



FISH PASSAGE CENTER

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MEMORANDUM

TO: Fish Passage Center Oversight Board
Randy Fisher, PSMFC

FROM: Michele DeHart

DATE: July 26, 2016

RE: Quarterly Fish Passage Center Report for April through June 2016

Following is the Quarterly Report for the Fish Passage Center (FPC) for the second quarter of 2016. This report follows the format and content agreed upon by the FPC Oversight Board.

PISCES System Work Elements

Produce Environmental Compliance Documentation

In the second quarter of 2016, the FPC staff monitored sampling and handling activities conducted in the Smolt Monitoring Program and the Comparative Survival Study to assure compliance with handling, sampling, and reporting requirements identified in the NOAA letter of determination for these monitoring programs.

Provide Technical Review

FPC staff facilitated weekly FPAC conference calls throughout the quarter and attended monthly meetings of FPAC through the quarter. FPC provided technical support to facilitate FPAC discussions as requested by the FPAC members, and provided technical assistance to FPAC for monitoring and review research studies and reviews of dam passage studies. FPC staff provided technical support to the fishery agencies and tribes' representatives on the SRWG by providing technical review of proposals and reports as requested. Several written technical reviews of research reports and research proposals were completed and posted on the FPC website. The FPC staff organized and implemented the Comparative Survival Study Annual Review meeting to present the summary of the CSS Annual Report for 2015 to the public. The meeting was well

attended. It was held on April 20, 2016, in Portland, Oregon. All of the CSS Annual Review presentations are posted on the FPC website.

Analyze/Interpret Data

During the second quarter of 2016, the FPC staff completed data summaries and analyzed Smolt Monitoring and Comparative Survival Study generation of juvenile fish survival estimates, juvenile fish travel time, and passage duration and timing. During this quarter the FPC completed the draft FPC Annual Report of the Smolt Monitoring Program and passage management actions in 2015. The draft report was posted on the FPC website for a 45 day regional review period, which ends on July 15. FPC staff will address comments and prepare the final draft for completion by August 31.

During the second quarter of 2016, FPC responded to 20 requests for data compilations and summaries. Of those requests, 9 required analyses and response in memorandum form. These were completed and posted on the FPC web site. Those responses are listed below:

1. Review of Lower Granite Dam Phase 1A – Scheduling Options Path Forward - July 18, 2016
2. Update to June 28th, 2016 Memo: Analysis of Additional Draft at Dworshak to Elevations 1515, 1510, and 1500 ft. end of September - June 30, 2016
3. Analysis of Additional Draft at Dworshak to Elevations 1510 or 1500 ft end of September - June 28, 2016
4. Data Request Regarding Drawing Down Lower Granite Reservoir to Better Meet Water Quality Standards for Temperature - June 24, 2016
5. AFEP Proposals Comments - June 9, 2016
6. Update of juvenile survival estimates and SARs of Upper Columbia River stocks - May 26, 2016
7. Review of April 2016 Draft of NOAA Fisheries report 2015 Sockeye Salmon Passage Report - May 4, 2016
8. April 7, 2016, Lower Granite Trip Report: Ladder Temperature Improvements/Juvenile Project Improvements - April 19, 2016
9. TDG below Dworshak Dam - April 1, 2016

Develop RME Methods and Designs

In the second quarter of 2016, FPC staff worked with the U.S. Army Corps of Engineers Walla Walla District staff to develop a data transfer methodology and a data web page display fish ladder water temperature monitors. These data are displayed on the FPC web site and collected by the USCOE.

Data Management

Website, Daily Reports, Database and Data Updates

- Regular website maintenance and updates

- Updated annual adult count maps for the adult chapter in annual report using new spatial database and mapping software
- Developed new web query and graphing application – “Daily Average Forebay Water Temperature”.
 - Developed SQL table, procedures and dynamic queries (views) to house data used for the query.
 - Developed an automated graph and data table that is updated based on the current date.
 - Wrote for the query and the data used in the query.
- Developed new web query and graphing application – “Walla Walla District Hourly Adult Ladder Water Temperature Query”.
 - Developed SQL table, procedures and dynamic queries (views) to house data used for the query.
 - Developed an automated graph and data table for the current year with temperatures graphed from up to four monitors and six differentials for each ladder for the current year. The user can scroll through an entire year and can turn selected monitor temperatures on and off as the graph axes automatically adjust for the chosen data variables.
 - Added metadata for the query and the data used in the query.
 - Added ladder schematics and maps with the locations for each ladder.

Software Development and Maintenance

- New system for posting ladder temperatures for web display has been developed.
 - New C# version of FTP Spider console application has been developed. This application discovers LadderTemp.xlsx files from SMPSITES folder after Easy detach service process then from source sites e-mails, copy them into processing folder and creates reference record in tblReceiveMailAttachments table for next step application. Development tools: Visual studio 2008 and to run on Windows 2012.
 - New SSIS SQL services to parse excel xml files and post data into SQL server tables has been developed. Development tools: Visual studio 2010 and to run on Windows SQL server 2012.

Tables:

- **tblReceiveEMailAttachments** – log type table to collect.xlsx data files process information (date of discovery, date of load);
- **LadderTemp_number** – data table with all loaded ladder temperatures (site, monitor, year, month, day, hour, temperature);
- **LadderTemp_Temp** - last loaded file data table
- **LadderTempv4** - presentation table for web page charts table

- Updated the ladder posting program due to some data inconsistencies
- Procedures were developed to address the data inconsistencies to allow for data automation

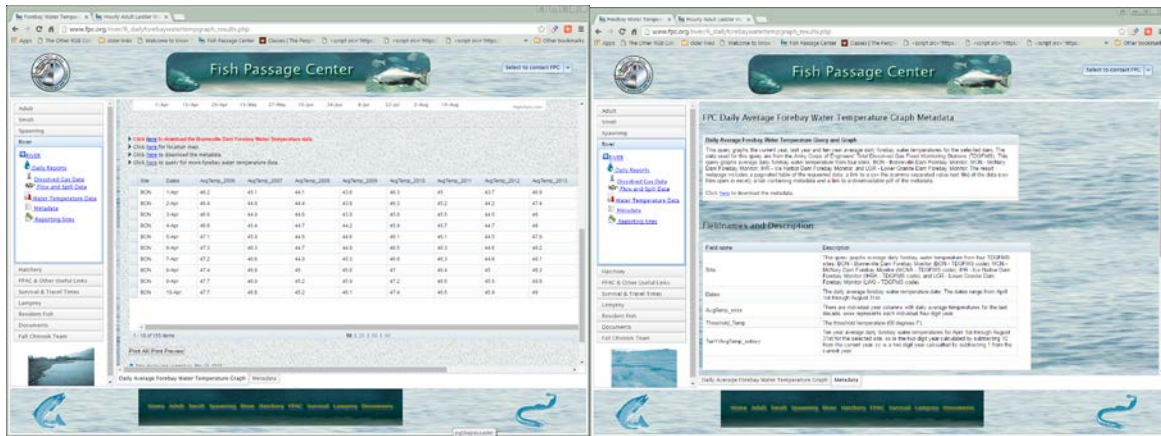
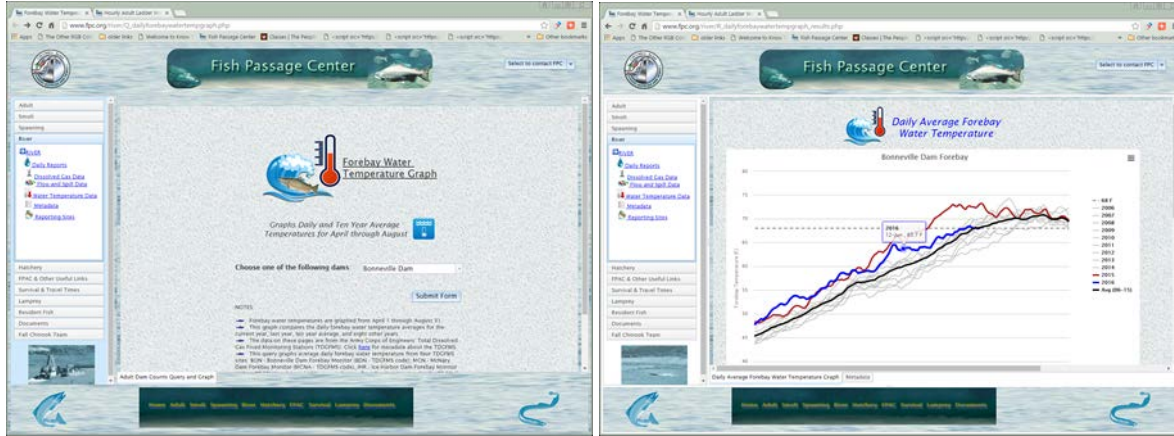
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Ladder Temperatures Posting Software & Database



Daily Forebay Water Temperature Graph and Data Table

Fish Passage Center

Hourly Adult Ladder Water Temperature Graph

Hourly Water Temperature Graphs for the Monitors Within Adult Ladders for June through September

Choose an adult ladder: Ice_Harbor_North

Submit Form

NOTE: Hourly temperature data should be evaluated with caution, as measurement errors may occur for short periods due to equipment malfunctions and/or malfunctions. See the [Strategy for Further Explanation](#) on hourly adult ladder water temperature graphs for June through September 10.

This data graph compares the hourly ladder water temperatures for the respective monitor and monitors located in-ladder through the ladder. It gives the difference between the monitor and monitor temperatures for the monitor. Further data

Ladder Water Temperature Graph

Home Adult Search Reporting About Helpdesk FPC National Reporting Resources

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Letter Granite South (LWG_3) Adult Ladder Schematic

Letter Granite South (LWG_3) Adult Ladder Location

Hourly Ladder Water Temperature Graph | LWG_3 Adult Ladder Schematic and Location Map | Metadata

Fish Passage Center

Hourly Adult Ladder Water Temperature Query and Graph

The graph compares the hourly ladder water temperatures for the monitors located and monitors located in-ladder through the ladder at previous or different. It gives the difference between neighboring monitor temperatures on the graph below the temperature graph. Hourly adult ladder water temperatures are graphed from June through September 10. The data on these pages are from the Army Corps of Engineers Field Water Temperature Stations. The data is used weekly by the FPC, provided with a 15-minute lag to allow for graphic and tables on the result webpage and are available for download as a CSV file from our graph. The result webpage provides a legend of the temperature data, a file to view the complete temperature value list for the date (see the How to use an event) at the following location: [Click on the number in the table to view a downloadable PDF of the metadata.](#) Click [here](#) to download the metadata.

NOTE: Hourly temperature data should be evaluated with caution, as measurement errors may occur for short periods due to equipment malfunctions and/or malfunctions.

Fields Name and Description

Field Name	Description
LadderName	The name of the adult ladder water temperature from eight adult ladders on Ice Harbors. Each ladder has four monitors from four field water temperature stations. The eight ladders include: LWG_3 - Lower Granite South, LWG_3 - Lower Granite South, LWG_3 - Lower Granite South, LWG_3 - Lower Granite South, LWG_3 - Lower Granite South, LWG_3 - Lower Granite South, LWG_3 - Lower Granite South, LWG_3 - Lower Granite South.
date_time	The date and hour of each temperature.
ProbeName_1	The name for each monitor within the adult ladder. Each ladder may have an offset from 1 to 4 probe numbers. Each monitor's code ends with a number (1, 2, 3, or 4).
temp	The temperature recorded at the specified monitor's code plus 1, 2, 3, or 4, date and hour and the temperature is recorded in Fahrenheit.
DiffTemp_1	The difference in temperature between two monitors in the selected ladder. The specified monitor is identified by the monitor number (1) shown in the address bar.

Hourly Ladder Water Temperature Graph | LWG_3 Adult Ladder Schematic and Location Map | Metadata

Fish Passage Center

FPC Hourly Adult Ladder Water Temperature Graph Metadata

Hourly Adult Ladder Water Temperature Query and Graph

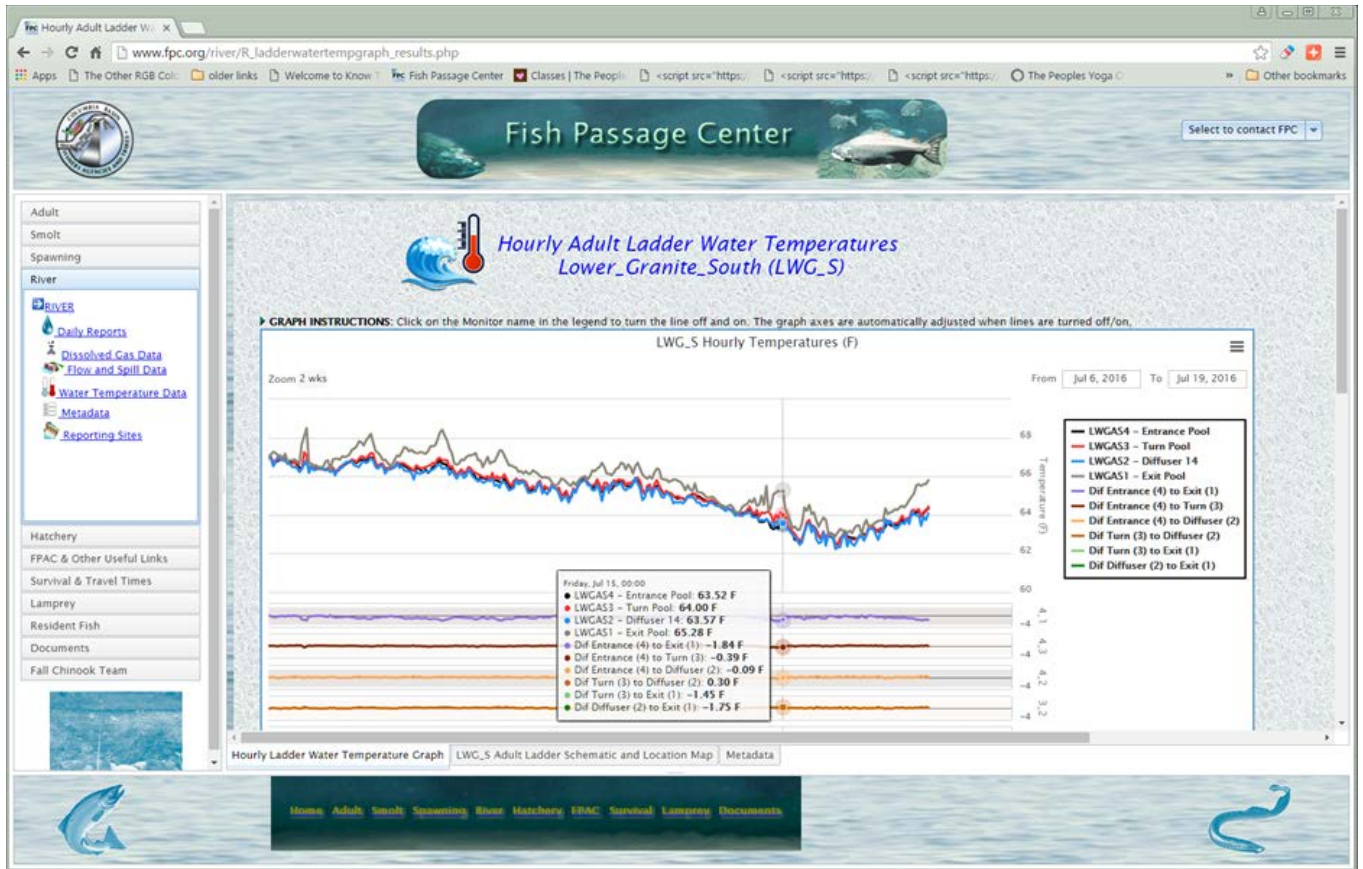
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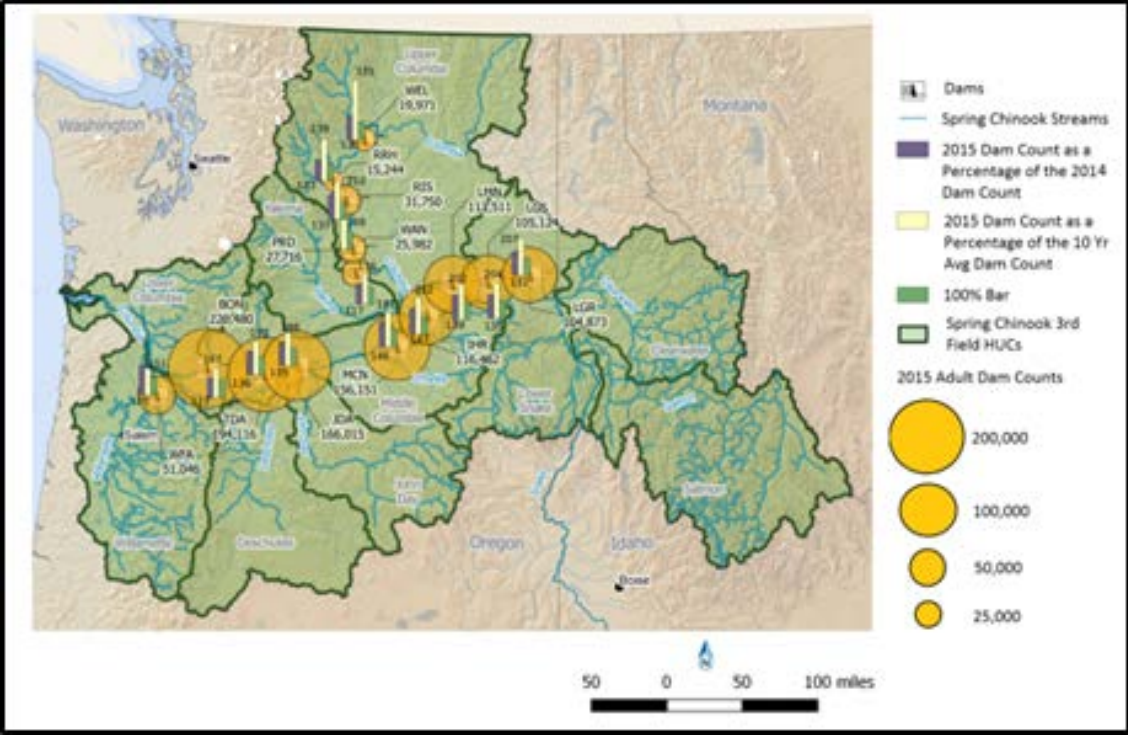
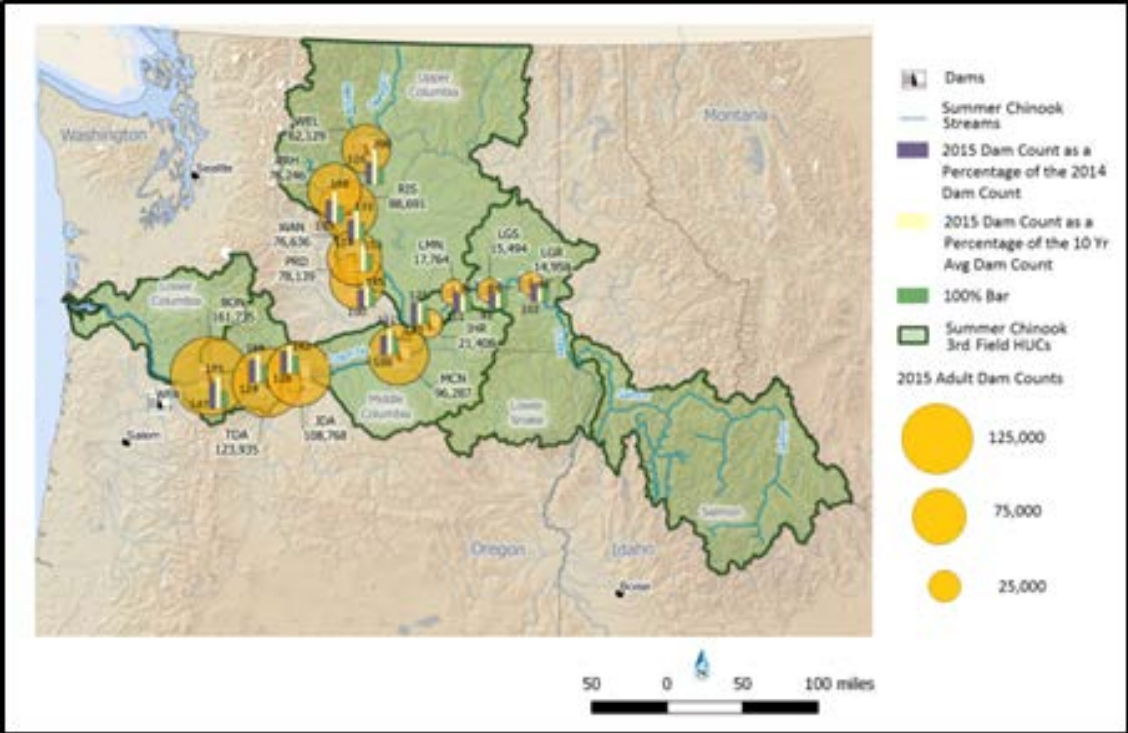
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Hourly Ladder Water Temperature Graph | LWG_3 Adult Ladder Schematic and Location Map | Metadata



Hourly Adult Ladder Water Temperature Graph and Data Table



Updated Adult Salmon Distribution and Adult Dam Count Maps for 2015, 2014 and 10 Year Averages

FPC.ORG WEBSITE STATISTICS

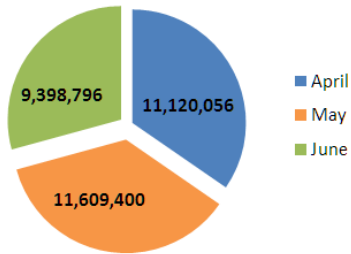
2016 – SECOND QUARTER April through June

The FPC website is the primary vehicle for data distribution. During the second quarter of 2016, FPC.org had 32,128,252 hits. There were a total of 3,179,783 pages viewed and 1,001,449 visits to the website. The average hits per day in the second quarter were 353,057. The average number of page views was 34,942 with an average staying time of 3:18 minutes. About 81% of the visits were from the United States. Of the U.S. visits, 19.5% were from Washington, 26.7% were from Oregon, 7.6% were from California, 9.2% were from Idaho, and 37% were from other states. About 41% of the visits were from commercial / organizations, 51% were from network / individuals and 8% were from government and education.

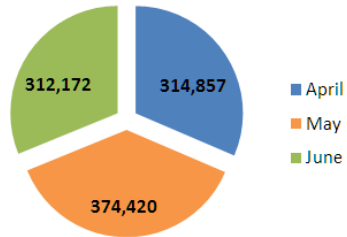
The most active day of the week was Tuesday, while the least active day of the week was Saturday. The busiest hour of the day was around 2:00 PM. May was the busiest month with 37% of the visits, followed by April with 32%, and June with 31%. The top platform (operating system) used to hit the site during the second quarter of 2016 was Windows 7 with about 44% of the hits, followed by Windows NT (23%), Android (18%), Mac OS (9%), Windows XP (3%), Windows Vista (2%) and Linux (1%). The top browser used to hit the site was Chrome (36%) followed by Safari (31%), Internet Explorer (26%) and Firefox (7%). A total of 24% of the hits during the second quarter were from mobile devices. Of the 24% mobile hits, 72.9% were from iPhones, 27% were from iPads and 0.1% were from various Android devices.

The top requested page was the Daily Adult Salmon Dam Count report. Of the top requested pages and queries, 82.3% were about adult salmon; 8.1% were about FPC and the website (includes FPC homepage, contact, site map, FAQ, FPAC links, etc.); 3.1% were about river queries (flow / spill report, temperature graphs, spill update, etc.); 4% were RSS pages (adult count RSS, smolt RSS, etc.); 0.1% were about spawning information; 0.7% were about smolt data; 0.8% were about FPC documents; 0.3% were about CSS; and 0.6% were about other pages. 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 2016, there were 1,135,971 total data requests

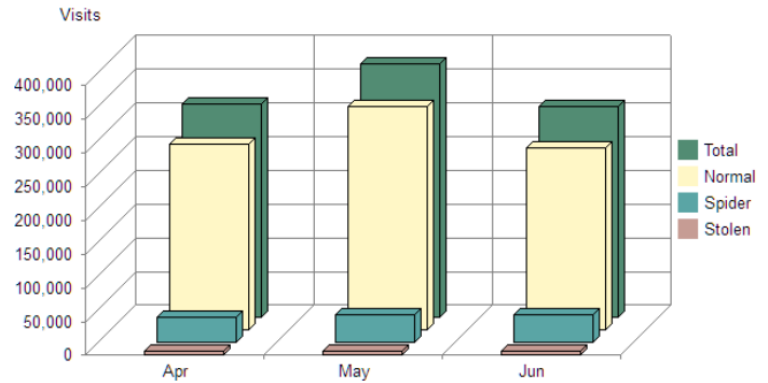
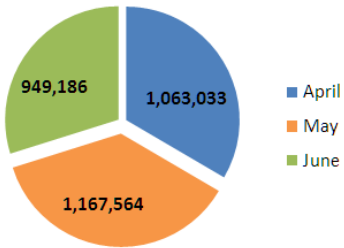
2016 FPC.org 2nd Quarter Hits



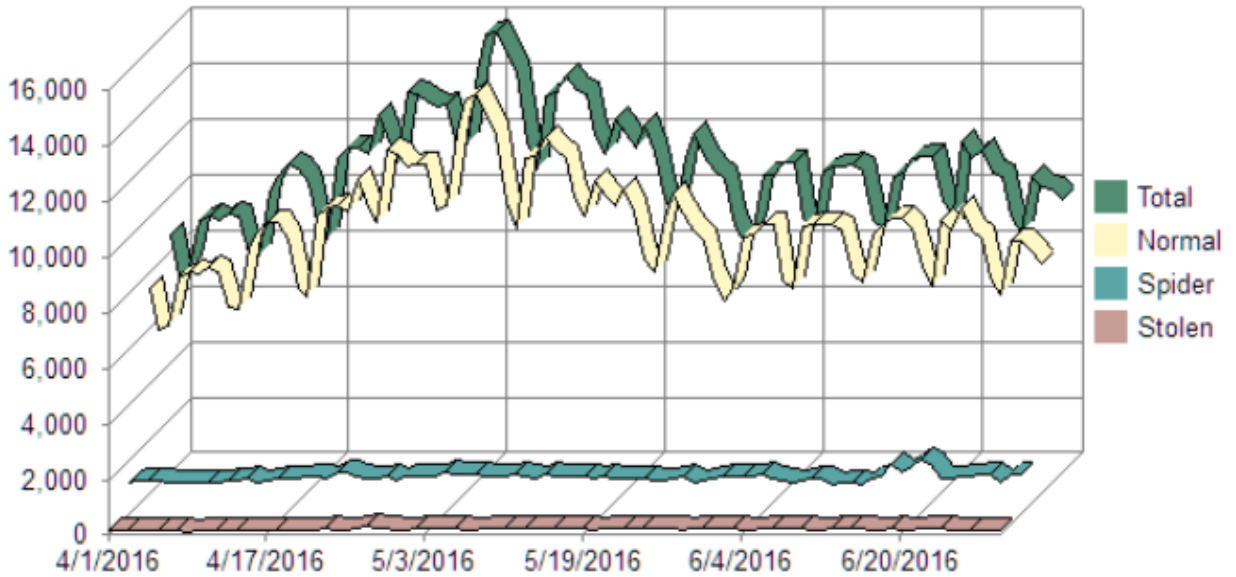
2016 FPC.org 2nd Quarter Visits



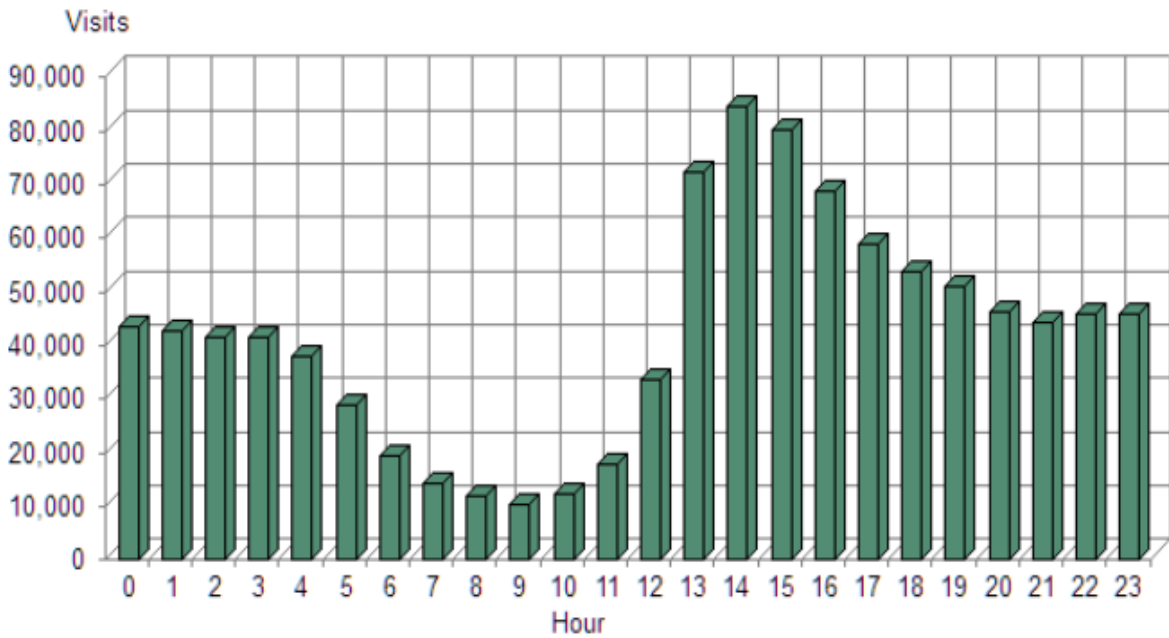
2016 FPC.org 2nd Quarter Pages



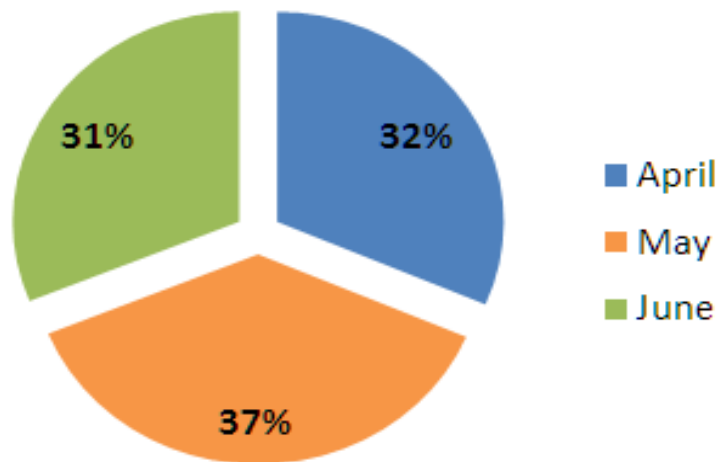
Visits



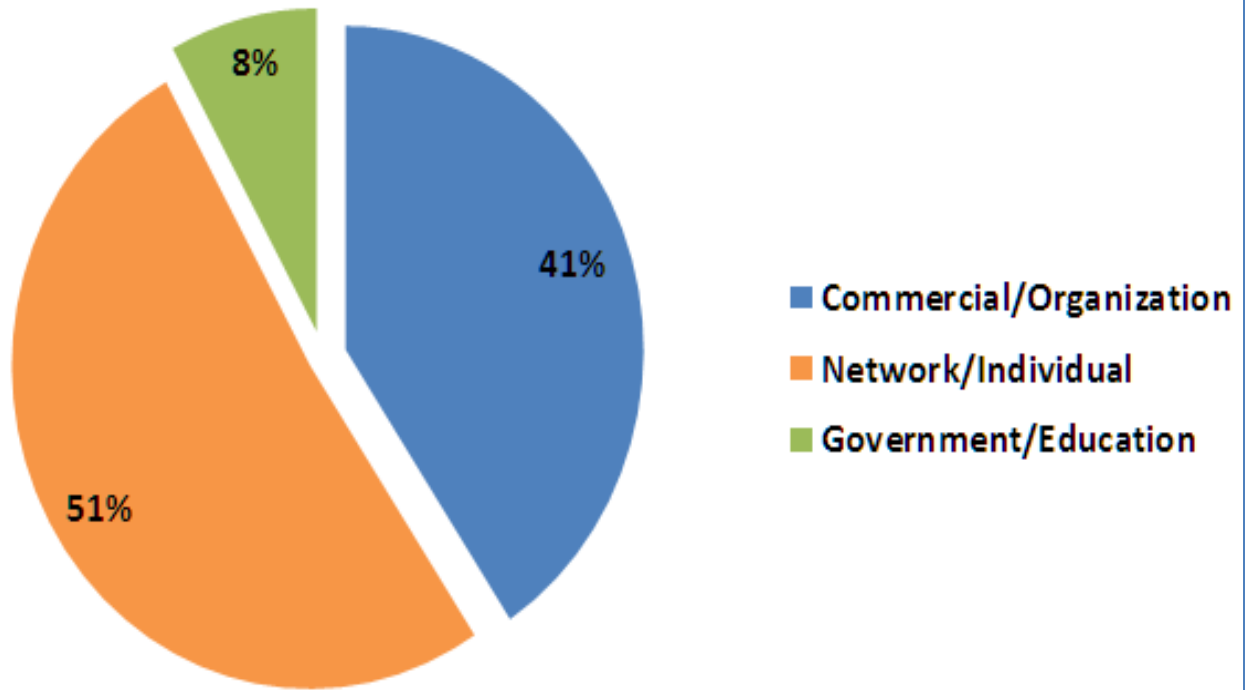
Visits By Hour Of Day



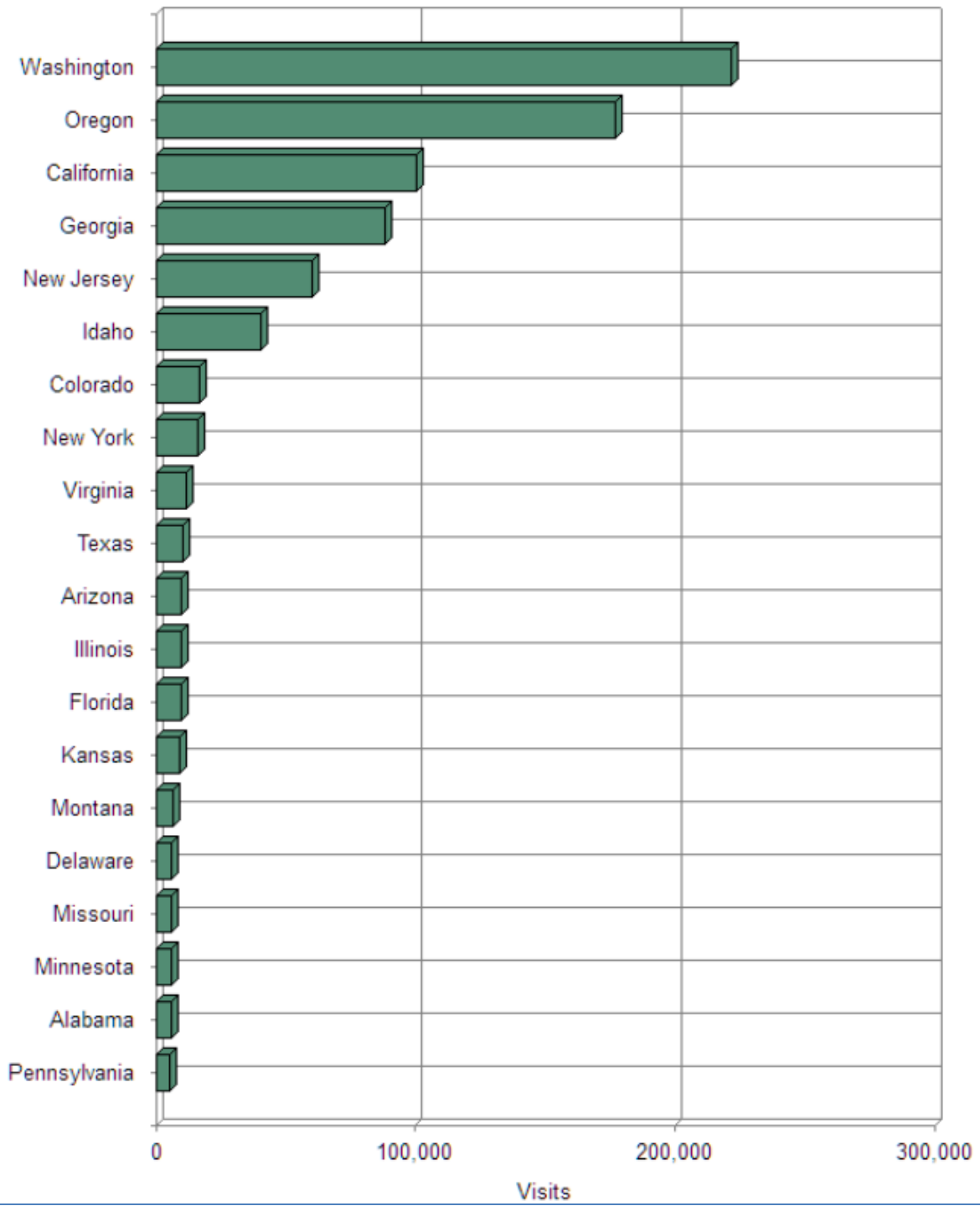
2016 FPC.org 2nd Quarter Visits



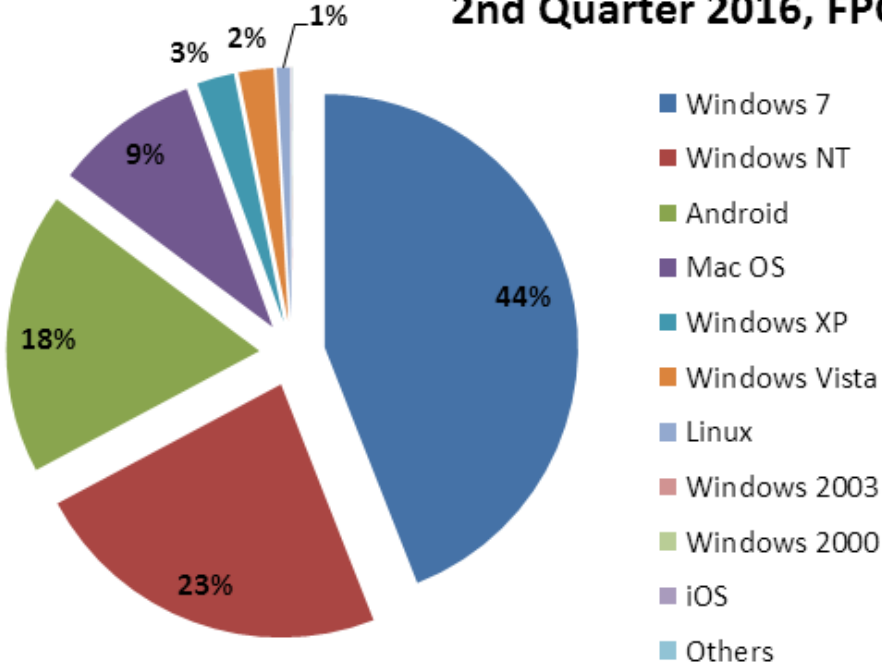
Percentage Hits by Domain, 2nd Quarter 2016, FPC.org



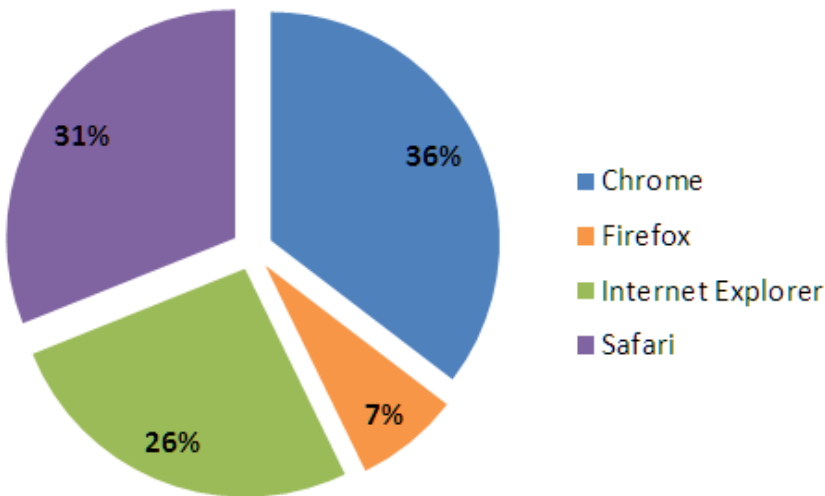
Most Active US States



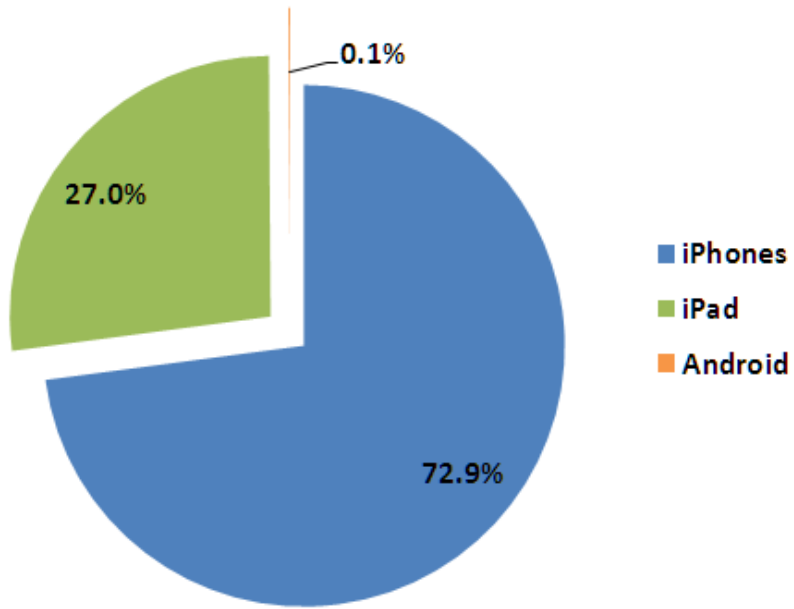
Percentage Hits by Platform 2nd Quarter 2016, FPC.org

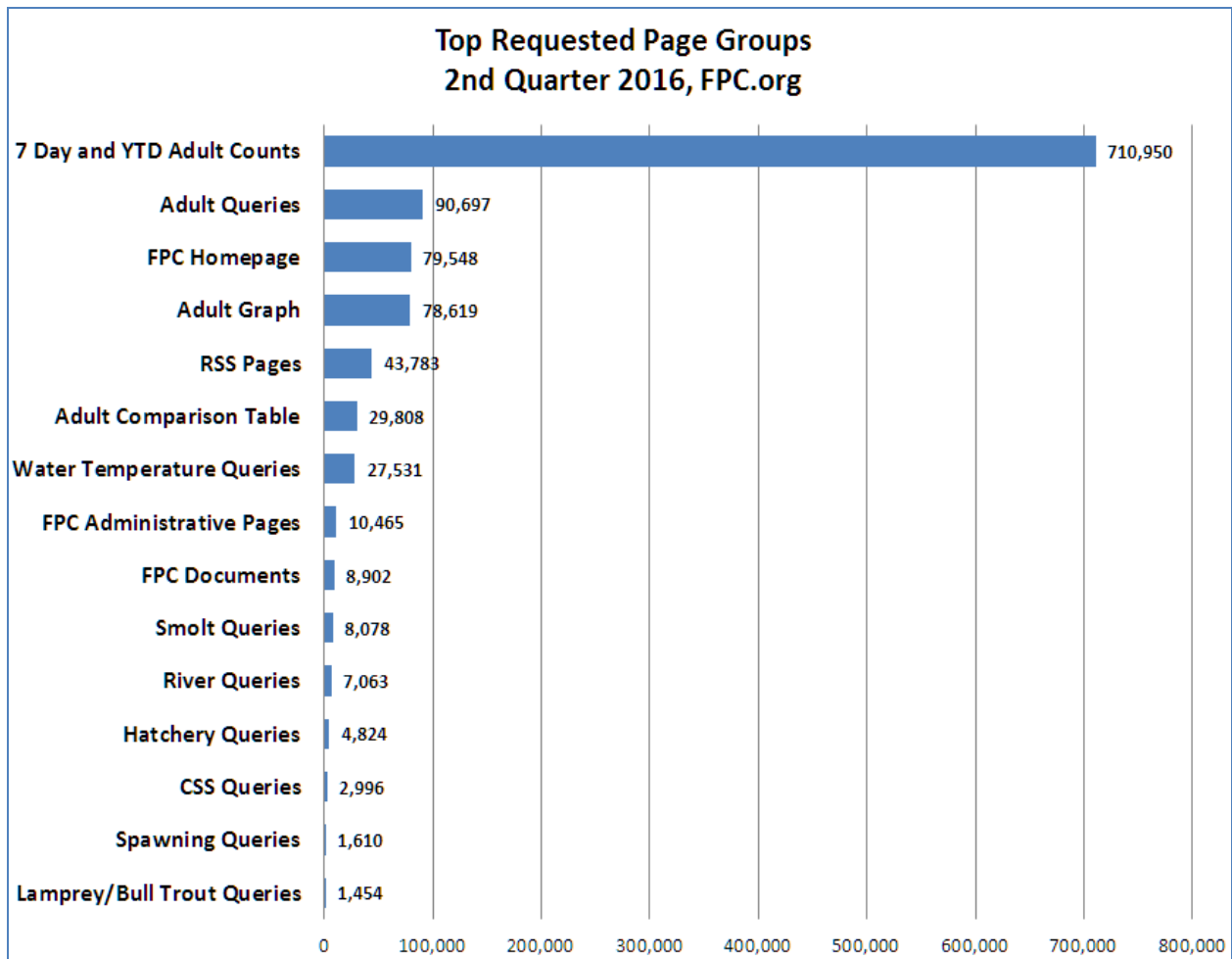


Percentage Hits by Browser, 2nd Quarter 2016, FPC.org



Of the Twenty-four Percent Mobile Devices, Percentage Hits by Device Type





Manage and Administer Projects

During the second quarter of 2016 FPC staff monitored CSS and SMP projects implementation, expenditures and reporting.

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 BPA's Pisces system where required.

Produce Annual Progress Reports

All Pisces progress reports were completed successfully for the CSS, the SMP, and the FPC projects. The FPC staff completed all CBFish requirements for Biological Opinion RPA reporting for the Smolt Monitoring, Comparative Survival Study, and Fish Passage Center projects for 2015, by March 15, 2016, consistent with contract deliverables for these projects.

Regional Coordination, Fishway Inspections/FPAC

FPC staff incorporated review comments and completed the final 2015 Annual Fish Facilities Inspection report and the final report was posted to the FPC website.

Monthly fishway inspections were completed during the second quarter at FCRPS and Public Utility projects on the Columba and Snake Rivers. FPC staff accompanied state and tribal staffs fishway inspectors on some inspections. The FPC staff is conducting fishway inspections at the Ice Harbor project. FPC staff coordinated inspections and reviewed inspection reports during this quarter.