



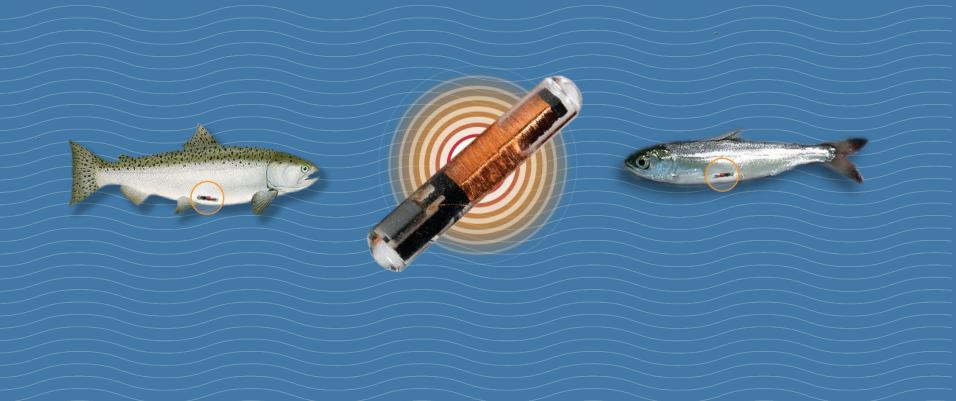
# PIT Tag Information System Columbia Basin

PSMFC 71<sup>st</sup> Annual Meeting

#### **PTAGIS Program Overview**



- Started in 1990 as a Fisheries Data Project of the PSMFC
- Funded via Columbia River Basin Fish and Wildlife Program
- Data contributed from regional agencies, available to anyone
- Support for Research Monitoring & Evaluation (RM&E)



#### **PIT Tag Steering Committee**

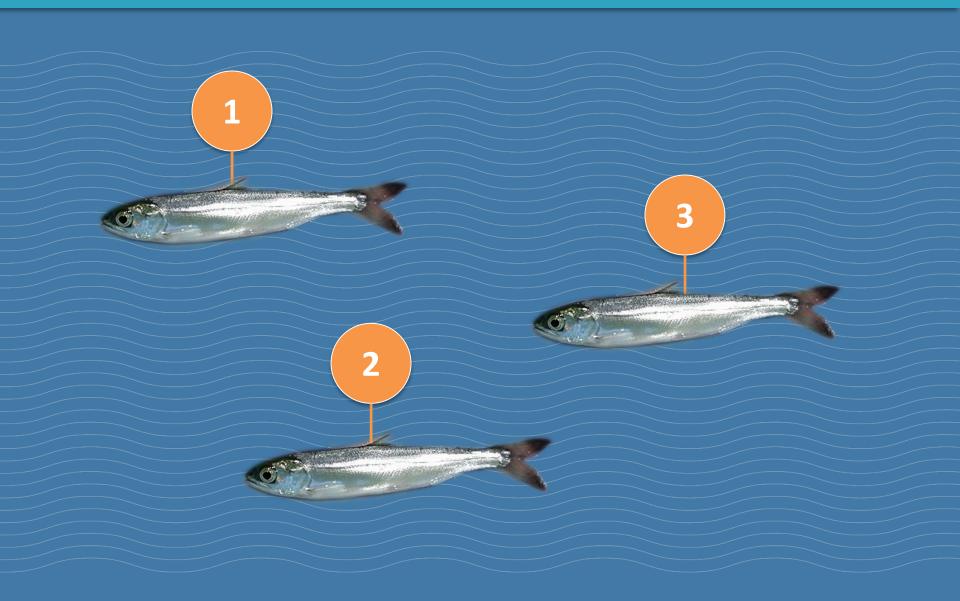


Members from each state agency, NOAA, Tribes, FPC

Data standardization

Regional coordination





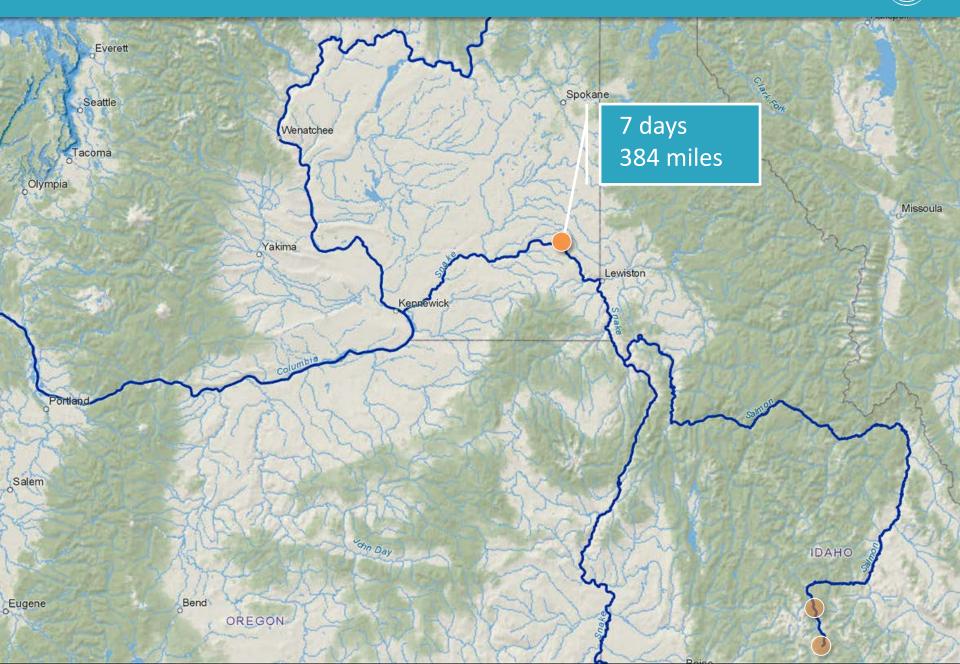
















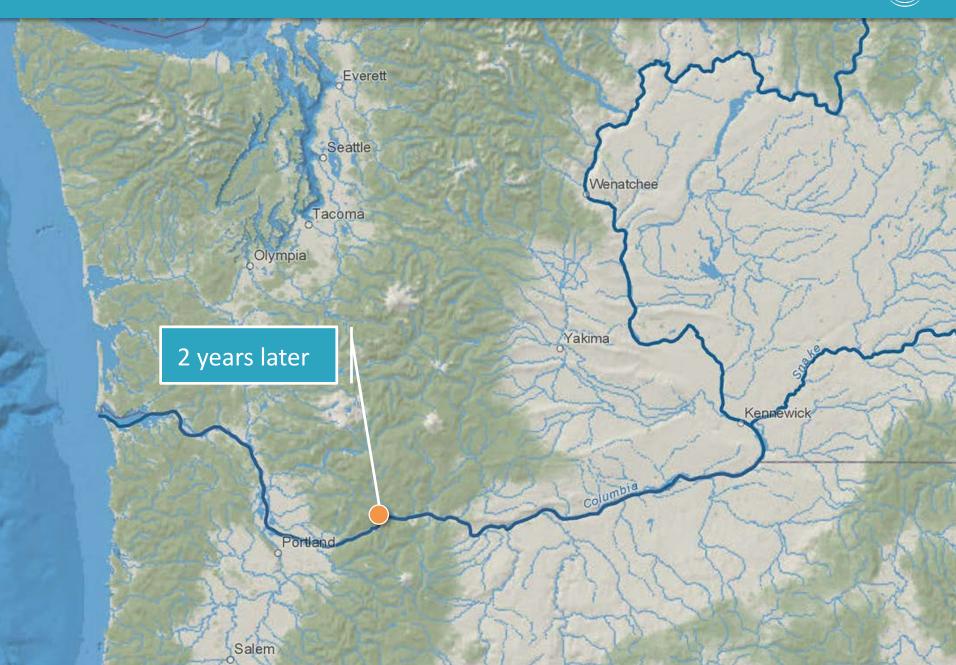












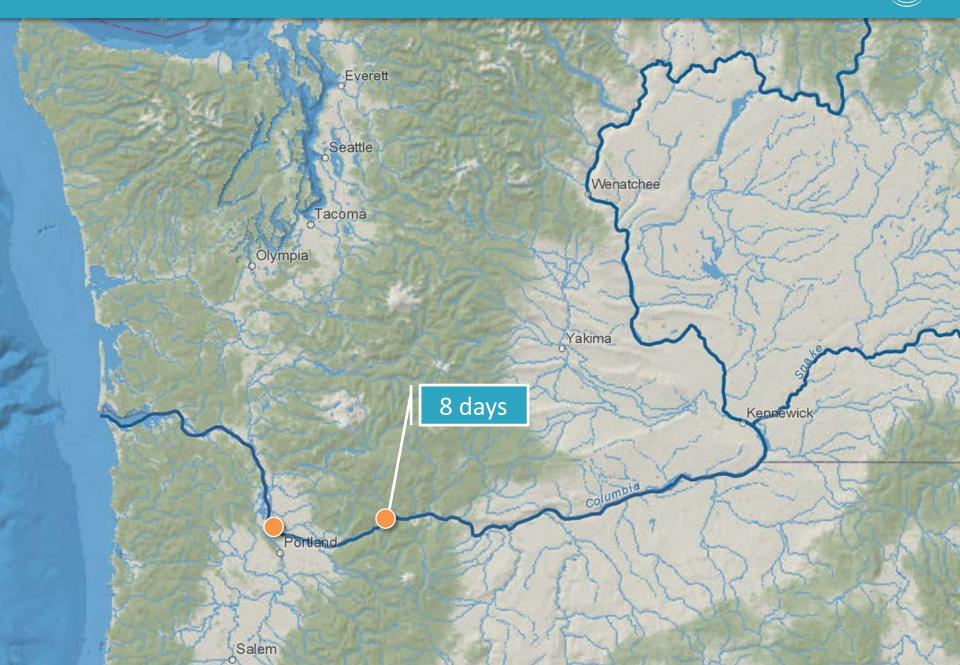






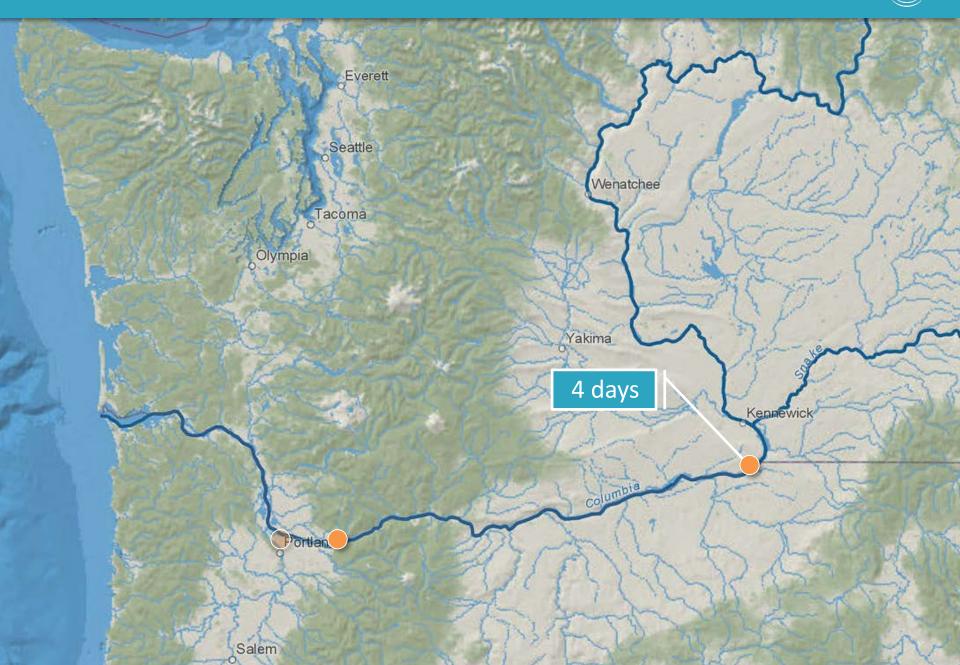




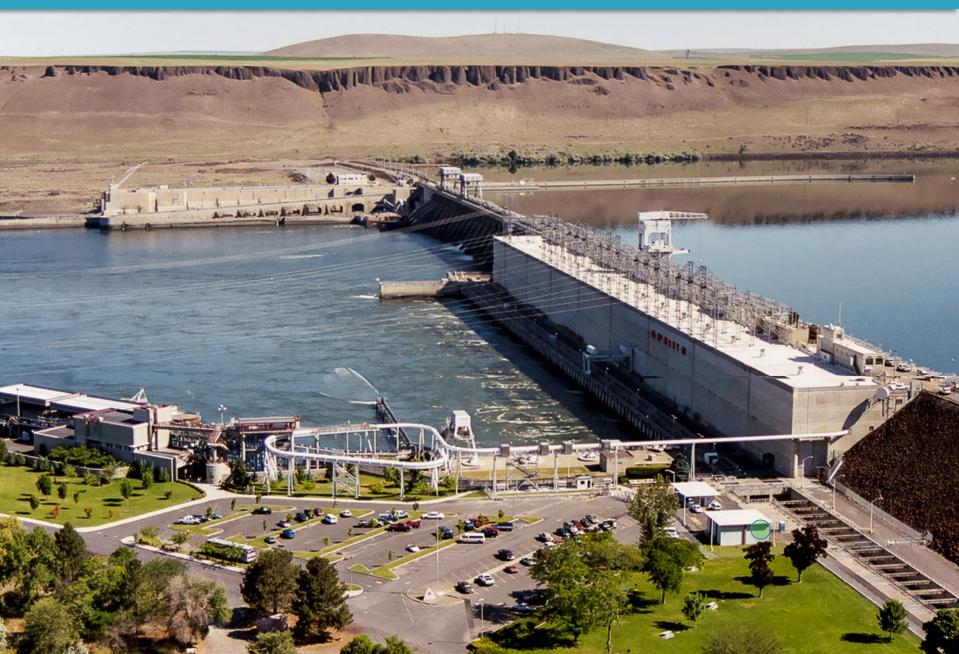




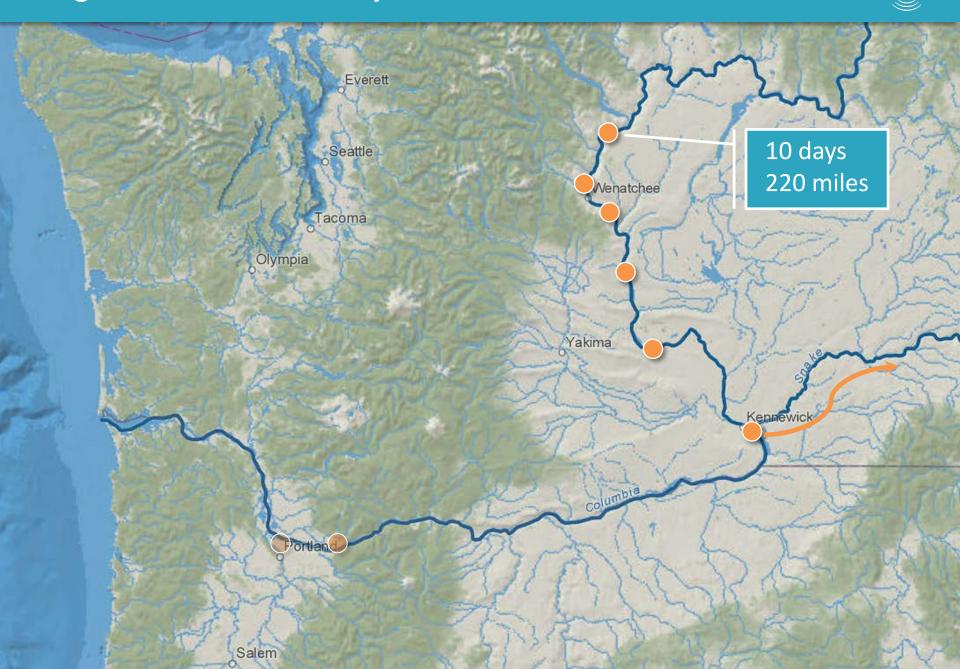




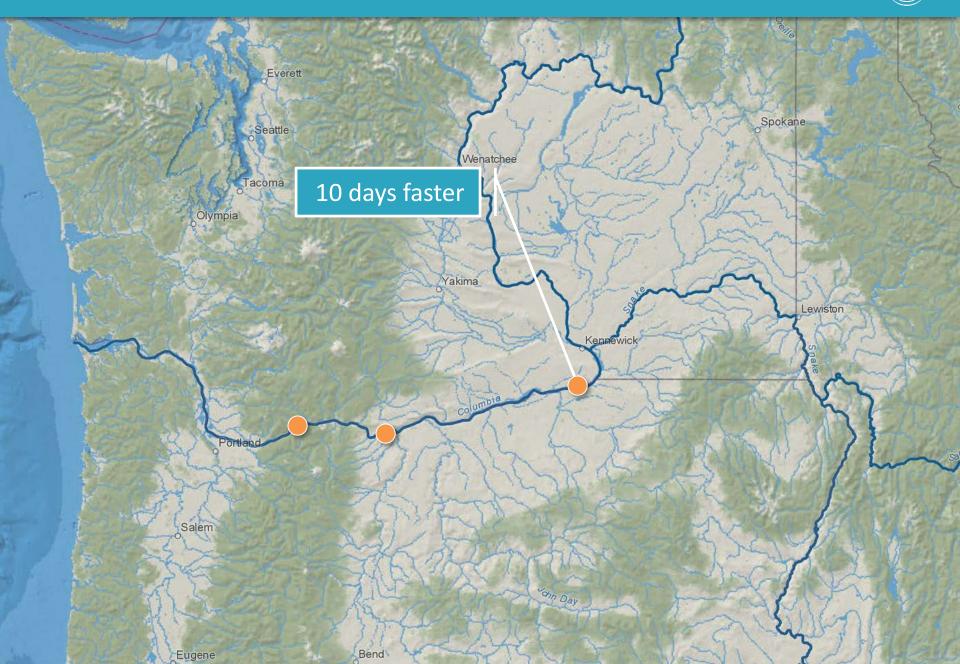




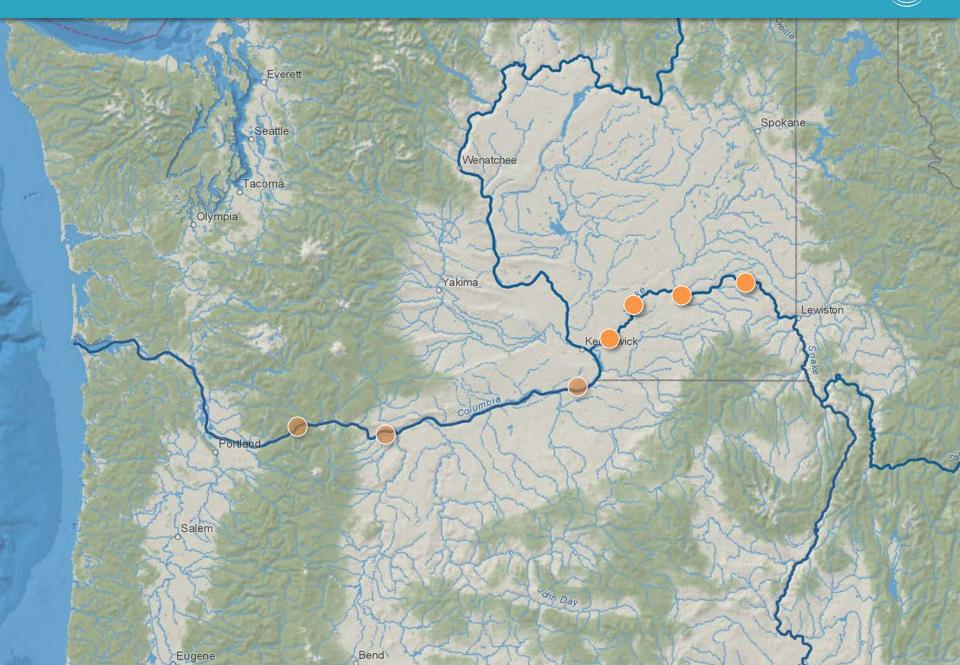




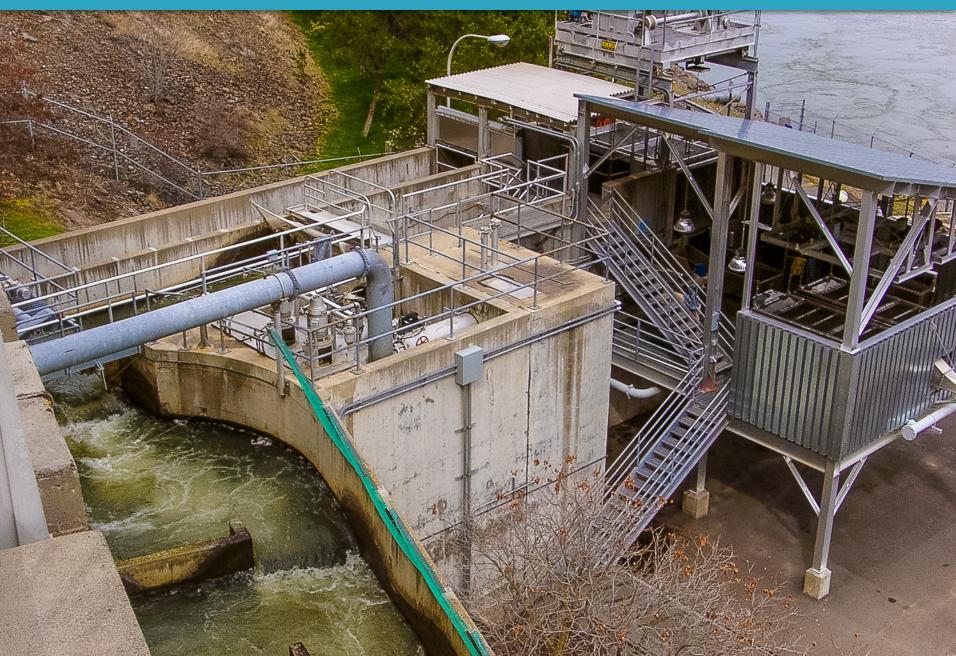
















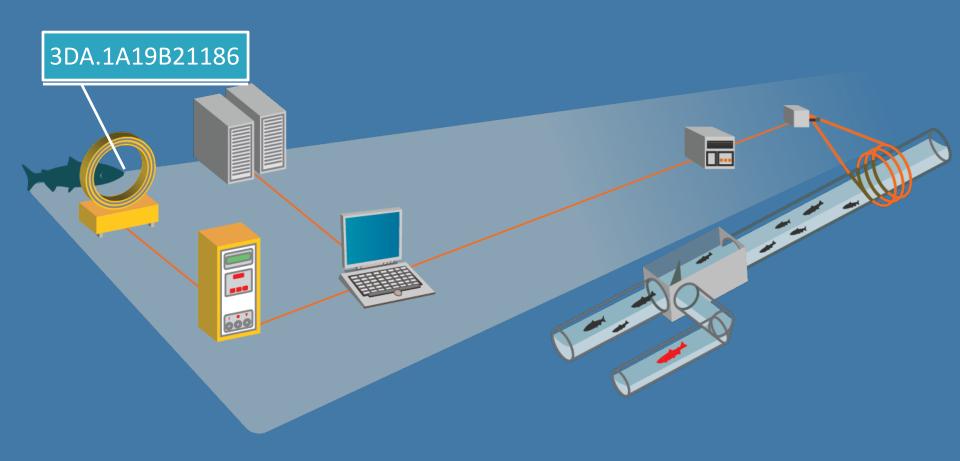




#### **Features of a PIT Tag**



- Uniquely identifies a marked fish
- Passive circuitry: no batteries or moving parts
- Small, durable, and long lifespan



# **PIT Tag Insertion and Data Collection**





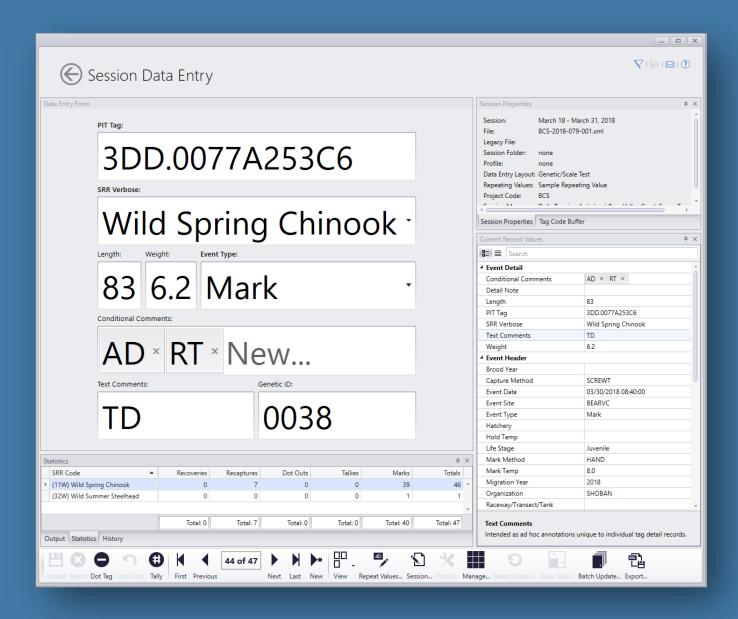
# **P4 Tagging Software**





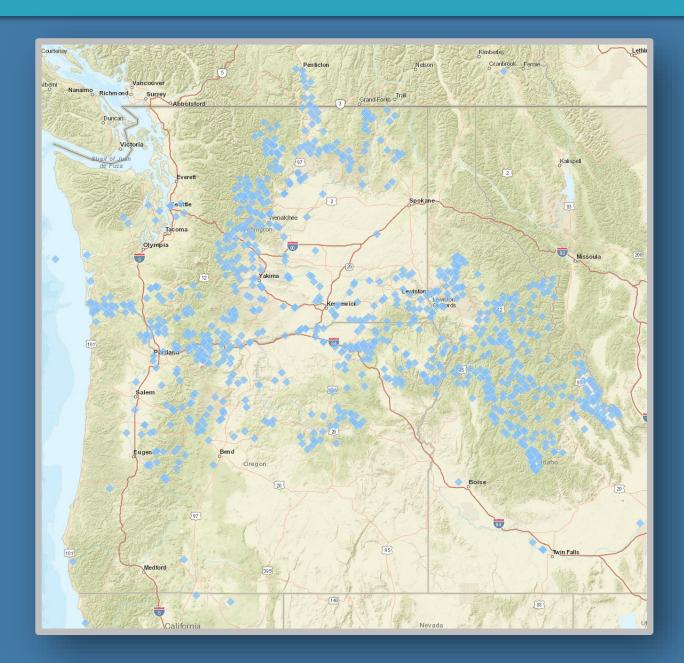
#### **P4 Tagging Software: Data Entry**





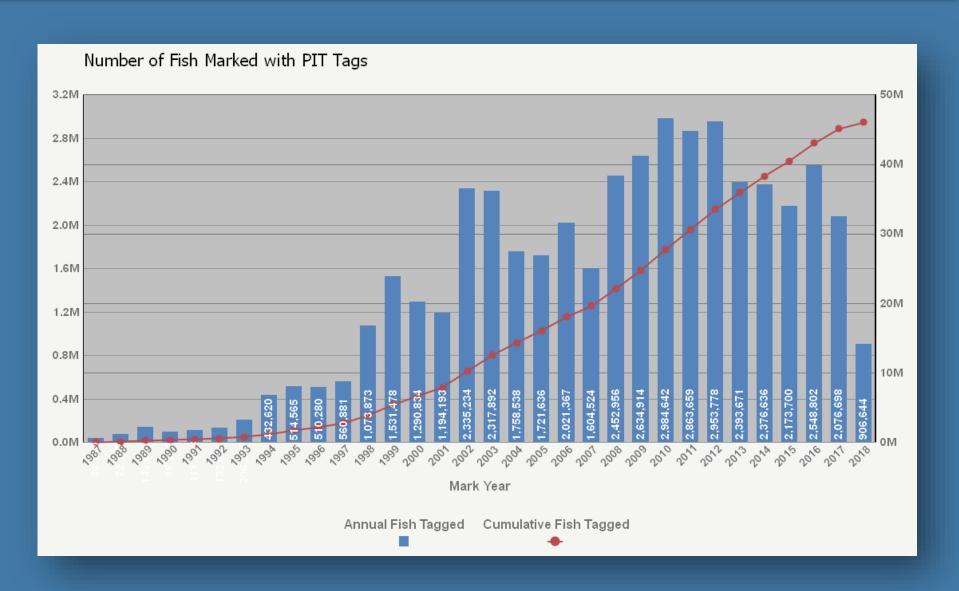
# **Registered PTAGIS Mark/Recapture/Recovery Sites**





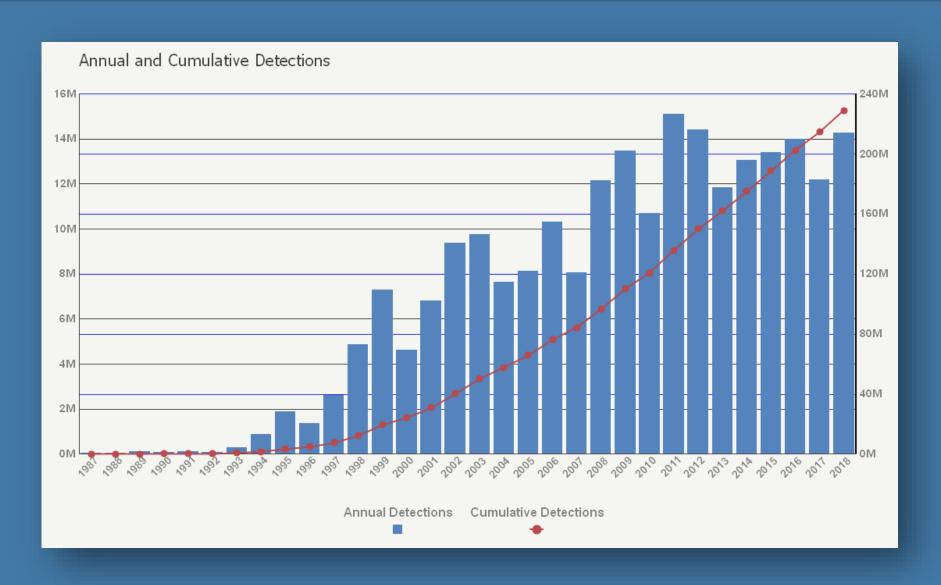
#### **Number of Marked Fish Submitted to PTAGIS**





#### **PIT Tag Detections Collected by PTAGIS**





# **Interrogation Sites O&M by PTAGIS**





#### Thin Wall Pass-Through Antenna Design





- 2" thickness -- targeted for counting windows
- Reduce concrete cutting and construction costs
- Same detection efficiency as standard body antennas

**Installed into adult ladders:** 

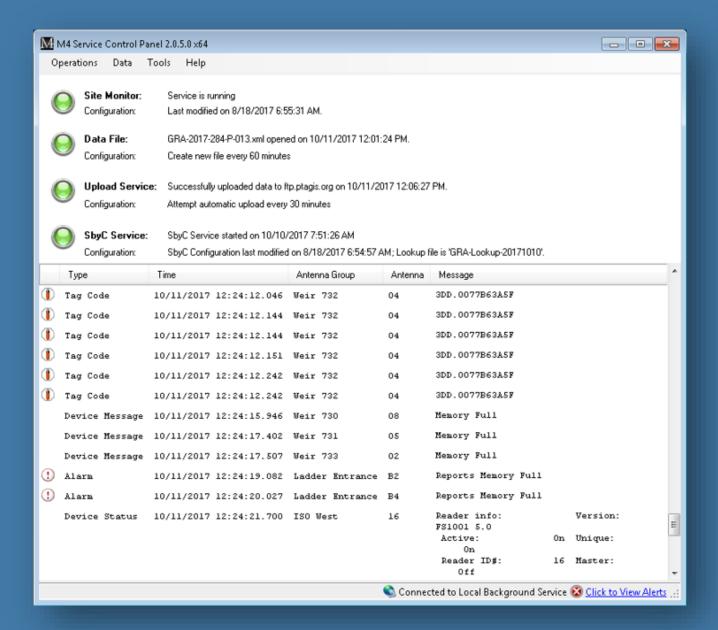
2013: The Dalles

2014: Lower Monumental, Little Goose, Ice Harbor

**2017: John Day** 

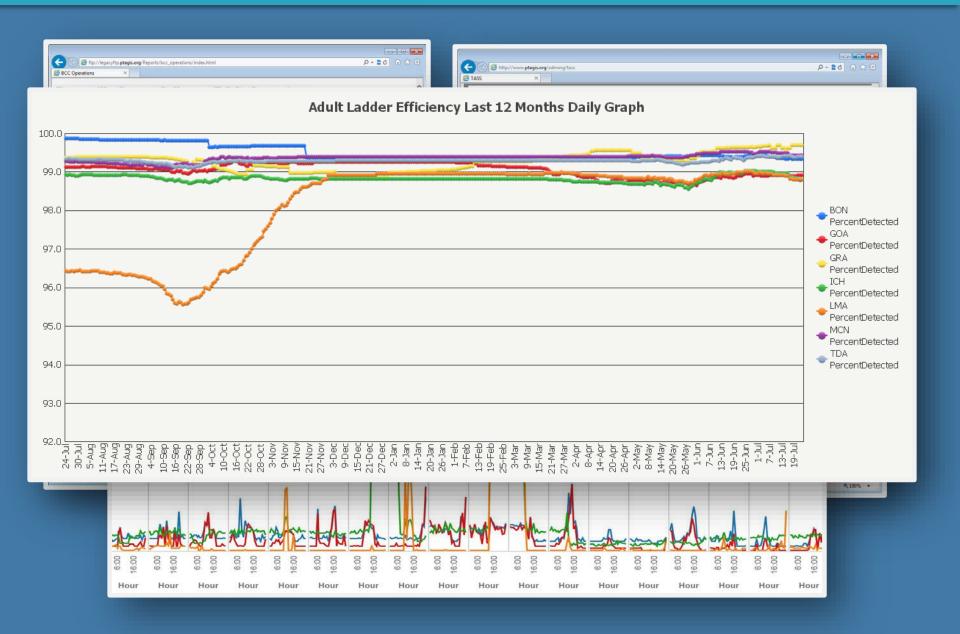
#### **PTAGIS M4 Interrogation Software**





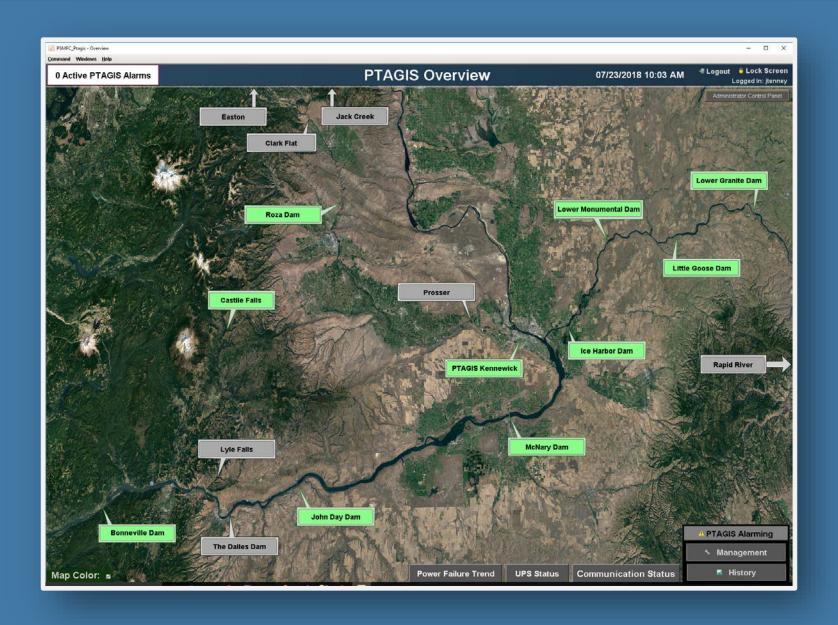
#### **O&M Remote Monitoring – 365 Days a Year**





# **Enhancements for Remote Monitoring: SCADA System**





## **Enhancements for Remote Monitoring: SCADA System**





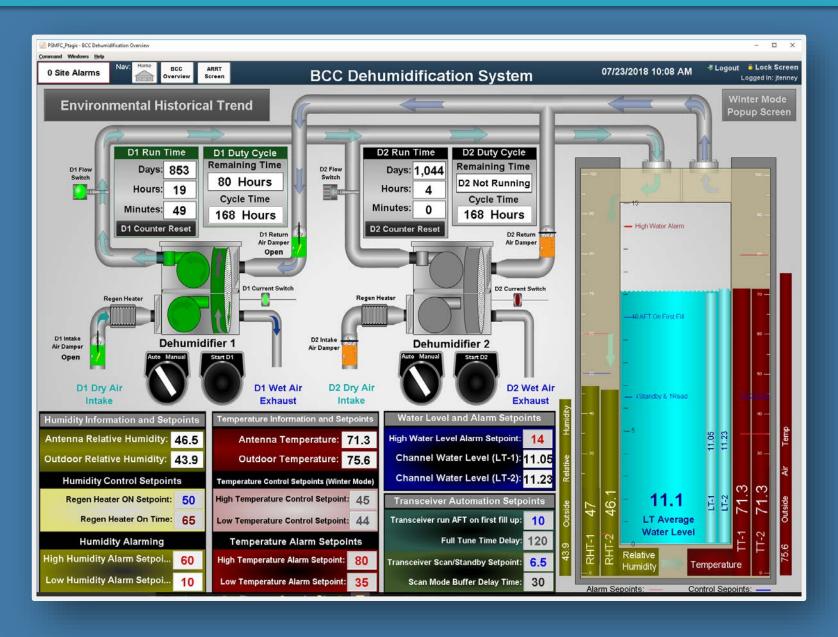
#### **Enhancements for Remote Monitoring: SCADA System**





#### **Enhancements for Remote Monitoring: SCADA System**





## **PIT Tag Inventory and Distribution**



up by: Status	Requests (Ctrl						
Status ▽	Request #	FWP Number ▽	Requested By   ▽	Ship Before ▽	Ship After ▽	Date Shipped ▽	Requested Tags
Shipped	5702	1993-029-00	Tiffani Marsh, NMFS	3/23/2018	3/1/2018	3/1/2018	55,000 12pl
Shipped	5799	2000-039-00	Travis Olsen, CTUIR	3/30/2018	3/16/2018	3/19/2018	15,000 12pl
Shipped	5784	2007-402-00-1	Eric Johnson, IDFG	3/31/2018	12/31/2017	1/2/2018	10,200 12pl
Shipped	5675	2003-039-00	Andrew Murdoch, WDFW	4/1/2018	11/1/2017	11/9/2017	2,000 12pl
Shipped	5677	1994-043-00	Brent Nichols, OTHER	4/1/2018	10/1/2017	1/19/2018	5,000 12mm
Shipped	5716	2007-170-00	Brett High, IDFG	4/1/2018	12/1/2017	1/19/2018	3,000 12mm
Shipped	5737	1996-020-00-14	Brandon Chockley, FPC	4/1/2018	3/15/2018	3/15/2018	63,100 12pl
Shipped	5750	1987-127-00-5	Brandon Chockley, FPC	4/1/2018	3/15/2018	3/19/2018	16,200 12mm
Shipped	5684	1994-042-00	Tom Nelson, ODFW	4/9/2018	11/1/2017	11/29/2017	1,000 12pl
Shipped	5690	1986-050-00	Peter Stevens, ODFW	4/13/2018	1/1/2018	1/24/2018	5,000 12mm
Shipped	5723	1995-063-35	Joe Zendt, YINN	4/15/2018	1/15/2018	1/24/2018	30,000 12mm; 10,000 12s
Shipped	5725	1983-350-03	Bill Arnsberg, NPT	4/15/2018	4/1/2018	4/3/2018	13,000 12pl
Shipped	5755	2003-023-00-1	Andrea Pearl, CCT	4/30/2018	4/1/2018	4/4/2018	15,000 12pl; 2,500 9pl
Shipped	5757	1983-350-03	Sherman Sprague, NPT	4/30/2018	2/1/2018	2/5/2018	10,700 12pl
Shipped	5691	1998-019-00-2	lan Jezorek, USGS	5/1/2018	11/1/2017	1/19/2018	500 12mm; 1,000 9mm
Shipped	5697	1990-005-01	Jerimiah Bonifer, CTUIR	5/31/2018	5/1/2018	5/9/2018	3,000 12pl
Shipped	5765	1996-040-00	Cory Kamphaus, YINN	5/31/2018	4/16/2018	5/9/2018	20,000 12pl
Shipped	5802	2010-030-00-1	Chris Frederiksen, YINN	5/31/2018	4/3/2018	5/7/2018	500 12pl
Shipped	5710	1991-028-00	Gordon Axel, NMFS	6/22/2018	6/1/2018	6/19/2018	5,000 12pl
Shipped	5763	2008-503-00	Jeff Fryer, CRITFC	6/30/2018	6/1/2018	6/20/2018	500 12pl
Shipped	5796	2009-009-00	Peter Galbreath, CRITFC	6/30/2018	2/14/2018	5/7/2018	1,000 9pl
Shipped	5804	2008-518-00	Jeff Fryer, CRITFC	7/13/2018	6/29/2018	6/27/2018	4,000 12pl
Shipped	5801	2007-402-00-1	Eric Johnson, IDFG	7/16/2018	3/22/2018	5/8/2018	10,200 12mm
Shipped	5789	1997-004-00	Charles Lee, WDFW	7/31/2018	2/28/2018	5/8/2018	500 12mm
Shipped	5729	1996-020-00-01	Brandon Chockley, FPC	8/1/2018	7/15/2018	7/19/2018	107,100 12mm
Shipped	5730	1996-020-00-12	Brandon Chockley, FPC	8/1/2018	7/15/2018	7/19/2018	39,800 12mm
Shipped	5731	1996-020-00-02	Brandon Chockley, FPC	8/1/2018	7/15/2018	7/19/2018	39,100 12mm
Shipped	5745	1987-127-00-2	Brandon Chockley, FPC	8/1/2018	7/15/2018	7/19/2018	15,000 12mm
Shipped	5752	2003-022-00	Brian Miller, CCT	8/1/2018	6/1/2018	7/23/2018	2,000 12pl
Shipped	5774	2007-156-00	Elaine Harvey, YINN	8/2/2018	7/2/2018	7/23/2018	1,400 12mm
Shipped	5800	1996-035-01	Timothy Resseguie, YINN	9/30/2018	3/22/2018	5/8/2018	4,000 12mm

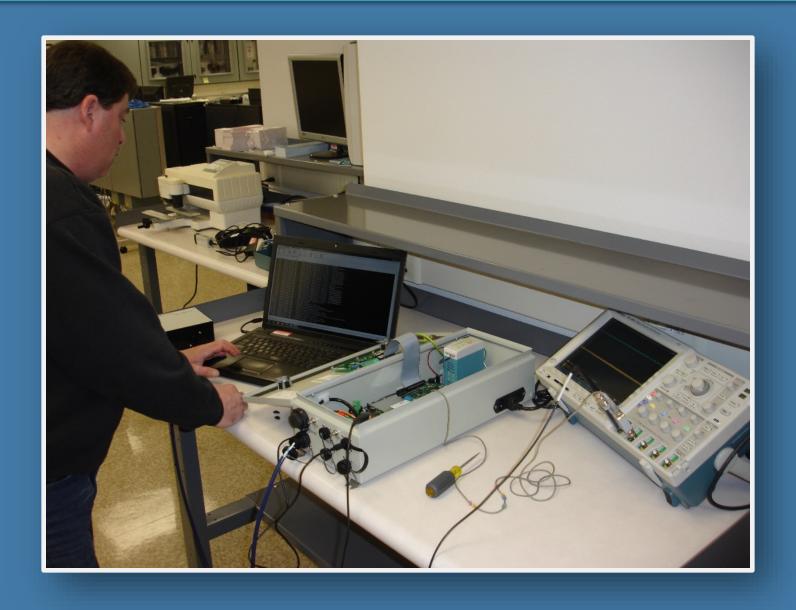
## **PIT Tag Evaluation and Quality Assurance**





## **Tag Reader Repair and Recycling**



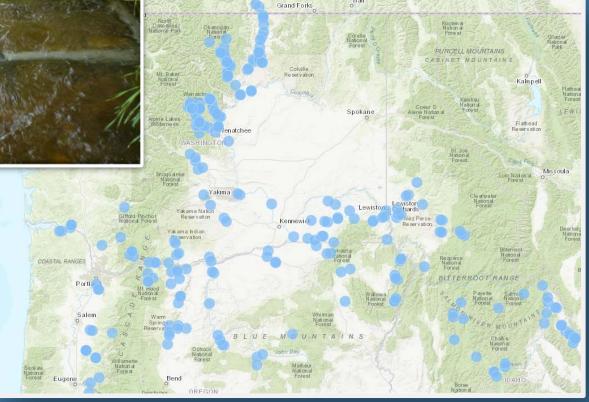


### **Tributary (Instream) Interrogation Sites**



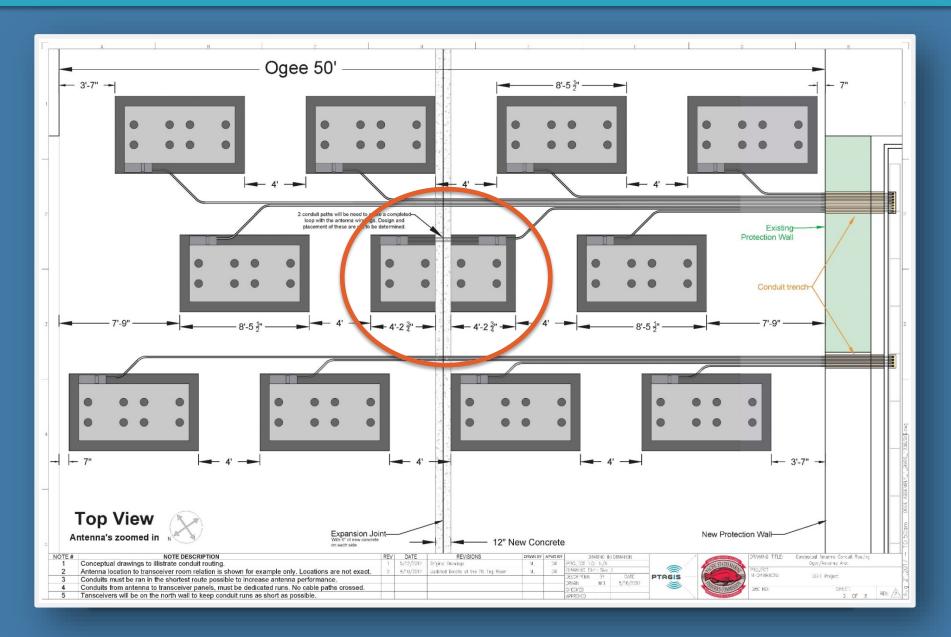


- ~270 sites contribute observation data
- Operated/Maintained by other agencies
- Smaller scale vs. hydro sites



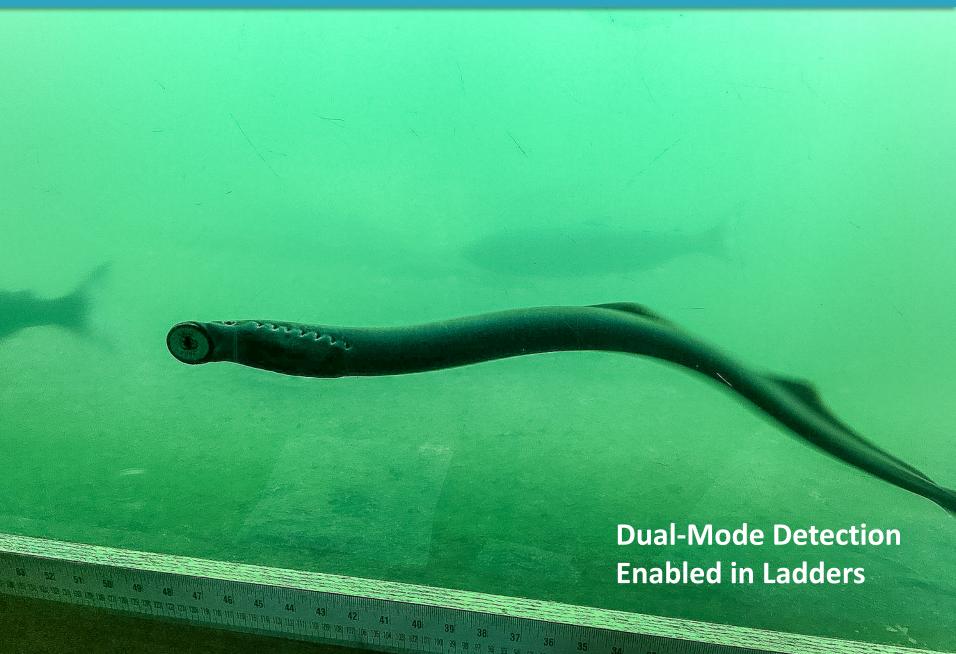
## **Challenges: Lower Granite Spill Bay #1**





## **Support for Lamprey Research**





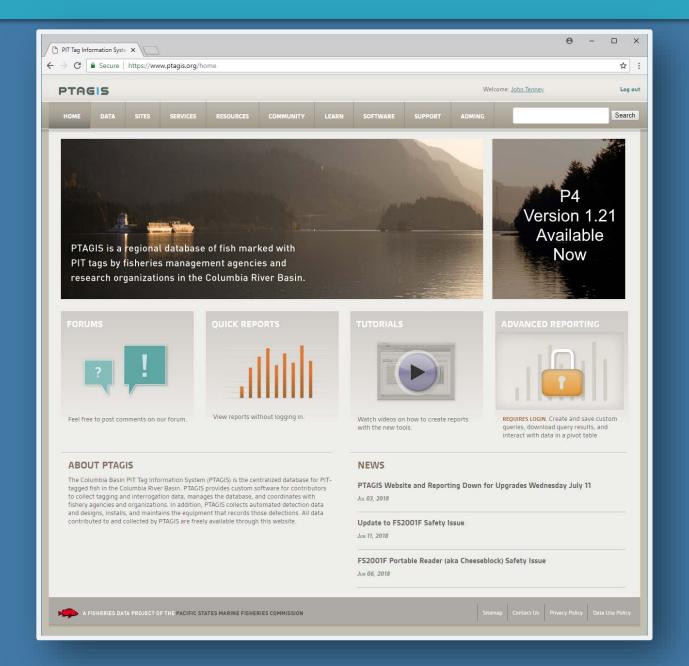
# **Support for Lamprey Research**





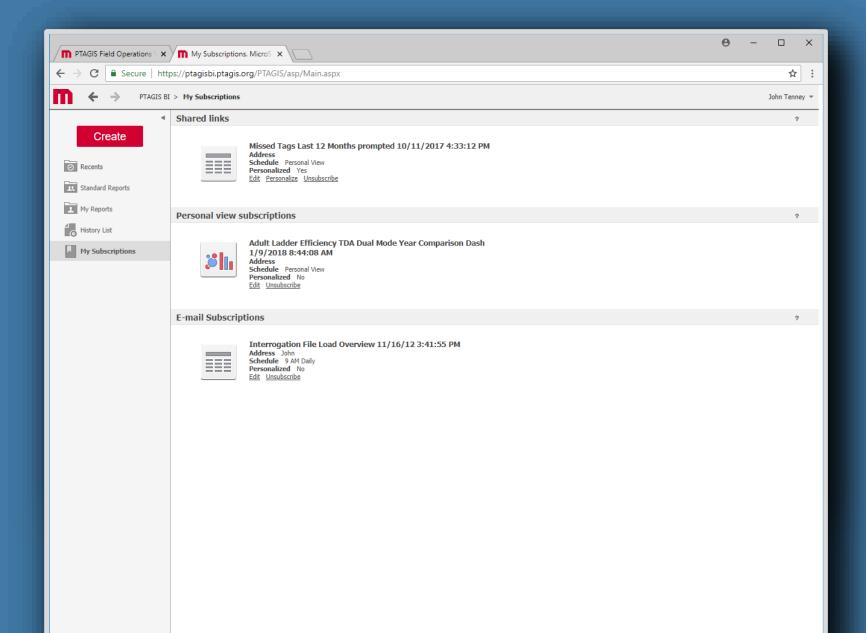
#### PTAGIS Web Site www.ptagis.org





## **PTAGIS Advanced Reporting**







486

**Users** 

342k

Thousand Jobs Ran 7.1

Billion Rows Returned

#### **PTAGIS Team**



**Portland Office:** 

PSMFC Executive Director: RANDY FISHER

Program Manager: JOHN TENNEY

Business Intelligence Engineer: CRAIG WHITE

Data Coordinator: NICOLE TANCRETO

Software Engineers: SEBASTIAN DUDEK

**DANIEL WILSON** 

**Kennewick Office:** 

Field Operations Program Manager: DON WARF

Electronics Engineering Technicians: SCOTT LIVINGSTON

DARREN CHASE ALAN BROWER ROGER CLARK MARK LEONARD

Administrative Assistant: **JENNIFOR LUNDY** 

## **Special Thanks**



Design: MICHAEL REARDON, FIELDTRIP

Research: NICOLE TANCRETO, PSMFC

Maps: BRETT HOLYCROSS, PSMFC

Pictures: ERIC JOHNSON, IDFG

**ERICA HOLCOMBE, NOAA** 

**DON WARF, PSMFC** 

SCOTT LIVINGSTON, PSMFC

**ALAN BROWER, PSMFC** 

MARK LEONARD, PSMFC