MEMORANDUM

TO: Fish Passage Center Oversight Board
    Jann Eckman, CBFWA
    Randy Fisher, PSMFC

FROM: Michele DeHart

DATE: August 1, 2011

RE: Quarterly Fish Passage Center Report for April - June 2011

Following is the Quarterly Report for the Fish Passage Center for the second quarter of 2011. This report follows the format and content agreed upon by the Fish Passage Center Oversight Board (Oversight Board).

**Pisces System Work Elements**

**Produce environmental compliance documentation**

During this quarter Comparative Survival Study (CSS) and Smolt Monitoring Program (SMP) sampling and marking were continuously monitored to assure compliance with NOAA established conditions in their letter of determination for these projects.

**Provide Technical Review**

Recently, inquiries have been made to the Fish Passage Center regarding the new BPA policy for Environmental Re-dispatch and its potential effect on fish survival. In order to become more familiar in general with the Wind industry and the challenges of balancing power production with endangered species protection, staff attended a two day workshop titled, “Northwest Wind Energy & Wildlife Workshop”. The workshop was hosted by the Washington Chapter of The

Topics addressed in the Workshop included State and National Guidelines, basics of electricity and transmission, trends and changes in industry, most-current information about potential effects to wildlife, ideas about minimization and mitigation, understanding monitoring, surveys, and contemporary research topics, and future and ongoing efforts to address these issues. Special attention was placed on migratory birds, eagles, ESA-listed species, and wildlife particularly susceptible to land-based wind and transmission, such as bats, eagles, and sage grouse.

**Analyze/Interpret data**

The FPC responded to various requests for data analysis and data summaries. The FPC responded to 15 requests for data and analysis, which are listed below and which are posted on the FPC web site.

1. [Columbia & Snake Rivers Smolt Monitoring Program Gas Bubble Trauma – June 24, 2011 Update](#) - June 24, 2011
2. [John Day Acoustic Tagging Compliance Monitoring](#) - June 21, 2011
5. [Performance Standard Testing, Hydroelectric project configuration testing, comparing operations](#) - June 8, 2011
6. [Juvenile and adult passage timing of Salmon River spring/summer Chinook (2006-2010)](#) - June 6, 2011
8. [Columbia & Snake Rivers Smolt Monitoring Program Gas Bubble Trauma](#) - May 27, 2011
10. [Juvenile migration success of spring Chinook adults that are returning in 2011](#) - April 14, 2011
11. Time series graphs of environmental conditions and spring Chinook adult counts (2001-2010) at Bonneville Dam - April 13, 2011

12. Adult spring Chinook timing at Bonneville Dam and environmental factors from March 15 – April 15 - April 12, 2011

13. Adult spring Chinook timing at Bonneville Dam and environmental factors - April 11, 2011

14. Estimated reduction in number of total dissolved gas exceedence days if managing to 120% TDG in tailrace monitors - April 4, 2011

15. Historic passage index at Bonneville Dam for yearling Chinook juveniles - April 4, 2011

Develop RME methods and designs

Fish Passage Center staff provided GBT training during early April in preparation for the spring migration of juvenile salmon. Staff members provided training on identification and reporting gas bubble signs in juvenile fish using fish with gas bubble signs. The staff also provided training on new software that was used for recording the GBT data.

FPC staff also visited GBT monitoring sites/personnel to provide QA of the monitoring program. Staff visited Lower Granite, Lower Monumental, McNary and Rock Island dams for QA of the GBT monitoring and to also observe SMP data collection and data entry. As well as provide updates and training on software related to GBT and SMP data collection and transmission to FPC.

Data Management
Disseminate raw data and analytical results

Hardware / OS Software Upgrades

- Reconfigured webservor application pool and timeouts to handle larger application loads/lengths of stays, due to changes in security in newer IIS (server resources are allocated between applications and secured)
- FPC Data Center researched ways to handle an increasing traffic load on our webservor and developed a recommendation memorandum with the following suggestions: FPC staff recommended setting up a web farm cluster, using the windows 2003 server service, Network Load Balancing. We have two machines that can be used for this cluster, SWORDFISH-3 and SWORDFISH. SWORDFISH-3 is the webservor and SWORDFISH is the backup webservor. We will have three machines in the web farm. Hence, we would need to purchase and build one additional machine, identical to SWORDFISH-3. All three machines would need to be identically setup, which involves several steps (i.e. configuring user accounts, installing software, configuring IIS
Manager, etc). In addition, DFS replication may be used to assure that the data are the same on all three machines. FPC staff worked on a draft plan of the steps needed to create the web farm, and provide resources to assure that our website service will not be interrupted on the client side during the implementation of the plan. A plan for these recommendations was established and is in progress. Two steps have been completed. Remaining steps include setting up and testing the web farm. The following steps have been completed:

- Configure Swordfish to have identical web server as swordfish-3
  - configure local user accounts;
  - configure Web Services and extensions.
  - configure Application Pool settings
  - enable Direct metabase editing and set the size of aspmaxentity
  - change the location where the log files are being stored
  - modify ODBC data connections strings and DSNs
- Build Swordfish-2 (Windows 2003 with IIS6) to have eventually 3 Web Servers in a Web Farm. Computer parts were ordered, computer built and is now being configured.
  - Build mirroring system for FPC SQL Database warehouse, so our recovery time will be substantially reduced.
  - Updated schematic of our backup systems for manual.
  - Resynchronized SQL2 (web database server and SQL1 –mirror web database server)

Software Development

- Updated / edited / debugged the GBT.net data entry program. The GBT.net data entry program was deployed to all Gas Bubble Trauma (GBT) examination sites prior to the start of the 2011 GBT sampling season. This data entry program allows users to enter GBT data in one of two ways: 1) conventional data entry and 2) real-time data entry. Conventional data entry requires that users record all GBT data on separate hand logs. Data from these hand logs are then entered into GBT.net data entry program. Real-time data entry does not require a hand log, as GBT data are entered directly into the GBT.net data entry program via a touch screen. The GBT.net data entry program then compiles the data into an XML file which is sent to the FPC via e-mail or through FTP upload. Once data have been uploaded to the FPC, these data are available in the web-queries and reports.
- FPC32.NET. Fixed Collection count rounding for Daily Summary, Daily Batch/ Tank report, and Lamprey Batch/Tank Report. These reports have been re-written to allow presentation of unrounded summaries.
Support Documentation and Training
- In conjunction with completion and deployment of the new GBT.net data entry program, the FPC staff also completed a new GBT Protocol and GBT.net Data Entry Program Manual. This manual was circulated among the GBT examination sites prior to the start of the 2011 GBT sampling season.
- Continued support of FPC32.net Data Entry Program - FPC staff continued to support FPC32.net data entry program. Continued support included issuing new versions of data entry program to fix reported bugs, as necessary.
- FPC staff prepared for CSS Workshop and developed supporting materials including basic black/white map of release sites for workshop participants
- Developed graphs / maps for FPC annual report adult and hatchery sections

Website, Daily Reports and Data Updates
- Maintained website pages and queries / posted memos, reports, etc…
- Updated Spill to the Court Order Webpage for 2011 Spill Season - Prior to the beginning of the 2011 voluntary spill season, the FPC staff updated the Spill to the Court Order webpage (http://www.fpc.org/WebForm2.0/MAINCHART.ASPX). This update incorporated the 2011 spring and summer Fish Operations Plans, which outline the planned voluntary spill operations at each of the FCRPS sites.
- Updated hatchery queries and menus for hatchery queries to make them more useful for website users, separating the data queries and mapping queries. Updated hatchery data queries to the newer stylesheet and results grids. The following hatchery release data queries were updated:
  - Hatchery Marked Releases
  - Release Site Hydrological Unit
  - Hatchery Hydrological Unit
  - RiverZone
  - Species/Age/Race
  - Agency
  - Hatchery
  - Migration Year
  - Release Dates
  - Release Site
- Updated CSS reach survivals query
- Updated FPC Lamprey sub-site to include the following queries:
  - 2011 Juvenile Lamprey Passage Query (new)
  - 2011 Juvenile Lamprey Passage Graph (new)
  - 2011 Juvenile Lamprey Mortality Query and Graph (new)
  - Historical Juvenile Lamprey Passage Query (new)
  - Historical Juvenile Lamprey Passage Graph (new)
  - Incidental Catch Data Query (new)
- Developed a data table on sql-main3 in the fpc database called wfa_hydrodata_temps. This table holds historical water temperature, flow, water elevation and turbidity data from Willamette Falls from 1/1/2001 through 7/7/2011.
- Updated Willamette Falls adult data in histfish table to include 2000 through 2010 and calculated 10 year averages for Willamette Falls adult salmon counts. Changed web queries to include this information. The following webpages include this information:
  - Adult Graph query
  - Adult Cumulative table
  - Daily 10 year average counts query
- Developed a dashboard query results pages for Current vs. historic water temperatures graphs webpage and Current water temperatures graphs web pages. The dashboard includes a temperature graph which allows the user to scroll through the entire year of water temperature data, it includes adult Chinook year to date graph and counts and it includes the last three days adult counts for all species for the selected dam.
- Updated water temperature posting program to include Willamette Falls site
- Added in LPS daily Lamprey counts to Bonneville Dam from 2010 through 2011 (current date).
UPDATED FPC BACKUP/MIRRORING SCHEMATIC

PostgreSQL

SQL3-MAIN // H:

Nova Backup

Easy Street Backup

Hatchery PostgreSQL Replication

Backup

Replication

Replication

Replication

SQL3-MAIN

Mirroring

www.fpc.org
Updated Historic and Real Time Water Temperature Graph

Willamette Falls Dam Water Temperature Chart
Current Water Temperature / Adult Fish count Dashboard
**FPC32.NET. Daily Summary, Daily Batch/ Tank report, and Lamprey Batch/Tank Report**

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Updated Bonneville Lamprey counts to include DAILY LPS counts 2010-2011

**Screen-shot of GBT.net data entry screen for Conventional data entry**
Screen-shot of GBT.net data entry screen for Real-time data entry

Updated Spill to the Court Order Webpage for 2011 Spill Season
Updated hatcheries queries menus – data queries, mapping queries and metadata
Updated hatcheries queries
Updated lamprey queries
Updated lamprey queries (contd.)

Willamette Falls Dam historical water temperature, flow, water elevation and turbidity data from 1/1/2001 through 7/7/2011

Updated Adult Queries to include 10 year averages for Willamette Falls adult salmon counts
Some maps and graphs developed to support FPC Annual Report and CSS Workshop

FPC.ORG WEBSITE STATISTICS
2011 – SECOND QUARTER April through June

The FPC website is the primary vehicle for data distribution. During the second quarter of 2011, FPC.org had 7,793,067 hits. There were a total of 867,737 pages viewed. The average hits per day were 84,230 and the average visitors per day were 12,922. The total number of visitors to the website in the second quarter was 496,705. The average hits per visitor was 56. The total number of unique IPs in the second quarter was 101,713. About 97% of the visits were from the United States. About 64.3% of the visits from the U.S. were from commercial and network domain types with the remaining 35.7% from organizations, government, educational and military domain types. The average number of page views during weekdays was 108,775, while the average number of page views during the weekend was 89,970. The most active days of the week are Monday, Tuesday and Wednesday, while the least active day of the week is Saturday. The busiest times of the day is 6 and 7 am, followed by 8 and 9 am. May was the busiest month with 40.9% of the visits, followed by June with 30.9% of the visits and lastly April with 28.2% of the total visits from the second quarter of 2011. The top requested page was the Daily Adult Salmon Dam Count Report. Of the top 70 requested pages and queries, 84.5% were about adult salmon, 9.4% were about FPC and the website (includes FPC homepage, contact, site map, FAQ, FPAC links, etc...), 3.3% were about river queries (flow / spill report, temperature graphs, spill update, etc...), 1.3% were about smolt data, 0.72% were about FPC documents, 0.78% were
about CSS, hatchery and other data queries. We track the number of page views on the dynamic web queries which are a measure of the data requests via the website (i.e. .asp, .aspx, .php, etc). During the second quarter of 2011, there were 187,172 total data requests.
Top 25 Requested Pages by Number of Visitors

- 7 Day and YTD Adult Counts
- 7 Day and YTD Adult Counts (based on historical reporting dates)
- Adult Salmon Counts Current Year Query
- Fish Passage Center Homepage
- Water Temperature Graph
- Cumulative Adult Ladder Counts
- Adult Pittag Graph
- Adult Salmon Annual Totals Query
- FPC Adult Salmon Web
- Daily Flow Spill Report
- FPC Adult Salmon Web - Fishermen's Links
- FPC Adult Salmon Migration Data
- FPC Columbia and Snake River Web - Daily River Reports
- Hatchery Queries
- Printable 7 day and ytd adult counts
- Smolt Queries
- FPC Documents Web - Weekly Reports
- Spill Season Update
- Fish Passage Center Links
- CSS Queries
- FPC Smolt Daily Reports
- Fish Passage Center Reporting Sites
- FPC Adult Salmon Web - Preseason Forecasts
- FPC Gas Bubble Trauma Data
- FPC Documents Web - Memorandums

FPC Page Requests by Sub-site

- Adult
- FPC
- River
- Smolt
- Documents
- Other (CSS, Hatchery, etc...)

85%
9%
1% 1% 3%
Manage and Administer projects
During this quarter, FPC staff worked with PSMFC and state subcontractors to finalize and close the Smolt Monitoring Contract for 2010. Planning and organization for CSS mark groups for the 2012 CSS study began during this quarter. Fish tagging plans will be completed in the upcoming quarter.

Produce status reports
All Pisces status report requirements were met for the SMP, CSS and FPC projects for this quarter. Files and reports were uploaded into the Pisces system to Bonneville where required.

Produce annual progress reports.
All Pisces progress reports were completed successfully for the Comparative Survival Study, the Smolt Monitoring Program and the Fish Passage Center projects. During this quarter, the FPC staff completed the data summaries, graphics and analyses that are the basis for the FPC Annual Report. The FPC Draft Annual Report for 2010 was posted on the FPC web site for the 45 day public review period. Data verification, compilation and summaries for the CSS draft annual status report was a primary focus for the FPC staff during this quarter.

Regional Coordination, Fishway Inspections/FPAC
Adult fishway inspections were conducted Columbia and Snake River projects with adult ladders over April, May, and June of 2011. In mid-June a diffuser grating was dislodged in the Washington Shore fishway at Bonneville Dam, this grating has been removed. Some debris issues were noted at the Washington shore count station picketed leads during the high river flows at McNary Dam. At Little Goose Dam, physical fishway inspections cannot be completed at the North Shore as high flows and spill caused damage to fishway fencing resulting in safety issues. At Ice Harbor Dam, a North fishway entrance weir cable has broken causing the weir to be resting on its sill.

FPC staff, facilitated FPAC conference calls once a week throughout the quarter and attended monthly meetings of FPAC through the quarter. FPC provided weekly updates to FPAC, regarding status of fish passage and river and migration conditions. FPC staff provides technical support to facilitate FPAC discussions as requested by the FPAC members.