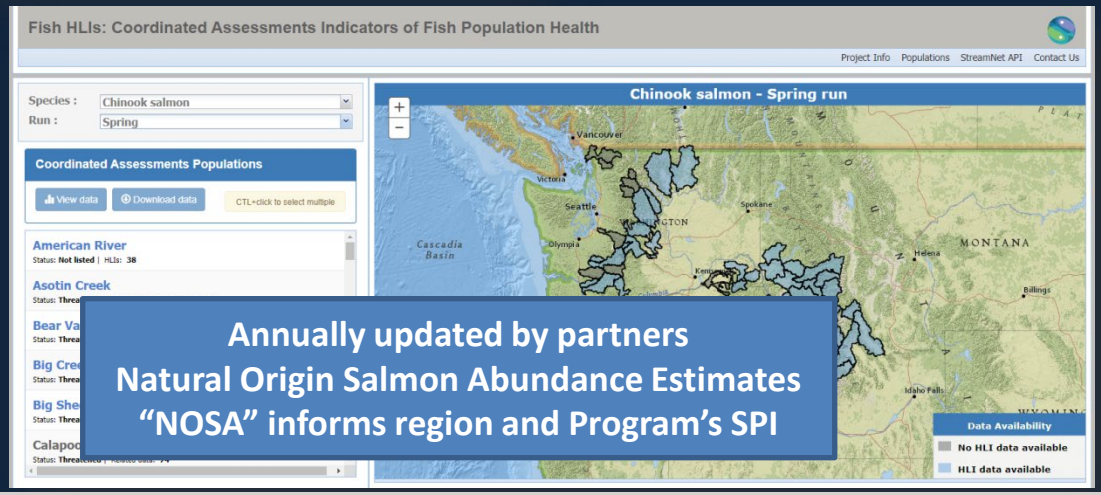
Support the Council's F&W Program

Resources and Data



Archiving Program foundational resources and programmatic data

Secure public repository for BPA, or others, project data



Annually updated by partners
Natural Origin Salmon Abundance Estimates
"NOSA" informs region and Program's SPI

Support the Council's F&W Program

Program Strategy Performance Indicators & Program Tracker

Data Currently Accessed via StreamNet

- Wild fish
- Resident fish

Support the Council's F&W Program

Program's Topic-Specific Storymaps

StreamNet Hatchery CAX data available in 2024

- Hatchery fish data standards
- Salmon, steelhead, and others
- Number of fish released annually

Exploring future SPI data in 2024 and beyond

- White sturgeon
- Non-native and invasive species
- Predator management
- Pacific lamprey
- Eulachon

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Relationship to Other Projects

Data Partners and Participants of Teams (includes committee member organizations)

States

Tribes

Federal

Bonneville Power Administration

pacific northwest aquatic monitoring partnership

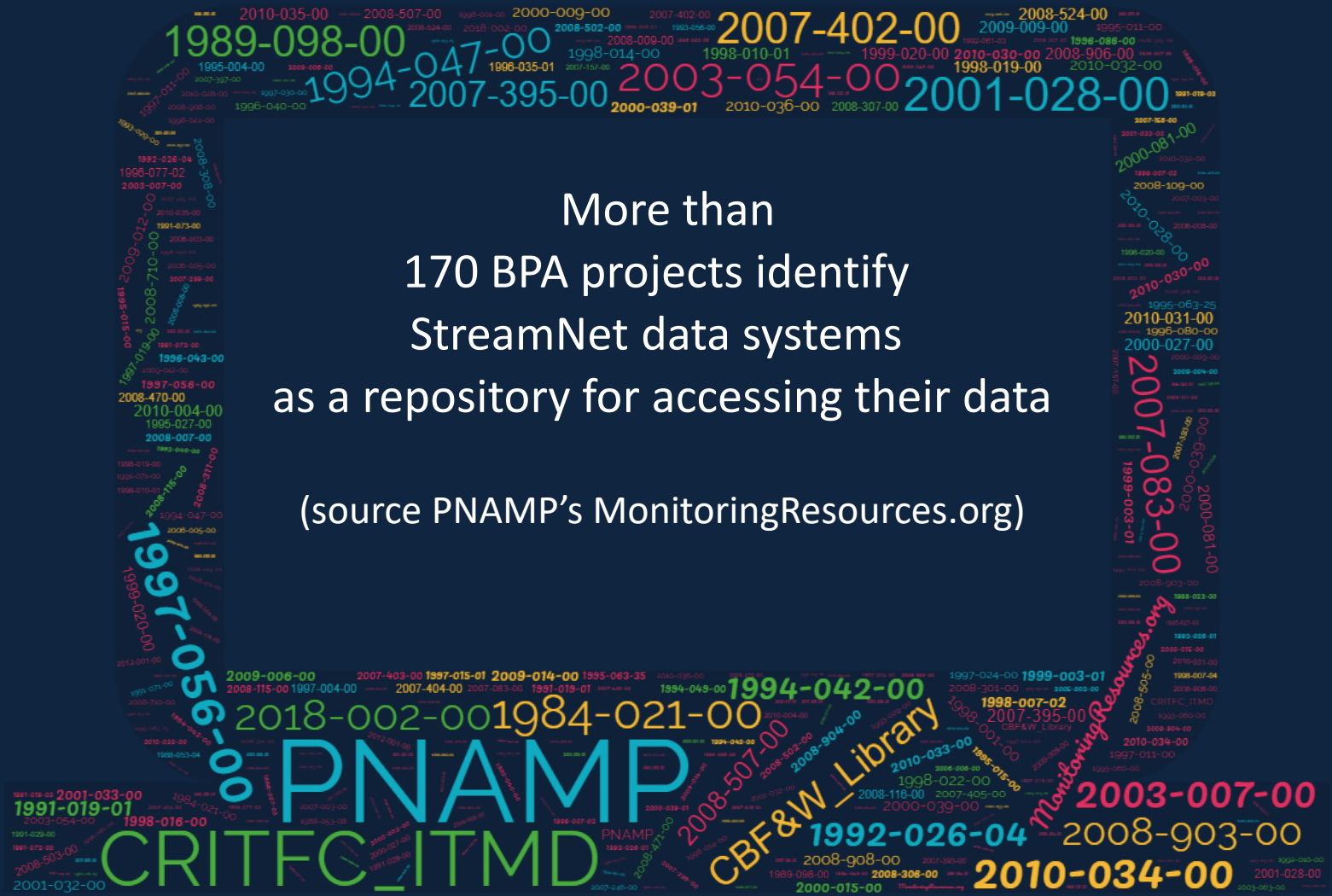
US Geological Survey

Interstate Compacts

Northwest Power and Conservation Council

Relationship to Other Projects

Projects Contributing Expertise for Data, Metadata, and Facilitation



More than
170 BPA projects identify
StreamNet data systems
as a repository for accessing their data

(source PNAMP's MonitoringResources.org)

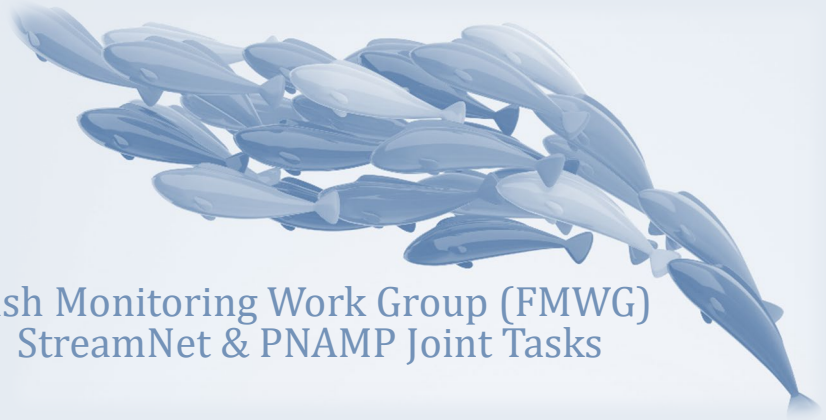
Relationship to Other Projects

Connecting Human & Data Through a Shared Forum

Uniting Experts to Inform CAP and StreamNet Products

Standardized Vocabulary and Data Fields
- Juvenile Density (Snorkel & Electrofishing)
- Rotary Screw Trap Data Collection

Standardized Approach for Map Queries
- Fish Management Units Boundaries



From Stream to Screen-Monitoring and Data Management Technology
- Learn about the latest technologies in aquatic monitoring for data collection, data management, and data visualization.
- Network with other monitoring professionals implementing technologies in new ways.
- Next event in 2025

pacific northwest aquatic monitoring partnership

US Geological Survey

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Adapting to changes and future needs

Connect to Leverage Existing Content and Expertise

Working Together

to secure investments, reduce redundancies, and meet FAIR principles

Project management

Monitoring metadata

Datasets, HLIs

Reference materials

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 journals

Information exchange

Adapting to changes and future needs

Update Technology and Approach for Efficient Access and Maintenance

Adapting to changes and future needs

Support Open Data by Implementing FAIR and Awareness of CARE Principles

Today's Topics

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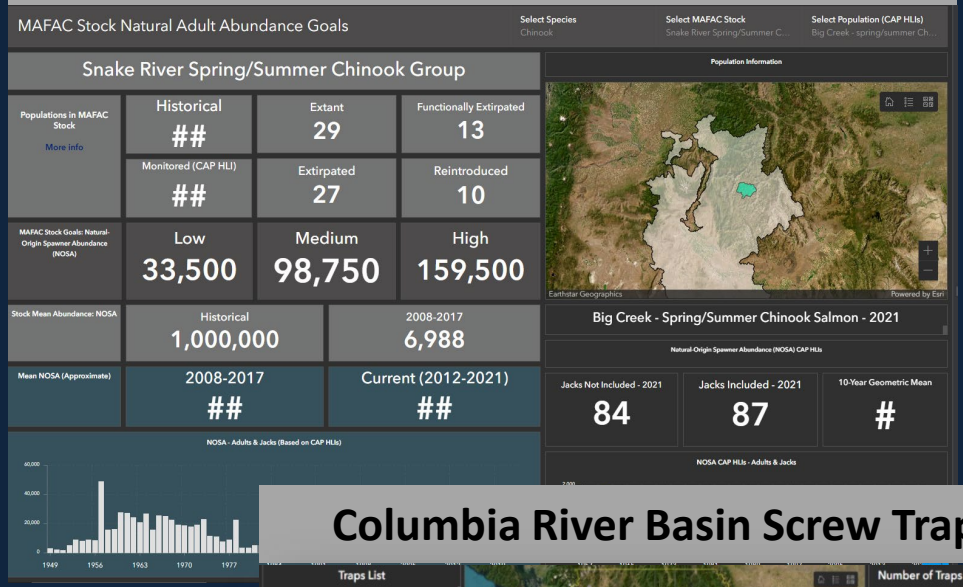
- Preview: new in 2023 and beyond

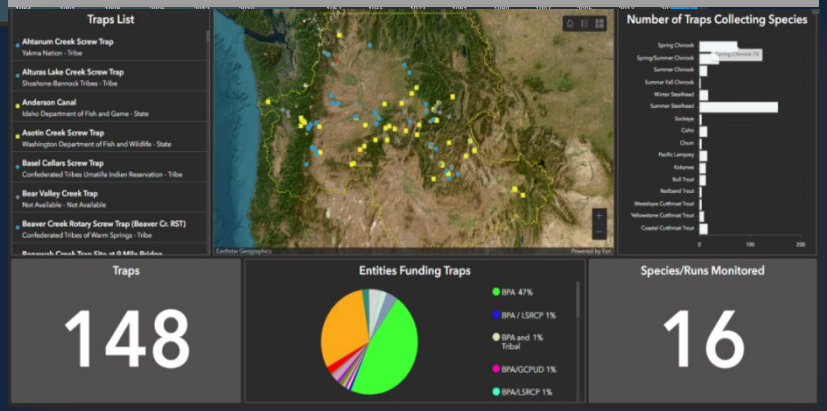
New in 2023 and Beyond

2023

MAFAC Stock Natural Abundance Goals and Available CAP Fish HLIs data



Columbia River Basin Screw Traps



2024

Hatchery CAX

SALMON DATA DISCOVERY

- SALTWATER
- TRANSITIONAL
- FRESHWATER

Pacific States Marine Fisheries Commission

StreamNet
www.streamnet.org

StreamNet

www.streamnet.org

Acknowledgement

Numerous biologists, data managers, data stewards, data consumers, and developers

- Participants of StreamNet committees and teams
- CAP teams and workshop participants
- PNAMP Fish Monitoring Work Group participants and leads
- CRITFC Library
- CRITFC ITMD project
- States, Tribes, and Federal agencies

Funding

Primary Funder

- Bonneville Power Administration

Other Funding Sources

- PSMFC IJFA
- EPA Exchange Network
- NOAA

In-Kind

States, Tribes, and Federal agencies

North Santiam, Packsaddle Park, Oregon

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