

# Pelton Round Butte Fish Facilities Annual Report, 2008

Richard L. Madden  
Portland General Electric  
Madras, Oregon  
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## **Introduction**

The Pelton Round Butte Project is a three-dam hydroelectric facility (Federal Energy Regulatory Commission License No. 2030) located on the Deschutes River in central Oregon. The Project begins with the Reregulating Dam at rkm 161. Presently, there is no upstream or downstream fish passage past the project. The Pelton trap is located immediately downstream of the Reregulating Dam. All fish attempting to migrate upstream are counted, and these counts have been continuous starting in 1956 (Madden 2006). It was originally intended to be a temporary trap-and-haul facility until the completion of the permanent volitional passage facilities were constructed (Ratliff and Schulz 1999). After several years of unsuccessful passage, Round Butte Hatchery was constructed in 1972, and the Pelton trap began to be used as a counting and brood collection facility. In 1984, one of the Portland General Electric (PGE) biologists retired. At this time, the operation responsibility was given to the Oregon Department of Fish and Wildlife (ODFW) Round Butte hatchery personnel. With the issuance of the FERC license in June 2005 for the Pelton/Round Butte Project, PGE is now responsible for operation of the Pelton fish trap. The ODFW is responsible for operating the Round Butte Hatchery. Thus, long-term run size data and run timing are gathered for each species including spring Chinook and fall Chinook salmon, sockeye salmon, and summer steelhead. Occasionally, Coho salmon are also observed. Return frequencies for hatchery releases of marked spring Chinook and summer steelhead are determined from these counts.

Because of the high numbers of fish observed, this is also a major location for the re-observation of previously tagged salmon and steelhead. Both the Tribal Natural Resource Department and ODFW have tagging operations downstream from which they make population estimates. Recovery of tagged fish at the Pelton Trap is a major contributor of data from which run numbers for these populations are estimated. Because of the importance of this data, it is critical that both the species and mark be accurately determined and recorded along with the tag number.

This report contains current and historical summaries of the species and numbers of fish captured in the Pelton trap (Figures 1-12, Appendix 1).

## **REFERENCES**

- Keil, J., K. Kautz, J.A. Manion, 2006. Agreement related to the operation of the Round Butte Hatchery and related facilities. Portland General Electric Company, Portland Oregon.
- Madden, R.L. 2006. Pelton Round Butte fish facilities annual report. Portland General Electric Company, Portland, Oregon.
- Nehlsen, W. 1995. Historical salmon and steelhead runs of the upper Deschutes River and their environments. Portland General Electric. Portland, Oregon.
- Ratliff, D. and E.E. Schulz 1999, Fisheries program at the Pelton Round Butte Hydroelectric Project (Oregon) 1956-1995. Portland General Electric Company. Portland, Oregon.

## **Appendix 1.**

## 2007-2008 Summer Steelhead (Pelton Trap)

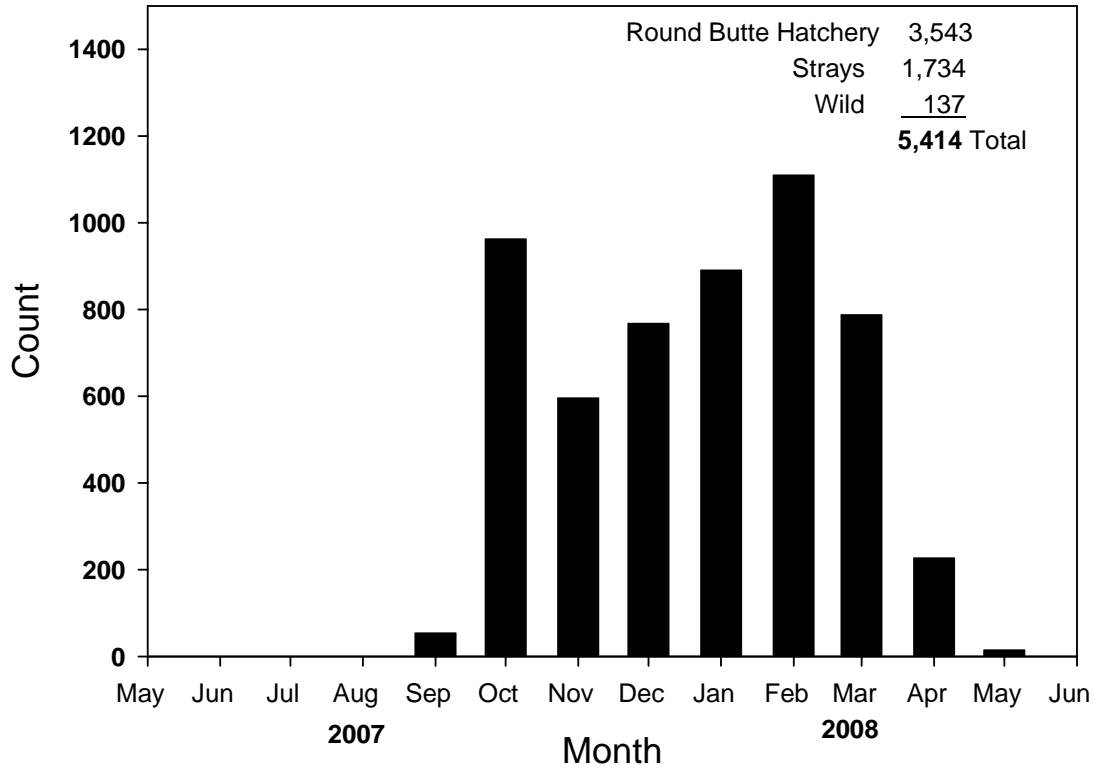


Figure 1. Timing distribution of summer steelhead captured in the Pelton trap during the 2007-2008 run year.

## 1956-2008 Summer Steelhead (Pelton Trap)

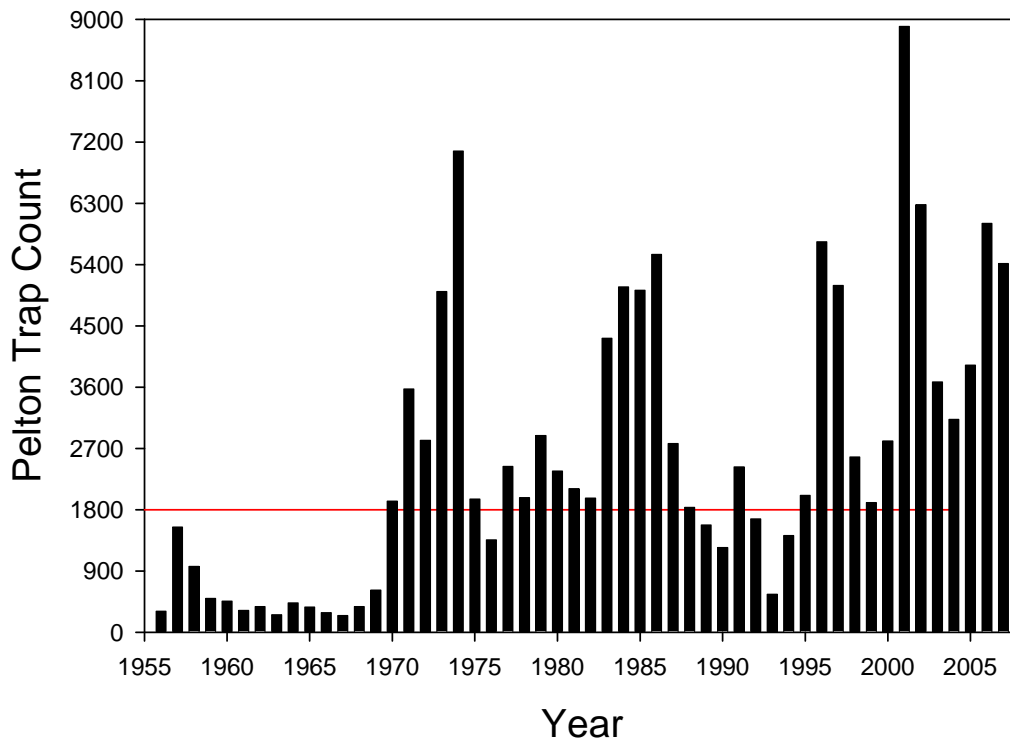


Figure 2. Historic run totals of summer steelhead at the Pelton trap from 1956-2008. Starting in 2005, the new license agreement requires a hatchery production release goal of 162,000 yearly summer steelhead smolts and not to exceed 78,000 total pounds for summer steelhead and spring Chinook combined (Keil et al. 2006). The horizontal line represents the old license agreement goal for adult returns of summer steelhead (average 1800 adults).

### 2008 Spring Chinook (Pelton Trap)

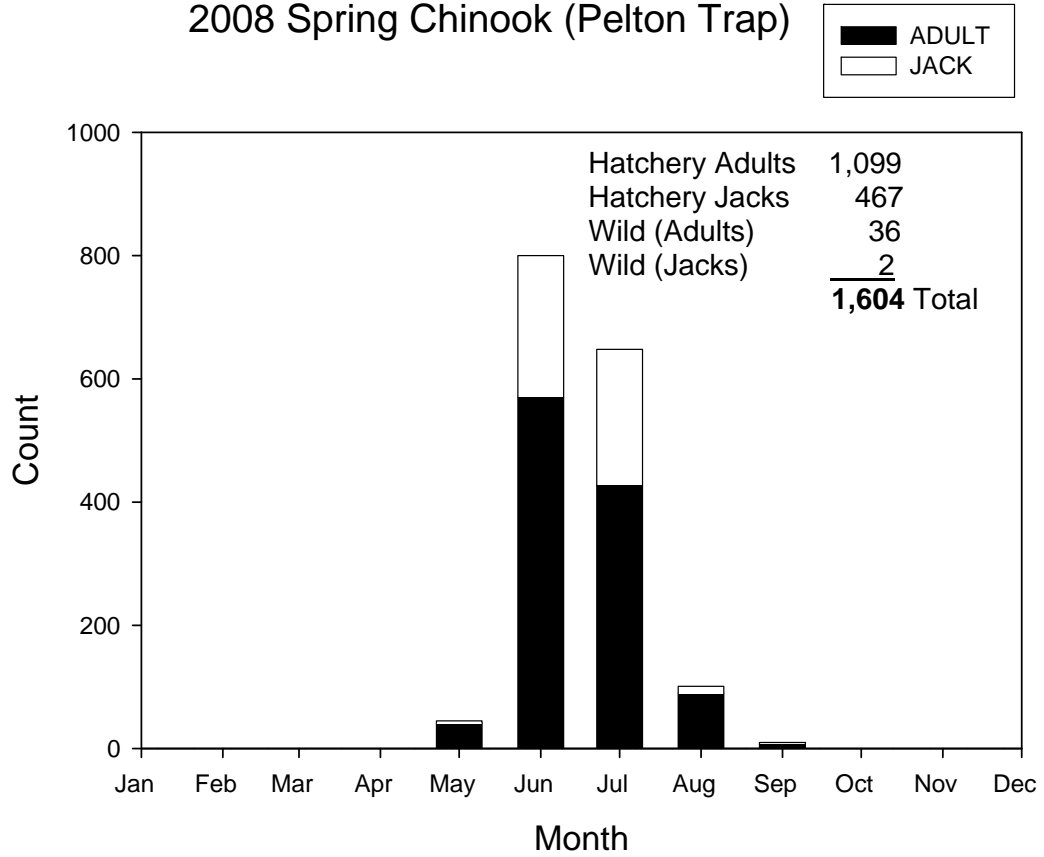


Figure 3. Timing distribution of spring Chinook captured in the Pelton trap during the 2008 run year.

## 1957 to 2008 Spring Chinook (Pelton Trap)

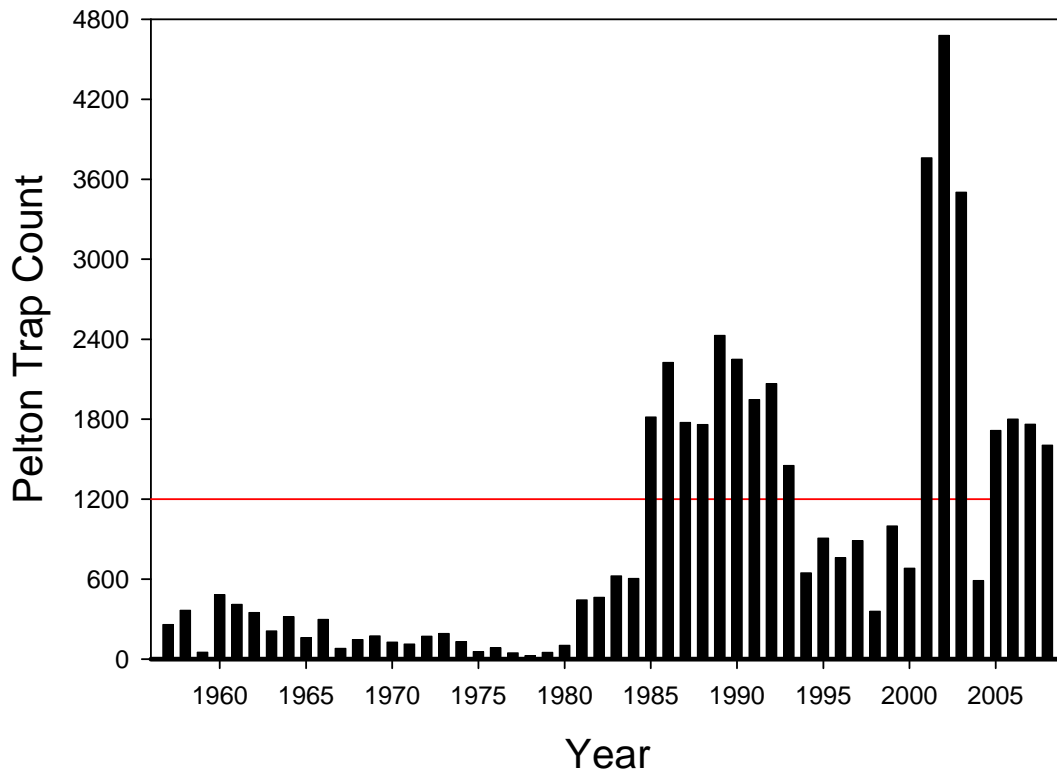


Figure 4. Historic run totals of spring Chinook at the Pelton trap from 1957-2008. Starting in 2005, the new license agreement requires a hatchery production release goal of 240,000 yearly spring Chinook smolts and not to exceed 78,000 total pounds for spring Chinook and summer steelhead combined (Keil et al. 2006). The horizontal line represents the old license agreement goal for adult returns of spring Chinook (average of 1200 adult, which 600 were female).



### 2008 Fall Chinook (Pelton Trap)

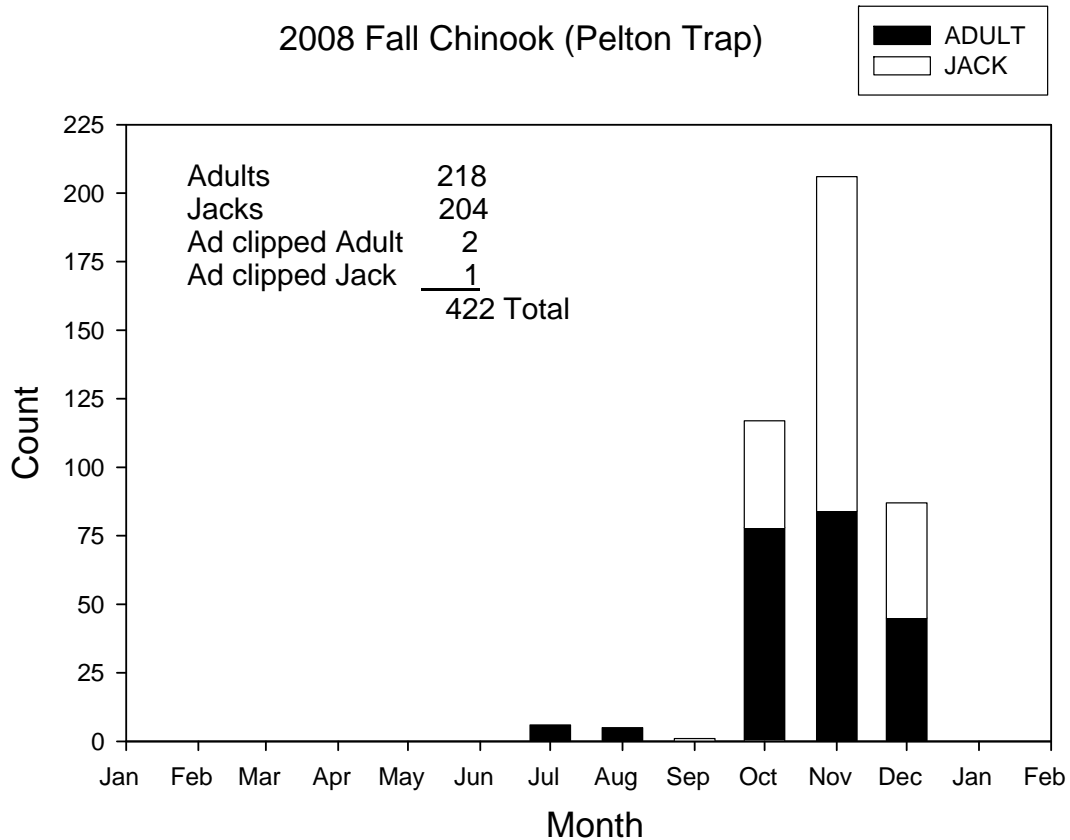


Figure 5. Timing distribution of fall Chinook captured in the Pelton trap during the 2008 run year. Almost all fall Chinook returning to the Deschutes River are wild and unmarked. Fall Chinook with an adipose clip was considered part of a lower river fall Chinook study being conducted by the Confederated Tribes of Warm Springs.

### 1956 - 2008 Fall Chinook (Pelton Trap)

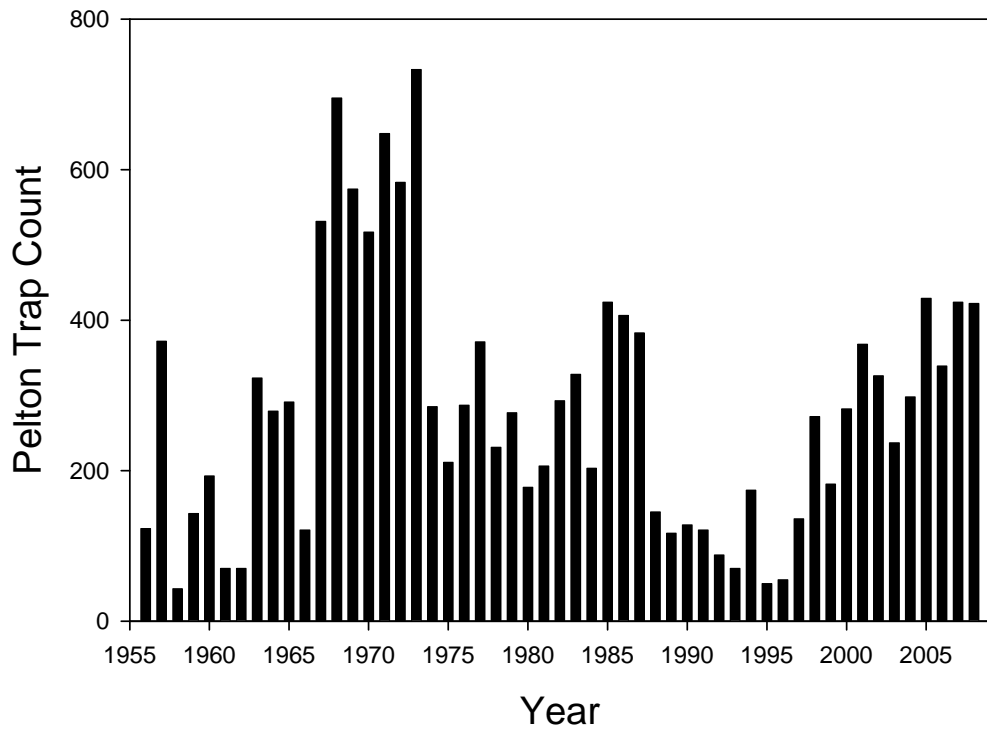


Figure 6. Historic run totals of wild fall Chinook at the Pelton trap from 1956-2008. There is no hatchery program for wild fall chinook on the Deschutes River. Most fall Chinook in the Deschutes River are main-stem spawners.

## 2008 Sockeye and Kokanee (Pelton Trap)

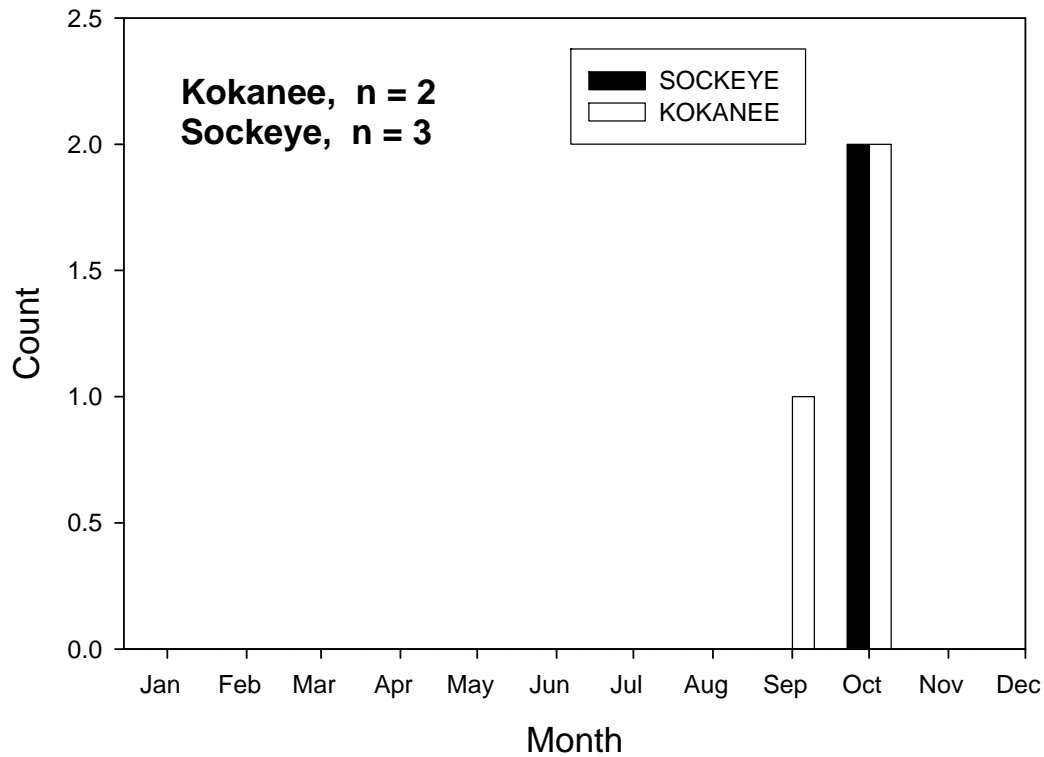


Figure 7. Timing distribution of sockeye salmon and kokanee salmon captured in the Pelton trap during the 2008 run year. The two groups were separated according to size at the time of capture (fish less than 400mm were considered kokanee, and fish greater than or equal to 400mm were considered sockeye).

## 1956-2008 Sockeye (Pelton Trap)

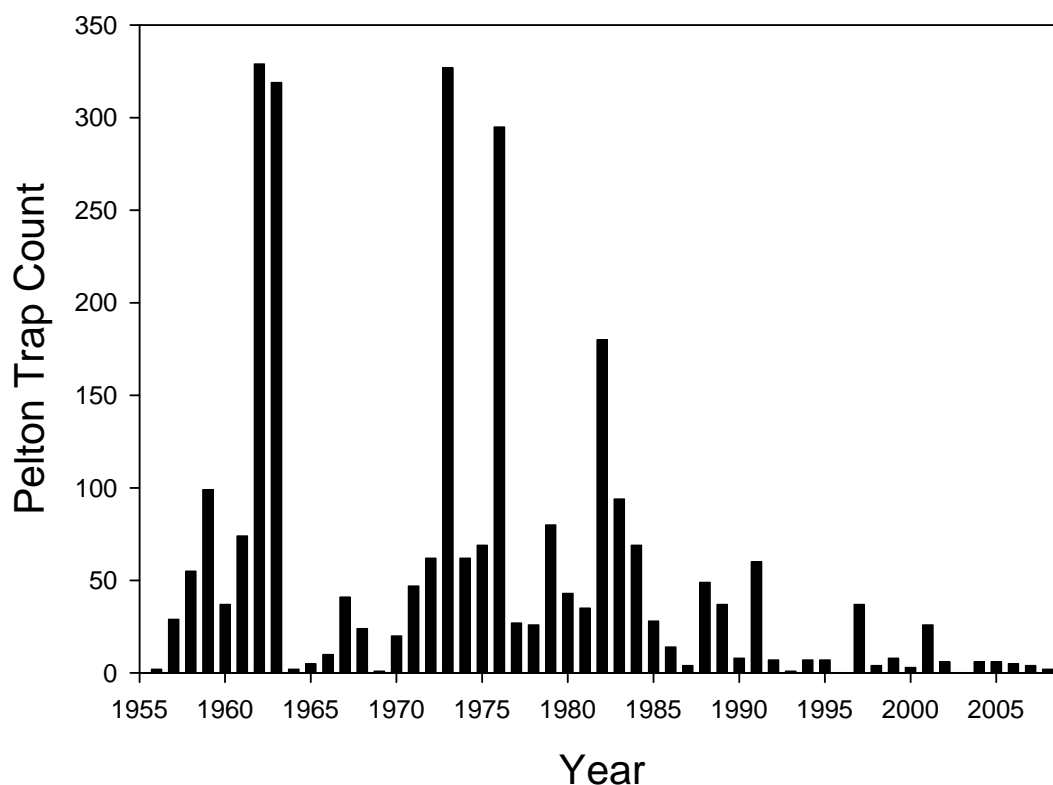


Figure 8. Historic run totals of sockeye salmon at the Pelton trap from 1956-2008. The State released sockeye (out-of-basin stock) from the Spring Creek Hatchery on the upper Metolius River from 1948 through 1961 (Nehlsen 1995). The returns are evident in the numbers of sockeye returning to the Pelton trap through 1963. From the mid-1960s to present, all but three annual counts were below 100 sockeye.

## 2008 Bull Trout (Pelton Trap)

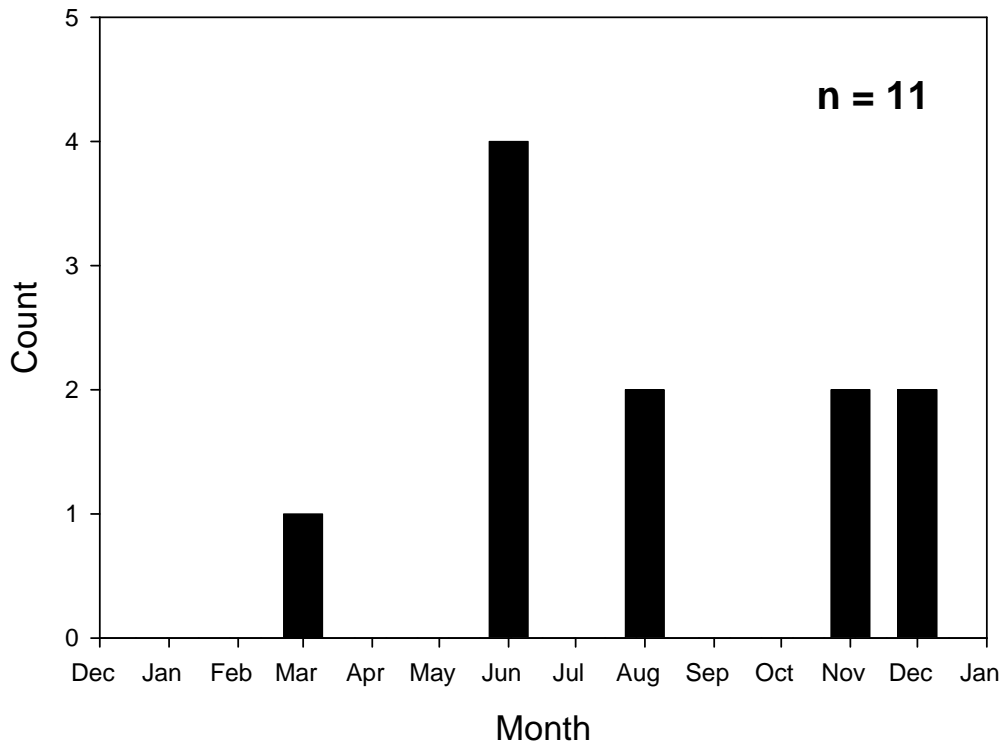


Figure 9. Eleven bull trout were captured in the Pelton trap between March and December of 2008. Most were floy-tagged, and released back to the lower Deschutes River. This was done as part of a population study for bull trout in the lower Deschutes River.

## 2008 Rainbow Trout (Pelton Trap)

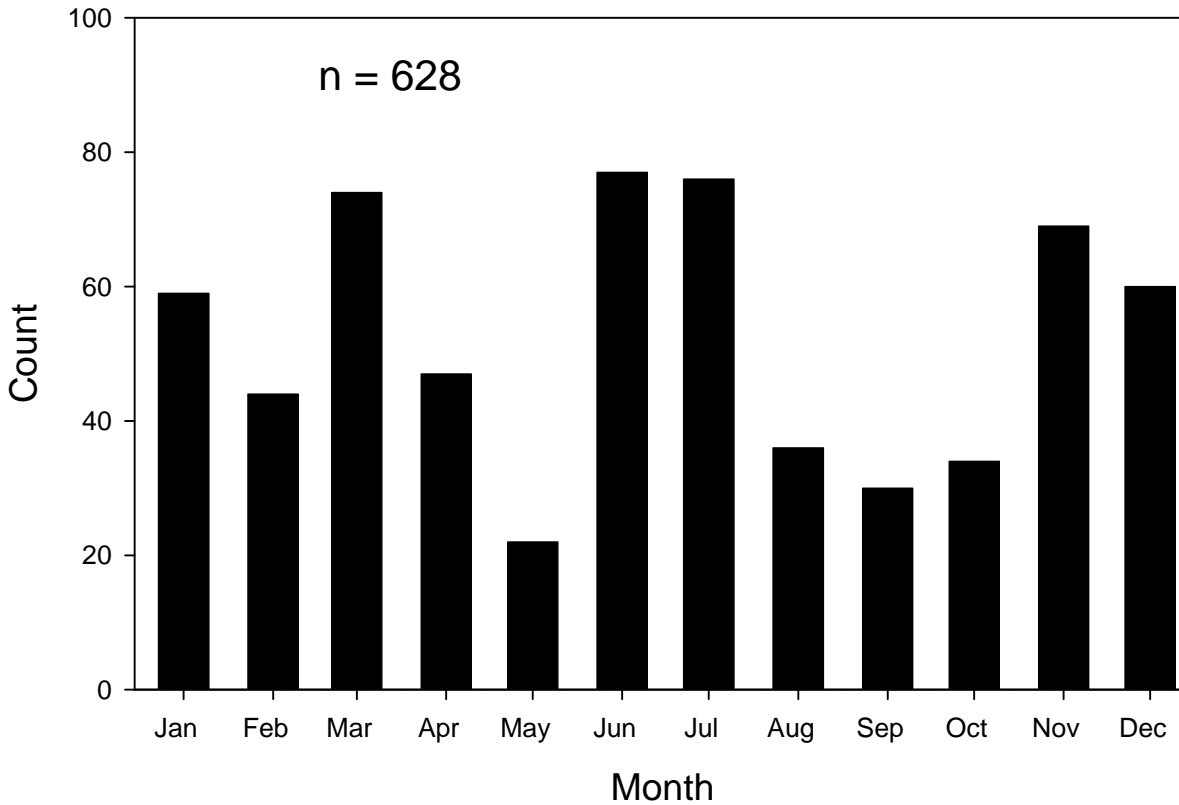


Figure 10. Timing distribution of rainbow trout captured in the Pelton trap during the 2008 run year. Rainbow trout are not marked and are released unharmed back into the Deschutes River. Since no marking occurs, it is likely that some of these fish return to the trap and are counted more than once.

## 2008 Coho Salmon (Pelton Trap)

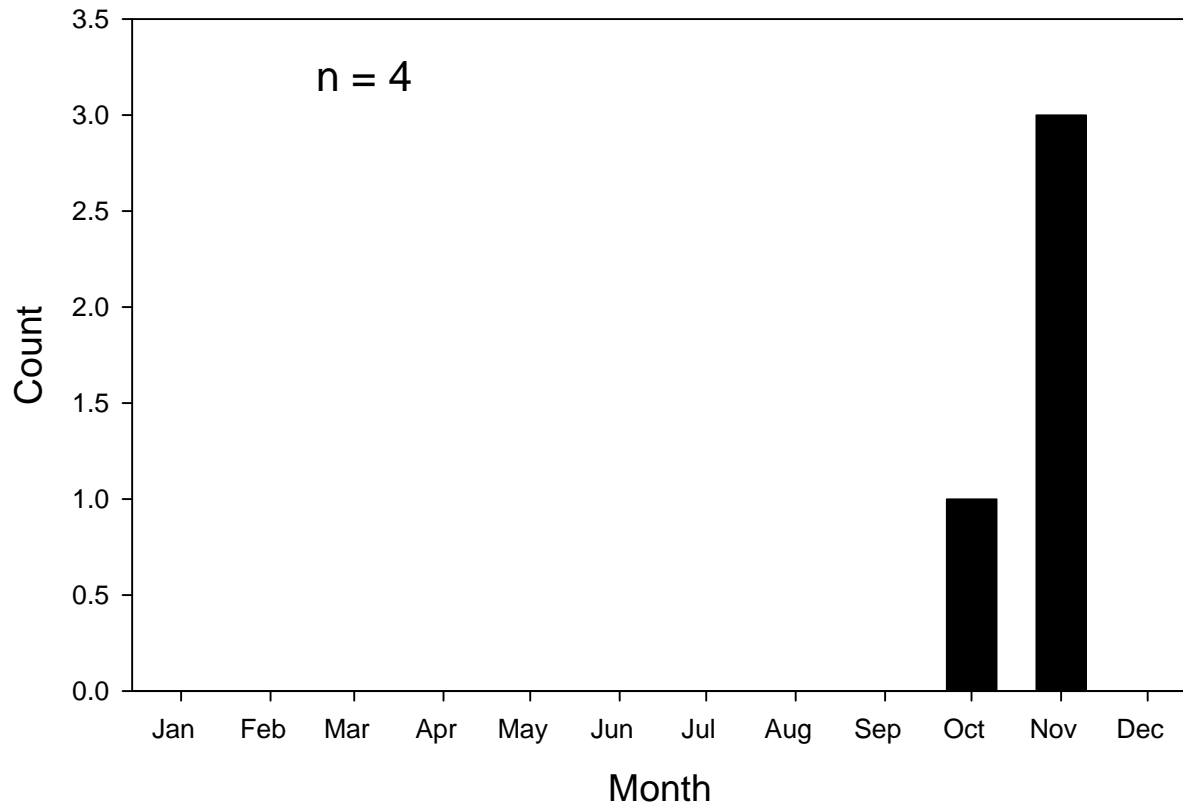


Figure 11. During 2008 a total of four Coho salmon were captured at the Pelton trap. All Coho captured were killed and given to the Confederated Tribes of Warm Springs or killed and buried. At this time, we are unsure where these fish are originating from, but it is thought that these fish are strays from the Mid-Columbia.

### 2000-2008 Coho (Pelton Trap)

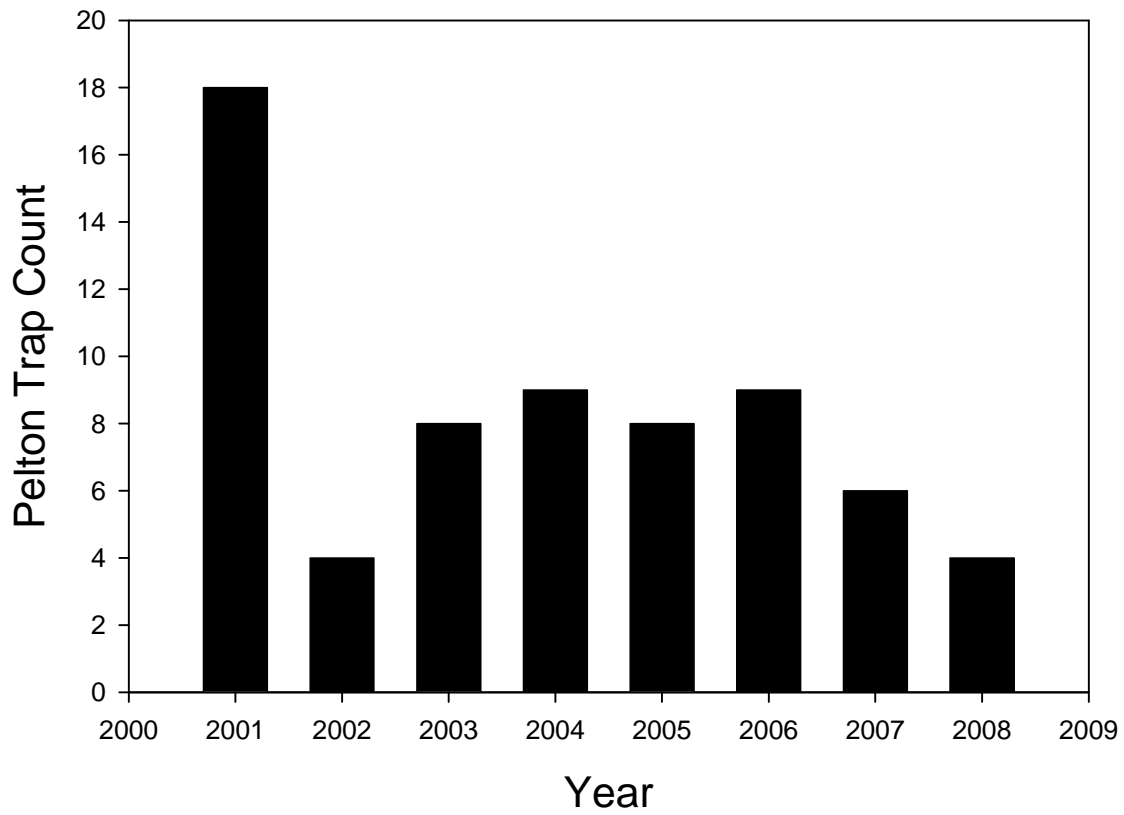


Figure 12. Historic run total of Coho salmon at the Pelton trap from 2000-2008.



Yearly Distribution of Upstream Migrants Captured in Pelton Fish Trap for 2007										
Source Species		Mark	Distribution Codes						Total	
			02	04	10	11	13	14		
Wild	bts	Adult		54						54
Species Totals:			0	54	0	0	0	0		54
Wild	brt	Adult		1						1
Species Totals:			0	1	0	0	0	0		1
Wild	but	Adult		5						5
Species Totals:			0	5	0	0	0	0		5
Wild	chl	Adult		5						5
Wild	chl	Jack		1						1
Wild	chl	Adult		248						248
Wild	chl	Jack		170						170
Species Totals:			0	424	0	0	0	0		424
RBH	chs	Adult	588		522	41				1151
RBH	chs	Jack	34		359	40				433
HR	chs	Adult				2				2
HR	chs	Jack			33	2				35
HR	chs	Adult			2					2
HR	chs	Adult			63	6				69
HR	chs	Jack				1				1
Wild	chs	Adult		52						52
Wild	chs	Jack		16						16
Species Totals:			622	68	0	979	0	92		1761
Wild	coh	Adult			2	3	1			6
Species Totals:			0	0	2	3	0	1		6
Wild	kok	Adult		7						7
Species Totals:			0	7	0	0	0	0		7
Wild	lss	Adult		37						37
Species Totals:			0	37	0	0	0	0		37
Wild	mwf	Adult		116						116
Species Totals:			0	116	0	0	0	0		116
Wild	npm	Adult		18						18
Species Totals:			0	18	0	0	0	0		18
Wild	rbi	Adult		579						579
Species Totals:			0	579	0	0	0	0		579
Wild	soc	Adult		4						4
Species Totals:			0	4	0	0	0	0		4
RBH	sts	ADLM	566		354	625	7	521		2063
RBH	sts	ADRM	355		222	750	7	309		1643
Stray	sts	AD			58	960	16	394		1428
Stray	sts	ADLMRM			1	1				2
Stray	sts	ADLP				10		1		11
Stray	sts	ADLPRM				1				1
Stray	sts	ADLPRP				1		1		2
Stray	sts	ADLV			3	134	6	56		199
Stray	sts	ADLVLP				2				2
Stray	sts	ADLVRV				2				2
Stray	sts	ADLRV				8		2		10
Stray	sts	ADRV			7	195		25		227
Stray	sts	DD			7	170	4	33		214
Wild	sts	NOMARK		200						200
Species Totals:			911	200	652	2859	40	1342		6004
Overall Totals:			1533	1513	654	3841	40	1435		9016

Distribution Code/Description
01 Round Butte Dam Forebay
02 Round Butte Dam Fish Hatchery Holding Ponds
03 Lake Simlustus
04 Deschutes River at Reregulating Dam Tailrace
05 Killed and sampled for diseases by ODFW
10 State or Country food Banks
11 Killed and given to CTWSRO
12 Died in transit
13 Dead in trap
14 Killed and buried
15 Released at capture site

Species Code/Description
bis Bridgelip Sucker
brt Brown Trout
but Bull Trout
chl Fall Chinook
chs Spring Chinook
coh Coho Salmon
kok Kokanee
lss Largescale Sucker
mwf Mountain Whitefish
npm Northern Pike/minnow
rbi Rainbow Trout
soc Sockeye
sts Summer Steelhead