The Fish Passage Center
Annual Report of Accomplishments
2008

Submitted To
The Fish Passage Center Oversight Board
December 15, 2008
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 Basins tribes and the Columbia Basin Fish and Wildlife Council. 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 Fish Passage 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.

In 2003 the Northwest Power Conservation Council adopted the Fish and Wildlife Program Amendments. These amendments established the primary purpose of the Center as the provision of technical assistance and information to the fish and wildlife agencies and tribes in particular and the public in general on matters related to juvenile and adult salmon and steelhead passage through the mainstem hydrosystem. The amendments describe the duties of the Center including the responsibility to:

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.
1) Plan and implement the annual Smolt Monitoring Program;

2) Gather, organize, analyze, house and make widely available, monitoring and research information related to juvenile and adult passage, and to the implementation of the water management and passage measures that are part of the Council’s program;

3) Provide technical information necessary to assist the agencies and tribes in formulating in-season flow and spill requests that implement the water management measures of the Council’s program, while also assisting the agencies and tribes in making sure that operating criteria for storage reservoirs are satisfied; and

4) In general, 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.

The 2003 amendments also created an oversight board for the Fish Passage Center that among other things helps to assure the quality of data reported by the Center and the responsiveness of the Center to input from the Northwest Power and Conservation Council.

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 be the Fish Passage Center historically.

The Year In Review

For the seventh continuous year the Fish Passage Center project was flat funded in 2008. Although the FPC project did not grow in 2008, general inflation over six years resulted in a shortfall between the flat funding level allotted to the FPC and the actual costs of implementing the project. In 2006 and 2007 the FPC project was subject to significant uncertainty as the result of conference report language introduced by Senator Larry Craig of Idaho to eliminate funding for the FPC. As a result of this uncertainty, almost half of the FPC staff resigned. With the agreement of Bonneville Power Administration the project funding agency, and the agreement of service and product vendors, 2006-2007 funds were utilized in 2007 to pre-pay services and products that would be used in 2008. This allowed the FPC to provide all of the same services and tasks to the region within the flat funded level allotted by BPA in 2008. All FPC project contract deliverables were successfully completed according to contract requirements.
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 to provide a consistent, long term database for short term in-season fish passage management and for long term mitigation decisions. The FPC staff provides daily oversight and technical support for the eleven remote sites implementing the SMP. Final data and analysis of the SMP data are reported in the Fish Passage Center Annual Report. Data validation and verification and data analysis occur throughout the fall and winter and are presented in the FPC Annual Report the following year. The quality control data verification report was completed and distributed to the remote sites on December 15, 2008. SMP data collection continues from March through October 31 at most in river trap and main stem sites. The FPC Annual Report for the 2007 passage season was completed after providing a draft for regional review. It was distributed and posted on the FPC website, on July 31, 2008, according to contract deliverable dates, along with previous year’s reports.

In 2008 the FPC staff in response to a request from the Fish Passage Advisory Committee (FPAC), began a review of the fish condition monitoring data collected at mainstem hydroelectric projects. The FPAC had requested that fish condition monitoring data be available on the FPC website, and standardized among sampling sites to inform fish passage management decisions. The FPC staff collaborated with the U.S. Army Corps of Engineers (COE) biological staff to ascertain the fish condition data requirements of the COE fish condition monitoring program. The FPC staff had several meetings with the various state staffs, conducting the sampling at the sites to review the data collection, recording and criteria utilized at each site. The FPC then developed a proposed data collection procedure which is being discussed among state, federal and tribal fishery managers for implementation in 2009 as part of the standardized remote data entry program for the Smolt Monitoring Program.

Annual GBT Monitoring and Reporting

Oversight requirement of the gas bubble trauma monitoring for 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

*Descaled steelhead*

*Nose injury*
waiver permits. This annual report summary was completed and provided to the agencies for incorporation into their 2008 passage season report requirements.

The development of the plan for implementation, the work statements and the budgets for the SMP for 2009, were completed in October 2008. Discussion with the state, tribal and Federal fishery managers took place and FPC staff has begun coordinating the necessary logistics for marking and sampling at remote trap and mainstem sites in 2009, including discussions with agencies and tribes implementing the sampling programs.

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 Smolt Monitoring Program and the Comparative Survival Study. 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 2008.

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. In addition, Independent Scientific Review Panel and NOAA review comments on the CSS Ten-Year Retrospective report in 2007 contributed to determining specific tasks that were addressed in 2008.

Additional analyses in 2008 were conducted on the question of whether there was a size bias of PIT-tagged smolts detected at Snake River collector dams. Analyses reported in Chapter 4 of the 2008 CSS Annual Report demonstrated that the issue of size bias in the collection/bypass facilities at Lower Granite and Little Goose dams was negligible to non-existent.

Estimates of Chinook overall SARs incorporating jacks were added in the 2008 annual report. These estimates were calculated for all available years (1994 to 2006 for wild Chinook and 1997 to 2006 for hatchery Chinook) and compared with the standard overall SARs that exclude jacks. The results are in Chapter 6 of the 2008 CSS Annual Report and demonstrate that the addition of jacks to the adult count had minor effect on the overall annual SARs for the aggregate of PIT-tagged wild Chinook and the spring Chinook hatchery stocks (Rapid River, Dworshak, and Catherine Creek), but did have a greater effect on the overall annual SARs of summer Chinook hatchery stocks in some years due to the much higher jack rate among those stocks. However, there was no statistically significant change in any group with the addition of jacks. The conclusions regarding not reaching the minimum of 2% overall SAR for wild Chinook in all but 1999 during the 13-year record (1994-2006) still stands even with the inclusion of jacks.
A major programming accomplishment in 2008 was the completion of two new Bootstrap computer programs. Part of this work directly addresses an early comment of the ISAB regarding the expansion of PIT-tagged fish removed at McNary, John Day, or Bonneville dams to Lower Granite Dam equivalents in prior CSS annual reports including the 10-Year Retrospective report. They recommended that we modify the bootstrap program to use specific reach survival from Lower Granite Dam to each of these locations for the PIT-tagged fish removed there from study groups C₀ and C₁. In prior years, a fixed 50% rate had been applied to the sum of the removals from these three dams. In both new programs, any tagged fish removed at dams below Lower Monumental Dam are expanded to LGR-equivalents using directly estimated survival rates from Lower Granite to that particular dam rather than the previous program’s fixed 5% rate. This computer program modification was completed in 2008, as part of a larger overhaul of the bootstrap program to accommodate the switch in 2006 to the approach of pre-assigning smolts to key study groups prior to release (the approach first applied in the region with Nez Perce tagging studies in the Imnaha River and Johnson Creek drainages). In the 2008 CSS Annual Report, all SAR’s from 2003 to present were run with the first (Program BT-2) of two new programs developed in 2008, changes between the prior SARs and re-run SARs have been minimal.

The new programs also allow for processing of PIT-tag data from pre-assigned groups (denoted as groups T and R). Group T reflects the untagged fish population and is transported at collector dams whenever transportation is occurring. Group R fish are bypassed if detected at collector dams throughout the season and aid in reach survival estimation. The combination of Group T and Group R fish is named Group CRT. Since this combined group matches the source PIT-tag data of migration year 2005 and earlier, it is also possible to compute all the parameters from the previous CSS Bootstrap Computer Program (COLOSSUS-YMOD) in both new programs. The primary difference between the two new programs (BT2 and BT3) lies is how CJS estimates are calculated. The CJS survival rates and collection probabilities are calculated from either Group R fish (as in Program BT-2) or Group CRT fish (as in Program BT-3). The CJS parameters are incorporated to estimate smolt population sizes at Lower Granite Dam (and for groups expressed in LGR equivalents). Smolt populations at LGR represent the denominator in LGR-to-LGR SAR calculations for respective study groups. This includes SAR estimates for the run as a whole (overall SAR), the transported group, and in-river groups. Additionally, Program BT-2’s Step 1 module may be run stand alone with tag input data from Migration years 2005 and earlier to produce all the standard parameters found in earlier CSS report, but with the benefit of the improved accounting of downstream removals. The new Bootstrap computer programs BT-2 and BT-3 was used for the processing of data presented in the 2008 CSS Annual Report, which was finalized on November 15, 2008, and placed on the FPC Web Page.

In 2008, FPC staff worked with BPA representatives and the state and federal fishery agencies to PIT-tag 75,000 hatchery steelhead for release in 2009 (plus another 2,000 for release in 2010). This was the full quota for steelhead agreed upon in 2007, but only partially accomplished that year. Work statements and budgets were developed for the hatchery steelhead in addition to the on-going tagging efforts on wild Chinook and steelhead and hatchery Chinook. This information was submitted to BPA via their Pisces database entry 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 often accompanied by FPC staff. Monthly reports are provided to the FPC. Monthly reports are 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 of Columbia Basin Fish and Wildlife Authority (CBFWA).

John Day Dam north shore fishway entrance

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 2008.
The Annual Adult Facilities Inspection Report for 2007 was completed in 2008 and is posted on the FPC website with previous years’ reports. The draft 2008 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, 2009 and posted on the FPC web site.

Data Acquisition, Storage, Analysis 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 data bases 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 is up to date and reflects any last minute changes in hatchery release data. All of the FPC databases were successfully maintained and updated without lapse in 2008. In 2008, 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.

- Hardware Improvements in 2008:
  - New servers built and relocated in new heat dissipating racks
  - New mail server was built and upgraded to Exchange 2003
  - Upgraded new anti-spam mail software to reduce the impact of spam in our email system by over 92%
  - Upgraded our domain server to Windows 2003 which allows for better security and allows all the workstations at the FPC to be upgraded to windows XP professional.
  - Removed two older servers from our network and replaced them with new servers. One of these servers was the primary web database server and the other was a duplicate replica, used as a backup server.
  - Installed and configured the two new servers, installed the most recent version of MS SQL 2005 server software, and pointed the web queries to the new database server. Some of the web queries needed editing, due to some minor syntax changes in the newer version of TSQL.
Built a new SQL Server for the Nez Perce SMP project and restored the database back to its original condition, also reconfigured their network setup so that they could access it from their desks as opposed to having to work directly on the server.

Built a new web development computer

Built and reconfigured a new antivirus master server, all of the computers get their antivirus updates from this computer and it maintains records of what virus are found on which computer.

Introduced a new software program to the office call InDesign that is now used to develop the weekly report as well as all other large reports (FPC Annual Report, CSS Annual report).

Testing two trial versions of updated library software. Our library software is older and hard to search. For these reasons, we are looking at upgrading our library data system.

Analytical tools developed / upgraded in 2008

- Year end and beginning of year data management procedures and documentation were completed this year. This included upgrading excel macros, storage procedures, web scripts, web pages and reports.
- Year end procedures for finalization of databases for 2007 were implemented. This included verification of adult count data for each site with Corps of Engineers final number.
- Hatchery release data was validated and finalized with state, federal, and tribal hatchery programs.
- Collecting fish condition data for 2008 – In response to an FPAC request to add fish condition data to the FPC web site, FPC staff evaluated the various fish condition data from each of the sites to determine best format for various data and summarized into a standard form.
- Fish condition data was collected from each of the sites in their various formats and summarized into a fish condition table for query on the web.
- A data entry program was developed for LGS and LMN for this year, since they did not collect daily individualized fish condition data (see Figure 1). Next year all sites will be using the new FPC32.net program (see below).
- Created two new daily reports that are posted to the website each day: Two week population index report and Two week descaling report (see Figure 2).

FPC32.net software development for the SMP program

- Two development phases were identified for updating the FPC32 software and project plan and schedule were created for this project
- Development on the newer version of FPC32.net began in the 2nd quarter of 2008. A beta version of the FPC32.net software will be completed in early Dec and will be tested by some of the site personnel.
- The batch data entry screens have been developed (see Figures 3-7). An import/export program has been developed, and updates to the FPC32.net post program have been completed. An installment program has also been
developed for the FPC32.net program, eventually allowing deployment of the software.
- Basic report functions have been developed and the standard reports have been created.
- The fish condition touch screen data entry program has been completed using the standardized fish condition metrics that were developed by the cooperation of COE, SMP, FPC, USFWS, and State Agency personnel (see SMP portion of this report for more information) (see Figure 8).

- **CSS bootstrap** program updates
  - New computer program CSS Bootstrap BT2 (R – CRT – T) has been developed
  - New computer program CSS Bootstrap BT3 (CRT – R – T) has been developed.

- **Website improvements:**
  - Shad were added to the Adult Cumulative table query
  - At the request of FPAC, created an FPAC Links page (see Figure 9) which lists all of the links they use the most in one location. This page was designed using the new web format and includes tabs for ease of use and contextual help through thumbnail images by hovering the mouse pointer over the links.
  - Several new queries were developed for the FPAC Links page. The queries include: fish condition graph (to be upgraded in 2009 to report more information and more detailed graphs using the standardized fish condition metrics that will be reported using the new FPC32 program), smolt descaling graph, smolt mortality graph, GBT graph, daily juvenile population index data query and graph, and the cumulative population index graph (see Figures 10-12).
  - The FPC website is composed of many sub-sites including: Adult, smolt, spawning, river, hatchery, survival, traveltime, and lamprey/bull trout data sub-sites. In addition, there is a documents sub-sites which allows access to all FPC current and historical documents and metadata pages. Links to some pages on the main level of the FPC webpage include: what’s new, reporting sites, useful links, FAQ, about/contact us, and our site map. Several of the sub-sites (including all of the link pages, queries, metadata, and graphs) have been upgraded to the new web-site design, new navigation tools, new data browsing tools and new graphics. The following sub-sites have been completely upgraded: main level FPC link pages, documents, adult data, smolt data, river data, lamprey/bull trout data, and spawning data (Figures 13-16).
  - The survival homepage, survival smolt-to-adult query navigation page, and the survival juvenile query navigation page were completed this year (Figure 17).
- All of the upgraded webpages include new web-site design, new navigation tools, new data browsing tools and new graphics where applicable. Examples of some of the upgraded navigation and user friendly data browsing tools include utilized tabbed shortcuts to group links to data pages for easier navigation and a table sort feature for browsing data returned by queries.

- A few survival query prototypes were developed last year. In 2008, the database used for the survival prototype queries and several new survival queries are being updated or developed and the queries / metadata are being updated, reviewed, and attached to the website for public use. The following queries have been added to the website or are being reviewed and will be added to the web-site by the end of the year. These queries include: CSS SARs by study category; CSS Ten Year Report results and expectations query; CSS returning adult age composition query; Number of smolts and returning adults by study category; CSS Reach Survival Data; CSS SR, TIR, and D; and FPC Annual Report Survival Estimates. Two of these queries use on-line mapping technology including: CSS Reach Survival Data and the FPC Annual Report Survival Estimates (Figures 18-23).

Figure 1 – 2008 LGS and LMN Fish Condition data entry program (all sites will be using the new FPC32.net SMP program next year which includes the newly standardized fish condition metrics)
**Figure 2** – Two week population index report and Two week descaling report

**Figure 3** – FPC32.net Catch data entry screen
Figure 4 – FPC32.net Catch Detail data entry screen

Figure 5 – FPC32.net Incidental Catch data entry screen
Figure 6 – FPC32.net Mark/Recapture data entry Screen

Figure 7 – FPC32.net Transportation data entry screen
Figure 8 – FPC32.net Fish Condition touch screen data entry program

Figure 9 – FPAC Links Page
Smolt Composition Data at Little Goose Dam
from: 02/15/2009 to 12/15/2008

Instructions:
- After the html table is done loading, right click here and select either save target as... or save link as... (depending on your browser) to save the Comma Separated Value (.csv) file to your computer.
- When browsing the data, click on the column heading to sort the data.
- To learn more about smolt monitoring program data click here to read the metadata.
- When there are blank fields in the result, it is because there was no data.
- Hatchery fish are salmon or steelhead that have been clipped, have a coded wire tag, or have elastomer tags. Steelhead fish with clipped fins are also hatchery steelhead. Unmarked Chinook or steelhead include fish that have not been clipped, fish that do not have coded wire tags, and fish that do not have elastomer tags.

<table>
<thead>
<tr>
<th>Site</th>
<th>Sample Enddate</th>
<th>Species</th>
<th>Age</th>
<th>Passage Index</th>
<th>Total Sample Count</th>
<th>Hatchery Sample Count</th>
<th>Unmarked Sample Count</th>
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<td>4/16/2009</td>
<td>CH</td>
<td>1</td>
<td>20</td>
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Figure 10 - Fish Composition

SMP Site Sub-Sample Fish Condition Graph

Figure 11 - Fish Condition Graph
Figure 12 - Descaled graph and data

Figure 13 - Smolt daily reports
Figure 14 - Updated Smolt Daily Passage Index Graph web pages

Figure 15 - Spawning Data Homepage
Figure 16 – Lamprey queries
Figure 17 - Survival Data Homepage

Figure 18 – CSS SARS by Study Category query results
Figure 19 – CSS annual in-river survival estimates query (launches selected map query)

Figure 20 - CSS annual in-river smolt survival estimates map query results
Figure 21 – Graph results from Number of estimated smolts and detected adults by CSS study category – one year
Figure 21 – Graph results from Number of estimated smolts and detected adults by CSS study category – multiple years
Figure 22 – CSS in-river survival (SR), TIR, and D parameters input form (single year data table and graph query)
FPC CSS In-river Survival (SR), TIR, and D Parameters for Hatchery Chinook, 2002  
Source: IMNH

Instructions:
1. After the graph and table are done loading, right click [here](#) and select either save target as... or save link as (depending on your browser) to save the Comma Separated Value (.csv) file to your computer.
2. Click [here](#) for a detailed discussion of this data found in the CSS 10 Year Report, or click [here](#) for a brief metadata listing of the fields included in this query; or click [here](#) for a discussion of the recent years’ data found in the 2008 CSS Annual Report.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Value</th>
<th>90% CI Lower</th>
<th>90% CI Upper</th>
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<td>TIR</td>
<td>Returning adults smell-to-odds survival ratio of transported to lower migrants from USR to BON</td>
<td>1.75</td>
<td>1.67</td>
<td>3.03</td>
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<tr>
<td>D</td>
<td>Returning adults smell-to-odds survival rate of transported</td>
<td></td>
<td></td>
<td></td>
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</table>

Figure 22 – CSS in-river survival (SR), TIR, and D parameters input form results – one year
Figure 23 – FPC annual report survival estimates map query and results
CSS annual in-river survival estimates query

Step 1 - Select a species by clicking on a radio button. This opens a map containing river reaches. This map provides access to CSS annual in-river survival estimates data by clicking on river reaches. NOTE: Click a radio button even if it looks selected.

- All Chinook (All CH)
- Hatchery Chinook (CHH)
- Wild Chinook (CHW)
- All Steelhead (All ST)
- Hatchery Steelhead (STH)
- Wild Steelhead (STW)
- All Chinook & Steelhead (All CH & ST)

Instructions:
- Return to CSS Annual In-River Smolt Survival Estimates Query Homepage
- Click on a river reach in the map to return survival data within the query results frame. NOTE: If a river reach is colored gray, this indicates that there are no data for the selected species.
- Click here for brief metadata and access to the CSS 10 Year Report.

Layer: FPC CSS Annual In-River Smolt Reach Survival Estimate Data - All Chinook & Steelhead

<table>
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<tr>
<th>REACH</th>
<th>SPECIES</th>
<th>RACE</th>
<th>MIGR YEAR</th>
<th>SURVIVAL</th>
<th>CONF INTERVAL LOWER LIMIT</th>
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Technical Assistance and Information to Fish and Wildlife Agencies and Tribes and the Public in General

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.

In implementing the NPCC Program language the Fish Passage Center 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 email. 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,
telephone requests

Data Request
Forms

Review and assign

FPC Web site

Redirect to website?

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

Request Taken By: ______________________________  Date: __________________

Data Requested By:
Name: __________________________  Phone: ________
Address: __________________________  Fax: ________
_________________________________  Email: _______________
_________________________________

Data Requested:
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Data Format:    Hardcopy ☐  Text ☐  Excel ☐

Delivery:    Mail ☐  Email ☐  Fax ☐  Phone ☐

Comments:
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Data Compiled: By___________________________________Date:____________

Request # _______________
Response to Specific Data Requests

In 2008 the FPC responded to 154 requests for data analyses and summaries from the agencies and tribes and others, in addition to the regular weekly reports, and annual reports. In addition to data access through the website, several data requests are received through telephone or written contacts. These are recorded through data request written forms. Responses are developed by FPC staff and distributed according to the request. Data request forms and responses are maintained in a data request log. In 2008 through November 24, 2008, 154 data and analysis requests were received and responded to by FPC staff. These included requests from agencies, tribes and the public. Of the 154 data requests, 38.5% were from government agencies, 37.8% were from the public, 10.2% were from tribal agencies, and 13.5% were from groups.

These requests were completed and presented to the agencies and tribes as requested to facilitate their activities in a wide range of forums related to fish passage and hydro system management. In 2008 many requests related to data summaries and analysis relative to historic passage data and fish passage characteristics under the court ordered fish passage operations. The requests that included analysis were posted on the FPC web site in accordance with established operating procedures.

Several in-season analyses were completed regarding downstream passage conditions experienced by record high returns of adult fall Chinook and sockeye and steelhead returning during 2008. 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 website. 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. Specifically, analysis of fish passage characteristics, timing and survival under the court ordered spill implementation plan. The FPC responded to requests from fishery managers and BPA staff to include consideration of marine conditions on smolt to adult returns. 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 to 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 US 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 provide assistance in reviewing results of research used to make management decisions regarding modifications to dam’s structure or operations.

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 email 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. This report serves as historic information relative to the annual operation and management of the hydro system. 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 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 information.

2008 Website use and data requests

The FPC website is the primary vehicle for data distribution. The FPC site had 21,270,974 successful hits on our website during 2008 with 1,523,113 page views and 1,243,161 user sessions. Approximately 83.6% of the user sessions were from the United States. Of the remaining users, 1.6% percent were international users and about 14.8% were of unknown origin. During 2008, we averaged 61,947 hits per day, 4,449 page views per day, and 3,209 user sessions per day. The average user session length was 5:45 minutes. The number of unique users was 277,674. Of these unique users, 58.6% visited once and 41.4% visited more than once. We log all data requests made via the web. The number of requests between 1/1/2008 and 11/24/08 was 192,559. The following graphics and tables illustrate our web-site use and our audience for 2008.
Map of number of user sessions by country, 2008.
Map of number of user sessions by state, 2008.
Top 21 requested pages, 2008 graph

Hits by Organization Type, 2008

Hits by organization type (excludes international users), 2008
**Documents completed by FPC in the 2008 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 2008 are listed below and are all available on the FPC website at [www.fpc.org](http://www.fpc.org).

- Fish Passage Center Annual Report
- Comparative Survival Study Annual Report (CSS),
- Annual Adult Facilities Inspection Report
- Weekly Reports
- Gas Bubble Trauma Monitoring Annual Report
- Fish Passage Center Accomplishments Annual Report

**Documents prepared in response to specific requests during the 2008 contract year**

- **Review, "Survival of migrating salmon smolts in large rivers with and without dams", Welch et al.**
  *PLOS Biology 2008* - November 13, 2008

- **Estimation of holdover proportion among PIT-tagged Snake River hatchery and wild fall Chinook, migration years 1997-2007** - November 7, 2008

- **Response to Questions regarding the FPC Spill Volume Analysis** - October 20, 2008

- **Questions from Agnes Lut: If the 2001 data was removed, would the figures still show a statistically significant relationship? Would the relationships remain the same?** - October 15, 2008


Chinook jack passage at Priest Rapids Dam - September 22, 2008

Updated data request regarding Adult Lamprey passage numbers at Bonneville Dam in 2008 compared to other recent years - September 17, 2008

Response to Data Request from Scott Levy, Bluefish.org - September 15, 2008

Passage timing of juvenile subyearling Chinook above Lower Granite Dam - August 27, 2008

Natural Flow Component of Upper Snake Flow Augmentation - August 27, 2008

Adult Sockeye and ocean conditions - August 18, 2008

Data request regarding Adult Lamprey passage numbers at Bonneville Dam in 2008 compared to other recent years - August 14, 2008

Estimation of termination date of summer spill at Snake River projects under the 2008 BiOp and 2008 MOA - August 14, 2008

1998-2008 Average Daily Temperature, Average 12-hr TDG, and Spill at Dworshak Dam, the Clearwater at Peck, and the Clearwater at Lewiston - August 13, 2008

Upper Snake Flow Augmentation and Irrigation - August 11, 2008

Response to NOAA Memorandum: 'Initial Critique of Fish Passage Center’s July 14, 2008 Memorandum from Michele DeHart to Liz Hamilton re: Sockeye adult returns in 2008'. - August 06, 2008

Proportion of hatchery Snake River subyearling Chinook (released above Lower Granite Dam) that are released unclipped and/or unmarked. - July 29, 2008

Adult sockeye return and ocean conditions. - July 21, 2008


Response to COE’s comments on GBT Presentation by the Fish Passage Center. - June 19, 2008


Examination of incidental take mortality of juvenile sockeye as presented in 2008 Biological Opinion. - June 19, 2008

Timing of subyearling Chinook at Bonneville Dam in late August - June 11, 2008

Attached memo: Transportation of Fall Chinook Smolts and Related Fall Chinook Migration and Tag Data Concerning Summer Spill for Fish Passage - 04/06/04


Fish Condition Sampling at SMP Sites: Current practices and plans for the interim and 2009 sampling seasons. - June 2, 2008

Response to comments on FPC’s Presentation Importance of spill in Juvenile Hydro-system Survivals and SARs - June 2, 2008

Response to comments made by Shane Scott regarding CSS Study presentation - June 2, 2008

BPA comments on the FPC Analysis of Spill Volume - June 2, 2008

Response to COE comments regarding FPC modeling efforts presented in December 2007 Adaptive Management Team meeting. - June 2, 2008

Review of NOAA document to ISAB by the CSS Oversight Committee - May 1, 2008

Average Spill Proportion variable used in analysis of importance of spill in SAR’s of Snake River yearling Chinook and steelhead - April 23, 2008

Effects of spring spill at the lower Snake River collector projects in 2007 on juvenile salmonids - April 21, 2008
Size differences in transported fish due to size selectivity of smaller fish by juvenile bypass/collection system - April 21, 2008

Seasonal Timing of CSS groups - April 21, 2008

Potential for Bias in NOAA TIR estimate as a result of tagging at LGR - April 21, 2008


Recent Attempts to Improve Mainstem Migration Conditions for In-river migrating salmonids - April 21, 2008

Response to data request for estimates of the spill levels (% and/or volume) at each dam that result in gas cap conditions. - April 15, 2008

Data request in response to questions by Russ Kiefer IDFG. - March 24, 2008

Response to data request to evaluate outflows that can be expected from Dworshak Dam and Grand Coulee under a flood control shift in 2008. - March 10, 2008

Response to Data Request - FPC Database. - March 4, 2008

Response to data request for information on the 2007 migration. - February 28, 2008

Data Request to determine the volume of spill affected by the operation of the Camas/Washougal TDG monitor. - February 19, 2008

JDA Spill 4-10-08 to 4-21-08 - February 15, 2008

Data request regarding higher adult mortality for Upper Columbia spring Chinook and steelhead (BON-MCN) compared to Snake River spring/summer Chinook and steelhead (BON-LGR), as reported in 2007 Draft BiOp. - February 13, 2008

Including Data since 2000 in calculation of 7Q10 flows - February 7, 2008

NOAA Biological Opinion flow targets and the affects of the specific operation at Grand Coulee - February 7, 2008
Financial Summary

The Fish Passage Center project has been flat funded for the past seven years. The flat funding level of $1,302,904 was not adequate to maintain service and products in 2008 without the ability to pre-pay 2008 costs from funds remaining in the 2006-2007 budget, that resulted from significant staff vacancies over that time period.

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.
### Data Requests 2008

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<tr>
<th>Title</th>
<th>Requestor</th>
<th>Date Completed</th>
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<tr>
<td>1. Subyearling travel time Snake River</td>
<td>Tom Lor, CRITFC</td>
<td>Jan. 1, 2008</td>
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<td>7. 2007 Descaling morality Data</td>
<td>Jeff Fryer, CRITFC</td>
<td>Jan. 28, 2008</td>
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<td>10. Number of TDG Exceedences</td>
<td>Chris Majnard, WDOE</td>
<td>Feb. 4, 2008</td>
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<td>17. Spring creek cost per smolt</td>
<td>Liz Hamilton, NSIA</td>
<td>Feb. 27, 2008</td>
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<td>21. Information on FPC Databases</td>
<td>Dan Goodman, Oversight Board</td>
<td>March 4, 2008</td>
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<td>22. DWR/GCL Shift Flows</td>
<td>FPAC</td>
<td>March 10, 2008</td>
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<td>23. Current Adult Counts</td>
<td>Charlie Horse, Citizen</td>
<td>March 14, 2008</td>
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<td>24. URL for 2008 Fall Chinook forecasts</td>
<td>Joe Skalicky, USFWS</td>
<td>March 18, 2008</td>
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<td>25. URL for Bonneville Turbidity Data</td>
<td>Paul Herosa, Citizen</td>
<td>March 18, 2008</td>
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<td>27. Est. of unclipped summer Chinook</td>
<td>Barney Currigan, Citizen</td>
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<td>32. 2004 Annual Report</td>
<td>Steve, CTUIR</td>
<td>April 1, 2008</td>
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<td>33. Adult Graph</td>
<td>Judy Peterson, Citizen</td>
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<td>34. Adult count clip vs. unclip information</td>
<td>Alicen Magnius, NOAA</td>
<td>April 7, 2008</td>
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<td>35. Link to NOAA</td>
<td>Dudley Devices</td>
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<td>36. Forced spill &amp; gas cap spill</td>
<td>Jay Hesse</td>
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<tr>
<td>37. Asked about adult pit tag counts</td>
<td>Victor Woops, Citizen</td>
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<td>38. Asked about adult pit tag counts</td>
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<td>April 16, 2008</td>
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<td>39. Follow-up transport questions</td>
<td>Russ Kiefer</td>
<td>April 21, 2008</td>
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<td>40. Transport related questions</td>
<td>Ed Bowles</td>
<td>April 21, 2008</td>
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<td>41. Asked about adult pit tag counts</td>
<td>David bighouse, Citizen</td>
<td>April 28, 2008</td>
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<td>42. Asked about adult pit tag counts</td>
<td>Liz Hamilton, NW Sport Fishing</td>
<td>April 28, 2008</td>
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<td>43. Asked about no adult counts at Bonneville</td>
<td>Rob Carroll, Citizen</td>
<td>April 28, 2008</td>
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<td>44. Average Temp. Bonneville in April 82-95</td>
<td>Cindy Lefleur, WDFW</td>
<td>April 28, 2008</td>
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<td>45. Wanted historical flow data</td>
<td>Richard Schully, IDFG</td>
<td>May 1, 2008</td>
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<td>46. Adult passage/spill</td>
<td>Robert Bissonette, Teacher</td>
<td>May 6, 2008</td>
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<td>47. Adult travel time data</td>
<td>Tony Manigila, Citizen</td>
<td>May 8, 2008</td>
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<td>48. Temp. graph suggestion</td>
<td>Vince Zeik, Citizen</td>
<td>May 9, 2008</td>
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<td>49. Added Association of Northwest steelheaders to website</td>
<td>Ted Fountain, Association of NW Steelheaders</td>
<td>May 12, 2008</td>
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<td>50. Requested McNary temp. Data</td>
<td>Bob Rogers, Citizen</td>
<td>May 12, 2008</td>
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<td>51. Passage Index ’06 and ’07</td>
<td>Peter Jensen, Citizen</td>
<td>May 13, 2008</td>
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52. Troubleshoot SQL  
53. Fish conversion rates  
54. Adult counts at Bonneville  
55. Pit tag counts  
56. Bonneville fish web cam  
57. Adult returns/Columbia  
58. Salmon travel time from LGS to LGR  
59. McNary travel  
60. Adult Chinook travel time  
61. November detects at JDA  
62. Why no shad counts at JDA  
63. Sockeye adults at Sawtooth & a. Redfish Lake  
64. Turbidity info on lower Columbia  
65. Libby Scenarios  
66. Flow & Spill historic  
67. SARs data  
68. Shad added to cumulative table  
69. More recent SAR data  
70. Explain SK survival, (old memo) a. Relative to biop  
71. Sturgeon passage  
72. Info on pacific Salmon decline  
73. Explained negative fish counts  
74. Libby to HGH impart of MT SOR  
75. CSS Mark Groups 2006 by route  
76. Adult Graph Error  
77. Lower Snake Reservoir Ops  
78. Adult Travel Time  
79. Hourly adult passage data from Bon Dam  
80. Sockeye Returns and conditions  
81. Adult Passage Annual totals for Chum  
82. Include ocean cond. In Sock. Memo  
83. Hatchery database query  
84. Tribes requested graphics to link to web.  
85. LGR collection question  
86. Compass Comments  
87. When COE fish counts will be updated  
88. Prop. Of Cho population unmarked  
89. Reservoir Ops MOP operation  
90. Wild Steelhead %  
91. Adult return info.  
92. Field Trip #  
93. Response to NOAA comments  
94. Accounting BOR Upper Snake  
95. Problem with Adult Graph  
96. Problem with Adult Graph  
97. Hourly Ladder Adult Counts from Bon.  
98. Dworshak Scenarios  
99. Email chain FPCOB- FPC Amend.  
100. Estimate termination if Summer Spill  
101. SAR’s Hatcheries  
102. DWOR, Peck and Lewiston conditions  
103. Adult Lamprey Data  
104. Hatchery data on Species  
105. Requested updated contact info.
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<th>Number</th>
<th>Request</th>
<th>Department</th>
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<td>106.</td>
<td>Documents Sockeye</td>
<td>Joan Dukes, NPCC</td>
<td>August 26, 2008</td>
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<td>107.</td>
<td>Subyearling Passage Timing</td>
<td>Ron Boyce, ODFW</td>
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<td>108.</td>
<td>Requested URL for Bon Fish Counts</td>
<td>John, Citizen</td>
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<td>110.</td>
<td>Flow/spill daily 06/07</td>
<td>Fred Olney, Citizen</td>
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<td>111.</td>
<td>Requested Bon. Fish counts for 8/28</td>
<td>Marcy McDonald, Citizen</td>
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<td>113.</td>
<td>Counts at RRH, RIS, WAN, PRD</td>
<td>Jennifer Kruse, Citizen</td>
<td>September 1, 2008</td>
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<td>115.</td>
<td>Location of query for historical adult counts</td>
<td>Robin Cody, Citizen</td>
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<td>116.</td>
<td>Identify releases of CWT codes</td>
<td>Mark Woodward, Grant PUD</td>
<td>September 4, 2008</td>
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<td>117.</td>
<td>Past years Adult count graphs</td>
<td>Noah, Citizen</td>
<td>September 4, 2008</td>
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<td>118.</td>
<td>Why are there higher counts at LGR</td>
<td>Bob Mink, Citizen</td>
<td>September 5, 2008</td>
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<td>119.</td>
<td>Adult graph not working</td>
<td>Clay Hagler</td>
<td>September 5, 2008</td>
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<td>120.</td>
<td>Lamprey Adult Counts Bon. Dam</td>
<td>Michael Milstein, The Oregonian</td>
<td>September 5, 2008</td>
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<td>122.</td>
<td>Distance Between Dams</td>
<td>Don Lovell, Citizen</td>
<td>September 8, 2008</td>
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<td>Adult Count Update</td>
<td>Brian Sorci, Citizen</td>
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<td>Review juveniles and Adult data</td>
<td>Scott Levy, bluefish.org</td>
<td>September 15, 2008</td>
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<td>127.</td>
<td>PRO Jack Counts</td>
<td>Mark Young, Citizen</td>
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<td>Inquired about “past last updated” adult</td>
<td>Dave North, Citizen</td>
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<td>Requested temp. data be in F not C</td>
<td>Michael Mathis, Citizen</td>
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<td>Site labels incorrect on historical adult rep.</td>
<td>Doug Sherwood, Citizen</td>
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<td>MW Young, Citizen</td>
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<td>Bert Bowler (SRSS)</td>
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<td>TDA No. Fishway Insp. 06-07</td>
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<td>Species of lamprey counted at Bon.</td>
<td>Tucker Jones, ODFW</td>
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<td>Tim Dalton, ODFW</td>
<td>October 30, 2008</td>
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<td>Req. smolt freeze brand data</td>
<td>Mike Flesher, ODFW</td>
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<td>Update proportion of CHO holding over FPAC</td>
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<td>Bill Tweit, WDFW</td>
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<td>Length Data from LGR</td>
<td>Jennifer Panther, PNL</td>
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<td>Gary Fredricks, NOAA</td>
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<td>151.</td>
<td>Adult travel time Bon</td>
<td>Tom Lorz, CRITFC</td>
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<td>Condition monitoring criteria</td>
<td>Tammy Mackey, COE</td>
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<td>154.</td>
<td>McNary temperature data</td>
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