The Fish Passage Center
Annual Report of Accomplishments
2013

Submitted To
The Fish Passage Center Oversight Board
January 31, 2014
Profile

The Fish Passage Center (Center) was first established in 1984 by agreement of the Columbia River Intertribal Fish Commission and the National Marine Fisheries Service on behalf of the basin’s tribes and the Columbia Basin Fish and Wildlife Council\(^1\). The Center originally housed two Water Budget managers and provided them with administrative support. The two Water Budget managers were a component of the Water Budget measures included in the Northwest Power Planning Council’s first Fish and Wildlife Program adopted in 1982. One Water Budget Manager represented the basin’s tribes and the other represented the state and federal fish and wildlife managers.

Since 1982, the Fish and Wildlife Program has directed that BPA provide funding for the functions carried out by the Center. The Center serves a large number of significant data gathering and analytical functions including the design and oversight of the implementation of the Smolt Monitoring Program, the Gas Bubble Trauma Monitoring Program, and the Comparative Survival Study. The Center provides a non-federal pool of expertise in assessing the effects of dam operations of Columbia Basin salmon, including analysis of juvenile salmon survival related to flow, spill, gas super saturation and passage routes. Tribal and states fishery managers rely heavily on this expertise and have managed their own staffs accordingly. The Center provides a wide range of data and information through its website, including daily fish passage data, historical data, and an archive of relevant documents.

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\(^1\) At the time the four Columbia River Treaty tribes were not members of the Columbia Basin Fish and Wildlife Council. Subsequently the Columbia Basin Fish and Wildlife Council was dissolved and the Columbia Basin Fish and Wildlife Authority was established which included expanded membership including the Basin tribes.
In 2009 the Northwest Power Conservation Council completed an amendment process and adopted a new the Fish and Wildlife Program. These amendments reaffirmed the primary purpose of the Center as the provision of technical assistance and information to the fish and wildlife agencies, tribes in particular, and the public in general on matters related to juvenile and adult salmon and steelhead passage through the mainstem hydro system. The 2009 program amendments describe the duties of the Center including the responsibility to:

- Assemble, organize, make publicly available, and maintain the primary archive of the smolt monitoring program data.
- Participate in the development of the annual smolt monitoring program implementation plan, and assist in the implementation of the program.
- Assemble, organize and make publicly accessible, data from other primary sources, and conduct analyses as requested, to meet the information needs of the fish and wildlife agencies, tribes, and public with respect to water management, spill, and fish passage.
- Provide technical information necessary to assist the agencies and tribes in formulating in-season flow and spill requests that implement the measures in the Council’s program, while also assisting the agencies and tribes in ensuring that operating criteria for storage reservoirs are satisfied.
- Provide the technical assistance necessary to coordinate recommendations for storage reservoir and river operations that, to the extent possible, avoid potential conflicts between anadromous and resident fish.
- Archive and make publicly accessible the data used in developing all analytical results, associating the specific data with the respective analyses.

In 2010 the Fish Passage Center Oversight Board established a process and guidelines for implementation of the 2009 Fish and Wildlife Program measures regarding Independent Scientific Advisory Board review of FPC products. The Oversight Board agreed that the first priority is the review of the FPC Annual Report and the Comparative Survival Study Annual Report. The Oversight Board agreed to implement a process and guidelines for review of the Center's products in 2011. The Oversight Board agreed that the guidelines would be reviewed after implementation in 2011, to determine if they required modification. The FPC was directed to keep a record of staff time spent responding to ISAB reviews.

On May 2, 2008 the Fish Accords Memorandum of Agreements were completed between the Confederated Tribes and Bands of the Yakama Indian Nation, the Confederated Tribes and Bands of the Umatilla Reservation, and the Confederated Tribes of the Warm Springs Reservation of Oregon, and the Bonneville Power Administration.

The Memorandum of Agreement included the Fish Passage Center project, specifying the same services, products, and tasks that have been carried out by the Center historically. In 2009 the Center operated under the terms and auspices of the Fish Accords Memorandum of Agreement in addition to the Northwest Power Conservation Council Fish and Wildlife Program.
The Fish Accords establish annual out-year budget levels as part of the agreement. The 2013 FPC budget was developed according to Tribal Accord Agreement guidelines.

The Year in Review

Funding level for the FPC project for 2013 was established by the terms of the Fish Accords Memorandum parties. The terms of the Agreement also establish future funding levels which included 2013. The implementation of the agreements among the Accord parties simplified and streamlined the budgeting and contracting process for the FPC. This allowed the FPC staff to concentrate efforts on improvements to the mainstem passage monitoring program and public data access through the FPC website and improved data display.

In 2013 the FPC office relocated to access fiber optic line internet service to improve speed and access to FPC data, and the FPC website for the region. As traffic continually increased on the FPC website additional band width was required. The FPC office relocated to 847 NE 19th Ave., Suite 250, in Portland, Oregon. At the same time FPC telephone numbers changed as the result of switching telephone service to voice over IP. The relocation was completed in October 2013. The relocation was completed with only one Saturday and Sunday interruption of the FPC website.

The Comparative Survival Study (CSS) Annual Review meeting was held in April 2013 following a CSS technical workshop that presented results of analyses that were completed in response to recommendations and requests from NOAA Fisheries and the Independent Scientific Advisory Board of the Northwest Power and Conservation Council. The workshop was attended by regional, national, and international experts that reviewed and provided comments on the CSS approach and methodologies. A workshop proceedings document was completed and is posted on the FPC website for public access. A long-time series of migration passage data and adult return data were presented to the regional audience. Life-cycle analyses were presented that related juvenile passage history to adult return rates for the Columbia and Snake River basins. These analyses incorporated freshwater and ocean conditions and the effect on smolt to adult return rates. The implementation and operation of surface passage structures at mainstem hydroelectric projects was presented at the Annual Review meeting. This analysis was the foundation of the presentation of a new spill metric definition to replace previous spill metric definitions of percent of river spilled. The presentations from the CSS Annual Review meeting are available on the FPC website.
Juvenile fish passage characteristics, such as survival and travel time, will be documented in the FPC Annual Reports of the Smolt Monitoring Program for 2013. The contract completion date for that Annual Report is August 31, 2014. Smolt-to-adult return, effect of environmental and river conditions, and effects of route of passage are documented annually in the CSS Annual Report (completed November 30, 2013, and posted on the FPC web site).

![Graph showing LGR Total Outflow (kcfs) from 4/1 to 8/19]

**Runoff Volume Forecasts in 2013**

The runoff volumes for the 2013 water year were near average in the Lower Columbia River, but below average in the Lower Snake River. The moderate to low runoff volumes resulted in variable flow conditions throughout the spring migration period and low flows during the summer migration period. The spring seasonal average Biological Opinion flow target at Lower Granite Dam was established at 85 Kcfs, however flows at Lower Granite met or exceeded the objective only for eleven days in May and, in terms of seasonal average, were below the Biological Opinion target. The spring Biological Opinion seasonal target was established at 226 Kcfs at McNary Dam; this target was achieved over the spring season in 2013, with flows at McNary at or above the flow target for most of May and the first half of June. The spring Biological Opinion flow target at Priest Rapids Dam was established at 135 Kcfs and was met over the spring period of 2013. Biological Opinion summer flow targets were established at 200 Kcfs at McNary Dam and 50 Kcfs at Lower Granite Dam for the summer fish migration period. For the majority of the summer migration period the Biological Opinion flow targets
were not met at Lower Granite and McNary dams. At McNary Dam, flows were above the summer Biological Flow target for approximately one-quarter of the summer flow period with the seasonal average below the summer target. At Lower Granite Dam, daily flows were above the summer Biological Flow target for one day of the summer flow period with the seasonal average flow well below the summer target.

The Smolt Monitoring Program

The Smolt Monitoring Program (SMP) was successfully implemented according to the plan agreed upon by the state, federal, and tribal fishery agencies. The objective of the SMP is to provide a consistent, long-term database for short-term in-season fish passage management, and for long-term mitigation decisions. In consultation with the U.S. Fish and Wildlife Service (USFWS) and the Fish Passage Advisory Committee (FPAC), the SMP was modified to accommodate collection of data on juvenile and larval lamprey in 2011. These modifications included: (1) adopting a standardized approach to juvenile (and potentially adult) lamprey identification based on methods that the USFWS developed, (2) assigning a sample rate to juvenile lamprey that were sampled at SMP sites (as opposed to handling lamprey as “incidental species” whose counts were not associated with sample rates), and (3) implementing a pilot study of condition monitoring. In 2012, again as the result of requests from USFWS and FPAC, lamprey condition monitoring was added to the SMP at McNary and Bonneville Dams, in addition to lamprey condition monitoring which was established at the John Day smolt monitoring site in 2011. The FPC32.net data entry program was modified in winter 2011 to accommodate these changes in 2012 monitoring.

In November 2013, FPC staff provided a report of the 2013 lamprey data to the Lamprey Technical Work Group (LTWG) with questions for guidance for the 2014 SMP season. The LTWG did not recommend modifications for the 2014 SMP lamprey monitoring. As a result monitoring for 2014 will be conducted consistent with 2013 monitoring without any changes to the sampling program or protocol.

Major modifications were completed to the FPC32.net remote data entry program to accommodate lamprey monitoring. Additional major modifications to the remote data entry program were not required in 2013.
The FPC staff provides daily oversight and technical support for the eleven remote sites implementing the SMP. Final data and analyses of the SMP data are reported in the FPC Annual Report. Data validation/verification and data analysis occur throughout the fall and winter and are presented in the FPC Annual Report the following year. SMP data collection continues from March through October 31 at most in-river trap and mainstem sites. The quality control data verification report was completed and distributed to the remote sites on November 15, 2013, completing the data review process. Annual Report for the 2012 passage season was completed after providing a draft for a 45-day regional review. It was distributed and posted on the FPC website, on July 31, 2013, according to contract deliverable dates, along with previous year's reports. The Independent Scientific Advisory Board following their recommendation to the Northwest Power Conservation Council (NPCC) did not provide comments on the FPC Annual Report.

**Annual GBT Monitoring and Reporting**

Oversight requirement of the gas bubble trauma monitoring for the Oregon Department of Environmental Quality waiver, issued for implementation of the NOAA Biological Opinion, spill for fish passage measures. The FPC provides a separate report; an annual summary of GBT data to the US Army Corps of Engineers and to NOAA Fisheries to fulfill states’ issued dissolved gas waiver permits. This annual report summary was completed and provided to the agencies in November for incorporation into their 2013 passage season report requirements.
Dissolved gas bubble trauma monitoring data is updated daily on the FPC web site and is reported in the FPC Annual Report.

Gas Bubble Trauma monitoring Lower Monumental Dam

Planning for 2014

In 2013, the FPC developed responses to questions and comments by the NPCC Independent Scientific Advisory Board on CSS reports. These reviews, comments, and recommendations are taken into consideration in planning SMP and CSS activities and analyses in future years. The development of the plan for implementation, the work statements, and the budgets for the Smolt Monitoring Program for 2014 and the Comparative Survival Study for 2014 began in the fall of 2013. During 2013, the FPC staff undertook a collaborative effort with Bonneville Power Administration, Idaho Department of Fish and Game, the Nez Perce Tribe, and Pacific States Marine Fisheries Commission to facilitate major needed repairs and maintenance to SMP tributary trapping equipment for the 2014 SMP sampling season. The much needed repairs and maintenance were accomplished within the terms of the Accord Memorandum terms and the Pisces work statements. The SMP work statement and budgets were completed and submitted to
BPA in December 2013. The SMP has a March 1 through February 28 contracted period. There were no proposals to modify the SMP for 2014. Because the SMP is managed as a Tribal Accord project the 2014 budget for this project is agreed upon in advance for 2014 as part of the Accord agreement. The budgets and work statements for the 2014 SMP were submitted through the Pisces system on December 10, 2013.

**Endangered Species Act Section 10 Permit and State Endangered Species Act Permit Requirements**

The FPC is responsible for application, accounting and reporting for federal and state ESA sampling and monitoring permits for the SMP and the CSS. Estimated numbers of endangered and/or threatened species to be handled are submitted to the permitting authority. Permit applications and reporting were completed. Application, accounting and reporting for state ESA permits was also accomplished. All ESA permit requirements were met in 2013. State permits from both Washington and Oregon were obtained for sampling under state-mandated requirements. State permits from both Washington and Oregon were obtained for sampling under state-mandated requirements.

**Comparative Survival Study**

The Comparative Survival Study (CSS) is a jointly developed and sponsored program of the state, tribal and federal fishery management agencies. A CSS Oversight Committee comprised of state, federal, and tribal fishery management agencies has been established to provide technical direction for data collection, analysis and preparation of annual status reports. The NPCC Independent Scientific Advisory Board reviews of the CSS Annual Reports for previous years have contributed to the determination of specific analyses and activities conducted for the CSS in 2013.
The CSS has had a history of collaboration and is currently cooperating with several other agencies including: the Lower Snake River Compensation Plan, Idaho Department of Fish and Game, Oregon Department of Fish and Wildlife, Washington Department of Fish and Wildlife, Idaho Power Company, and the SMP. This project incorporates the long-term PIT-tag marking and recovery of groups of wild and hatchery Chinook juveniles and steelhead. We continued our coordination towards the marking of hatchery Chinook groups from Imnaha, Catherine Creek, McCall, Rapid River, Dworshak, Clearwater, Pahsimeroi and Sawtooth facilities; hatchery steelhead groups from Dworshak, Clearwater, Magic Valley, Hagerman, Niagara Springs, and Irrigon hatcheries; and wild Chinook and steelhead from tributary tagging programs in the Clearwater and Snake River basin. These PIT-tag groups will also be an important component of the regional smolt monitoring program.

In addition to the historic data time series analyses included in the CSS, additional analyses were added in 2012. In 2012 a manuscript entitled Assessing Freshwater and Marine Environmental Influences on Life-Stage-Specific Survival Rates of Snake River Spring–Summer Chinook Salmon and Steelhead was published in the Transactions of the American Fisheries Society. The analyses are based upon the CSS data time series for Chinook and steelhead. The analyses and manuscript was developed by the FPC staff in collaboration with CSS Oversight Committee representatives. The life-cycle analysis incorporates freshwater and ocean condition variables and their impact on smolt-to-adult return rates. These analyses were updated in 2013, in particular to include the implementation and operation of surface passage structures.

In 2013 the FPC staff continued modifications to the bootstrap program utilized in CSS analyses. We use our own software that is developed in-house to generate many of the base metrics provided by the CSS. The development of our update to this software began in 2011 and continued through 2013. We have migrated the core programming from FoxPro to C# and streamlined the user interface to increase efficiency and provide more flexibility. The final program should eventually supplant the previous versions and will require fewer user hours to operate and include many other user-friendly features. In particular, the ability to run multiple iterations of the program without stopping for user input will streamline the initial data analysis for the report. The multiple-runs feature will include extension logging information that is recorded to track each individual run and allow for easy interpretation of the output by the user. Future and ongoing modifications to the bootstrap program will include incorporation of fall Chinook data sets. FPC staff expended significant effort to modify FPC software programs to adjust to the complete restructure of the PTAGIS Data System which houses all PIT-tag files and observation files. FPC staff worked closely with PSMFC PTAGIS staff to adjust FPC data acquisition and validation processes to the new SQL data structure adopted at PTAGIS. This was a high priority for FPC staff since FPC data analysis for the SMP and the CSS is dependent on data access at PTAGIS.

In April 2013 the CSS Oversight Committee and the FPC organized and conducted the fourth Comparative Survival Study Annual Review. The objective of the public review meeting is the presentation of the annual CSS analyses by the agencies and tribes representatives on the CSS Oversight Committee and the FPC. The Annual Review meeting was held at the Water Resources Center in Vancouver Washington and was well attended by the fishery management agencies and tribal representatives. The presentations and attendance from the Annual Review
meeting are available on the FPC web site. CSS life-cycle analyses incorporating freshwater and ocean conditions were presented at the Annual Review. Also presented were the methodology and results of incorporating the implementation and operation of surface passage structures into the spill for fish passage metric utilized in CSS analyses. The Annual review meeting is beneficial in that it annually provides the opportunity for fishery managers, other regional managers, and the public to view a succinct, condensed report of the results of the CSS life-cycle monitoring program.

Adult Facilities Inspection Program

The state and federal fishery management agencies provide funding for the FPC Adult Fish Passage Facilities Inspection Program. FPC staff manages the agencies’ adult facilities inspection program and writes the annual report of the inspection program. The FPC staff trains and coordinates fish facilities inspections at federal and Public Utility mainstem Columbia and Snake rivers dams. Inspections are conducted monthly and are often accompanied by FPC staff. Monthly reports are provided to the FPC and then posted on the FPC web site for regional access. Facility issues that arise as the result of inspections are raised to the project operators by the FPC for discussion and resolution and are reported to the Fish Passage Advisory Committee. In 2013 inspections were conducted at all 13 dams. A total of 92 adult facility inspections were conducted in 2013.
In addition emergency passage facility events are coordinated by the hydro project operators and regulators through the FPC facilities inspection program staff who assures communication with the Fish Passage Advisory Committee. FPC produces an Annual Adult Facilities Inspection report. All inspections and reports were successfully implemented in 2013. The Annual Adult Facilities Inspection Report for 2012 was completed in 2013 and is posted on the FPC website with previous years’ reports. The draft 2013 report will be completed by April 15 and posted on the FPC web site for a 45-day public review period. The final report will be completed by June 1, 2014, and posted on the FPC web site.

Data Acquisition, Storage, Management and Distribution

The NPCC Program Amendment specifically requires the FPC to “Gather, organize, analyze, house, and make widely available monitoring and research information related to juvenile and adult passage and to the implementation of water management and passage measures that are a part of the Council’s program.” The FPC Data System is comprised of several databases that are maintained and updated hourly, daily, weekly, monthly and annually. These databases are utilized by the state, tribal, and federal fisheries agencies for in-season management deliberations and decisions, so they must be accurate with the most recent information available. The databases are the foundation of FPC analysis and technical support for the fishery managers. Smolt passage data, flow, spill, and adult counts are updated daily. The hatchery release database is continually updated through daily discussions between FPC staff and hatchery managers and hatchery staff to assure that hatchery release data are up to date and reflect any last minute changes in hatchery release data. All of the FPC databases were successfully maintained and updated without lapse in 2013 (except for one weekend at the end of October when the FPC office was relocated requiring the data center servers to be moved). In 2013, several upgrades, improvements, and modifications were made to the FPC data system. Analytical tools were developed to deliver data for our users, improve database stability, and improve data presentation to facilitate meeting the needs of the agencies, tribes, and the public at large. Website improvements were made to enhance user navigation, ease of use, and data access. A major improvement for the operation of the FPC website which occurred was the installation of fiber optic line to improve speed and capacity for the website, and data access from the website by the region. Logistical issues raised by the building landlord have created an obstacle to installation of the fiber optic line in 2012. Office space in a building with existing fiber optic service was found and the FPC was relocated in the fall of 2013 after the primary juvenile migration season had ended.

FPC Data Management and Distribution in 2013

Software Development

- New procedure to simplify end of the year procedure for adult dam counts has been developed.
- New star schema to accommodate new PTG AIS database structure has been deployed on FPC SQL server.
• 21 new CTL tasks have been developed to collect Dimensions PTGAIS database data.
• Four CTL tasks have been developed and deployed to collect on a daily basis Dimensions PITAGIS database data.
• Four new CTL tasks were developed to collect extra-large accumulation of historical data from PTAGIS database
• New tables were created to transfer new star schema PTAGIS approach to FPC traditional data storage on SQL server
• Developed new task to update traditional PTAGIS database data. Storage procedures were created to populate traditional tables from new star schema tables. These procedures are running from SQL server scheduler.
• New application has been developed and deployed to accommodate new TDG source files format.
• New procedures have been developed to populate MCN_temps table. The procedure gets data from an Excel e-mail attachment and posts it on the SQL Server.
• New software and procedures to populate Brownlee and Hells Canyon flow data were developed.

Website, Daily Reports, Database and Data Updates

• The beginning of year website maintenance, regular website maintenance and updates were completed. For instance, updating some SMP queries and graphs for the new season (Fish Condition graph and query, Population index data and graphs, CSS queries and graphs to incorporate data from CSS 2012 Annual report, and the passage index graphs and data queries).
• Daily SMP reports, scripts, and databases were updated for 2013.
• Installed new version of spatial database software and moved data to the new database on development server for testing. This new version of the software will be used to set up replication of our spatial databases to web servers and back-up servers.
• Updated software stack for new prototype web-site design. Updated components include: Dojo 1.9, Geoext/Openlayers 2.12 (and plugins), Leaflet (and plugins), Highcharts 3.0, Jquery 1.8 tools, Qtip 2.0, Weave, PostGis 9.1, Mapserver 6.0, GeoServer 2.2, p.mapper 5.0, php 5.4.9 using new Microsoft PDO drivers to connect to databases.
• Continued development of preliminary map queries, data queries and graphs using new website components including: Dojo JavaScript toolkit, Geoext/Openlayers, Highcharts, Jquery tools, weave, and others for use with State of Idaho technical support data request and new FPC website design.
• Continued development of preliminary temporal mapping and graphing web components. Data used on the queries included: hatchery releases, estimated spawner escapement to watersheds, and other data sets.
• Developed process for adding new data to hatchery release mapping application and linking this data to website queries with data download and graphing components. Began adding this data to our spatial databases. Includes linking SARs to CSS release sites, redd counts, and transects.
• Researched and tried out various CMS software packages. Found several scripting tools to use to develop a FPC CMS.
• Updated website metadata for current year. Some updates included: SMP metadata; GBT metadata; Adults metadata; 2013–2014 Adult Salmon Dam Count Monitoring Dates; 2012–2013 Columbia and Snake River Fishway Outages; Summary of 2012 Actual and 2013 Preseason Forecasts of Spring Chinook, Summer Chinook, Sockeye and Steelhead Returns to the Columbia River; Summary of Salmon and Steelhead Estimated Returns to the Columbia River Mouth by Year, etc.

• Developed graphs/maps for FPC annual report for the adult and hatchery sections.

• FPC updated the process for collecting and storing adult dam count data (removed historical and traditional count date schedules: we now collect data throughout the year with no date constraints at all dams, except in regard to the dates used for Chinook race).

• Developed adult count dynamic views and updated web queries to reflect this new process and storage system. Query updates include: Adult Salmon Dam Count Graphs Comparing 2013, 2012, and 10-year average (2003 to 2012); Adult Salmon Return Comparison Report for 2013 (Compares 2013, 2012, and 10-year average); and 2013 Daily Adult Salmon Dam Counts Query and Download Data (updated throughout the day).

• Completed technical support provided to State of Idaho on interactive web page queries, maps, temporal map queries, data tables and metadata Follow Idaho Salmon Home (F.I.S.H). These pages utilized our updated software stack (see above).

• Developed ‘include files’ for menus, database connections, headers, footers, metadata and other design components for new FPC website design.

• Completed a prototype FPC adult count website, including Adult Graph query, Adult Cumulative Table Report, Annual Adult Count Query, and Adult Count Data Query for daily counts for multiple years. These queries used the new software stack, include files and FPC website design. Additionally, the queries are automated (automatically changing years and date ranges for each site selected).

**Infrastructure Updates**

• Researched the cost of replacing our current phone system (BPA requested that due to our moving and them wanting to go to VOIP next year that we have our own system as opposed to being on theirs).

• Researched the cost of replacing our existing T-1 lines with fiber optic to facilitate better access to our website and the collection of data from outside sources.

• Received proposals for several companies to replace our phone system, with the final decision to go with an Adtran system from CenturyLink.

• Received proposals from several companies on upgrading to fiber optic internet service; again the contract went to CenturyLink based on the lowest cost for the fastest service.

• Researched the cost of wiring the new office for both phone and data cabling. This contract was awarded to Christensen Electric. They ran all new Cat-6 cabling throughout the office, had it tested, and made sure it meets or exceeds industry standards. It is guaranteed against any failures for 25 years.
Procedure to Simplify End of the Year Procedure for Adult Dam Counts
New Star Schema to Accommodate New PTGAIS Database Structure on FPC SQL Server
21 New CTL Tasks to Collect Dimensions PTGAIS Database Data
Four CTL Tasks to Collect Dimensions PTGAIS Data on Daily Basis
After 03/02/2013

Before 03/02/2013

Application to Accommodate New TDG Source Files Format
Adult Count Dynamic Views and Updated Web Queries to Reflect New Process and Storage System
Updated CSS Queries and Graphs Incorporating Data from CSS 2012 Annual Report

Updated SMP 2013 Season Queries and Graphs
Updated 2013 Metadata and Forecasts
Preliminary Temporal Mapping and Graphing Queries

Updating and Adding New Searches to Hatchery Map App
MCN Temperature SQL Server tables

FTP directory /DataExtract/Mark/Cumulation/ at ptagisbi.psmfc.org

To view this FTP site in Windows Explorer, click Page, and then click Open FTP Site in Windows Explorer.

Up to higher level directory

- 06/25/2013 02:42PM 450,235 MarkCumulation2013.csv.zip
- 06/25/2013 02:42PM 325,229 MarkCumulation2009.csv.zip
- 06/28/2013 02:49PM 1,982,839 MarkCumulation1999.csv.zip
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Historical PTAGIS data download and input into FPC PIT-tag DB
CTL tasks to collect historical data from PTAGIS database data has been developed.

Tasks to update traditional PTAGIS database data. Scheduled storage procedures populate traditional tables from new star schema tables.
Completed installation spatial database software and data – Postgresql 9.1 / PostGis 2.0

Updated 2012 FPC annual report hatchery release and adult dam count maps
Technical support provided for (Follow Idaho Salmon Home) F.I.S.H. interactive map and data queries for State of Idaho
Technical support provided for (Follow Idaho Salmon Home) F.I.S.H. interactive map and data queries for State of Idaho (contd.)
Technical support provided for (Follow Idaho Salmon Home) F.I.S.H. interactive map and data queries for State of Idaho (contd.)
Completed Prototype Adult Section of new FPC website using new software stack, automated queries and include files.
Completed Adult Query using new software stack, automated queries and include files (contd.)

2013 Annual Web Statistics

The FPC website is the primary vehicle for data distribution. During 2013, FPC.org had 23,639,612 hits. During 2012, there were a total of 22,034,962 hits. The 2013 FPC.org annual hits were 1.07 times greater than the 2012 hits. In 2013, there were a total of 4,973,428 pages viewed and 2,308,413 visits to the website. The 2013 FPC.org page views were 1.42 times greater than the 2012 pages views and the 2013 visits were 1.16 times greater than the 2012 visits. The numbers of unique page views were 2,956,191. The average number of hits per day during weekdays was 72,403 while the average number of hits per day during the weekend was 6,641. The average visits per day to the website were 6,275 staying an average of 3:29 minutes. About 94% of the visits were from the United States. Of the U.S. visits, 36.3% were from Washington, 19.8% were from Oregon, 9.9% were from California, 4.8% were from Idaho, and 29.2% were from other states. Of the top 50 domains, 10% of the visits were from commercial organizations, 86% were from individuals and networks, and 10% were from government and education sites. We log all data requests made via the web. The number of requests between 1/1/2013 and 12/31/2013 was 1,545,272.

The most active day of the week was Tuesday, while the least active day of the week was Sunday. The busiest hour of the day was around 3:00 PM. September was the busiest month, with 17.2% of the hits, followed by May (12.3%), August (12.2%), July (10.8%) and April (10.7%). The top platform (operating system) used to hit the site during 2013 was Windows 7 with about 42.3% of the hits, followed by Windows XP (16.4%), AndroidOS (8.1%), Windows Vista (6.5%), Mac OS (6.0%), iOS (0.5%), Unix/Linux (0.5%) and other platforms (19.7%). The top browser used to hit the site was Internet Explorer (44.8%) followed by Safari (21%),
Chrome (15.7%), Firefox (7.4%), and other various other browsers (11.1%). A total of 10.8% of the visits during 2013 were from mobile devices. Of the 10.8% mobile visits, 62.7% were from iPhones, 31.9% were from iPads, 4.2% were from various Android devices, and 1.2% were from iPods.

The top requested page was the Daily Adult Salmon Dam Count Report. Of the top 50 groups of requested pages and queries, 76.9% were about adult salmon, 9% were about FPC documents and other FPC administrative pages (includes FPC homepage, contact, site map, FAQ, FPAC links, etc.), 7.8% were about river queries (flow/spill report, temperature graphs, spill update, etc.), 2.8% were about smolt data, and 3.5% were about CSS, PIT tags, hatchery and other data queries.
Hits by Domain, 2013

Network / Individual, 86%

Government / Education, 5%

Commercial / Organization, 10%
Hits by Platform, FPC.ORG, 2013

- Windows 7: 42%
- Windows XP: 16%
- Windows Vista: 6%
- Android: 8%
- Mac OS: 6%
- iOS: 1%
- Other: 20%
- Unix/Linux: 1%
Hits by Browser, FPC.ORG, 2013

- Internet Explorer: 45%
- Safari: 21%
- Firefox: 7%
- Chrome: 16%
- Other: 11%
Of the Eleven Percent of Hits from Mobile Devices:
Percentage of Hits by Device Type

- iPhones: 63%
- iPads: 32%
- Android: 4%
- iPods: 1%
2013 FPC.ORG Top Requested Pages

- 7 Day and YTD Adult Counts: 1,430,526
- Adult Queries: 690,384
- RSS Adult Counts: 596,263
- FPC Administrative Pages: 292,300
- Water Temperature Graph: 269,573
- Adult Graph: 129,385
- PITtag Queries and Graph: 98,555
- RSS SMP / GBT: 80,724
- Documents: 24,583
- Smolt Queries: 23,362
- River Queries: 20,785
- CSS Queries: 14,660
- Fisherman's Links: 13,411
- Hatchery Queries: 7,263
- Spawning Queries: 7,174
2013 Percentage of National FPC.ORG Visits by State

Note: The geographic locations included in these maps are based on where the domain name of the visitor is registered. In some cases, the domain name is not registered in the same location as the visitor. For example, the domain name for the USFWS is in Colorado. Therefore, if a USFWS employee in Montana, Washington, Oregon or Idaho accesses the FPC web site, that visit will be logged as coming from Colorado.
2013 Percentage of International FPC.ORG Visits by Country

Note: The geographic locations included in these maps are based on where the domain name of the visitor is registered. In some cases, the domain name is not registered in the same location as the visitor. For example, the domain name for the USFWS is in Colorado. Therefore, if a USFWS employee in Montana, Washington, Oregon or Idaho accesses the FPC web site, that visit will be logged as coming from Colorado.

Technical Assistance for fishery managers and the public at large

The primary purpose of the Fish Passage Center is to provide technical assistance and information to fish and wildlife agencies and tribes in particular and the public in general. The FPC participated in all Fish Passage Advisory Committee meetings and provided technical information as requested. In season analyses and recommendations relative to the implementation of the 2013 Operations Agreement were assessed weekly and SORs were developed and submitted as needed. The FPC also participated in weekly Technical Management Team meetings. In response to requests from Washington Depart of Fish and Wildlife and Yakama biological staff, the FPC attended a joint meeting of the Upper Columbia Habitat Conservation Plan Coordinating Committee and the Priest Rapids Coordinating Committee. The FPC staff and representatives of the CSS Oversight Committee presented CSS and SMP results for juvenile fish survival, juvenile fish travel time and Smolt to Adult Return data for Upper Columbia salmon and steelhead. The FPC staff provided technical support to Idaho Department of Fish and Game to develop an IDFG web site entitled Follow Idaho Salmon Home (FISH). The web site is displays life cycle data for Idaho stocks of salmon and steelhead and is designed to provide easily accessible data for the salmon life cycle for juveniles leaving Idaho and migrating to the ocean and their return to Idaho.
The FPC staff provided a report to the Lamprey Technical Workgroup on the 2013 results from lamprey monitoring and lamprey condition monitoring. The report is posted on the web (http://www.fpc.org/documents/memos/139-13.pdf). In response to a request from the Lamprey Technical Workgroup (LTWG), the FPC staff summarized the lamprey monitoring data that were gathered as part of the SMP in 2013. Migration year 2013 was the third year of including lamprey as target species in the SMP. Results from 2011 and 2012 were also included in this report. The FPC staff prepared reports to each of our cooperative hatcheries from the SMP and CSS that describe passage timing, survivals, and/or SARs for these cooperative groups. These reports are prepared annually. In addition, upon the request from the USFWS, FPC staff prepared a similar report for the Columbia Gorge Hatchery Complex. All of these reports are available on the FPC website: http://www.fpc.org/documents/FPC_memos.html.

In November of 2013, FPC staff was invited by the North Atlantic Salmon Fund to give a technical presentation to the Ministry for the Environment and Natural Resources’ Master Plan Steering Committee on the development of fish passage and hydro system operations on the Columbia River. Margaret Filardo of the FPC staff was sent as the technical expert on adult and juvenile fish passage in the Columbia basin. FPC staff spent four days meeting with various committees and technical experts to provide technical advice regarding the risks associated with the hydropower development in Atlantic salmon habitat in the Icelandic Thjorsa River.

In implementing the NPCC Program language the FPC responds to requests for data, analysis and technical support. The vast majority of data provided to the region by the FPC is accomplished through the FPC web site. Users throughout the region and the world are able to access FPC data through the web site. Data can be downloaded into spreadsheet format and documents, analysis and reports can be accessed through the web site. The data and analysis provided to the region through the web site is accomplished without direct involvement of FPC staff. FPC staff is available to assist individuals when they are having difficulty locating or downloading the data they need.

Specific requests for data summaries or analysis are also submitted to the FPC through telephone conversations or e-mail. If possible these requests are directed to the web site and assistance is provided to the requester in navigating the site to retrieve the data requested. These requests are logged onto a data request form reviewed by the FPC manager and assigned to one or more FPC staff members according to expertise and workload to fill the request. All data requests are logged and filed upon completion. Those that include analysis are posted on the web site upon completion. The schematic below shows the process for response to data requests followed by a data request form.
Data Requests

Regional, National
International, Public
and Private entities

Email, written, verbal,
television requests

FPC Web site

Redirect to website?

Data Request
Forms

Review and
assign

Response, hard copy,
email, excel, ascii
DATA REQUEST FORM

Request Taken By: ________________________________ Date: _____________________

Data Requested By:
Name: _____________________________________ Phone: _______________________
Address: ___________________________________ Fax: _________________________
________________________________________________________________________
________________________________________________________________________
Data Requested:________________________________________________________________
________________________________________________________________________

Data Format:   Hardcopy ☐  Text ☐  Excel ☐
Delivery:      Mail ☐  E-mail ☐  Fax ☐  Phone ☐

Comments:_________________________________________________________________
________________________________________________________________________

Data Compiled By: ________________________________ Date: _____________________

Request # __________________
The FPC website is the primary source for public data access. In addition to data access through the website, several data requests are received through telephone or written contacts. Responses to these requests are developed by FPC staff and distributed according to the request. In 2013 the FPC staff received and responded to 65 data requests from agencies, tribes and the public. Of the 65 requests received, 47 responses required analyses and the response was developed in memorandum form. These memorandums are posted on the FPC website at the same time as they are submitted to the requestor. These requests were completed and presented to the agencies and tribes to facilitate their activities in a wide range of forums related to fish passage and hydro system management. These 47 requests related to data summaries and analysis relative to historic passage data, hydro system operations, and fish passage characteristics. The requests that included analysis were posted on the FPC web site in accordance with established FPC operating procedures.

Weekly summary reports of storage reservoir elevations and operations were provided to the Fish Passage Advisory Committee and reflected in weekly reports which are posted on the FPC web site. FPC staff participated in the Adaptive Management Team and provided analysis and technical support to the agencies and tribes regarding dissolved gas waiver limits and monitoring.

In response to requests from the fishery agencies and tribes, the FPC staff provided historic data summaries, research results, analytical results to the agencies and tribes and review comments on various proposed hydro system operations as they potentially affect fish passage and survival. The FPC staff continued participation and technical support in the regional Adaptive Management Team, the Fish Passage Advisory Committee, and the Lamprey Technical Workgroup. FPC staff provided technical support for the Corps of Engineers Fish Passage Operations and Management Committee. Regular updates were provided in-season on the migration characteristics of juvenile and adult salmonids during the spring season and particularly during the implementation of the court ordered spill. These were developed into web reports. The FPC staff provided review comments on research proposals and research reports as requested by the agencies and tribes. These were proposed or conducted through the BPA Fish and Wildlife Program process and the U.S. Army Corps of Engineers Anadromous Fish Passage Evaluation Program. Specifically, the FPC staff provided technical assistance to the agencies and tribes in the development and review of research proposals, as well as provided assistance in reviewing results of research used to make management decisions regarding modifications to dam’s structure or operations.

**Specific Data Requests 2013**

12. Results of 2013 Lamprey Monitoring - December 3, 2013
16. Additional Irrigation Withdrawals from the Upstream Portion of the John Day Reservoir of the Columbia River - November 27, 2013
17. Inflated collection estimates at Lower Granite Dam for clipped yearling Chinook, steelhead, and subyearling Chinook due to resampling of PIT-tagged study fish - November 19, 2013
22. Review of Adult Sockeye Passage Data and Ladder Temperatures at Lower Granite Dam - July 30, 2013
23. Lower Granite Dam Ladder Update - July 25, 2013
24. Meeting with DOE on June 27, 2013 - July 18, 2013
25. Survival Testing at Rocky Reach and Rock Island Dams - July 11, 2013
26. Estimated Change in Proportion Transported with April 21 Transport Start Date - July 1, 2013
27. Review of NOAA Proposal for Estimating 95% Passage Date at Lower Monumental Dam - May 28, 2013
29. BON Operations Task Group - Comments on Proposed Fish Passage Plan Change Form and Supporting Memorandum - May 7, 2013
30. Transportation Start Date - April 23, 2013
31. Spread the Risk Data Request - April 23, 2013
32. Summer spill initiation under 2008 BiOp and subyearling fall Chinook timing at LMN - April 22, 2013
33. Operation of the Ice Harbor Adult Trap (Spring 2013) - April 12, 2013
34. Permission to Radio Tag (Previously PIT Tagged) Adult Chinook at Ice Harbor Dam, Spring 2013 - March 27, 2013
All FPC staff participates in the development of weekly reports from March through October. These weekly reports summarize river and reservoir operations, as well as fish passage information. The reports document any unplanned or planned excursions from the implementation of Biological Opinion measures. The report is distributed via e-mail and paper copy, as well as being posted on the FPC website. The estimated circulation is about 750 readers.

All FPC staff participates in the development of the Annual Fish Passage Center Report and the CSS Annual Report. The objective of the Annual Report is to tell the story of adult and juvenile fish passage for that year. In this way the report serves as a resource of historic practical information regarding the annual operation and management of the hydro system and juvenile and adult fish passage. The report summarizes hydrologic conditions, reservoir operations throughout the water year and focuses on the resulting flows during the migration period. The report also summarizes annual spill operations as provided under the Biological Opinion spill measures or court ordered spill measures. Annual fish passage metrics, passage indices, passage timing, smolt travel time and survival, and analyses are presented and discussed along with past years’ information collected under varying environmental parameters. The Annual Report also presents annual and historic adult passage information and yearly hatchery releases.
Documents completed by FPC in the 2013 contract year

The culmination of all aspects of the FPC project staff work is presented in several annual, weekly, and periodic documents prepared in response to requests. The documents completed in 2013 are listed below and are all available on the FPC website at www.fpc.org.

- Fish Passage Center Annual Report
- Comparative Survival Study Annual Report
- Annual Adult Facilities Inspection Report
- Weekly Reports
- Gas Bubble Trauma Monitoring Annual Report
- Fish Passage Center Accomplishments Annual Report
- Response to ISAB comments on the CSS project
- Response to ISAB comments on the SMP project and the FPC Annual Report

In addition in 2013, the FPC staff attended monitoring.org training and training for new reporting requirements for Bonneville Power Administration Research, Monitoring and Evaluation projects.

Financial Summary

The Fish Passage Center project funding levels were established and agreed upon through the Tribal Accords Process. The funding levels for the FPC and CSS and SMP projects were all set and agreed upon for the term of the Tribal Accords. The funding level for 2013 was set at $1,823,886. The FPC project was successfully operated in 2013 within the budget established through the Accords process.

BPA PISCES System

The FPC project met all of the Pisces system requirements for maintaining Pisces project data for the Fish Passage Center, Smolt Monitoring Program and Comparative Survival Study projects, including, input of data, budgets, milestone reports, annual and quarterly reports. Edits were made to the statement of work as necessary for all projects. Project inventory was also maintained and updated by the FPC for all projects. FPC continues to maintain the responsibility of updating all needed PISCES requirements for CSS USFWS and updated budget information. All Pisces requirements for the CSS and the SMP were successfully completed within the required time frames.