

# 2010 Run Forecasts

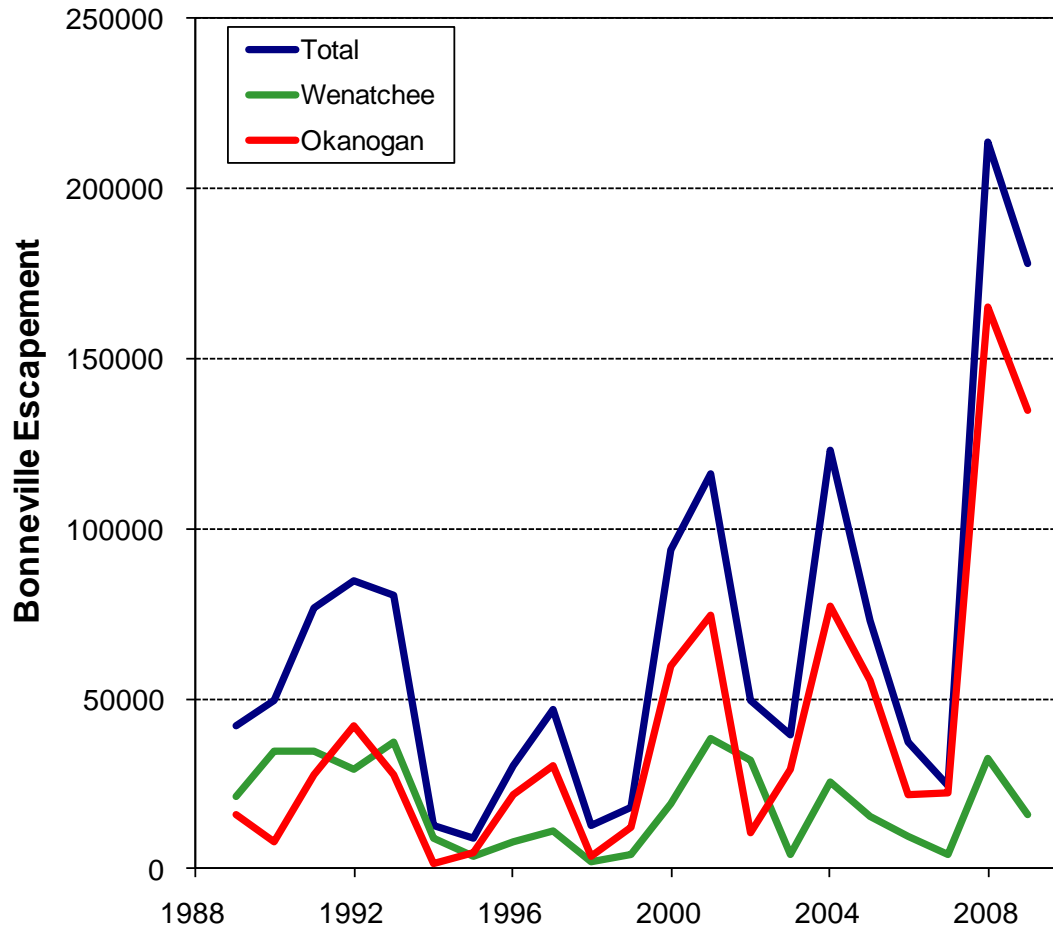
# 2009 Sockeye Review

	2009 Forecast			2009 Estimated			
	Wen.	Oka.	Total	Wen.	Oka.	Snake	Total
Three year olds (1.1)	0	4,400	4,400	200	18,400	1,100	19,700
Four year olds (1.2, 2.1)	7,800	154,500	162,300	20,400	116,300	3,000	139,700
Five year olds (1.3 and 2.2)	10,000	6,500	16,500	6,300	10,500	0	16,800
Six year olds (2.3)	0	0	0	0	100	0	100
Totals	17,800	165,400	183,200	26,900	145,300	4,100	176,300

2009 Forecast used is my unadjusted forecast adopted by TAC, rather than my conservative forecast.

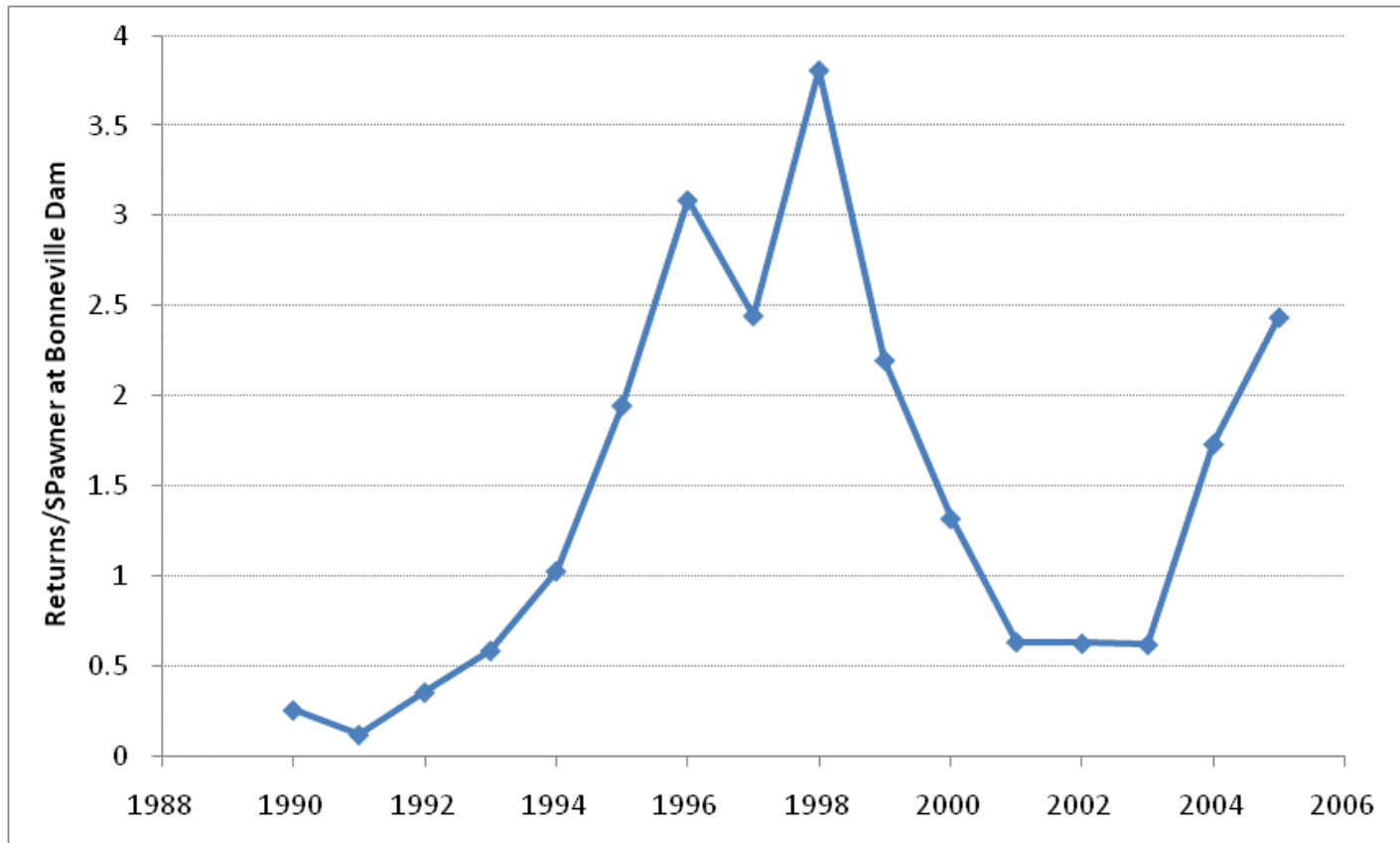
Shaded numbers are those that had the greatest deviations between estimated and forecast. Estimates are based on Bonneville sampling and PIT tag recoveries upstream.

# Estimated total, Wenatchee, and Okanogan sockeye escapement to Bonneville Dam



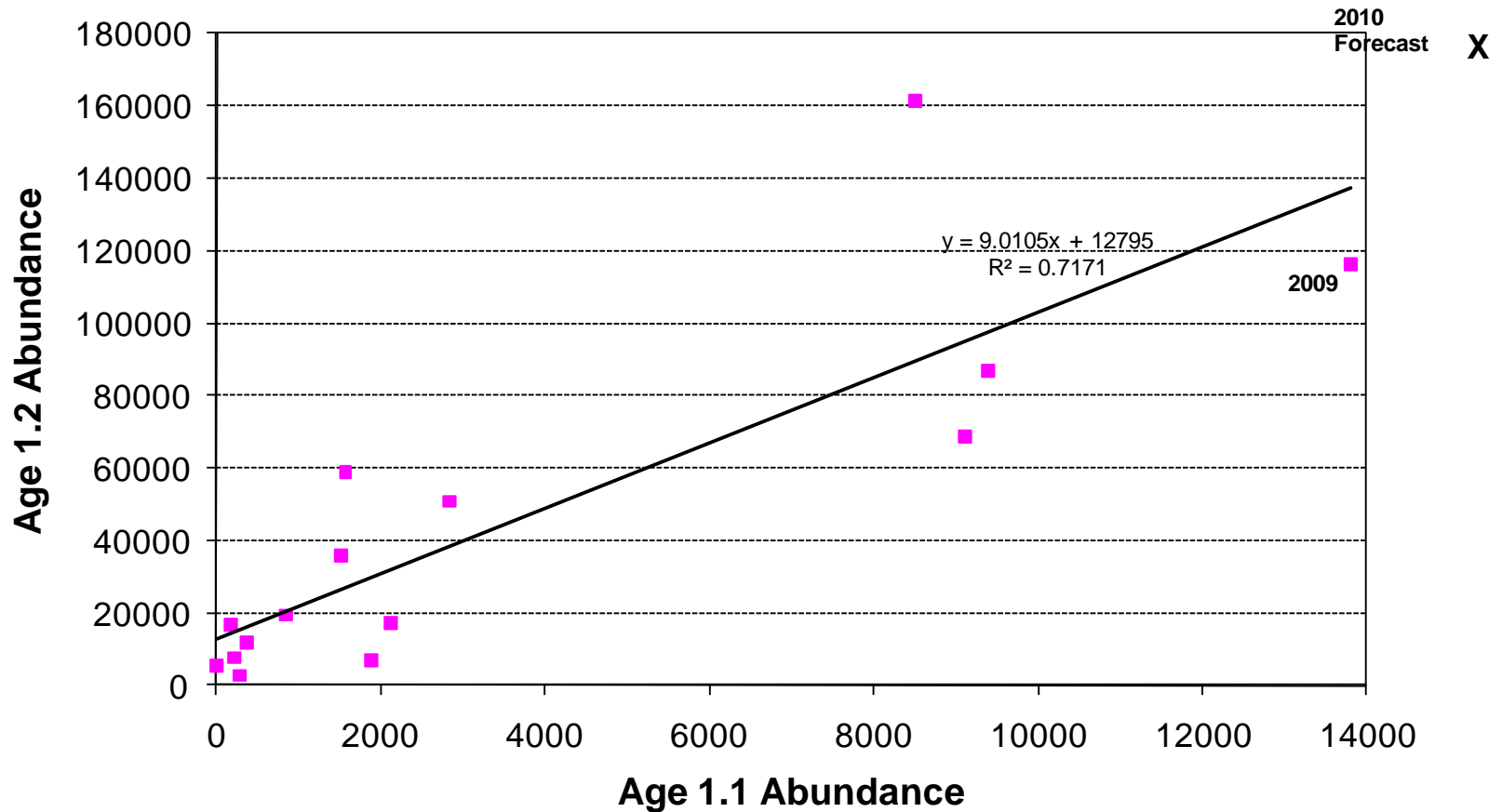
2009 was the second highest run in the past 20 years for both the composite and Okanogan run, although the Wenatchee run remains relatively weak.

# Returns per spawner at Bonneville Dam for brood years 1990-2005 based on a four year life cycle. (2006 return 37,000)



About 80% of Columbia Basin sockeye return as four-year-olds, thus the return ratio is a way of estimating population trends and future forecasts. Based on the 2006 return, not much of a return would be expected in 2010.

**Figure 3. Relationship between the abundance of Age 1.1 Okanogan sockeye salmon and the abundance of Age 1.2 Okanogan sockeye salmon returning the following year (1990-2005 brood years)**



However, the Okanogan 4-year-old forecast is huge based on 2009 3-year-old returns! But can this be given only 37,000 returns of all stocks to Bonneville in 2006?

# 2010 Forecast

	Wenatchee	Okanogan	Total
Three year olds (1.1)		3,200	3,200
Four year olds (1.2)	5,500	100,000	105,500
Five year olds (1.3 and 2.2)	8,800	7,100	15,900
Total	14,300	110,300	124,600

Regression method forecast: 203,000 which means a 4 year ratio of 6.5, only exceeded in 1944. This is entirely driven by the record (since 1985) high jack count at Bonneville Dam. But how representative is sampling at Bonneville Dam? Bonneville trap changes imposed on us in 2009 resulted in the trap trapping almost twice as many jack Chinook as it should have (67% versus 39% based on previously PIT tagged fish). We are fighting for changes in 2010 and this dispute was recently elevated by WDFW over steelhead sampling impacts. Sockeye selectivity is unknown due to insufficient previously PIT tagged fish. Wells data doesn't help as it is selective against jacks. Preliminary spawning ground data confirmed a high jack escapement in 2009 reinforcing my high 2010 escapement estimate. (However, spawning ground data presented earlier today appears to counter that.) DFO acoustic trawl surveys of Lake Osoyoos indicate very high smolt abundance outmigrating in 2008.

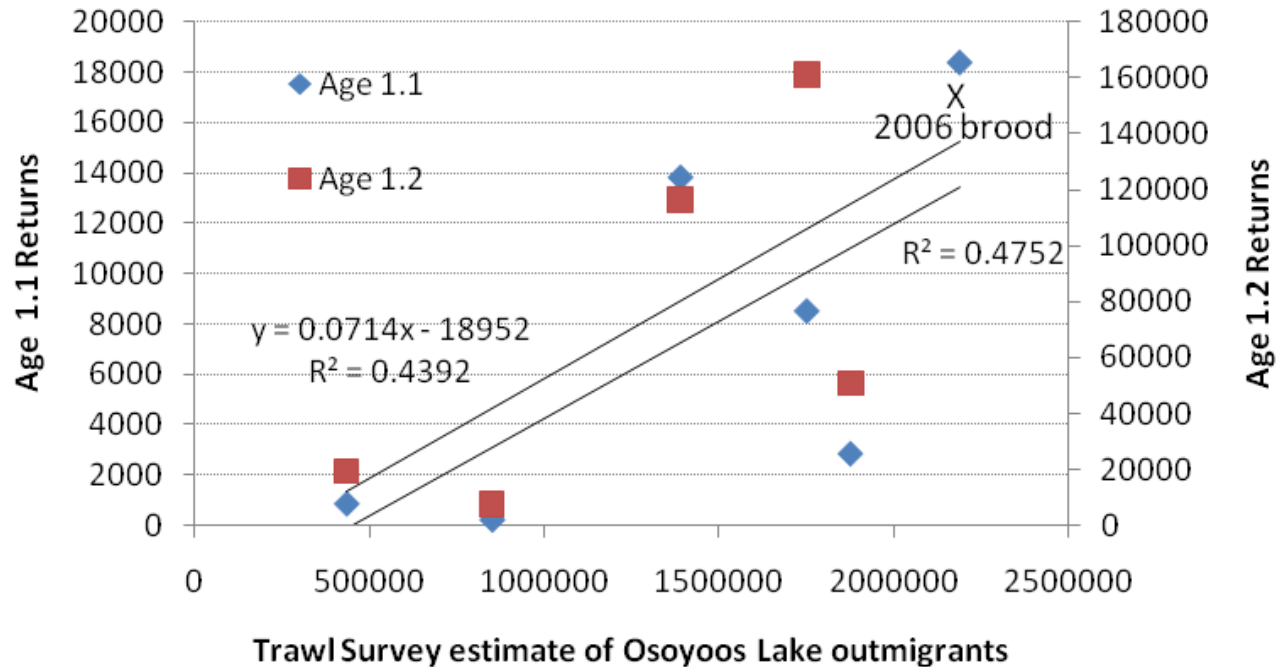
I went conservative again in 2010 and reduced my Okanogan 4-year-old estimate to 100,000 to get the above forecast. This "conservative" estimate was accepted by TAC.

## 2010 Chinook and Steelhead forecasts

Run	Description		2009 Forecast	2009 Return	2010 Forecast
Spring Chinook	Upper Columbia	Total	23,100	17,400	57,300
		<i>Wild</i>	2,700	1,800	5,700

Steelhead forecasts are not yet available and several e-mails have not been returned with summer Chinook estimates.

# Relationship between trawl survey estimate of Osoyoos Lake outmigrants and return of Age 1.1 and Age 1.2 Okanogan sockeye salmon to Bonneville Dam for the same brood year



Data from DFO acoustic trawl estimates presents a good relationship between estimates and returns of jacks the following year and 2 ocean fish two years later. The 2008 estimate forecast a return of over 150,000 2 ocean Okanogan fish in 2010.