

Second-Tier Database for Ecosystem Focus

**Annual Report
2000 - 2001**



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Second-Tier Database for Ecosystem Focus

Annual Report

October 1, 2000 - September 30, 2001

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Table of Contents

Abstract.....	3
Introduction.....	3
Project Activity	3
Objective 1 – Data Services for Modeling, Monitoring, and Evaluation	3
Provide electronic data integration	3
Provide monitoring and evaluation.....	4
Objective 2 -- Provide Public Services	4
DART Coordination.....	4
Inter-organizational.....	4
In-House Support.....	4
Historical Data Set Development	5
Daily Services and Operations	5
Daily Data Acquisition.....	5
DART Maintenance	6
Quality Control	6
DART Web Support	6
Problems Encountered during the Year	6
Hardware Support.....	7
Software Support	7
Special services requested by Regional Info. Management.....	8
Appendix A: DART Query Usage Statistics for 2001	9

Abstract

The Second-Tier Database for Ecosystem Focus (Contract 00004124) provides direct and timely public access to Columbia Basin environmental, operational, fishery and riverine data resources for federal, state, public and private entities.

The Second-Tier Database known as Data Access in Realtime (DART) does not duplicate services provided by other government entities in the region. Rather, it integrates public data for effective access, consideration and application.

Introduction

Information resources for the Columbia Basin are resident among a diverse number of Governmental organizations within the region. Effective management and research of river and fishery issues frequently require timely data access in a format useful for comparison, analysis and decision support. It is precisely this requirement that DART addresses.

DART (Data Access in Realtime), is a second-tier database warehouse containing historic data back as far as 1883, and current real-time data maintained by daily accesses to regional primary-tier sites. By design, DART has been developed to integrate diverse datasets and allow data be displayed in text and graphical formats via an interactive forms based web-site (<http://www.cqs.washington.edu/dart/>). Project personnel work closely with the primary-tier organizations to ensure quality and timeliness of the data and with end users to provide data utility.

Project Activity

Objective 1 – Data Services for Modeling, Monitoring, and Evaluation

Provide electronic data integration

Data acquisition from numerous primary sites with the region was performed on a daily basis. Datasets, products and services were integrated within a relational database based on date and location, then immediately made available over the World Wide Web and Internet. Data sets include headwater flows and temperatures, regional climactic data, water quality, project operations, ocean conditions, and fish passage. Text and graphical formats provided current real time information as well as historic data as far back as 1862. Year-to-date updates from the primary sources were applied as available on a weekly and monthly basis.

Provide monitoring and evaluation

Regional integrated electronic products and services were distributed via the Internet throughout the fiscal year to support BPA and ESA mandated activities. Realtime interactive services supported the BPA FWP and the Technical Management Team in adaptive management and recovery efforts. Products to support ISAB requests to evaluate ESU recovery efforts were implemented. User-defined PIT-tag release and observation summaries providing an overview of tagged stocks with on-line analytical tools for estimating reach specific survival and travel-time estimates were implemented.

Objective 2 -- Provide Public Services

DART provides a public Internet interface year-round to support planning and decision making for the operation of the Federal Columbia River Power System. Active users include Federal, State and interested public and private entities. These services compliment and enhance the value of primary data sites and are an important step toward a regionally integrated data services.

DART Coordination

Inter-organizational

Frequent contacts were made with PSMFC, U.S. Army Corps of Engineers, Grant County PUD, Chelan County PUD, Douglas County PUD, USGS, SNOTEL, PFEL, NOAA, NWS, NCDC, and Fish Passage Center to coordinate data transfer, acquisition, and quality control for the contract year. Beginning-of-year data anomalies, data availability, data file format, and meta-data issues were addressed through feedback with the primary sources. The Technical Management Team was supported throughout the migration season. Reports, assessments, and new database tools were provided to ISRP and ISAB. Grant, Chelan, and Douglas County PUD adult monitoring programs were supported by integrating their daily adult data collection with timely reporting through DART.

In-House Support

In-house support was provided to Dr. John Skalski's and Dr. James Anderson's groups. This included the expansion of headwater temperature datasets, providing PTAGIS observation data for survival and travel-time analysis, and adult passage data for adult passage modeling.

Historical Data Set Development

Acquisition of historical Snake River headwater temperature from the USGS was completed. Mainstem turbidity data was acquired and loaded from USACE. Acquisition of historical temperature and precipitation data from NCDC, USBR, SNOTEL, and USGS sites to augment the daily data was completed. Coil-specific observations were added to the PIT-tag data set to assist in survival and travel time analysis for historical years (1987-1995). Current ESU designations were applied to historical data to allow annual comparisons of ESU stocks. The adult passage and river data at Bonneville were extended back through 1949. McNary, John Day, and The Dalles adult passage and river data were also expanded. Oxygen saturation data was collected for the entire year.

Daily Services and Operations

Daily Data Acquisition

Daily data acquisition continued throughout the year from primary sites. Water quality and operations data including outflow, spill, water temperature and a variety of water quality values including hourly were loaded, updated and processed. Salmonid migration data was integrated with these ecological measures.

The Douglas County PUD requested DART to obtain the adult passage data for Wells, Rock Island, Rocky Reach and Priest Rapids dams directly from the PUDs to improve timeliness of data reporting. These direct data loads were developed and implemented and now provide the most up-to-date data available.

Tagging session header files and PTAGIS observation records were acquired from PSMFC on a daily basis. The current year's observation total exceeded 910,000 valid records. Release and observation site datasets were updated to reflect changes and additions.

Daily flow, stage and intermittent temperature data is acquired from 10 USGS sites to provide information concerning headwater conditions. Daily temperature and precipitation records from 58 sites throughout the region provide information on weather and climate. Adult passage and smolt passage indices were loaded daily from 12 mainstem dams.

New Data products

DART is presenting a number of new products that enhance the usefulness of the system. DART now provides reach-specific survival and travel-time estimates for user-selected releases using in-house OLAP programming:

(http://www.cbr.washington.edu/dart/pit_sum_isab.html).

DART has also added, on request, the capability of querying the PIT tag database by tag coordinator: (http://www.cbr.washington.edu/dart/pit_coord_de.html).

The PIT-tag detail and adult return reports were updated to accommodate user requests for specific query and output criteria.

Additional web pages were developed in response to specific requests by BPA for ESU and other stocks travel time estimates: (<http://www.cbr.washington.edu/dart/meantt>).

DART Maintenance

Normal DART maintenance was conducted throughout the quarter. Data loads were monitored and reviewed on a daily basis. Performance tuning, indexing rebuilds and daily monitoring of incoming web user database access continued. Pre-migration date and specification changes were implemented and a variety of program edits and modifications were completed in preparation for the start of the migration season. Year-to-date updates were performed daily for adult passage counts, weekly for PTAGIS data and monthly for ocean conditions and water quality. Occasional updates smolt index data were performed as needed.

Quality Control

Data quality was monitored throughout the contract on a daily basis and adjustments made as needed. Primary sites were contacted concerning data omissions, anomalies and format changes. The start of the migration season is filled with data file format changes and data outliers that require constant attention. A primary source data archive was initiated to retain primary data in its original form in order to provide data redundancy.

DART Web Support

Data and meta-data requests from the public were filled as they were received. Issues with primary data raised by users were resolved. Browser and Proxy Web server issues were researched and resolved. Reports and database objects were modified to accommodate user requests when appropriate.

Direct data support was provided to Dr Goodman (Montana State University); Lisa Weiland (Columbia River Research Lab); Gus Kladis; Michele Ferry (Olympic Natural Resource Center); John Rowan (Fish and Wildlife Division Bonneville Power Administration); Chris Ross (NOAA), Hannah Wiggs (HS honors project); Alicia Matter (NOAA); Dr. Richard N. Williams, Meredith, Miller (Tabors Caramanis and Associates); Jill Thomson (Washington State University); Dr. Richard N. Williams (IDFG); Steven Hannula (RO Resources); Chrissy Poe (Washington State Senator Bob Morton); Zach Willey; Craig A. Haskell (USGS); Steve Smith (NOAA); Hugh Owen (Chelan County Public Utility District); Parvin Pira; Beverly Brenton; Jason R.

Scott (J-U-B Engineers, Inc.); Roger Dick Jr. (Yakama Nation); Mark Miller (BioAnalysts, Inc.); Eric Schrepel (Northwest Power Planning Council); Dr. Edwin Buettner (IDFG); Matthew L. Keefer (Idaho Cooperative Fish and Wildlife Unit); Gene Matthews (NOAA); Shannon O'Brien; David Venditti (IDFG); Mike McLean (C.T.U.I.R.); Robert P Mueller, Battelle (PNNL); Don Larsen (NOAA); Shannon Addis (NewsData Corp); Ron Garrett (Western White Water Assoc); Alyssa Reischauer (Eastern Oregon University); Richard.Igau (El Paso Corporation); Curt Harbaugh; Brian Jonasson (Oregon Department of Fish and Wildlife); Robert Reagan (USGS); Rob Walton (PPC); Bayer (OSU Hatfield Marine Science Center); Mike Blenden (NezPerce); Geoffrey McMichael (Battelle-Pacific Northwest National Laboratory); Alison Squier (Lake Roosevelt Forum); Than Chommany (Utilicorp); Robert Curtis; Andy Shoup; Vernon B. Jeremica; Steve Yonce (Mtpower); Ron Gordon; Tom Fox; Edward B. Sinclair; Dan Rawding and Thomas Zeppetella (aeglobalmarkets).

Problems Encountered during the Year

Throughout the year, there were unannounced modifications of primary source data files. Changes were made in location, format, and content. This results in data load failures. Constant monitoring is required to maintain data integrity and coverage. The newly initiated archive has been invaluable in restoring data under these conditions.

On June 14th, DART's main database server suffered a double disk failure that resulted in a loss of service for approximately 18 hours. The hardware was replaced under the service contract for the server and data was restored from mirrored discs. The backup schedule was reduced by 60% to improve disc drive life spans.

Hardware Support

An 8-base internal storage expansion was added to E-450 to allow for installation of six new disk drives when needed.

Ongoing hardware support involved fixing and repairing computer systems, as well as network repair and installation.

Software Support

Commercial Software Maintained:

- Ingres (database management)
- Oracle 8 Enterprise Edition
- Developer/2000
- Oracle Enterprise Manager
- Webworks Publisher
- JSVR for Ingres

Public Domain Software Maintained

- Netscape (World Wide Web browser)

Special services requested by Regional Info. Management

We developed and expanded capabilities in DART to provide summary release and observation data based on a wide range of release criteria per ISAB request. Query output now includes a datafile suitable for importation to SURPH, allowing survival estimates for any chosen release grouping. This capability is being expanded to provide travel time information as well.

A report on DART Query Usage Statistics is also included. (See Appendix A).

Appendix A: DART Query Usage Statistics for 2001

OCTOBER 2000	Total	%Gov	%Mil	%US	%IP	%Edu	%Org
Graphic Queries							
River	6764	3.19%	0.30%	1.30%	3.40%	6.53%	1.20%
Adult	6006	6.93%	0.57%	6.31%	12.69%	5.88%	5.68%
ESU	97	1.03%	0.00%	0.00%	97.94%	0.00%	0.00%
PIT Tag	25	4.00%	0.00%	0.00%	88.00%	8.00%	0.00%
Smolt	54	3.70%	7.41%	0.00%	24.07%	22.22%	20.37%
Climate	20	25.00%	0.00%	0.00%	35.00%	10.00%	0.00%
Total Graphic Queries	12966	4.94%	0.45%	3.60%	8.71%	6.25%	3.34%
Detail & Composite Reports							
River	2795	9.62%	11.63%	0.18%	9.41%	4.11%	1.61%
Adult	9137	4.65%	0.68%	5.91%	18.80%	7.19%	1.16%
ESU	90	4.44%	12.22%	2.22%	56.67%	5.56%	0.00%
Hatchery	153	1.96%	3.27%	9.80%	26.14%	19.61%	8.50%
PIT Tag	531	6.40%	0.00%	3.77%	52.17%	12.62%	5.46%
Smolt	32	0.00%	3.13%	0.00%	15.63%	46.88%	9.38%
Climate	39	7.69%	0.00%	0.00%	20.51%	25.64%	0.00%
CWT	11	0.00%	0.00%	9.09%	0.00%	0.00%	27.27%
Total Report Queries	12788	5.77%	3.16%	4.56%	18.47%	7.03%	1.56%
Total Queries	25754	5.35%	1.79%	4.08%	13.56%	6.64%	2.45%
HTML requests	17190	5.15%	0.96%	3.39%	20.91%	8.73%	1.84%

NOVEMBER 2000	Total	%Gov	%Mil	%US	%IP	%Edu	%Org
Graphic Queries							
River	6314	2.77%	0.92%	1.49%	3.96%	1.92%	0.13%
Adult	2003	5.39%	1.20%	7.64%	14.13%	6.64%	4.59%
ESU	5	0.00%	0.00%	0.00%	0.00%	20.00%	0.00%
PIT Tag	12	0.00%	0.00%	0.00%	25.00%	0.00%	41.67%
Smolt	54	12.96%	9.26%	7.41%	38.89%	9.26%	14.81%
Climate	34	2.94%	0.00%	0.00%	58.82%	5.88%	0.00%
Total Graphic Queries	8422	3.46%	1.03%	2.98%	6.85%	3.11%	1.34%
Detail & Composite Reports							
River	2135	5.71%	0.00%	0.80%	7.87%	5.67%	0.61%
Adult	2821	6.10%	1.42%	3.37%	15.77%	4.71%	0.32%
ESU	27	0.00%	0.00%	0.00%	29.63%	3.70%	0.00%
Hatchery	80	1.25%	0.00%	5.00%	17.50%	0.00%	20.00%
PIT Tag	247	0.81%	0.00%	6.88%	39.68%	2.02%	8.10%
Smolt	111	1.80%	70.27%	0.90%	13.51%	1.80%	0.90%
Climate	40	20.00%	0.00%	0.00%	27.50%	10.00%	0.00%
CWT	2	0.00%	0.00%	0.00%	50.00%	0.00%	0.00%
Total Report Queries	5463	5.62%	2.16%	2.45%	13.91%	4.87%	1.08%
Total Queries	13885	4.31%	1.48%	2.77%	9.63%	3.80%	1.24%
HTML requests	23317	2.24%	0.33%	1.18%	6.89%	3.15%	0.59%

DECEMBER 2000	Total	%Gov	%Mil	%US	%IP	%Edu	%Org
Graphic Queries							

River	5914	2.06%	0.34%	1.35%	4.48%	1.57%	0.24%
Adult	861	4.76%	0.35%	6.62%	13.70%	6.74%	4.18%
ESU	3	0.00%	0.00%	0.00%	0.00%	66.67%	0.00%
PIT Tag	0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Smolt	92	15.22%	0.00%	0.00%	16.30%	8.70%	3.26%
Climate	10	0.00%	0.00%	10.00%	0.00%	20.00%	0.00%
Total Graphic Queries	6880	2.57%	0.33%	2.01%	5.78%	2.37%	0.77%

Detail & Composite Reports

River	1940	6.96%	0.10%	0.82%	15.72%	4.28%	4.43%
Adult	1072	8.77%	0.19%	2.43%	16.51%	8.58%	0.28%
ESU	24	0.00%	0.00%	0.00%	33.33%	4.17%	0.00%
Hatchery	34	14.71%	0.00%	2.94%	35.29%	0.00%	5.88%
PIT Tag	117	38.46%	0.00%	0.00%	17.09%	20.51%	4.27%
Smolt	62	6.45%	1.61%	1.61%	12.90%	3.23%	0.00%
Climate	23	0.00%	0.00%	0.00%	26.09%	30.43%	0.00%
CWT	15	80.00%	0.00%	0.00%	0.00%	6.67%	0.00%
Total Report Queries	3287	8.97%	0.15%	1.34%	16.31%	6.39%	2.92%

Total Queries	10167	4.64%	0.28%	1.79%	9.19%	3.67%	1.47%
HTML requests	6690	5.07%	0.64%	2.09%	22.36%	9.52%	1.20%

JANUARY 2001

	Total	%Gov	%Mil	%US	%IP	%Edu	%Org
Graphic Queries							
River	6571	3.30%	0.18%	1.17%	7.09%	0.56%	2.40%
Adult	956	9.41%	0.94%	4.92%	8.16%	11.19%	2.20%
ESU	15	20.00%	0.00%	66.67%	6.67%	0.00%	0.00%
PIT Tag	59	0.00%	0.00%	0.00%	28.81%	64.41%	0.00%
Smolt	587	94.38%	1.36%	0.00%	2.21%	0.51%	0.00%
Climate	86	0.00%	0.00%	0.00%	23.26%	15.12%	0.00%
Total Graphic Queries	8274	10.44%	0.35%	1.62%	7.19%	2.39%	2.16%

Detail & Composite Reports

River	1387	6.06%	1.23%	2.81%	7.79%	3.32%	0.79%
Adult	1156	9.00%	2.60%	12.98%	9.78%	20.16%	0.09%
ESU	5	0.00%	0.00%	0.00%	0.00%	40.00%	0.00%
Hatchery	40	0.00%	0.00%	0.00%	42.50%	10.00%	0.00%
PIT Tag	148	7.43%	0.68%	1.35%	24.32%	37.84%	1.35%
Smolt	116	77.59%	10.34%	0.00%	4.31%	0.86%	0.00%
Climate	38	13.16%	5.26%	2.63%	34.21%	2.63%	2.63%
CWT	2	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Report Queries	2892	10.17%	2.14%	6.64%	10.10%	11.86%	0.52%

Total Queries	11166	10.37%	0.81%	2.92%	7.94%	4.85%	1.74%
HTML requests	17563	2.32%	0.46%	1.20%	6.22%	3.19%	0.09%

FEBRUARY 2001

	Total	%Gov	%Mil	%US	%IP	%Edu	%Org
Graphic Queries							
River	6893	3.58%	0.61%	2.21%	8.63%	0.78%	0.55%
Adult	1083	7.29%	0.09%	1.85%	15.42%	8.49%	4.99%
ESU	6	0.00%	16.67%	0.00%	16.67%	0.00%	0.00%
PIT Tag	24	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%
Smolt	99	47.47%	0.00%	0.00%	6.06%	39.39%	0.00%

Climate	14	0.00%	0.00%	28.57%	7.14%	42.86%	0.00%
Total Graphic Queries	8119	4.59%	0.54%	2.17%	9.78%	2.35%	1.13%
Detail & Composite Reports							
River	1483	6.74%	0.88%	3.03%	48.01%	2.16%	2.49%
Adult	1172	4.44%	0.09%	3.16%	20.56%	5.03%	1.79%
ESU	117	0.00%	0.00%	0.85%	4.27%	4.27%	0.00%
Hatchery	111	15.32%	0.00%	7.21%	15.32%	8.11%	0.00%
PIT Tag	389	14.14%	19.28%	0.00%	26.99%	21.08%	5.14%
Smolt	39	5.13%	0.00%	0.00%	5.13%	69.23%	0.00%
Climate	81	24.69%	0.00%	7.41%	9.88%	9.88%	12.35%
CWT	3	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Report Queries	3395	7.25%	2.62%	2.86%	32.11%	6.54%	2.59%
Total Queries	11514	5.38%	1.16%	2.37%	16.36%	3.59%	1.56%
HTML requests	19792	2.70%	0.46%	1.06%	10.08%	2.69%	0.57%

MARCH 2001	Total	%Gov	%Mil	%US	%IP	%Edu	%Org
Graphic Queries							
River	8250	2.46%	0.91%	2.81%	7.12%	2.42%	0.90%
Adult	7055	5.43%	0.72%	5.73%	17.79%	6.53%	1.83%
ESU	70	92.86%	0.00%	0.00%	0.00%	0.00%	0.00%
PIT Tag	86	1.16%	83.72%	0.00%	0.00%	3.49%	0.00%
Smolt	79	48.10%	5.06%	0.00%	1.27%	20.25%	0.00%
Climate	67	16.42%	0.00%	0.00%	7.46%	17.91%	0.00%
Total Graphic Queries	15607	4.49%	1.29%	4.08%	11.84%	4.43%	1.30%
Detail & Composite Reports							
River	2152	5.90%	15.89%	0.98%	30.76%	2.74%	1.44%
Adult	8701	5.67%	2.51%	2.85%	21.15%	5.61%	0.57%
ESU	189	20.63%	6.35%	0.00%	7.41%	3.17%	0.00%
Hatchery	203	4.93%	0.99%	2.46%	24.63%	13.30%	4.43%
PIT Tag	479	9.19%	8.56%	3.55%	36.95%	10.02%	0.84%
Smolt	132	12.12%	29.55%	0.76%	10.61%	0.76%	0.76%
Climate	100	7.00%	0.00%	1.00%	14.00%	14.00%	2.00%
CWT	4	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Report Queries	11960	6.15%	5.47%	2.45%	23.17%	5.38%	0.81%
Total Queries	27567	5.21%	3.11%	3.37%	16.76%	4.84%	1.09%
HTML requests	19435	6.21%	1.53%	2.66%	20.33%	5.43%	1.46%

APRIL 2001	Total	%Gov	%Mil	%US	%IP	%Edu	%Org
Graphic Queries							
River	8081	2.35%	2.28%	1.66%	7.72%	3.50%	0.84%
Adult	21295	4.39%	1.10%	7.17%	14.59%	6.09%	2.01%
ESU	136	61.03%	0.00%	0.00%	30.88%	2.21%	0.00%
PIT Tag	94	27.66%	38.30%	0.00%	8.51%	4.26%	0.00%
Smolt	469	5.54%	2.77%	0.85%	42.64%	26.44%	0.00%
Climate	87	2.30%	0.00%	0.00%	48.28%	39.08%	0.00%
Total Graphic Queries	30162	4.18%	1.55%	5.52%	13.33%	5.78%	1.64%
Detail & Composite Reports							
River	2504	3.12%	23.16%	3.55%	30.87%	3.59%	2.48%
Adult	31829	4.18%	1.46%	4.01%	19.16%	4.59%	1.01%

ESU	309	18.77%	9.39%	0.32%	26.21%	14.24%	0.00%
Hatchery	412	4.37%	1.70%	1.21%	13.59%	14.81%	0.49%
PIT Tag	1409	8.23%	4.83%	3.48%	33.85%	11.92%	1.85%
Smolt	509	2.36%	5.11%	0.59%	59.92%	3.34%	0.59%
Climate	98	8.16%	1.02%	5.10%	17.35%	7.14%	2.04%
CWT	10	10.00%	0.00%	0.00%	60.00%	10.00%	0.00%
Total Report Queries	37080	4.38%	3.17%	3.85%	21.07%	4.98%	1.13%
Total Queries	67242	4.29%	2.44%	4.60%	17.60%	5.34%	1.36%
HTML requests	42296	3.83%	1.17%	3.46%	19.32%	5.51%	1.44%

MAY 2001	Total	%Gov	%Mil	%US	%IP	%Edu	%Org
Graphic Queries							
River	8879	3.39%	1.64%	2.50%	8.59%	2.39%	0.32%
Adult	13344	4.98%	1.22%	6.00%	15.17%	6.05%	1.75%
ESU	368	9.24%	0.00%	0.00%	12.77%	0.27%	0.00%
PIT Tag	111	29.73%	34.23%	4.50%	10.81%	0.00%	0.90%
Smolt	654	13.46%	17.89%	0.61%	25.38%	22.48%	0.00%
Climate	35	11.43%	0.00%	0.00%	5.71%	20.00%	14.29%
Total Graphic Queries	23391	4.81%	1.98%	4.41%	12.89%	5.02%	1.15%
Detail & Composite Reports							
River	2420	2.98%	18.47%	2.15%	28.06%	4.92%	5.54%
Adult	21601	3.93%	1.45%	6.26%	18.78%	5.55%	1.18%
ESU	650	6.62%	2.15%	0.31%	20.46%	6.77%	0.00%
Hatchery	197	16.75%	0.00%	1.02%	26.40%	6.09%	5.08%
PIT Tag	1561	9.67%	6.47%	6.53%	35.75%	11.15%	7.17%
Smolt	428	4.21%	7.94%	1.17%	53.04%	6.54%	0.93%
Climate	50	12.00%	4.00%	4.00%	8.00%	18.00%	0.00%
CWT	5	60.00%	0.00%	0.00%	20.00%	0.00%	0.00%
Total Report Queries	26912	4.37%	3.39%	5.64%	21.22%	5.89%	1.91%
Total Queries	50303	4.57%	2.73%	5.07%	17.34%	5.48%	1.55%
HTML requests	32678	4.72%	1.41%	4.04%	20.92%	6.44%	1.79%

JUNE 2001	Total	%Gov	%Mil	%US	%IP	%Edu	%Org
Graphic Queries							
River	7923	3.02%	1.55%	2.18%	6.20%	1.38%	0.38%
Adult	8335	6.06%	0.68%	6.93%	14.21%	4.04%	2.21%
ESU	93	2.15%	0.00%	0.00%	13.98%	2.15%	0.00%
PIT Tag	74	32.43%	48.65%	0.00%	0.00%	8.11%	0.00%
Smolt	329	25.84%	3.65%	0.00%	18.24%	24.62%	0.30%
Climate	108	1.85%	4.63%	0.00%	8.33%	35.19%	0.00%
Total Graphic Queries	16862	5.08%	1.38%	4.45%	10.42%	3.40%	1.28%
Detail & Composite Reports							
River	2569	4.01%	22.42%	0.82%	20.79%	1.36%	4.59%
Adult	12997	4.78%	2.73%	3.87%	24.25%	3.89%	1.53%
ESU	265	6.04%	6.79%	0.00%	54.72%	5.66%	0.00%
Hatchery	153	3.27%	0.65%	0.00%	9.15%	18.30%	1.96%
PIT Tag	879	8.42%	7.39%	3.75%	39.36%	13.08%	2.96%
Smolt	360	5.83%	5.00%	15.56%	31.39%	1.11%	1.94%
Climate	54	5.56%	9.26%	0.00%	18.52%	38.89%	1.85%

CWT	10	0.00%	0.00%	0.00%	20.00%	0.00%	30.00%
Total Report Queries	17287	4.88%	6.00%	3.55%	24.97%	4.18%	2.07%
Total Queries	34149	4.98%	3.72%	3.99%	17.78%	3.80%	1.68%
HTML requests	21336	5.82%	1.31%	3.18%	21.91%	5.31%	2.18%

JULY 2001	Total	%Gov	%Mil	%US	%IP	%Edu	%Org
Graphic Queries							
River	7752	2.95%	1.20%	3.21%	9.43%	1.82%	0.34%
Adult	8423	5.54%	1.41%	5.76%	16.45%	3.16%	1.12%
ESU	40	0.00%	0.00%	15.00%	20.00%	5.00%	0.00%
PIT Tag	118	37.29%	33.05%	0.00%	19.49%	2.54%	0.00%
Smolt	406	30.79%	6.65%	0.00%	38.18%	8.87%	0.00%
Climate	127	21.26%	0.00%	0.00%	6.30%	64.57%	0.00%
Total Graphic Queries	16866	5.29%	1.65%	4.39%	13.70%	3.14%	0.71%
Detail & Composite Reports							
River	5288	1.32%	11.35%	1.23%	16.41%	3.42%	1.87%
Adult	13941	5.25%	2.63%	4.50%	19.86%	3.35%	0.54%
ESU	182	4.40%	4.40%	0.00%	45.60%	3.85%	1.65%
Hatchery	106	7.55%	2.83%	1.89%	44.34%	12.26%	4.72%
PIT Tag	656	12.80%	8.08%	1.52%	36.43%	17.07%	0.15%
Smolt	197	5.58%	9.64%	3.55%	43.15%	1.52%	2.03%
Climate	46	4.35%	0.00%	10.87%	28.26%	8.70%	0.00%
CWT	7	0.00%	0.00%	0.00%	71.43%	0.00%	0.00%
Total Report Queries	20423	4.48%	5.14%	3.51%	20.11%	3.85%	0.92%
Total Queries	37289	4.85%	3.56%	3.90%	17.21%	3.53%	0.82%
HTML requests	24690	5.45%	1.35%	2.56%	19.23%	4.11%	1.13%

AUGUST 2001	Total	%Gov	%Mil	%US	%IP	%Edu	%Org
Graphic Queries							
River	7540	4.06%	0.94%	2.12%	6.02%	1.90%	0.25%
Adult	13428	7.44%	0.60%	3.60%	16.84%	4.68%	1.31%
ESU	18	27.78%	0.00%	0.00%	0.00%	0.00%	0.00%
PIT Tag	110	58.18%	32.73%	0.00%	7.27%	0.91%	0.00%
Smolt	352	24.15%	17.33%	0.28%	31.82%	19.89%	0.00%
Climate	58	5.17%	0.00%	0.00%	5.17%	12.07%	0.00%
Total Graphic Queries	21506	6.80%	1.15%	3.00%	13.20%	3.95%	0.91%
Detail & Composite Reports							
River	2512	6.09%	23.81%	10.23%	11.50%	5.41%	4.42%
Adult	22236	5.85%	2.18%	5.41%	16.73%	4.58%	0.77%
ESU	139	10.79%	8.63%	1.44%	30.22%	0.00%	0.00%
Hatchery	152	19.08%	0.00%	7.89%	11.84%	3.29%	2.63%
PIT Tag	505	8.91%	2.97%	4.95%	36.63%	8.32%	0.79%
Smolt	143	25.17%	7.69%	6.99%	29.37%	4.90%	0.00%
Climate	51	5.88%	1.96%	15.69%	27.45%	0.00%	0.00%
CWT	8	37.50%	0.00%	0.00%	37.50%	0.00%	0.00%
Total Report Queries	25746	6.16%	4.35%	5.89%	16.75%	4.70%	1.13%
Total Queries	47252	6.45%	2.90%	4.58%	15.13%	4.36%	1.03%
HTML requests	29875	7.48%	1.71%	3.45%	17.50%	4.21%	1.34%

SEPTEMBER 2001	Total	%Gov	%Mil	%US	%IP	%Edu	%Org
Graphic Queries							
River	7030	4.14%	0.91%	1.38%	32.16%	2.05%	0.83%
Adult	15847	7.50%	0.40%	2.35%	17.65%	4.54%	1.53%
ESU	69	8.70%	0.00%	0.00%	82.61%	5.80%	0.00%
PIT Tag	73	10.96%	49.32%	0.00%	2.74%	6.85%	0.00%
Smolt	117	8.55%	4.27%	2.56%	35.90%	42.74%	5.13%
Climate	51	0.00%	0.00%	3.92%	58.82%	5.88%	1.96%
Total Graphic Queries	23187	6.48%	0.73%	2.04%	22.38%	3.99%	1.32%
Detail & Composite Reports							
River	2134	3.23%	26.05%	3.51%	18.93%	4.12%	3.42%
Adult	26061	5.64%	1.86%	3.59%	18.94%	4.23%	0.81%
ESU	106	10.38%	6.60%	7.55%	15.09%	2.83%	1.89%
Hatchery	213	3.29%	0.00%	4.69%	22.07%	43.66%	0.00%
PIT Tag	490	5.51%	4.29%	3.27%	64.08%	4.29%	1.22%
Smolt	81	1.23%	8.64%	2.47%	8.64%	55.56%	1.23%
Climate	36	8.33%	0.00%	22.22%	11.11%	8.33%	0.00%
CWT	6	0.00%	0.00%	0.00%	16.67%	0.00%	0.00%
Total Report Queries	29127	5.45%	3.70%	3.62%	19.67%	4.66%	1.01%
Total Queries	52314	5.91%	2.38%	2.92%	20.87%	4.36%	1.15%
HTML requests	29862	5.75%	1.45%	2.65%	17.60%	5.40%	1.51%
Total Graphic Queries	192242	5.28%	1.20%	3.70%	12.73%	4.22%	1.39%
Total Report Queries	196360	5.27%	3.92%	4.17%	20.27%	5.14%	1.33%
Total Queries 2001	388602	5.27%	2.58%	3.94%	16.54%	4.68%	1.36%