APPENDIX B

Fish Trapping at the Chiwawa, Upper Wenatchee, and Lower Wenatchee Smolt Traps during 2006.

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To: HCP Hatchery Committee

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Subject: 2006 Chiwawa and Wenatchee River Smolt Estimates

Smolt monitoring programs in the Wenatchee Basin were intended to estimate the number of naturally produced migrating smolts at either the subbasin (i.e., Wenatchee) or watershed scale (i.e., Chiwawa) depending on the target stock (Table 1). In addition, population estimates of hatchery sockeye emigrating from Lake Wenatchee are used to calculate post release survival (i.e., subyearling parr to yearling smolt). The number and size of smolt traps used are based on water depth and river discharge at each of the locations. Smolt traps were located downstream from all (i.e., Chiwawa spring Chinook, Wenatchee spring Chinook, and Wenatchee sockeye), or the majority (i.e., Wenatchee summer Chinook and Wenatchee steelhead) of the spawning areas (Figure 1).

Table 1. Target stocks and corresponding smolt trapping locations used in 2006.

Stock	Smolt trap	Number and size of trap(s)
Chiwawa spring Chinook	Chiwawa	Single 2.6 m diameter
Wenatchee sockeye	Lake Wenatchee	Two 1.5 m diameter
Wenatchee spring Chinook	Monitor (Lower Wenatchee)	Two 2.6 m diameter
Wenatchee summer Chinook	Monitor (Lower Wenatchee)	Two 2.6 m diameter
Wenatchee steelhead	Monitor (Lower Wenatchee)	Two 2.6 m diameter

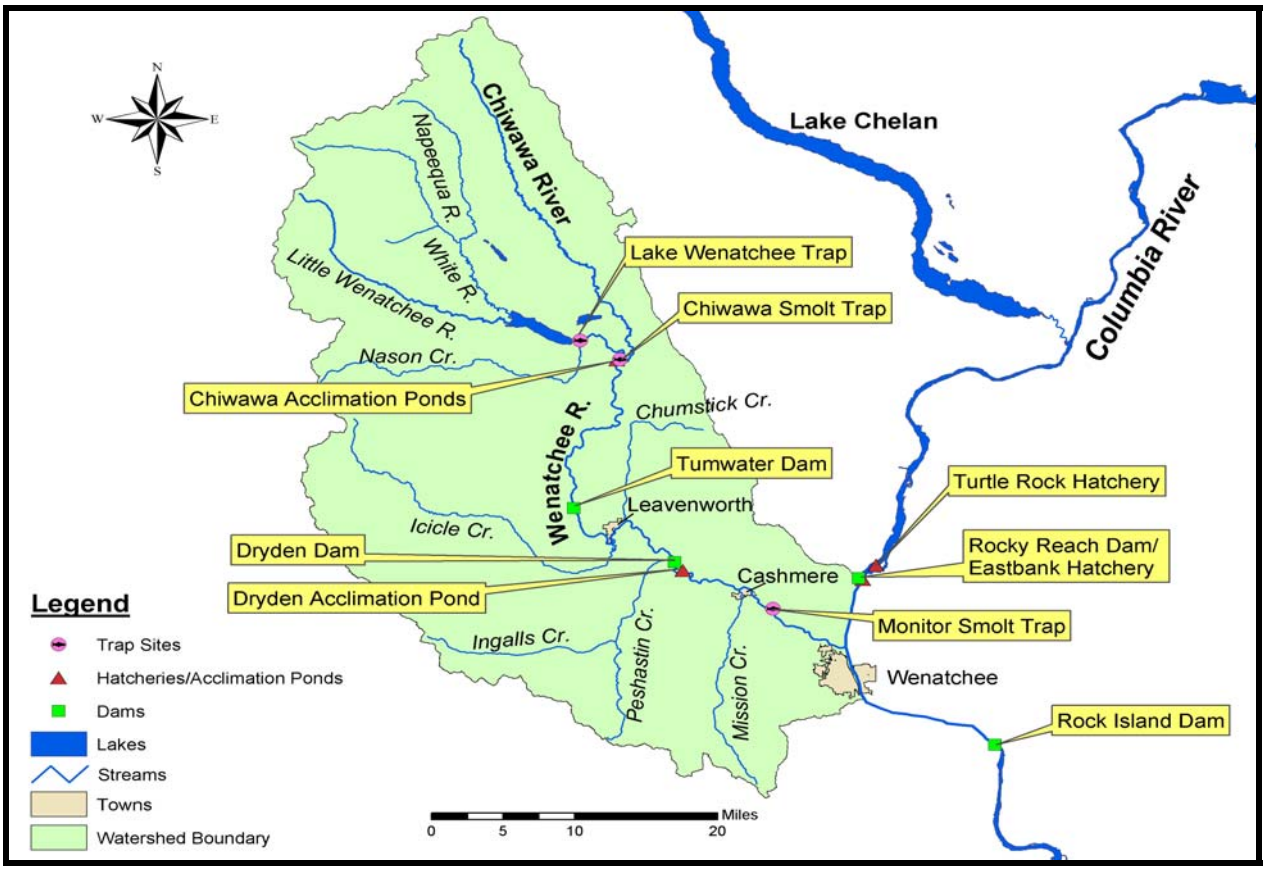

Figure 1. Locations of the upper Wenatchee (Lake Wenatchee Trap), Chiwawa, and lower Wenatchee River (Monitor Smolt Trap) smolt traps.

Methods

Fish were removed from the trap at a minimum every morning and placed in an anesthetic solution of MS-222. Fish were identified to species and counted. Non-target species were allowed to fully recover in fresh water prior to being released in an area of calm water downstream from the smolt trap. Target species were held in separate live boxes when needed for mark/recapture efficiency trials conducted in the evening.

Fork length was measured to the nearest millimeter and weight to the nearest 0.1 g. A Fulton type condition factor ($WH10^5/FL^3$) was calculated for all target species. The degree of smoltification (parr, transitional, or smolt) was assessed by visual examination. Juvenile spring Chinook and steelhead were classified as parr if parr marks are distinct, transitional if parr marks are not distinct, and smolts if parr marks were not visible and the fish exhibited a silvery appearance.

Mark/recapture efficiency trials were conducted throughout the trapping season. The frequency of mark/recapture trials was dependent on the number of fish captured (i.e., no less than 100) and the river discharge. These trials were conducted over the widest range of discharge possible

(interval depends on trap location). Fish for the mark/recapture trials were marked by clipping the tip of either the upper or lower lobe of the caudal fin. Chinook fry (i.e.,, FL < 50 mm) used in mark/recapture trials were dyed using a Bismark brown solution. Fish were placed in a live pen to recover for at least 8 h before being transported to the release site upstream of the trap. Marked fish were distributed evenly on both sides of the river in pools or in calm pockets of water around boulders. In the case of the upper Wenatchee River trap, marked fish were transported and released into Lake Wenatchee. Marked fish were released between 1800 h and 2000 h. All recaptures of marked fish typically occurred within 48 h after each trial. Emigration estimates were calculated using estimated daily trap efficiency derived from the regression formula using trap efficiency (dependent variable) and discharge (independent variable).

Trap efficiency was calculated using the following formula:

$$\text{Trap efficiency} = E_i = R / Mi,$$

where E_i is the trap efficiency during time period i; M_i is the number of marked fish released during time period i; and R_i is the number of marked fish recaptured during time period i. The number of fish captured will be expanded by the estimated daily trap efficiency (e) to estimate the daily number of fish migrating past the trap (N_i) using the following formula:

$$\text{Estimated daily migration} = \hat{N}_i = C_i / \hat{e}_i$$

where N_i is the estimated number of fish passing the trap during time period i; C_i is the number of unmarked fish captured during time period i; and e_i is the estimated trap efficiency for time period i based on the regression equation.

The variance for the total daily number of fish migrating past the trap will be calculated using the following formulas:

$$\text{Variance of daily migration estimate} = \text{var}\left[\hat{N}_i\right] = \hat{N}_i^2 \frac{\text{MSE}\left(1 + \frac{1}{n} + \frac{\left(X_i - \overline{X}\right)^2}{(n-1)s_X^2}\right)}{\hat{e}_i^2}$$

where X_i is the discharge for time period i, and n is the sample size. If a relationship between discharge and trap efficiency was not present (i.e., $P < 0.05$; $r^2 \sim 0.5$), a pooled trap efficiency was used to estimate daily emigration:

$$\text{Pooled trap efficiency} = e_p = \sum R / \sum M$$

The daily emigration estimate will be calculated using the formula:

$$\text{Daily emigration estimate} = \hat{N}_i = C_i / e_p$$

The variance for daily emigration estimates using the pooled trap efficiency will be calculated using the formula:

$$\text{Variance for daily emigration estimate} = \operatorname{var}\left[\hat{N}_i\right] = \hat{N}_i^2 \frac{e_p(1-e_p)/\sum M}{e_p^2}$$

The total emigration estimate and confidence interval will be calculated using the following formulas:

$$\text{Total emigration estimate} = \sum \hat{N}_i$$

$$\text{95\% confidence interval} = 1.96 \times \sqrt{\sum \operatorname{var}\left[\hat{N}_i\right]}$$

Results

Chiwawa River Smolt Trap

2004 Brood Year

The Chiwawa River smolt trap was located approximately 1 km upstream from the confluence with the Wenatchee River. The smolt trap operated between 28 February and 27 November. During that time period the trap was inoperable for nine days as a result of high river flows, debris, snow/ice, or mechanical failure. During breaks in operation, the estimated number of Chinook captured was calculated from the mean of number of fish captured two days prior and two days after the break in operation. The trap was operated in two positions dependent on river discharge (i.e., lower > 12 m^3/s and upper < 12 m^3/s). Daily trap efficiencies were estimated from two regression models (independent variable = discharge) depending on trap position and age class (i.e., subyearling and yearling Chinook).

Wild yearling spring Chinook (2004 brood) were primarily captured between 2 March and 25 June (Figure 2). We captured 4,974 yearling Chinook (Appendix A) and estimated 5,071 yearling Chinook would have been captured if the trap had operated without interruption. Mortality for the season totaled 14 yearling spring Chinook (0.3%). Seven mark/recapture efficiency trials were conducted in the lower position with a mean (SD) trap efficiency of 19.9 (8.9) %. In 2006, mark/recapture trials could not be conducted at all required discharge levels due to low catch rates. Mark/recapture trials conducted in 2006 were combined with historical trials (2003 – 2005) in order to increase the range of river discharge used in the regression model and the overall utility of the model. The 2006 regression model for the lower position ($r^2 = 0.81$, $P < 0.01$) was used to estimate yearling Chinook. The estimated number (95% C.I.) of yearling Chinook that emigrated from the Chiwawa River in 2006 was 72,080 (±330,373). The extremely large confidence interval was due to the number of fish captured at very high discharge (i.e., low trap efficiency). Fish captured during the months of May and June account for only 61% of the estimated population, but 96% of the total variance. More simply, low trap efficiency (~ 0.5%) during this period was responsible for the large reported variance.

2005 Brood Year

Wild subyearling spring Chinook were captured between 6 March and 28 November. We captured 14,542 subyearling Chinook and estimated 15,571 subyearling Chinook would have been captured if the trap had operated without interruption (Figure 2). Mortality for the season totaled 95 subyearling spring Chinook (0.7%). Sixteen mark/recapture efficiency trials were conducted with a mean (SD) trap efficiency of 32.7 (11.3) %. The 2006 subyearling regression model (i.e., upper trap position) also included data from previous years (2001-2004, 2006; $r^2 = 0.82$, $P < 0.01$) increasing the utility of the model over a greater range of river discharge. However, subyearling Chinook were also captured while the trap was operated in the lower position. Hence, a separate regression model was used for that time period ($r^2 = 0.62$, $P < 0.01$). In 2006, the estimated number (95% C.I.) of subyearling spring Chinook (including fry) that moved downstream of the Chiwawa River smolt trap during the sampling period was 133,758 (± 42,159). The estimate should be considered conservative because several days during peak emigration river discharge exceeded the range of the regression model. Hence, the estimated trap efficiency for those days was actually lower than that estimated using the regression model.

The proportion of the subyearling Chinook that were captured and classified as fry was less in 2006 (10%) than 2005 (24%). Typically the number of fry captured comprises less than 3% of the total number of Chinook captured for any given brood year. The large proportion of fry captured in 2002, 2003, 2004, and 2005 was attributed to a combination of large escapement, proximity of redds to the trapping location, and high water velocity and discharge during the emergence period. We have been unable to determine if fry captured in the smolt trap migrate upstream at a later date and rear in the Chiwawa River or reside downstream of the smolt trap until the following spring and emigrate as yearling smolts. Hillman and Miller (2002) reported large numbers of subyearling chinook in tributaries of the Chiwawa River where no spawning had been reported. These data suggest considerable movement during the summer rearing period. Due to the high likelihood that fry do migrate upstream and reside in the Chiwawa River, fry have not been included in our emigrant production estimates. Excluding the fry from the estimate, the number of subyearling spring Chinook that emigrated from the Chiwawa River was 108,595 (± 38,362).

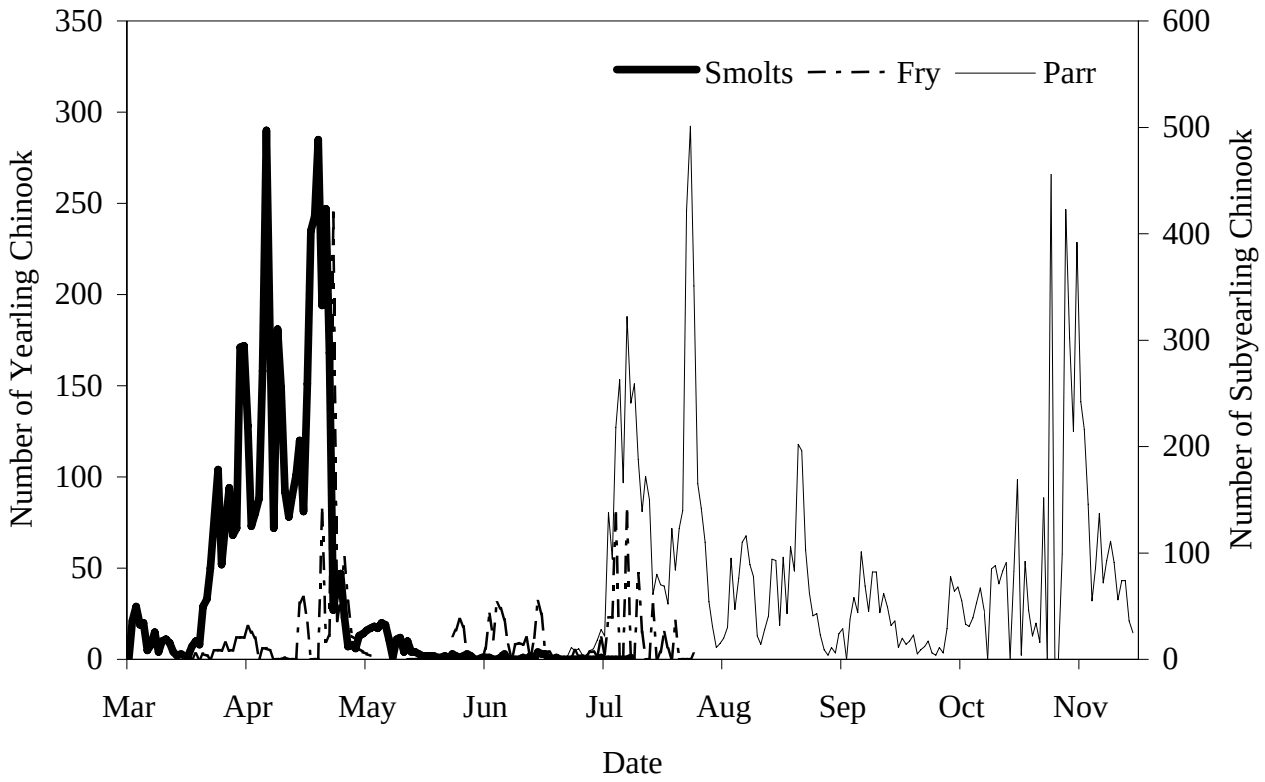

Figure 2. Daily number of Chiwawa River spring Chinook smolts, parr, and fry captured in 2006.

Emigrant Survival

The estimated total egg deposition calculated by multiplying the mean fecundity of the 2004 brood spawners (Tonseth 2006) by the total number of redds found during surveys in the Chiwawa River basin in 2004 (Murdoch et al. 2005). Egg-to-emigrant survival was calculated by dividing the estimated egg deposition by the total number of subyearling (excluding fry) that emigrated in 2005 and yearling spring Chinook that emigrated in 2006. The estimated egg-to-emigrant survival for the 2004 brood Chiwawa spring Chinook was 10.0% (Table 2).

Length and Weight

Individual length and weight measurements were recorded from a sample of the daily catch. The mean fork length (SD) of yearling and subyearling Chinook (fry excluded) captured was 94.6 (7.2) mm and 76.3 (10.0) mm, respectively (Table 3). The mean fork length of subyearling Chinook fry was 45.5 (3.0) mm.

Table 2. Estimated egg deposition (# of redds x mean broodstock fecundity) and egg-to-emigrant survival rates for Chiwawa River spring Chinook salmon.

Brood Year	Number of redds	Estimated egg deposition	Estimated number			Egg-to-emigrant survival (%)
			Subyearling	Yearling	Total emigrants	
1992	302	1,570,098	25,818	39,723	65,541	4.2
1993	106	556,394	14,036	8,662	22,698	4.1
1994	82	485,686	8,595	16,472	25,067	5.2
1995	13	66,248	2,121	3,830	5,951	9.0
1996	23	106,835	3,708	15,475	19,183	18.0
1997	82	374,740	16,228	28,334	44,562	11.9
1998	39	207,675	2,855	23,068	25,923	12.5
1999	34	166,090	4,988	10,661	15,649	9.4
2000	128	642,944	14,854	40,831	55,685	8.7
2001	1,046	4,836,704	459,784	86,482	546,266	11.3
2002	345	1,605,630	93,331	90,948	184,279	11.5
2003	111	648,684	16,881	16,755	33,637	5.2
2004	241	1,156,559	44,079	72,080	116,158	10.0
2005	362	1,436,564	108,595			

Table 3. Mean fork lengths (mm), weights (g), and body condition factor of spring Chinook captured in the Chiwawa River smolt trap during 2006.

	Yearling			Subyearling		
	Mean	SD	*N*	Mean	SD	*N*
Fork length	94.6	7.2	4,645	76.3	10.0	4,012
Weight	9.4	2.3	4,645	5.10	1.9	3,421
K factor	1.10	0.13	4,645	1.13	0.21	3,421

Nontarget Salmonids

During the trapping period, 53 steelhead smolts and 1,736 steelhead/rainbow trout parr were also captured. Mortality for the season totaled 8 steelhead juveniles (0.4%). The mean fork length (SD) of steelhead parr and smolts captured was 82.4 (28.7) mm and 171.1 (14.2) mm, respectively (Table 4). Bull trout also comprised a large proportion of incidental species captured. During the trapping period, 39 adult (>300mm) and 125 juvenile bull trout were captured (Table 5). Low numbers of fish captured prevented us from estimating the total number

of steelhead and bull trout that emigrated from the Chiwawa River during the sampling period. The monthly totals of all fish captured are listed in Appendix A.

Table 4. Mean fork lengths (mm), weights (g), and body condition factor of juvenile steelhead captured in the Chiwawa River smolt trap during 2006.

	Parr			Smolts		
	Mean	SD	*N*	Mean	SD	*N*
Fork length	82.4	28.7	1,194	171.1	14.2	53
Weight	8.0	15.6	1,184	50.1	12.5	53
K factor	1.12	0.19	1,184	0.99	0.09	53

Table 5. Mean fork lengths (mm), weights (g), and body condition factor of bull trout captured in the Chiwawa River smolt trap during 2006.

	Juvenile			Adult		
	Mean	SD	*N*	Mean	SD	*N*
Fork length	186.9	41.3	113	501.7	175.0	15
Weight	76.0	50.9	110	150.0	--	1
K factor	1.02	0.41	110	1.16	--	1

Upper Wenatchee River Smolt Trap

The upper Wenatchee River smolt traps were located approximately 0.5 km below the outlet of Lake Wenatchee. The trap operated nightly between 3 March and 17 May. On 17 May, due to flooding and large woody debris, the trap was severely damaged and pulled for the season. We captured 20,309 wild and 1,500 hatchery sockeye smolts during the sampling period (Figure 3). Mortality during the season totaled 410 wild sockeye (2.0%). This year no hatchery sockeye were killed for CWT extraction to determine the post-release survival of the two groups released in 2005 (i.e., August and November). Post-release survival data from previous years suggests that late release fish survive at a greater rate. We also captured 138 wild spring Chinook smolts and 42 juvenile steelhead. There was no mortality of wild spring Chinook during trapping. Two juvenile bull trout were captured during the sampling period. The monthly totals of all fish captured are listed in Appendix B.

A total of twelve mark/recapture efficiency trials were conducted during the sampling period, six wild and six hatchery trials. During which, 6,752 marked (i.e., caudal fin clip) sockeye were released into Lake Wenatchee and 104 were subsequently recaptured. A delay in migration and subsequent recapture of the marked fish from Lake Wenatchee negatively affected the relationship between discharge and trap efficiency (i.e., unequal probability of recapture). Both the hatchery and wild sockeye smolt production estimate was calculated using a wild and hatchery pooled daily trap efficiency (i.e., wild 98/6114 = 1.6%; hatchery 6/638 = 0.94%).

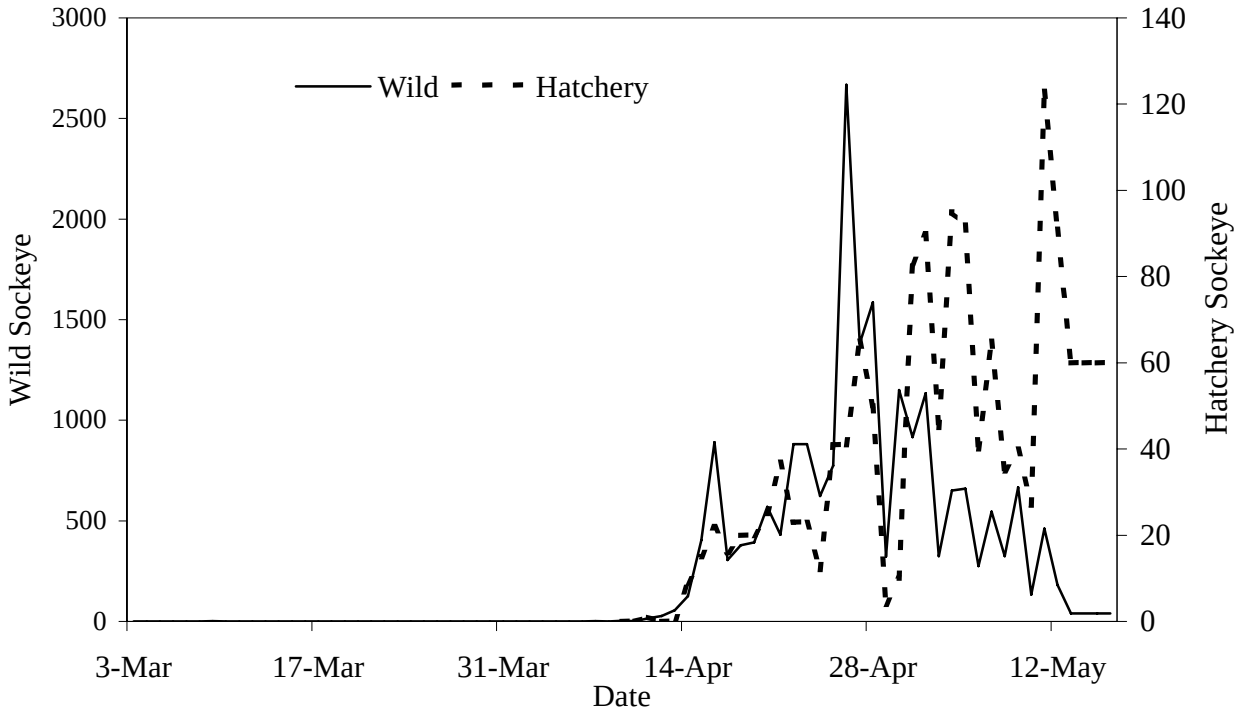

Figure 3. Number of wild and hatchery sockeye captured at the upper Wenatchee smolt trap, 2006.

The estimated smolt production (95% C.I.) for wild sockeye was 1,266,971 (±103,466). Age classes of wild sockeye were determined from scales collected randomly from the run (Table 6). Egg deposition was calculated based on the spawning escapement determined at Tumwater Dam and the sex ratio and fecundity of the broodstock (M. Tonseth, WDFW, personal communication). The egg-to-smolt survival rates for wild Wenatchee sockeye have ranged between 1.18% and 21.12% (Table 7).

The estimated number (95% CI) of hatchery sockeye that emigrated from Lake Wenatchee was 159,500 (±15,405). The estimated post-release survival rate of hatchery sockeye released into Lake Wenatchee was similar than previous years (Table 8).

Table 6. Age composition and estimated number of wild sockeye smolts emigrating from Lake Wenatchee derived from scale samples.

Run Year	Proportion of wild smolts			Total emigrants
	Age 1+	Age 2+	Age 3+	
1997	0.075	0.906	0.019	55,359
1998	0.955	0.037	0.008	1,447,259
1999	0.619	0.381	0.000	1,944,966
2000	0.599	0.400	0.001	985,490
2001	0.943	0.051	0.006	39,353
2002	0.961	0.039	0.000	729,716
2003	0.740	0.026	0.000	5,303,056
2004	0.929	0.071	0.000	5,771,187
2005	0.230	0.748	0.022	723,413
2006	0.994	0.006	0.000	1,266,971

Table 7. Estimated egg deposition (mean fecundity x estimated # of females) and egg-to-emigrant survival rates for Lake Wenatchee sockeye salmon.

Brood year	Estimated egg deposition	Estimated number of wild smolts				Egg-to-smolt survival (%)
		Age 1+	Age 2+	Age 3+	Total	
1995	4,902,120	4,174	53,549	0	57,723	1.18
1996	10,035,288	1,382,133	741,032	985	2,124,150	21.12
1997	11,796,932	1,203,934	394,196	236	1,598,366	13.55
1998	5,505,944	590,309	2,007	0	592,316	10.76
1999	1,188,488	37,110	28,459	0	65,569	5.52
2000	30,506,949	701,257	1,378,795	0	2,080,052	6.82
2001	64,100,860	4,024,884	409,754	90,427	4,525,065	7.06
2002	49,197,456	5,361,433	511,453	0	5,872,886	12.00
2003[a]	7,576,738	166,385	7,602	--	121,533	--
2004[a]	38,332,182	1,259,369	--	--	1,259,369	--

[a] Incomplete brood year

Table 8. Release-to-smolt survival rates for Lake Wenatchee hatchery sockeye.

Brood year	Release year	Run year	Number of fish released	Fork length (mm) at release (SD)	Date of release	Number of fish captured	Estimated number of smolts	Release to smolt survival
1995	1996	1997	150,808	106.0(6.2)	25 Oct	130	28,828	19.12%
1996	1997	1998	284,630	106.5(7.4)	22 Oct	279	55,985	19.67%
1997	1998	1999	197,195	122.1(7.4)	09 Nov	586	112,524	57.06%
1998	1999	2000	121,344	112.3(7.6)	27 Oct	66	24,684	20.34%
1999	2000	2001	84,466	94.4(8.9)	28 Aug	319	30,326	35.90%
1999	2000	2001	83,489	134.3(15.4)	01 Nov	548	63,720	76.32%
2000	2001	2002	92,055	122.6(7.9)	27 Aug	142	30,918	33.59%
2000	2001	2002	98,119	146.3(12.2)	27 Sept	416	90,593	92.33%
2001	2002	2003	96,486	117.9(8.7)	28 Aug	162	36,484	37.81%
2001	2002	2003	104,452	134.8(8.7)	23 Sept	465	103,838	99.41%
2002	2003	2004	98,509	72.7(5.0)	16 Jun	31	5,192	4.41%
2002	2003	2004	104,855	118.1(9.1)	25 Aug	376	98,412	85.88%
2002	2003	2004	112,419	145.4(13.7)	22 Oct	292	112,419	100.0%
2003	2004	2005	32,755	78.7(3.6)	15 Jun	0	0	0.00%
2003	2004	2005	104,879	118.4(7.0)	25 Aug	229	19,574	18.66%
2003	2004	2005	102,825	158.2(12.8)	03 Nov	1,185	102,825	100.0%
2004	2005	2006	81,428	115.8(6.7)	29 Aug	1,500	159,500	92.2%
2004	2005	2006	91,495	150.7(7.0)	2 Nov			

Lower Wenatchee River Smolt Trap

The lower Wenatchee River smolt traps were located at the West Monitor Bridge (rkm 9.6). The trap operated nightly between 8 February and 5 August. However, due to heavy debris and/or high flow the trap was not operational for 27 days (i.e., 17 February through 21 February, 13 March, 30 April, 17 May through 27 May, 3 June through 9 June, 14 June, and 28 June). We captured 652 wild yearling Chinook and 35,261 hatchery yearling Chinook (Figure 4). A total of 63,580 subyearling Chinook were also captured comprising 63.9% of the total Chinook captured in 2006. Mortality during the season totaled 1 wild yearling Chinook (0.2%) and 82 subyearling Chinook (0.1%). The number of wild and hatchery steelhead smolts captured was 113 and 3,769, respectively (Figure 5). The number of steelhead fry captured totaled 89. Mortality during the season totaled one juvenile steelhead (0.6%) and one steelhead fry (1.1%). We also captured 5,204 wild and 68 hatchery sockeye (Figure 6). Only one bull trout was captured in

2006. The monthly totals of all fish captured are listed in Appendix C. Smolt production estimates for salmon and steelhead were calculated using efficiency trials conducted with subyearling Chinook, yearling hatchery Chinook, and yearling hatchery coho. Mark/recapture trials were conducted when river discharge changed between 14 and 28 m^3/s or the trap position had changed. Low abundance of other target species precluded their use in mark/recapture trials.

Smolt production estimates were calculated using separate regression models (independent variable = river discharge) for each trap position and species. However, when an insufficient number of trials for any given position or species were not conducted, efficiency trials from previous years were incorporated into the regression model. Until the relative abundance of wild yearling Chinook and steelhead increases, or trap efficiency significantly increases such that an adequate number of the target species are captured, surrogates must be used in trap efficiency trials. Estimates for yearling Chinook and steelhead incorporated regression models developed with hatchery coho and hatchery Chinook for both the "out" and "in" positions ($r^2 = 0.69$, $P = 0.08$; $r^2 = 0.78$, $P < 0.01$). Subyearling Chinook were captured in sufficient numbers such that regression models were developed using only subyearling Chinook when the trap was operated in the "out" and "in" position ($r^2 = 0.34$, $P = 0.02$; $r^2 = 0.98$, $P < 0.01$). The smolt production estimate (95% CI) for wild yearling and subyearling Chinook was 55,619 (±81,310) and 11,612,939 (±3,022,607), respectively. The 2004 brood egg-to-smolt survival for Wenatchee spring Chinook was 2.09% (Table 9). The smolt production estimate for Wenatchee steelhead was 17,499 (±33,554). The 2002 brood emigration completed in 2006 had an egg-to-smolt survival of 1.29% (Table 10).

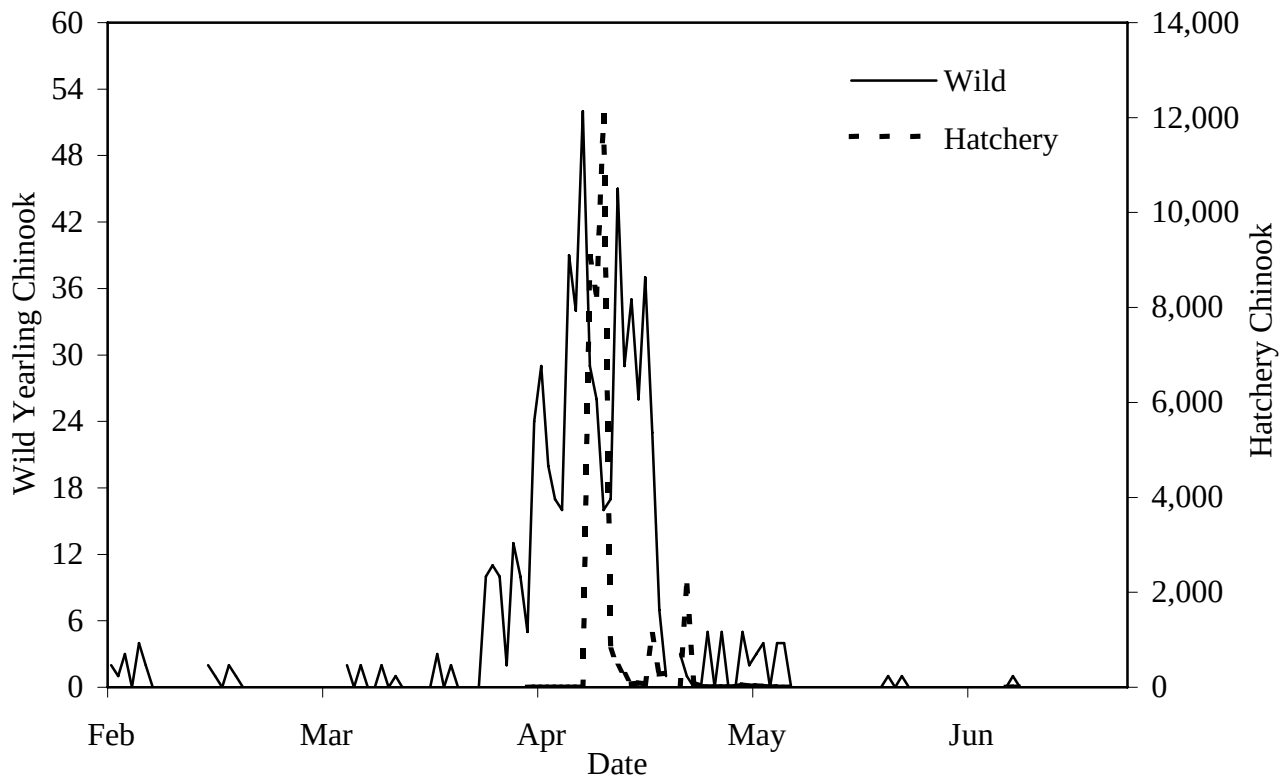

Figure 4. Number of yearling wild Chinook and yearling hatchery Chinook captured at the lower Wenatchee River trap in 2006.

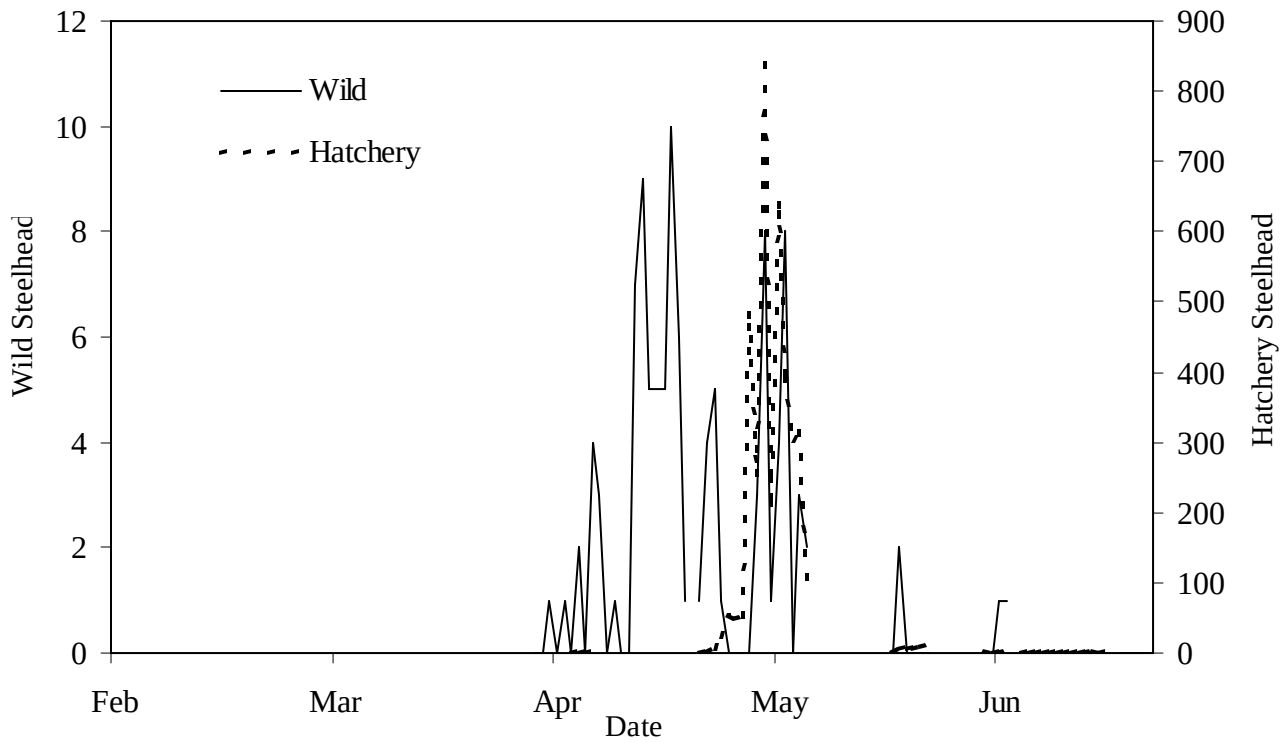

Figure 5. Number of wild and hatchery steelhead captured at the lower Wenatchee River trap in 2006.

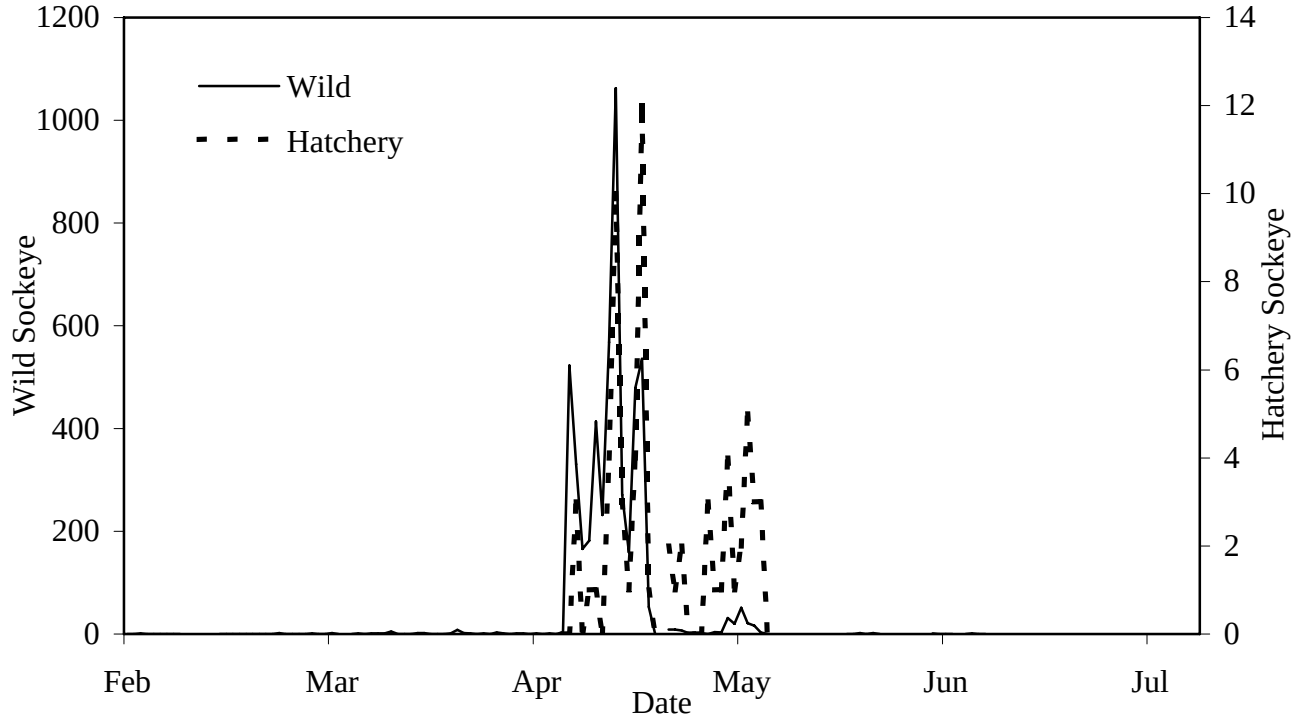

Figure 6. Number of wild and hatchery sockeye captured at the lower Wenatchee River trap in 2006.

Table 9. Estimated egg deposition (# of redds x mean broodstock fecundity) and egg-to-smolt survival rates for Wenatchee Basin spring Chinook salmon.

Brood Year	Number of redds	Estimated egg deposition	Estimated number	
			Total emigrants	Egg-to-smolt survival (%)
2000	350	1,758,050	76,643	4.36
2001	1,876	8,674,624	243,516	2.81
2002	1,139	5,300,906	165,116	3.11
2003	323	1,887,612	70,738	3.75
2004	555	2,663,445	55,619	2.09

Table 10. Estimated egg deposition (mean fecundity x estimated # of females) and egg-to-emigrant survival rates for Wenatchee Basin Steelhead.

Brood year	Estimated egg deposition	Estimated number of wild smolts				Egg-to-smolt survival (%)
		Age 1+	Age 2+	Age 3+	Total	
1997[a]						
1998[a]		16,628	14,799	4,293	35,720	
1999[a]		5,691	24,528	4,203	34,422	
2000[a]		7,972	26,462	5,857	40,292	
2001[b]	858,990	1,930	21,522	8,142	31,593	3.68
2002	2,674,250	4,712	28,153	1,708	34,574	1.29
2003[c]	2,919,420	4,887	6,828	--	--	--
2004[c]	1,933,560	8,963	--	--	--	--

[a] No redd counts
[b] Partial basin redd counts
[c] Incomplete brood year

Discussion

In 2006, the Chiwawa trap was operated at the discharge levels that in previous years the trap would have been pulled. As a result, the extremely low estimated trap efficiencies resulted in high confidence intervals. Confidence intervals are inversely related to trap efficiency. Hence, when trap efficiency is low, the confidence interval of the estimate increases. More importantly, is the utility of the regression model used to estimate trap efficiency. Abundant wild Chinook in the Chiwawa River typically allow for trap efficiency trials to be conducted a great enough frequency and size to develop highly significant flow-efficiency regression models. As a result, the estimated trap efficiency at any given discharge level should be a good estimate of the actual trap efficiency. In summary, while the confidence interval of the 2004 brood Chiwawa Chinook

is extremely large, we believe the smolt production estimate is accurate.

Sockeye egg to smolt survival rates were based on the estimated number of females passing Tumwater Dam. This methodology does not take into account prespawn mortality and likely underestimates survival. In the future, redd based egg deposition estimates provided by Chelan PUD should provide more accurate estimates. Hatchery survival rates were consistent with previous estimates for late releases. Continuation of this release methodology should result in an increase in the release to adult survival rates of hatchery sockeye.

For the first time since the lower Wenatchee traps began operation in 2000, the 2006 (2004 brood) estimate of yearling Chinook at the lower Wenatchee traps was lower than the estimate at the Chiwawa trap. The most plausible explanation for this phenomenon start with the number of fish captured. Lower than average discharge during February and March, followed by higher than normal discharge during May and June negatively affecting the number of yearling Chinook captured in 2006.

Between 2002 and 2005, the number of yearling Chinook captured in February and March averaged 36% of the yearly total. In 2006, only 5% of the total yearling Chinook were captured during this period. Low river discharge decreased water velocities at the trapping location resulting in a fewer cone rotations per minute and subsequently higher trap avoidance. The number of yearling Chinook captured in April 2006 represented 89% of the yearly total. While the 2002 – 2005 average for April was only 43%. River discharge levels during April were similar to previous years. Higher than normal discharge during the months of May and June limited trapping operations and resulted in only 6% of the yearly total compared to a 2002 –2005 average of 21%. The traps could not be operated for 19 days during May and June including two breaks in trapping that lasted 11 consecutive days in May and 8 consecutive days in June. Estimating the number of fish captured during large consecutive breaks in operation is problematic. Estimates of fish captured during breaks in trapping likely underestimated the number fish that would have been captured if the traps were operating. Despite robust trap efficiency regression models, unusual river discharge condition in 2006 drastically reduced the number of fish captured under normal years thereby reducing smolt production estimates.

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Appendix A. Yearly and monthly total juvenile capture information for the Chiwawa River trap.

	2006										
Species/Origin	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Chinook											
Wild yearling	1,013	3,810	121	26	2	0	2	0	0	--	4,974
Wild subyearling	65	665	70	323	4,066	3,094	1,182	1,445	3,624	--	14,542
Hatchery yearling	0	5,889	3,899	3	1	0	3	1	0	--	9,796
Steelhead											
Wild	37	346	269	173	30	54	112	10	758	--	1,789
Smolt	1	26	7	6	3	0	9	1	0	--	53
Parr	36	320	262	167	27	54	103	9	758	--	1,736
Hatchery	5	0	1,354	16	0	2	4	2	1	--	1,384
Coho											
Wild yearling	3	0	0	0	0	0	0	0	0	--	3
Wild subyearling	0	0	0	2	0	0	0	0	0	--	2
Hatchery yearling	86	40	0	0	0	0	0	0	0	--	126
Bull trout											
Juvenile	12	1	1	7	1	4	31	19	49	--	125
Adult	5	0	0	0	0	4	19	6	5	--	39
Cutthroat	0	0	0	0	2	5	45	1	3	--	56
Eastern brook	0	0	0	0	1	0	0	0	3	--	4
White fish	42	13	0	2	272	1,097	720	62	59	--	2,267
Northern pikeminnow	0	0	0	0	0	0	0	0	0	--	0
Longnose dace	36	59	160	100	51	29	1,226	254	36	--	1,951
Sucker spp.	0	1	2	0	0	0	4	1	0	--	8
Redside shiner	0	0	0	0	0	1	0	0	0	--	1
Yellow perch	0	0	0	0	0	0	0	0	0	--	0
Sculpin spp.	3	0	5	4	34	11	8	27	12	--	104

	2005										
Chinook											
Wild yearling	355	2,327	138	54	0	0	0	0	0	--	2,874
Wild subyearling	803	1,024	12	2,453	2,324	951	505	1,561	1,416	--	11,049
Hatchery yearling	0	1,811	2,134	1	2	7	9	1	0	--	3,965
Steelhead											
Wild	13	170	173	88	68	626	129	381	24	--	1,672
Smolt	0	25	7	3	10	0	0	0	0	--	45
Parr	13	145	166	85	58	626	129	381	24	--	1,627
Hatchery	0	0	2,069	30	1	2	2	0	0	--	2,104
Coho											
Wild yearling	0	4	0	0	0	0	0	0	0	--	4
Wild subyearling	0	0	0	0	0	0	0	0	0	--	0
Hatchery yearling	0	8	0	0	0	0	0	0	0	--	8
Bull trout											
Juvenile	2	1	1	5	1	7	67	73	18	--	175
Adult	0	0	0	0	2	1	15	21	2	--	41
Cutthroat	0	1	6	11	2	12	8	3	1	--	44
Eastern brook	0	0	1	0	0	0	0	2	1	--	4
White fish	17	58	10	97	679	2,213	579	18	1	--	3,672
Northern pikeminnow	0	0	0	0	0	0	0	0	0	--	0
Longnose dace	8	117	242	382	86	675	1,500	82	41	--	3,133
Sucker spp.	0	0	0	0	0	2	5	3	0	--	10
Redside shiner	0	0	0	0	0	1	1	0	0	--	2
Yellow perch	0	0	0	0	0	0	0	0	0	--	0
Sculpin spp.	1	0	0	0	3	5	11	3	0	--	23

					2004						
Chinook											
Wild yearling	1,429	2,446	287	152	4	3	5	0	0	0	4,326
Wild subyearling	871	332	44	632	415	595	510	677	1,145	45	5,266
Hatchery yearling	0	4,766	2,769	1	7	14	0	0	0	0	7,557
Steelhead											
Wild	41	236	186	307	108	1,373	116	33	39	2	2,441
Smolt	2	19	1	1	18	239	0	0	0	0	280
Parr	39	217	185	306	90	1,134	116	33	39	2	2,161
Hatchery	1	4,917	4,709	12	2	18	17	2	0	0	9,678
Coho											
Wild yearling	0	0	0	0	0	0	0	0	0	0	0
Wild subyearling	0	0	0	0	0	0	0	0	0	0	0
Hatchery yearling	0	0	0	0	0	0	0	0	0	0	0
Bull trout	9	18	11	9	5	24	97	45	32	0	250
Juvenile	9	18	11	9	5	20	92	42	32	0	238
Adult	0	0	0	0	0	4	5	3	0	0	12
Cutthroat	0	0	1	11	3	20	10	0	0	0	45
Eastern brook	0	0	2	0	0	0	0	0	0	0	2
White fish	6	1	2	10	563	809	2,244	27	7	0	3,669
Northern pikeminnow	0	1	0	0	10	2	0	0	0	0	13
Longnose dace	0	44	325	589	190	1,175	387	421	31	0	3,162
Sucker spp.	2	0	0	0	0	1	1	1	0	0	5
Redside shiner	0	0	0	0	1	0	0	0	0	0	1
Yellow perch	0	0	0	0	0	0	0	0	0	0	0
Sculpin spp.	1	2	5	1	10	0	0	9	6	0	34

					2003						
Chinook											
Wild yearling	2,429	4,293	1,184	52	24	11	19	0	0	-	8,012
Wild subyearling	1,029	4,661	1,894	1,060	4,751	5,588	1,209	4,064	840	-	25,096
Hatchery yearling	0	2,706	3,183	1	3	0	0	0	0	-	5,893
Steelhead											
Wild	18	148	125	274	90	399	157	427	24	-	1,662
smolt	2	22	5	3	0	0	0	0	0	-	32
parr	16	126	120	271	90	399	157	427	24	-	1,630
Hatchery	0	1,457	4,396	23	2	4	2	2	0	-	5,886
Coho											
Wild yearling	0	0	0	0	0	0	0	0	0	-	0
Wild subyearling	0	0	0	0	0	0	0	0	0	-	0
Hatchery yearling	0	0	0	0	0	0	0	0	0	-	0
Bull trout	14	11	19	40	20	36	122	153	29	-	444
Juvenile	14	11	19	40	19	33	120	153	29	-	438
Adult	0	0	0	0	1	3	2	0	0	-	6
Cutthroat	0	0	0	5	3	10	6	0	4	-	28
Eastern brook	0	0	0	5	0	0	0	1	0	-	6
White fish	28	2	1	65	42	889	167	13	5	-	1,212
Northern pikeminnow	0	0	0	1	0	0	0	0	0	-	1
Longnose dace	3	0	0	266	306	92	425	461	4	-	1,557
Sucker spp.	0	0	0	0	0	0	3	1	0	-	4
Redside shiner	0	0	0	0	0	1	0	0	0	-	1
Yellow perch	0	0	0	0	0	0	0	0	0	-	0
Sculpin spp.	0	4	0	2	1	0	3	3	0	-	13

					2002						
Chinook											
Wild yearling	21	1,398	1	0	0	3	0	0	0	0	1,423
Wild subyearling	461	7,610	7,694	316	15,235	12,890	3,470	2,797	3,003	196	53,672
Hatchery yearling	479	2,142	291	1	3	5	5	0	0	0	2,926
Steelhead											
Wild	7	153	118	65	65	95	210	28	36	1	778
Smolt	0	9	11	6	12	37	8	2	1	0	86
Parr	7	144	107	59	53	58	202	26	35	1	692
Hatchery	0	0	2,687	0	1	5	23	4	0	0	2,720
Coho											
Wild yearling	0	0	0	0	0	0	0	0	0	0	0
Wild subyearling	0	0	0	0	0	0	0	0	0	0	0
Hatchery yearling	0	0	0	0	1	4	2	0	0	0	0
Bull trout	15	13	4	9	15	43	86	45	107	10	347
Juvenile	15	13	4	9	15	42	80	44	107	10	339
Adult	0	0	0	0	0	1	6	1	0	0	8
Cutthroat	1	0	2	1	3	17	13	0	0	0	37
Eastern brook	0	0	2	0	0	1	0	4	0	0	7
White fish	10	13	8	1	40	414	228	133	24	0	871
Northern pikeminnow	0	0	0	0	0	3	0	0	0	0	3
Longnose dace	13	33	41	77	36	92	281	31	0	0	604
Sucker spp.	0	0	0	0	0	0	0	0	0	0	0
Redside shiner	0	0	0	0	0	0	0	0	0	0	0
Yellow perch	0	1	0	0	0	0	0	0	0	0	1
Sculpin spp.	1	0	1	0	0	9	37	6	1	3	58

					2001						
Chinook											
Wild yearling	998	1,650	76	36	0	1	2	0	0	0	2,763
Wild subyearling	18	17	1	32	192	796	236	1,860	1,872	153	5,177
Hatchery yearling	0	0	0	0	0	0	0	0	0	0	0
Steelhead											
Wild	18	167	137	73	9	449	49	79	95	15	1,091
smolt	0	34	4	5	3	4	7	6	0	0	63
parr	18	133	133	68	6	445	42	73	95	15	1,028
Hatchery	0	2	69	11	5	24	18	5	0	0	134
Coho											
Wild yearling	0	0	0	0	0	0	0	0	0	0	0
Wild subyearling	0	0	0	0	0	0	0	0	0	0	0
Hatchery yearling	0	0	0	0	1	0	0	0	1	0	2
Bull trout	36	21	26	31	4	6	48	50	51	16	289
Juvenile	35	21	26	31	4	6	32	42	51	16	264
Adult	1	0	0	0	0	0	16	8	0	0	25
Cutthroat	4	4	5	54	6	16	9	35	50	0	183
Eastern brook	1	0	0	6	0	0	0	15	3	0	25
White fish	15	36	0	0	34	1,432	248	39	21	0	1,825
Northern pikeminnow	0	0	0	0	14	0	0	0	0	0	14
Longnose dace	15	15	12	411	92	247	251	172	2	0	1,217
Sucker spp.	0	0	0	0	0	2	2	2	0	0	6
Redside shiner	0	0	0	0	0	0	0	0	0	0	0
Yellow perch	0	0	0	0	0	6	0	6	0	2	14
Sculpin spp.	4	2	1	0	23	12	9	17	9	0	77

					2000						
Chinook											
Wild yearling	334	1,135	308	12	0	1	1	0	0	-	1,791
Wild subyearling	7	0	0	8	112	286	229	679	162	-	1,483
Hatchery yearling	0	4	2	0	0	0	0	0	0	-	6
Steelhead											
Wild	1	102	40	7	11	82	47	32	4	-	326
smolt	0	74	20	2	3	36	31	11	4	-	181
parr	1	28	20	5	8	46	16	21	0	-	145
Hatchery	0	4	7	7	2	13	9	0	3	-	45
Coho											
Wild yearling	0	0	0	0	0	0	0	0	0	-	0
Wild subyearling	0	0	0	0	0	0	0	0	0	-	0
Hatchery yearling	0	0	0	0	0	0	0	0	0	-	0
Bull trout	8	66	71	27	18	19	70	112	49	-	440
Juvenile	4	65	71	26	18	18	64	106	49	-	421
Adult	4	1	0	1	0	1	6	6	0	-	19
Cutthroat	0	1	3	0	1	11	4	2	0	-	22
Eastern brook	0	1	4	1	0	0	1	3	0	-	10
White fish	5	2	1	2	6	669	58	60	34	-	837
Northern pikeminnow	0	0	0	0	5	7	0	0	0	-	12
Longnose dace	1	22	256	486	185	141	165	194	6	-	1,456
Sucker spp.	0	0	36	0	0	3	0	1	0	-	40
Redside shiner	0	0	0	0	0	0	0	0	0	-	0
Yellow perch	0	0	0	0	0	0	0	0	0	-	0
Sculpin spp.	1	2	9	7	3	16	9	8	1	-	56

					1999						
Chinook											
Wild yearling	600	2,618	684	8	1	1	5	0	0	0	3,917
Wild subyearling	0	4	2	1	10	108	42	127	252	11	557
Hatchery yearling	0	0	0	0	0	4	51	4	1	0	60
Steelhead											
Wild	1	108	63	19	17	16	19	7	3	0	253
smolt	0	60	24	9	8	10	18	4	0	0	133
parr	1	48	39	10	9	6	1	3	3	0	120
Hatchery	1	2	25	14	9	8	8	4	6	1	78
Coho											
Wild yearling	0	0	0	0	0	0	0	0	0	0	0
Wild subyearling	0	0	0	0	0	0	0	0	0	0	0
Hatchery yearling	0	0	0	0	0	0	0	0	0	0	0
Bull trout	10	25	35	9	21	16	30	37	64	3	250
Juvenile	10	24	35	9	21	16	21	31	64	3	234
Adult	0	1	0	0	0	0	9	6	0	0	16
Cutthroat	0	0	0	0	2	3	7	0	1	0	13
Eastern brook	0	0	0	2	0	0	0	4	3	0	9
White fish	27	76	3	0	2	15	112	49	32	1	317
Northern pikeminnow	0	0	0	0	0	2	0	0	0	0	2
Longnose dace	9	38	34	29	18	0	0	2	0	0	130
Sucker spp.	0	0	0	0	0	0	3	0	0	0	3
Redside shiner	0	0	0	0	0	0	0	0	0	0	0
Yellow perch	0	1	0	0	0	0	0	0	0	0	1
Sculpin spp.	0	5	4	0	1	1	7	5	1	0	24

					1998						
Chinook											
Wild yearling	1,619	1,679	110	32	0	9	11	0	0	0	3,460
Wild subyearling	0	13	1	3	439	316	183	297	2,567	24	3,843
Hatchery yearling	0	77	0	0	0	16	4	0	0	0	97
Steelhead											
Wild	22	168	165	71	51	86	19	6	34	0	622
Smolt	2	69	26	8	5	47	3	0	0	0	160
Parr	20	99	139	63	46	39	16	6	34	0	462
Hatchery	0	0	1	0	0	1	0	0	1	0	3
Coho											
Wild yearling	0	0	0	0	0	0	0	0	0	0	0
Wild subyearling	0	0	0	0	0	0	0	0	0	0	0
Hatchery yearling	0	0	0	0	0	0	0	0	0	0	0
Bull trout	34	53	95	66	20	15	94	71	213	1	662
Juvenile	34	53	95	66	20	13	41	69	213	1	605
Adult	0	0	0	0	0	2	53	2	0	0	57
Cutthroat	0	1	5	6	2	18	1	0	1	0	34
Eastern brook	0	0	4	2	0	0	1	0	10	0	17
White fish	31	28	2	5	132	1,103	180	39	45	0	1,565
Northern pikeminnow	0	0	0	0	9	38	7	0	0	0	54
Longnose dace	8	148	293	746	259	2	5	12	8	0	1,481
Sucker spp.	0	0	0	0	0	1	5	4	1	0	11
Redside shiner	0	0	0	0	0	0	0	0	0	0	0
Yellow perch	2	0	0	0	0	0	0	0	2	0	4
Sculpin spp.	3	10	2	1	40	14	20	19	10	0	119

					1997						
Chinook											
Wild yearling	336	484	59	1	0	0	0	0	0	-	880
Wild subyearling	0	0	0	0	6	87	70	373	208	-	744
Hatchery yearling	0	0	0	0	0	0	0	0	0	-	0
Steelhead											
Wild	32	56	32	21	22	31	35	26	5	-	260
smolt	1	40	27	3	4	14	9	6	1	-	105
parr	31	16	5	18	18	17	26	20	4	-	155
Hatchery	0	0	0	0	0	0	0	0	0	-	0
Coho											
Wild yearling	0	0	0	0	0	0	0	0	0	-	0
Wild subyearling	0	0	0	0	0	0	0	0	0	-	0
Hatchery yearling	0	0	0	0	0	0	0	0	0	-	0
Bull trout	22	23	17	9	22	28	64	55	16	-	256
Juvenile	22	23	17	9	22	27	50	48	15	-	233
Adult	0	0	0	0	0	1	14	7	1	-	23
Cutthroat	0	2	3	1	1	7	8	0	0	-	22
Eastern brook	0	0	0	0	0	0	3	16	5	-	24
White fish	15	21	1	0	7	298	108	58	17	-	525
Northern pikeminnow	0	0	0	0	1	0	0	2	0	-	3
Longnose dace	6	43	31	87	116	74	174	46	2	-	579
Sucker spp.	0	0	0	0	0	0	0	0	0	-	0
Redside shiner	0	0	0	0	0	0	0	0	0	-	0
Yellow perch	0	0	0	0	0	0	0	0	0	-	0
Sculpin spp.	1	5	0	0	1	18	10	5	2	-	42

Appendix B. Yearly and monthly total juvenile capture information for the Lake River trap.

	2006										
Species/Origin	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Chinook											
Wild yearling	18	68	52	--	--	--	--	--	--	--	138
Wild subyearling	636	1,375	1	--	--	--	--	--	--	--	2,012
Hatchery yearling	0	9	1	--	--	--	--	--	--	--	10
Steelhead											
Wild	5	30	7	--	--	--	--	--	--	--	42
Smolt	0	5	5	--	--	--	--	--	--	--	10
Parr	5	25	2	--	--	--	--	--	--	--	32
Hatchery	0	0	160	--	--	--	--	--	--	--	160
Sockeye											0
Wild	1	13,875	6,433	--	--	--	--	--	--	--	20,309
Hatchery	0	434	1,066	--	--	--	--	--	--	--	1,500
Coho											
Wild yearling	5	0	5	--	--	--	--	--	--	--	10
Wild subyearling	0	0	0	--	--	--	--	--	--	--	0
Hatchery yearling	14	88	23	--	--	--	--	--	--	--	125
Bull trout											
Juvenile	0	1	0	--	--	--	--	--	--	--	1
Adult	0	0	0	--	--	--	--	--	--	--	0
Cutthroat	0	0	0	--	--	--	--	--	--	--	0
White fish	2	1	0	--	--	--	--	--	--	--	3
Northern pikeminnow	0	24	22	--	--	--	--	--	--	--	46
Longnose dace	1	1	0	--	--	--	--	--	--	--	2
Sucker spp.	0	2	0	--	--	--	--	--	--	--	2
Redside shiner	0	16	5	--	--	--	--	--	--	--	21
Yellow perch	0	0	0	--	--	--	--	--	--	--	0
Sculpin spp.	6	28	1	--	--	--	--	--	--	--	35

					2005						
Chinook											
Wild yearling	10	19	31	1	--	--	--	--	--	--	61
Wild subyearling	224	1,412	769	136	--	--	--	--	--	--	2,541
Hatchery yearling	0	0	6	0	--	--	--	--	--	--	6
Steelhead											
Wild	3	8	16	9	--	--	--	--	--	--	36
Smolt	0	0	1	0	--	--	--	--	--	--	1
Parr	3	8	15	9	--	--	--	--	--	--	35
Hatchery	0	0	354	0	--	--	--	--	--	--	354
Sockeye											
Wild	4	5,898	677	1	--	--	--	--	--	--	6,580
Hatchery	0	833	576	7	--	--	--	--	--	--	1,416
Coho											
Wild yearling	0	2	0	0	--	--	--	--	--	--	2
Wild subyearling	0	0	5	0	--	--	--	--	--	--	5
Hatchery yearling	18	17	302	3	--	--	--	--	--	--	340
Bull trout											
Juvenile	2	1	2	0	--	--	--	--	--	--	5
Adult	0	2	0	1	--	--	--	--	--	--	3
Cutthroat	0	0	1	0	--	--	--	--	--	--	1
White fish	5	19	2	0	--	--	--	--	--	--	26
Northern pikeminnow	0	5	8	4	--	--	--	--	--	--	17
Longnose dace	1	0	4	48	--	--	--	--	--	--	53
Sucker spp.	1	1	6	20	--	--	--	--	--	--	28
Redside shiner	2	8	8	29	--	--	--	--	--	--	47
Sculpin spp.	11	2	10	62	--	--	--	--	--	--	85

					2004						
Chinook											
Wild yearling	35	127	186	7	0	0	0	0	0	0	355
Wild subyearling	0	2	2	21	4	7	2	1	100	0	139
Hatchery yearling	0	1	0	0	0	0	0	0	0	0	1
Steelhead											
Wild	1	4	6	13	5	10	6	1	9	0	55
Smolt	0	1	0	0	0	0	0	0	0	0	1
Parr	1	3	6	13	5	10	6	1	9	0	54
Hatchery	0	15	12	0	0	0	0	0	0	0	27
Sockeye											
Wild	198	35,154	2,552	47	1	0	0	0	1	0	37,953
Hatchery	10	1,005	765	51	14	7	5	0	9	0	1,866
Coho											
Wild yearling	0	1	0	0	0	0	0	0	0	0	1
Wild subyearling	0	0	0	0	0	0	0	0	0	0	0
Hatchery yearling	0	6	74	1	0	0	0	0	0	0	81
Bull trout	0	0	1	0	0	0	0	0	0	0	1
Juvenile	0	0	0	0	0	0	0	0	0	0	0
Adult	0	0	1	0	0	0	0	0	0	0	1
Cutthroat	0	1	0	1	0	0	0	0	0	0	2
White fish	2	2	3	0	4	5	2	0	1	0	19
Northern pikeminnow	6	3	12	2	10	11	0	2	0	0	46
Longnose dace	0	1	2	3	14	20	3	11	4	0	58
Sucker spp.	0	1	2	11	23	10	0	0	0	0	47
Redside shiner	3	1	2	10	13	25	5	2	1	0	62
Sculpin spp.	6	8	11	25	8	5	1	2	2	0	68

					2003						
Chinook											
Wild yearling	25	117	85	30	0	-	-	-	-	-	257
Wild subyearling	2	30	1	0	7	-	-	-	-	-	40
Hatchery yearling	0	0	0	0	0	-	-	-	-	-	0
Steelhead											
Wild	2	1	2	8	1	-	-	-	-	-	14
smolt	0	0	0	0	0	-	-	-	-	-	0
parr	2	1	2	8	1	-	-	-	-	-	14
Hatchery	0	0	43	0	0	-	-	-	-	-	43
Sockeye											
Wild	14	22,293	2,849	9	0	-	-	-	-	-	25,165
Hatchery	1	466	182	13	6	-	-	-	-	-	668
Coho											
Wild yearling	0	0	0	0	0	-	-	-	-	-	0
Wild subyearling	0	0	0	0	0	-	-	-	-	-	0
Hatchery yearling	0	0	98	0	0	-	-	-	-	-	98
Bull trout	0	0	0	0	0	-	-	-	-	-	0
Juvenile	0	0	0	0	0	-	-	-	-	-	0
Adult	0	0	0	0	0	-	-	-	-	-	0
Cutthroat	0	0	0	0	0	-	-	-	-	-	0
White fish	0	6	0	0	0	-	-	-	-	-	6
Northern pikeminnow	1	2	20	0	0	-	-	-	-	-	23
Longnose dace	0	0	0	0	0	-	-	-	-	-	0
Sucker spp.	0	0	5	2	5	-	-	-	-	-	12
Redside shiner	3	0	7	1	3	-	-	-	-	-	14
Sculpin spp.	6	4	8	12	4	-	-	-	-	-	34

						2002					
Chinook											
Wild yearling	-	15	19	-	-	-	-	-	-	-	34
Wild subyearling	-	3	2	-	-	-	-	-	-	-	5
Hatchery yearling	-	0	0	-	-	-	-	-	-	-	0
Steelhead											
Wild	-	1	1	-	-	-	-	-	-	-	2
Smolt	-	1	1	-	-	-	-	-	-	-	2
Parr	-	0	0	-	-	-	-	-	-	-	0
Hatchery	-	4	37	-	-	-	-	-	-	-	41
Sockeye											
Wild	-	2,450	849	-	-	-	-	-	-	-	3,299
Hatchery	-	290	268	-	-	-	-	-	-	-	558
Coho											
Wild yearling	-	0	0	-	-	-	-	-	-	-	0
Wild subyearling	-	0	0	-	-	-	-	-	-	-	0
Hatchery yearling	-	0	27	-	-	-	-	-	-	-	27
Bull trout	-	0	1	-	-	-	-	-	-	-	1
Juvenile	-	0	1	-	-	-	-	-	-	-	1
Adult	-	0	0	-	-	-	-	-	-	-	0
Cutthroat	-	0	0	-	-	-	-	-	-	-	0
White fish	-	3	1	-	-	-	-	-	-	-	4
Northern pikeminnow	-	0	5	-	-	-	-	-	-	-	5
Longnose dace	-	0	0	-	-	-	-	-	-	-	0
Sucker spp.	-	0	0	-	-	-	-	-	-	-	0
Redside shiner	-	0	0	-	-	-	-	-	-	-	0
Sculpin spp.	-	2	10	-	-	-	-	-	-	-	12

					2001						
Chinook											
Wild yearling	0	23	37	2	-	-	-	-	-	-	62
Wild subyearling	8	65	28	17	-	-	-	-	-	-	118
Hatchery yearling	0	0	0	0	-	-	-	-	-	-	0
Steelhead											
Wild	1	9	20	7	-	-	-	-	-	-	37
Smolt	1	1	1	1	-	-	-	-	-	-	4
Parr	0	8	19	6	-	-	-	-	-	-	33
Hatchery	0	0	0	0	-	-	-	-	-	-	0
Sockeye											
Wild	2	648	195	3	-	-	-	-	-	-	848
Hatchery	0	449	1,128	4	-	-	-	-	-	-	1,581
Coho											
Wild yearling	0	0	0	0	-	-	-	-	-	-	0
Wild subyearling	0	0	0	0	-	-	-	-	-	-	0
Hatchery yearling	0	2	94	23	-	-	-	-	-	-	119
Bull trout	0	2	2	1	-	-	-	-	-	-	5
Juvenile	0	2	0	1	-	-	-	-	-	-	3
Adult	0	0	2	0	-	-	-	-	-	-	2
Cutthroat	0	3	3	6	-	-	-	-	-	-	12
White fish	0	14	2	0	-	-	-	-	-	-	16
Northern pikeminnow	0	6	21	1	-	-	-	-	-	-	28
Longnose dace	0	0	4	16	-	-	-	-	-	-	20
Sucker spp.	1	4	12	6	-	-	-	-	-	-	23
Redside shiner	0	9	10	2	-	-	-	-	-	-	21
Sculpin spp.	4	24	39	29	-	-	-	-	-	-	96

					2000						
Chinook											
Wild yearling	-	35	14	0	-	-	-	-	-	-	49
Wild subyearling	-	2	7	1	-	-	-	-	-	-	10
Hatchery yearling	-	0	0	0	-	-	-	-	-	-	0
Steelhead											
Wild	-	0	1	0	-	-	-	-	-	-	1
Smolt	-	0	1	0	-	-	-	-	-	-	1
Parr	-	0	0	0	-	-	-	-	-	-	0
Hatchery	-	0	0	0	-	-	-	-	-	-	0
Sockeye											
Wild	-	2,354	281	0	-	-	-	-	-	-	2,635
Hatchery	-	7	59	0	-	-	-	-	-	-	66
Coho											
Wild yearling	-	0	0	0	-	-	-	-	-	-	0
Wild subyearling	-	0	0	0	-	-	-	-	-	-	0
Hatchery yearling	-	0	11	0	-	-	-	-	-	-	11
Bull trout	-	2	4	0	-	-	-	-	-	-	6
Juvenile	-	2	4	0	-	-	-	-	-	-	6
Adult	-	0	0	0	-	-	-	-	-	-	0
Cutthroat	-	0	0	0	-	-	-	-	-	-	0
White fish	-	3	1	0	-	-	-	-	-	-	4
Northern pikeminnow	-	10	14	2	-	-	-	-	-	-	26
Longnose dace	-	0	3	0	-	-	-	-	-	-	3
Sucker spp.	-	3	2	0	-	-	-	-	-	-	5
Redside shiner	-	13	2	0	-	-	-	-	-	-	15
Sculpin spp.	-	19	16	11	-	-	-	-	-	-	46

					1999						
Chinook											
Wild yearling	4	135	83	6	-	-	-	-	-	-	228
Wild subyearling	0	73	10	1	-	-	-	-	-	-	84
Hatchery yearling	0	1	4	0	-	-	-	-	-	-	5
Steelhead											
Wild	0	6	3	0	-	-	-	-	-	-	9
Smolt	0	1	0	0	-	-	-	-	-	-	1
Parr	0	5	3	0	-	-	-	-	-	-	8
Hatchery	0	0	0	0	-	-	-	-	-	-	0
Sockeye											
Wild	0	6,428	3,458	1	-	-	-	-	-	-	9,887
Hatchery	0	43	506	23	-	-	-	-	-	-	572
Coho											
Wild yearling	0	0	0	0	-	-	-	-	-	-	0
Wild subyearling	0	0	0	0	-	-	-	-	-	-	0
Hatchery yearling	0	4	6	0	-	-	-	-	-	-	10
Bull trout	0	1	1	2	-	-	-	-	-	-	4
Juvenile	0	1	1	2	-	-	-	-	-	-	4
Adult	0	0	0	0	-	-	-	-	-	-	0
Cutthroat	0	0	0	0	-	-	-	-	-	-	0
White fish	1	12	3	0	-	-	-	-	-	-	16
Northern pikeminnow	0	41	2	0	-	-	-	-	-	-	43
Longnose dace	0	4	1	1	-	-	-	-	-	-	6
Sucker spp.	0	2	18	5	-	-	-	-	-	-	25
Redside shiner	1	18	3	1	-	-	-	-	-	-	23
Sculpin spp.	0	20	34	13	-	-	-	-	-	-	67

					1998						
Chinook											
Wild yearling	7	51	31	1	-	-	-	-	-	-	90
Wild subyearling	0	0	0	0	-	-	-	-	-	-	0
Hatchery yearling	0	0	0	0	-	-	-	-	-	-	0
Steelhead											
Wild	0	2	2	0	-	-	-	-	-	-	4
Smolt	0	1	2	0	-	-	-	-	-	-	3
Parr	0	1	0	0	-	-	-	-	-	-	1
Hatchery	0	0	0	0	-	-	-	-	-	-	0
Sockeye											
Wild	0	6,758	168	0	-	-	-	-	-	-	6,926
Hatchery	0	173	94	1	-	-	-	-	-	-	268
Coho											
Wild yearling	0	0	0	0	-	-	-	-	-	-	0
Wild subyearling	0	0	0	0	-	-	-	-	-	-	0
Hatchery yearling	0	0	0	0	-	-	-	-	-	-	0
Bull trout	0	0	1	0	-	-	-	-	-	-	1
Juvenile	0	0	1	0	-	-	-	-	-	-	1
Adult	0	0	0	0	-	-	-	-	-	-	0
Cutthroat	0	0	0	0	-	-	-	-	-	-	0
Eastern brook	0	0	0	1	-	-	-	-	-	-	1
White fish	0	0	10	0	-	-	-	-	-	-	10
Northern pikeminnow	0	0	22	11	-	-	-	-	-	-	33
Longnose dace	0	1	1	0	-	-	-	-	-	-	2
Sucker spp.	0	0	3	3	-	-	-	-	-	-	6
Redside shiner	0	0	5	7	-	-	-	-	-	-	12
Sculpin spp.	0	3	14	42	-	-	-	-	-	-	59

					1997						
Chinook											
Wild yearling	0	7	3	2	-	-	-	-	-	-	12
Wild subyearling	0	0	0	0	-	-	-	-	-	-	0
Hatchery yearling	0	0	0	0	-	-	-	-	-	-	0
Steelhead											
Wild	0	4	3	0	-	-	-	-	-	-	7
Smolt	0	1	0	0	-	-	-	-	-	-	1
Parr	0	3	3	0	-	-	-	-	-	-	6
Hatchery	0	0	0	0	-	-	-	-	-	-	0
Sockeye											
Wild	0	0	206	59	-	-	-	-	-	-	265
Hatchery	0	53	85	0	-	-	-	-	-	-	138
Coho											
Wild yearling	0	0	0	0	-	-	-	-	-	-	0
Wild subyearling	0	0	0	0	-	-	-	-	-	-	0
Hatchery yearling	0	0	0	0	-	-	-	-	-	-	0
Bull trout	1	1	1	0	-	-	-	-	-	-	3
Juvenile	1	1	1	0	-	-	-	-	-	-	3
Adult	0	0	0	0	-	-	-	-	-	-	0
Cutthroat	0	0	0	0	-	-	-	-	-	-	0
Eastern brook	0	0	0	0	-	-	-	-	-	-	0
White fish	0	11	9	0	-	-	-	-	-	-	20
Northern pikeminnow	1	47	77	0	-	-	-	-	-	-	125
Longnose dace	0	0	0	0	-	-	-	-	-	-	0
Sucker spp.	0	2	3	0	-	-	-	-	-	-	5
Redside shiner	2	11	19	2	-	-	-	-	-	-	34
Sculpin spp.	8	22	21	7	-	-	-	-	-	-	58

Appendix C. Yearly and monthly total juvenile capture information for the Lower Wenatchee River trap.

	2006											
Species/Origin	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Chinook												
Wild yearling	18	12	583	37	2	0	0	--	--	--	--	652
Wild subyearling	126	429	6467	40376	9722	6416	44	--	--	--	--	63,580
Hatchery yearling	0	0	32792	2467	1	1	0	--	--	--	--	35,261
Steelhead												
Wild	1	2	87	51	6	4	0	--	--	--	--	151
Smolt	0	0	60	42	2	1	0	--	--	--	--	105
Parr	1	2	26	9	4	3	0	--	--	--	--	45
Hatchery	0	0	1	3736	32	0	0	--	--	--	--	3,769
Sockeye												
Wild	1	29	4990	180	4	0	0	--	--	--	--	5,204
Hatchery	0	0	40	28	0	0	0	--	--	--	--	68
Coho												
Wild yearling	12	0	37	41	13	0	0	--	--	--	--	103
Wild subyearling	0	1	74	271	166	945	3	--	--	--	--	1,460
Hatchery yearling	0	0	10480	3076	70	1	0	--	--	--	--	13,627
Bull trout												
Juvenile	0	0	0	1	0	0	0	--	--	--	--	1
Adult	0	0	0	0	0	0	0	--	--	--	--	0
Cutthroat	0	0	0	0	0	0	0	--	--	--	--	0
White fish	0	0	18	11	0	58	0	--	--	--	--	118
Northern pikeminnow	20	9	48	142	214	41	1	--	--	--	--	475
Longnose dace	7	39	313	219	170	52	1	--	--	--	--	801
Speckled dace	0	0	0	0	0	0	0	--	--	--	--	0
Umatilla dace	0	0	0	0	0	0	0	--	--	--	--	0
Sucker spp.	21	86	1151	1525	484	153	0	--	--	--	--	3,420
Peamouth	0	0	0	0	0	0	0	--	--	--	--	0
Chiselmouth	4	2	2	2	9	13	0	--	--	--	--	32

Redside shiner	1	1	109	255	435	148	3	--	--	--	--	952
Yellow bullhead	0	0	0	0	0	0	0	--	--	--	--	0
Pacific lamprey	22	133	582	475	503	218	0	--	--	--	--	1,933
River lamprey	0	0	0	0	0	0	0	--	--	--	--	0
Sculpin spp.	4	31	29	18	13	23	0	--	--	--	--	118
Stickleback (3 spined)	1	1	0	14	25	37	0	--	--	--	--	78

						2005						
Chinook												
Wild yearling	43	64	156	61	9	0	--	--	--	--	--	333
Wild subyearling	227	1,642	42,294	149,126	29,624	1,945	--	--	--	--	--	224,858
Hatchery yearling	1	3	17,328	6,375	2	0	--	--	--	--	--	23,709
Steelhead												
Wild	5	2	63	167	8	1	--	--	--	--	--	246
Smolt	0	0	47	155	8	0	--	--	--	--	--	210
Parr	5	2	16	12	0	1	--	--	--	--	--	36
Hatchery	0	1	1	1,964	47	0	--	--	--	--	--	2,013
Sockeye												
Wild	0	8	112	82	0	0	--	--	--	--	--	202
Hatchery	0	0	17	62	0	0	--	--	--	--	--	79
Coho												
Wild yearling	14	18	97	57	3	0	--	--	--	--	--	189
Wild subyearling	2	30	214	1,091	453	56	--	--	--	--	--	1,846
Hatchery yearling	0	1	3,476	8,347	119	0	--	--	--	--	--	11,943
Bull trout												
Juvenile	0	0	1	2	0	0	--	--	--	--	--	3
Adult	0	0	0	0	0	0	--	--	--	--	--	0
Cutthroat	0	0	0	0	0	0	--	--	--	--	--	0
White fish	0	0	1	7	1	0	--	--	--	--	--	9
Northern pikeminnow	0	1	28	45	16	0	--	--	--	--	--	90
Longnose dace	3	14	87	399	126	30	--	--	--	--	--	659
Speckled dace	0	0	0	0	0	0	--	--	--	--	--	0
Umatilla dace	0	0	0	0	0	0	--	--	--	--	--	0
Sucker spp.	6	12	63	102	20	0	--	--	--	--	--	203
Peamouth	0	0	0	0	0	0	--	--	--	--	--	0
Chiselmouth	0	0	0	0	0	0	--	--	--	--	--	0
Redside shiner	0	1	11	47	89	18	--	--	--	--	--	166

Yellow bullhead	0	0	0	0	0	0	--	--	--	--	--	0
Pacific lamprey	13	37	156	320	157	2	--	--	--	--	--	685
River lamprey	0	0	0	0	0	0	--	--	--	--	--	0
Sculpin spp.	14	35	29	65	23	5	--	--	--	--	--	171
Stickleback (3 spined)	1	3	2	34	10	1	--	--	--	--	--	51

						2004						
Chinook												
Wild yearling	11	237	554	241	18	0	--	--	--	--	--	1,061
Wild subyearling	129	1,001	4,895	149,570	63,410	6,544	--	--	--	--	--	225,549
Hatchery yearling	0	36	9,693	2,108	8	1	--	--	--	--	--	11,846
Steelhead												
Wild	1	12	117	205	23	2	--	--	--	--	--	360
Smolt	0	2	94	187	15	1	--	--	--	--	--	299
Parr	1	10	23	18	8	1	--	--	--	--	--	61
Hatchery	0	0	519	2,690	256	0	--	--	--	--	--	3,465
Sockeye												
Wild	0	48	3,047	106	23	0	--	--	--	--	--	3,224
Hatchery	0	3	139	128	52	13	--	--	--	--	--	335
Coho												
Wild yearling	0	1	12	13	25	7	--	--	--	--	--	58
Wild subyearling	0	5	27	572	233	90	--	--	--	--	--	927
Hatchery yearling	0	40	2,285	12,216	914	0	--	--	--	--	--	15,455
Bull trout	0	0	1	1	0	0	--	--	--	--	--	2
Juvenile	0	0	1	1	0	0	--	--	--	--	--	2
Adult	0	0	0	0	0	0	--	--	--	--	--	0
Cutthroat	0	0	0	0	0	0	--	--	--	--	--	0
White fish	0	2	1	12	15	4	--	--	--	--	--	34
Northern pikeminnow	0	0	3	25	14	33	--	--	--	--	--	75
Longnose dace	5	66	498	1,444	241	120	--	--	--	--	--	2,374
Speckled dace	0	4	0	0	0	1	--	--	--	--	--	5
Umatilla dace	1	0	0	1	0	0	--	--	--	--	--	2
Sucker spp.	0	7	13	67	95	26	--	--	--	--	--	208
Peamouth	0	0	0	0	0	0	--	--	--	--	--	0
Chiselmouth	0	0	0	0	4	3	--	--	--	--	--	7
Redside shiner	0	0	2	46	34	18	--	--	--	--	--	100

Yellow bullhead	0	0	0	0	0	0	--	--	--	--	--	0
Pacific lamprey	2	69	147	221	201	10	--	--	--	--	--	650
River lamprey	0	0	0	0	0	0	--	--	--	--	--	0
Sculpin spp.	1	5	17	30	19	14	--	--	--	--	--	86
Stickleback (3 spined)	0	0	0	6	9	70	--	--	--	--	--	85

						2003						
Chinook												
Wild yearling	21	321	664	538	75	0	--	--	--	--	--	1,619
Wild subyearling	90	1,423	10,039	67,378	25,014	6,584	--	--	--	--	--	110,528
Hatchery yearling	0	0	19,952	984	3	0	--	--	--	--	--	20,939
Steelhead												
Wild	5	15	81	273	38	1	--	--	--	--	--	413
Smolt	0	2	52	269	19	1	--	--	--	--	--	343
Parr	5	13	29	4	19	0	--	--	--	--	--	70
Hatchery	0	0	3	2,098	66	8	--	--	--	--	--	2,175
Sockeye												
Wild	0	14	6,747	782	1	0	--	--	--	--	--	7,544
Hatchery	0	0	150	72	27	22	--	--	--	--	--	271
Coho												
Wild yearling	6	59	56	75	3	0	--	--	--	--	--	199
Wild subyearling	2	0	1	12	9	5	--	--	--	--	--	29
Hatchery yearling	0	109	582	7,036	304	3	--	--	--	--	--	8,034
Bull trout	0	0	0	0	0	0	--	--	--	--	--	0
Juvenile	0	0	0	0	0	0	--	--	--	--	--	0
Adult	0	0	0	0	0	0	--	--	--	--	--	0
Cutthroat	0	0	0	0	0	0	--	--	--	--	--	0
White fish	0	2	5	65	15	28	--	--	--	--	--	115
Northern pikeminnow	1	2	4	12	2	0	--	--	--	--	--	21
Longnose dace	1	44	104	124	126	89	--	--	--	--	--	488
Speckled dace	1	2	1	0	0	0	--	--	--	--	--	4
Umatilla dace	0	0	0	0	0	1	--	--	--	--	--	1
Sucker spp.	1	17	59	53	30	12	--	--	--	--	--	172
Peamouth	0	0	0	0	0	0	--	--	--	--	--	0
Chiselmouth	0	0	0	0	0	2	--	--	--	--	--	2
Redside shiner	0	0	4	0	3	7	--	--	--	--	--	14

Yellow bullhead	0	0	0	0	0	0	--	--	--	--	--	0
Pacific lamprey	6	67	257	168	390	34	--	--	--	--	--	922
River lamprey	0	0	0	1	0	0	--	--	--	--	--	1
Sculpin spp.	0	10	17	17	12	15	--	--	--	--	--	71
Stickleback (3 spined)	0	0	2	6	6	4	--	--	--	--	--	18

						2002						
Chinook												
Wild yearling	--	51	170	111	3	1	0	0	0	0	0	336
Wild subyearling	--	401	1,422	17,679	7,682	11,666	556	20	100	133	55	39,714
Hatchery yearling	--	6	797	2,610	5	0	0	0	0	3	0	3,421
Steelhead												
Wild	--	0	85	137	3	9	3	0	7	8	0	252
Smolt	--	0	52	129	2	3	1	0	0	0	0	187
Parr	--	0	33	8	1	6	2	0	7	8	11	76
Hatchery	--	0	37	2,207	16	0	0	0	0	0	0	2,260
Sockeye												
Wild	--	0	4,711	327	1	0	3	0	0	0	0	5,042
Hatchery	--	0	216	65	0	0	0	0	0	0	0	281
Coho												
Wild yearling	--	9	17	44	1	1	0	0	0	0	0	72
Wild subyearling	--	20	33	186	108	1,021	48	1	8	18	0	1,443
Hatchery yearling	--	1	1,502	10,680	134	46	0	0	0	0	0	12,363
Bull trout	--	0	0	1	0	0	0	0	0	0	0	1
Juvenile	--	0	0	1	0	0	0	0	0	0	0	1
Adult	--	0	0	0	0	0	0	0	0	0	0	0
Cutthroat	--	0	0	0	0	0	0	0	0	0	0	0
White fish	--	0	3	2	3	21	0	0	1	1	0	31
Northern pikeminnow	--	1	8	37	6	37	0	0	3	0	10	93
Longnose dace	--	29	170	240	43	88	9	1	5	6	20	593
Speckled dace	--	0	0	1	1	1	0	0	0	0	0	3
Umatilla dace	--	0	0	3	2	5	2	0	0	0	0	012
Sucker spp.	--	7	44	49	8	54	3	0	1	2	1	169
Peamouth	--	0	0	0	0	0	0	0	0	0	0	0
Chiselmouth	--	0	0	1	0	6	0	1	0	0	0	7

Redside shiner	--	1	0	0	1	34	9	0	1	1	0	47
Yellow bullhead	--	0	0	0	0	0	0	0	0	0	0	0
Pacific lamprey	--	15	212	384	95	256	2	0	0	8	6	978
River lamprey	--	0	0	0	0	0	0	0	0	0	0	0
Sculpin spp.	--	9	38	27	4	15	2	0	0	2	0	97
Stickleback (3 spined)	--	9	17	8	5	7	2	0	0	0	0	48

						2001						
Chinook												
Wild yearling	--	27	83	73	23	0	--	--	--	--	--	206
Wild subyearling	--	95	1,183	34,156	31,098	4,420	--	--	--	--	--	70,952
Hatchery yearling	--	0	8,446	294	17	1	--	--	--	--	--	8,758
Steelhead												
Wild	--	29	123	163	25	1	--	--	--	--	--	341
smolt	--	5	93	154	21	0	--	--	--	--	--	273
parr	--	24	30	9	4	1	--	--	--	--	--	68
Hatchery	--	0	169	1,376	162	4	--	--	--	--	--	1,711
Sockeye												
Wild	--	0	31	26	0	1	--	--	--	--	--	58
Hatchery	--	0	45	85	1	0	--	--	--	--	--	131
Coho												
Wild yearling	--	0	0	0	0	0	--	--	--	--	--	0
Wild subyearling	--	0	26	105	43	17	--	--	--	--	--	191
Hatchery yearling	--	8	4,210	6,193	847	7	--	--	--	--	--	11,265
Bull trout	--	0	1	1	0	0	--	--	--	--	--	1
Juvenile	--	0	1	1	0	0	--	--	--	--	--	1
Adult	--	0	0	0	0	0	--	--	--	--	--	0
Cutthroat	--	0	0	2	0	0	--	--	--	--	--	2
White fish	--	0	5	33	30	10	--	--	--	--	--	78
Northern pikeminnow	--	0	0	6	1	3	--	--	--	--	--	10
Longnose dace	--	11	21	175	73	165	--	--	--	--	--	445
Speckled dace	--	0	0	4	3	0	--	--	--	--	--	7
Umatilla dace	--	0	1	0	14	21	--	--	--	--	--	36
Sucker spp.	--	5	36	108	34	18	--	--	--	--	--	201
Peamouth	--	0	0	0	0	0	--	--	--	--	--	0
Chiselmouth	--	0	0	0	0	1	--	--	--	--	--	1
Redside shiner	--	0	5	8	7	27	--	--	--	--	--	47

Yellow bullhead	--	0	0	0	0	0	--	--	--	--	--	0
Pacific lamprey	--	12	466	521	240	28	--	--	--	--	--	1,267
River lamprey	--	0	12	6	0	0	--	--	--	--	--	18
Sculpin spp.	--	2	6	15	9	23	--	--	--	--	--	55
Stickleback (3 spined)	--	0	0	0	0	246	--	--	--	--	--	246

						2000						
Chinook												
Wild yearling	--	8	192	67	8	9	0	--	--	--	--	284
Wild subyearling	--	162	3,737	41,790	21,618	4,627	310	--	--	--	--	72,244
Hatchery yearling	--	0	2,471	270	8	2	2	--	--	--	--	2,753
Steelhead												
Wild	--	1	171	254	4	16	22	--	--	--	--	468
Smolt	--	0	164	254	3	3	2	--	--	--	--	426
Parr	--	1	7	0	1	13	20	--	--	--	--	42
Hatchery	--	0	208	1,952	59	0	0	--	--	--	--	2,219
Sockeye												
Wild	--	3	1,041	70	0	0	0	--	--	--	--	1,114
Hatchery	--	0	6	5	0	0	1	--	--	--	--	12
Coho												
Wild yearling	--	0	0	0	0	0	0	--	--	--	--	0
Wild subyearling	--	0	0	0	0	0	0	--	--	--	--	0
Hatchery yearling	--	82	2,724	8,769	726	4	0	--	--	--	--	12,305
Bull trout	--	0	2	1	0	1	0	--	--	--	--	4
Juvenile	--	0	2	1	0	1	0	--	--	--	--	4
Adult	--	0	0	0	0	0	0	--	--	--	--	0
Cutthroat	--	0	0	0	0	0	0	--	--	--	--	0
White fish	--	1	9	5	12	41	5	--	--	--	--	73
Northern pikeminnow	--	0	2	2	2	2	1	--	--	--	--	9
Longnose dace	--	1	45	35	128	92	18	--	--	--	--	319
Speckled dace	--	0	3	0	10	4	0	--	--	--	--	17
Umatilla dace	--	0	0	0	6	7	4	--	--	--	--	17
Sucker spp.	--	0	21	70	13	15	2	--	--	--	--	121
Peamouth	--	0	0	0	11	0	0	--	--	--	--	11
Chiselmouth	--	0	0	0	2	4	0	--	--	--	--	6
Redside shiner	--	0	0	1	1	5	1	--	--	--	--	8

Yellow bullhead	--	0	0	0	1	0	0	--	--	--	--	1
Pacific lamprey	--	3	610	268	243	265	4	--	--	--	--	1,393
River lamprey	--	0	1	0	9	10	0	--	--	--	--	20
Sculpin spp.	--	1	16	15	22	17	5	--	--	--	--	76
Stickleback (3 spined)	--	0	0	0	0	0	0	--	--	--	--	0