FINS CHARTER

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FINS PROJECT OVERVIEW

The Fish Inventory System, or FINS, is an inventory program that allows for web based access as well as offline inputs consisting of 6 data modules all connected to a centralized SQL Database for Snake Basin hatchery and evaluation programs; Trapping, Holding, Spawning, Incubation, Rearing and Release. FINS is a Pacific States Marine Fisheries Commission (PSMFC) Database Project designed to be an accessible, useful, & standardized tool used to assist fish hatcheries and associated research facilities, within the Snake River track juvenile fish production and adult data collection across a number of Salmon and Steelhead programs. Data is entered by authenticated FINS users either online or offline via an installed application using a desktop computer or tablet. Data collection can be standardized by project, program and/or Agency and basic data query ability provides users with predesigned data summaries as well as transactional records and auditing. The data collected and queried in FINS assists with fisheries management, annual reporting requirements related to permitting or funding, and overall hatchery operations while providing a backed up, centralized, uniform database for necessary structured data storage.

FINS uses an open architecture, which follows industry standards providing many development benefits, and presently provides data entry users the ability to record data via the internet into the six data modules. Offline data entry is provided for users without internet for adult Trapping and Spawning events. In addition to recording data of the fish at each life stage, users can also document the actions taken that affect hatchery inventory, including Rearing Metrics. A query tool allows downloading of specific data related to ongoing hatchery evaluations or data requests. FINS is designed to use multiple fish tagging methods for program evaluation or research. FINS has become an essential tool in the evaluation of programs using Parental Based Tagging (PBT) assessments through its ability to track spawning crosses in hatchery programs and their progeny through the hatchery rearing cycle to release. The use of FINS for both adult and juvenile salmonid trapping and monitoring has become more prevalent with the use of the offline application for data entry in remote locations and with additional data collection built for PIT tag hardware and tag data usually collected.

Current users of FINS are predominantly involved with hatchery programs administered by the Lower Snake River Compensation Plan (LSRCP) and Idaho Power Company (IPC) but as FINS use has become more prevalent with the Snake Basin co-managers, it has grown to be used by other non-LSRCP/IPC programs and projects. Currently, a number of BPA administered programs operated by the Nez Perce Tribe and Idaho Department of Fish and Game use FINS data modules and receive FINS staff support (training, troubleshooting, help desk assistance).

The features and functionality of FINS Hatchery Database and related applications are developed through collaboration of a Technical Advisory Committee (TAC) and Steering Committee members that consists of agency users, program funders and the PSFMC FINS staff. This ensures broad coverage of programs and widespread applicability. With input from cooperators and partners, PSFMC FINS staff has sole responsibility for design and implementation of FINS database structures, web applications, and offline desktop and mobile applications in fulfillment of FINS goals and user objectives.

STEERING COMMITTEE

The FINS project established the FINS Steering Committee to solicit management level guidance for FINS.
Pacific States Marine Fisheries Commission (PSMFC) also participates on the Steering Committee for FINS staffing and project oversight.

Steering Committee meetings occur at least quarterly and may include discussions about Agency use, training needs, FINS enhancements, FINS development challenges or issues from PSMFC staff, participating Agencies and the TAC committee. Minutes will be issued from each meeting to all participating entities.

STEERING COMMITTEE ROLE

1. Coordination with PSMFC to prioritize the development of FINS enhancements
2. Review and assist with refining PSMFC's annual Statements of Work

3. Coordination with other funding Agencies regarding the administration of FINS
4. Represent each funding entities interests and needs

The Steering Committee assists in determining FINS development priorities to ensure requests are aligned with the overall vision and goals of the FINS Program, help address coordination and funding issues, prioritize developments or refinements to the database, and decide short and long-term progress toward the mission of the FINS program.

All parties participating on the Steering Committee commit to working together in good faith and to have respectful, productive conversations.

TABLE 1. STEERING COMMITTEE MEMBERSHIP

2021 Members
Lower Snake River Compensation Plan Office
Idaho Power Company
Idaho Department Fish & Game
Nez Perce Tribe
Oregon Department Fish & Wildlife
Pacific States Marine Fisheries Commission

If additional partners are being considered, the Steering Committee will determine participation by vote. Considerations to join FINS will include an assessment by the Steering Committee to ensure the established practices are agreed to by the new Member.

If further entities begin utilizing FINS on regional or program level, they will be required to provide a representative on the Steering Committee and participate in quarterly meetings. The representatives are voting members of the committee. To ensure committee equality, regardless of funding level or Agency use each Steering Committee member has equal voting rights (i.e. 1 vote per entity) when issues arise that need resolution. Each entity is permitted two Members to encourage that Agency investment, policy alignment and necessary Hatchery/Evaluation perspectives are available for decision making. Substitutions for steering committee participation are discouraged to ensure continuity in understanding and decision making.

Administration and funding of FINS is the responsibility of funding entities and PSMFC staff related to cooperative agreements and statements of work that are annually reviewed and developed. While sharing of information on budgeting and annual work plans are encouraged at the steering committee meetings, the decisions related to annual funding of PSMFC and FINS, performance towards deliverables and meeting of cooperative agreement requirements are solely those of the funding agencies and not under direct approval or purview of the Steering Committee.

STEERING COMMITTEE DECISION MAKING PROCESS

Ideas for new refinements, corrections/fixes, or features to the FINS database that need user stakeholder criteria distinguished are brought to the Steering Committee (SC) via individual Agencies, through planned Statement of Work Deliverables, the regular Technical Advisory Committee (TAC) meetings (via representatives and TAC discussions) or through the PSMFC FINS Team Project Manager.

The SC listens to or reads any proposals and weighs the costs/benefits/tradeoffs of implementation. Since the SC has participation by both funding and user Agencies to FINS, there are several important items for consideration of any project:

- Cost
- Staff time (PSMFC)
- Potential for disruption of current calendar of goals/deliverables identified in Statements of Work to funding Agencies or to the Steering Committee

- Scale of benefits (individual or multiple users)
- Does the refinement, correction/fix, feature fit the broad scope of the FINS framework/goals

Implementation of proposals that have increased costs and/or disruption of goals and planned deliverables will have broader involvement and decision making of funding Agencies and their role in administration of FINS with PSMFC funding agreements. Consensus recommendations at the SC level is the goal for any FINS discussion or decision item but final decision-making is comprised of FINS funding Agencies and PSMFC.

Technical Advisory Committee

The TAC is comprised of users from various participating entities that are identified by the PSMFC FINS Team Project Manager and Steering Committee members identified as having insights and experiences with FINS that make them capable of discussing diverse topics related to the development and use of FINS, while keeping the vision and goals of the FINS Database aligned. The TAC will be comprised of fish culturists, researchers, hatchery managers, and other hatchery specific technical experts. The TAC will meet as needed or when identified by the PSMFC FINS Team Project Manager, Steering Committee and/or PSMFC-FINS tasks or deliverables. Membership to the TAC will be developed collaboratively and reviewed annually by the PSMFC FINS Team Project Manager and Steering Committee. All parties participating in the TAC commit to working together in good faith and to have respectful, productive conversations.

Technical Advisory Committee Purpose

1. Discuss FINS use cases and provide feedback to the Steering Committee on need and priority
2. Participate in FINS demonstrations, testing and provide feedback when requested
3. The TAC will have the responsibility of working w/their respective Agency and Steering Committee member to make sure the use cases discussed are reasonable & appropriate for their Agencies
4. Where decisions affect Agency policies or approved project milestone dates, the TAC will request review/approval from the Steering Committee
5. May periodically request other people at future TAC as specific expertise is needed
6. Vet peer and Agency requested features and enhancements

Table 2. Technical Advisory Committee Membership

2021 Members
Confederated Tribes of the Umatilla Indian Reservation
Idaho Department Fish & Game
Idaho Power Company
Lower Snake River Compensation Plan Office
Nez Perce Tribe
Oregon Department Fish & Wildlife
Pacific States Marine Fisheries Commission

PSMFC FINS Staffing and Operations

FINS Team

Pacific States Marine Fisheries Commission (PSMFC) supplies FINS staff as needed consisting of the following, which may change based on need and funding availability:

1. Project Manager
2. Software Developers

3. Development Tester
4. Support & Training Specialist

PSMFC FINS staff office:
8923 W. Hackamore Dr., Boise, ID. 83709

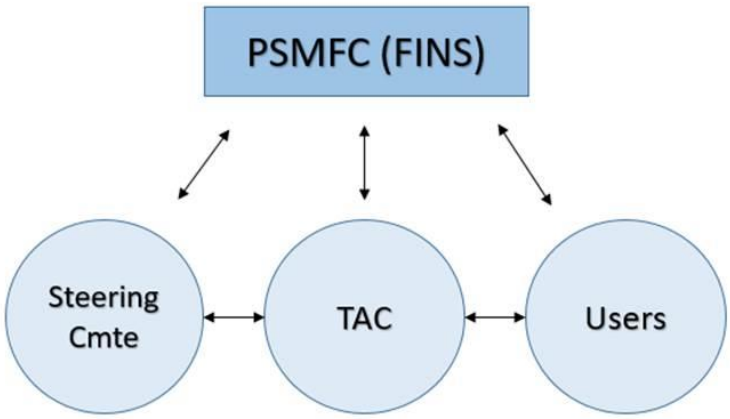
PSMFC FINS staff contact details:
208.378.5279 Support | 208.398.FINS (3467) Office | Support@FINSNet.org

As a Team, they practice Scrum, a proven, mainstream, software development Agile framework. Scrum allows them to quickly turn around features in an incremental fashion to allow for maximum feedback from users, cooperators and sponsors with minimal waste. Scrum relies on transparency and accountability and encourages team focus on getting things done. It is structured to warrant flexible priority and quicker delivery of useful desired software. It also provides the team with the opportunity for consistent review/retrospectives and opportunity to improve and increase efficiency.

FINS Structure

The features and functionality of FINS are developed through collaboration with users from varying perspectives and across multiple Agencies. This ensures broad coverage of Programs and widespread applicability. Over time, user groups have been simplified into a Technical Advisory Committee (TAC) format for scope and requirements of the data collection process for components in development. FINS planned project implementations have Beta releases built into the schedule to solicit feedback and confirm with FINS users and TAC Members that needed elements are included and to test the performance and feature scope delivered.

Table 3. Communication Flowchart



FINS Goals

1. Coordinate data input among stakeholders. Establish and maintain consistent standardized record keeping, data metrics, terminology and methodology among the anadromous hatchery facilities and within FINS.
2. Develop, maintain and update a database that will serve as a secure repository for anadromous hatchery data with the ability for various stakeholders to upload hatchery data into the database. This inherently involves maintaining QA/QC processing and functionality of the data by users.
3. Develop, maintain and update user applications of the database to facilitate retrieval of data necessary for the various users of the hatchery and public data as required.
4. Continue to structure the database in such a way so as to ensure its long-term functionality while allowing for

future enhancements without detriment to existing functions.

5. Provide FINS Users with necessary training, support, troubleshooting and help desk assistance, as needed

FINS TECHNOLOGY

FINS' primary platform is a website which means that you can use it as long as you have access to the internet. There is no intranet or network privilege necessary to get access to FINS Data or enter the data into FINS. All that is needed is a User Name/Password with assigned permissions, further known as Password Authentication Protocol (PAP).
The FINS database is a Microsoft SQL Database designed with the underlying goal to be accessible, useful and standardized.

FINS product suite utilizes an open architecture to safeguard support and growth of future development goals.

Web and Database Servers provide functionality and access to the FINS website FINSNet.org as well as the storing and retrieving of FINS Data which resides in Portland, where they are hosted by Pacific States Marine Fisheries Commission (PSMFC).

PSMFC office:
205 SE Spokane
Street, Suite 100
Portland, Oregon 97202

PSMFC contact details:
503.595.3100 Office | 503.595.3232 Fax | info@psmfc.org

FINSNet.org and FINS Online maintain an n-tier architecture, implemented via asp.net MVC5 in C# and JavaScript (AngularJS, jQuery, Kendo Pro UI, etc.) as a single page web application, with views as 'online' and 'data' pages.

- **SQL Server -** Used for database transactions (Create, Read, Update and Delete)
- **WebServer -** C#, using asp.NET on the server side to communicate between the database and client pages
- **Client–** JavaScript and HTML 5, using Telerik KendoUI, AngularJS and several other JavaScript and TrueType/Node (Angular) based libraries
- **Application –** Using NW.js as its platform to call Node.js modules from the DOM that provides the use of web technologies of HTML5, JavaScript and several JavaScript libraries

To protect shared data from unauthorized physical and electronic access and to ensure the confidentiality, availability and integrity of all shared data, PSMFC and FINS meet or exceed industry best practices for physical security, data security, network security, and access controls, both technically and procedurally.

PSMFC FINS DATA SECURITY PROTOCOLS

- PSMFC and FINS firewalls employ Intrusion Detection and Prevention systems, electronic communications between PSMFC and FINS offices is facilitated using Site-To-Site VPN tunnels leveraging encryption that exceed industry standards.
- FINS data is housed and maintained within PSMFC's internal data computer systems, these systems and user access adapt the "Principle of Least Privilege", therefore dictating who can view what data and separating data between individual users.
- To ensure data integrity, PSMFC/FINS applies security patches and upgrades, keeps virus software up-to-date on all systems on which the data may be used, conducts full backups of their databases weekly, incremental backups daily, and preserves an archive of monthly backups for 3 months.

- Logins to FINS are secure, protected by an SSL layer (HTTPS).

FINS System Requirements

FINSNet.org/FINS Online Internet Requirements

- **Speed -** FINS requires a 2Mbps Download Connection at minimum
- **Browser -** FINS supported Browsers include Chrome and Brave

FINS Offline Application Machine Requirements

- **Operating System (OS) -** FINS Offline Application requires Microsoft Windows Platform
- **OS Version –** FINS Offline Application requires Windows 7 at minimum

Cost Allocation

The Fiscal Year 2022 FINS cost allocation methodology reflects the use by LSRCP, IPC, USFWS and BPA hatchery projects and programs. The cost allocation methodology was developed with broad cooperator input and implemented in FY2022. The PSMFC FINS Project Manager provides the document management for the current Cost Allocation budget spreadsheet. This spreadsheet details the current Programs/Facilities that are using FINS, by agency/program/project and funder to determine a specified cost. This cost allocation spreadsheet and the associated module use details are reviewed annually by the Steering Committee and shared with all FINS participating entities.

Methodology

The number of FINS data modules (Trapping, Holding, Spawning, Incubation, Rearing, Release) used by a specific agency/program/project is the fundamental factor in the agreed upon cost allocation methodology. For example, most fisheries research projects, such as a rotary screw trap or an adult weir, use only the Trapping module within FINS and are represented in this allocation methodology. Hatchery programs commonly use most, if not all, of the six data modules. The overall cost a single module, and the total number of modules used by a funding entity remains transparent among cooperating Agencies and basin-wide co-managers. This also helps identify future funding considerations with increased use of FINS by an existing funding agency or program or by potential future users. The overall cost of FINS staff, equipment and administrative costs is proportioned to the total number of modules by each funding agency. These proportional costs will fluctuate annually, as well as the cost of an individual module, as additional programs/projects enter into the database.

Other data factors were considered outside of module use to include the amount of hatchery production, number of users, training events, etc. as these are all highly variable across Agencies, variable to the types of programs (yearling or subyearling hatchery programs for example) and variable over time with new programs or users requiring more training than established programs and users. Due to the inconsistencies and complexities with using aforementioned variables as part of the methodology, the Steering Committee opted for the simpler approach of totaling modules used. This was accepted and the overall costs of training, users, and production program differences were rolled into the overall budgeting costs of a FINS module.