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October 27, 2014

MEMORANDUM

TO: Fish and Wildlife Committee members

FROM: Jim Ruff – Manager, Mainstem Passage and River Operations

SUBJECT: Presentation on the PIT tag forecaster tool for the Columbia River Basin

BACKGROUND:

Presenters:
Presenters will include Jim Geiselman (Environmental Engineer at BPA) and Al Giorgi (Bioanalysts, Inc. and BPA contractor). John Tenney (PTAGIS Program Manager and Software Engineer) and Nicole Tancreto (PTAGIS Data Coordinator) of Pacific States Marine Fisheries Commission (PSMFC) will be available to address any questions.

Summary
A PIT Tag Forecaster (PTF) database system has been developed to support regional PIT tag coordination efforts and to assist investigators and fishery managers. The intent of this PIT tagging coordination effort is to: 1) evaluate opportunities to improve the efficiency of PIT tag use to minimize cost and contain the numbers of fish being handled and tagged; and 2) provide input to forecasting PIT tag purchases basin-wide.

Relevance
The PTF tool will allow managers and investigators to accomplish multiple objectives toward ensuring the most efficient use of PIT-tagged anadromous fish throughout the Columbia Basin by:

- Providing a platform for various investigators and managers to view the collective planned tagging activities throughout the system in an effort to assess opportunities for sharing of tagged fish, and assist with coordinating tag use within and across watersheds.

- Maintaining adequate stock coverage to satisfy specific monitoring needs (under both the FCRPS BiOp and Fish and Wildlife Program) into the future.
- Minimizing over-tagging sensitive ESA-listed populations, as well as informing NOAA Sec. 10 take-permits.

Workplan:
Both the 2008 NOAA Fisheries FCRPS Biological Opinion and the Council's 2013 Fish Tagging Forum noted the need to improve coordination and efficiency among PIT tag users in the Columbia River Basin. As a result of consensus recommendation #3 of the Fish Tagging Forum, the Council called for the establishment of an annual coordination forum to review short-term and long-term study plans which rely on PIT tags.

In addition, the Fish Propagation strategy section of the 2014 Fish and Wildlife Program states the Council continues to support PIT tagging and detection … to help assure adequate effectiveness monitoring, and other monitoring as necessary, throughout fish life cycles and across various fish environments.

Also, a principle in the Investment strategy section of the 2014 Fish and Wildlife Program states that Bonneville and action agencies should allocate and assure adequate funding for the application and recovery or detection of PIT tags.

Background:
An initial PIT tag database system was constructed in 2009 and resided at the University of Washington-Columbia Basin Research. The new 2014 interactive, web-based version of the PTF system was designed and developed by PSMFC and has been integrated with PTAGIS. It is expected that regional PIT tag users will populate the database in three-year time steps, yielding a three-year forecast of PIT tag needs in the basin. The key input parameters are geographic release location, numbers of tagged fish, life stage, and species/ESU/population information. The system is now functional and ready for broad, regional use. The PTF tool will be demonstrated during this presentation.

More information:
Fish managers and investigators will have access to the query and reporting features associated with the PTF database. The system has two query modes: 1) a generic query mode using a common set of filtering parameters which produces fixed graphic output; and 2) a more detailed mode that can accommodate other, more specific and complex data queries. The PTF tool also includes an online tutorial to guide users through the data entry process.

Status of the PIT Tag Forecaster (PTF)

November 2014

What is the PTF?

- Database system used to forecast Columbia Basin PIT tag use
  - Focus is currently anadromous salmonids
  - Integrated with PTAGIS
- Time step = 3 year forecast

Genesis of the PTF

- 2008 FCRPS BiOp & 2013 NPCC Tagging Forum noted the need to improve coordination and efficiency among PIT tag users region-wide.
- AA & NOAA 2013 product = "The Status & Needs of the Columbia Basin PIT Tag Information System as Related to FCRPS BiOp RME Requirements" (Salmonrecovery.gov)
  - one element was a PIT tag forecasting tool.
- NPCC Tagging Forum 2013 recommends establishment of a coordination forum for studies relying on PIT tags. Key objectives are-
  - To improve tag use efficiency and contain costs, and
  - To minimize # fish handled/tagged.
- The PTF is a forecasting tool meant to assist these efforts .

Applications of the PTF

- Ensure the efficient use of tagged anadromous salmon and steelhead throughout the Columbia Basin.
- Provide a platform for various investigators and managers to view the collective planned tagging activities throughout the system.
  - Identify opportunities for sharing of tagged fish.
  - Assist with coordinating tag use within and across watersheds
- Maintain adequate stock coverage to satisfy specific monitoring needs (BiOp & FWP) in the out-years.
- Minimize over-tagging sensitive ESA-listed populations, and inform NOAA take-permits.

History of PTF

- 2009-2010
  - UW & BioAnalysts- prototype database & query system @CBR
  - Populated by agencies via distributed spreadsheet
- 2011-2012
  - Dormant
- 2013-2014
  - PSMFC redesigns system and integrates with PTAGIS
  - Beta-tested spring 2014 (FPC & Corps)
  - Regional parties/agencies have been contacted, regarding the need for populating the database.

The PTF System: two components

- Database
  - Populated online by users; update annually
  - Ideally one contact per agency, or agency coalition (e.g. FPC)
- Query & Reporting tools
  - A generic query and graphical report tool, and
  - A detailed query tool

Database information, annually by RME project

- ESU/MPG
  - ESA-listed and unlisted populations
- Release site
- Project/contract #
- Sponsor
- Contractor
- Number to be released
- Life stage
- Origin (wild/hat.)
  - Hatchery name
- RME application
- Data source

Database Entry Page: List of Projects

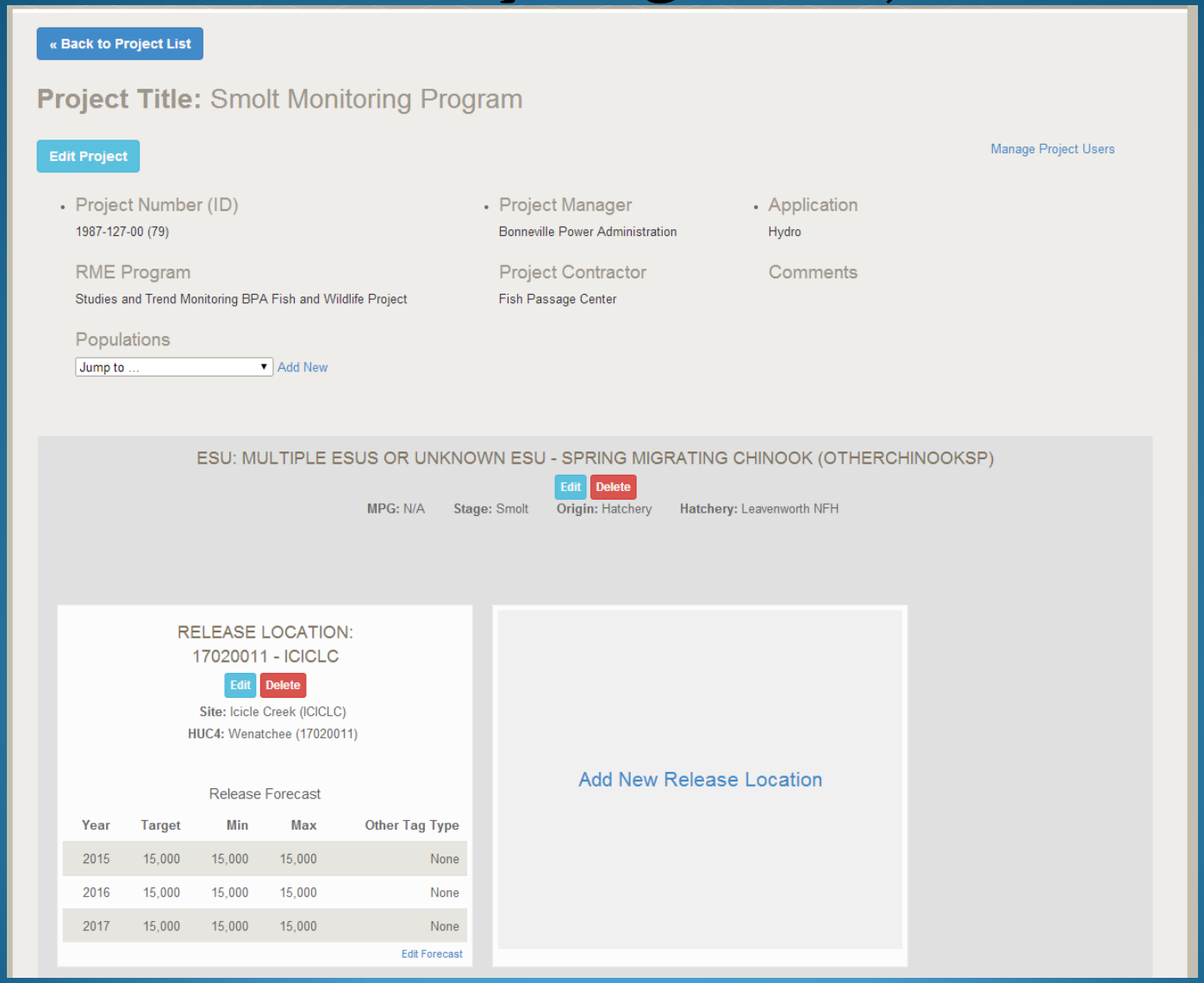
PROJECT LIST

Add new project

ID	Title	Project Number	RME Program	RME Type	Project Manager	Project Contractor	Application	Comments		
76	A study to compare seasonal SARs of in-river vs transported Snake River yearling fish		AFEP	CUR/STM	USACE	NOAA	HYD		Users	Remove
77	Fate if juvenile chinook and steelhead released above/below dams (paired release studies)		AFEP	STM/AER	USACE	USGS	HAT		Users	Remove
78	Comparative Survival Study	1996-020-00	FWP	STM	BPA	FPC	HYD		Users	Remove
79	Smolt Monitoring Program	1987-127-00	FWP	STM	BPA	FPC	HYD		Users	Remove
1076	WVP S. Santiam Studies		AFEP	AER	USACE	ODFW	HAR		Users	Remove
1077	PFFC Monitoring		AFEP	STM	USACE	WDFW	HAT		Users	Remove
1078	Lower Columbia adult salmon passage studies		AFEP	CUR/STM	USACE	UI	HYD		Users	Remove
1079	Estuary Avian Predation Studies		AFEP	STM	USACE	OSU	HAR	And Real Time Research	Users	Remove
1080	WVP Adult Studies		AFEP	STM	USACE	UI	HAR	and Oregon Department of Fish and Wildlife	Users	Remove
1081	DET DSP		AFEP	STM	USACE	USGS	HAT	and Oregon Department of Fish and Wildlife	Users	Remove
1082	Fall Creek Entrainment		AFEP	STM	USACE	OSU	HAR	Wild Surrogates	Users	Remove
1083	Ice Harbor Performance Standard Test		AFEP	STM	USACE	USACE	HYD		Users	Remove
1084	Lower Granite Performance Standard Test		AFEP	STM	USACE	USACE	HYD		Users	Remove
1085	Little Goose Performance Standard Test		AFEP	STM	USACE	USACE	HYD		Users	Remove

View Deleted Projects

Database Entry Page: Project Detail

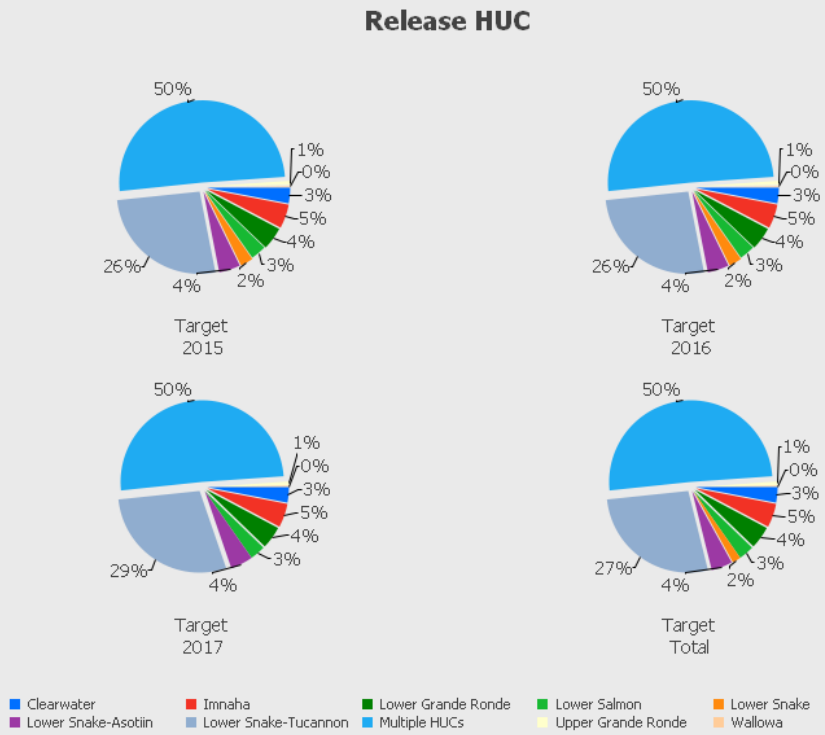


Queries & Reports: Dashboard

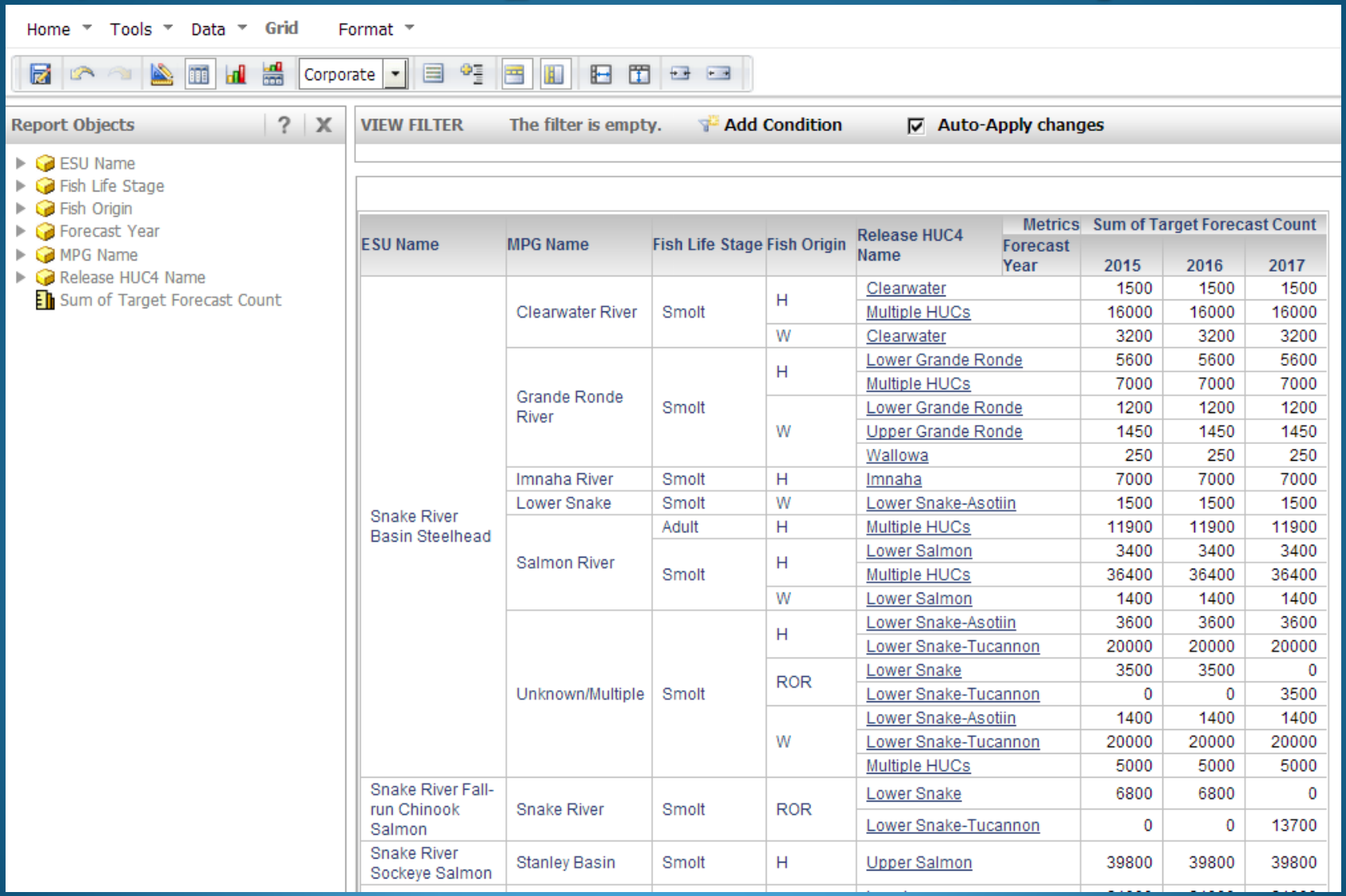
Geographic Area: Columbia Basin
Species Group: (All)
ESU: Snake River Basin Steelhead
Forecast Type: Target

Overview | Fish Origin | Life Stage | Locations | Projects

Release HUC4 Name	Metrics Forecast Year	Target 2015	2016	2017	Total
Clearwater		4,700	4,700	4,700	14,100
Imnaha		7,000	7,000	7,000	21,000
Lower Grande Ronde		6,800	6,800	6,800	20,400
Lower Salmon		4,800	4,800	4,800	14,400
Lower Snake		3,500	3,500	0	7,000
Lower Snake-Asotiin		6,500	6,500	6,500	19,500
Lower Snake-Tucannon		40,000	40,000	43,500	123,500
Multiple HUCs		76,300	76,300	76,300	228,900
Upper Grande Ronde		1,450	1,450	1,450	4,350
Wallowa		250	250	250	750
Total		**151,300**	**151,300**	**151,300**	**453,900**



Queries & Reports: Web Query Tool



ESU Name	MPG Name	Fish Life Stage	Fish Origin	Release HUC4 Name	Metrics / Forecast Year	Sum of Target Forecast Count 2015	2016	2017
Snake River Basin Steelhead	Clearwater River	Smolt	H	Clearwater		1500	1500	1500
				Multiple HUCs		16000	16000	16000
			W	Clearwater		3200	3200	3200
	Grande Ronde River	Smolt	H	Lower Grande Ronde		5600	5600	5600
				Multiple HUCs		7000	7000	7000
			W	Lower Grande Ronde		1200	1200	1200
				Upper Grande Ronde		1450	1450	1450
				Wallowa		250	250	250
	Imnaha River	Smolt	H	Imnaha		7000	7000	7000
	Lower Snake	Smolt	W	Lower Snake-Asotiin		1500	1500	1500
	Salmon River	Adult	H	Multiple HUCs		11900	11900	11900
		Smolt	H	Lower Salmon		3400	3400	3400
				Multiple HUCs		36400	36400	36400
			W	Lower Salmon		1400	1400	1400
	Unknown/Multiple	Smolt	H	Lower Snake-Asotiin		3600	3600	3600
				Lower Snake-Tucannon		20000	20000	20000
			ROR	Lower Snake		3500	3500	0
				Lower Snake-Tucannon		0	0	3500
			W	Lower Snake-Asotiin		1400	1400	1400
				Lower Snake-Tucannon		20000	20000	20000
				Multiple HUCs		5000	5000	5000
Snake River Fall-run Chinook Salmon	Snake River	Smolt	ROR	Lower Snake		6800	6800	0
				Lower Snake-Tucannon		0	0	13700
Snake River Sockeye Salmon	Stanley Basin	Smolt	H	Upper Salmon		39800	39800	39800

Next Steps (AA, NOAA & NPCC)

- PTF user coordination meeting being scheduled for late November.
- Specify the timeframe for populating the database. (December 31, 2014 is the proposed target)
- Engage the NPCC tagging coordination group. Provide the PTF as one tool.
- Continue refining the PTF to include graphical geo-referenced query capability.