

BPA Tagging Cost Estimates FY 2012

Tag Types Funded in FY 12 By BPA

- Coded wire tags
- PIT tags
- Genetic
- Acoustic
- Radio
- Other – otolith, fin rays, scales, jaw, spaghetti, floy, and calcien

BPA Funded CWT Projects

- Assess hatchery operations for Accord and mitigation hatcheries, including run forecasting.
- Determine effects of mitigation hatcheries on ESA-listed salmon for FCRPS BiOp compliance (e.g., straying, harvest).
- Regional Mark Information System for CWT data management.
- General types of CWT-related tasks contracted include tag insertion, tag recovery, decoding/data management, and data analysis.

FY 12 CWT Tasks and Costs

Task	# Projects Annually*	FY 12 Estimated Cost**	Contractors	Species
Tag Insertion	14	\$2,401,533	PSMFC, WDFW, ODFW, USFWS, Clatsop County, and the Colville, Nez Perce, Yakama, and Warm Springs tribes.	coho, spring, summer, & fall Chinook, sockeye, redband
Tag Retrieval	11	\$2,719,173		
Decoding	8	\$499,981		
Analysis	9	\$1,032,500		
Total:	21	\$6,653,187		

*Projects may contain more than one task type, thus total is less than for individual task types.

**Snake River Comp costs are very uncertain.

BPA Funded PIT Tag Projects

- Assess hatchery operations for Accord and mitigation hatcheries. Includes run forecasting, smolt performance/physiology, others.
- BiOp compliance (e.g., habitat restoration effectiveness, RRS, smolt transport, others).
- Tasks included tag insertion, tag detection/data management, interrogator construction and maintenance, and data analysis.

FY 12 PIT Tag Tasks and Costs

Task	# Projects Annually	FY 12 Estimated Cost*	Contractors	Species
Tag Insertion	69	\$9,627,713	CRITFC, WDFW, NOAA, PSMFC, ODFW, USGS, USFWS, MFWP, IDFG, U of W, Biomark, EcoLogical, and the Shoshone-Bannock, Coeur D'Alene, Umatilla, Colville, Kootenai, Nez Perce, Spokane, Yakama, and Warm Springs tribes.	Chinook, sockeye, steelhead, coho, white sturgeon, westslope cutthroat, smallmouth bass, northern pike, pikeminnow, lake trout, rainbow & redband trout, bull trout, burbot, northern whitefish, lamprey
Detection & Data Management	51	\$7,351,464		
Analysis	53	\$3,104,180		
Total:	76	\$20,083,357		

*Snake River Comp costs are very uncertain.

BPA Funded Genetic Projects

- Develop Parental Based Tagging and Genetic Stock Index databases.
- Relative reproductive success projects.
- QA of visual identification of run type (e.g., adult winter vs. summer steelhead).
- Primarily microsatellite and SNP methods.
- Tasks funded were sampling and analysis.

FY 12 Genetic Tagging Tasks and Costs

Task	# Projects Annually*	FY 12 Estimated Cost	Contractors	Species
Sampling	11	\$818,083	IDFG, CRITFC, USFWS, NOAA, WDFW, NOAA, U of W, OSU (plus undocumented sampling sources)	Chinook, sockeye, coho, steelhead, redband
Analysis	10	\$4,782,908		
Total:	14	\$5,600,991		

* It was not possible to determine all projects that contribute samples, and an untracked cost of sampling exists in many projects where genetic samples are opportunistically collected (e.g., CWT retrieval, PIT insertion at screw traps, returning adults handles at weirs & dams, etc).

BPA Funded Radio Tag Projects

- Tracking adult migration patterns in tributaries, determining spawning and holding locations, determine ability to pass suspected migration barriers, others.
- Funded tasks were insertion, detection, and analysis.

FY 12 Radio Tagging Tasks and Costs

Task	# Projects Annually	FY 12 Estimated Cost	Contractors	Species
Tag Insertion	8	\$479,939	NOAA, ODFW, USGS, and Yakama, Kalispel, Colville, and Umatilla tribes	Chinook, lamprey, steelhead, smallmouth bass, bull trout, rainbow trout, sockeye
Detection	9	\$1,096,933		
Analysis	6	\$265,688		
Total:	11	\$1,842,560		

BPA Funded Acoustic Tag Projects

- Ocean/estuary migration, determine spawning locations, habitat use, and monitor sea lion movements.
- Funded tasks were insertion, detection, and analysis.

FY 12 Acoustic Tagging Tasks and Costs

Task	# Projects Annually	FY 12 Estimated Cost	Contractors	Species
Tag Insertion	3	\$125,498	IDFG, Kintama, CRITFC, Spokane Tribe	Lake trout, white sturgeon, burbot, kokanee, Chinook, sea lions
Detection	4	\$436,340		
Analysis	4	\$389,747		
Total:	5	\$951,585		

FY 12 Other Tagging Projects

- Hatchery operations, life cycle study.
- Predation (spaghetti, floy, and jaw).
- Often a secondary tag.
- Funded tasks were insertion, detection, and analysis.

FY 12 Other Tag Type Tasks and Costs

Task	# Projects Annually	FY 12 Estimated Cost	Tag Types	Contractors	Species
Tag Insertion	6	\$385,159	Otoliths, Fin rays, scales, calcien mark, floy, spaghetti, jaw tags	U of W, IDFG, PSMFC, Umatilla, Spokane, and Warm Springs Tribes	Steelhead, rainbow trout, sturgeon, sockeye, pikeminnow, kokanee
Detection	3	\$84,000			
Analysis	5	\$748,680			
Total:	10	\$1,217,839			

Summary of FY 12 BPA Tagging Costs*

Tag Type	Cost	# Projects**	Tasks	Cost
CWT	\$6,653,187	21		
PIT	\$20,083,357	76	Insert	\$13,019,842
Genetic	\$5,600,991	14	Detect/Retrieve/Data Management	\$13,005,974
Acoustic	\$951,585	5	Analysis	<u>\$10,323,703</u>
Radio	\$1,842,560	11		Total = \$36,349,519
Other	<u>\$1,217,839</u>	10		
Total =	\$36,349,519			

*LSRCP costs very uncertain and incomplete, COE reimbursements not included. Pisces WE Budgets tab cost data are estimates of unknown accuracy.

** Some double counting of projects if they contained more than one tag type.

How Was The BPA Cost Data Derived?

- Taurus database queried in December, 2011 for projects in FY 11 and FY 12 with work element (WE) 158 (mark/tag animals) produced a list of 99 projects.
- It was known that the Taurus query would miss many projects with tag-related work (i.e., tagging was a milestone under a different WE, or the project was for tag recovery and/or analysis). Thus, to ID all projects with tagging-related costs, the project descriptions of all 406 active projects in Pisces in had to be skimmed, and the SOWs of all contracts read for those likely to have tag related tasks.
- If tag related tasks present, costs estimated from the “WE budget” tab, which often involved parsing the cost of a individual WEs.
- First done for FY 11 & 12 overall tagging costs. Redone later for FY 12 contracts only after all contracts issued, parsing by tag insertion, tag detection/retrieval/data management, and analysis.