

KLAMATH RIVER FISHERIES ASSESSMENT PROGRAM

JUVENILE SALMONID MONITORING ON THE MAINSTEM KLAMATH RIVER
AT BIG BAR AND MAINSTEM TRINITY RIVER AT WILLOW CREEK
1997-2000



U.S. Fish and Wildlife Service
AFWO
Arcata, California

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Funded in part by:

Trinity River Task Force
Klamath River Basin Fisheries Task Force

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DEPARTMENT OF THE INTERIOR
U.S. FISH AND WILDLIFE SERVICE
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Abstract

Monitoring of juvenile salmonid emigration on the mainstem Klamath and Trinity rivers has been conducted by the Arcata Fish and Wildlife Office since 1988. Rotary screw traps have been utilized as monitoring devices on these rivers since 1989. This report describes monitoring conducted during 1997 through 2000. Catch data were used to calculate abundance indices for juvenile chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*O. kisutch*), and steelhead (*O. mykiss*). The age of outmigrants, length frequency distributions, development stages, migration rates, and hatchery contributions were also determined. River discharge and temperature data are also presented. Non-target species abundance and biological data are presented for sculpin (*Cottus sp.*), speckled dace (*Rhinichthys osculus*), Klamath smallscale sucker (*Catostomus rimiculus*), Pacific lamprey (*Lampetra tridentata*), American shad (*Alosa sapidissima*), green sturgeon (*Acipenser medirostris*), and threespine stickleback (*Gasterosteus aculeatus*). Catch data is also presented for less abundant species.

Introduction

The Klamath River system is the second largest river system in California, draining an area of approximately 26,000 square kilometers (km²) in California, and 14,400 km² in Oregon. The Trinity River is the largest tributary to the Klamath River, draining approximately 7,690 km² in California. Two dams, Iron Gate Dam on the Klamath River and Lewiston Dam on the Trinity River, are the upper limits of anadromous fish migration in the Basin. Two fish hatcheries, Iron Gate Hatchery (IGH) on the Klamath River and Trinity River Hatchery (TRH), were constructed to mitigate for losses of anadromous fish habitat upstream of Iron Gate and Lewiston dams.

The Klamath and Trinity rivers once supported large runs of chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*O. kisutch*) and steelhead trout (*O. mykiss*) which supported tribal, ocean troll and recreational fisheries. Declines in the Klamath Basin anadromous fish populations due to floods, water and land management, and fish harvest management (Klamath River Basin TF, 1991), led Congress to enact the Trinity River Basin Fish and Wildlife Restoration Act (PL 98-541) in 1984 and the Klamath River Basin Conservation Area Fishery Restoration Program (PL 99-552) in 1986. Both of these Acts directed the Secretary of the Interior to take actions necessary to restore the fishery resources of the Klamath Basin, primarily by addressing restoration of freshwater habitat.

Past fishery investigations in the Basin have focused primarily on adult returns, due to harvest allocation and escapement objectives. Data on adult returns is not adequate for monitoring restoration efforts in the basin because adult return data is affected by ocean mortality (both juveniles entering the ocean, and adult mortality), harvest at sea, and a number of other factors. The monitoring of emigrating juvenile salmonid populations in conjunction with habitat availability data and suitability studies may permit for the evaluation of restoration efforts because these studies focus on the juvenile phase of life which is most affected by instream conditions.

Intermittent juvenile salmonid investigations have been conducted in the Klamath River Basin by the Coastal California Fish and Wildlife Office (CCFWO) since 1981 (USFWS 1982, 1983). In 1988, a substantial monitoring effort was undertaken in both the mainstem Klamath and Trinity rivers utilizing frame nets, and in 1989, the utilization of rotary screw traps. The purpose of this project was to monitor the abundance, timing, hatchery contribution, and biological parameters of emigrating anadromous salmonids in the mainstem Klamath and Trinity Rivers. It is intended that this information will provide basic biological information that can be used by freshwater habitat managers and potentially fishery harvest managers.

Methods

Trapping Sites

During the spring months (Julian Weeks 1-39) of 1997 through 2000, Klamath River trapping was conducted at the Big Bar river access, located at river kilometer (rkm) 80 (16 rkms downstream of Orleans CA, and 10 rkm above the Trinity River confluence). The Big Bar trapping site was originally chosen in 1988. The site was selected because it allowed sampling of fish outmigrating from virtually the entire Klamath River Basin upstream of the Trinity River confluence, and the year-to-year channel configuration appeared to be consistent. The Big Bar site also allowed ready access by boat or vehicle and was not visible from Highway 96. During the spring and early fall (Julian Weeks 40-52) months of 1996 through 2000, Trinity River trapping was conducted at the Riverdale Campground (rkm 34) near Willow Creek (Figure 1). This location has been used since 1991 because the channel configuration is fairly consistent, it has private access, and the trap is not visible from Highway 96.

Trap Design and Operation

Rotary screw traps with 2.44 m diameter cones were used (Figure 2). Traps were anchored with 0.64 cm diameter aircraft cable to large trees or a series of steel fence stakes upstream. One or two 0.1 x 0.15 x 6.0 m (4"x6"x10') beams were used to push the trap out from the bank and to compensate for changes in river stage and velocity. Cone revolutions were used to determine where and when the trap could be operated without inducing unnecessary risk to the trap. River conditions ultimately dictated when traps were deployed. An effort was made to place rotary traps in the river prior to the emigration of young-of-year (YOY) or age 0 chinook so that emigration patterns and the relative abundance of natural and hatchery chinook within all life history stages could be evaluated. The traps were fished on the edge of the thalweg during high river discharge, and incrementally moved back into the thalweg as river discharge decreased. When deployed, the bottom of the cone was generally <1 m from the stream bottom. A sampling day was defined as the time period between the setting of the trap one day, and removal of captured fish approximately 24 hours later. This period encompassed all night hours, when the majority of juvenile salmonids emigrate. Trap checks usually occurred during late morning or early afternoon. During peak emigration periods, fish were removed from traps several times during the sampling period (the frequency dictated by water temperatures, fish numbers, and mortality rates).

Daily trap data were summarized by Julian week (JW; Table 1), with the first day of JW 1 commencing on the first day of the year. All JWs are seven days in length except the last JW of the year and the 9th JW during leap years, which are both eight days in length.

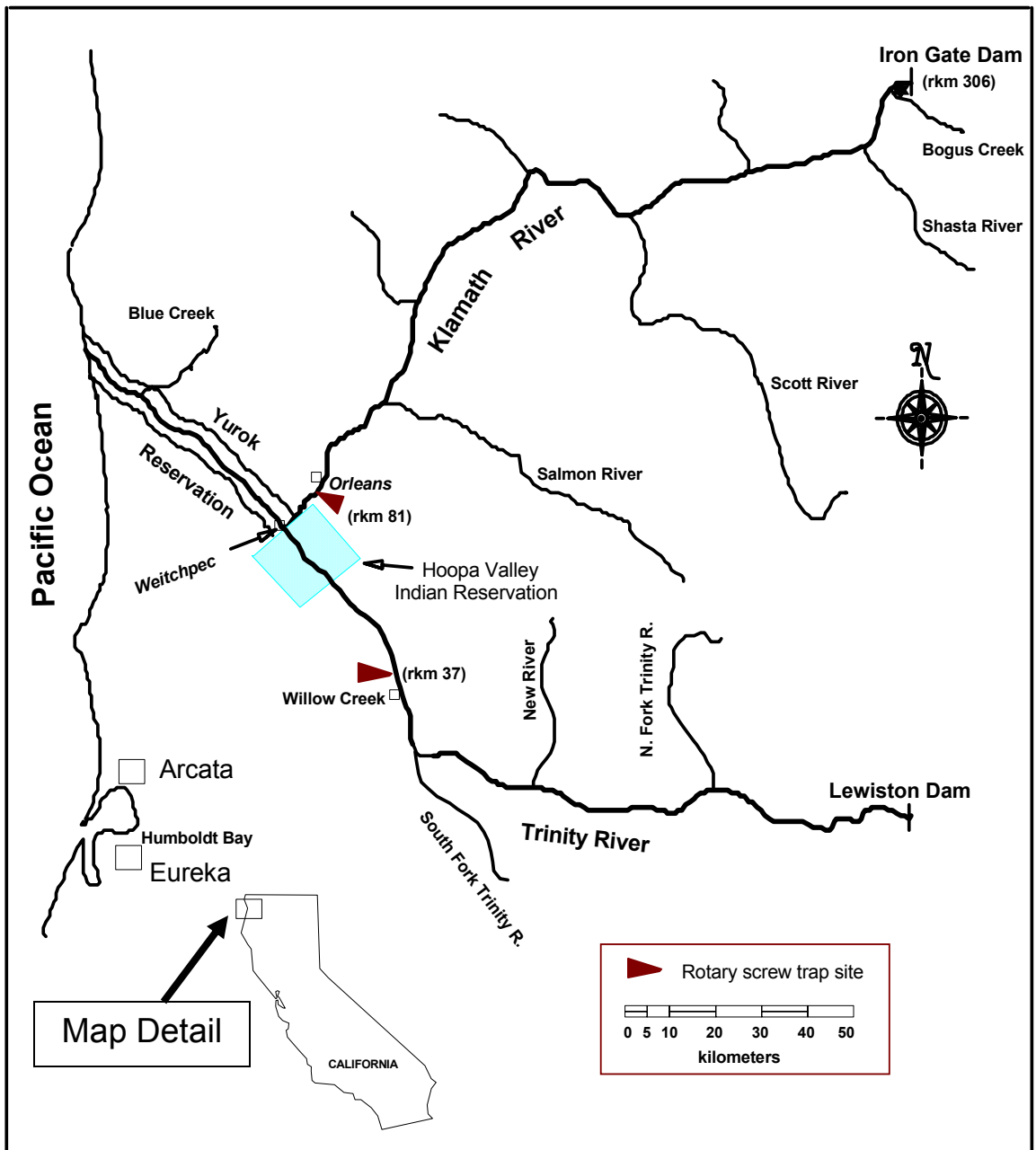


Figure 1. Location of rotary screw trap sites on the Klamath and Trinity rivers in Northwestern CA.

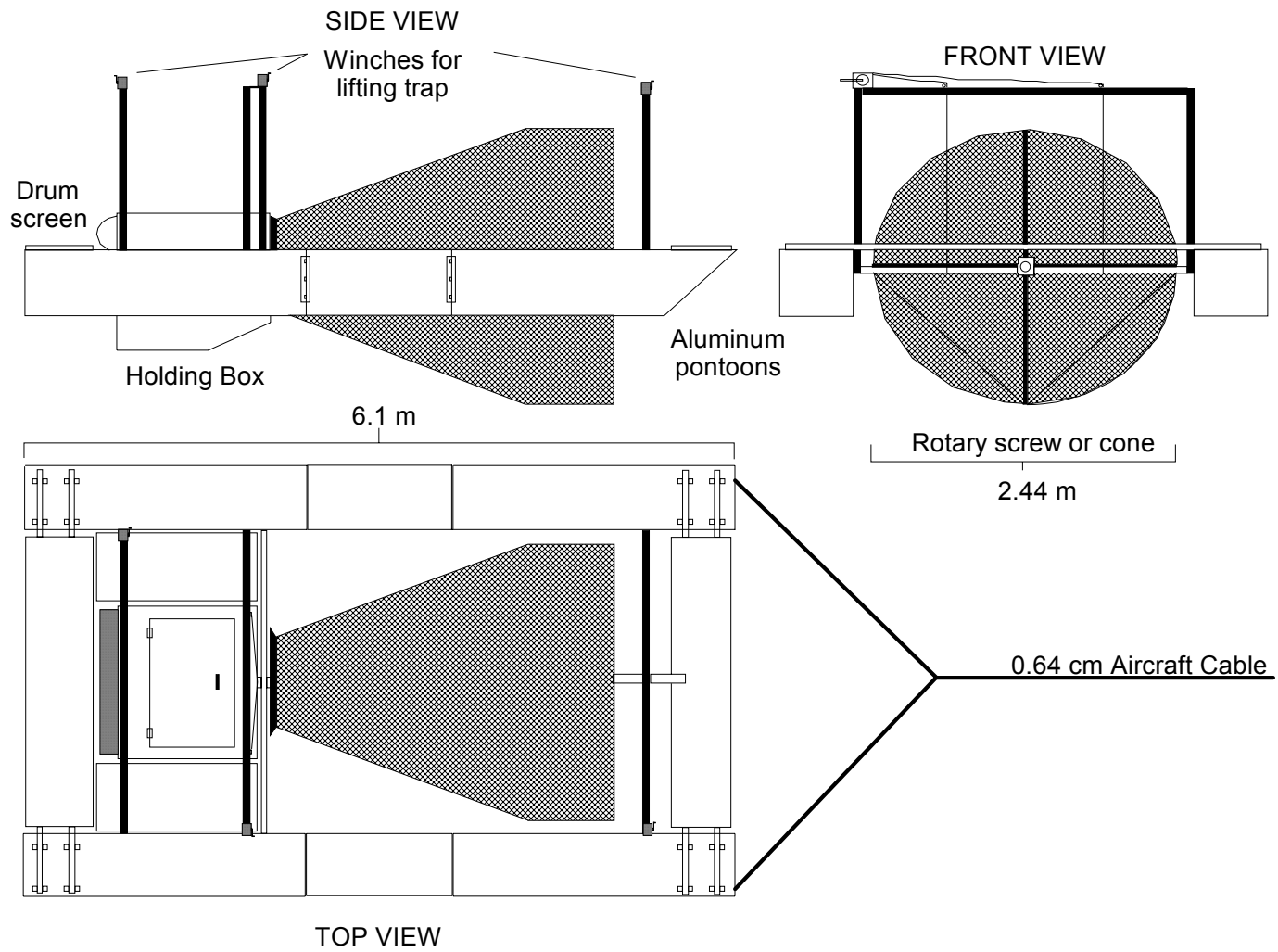


Figure 2. Rotary screw trap design depicting key components and dimensions.

Table 1. Julian week and corresponding first date.

Julian Week	Week beginning	Julian Week	Week beginning	Julian Week	Week beginning
1	1/1	18	4/30	35	8/27
2	1/8	19	5/7	36	9/3
3	1/15	20	5/14	37	9/10
4	1/22	21	5/21	38	9/17
5	1/29	22	5/28	39	9/24
6	2/5	23	6/4	40	10/1
7	2/12	24	6/11	41	10/8
8	2/19	25	6/18	42	10/15
9	2/26	26	6/25	43	10/22
10	3/5	27	7/2	44	10/29
11	3/12	28	7/9	45	11/5
12	3/19	29	7/16	46	11/12
13	3/26	30	7/23	47	11/19
14	4/2	31	7/30	48	11/26
15	4/9	32	8/6	49	12/3
16	4/16	33	8/13	50	12/10
17	4/23	34	8/20	51	12/17
				52	12/24

Water Flow and Temperature Measurements

Normal cone operating depth was 1.07 m. Daily velocity measurements were taken directly in front of the cone as follows: the submerged portion of the cone was divided into three cells (right, center, left); within each cell, velocity was measured at 0.2 and 0.8 of the cone operating depth for 60 seconds using a General Oceanics digital flowmeter (Model 2030) (General Oceanics, Inc. 1983). Mean water velocity (m/s) was calculated for each cell. Each cell area (m²) was calculated, then multiplied by its corresponding mean water velocity (m/s). The values for each cell were summed, yielding an estimate of volume of river discharge sampled (Q_s) in cubic meters per second (m³/s). Discharge data from U.S. Geological Survey Water Resource gauge stations at Orleans (#11-523000 at rkm 95.2) on the Klamath River and at Hoopa (#11-530000 at rkm 19.9) on the Trinity River were used as surrogate measures of mean daily river discharge (Q) at the trap sites. It was assumed that there was no significant difference between river discharge at these gauging stations and the respective trap locations.

Water temperature data were collected using an Onset Stow Away Tidbit temperature logger attached to the outside bottom edge of each traps live box. Temperature was recorded every two hours for the entire sampling season. Mean daily river temperatures were calculated by averaging over 24-hour periods.

Biological Sampling Procedures

All fish captured were anesthetized with tricaine methanesulfonate (MS-222) prior to processing. Up to 30 individuals of each species and developmental stage (parr, pre-smolt, smolt, etc.) were randomly subsampled (biosampled) from the daily catch. Biosampled salmonids were measured to the nearest mm fork length (FL), weighed by volumetric displacement, and examined for developmental stage, fin clips, and physical irregularities. All captured salmonids that were not biosampled were tallied by species, development stage and/or age and examined for fin clips.

Fish other than chinook, coho, or steelhead were considered non-target species. Non-target fishes captured were identified to species (or genus in some cases), enumerated, and up to 30 specimens were measured to FL. Total length (TL) was measured on species without a forked caudal fin. All anesthetized fish not retained were allowed to resuscitate in buckets of ambient river water before being released downstream of the trap. NovAqua® water conditioner was added to recovery buckets to help protect fish during handling, minimize infection, reduce stress and aid in recovery. Adult salmonids were not anesthetized. Fork lengths of adult salmonids were approximated before release. Any salmonid mortality in the live box was checked for a fin clip and, if included in the subsample, measured (FL). If a salmonid escaped during netting or handling before it could be identified to species or checked for a hatchery mark (i.e. fin or maxillary clip), it was counted in the sample tally as an "unknown". Based on the probability of occurrence, unknown fish were redistributed into the most likely marked or unmarked species categories.

When present, daily subsamples of marked hatchery chinook were collected. A missing adipose fin (Ad-clip) was the external marker depicting fish with a coded wire tag (CWT) embedded in the snout. A maximum of five hatchery chinook were collected daily. Ad-clipped fish were sacrificed for subsequent CWT retrieval. Collected fish were stored in a freezer until time of dissection. Occasionally, Ad-clipped fish were also collected for disease sampling, after which the CWT's were removed.

Juvenile chinook were classified as Age 0 (young of year) or Age 1, based on size and date of capture. Coho were classified as either Age 0 or Age 1; the latter of which were much larger in size, silvery, and lacked distinct parr marks. Steelhead were also classified by age classes based on size and scale analysis. Scale samples were collected from a subsample of chinook, coho, and steelhead for age analysis. Fish were assigned an age based on the number of annuli (overwinter period) present. A fish with one annuli was classified as a Age 1, two annuli designated as Age 2, etc.

Age 0 chinook and coho captured in 1997 were produced from adult spawners in 1996 and were therefore considered 1996 brood year (BY), while Age 1 chinook and coho were BY 1995 fish. Age 0 steelhead captured in 1997 were considered BY 1997, while Age 1 and Age 2 steelhead were considered BY 1996 and BY 1995 respectively.

Hatchery and Natural Stocks Estimate

Captured chinook and coho were later categorized as being either of hatchery or natural origin, based on hatchery marks and hatchery release data provided by TRH and IGH. The California Department of Fish and Game (CDFG) coded wire tagged and Ad-clipped natural chinook from the upper Trinity River as part of their natural stocks assessment program. Natural fish are defined as the progeny of river or tributary spawning adults regardless of parental genetics. Hatchery release strategies for chinook consist of fingerling releases in the spring and "yearling" releases in the fall. These two distinct release periods prompted the division of the trapping season into spring and fall monitoring periods. The spring monitoring period was designated as JW 1 through 39 and the fall period 40 through 52. Hatchery coho and steelhead were released as Age 1 fish in the spring.

Chinook

All Ad-clipped fish collected were passed through a magnetic field detector manufactured by Northwest Marine Technology to determine the presence or absence of a CWT. The snout of each fish that registered positive for a tag was dissected until the CWT was recovered. Each fish registering negative for a tag had its head dissolved in a solution of potassium hydroxide. A magnet was then stirred through the resultant slurry. If the tag was not recovered, the fish was considered an Ad-clipped fish that had shed its tag (No-Tag). Recovered tags were decoded using a dissection microscope. CWT recoveries were summed by specific CWT code for each JW.

The number of CWT fish captured for each code was estimated by multiplying the number of CWT's recovered by an expansion factor (E) which accounted for subsampling of Ad-clipped fish, CWT's that were lost during dissection, and unreadable tags. The expansion factor (E) was calculated using the formula:

$$E = (C/MS)(Ad/H)(T/TR)$$

Where,

C =	Total # of chinook captured,
MS=	Number of fish examined for Ad-clips,
Ad=	Number of Ad-clipped fish observed,
H =	Number of Ad-clipped fish collected,
T =	Number of collected Ad-clipped fish containing a CWT,
TR=	Total number of CWT's recovered and decoded after processing.

To account for unmarked hatchery fish over a JW, the expanded estimates for each CWT code were multiplied by a production multiplier (PM) specific to each CWT code. Each PM was calculated from hatchery release data (Pacific States Marine Fisheries Commission, 1997,1998,1999, 2000), using the following formula:

$$PM = \frac{\# \text{ Tagged} + \# \text{ Poor Tagged} + \# \text{ Unmarked}}{\# \text{ Tagged}}$$

Where:

# Tagged =	The actual number of Ad-clipped fish released with a CWT,
# Poor Tagged =	The number of Ad-clipped fish that were tagged and shed the tag (No-Tags),
# Unmarked =	The number of unmarked fish in a release group.

The estimated contribution of hatchery fish attributable to a specific CWT code for a given JW, was calculated by the following formula:

$$\# \text{Hatchery}_{\text{code } i} = (\# \text{recovered}_{\text{code } i}) * (E_{\text{code } i}) * (PM_{\text{code } i})$$

The total weekly estimated hatchery contribution to the catch was the sum of all estimated hatchery fish attributable to CWT codes. The weekly contribution of naturally produced chinook to the catch was estimated by subtracting the estimated hatchery contribution from the total weekly catch. Occasionally, the daily estimated hatchery contribution exceeded the total daily catch. In such instances the estimated hatchery contribution was limited to the actual daily catch.

Towards the end of each emigration period, due to relatively few fish passing by the trap, it is possible that we captured juveniles of hatchery origin not represented by Ad-clipped fish. If no hatchery fish captured within a given time period were marked, the hatchery contribution for that period could not be differentiated from the natural component. Thus, all fish captured during that period were considered of natural origin. The hatchery and natural stock estimates assume no differential mortality between tagged and untagged fish of the same release group, equal vulnerability to capture and accurate estimates of the numbers of marked, unmarked and poor tagged fish released from the hatchery. The estimate does not account for Ad-clipped or non-Ad-clipped hatchery fish removed from the river upstream.

Coho

All hatchery coho released in 1997-2000, were marked with a maxillary clip (TRH coho received a right maxillary clip and IGH coho received a left maxillary clip). The weekly contribution of naturally produced coho to the catch was estimated by subtracting the actual hatchery contribution (marked fish) from the total weekly catch.

Steelhead

Hatchery steelhead released in 1997-2000 were marked with an adipose fin clip. Analysis of scale samples taken over the sampling season provided length to age relationships.

Abundance Index

Catch effort data were recorded and evaluated for each sample day. Trends in emigration were analyzed on a JW basis using daily abundance indices, adjusting for days not sampled (occasionally woody debris or an accumulation of aquatic vegetation would cause the cone to cease rotating). Daily abundance indices (Index_d) for each species and development stage were calculated by the following equation:

$$\text{Index}_d = \text{Catch}_d / (Q_s / Q)$$

Where: Catch_d = daily catch of a species
 Q_s = volume of water sampled (cfs)
 Q = mean daily river discharge (cfs)

Weekly abundance indices were calculated for each JW using the following equation:

$$\text{Index}_{\text{JW}_i} = \sum \text{Index}_d (\# \text{ days in JW}_i / \# \text{ days sampled during JW}_i)$$

Abundance indices were also calculated for the more abundant non-target species in the same manner as for salmonids.

The usefulness of this index as an estimator of abundance is contingent upon the assumptions that catch rates are directly proportional to the percentage of river flow sampled and that individuals from a given species are equally susceptible to capture. The abundance index is not intended to represent a population estimate it is used to compare relative abundance between weeks during the trapping season, between trapping seasons, and between years.

Migration Rate

Initial migration rates for hatchery chinook and coho were estimated by dividing the distance (rkm) traveled by the number of days elapsed between the initial release date and initial capture date for specific CWT codes or marked fish. Mean migration rates were calculated for each CWT group throughout the trapping period. Because IGH released chinook over a 3-day period (June 3-5) during the spring of 1997, the median date of June 4 was used as the initial release date when calculating mean migration rates. Due to a prolonged release period (March 18 to March 31), mean migration rates were not calculated for TRH chinook. Naturally produced chinook tagged by CDFG on the Trinity River were tagged in early spring of 1997, before initiation of migration, so migration rates for these CWT groups were not calculated.

Daily migration rates were weighted by the proportion of river flow sampled to reflect the untrapped fish passing through the sampling area. A mean migration rate per CWT code or marked fish was calculated by the following formula with the first 10% and last 10% of each group excluded:

$$Rate_{mean} = \frac{\left(\# \frac{rkm}{d} \frac{Q}{Q_s} \right)}{\left(\# \frac{Q}{Q_s} \right)}$$

Where # = Daily expanded CWT_i code or fin clip counts,
 rkm/d = distance traveled divided by number of days taken to reach trap after initial release,
 Q = mean daily volume of river discharge ,
 Q_s = volume of river discharge sampled.

The 10 through 90 percent capture dates were used to calculate the migration rate of the majority of each specific CWT or mark group. When less than ten tags of any specific release group were recovered all tags were used. Ad-clipped chinook not collected (i.e.; released at time of capture) were included in migration rate calculations using tag allocation procedures previously described in the hatchery and natural stocks estimation section of this report (page 8).

Results and Discussion

Chinook monitoring on the mainstem Klamath River at Big Bar

Juvenile salmonid monitoring on the Klamath River at Big Bar occurred for 126, 97, 115 and 87 days respectively in 1997, 1998, 1999 and 2000, coinciding with trap deployment in March or April and ending in July or August. End dates are in part due to the water-year type, timing and duration of sustained high water temperatures, catch levels and the accumulation rate of algal drift. The Big Bar trap (BBT) effectively fished 82, 87, 91 and 89 percent of the total days possible (start date to end date) respectively, in 1997, 1998, 1999 and 2000 (Table 2).

Table 2. Period and duration of Spring monitoring, trapping rate and date of peak daily average water temperature at the BBT, 1997-2000.

Year	Start-end dates	Days Trapped	Days possible	Trapping rate	Peak daily average water temperature °C	Date occurred
1997	Mar 28-Aug 20	126	154	82%	25.5	Aug 8
1998	Apr 30-Aug 15	97	112	87%	24.3	Jul 27
1999	Apr 11-Aug 10	118	126	94%	23.5	Jul 27
2000	Apr 06-July 19	93	98	94%	23.3	Jun 29

Annually, Iron Gate Hatchery (IGH) released between 4.7 and 5.6 million chinook fingerlings in June. Releases include AD-clipped CWT groups representing between 3.6 and 4.3 percent of a given brood-years fingerling release total. There are 225 river kilometers (rkm) between IGH and the BBT. The time between release and first capture of an Ad-clipped fingerling at the BBT ranged from 4 days in 2000 to 16 days in 1999. The 4 day travel time in 2000 represents an initial emigration rate of 56.3 rkm/day. The mean emigration rate is more representational of the total release rate. Mean emigration rates for IGH fingerlings and ranged between 7.4 and 11.8 rkm/day (Table 3).

Table 3. Iron Gate Hatchery fall-run fingerling releases and recoveries at the BBT, 1997-2000.

IGH Age 0 Fall Chinook Releases				Migration rates				
Year	Number Released	Percentage (AD-clipped)	Release dates	Date first AD-clip Captured	Days After Release	Initial Rate (rkm/day)	Mean Rate (rkm/day)	Ad-clips Captured (n)
1997	5,600,000	3.7%	6/03-6/05	6/18/97	15	15.0	7.42	944
1998	5,100,000	4.1%	6/08-6/11	6/17/98	9	25.0	11.82	594
1999	4,700,000	4.3%	6/21-6/22	7/07/99	16	14.0	10.00	450
2000	5,028,070	3.6%	6/09-6/10	6/13/00	4	56.3	8.12	205

Chinook Catch Totals

For spring monitoring 1997 through 2000, the number of Age 0 chinook captured at the BBT ranged from 11,153 to 27,067 fish. Catch-per-unit effort totals ranged from 120 in 2000, to 279 in 1998. The overall chinook Age 0 catch in 1998 was the largest since initiating downstream migrant trapping at Big Bar in 1988. Hatchery percentage in trap catches for 1997-2000, ranged from 44% in 2000 to 83% in 1997 (Table 4).

Table 4. BBT hatchery and natural Age 0 chinook catch totals, catch-per-unit effort (CPUE), and hatchery percentages, Spring monitoring, 1997-2000.

Spring Monitoring	Days Fished	Age 0 Chinook				
		Hatchery	Natural	Total	CPUE	% Hatchery
1997	126	15,700	3,108	18,808	149	83%
1998	97	14,359	12,708	27,067	279	53%
1999	118	10,935	7,877	18,812	159	58%
2000	93	4,962	6,191	11,153	120	44%
97-00 Totals	434	45,956	29,884	75,840	707	61%
97-00 Avg	109	11,489	7,471	18,960	177	

As in past years (USFWS, 1991, 1992a, 1992b, 1994), a few Age 1 “yearling” chinook are captured each spring. Ad-clipped yearlings are released from Iron Gate Hatchery each October. A total of 28 non-Ad-clipped chinook and 3 Ad-clipped yearlings were captured in the four spring trapping periods.

Chinook Catches and Fork Lengths

Spring 1997: Fork lengths from 1,691 chinook (9% of the total catch) were measured. Mean fork lengths of Age 1 chinook range from 116mm to 140mm (n=6) and were captured in 3 consecutive weeks (JW 19-21) in May. Initial catches of Age 0 chinook occurred in JW 15 (0=39, sd=1.0, n=3) (Figure 3). Mean fork lengths increased steadily through JW 24 (0=104, sd=12.4, n=199). In JW 25 hatchery fish were first observed and comprised 59% of the catch that week. CPUE increased significantly from 244 fish in JW 25 to a peak of 1,033 fish in JW 27 before dropping off significantly. Upon the arrival of hatchery fish, mean weekly fork lengths decreased from a mean of 104 mm (sd=12.37, n=199) to a mean of 88 mm (sd=7.5, n=246). Trapping became intermittent after JW 32. The mean fork length at that time was 102mm (sd=12.6, n=33) (Appendix 25).

Spring 1998: Fork lengths from 1,650 chinook (6.1% of the total catch) were measured. Mean fork lengths of Age 1 chinook range from 128mm to 193mm (n=10) and were captured from the beginning of trapping in April through mid-June (Figure 3). Initial catches of Age 0 chinook occurred in JW 18 (0=73, sd=30.4, n=5) (Figure 3). Mean fork lengths increased steadily through JW 23 (0=101, sd=9.7, n=212). In JW 24 hatchery fish were first observed and comprised 2% of the catch that week. CPUE increased significantly from 145 fish in JW 24 to a peak of 900 in JW 25. The CPUE remained high, greater than 200 fish, before dropping off significantly during JW 30. Upon arrival of hatchery fish, mean weekly fork lengths decreased from a mean of 101mm (sd=9.7, n=212) to a mean of 91mm (sd=7.0, n=210). Trapping concluded on JW 31, with a mean weekly fork length of 93mm (sd=9.1, n=125) (Appendix 27).

Spring 1999: Fork lengths from 1,577 chinook (8.4% of the total catch) were measured during spring 1999 monitoring. Age 1 chinook were captured in JW 17 (0=152, n=1) and again in JW 22 (0=134, sd=8.5, n=2) (Figure 3). Initial catches of Age 0 chinook occurred in JW 15 (0=38, sd=2.1, n=2) (Figure 3). Mean fork lengths increased steadily through JW 23 (0=61, sd=14.2, n=12). In JW 27 hatchery fish were first observed and comprised 19% of the catch that week. CPUE steadily increased from 2 fish in JW 24 to a peak of 1,729 fish in JW 28 before dropping of significantly. Upon the arrival of hatchery fish, mean weekly fork lengths decreased from a mean of 97mm (sd=9.0, n=200) to a mean of 92mm (sd=6.7, n=180). Trapping concluded on JW 32, with a mean weekly fork length of 94mm (sd=11.2, n=49) (Appendix 29).

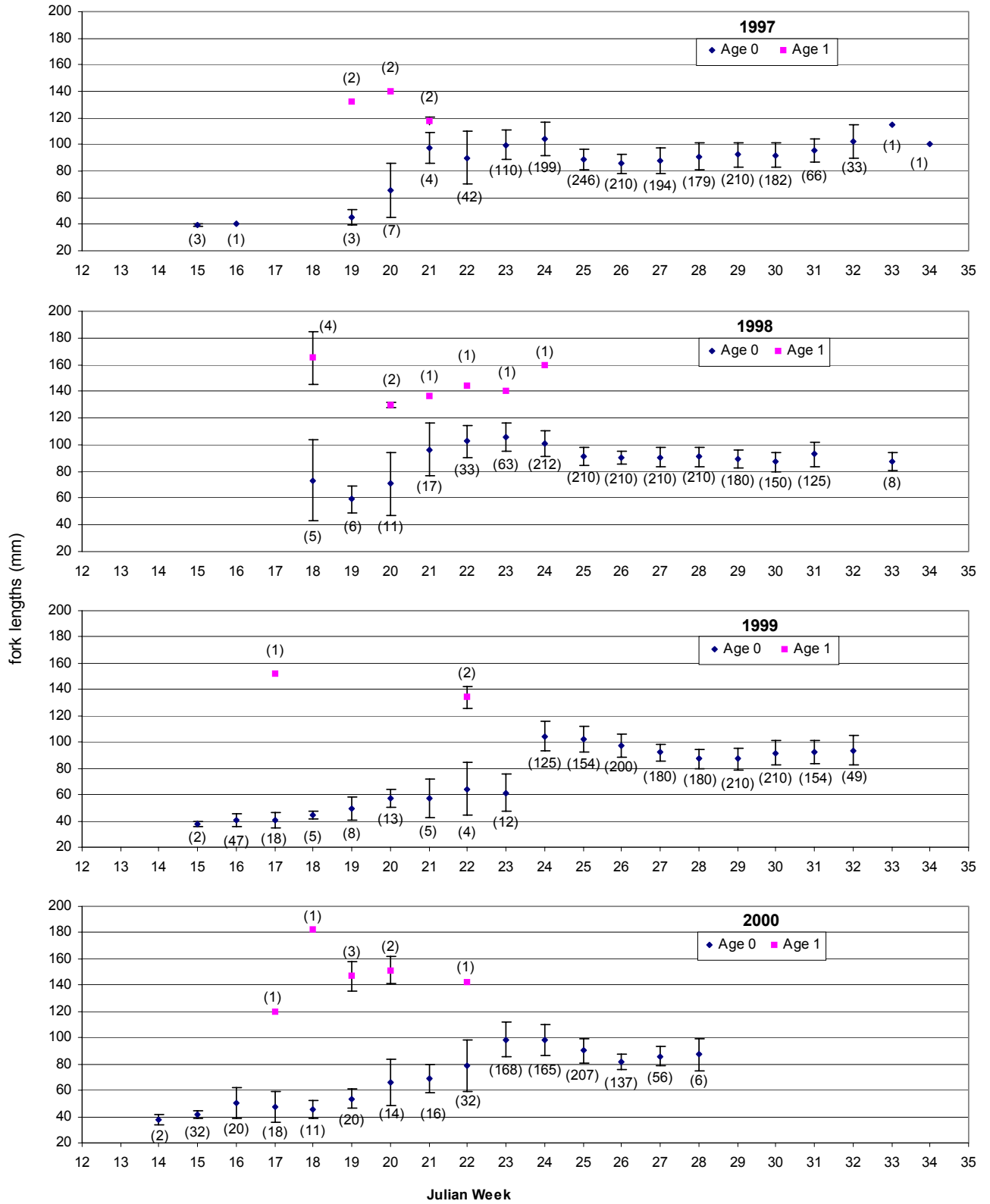


Figure 3. Chinook Age 0 and Age 1 mean fork lengths (mm) by Julian week on the BBT, 1997-2000. (+/- 1 standard error, sample size)

Spring 2000: Fork lengths from 904 chinook (8.2% of the total catch) were measured during spring 2000 monitoring. Mean fork lengths of Age 1 chinook, captured between JW 17 and JW 22, ranged from 120-182mm (n=8) (Figure 3). Initial catches of Age 0 chinook occurred in JW 14 (0=38, sd=3.5, n=2). Mean fork lengths increased steadily through JW 21 (0=98, sd=11.3, n=165) (Figure 3). In JW 22 hatchery fish were first observed and comprised 17% of the catch that week. CPUE increased from 37 fish in JW 22 to a peak of 762 fish in JW 26 before dropping off significantly. Upon arrival of hatchery fish, mean weekly fork lengths increased from a mean of 69mm (sd=10.8, n=16) to a mean of 79mm (sd=19.5, n=32). Trapping became intermittent after JW 27. The mean fork length at that time was 87mm (sd=12.5, n=6) (Appendix 31).

Chinook Abundance Indexes and Hatchery Contributions by Year

Spring 1997: Monitoring at the BBT began in late March, with very few natural Age 0 chinook were captured before the beginning of June. Catches increased weekly throughout the month of June, with the peak weekly catch occurring in the last week of June (JW 26). Hatchery Age 0 chinook contributions began during JW 25 and peaked in JW 27 (Figure 4). Spring monitoring at the BBT ended in late August due to low trap catches and large algae loads. The 1997 BBT abundance index total was 546,736.

Spring 1998: Monitoring at the BBT began in late April, with very few natural Age 0 chinook being captured before the beginning of June. Catches increased weekly throughout the month of June, with the peak weekly catch occurring in the second week of July (JW 28). Hatchery Age 0 chinook contributions began during JW 24 and peaked in JW 25 (Figure 4). Spring monitoring at the BBT ended in mid August due to low trap catches and large algae loads. The 1998 BBT abundance index total was 1,914,406.

Spring 1999: Monitoring at the BBT began in early April, with very few natural Age 0 chinook being captured before the middle of June. Catches increased weekly throughout the month of June, with the peak weekly catch occurring in the second week of July (JW 28). Hatchery Age 0 chinook contributions began during JW 27 and peaked in JW 28 (Figure 4). Spring monitoring at the BBT ended in early August due to low trap catches and large algae loads. The 1999 BBT abundance index total was 798,674.

Spring 2000: Monitoring at the BBT began in early April, with few natural Age 0 chinook being captured before early June. Catches increased weekly throughout the month of June, with the peak weekly catch occurring in the third week in June (JW 25). Hatchery Age 0 chinook contributions began during JW 22 and peaked in JW 26 (Figure 4). Spring monitoring at the BBT ended in early Mid July due to low trap catches and large algae loads. The 2000 BBT abundance index total was 511,798.

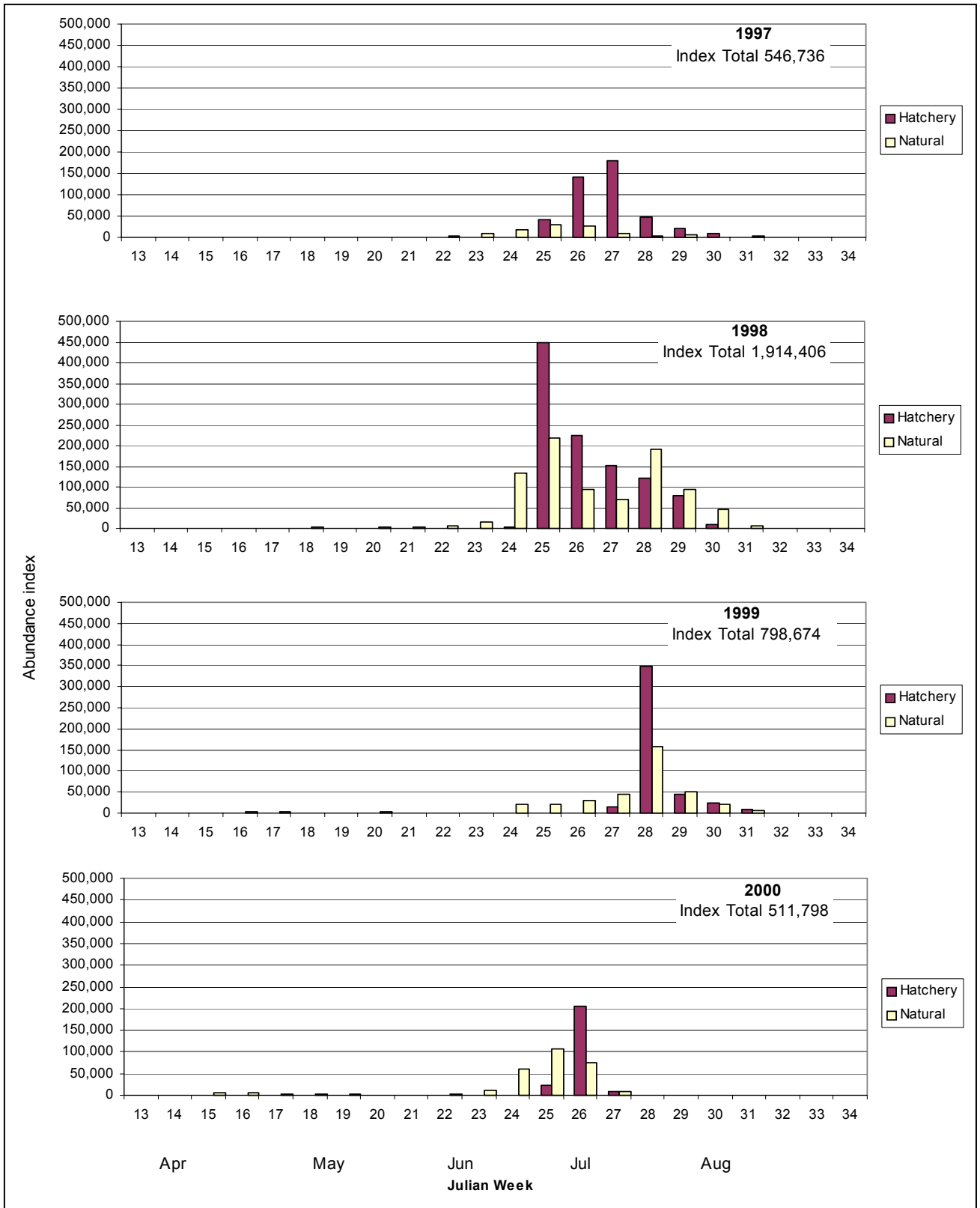


Figure 4. Weekly abundance index totals for natural and hatchery chinook at the BBT, 1997-2000

Emigration Timing

A consistent feature in all four spring monitoring periods 1997-2000, is that few natural Age 0 chinook were captured prior to the beginning of June (JW 23). Natural chinook emigration occurred earlier in 1997 and 2000 compared to 1998 and 1999, and corresponds to increased water temperatures occurring earlier in the spring (Figure 5). Water temperatures reached 15°C in early May 1997, mid-May in 2000, late May in 1998 and early June in 1999 (Figure 6). Sustained high water temperatures occurred in both 1997 and 2000, leading to stress related fish kills. In 2000, dead fish were observed in late June and early July. CDFG estimated fish deaths in the tens of thousands as a conservative estimate, and that the true number could be as many as 100,000 to 300,000 fish (chinook, Age 0, and Age 0, Age 1 and Age 2 steelhead) that died in the mainstem Klamath River (CDFG 2000). A similar fish kill occurred in 1997, but later in the summer (August) and included a wider range of non-salmonid species. Both the 1997 and 2000 fish kills occurred following a period of sustained high air temperatures with resultant increases in mainstem water temperatures. Two pathogens endemic to the Klamath Basin: *Ceratomyxa shasta* (ceratomyxosis) and *Flavobacterium columnare* (columnaris) are stress triggered infections and likely the direct cause of death, although low dissolved oxygen levels are also suspected in 1997.

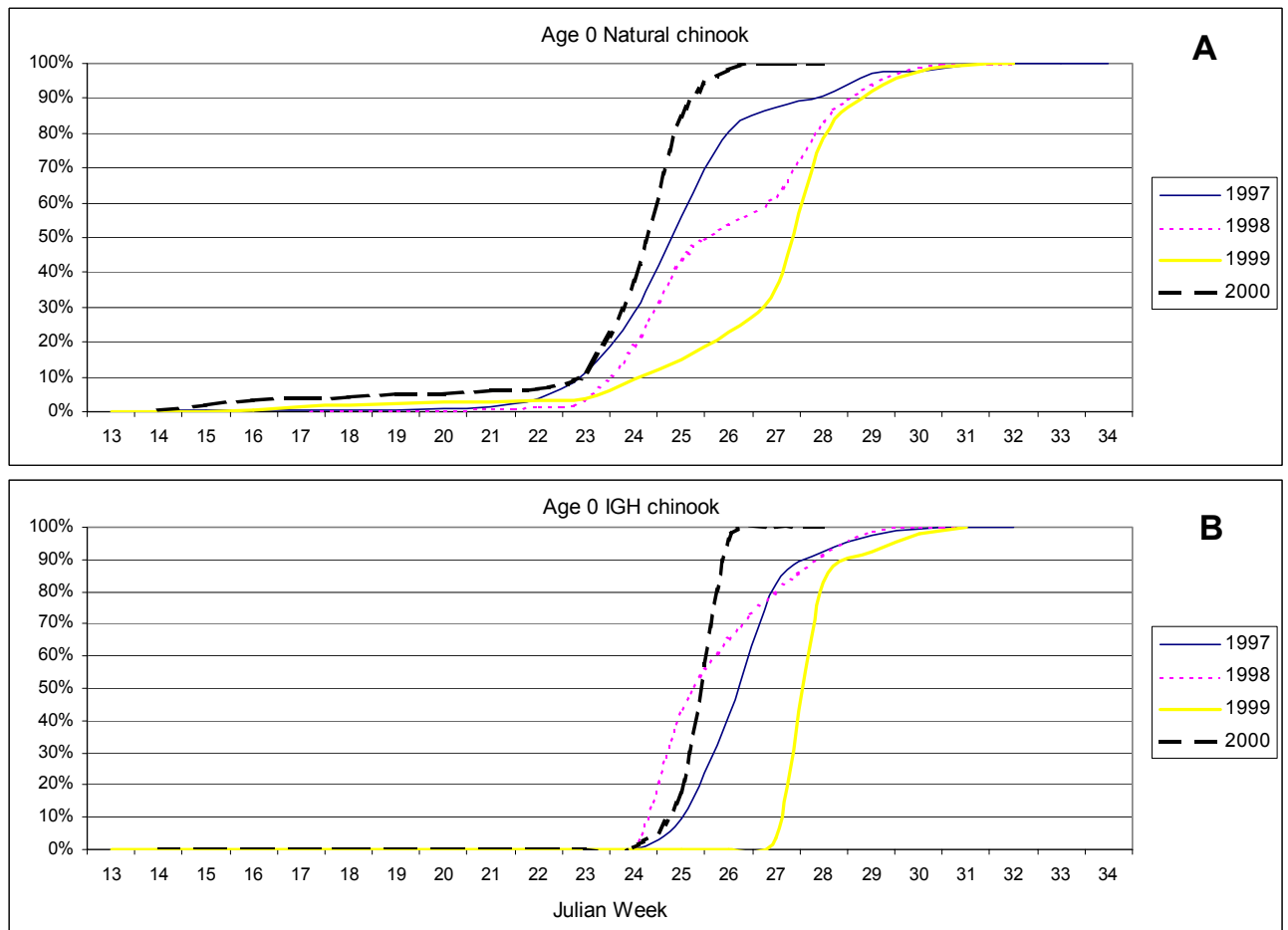


Figure 5. Emigration timing of natural (A) and hatchery Chinook (B) captured at the BBT, Spring 1997-2000.

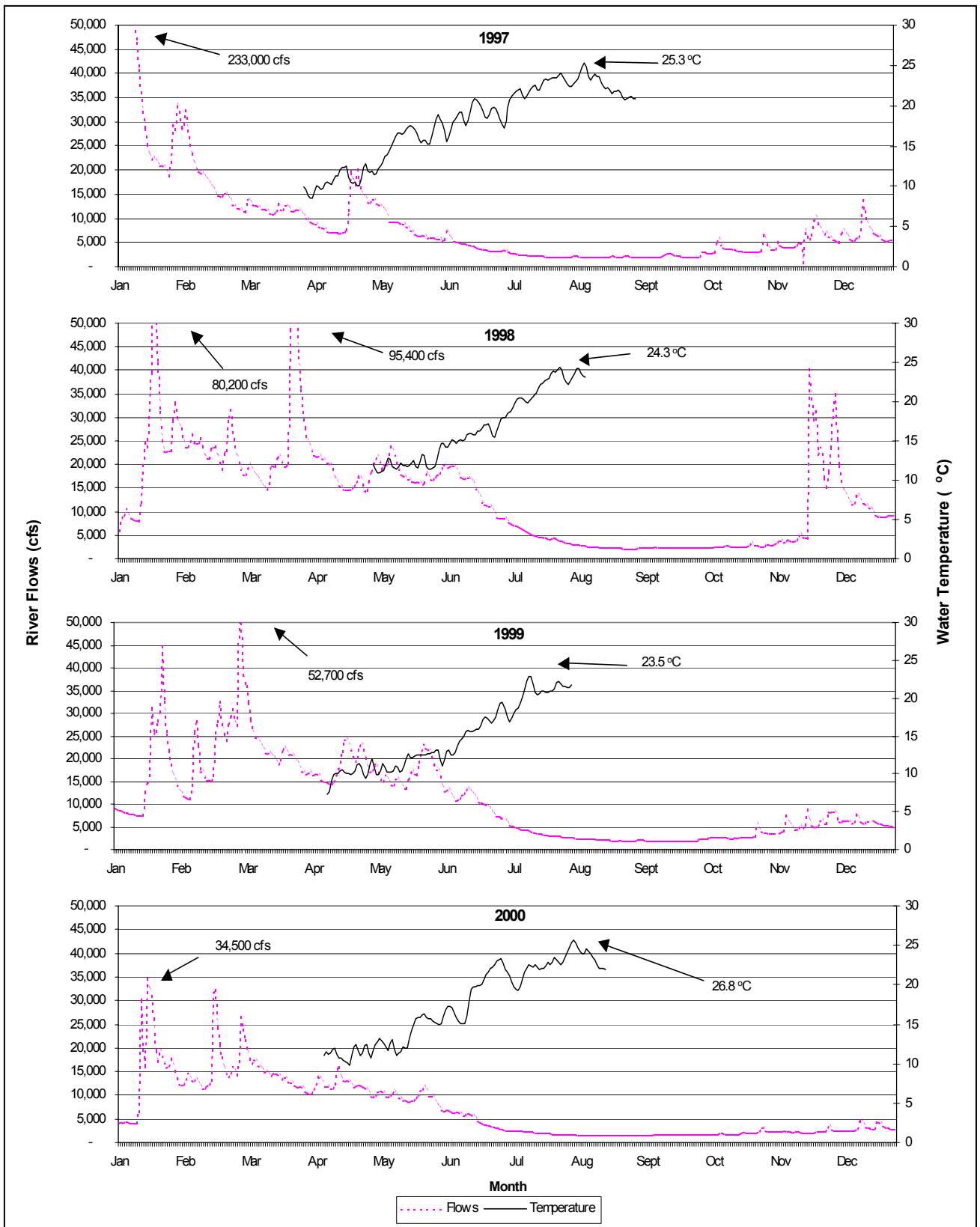


Figure 6. Mean daily flow (cfs) at Orleans and mean daily river temperature (°C) at the BBT, 1997-2000.

Chinook Monitoring on the Mainstem Trinity River at Willow Creek:

Juvenile salmonid monitoring on the Trinity River at Willow Creek occurred for 231, 206, 189 and 143 days respectively in 1997, 1998, 1999 and 2000. Trapping began prior to significant natural fall-run chinook outmigration in late March or April and continued through late September or October (Table 5). Because the Trinity River Hatchery (TRH) conducts both spring (fingerling) and fall (yearling) releases, trapping at Willow Creek trap (WCT) was divided into spring and fall monitoring periods. Trapping was concluded when funding was exhausted or when fall storms made trapping difficult. Late summer algae blooms were not as problematic on the Trinity River as on the Klamath River, therefore trapping operations could continue on the Trinity throughout the summer and into the fall.

The Willow Creek Trap effectively fished 90, 94, 96 and 99 percent respectively, of the total possible trap days in 1997, 1998, 1999 and 2000 monitoring period (Table 5). Consistent daily data collection was disrupted (flawed set) intermittently by large woody debris and mechanical difficulties.

Table 5. Period and duration of Spring and Fall monitoring, trapping rate and date of peak daily average water temperature at the WCT, 1997-2000.

Year	Start-end dates	Days Trapped	Days possible	Trapping rate	Peak daily average water temperature oC	Date occurred
1997	March 26 -Dec 07	231	257	90%	23.9	Aug 8
1998	April 16 - Nov 20	206	220	94%	24.6	Aug 14
1999	March 18 - August 30	189	197	96%	22.3	July 13
2000	May 16 - Oct 06	143	144	99%	23.9	Aug 2

Winter and spring storms produced high flow events ranging from 31,000 cfs to 101,000 cfs during the 1997-2000 trapping period. In 1997 a peak flow of 101,000cfs was recorded at Hoopa on January 1st. Intermittent storms in 1998, produced two high flow events, 57,000 cfs on January 17th and 66,800 cfs on March 23rd. In 1999 a peak flow of 31,000 cfs was recorded at Hoopa on March 1st. In 2000 a peak flow of 37,000 cfs was recorded on February 15th.

Trinity River Hatchery (TRH) released 3.1, 3.7, 3.2 and 2.9 million chinook fingerlings in spring of 1997, 1998, 1999 and 2000 respectively (Table 6). Releases included adipose fin clipped (AD-clip) CWT groups, representing 8.9 to 21.1 percent of brood-year fingerling releases. Fingerlings were released at Hardhat and Sky Ranch which are 134 and 148 river kilometers ,respectfully, upstream of the WCT. Ad-clipped TRH releases were first captured at the WCT 3 to 129 days after release, representing mean outmigration rates from the upper Trinity River of 10.8 to 1.4 rkm's per day.

TRH released 1.3, 1.3, 1.4, and 1.2 million chinook fingerlings in fall of 1997, 1998, 1999, and 2000 respectively (Table 6). Releases included AD-clip CWT groups, representing 12.0 to 35.1 percent of brood-year fingerlings releases. Fingerlings were released at Hardhat and Sky Ranch which are 134 and 148 river kilometers, respectfully, upstream of the WCT. Ad-clipped TRH releases were first captured at the WCT 3 to 4 days after release, representing mean outmigration rates from the upper Trinity River of 6.9 to 18.2 rkm's per day.

Table 6. Trinity River Hatchery fingerling releases and recoveries at the WCT, 1997-2000.

Trinity River Hatchery Age 0 Fall chinook Releases					Migration Rates				
Year	Race	Number Released	Percentage (AD-clipped)	Release dates	Date First Ad-clip Captured	Days After Release	Initial Rate (rkm)/day	Mean Rate (rkm)/day	Ad-clips captured (n)
1997	Spring	1,036,538	21.1%	6/2-6/6	6/13/1997	11	13.09	5	1,818
	Fall	2,101,524	10.4%	6/5-6/12	6/14/1997	9	16	2.6	1,174
	Spring	414,579	26.6%	10/1-10/7	10/4/1997	3	48	18.2	626
	Fall	918,078	12.0%	10/1-10/7	10/4/1997	3	48	10.8	1,170
1998	Spring	2,398,295	12.9%	6/15	6/20/1998	5	29	3.99	293
	Fall	1,309,523	8.9%	6/15	7/10/1998	25	6	0.29	191
	Spring	420,663	35.1%	10/1-10/7	10/4/1998	3	48	9.5	47
	Fall	907,600	34.5%	10/1-10/7	10/5/1998	4	36	6.9	135
1999	Spring	1,161,439	15.2%	6/1-6/7	6/23/1999	7	6.5	2.4	685
	Fall	2,057,036	9.1%	6/1-6/7	6/5/1999	4	36	2.9	614
	Spring	401,727	34.3%	10/4-10/13	No data collected				
	Fall	970,935	34.5%	10/4-10/13	No data collected				
	Fall	49,439	33.7%	10/4-10/13	No data collected				
	Spring	952,715	15.6%	7/1-7/7	6/7/2000	6	24	7.38	380
2000	Fall	1,967,854	9.2%	7/1-7/7	6/15/2000	14	10.29	2.72	731
	Spring	381,497	34.3%	10/2-10/15	No data collected				
	Fall	863,988	34.7%	10/2-10/15	No data collected				

Spring Monitoring Catch Totals

Spring monitoring on the WCT was conducted from 137 to 189 days during the 1997-2000 trapping period (Table 7). During the spring season monitoring, the number of Age 0 chinook captured ranged from 23,443 to 47,417 fish. Catches were predominately Age 0 with few yearling fish captured. The two years that Age 1 chinook were captured (1997 and 2000) they comprised only .02 and .004 percent respectively of the total spring chinook catch (Appendix 1 and 10). Hatchery Age 1 chinook released in the fall and captured the following spring also occurred in past monitoring (USFWS 1991, 1992a, 1992b, 1994).

Table 7. Chinook catch totals at the WCT, Spring monitoring, 1997-2000.

Spring monitoring	Days trapped	Age 0 Chinook				
		Hatchery	Natural	Total	CPUE	% Hatchery
1997	171	17,847	10,184	28,031	164	64%
1998	157	28,824	18,436	47,260	301	61%
1999	189	10749	14920	25,669	136	42%
2000	137	10263	13042	23,305	170	44%
97-00 Totals	654	67,683	56,582	124,265	190	54%
97-00 Avg	164	16,921	14,146	31,066	193	53%

Fall Monitoring Catch Totals

Fall Monitoring on the WCT was conducted from 0 to 60 days during the 1997-2000 trapping period. (Table 8). During fall season monitoring the number of Age 0 chinook captured ranged from 160 to 51479. Catches were all Age 0 chinook with hatchery fish making up the majority of the catch for all years (Table 8).

Table 8. Chinook catch totals at the WCT, Fall monitoring, 1997-2000.

Fall monitoring	Days trapped	Age 0 Chinook				
		Hatchery	Natural	Total	CPUE	% Hatchery
1997	60	11,263	1,995	13,318	222	85%
1998	49	28,567	22,863	51,479	1051	55%
1999	0					
2000	6	98	56	160	27	61%
97-00 Totals	115	39,928	24,914	64,842	564	62%
97-00 Avg	29	13,309	8,305	21,652	433	67%

Chinook Catches and Fork lengths

Spring and Fall 1997: Fork lengths from 4,538 chinook (10.7% of the total catch) were measured (Appendix 33). Mean fork lengths of Age 1 chinook range from 115mm to 145mm (n=4) and were captured between JW 15 and JW 24. Initial catches of Age 0 chinook occurred in JW 13 (0=38mm, sd=1.5, n=14) (Figure 7). Mean weekly fork lengths increased steadily throughout JW 23 (0=98mm, sd=12.4, n=113). In JW 24 hatchery fish were first observed and comprised 68% of the catch that week. CPUE increased from 33 fish in JW 23 to a peak of 966 fish in JW 28 before dropping off. Upon the arrival of hatchery fish, mean weekly fork lengths increased slightly from 98mm (sd=12.4, n=113) to 100mm (sd=10.1, n=208). Spring trapping concluded on JW 39 with a mean fork length of 106mm (sd=9.9, n=179). Fall trapping began on JW 40 with significant increases in hatchery and natural Age 0 chinook catches. Mean weekly fork lengths also increased from 106mm (sd=9.9, n=179) to 119mm (sd=19.4, n=195). Catch for both hatchery and natural Age 0 chinook peaked during JW 41. The mean fork length at that time was 135mm (sd=13.6, n=210). Trapping concluded on JW 49 with a mean fork length of 133mm (sd=14.8, n=8).

Spring and Fall 1998: Fork lengths from 4,347 chinook (5.4% of the total catch) were measured (Appendix 35). No Age 1 chinook were captured in 1998. Initial catches of Age 0 chinook occurred in JW 16 (0=38mm, sd=1.7, n=19). Mean weekly fork lengths increased steadily throughout JW 24 (0=78mm, sd=19.9, n=29). In JW 25 hatchery fish were first observed and comprised 17% of the catch that week. CPUE increased from 4 fish in JW 24 to a peak of 1,277 fish in JW 31. Upon arrival of hatchery fish, mean weekly fork lengths increased from 78mm (sd=19.9, n=29) to 87mm (sd=13.6, n=91). Spring trapping concluded on JW 39 with a mean fork length of 105mm (sd=6.4, n=210). Fall trapping began on JW 40 with significant increases in hatchery and natural Age 0 chinook catches. Mean weekly fork lengths also increased from 105mm (sd=6.4, n=210) to 114mm (sd=13.1, n=210). Catch for both hatchery and natural Age 0 chinook peaked during JW 41. The mean fork length at that time was 125mm (sd=11.9, n=210). Trapping concluded on JW 47 with a mean fork length of 121mm (sd=19.7, n=4).

Spring 1999: Fork lengths from 3,796 chinook (14.8% of the total catch) were measured during spring monitoring (Appendix 37). No Age 1 chinook were captured in 1999. Initial catches of Age 0 chinook occurred in JW 11 (0=37mm, n=1). Mean fork lengths increased steadily throughout the trapping period. In JW 23 hatchery fish were first observed and comprised 5% of the catch that week. CPUE increased from 3 fish in JW 22 to a peak of 478 fish in JW 30. Upon the arrival of hatchery fish, mean weekly fork lengths increased from 62mm (sd=18.3, n=133) to 72mm (sd=14.9, n=189). Spring trapping concluded on JW 39 with a mean fork length 101mm (sd=7.3, n=209)

Spring and Fall 2000: Fork lengths from 3,911 chinook (16.5% of the total catch) were measured (Appendix 39). No yearling chinook were captured during 2000. Initial catches of Age 0 chinook occurred in JW 20 (0=59mm, sd=9.6, n=78). In JW 23 hatchery fish were first observed and comprised 20% of the catch that week. CPUE increased from 40 fish in JW 22 to a peak of 496 fish in JW 30. Upon the arrival of hatchery fish, mean weekly fork lengths increased from 70mm (sd=14.1, n=202) to 84mm (sd=14.9, n=210). Spring trapping concluded on JW 39 with a mean fork length of 103mm (sd=7.5, n=170). Trapping was conducted for only one week (JW 40) during the fall season. Catch numbers for hatchery Age 0 chinook increased while natural Age 0 chinook catch numbers decreased. The mean fork length for JW 40 was 117mm (sd=20.1, n=150).

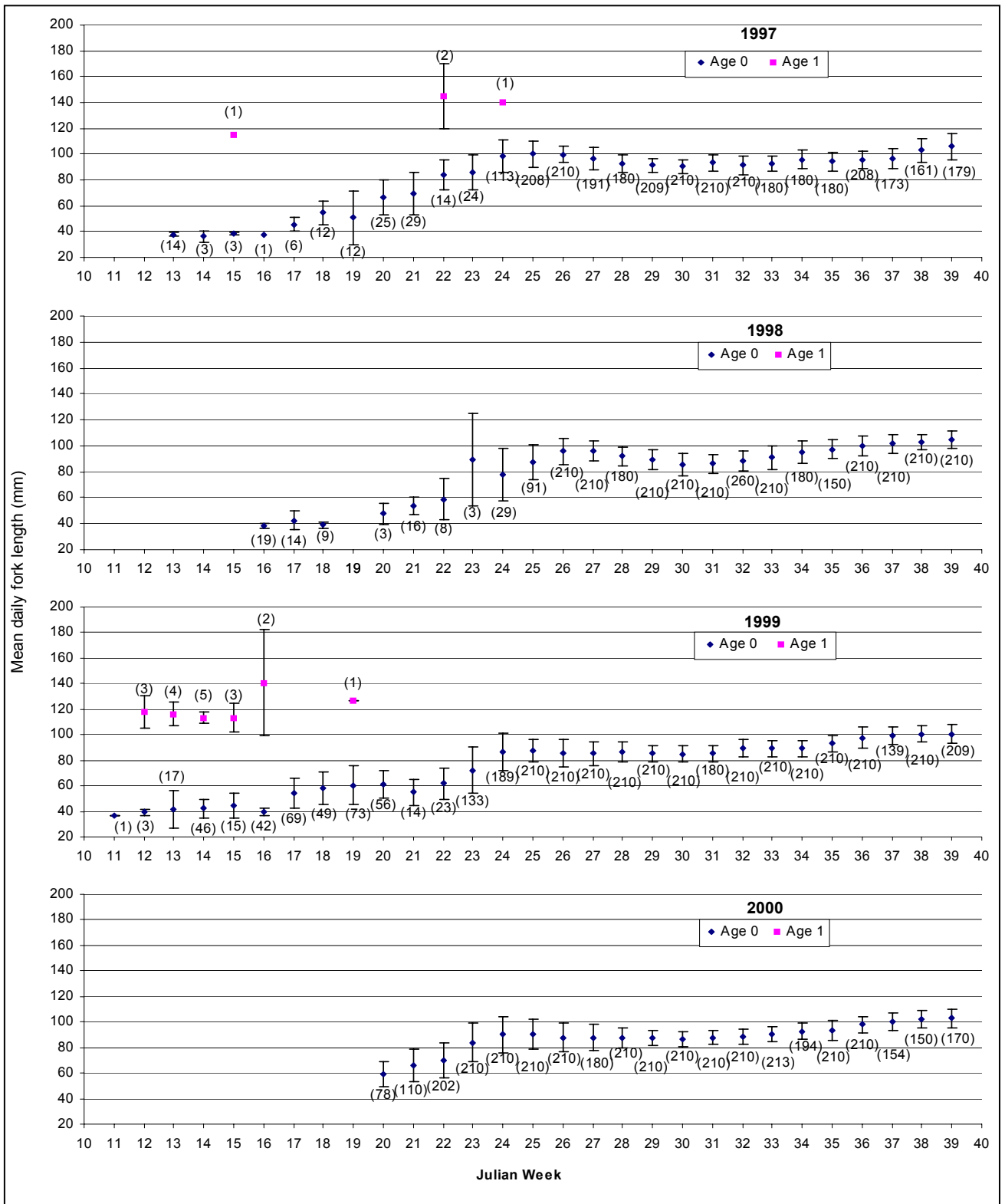


Figure 7. Chinook Age 0 and Age 1 mean fork lengths (mm) by Julian week at the WCT, 1997-2000. (+/- 1 standard error, sample size)

Chinook Abundance Index and Hatchery Contributions by Year – Spring Monitoring

Spring 1997: Monitoring at the WCT started in late March (JW 13). Initial catches were small and consisted largely of natural Age 0 chinook. Several Age 1 chinook were captured early in the trapping season (JW 13-JW 22). Catches increased weekly throughout the months of April and May, with the peak weekly catch occurring in the beginning of July (JW 28). Hatchery Age 0 chinook contributions began during JW 24 and peaked in JW 28 (Figure 8). Monitoring at the WCT continued throughout the spring and into the fall season. The spring 1997 WCT abundance index total was 397,558 (Appendix 13).

Spring 1998: Spring monitoring at the WCT began in mid-April (JW 16), with few natural Age 0 chinook being captured before the middle of June (JW 25). Catches increased weekly throughout the months of June and July, with the peak weekly catch occurring in the end of July (JW 31). Hatchery Age 0 chinook contributions began during JW 25 and peaked in JW 31 (Figure 8). Spring monitoring at the WCT concluded at the end of August (JW 39). The spring 1998 WCT abundance index was 910,729 (Appendix 16).

Spring 1999: Spring monitoring at the WCT began in mid-March (JW 11), with few natural Age 0 chinook being captured before early June (JW 23). Catches increased weekly throughout the months of June and July, with the peak weekly catch occurring in the end of July (JW 30). Hatchery Age 0 chinook contributions began during JW 23 and peaked in JW 31 (Figure 8). Spring monitoring at the WCT concluded at the end of August (JW 39). The spring 1999 WCT abundance index was 544,172 (Appendix 19).

Spring 2000: Spring monitoring at the WCT began in mid-May (JW 20), with few natural Age 0 chinook being captured before late May (JW 22). Catches increased weekly throughout June and July with the peak weekly catch occurring in late July (JW 30). Hatchery Age 0 chinook contributions began during early JW 23 and peaked in JW 29 (Figure 8). Spring monitoring at the WCT concluded at the end of August (JW 39). The spring 2000 WCT abundance index was 451,212 (Appendix 22).

Chinook Abundance Index and Hatchery Contributions by Year – Fall Monitoring

Fall 1997: Fall monitoring at the WCT began in early October (JW 40). Natural Age 0 catch numbers dramatically increased in the first week of fall trapping with the peak weekly catch occurring in the second week of October (JW 41). Hatchery Age 0 chinook contributions increased during JW 40 and peaked in JW 41. Monitoring at the WCT concluded in the beginning of December JW 49 (Appendix 13). The fall 1997 WCT abundance index was 172,849.

Fall 1998: Fall monitoring on the WCT began in early October (JW 40). Natural age 0 catch numbers initially decreased but peaked in mid-October (JW 41). Hatchery Age 0 contributions increased during JW 40 with the peak weekly catch occurring in mid-October (JW 41). Monitoring at the WCT concluded in mid-November (JW 47) (Appendix 16). The fall 1998 WCT abundance index was 327,224.

Fall 1999: No Fall monitoring on the WCT occurred in 1999 (Appendix 19).

Fall 2000: The Fall monitoring on the WCT consisted of six trapping days in JW 40. The abundance index for this period was 4,957 (Appendix 22).

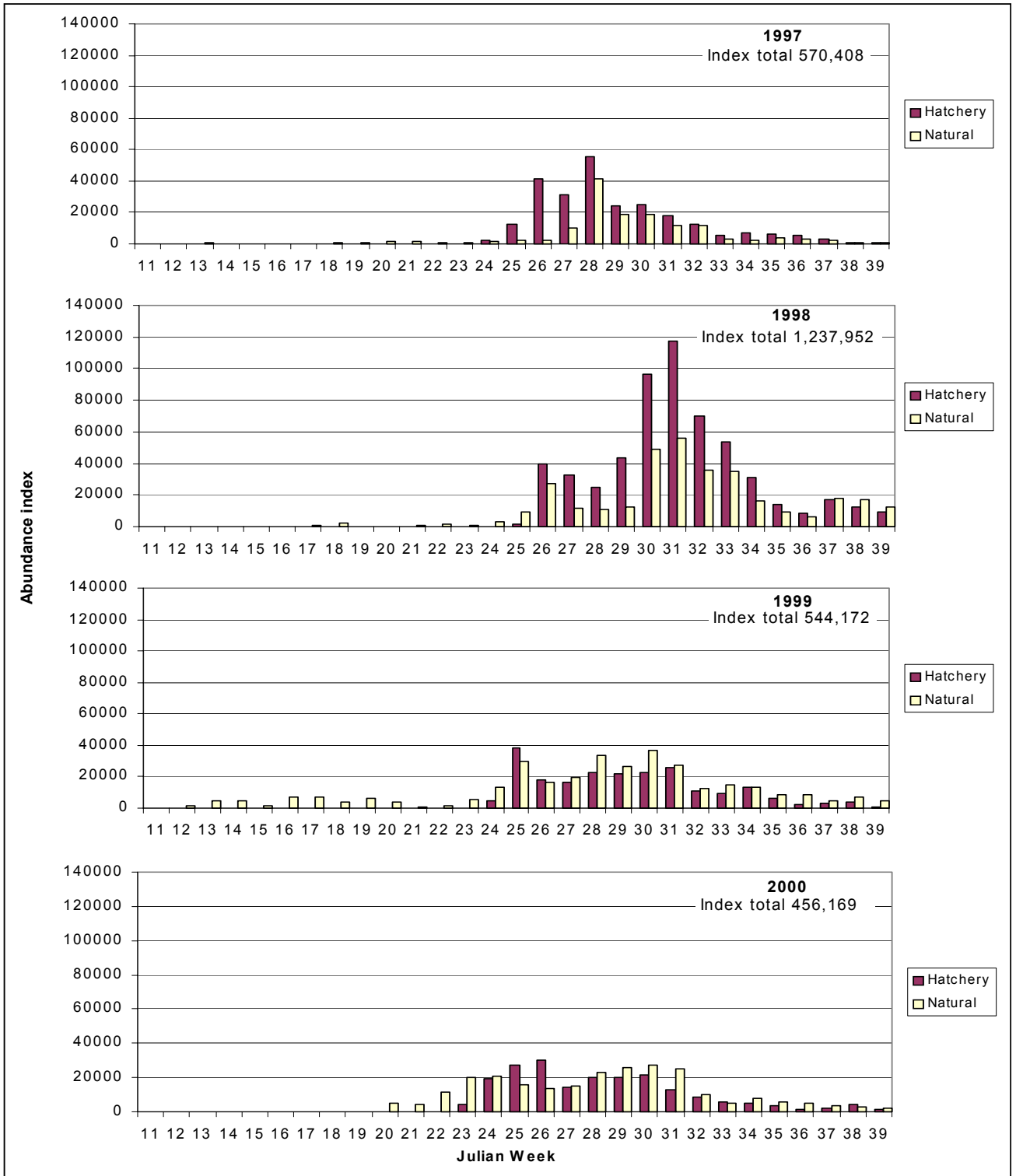


Figure 8. Weekly abundance index totals for natural and hatchery chinook at the WCT, spring 1997-2000.

Emigration Timing

Like the BBT, very few natural Age 0 chinook were captured prior to the beginning of June (JW 23). This trend was consistent for all four years (Figure 9). However, unlike the BBT, natural chinook emigration occurred earlier in 1999 and 2000 compared to 1997 and 1998. Water temperatures reached 15 °C in early May 1997, early June 1998, late May 1999, and late May 2000. The maximum of flows in June 2000 (range 1,900-3,300 cfs) were lower than June 1999 (range 2,500-5,600 cfs), June 1998 (range 6,000-12,100 cfs) or June 1997 (1,400-4,100 cfs) (Figure 10).

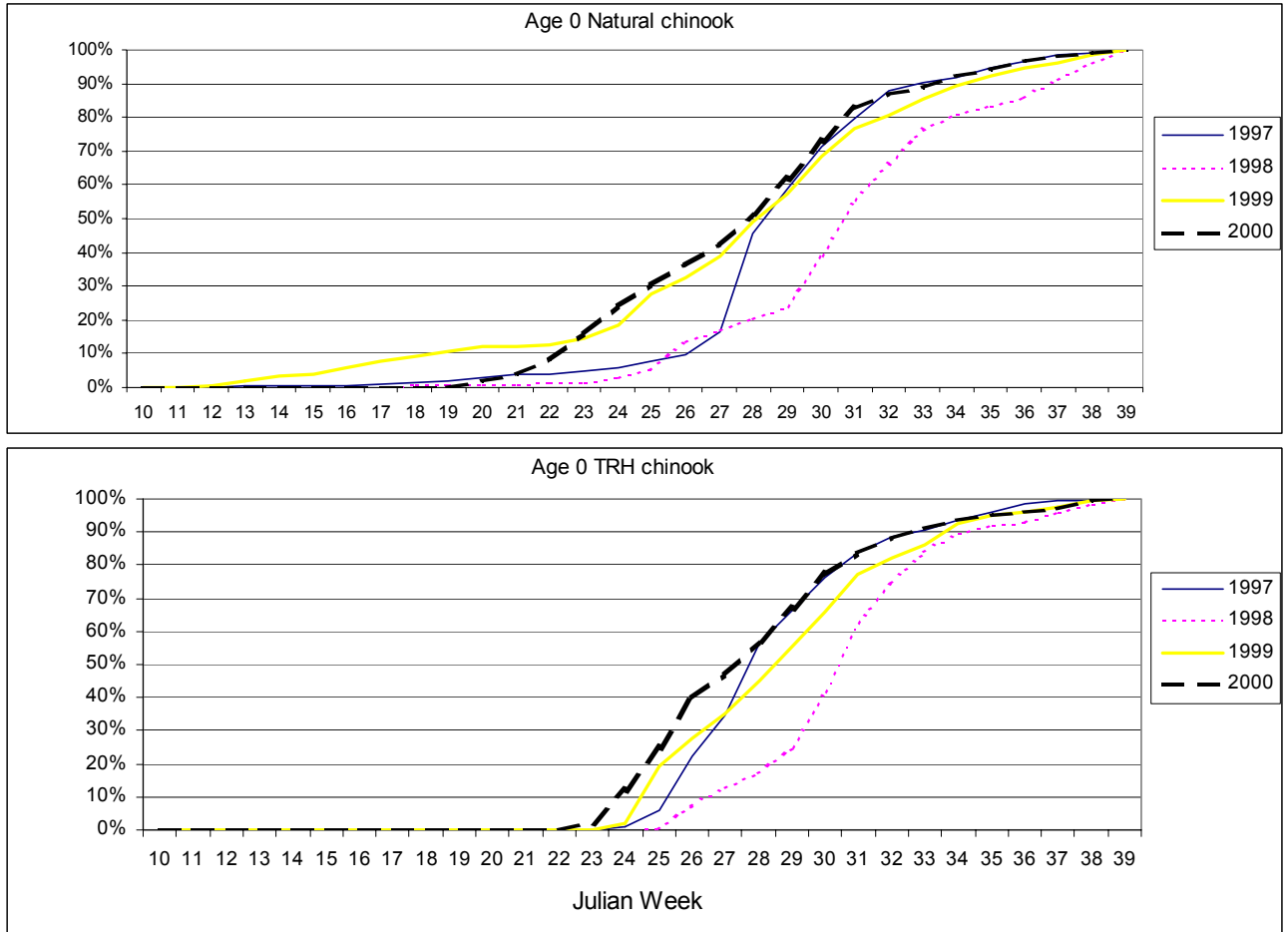


Figure 9. Emigration timing of natural (A) and TRH released chinook (B) at the WCT, spring 1997-2000.

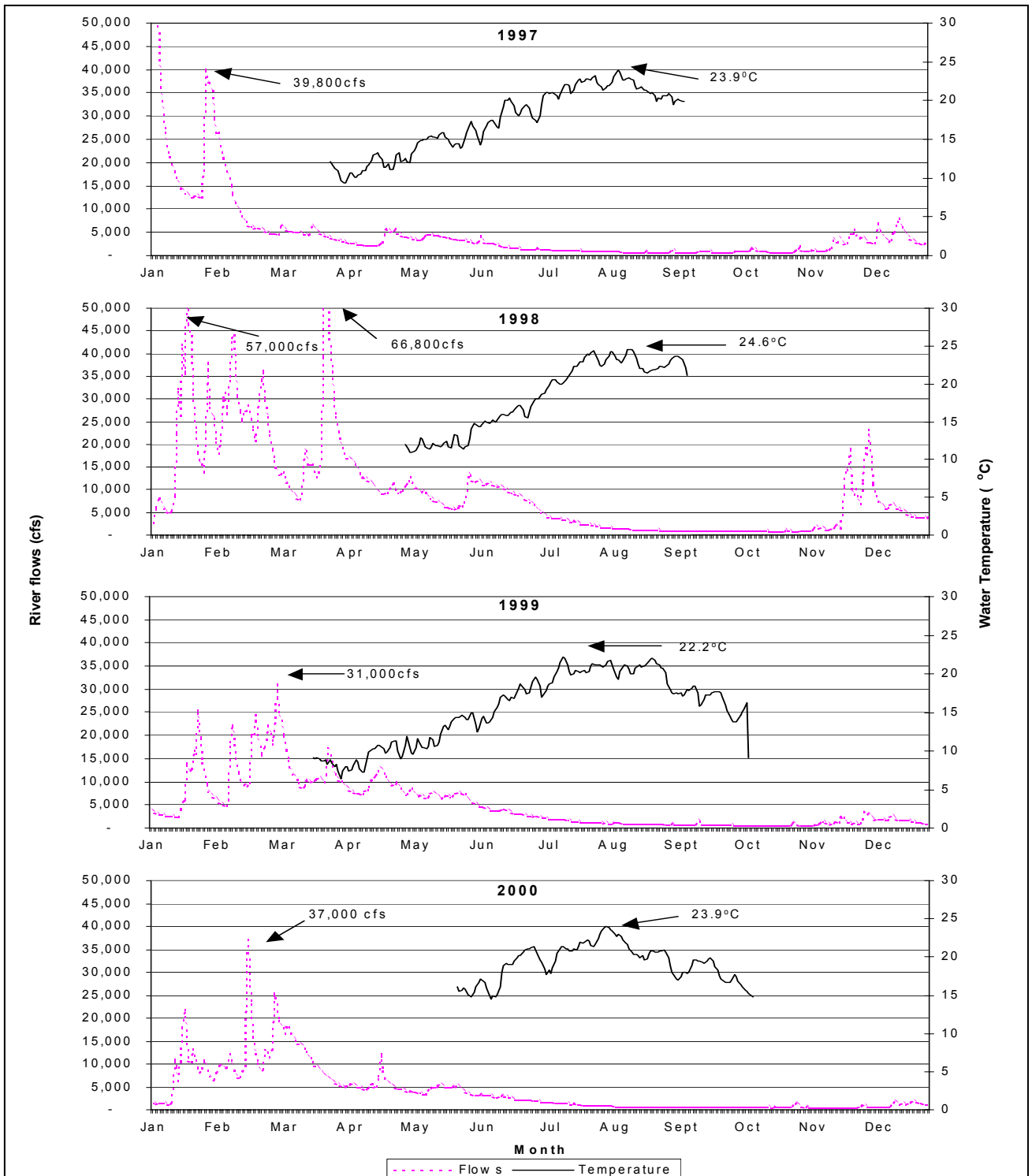


Figure 10. Mean daily flow (cfs) at Hoopa and mean daily river temperature (°C) at the WCT, 1997-2000.

Intra Basin Comparison

Flows in the Trinity River were generally higher than the Klamath River during most of the periods both traps were operating. Mean daily water temperatures (MDT) were slightly lower in the Klamath River for most of the period both traps were operating (Figure 11). The MDT of both rivers exceeded "stressful conditions" ($>20^{\circ}\text{C}$) by the beginning of July (JW 27) or sooner. Water temperatures on the Trinity would often return to below 20°C by the beginning of August (JW 35). The Klamath trap was removed before temperatures had dropped below 20°C .

On both rivers, the bulk of the 1997-2000 natural Age 0 chinook emigration corresponded with periods of rapidly increasing water temperatures. Most chinook had emigrated past the traps before MDTs reached stressful levels. The peak of the Klamath River natural Age 0 chinook emigration is often more pronounced and larger in magnitude than in the Trinity River. However, Age 0 emigration tapered off faster in the Klamath River than in the Trinity River.

Winter storms in late December 1996 and early January 1997, produced a high flow event and peak flow of 233,000 cfs recorded at Orleans on January 1, 1997 (Figure 6). Intermittent storms in 1998, produced two high flow events, 80,200 cfs in mid-January, and 95,400 in late March and storms in the fall of 1998 resulted in high flows in November and December (Figure 6). The magnitude and timing of these November/December flow events may have resulted in scouring of fall chinook and coho redds. A peak flow of 52,700 cfs occurred in early March 1999 (Figure 6). In 2000 a peak flow of only 34,500 cfs occurred in mid January.

High flow events occurring in December and January can scour salmon redds resulting in poor egg-to-fry survival. Conversely, moderate to low flows in December and January will result in little or no negative effects to salmon egg-to-fry survival. Steelhead spawn in early spring, primarily in tributaries. The effects of high spring flows and steelhead egg-to-fry survival is not well understood. However, the protracted spawning period into late spring/early summer may reduce negative impacts. High winter flows, snowpack and subsequent spring runoff conditions, summer meteorological conditions, and smoke due to forest fire, all contribute to the yearly variability observed in the timing and duration of salmonid outmigration in spring/summer.

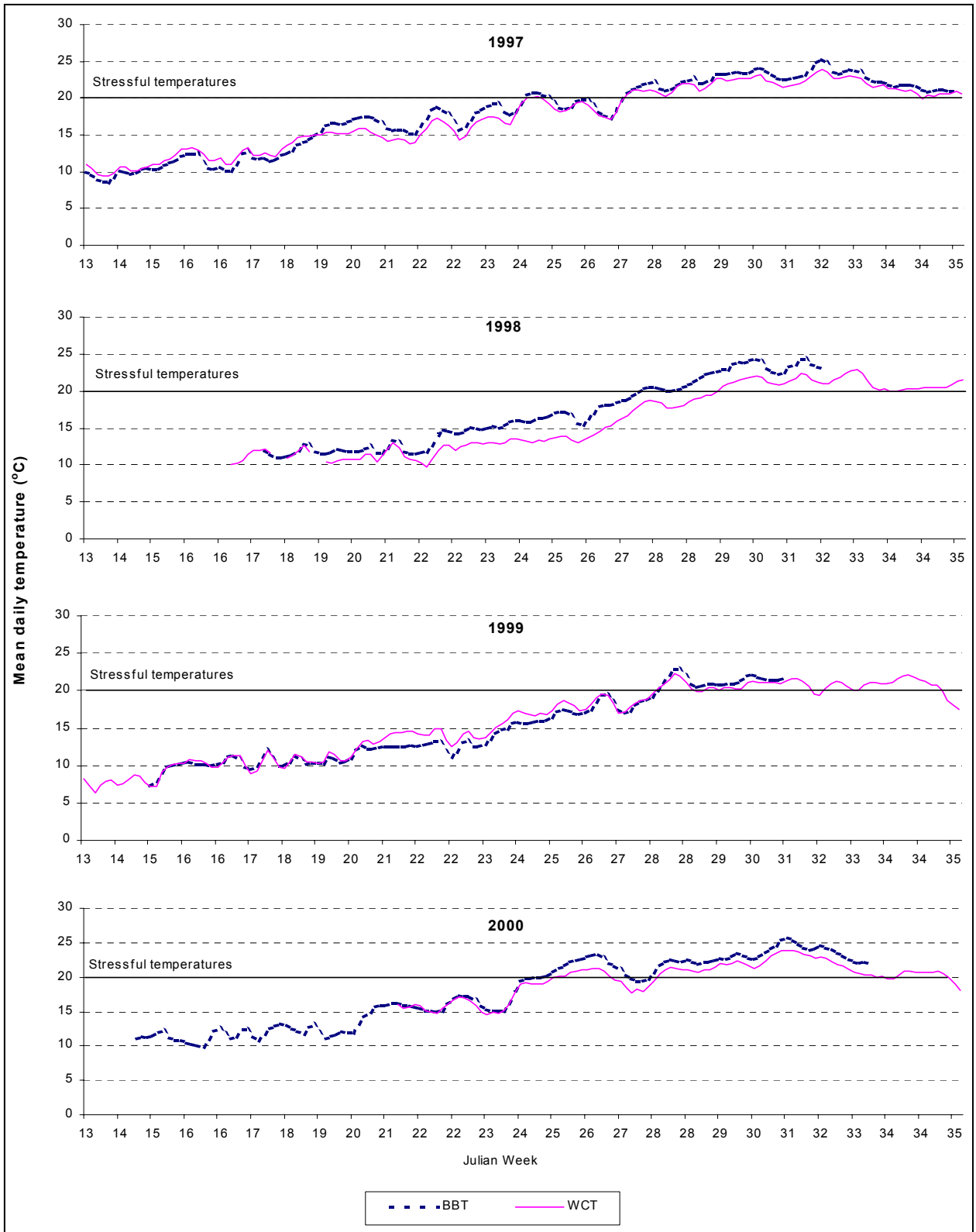


Figure 11. Mean daily Klamath and Trinity river temperatures (°C) at the BBT and WCT sites during the period of peak chinook Age 0 emigration, 1997-2000.

Additional Salmonid Catches

The capture of additional salmonid species (steelhead, coho, chum) were incidental to the capture of chinook juveniles, which was the primary objective of this monitoring project. Results reflect emigration trends during periods of coemigration with juvenile chinook.

Klamath River Coho

As in previous years, coho catches at the BBT from 1997 to 2000 were very low. Typically, coho smolts (age 1+) were captured in early May to mid-June, and coho Age 0 from late February to early July. Coho smolts age 1+ were released from IGH during late-March for all monitoring periods in 1997-2000. IGH released between 74,250 and 150,312 age 1+ coho smolts during the 1997-2000 monitoring period, (Table 9).

Table 9. Iron Gate Hatchery coho releases, 1997-2000.

Brood Year & age	Date of Release	Size (grams)	Release # and Mark		Total released
			Left Maxillary	Un-Marked	
coho-95 2+	4/11/1997	10	74,250	0	74,250
coho-96 2+	3/30/1998	41.2	79,607	0	79,607
coho-97 2+	3/30/1999	37.8	146,858	3,454	150,312
coho-98 2+	3/30/2000	NA	77,147	0	77,147

Coho Catches

A total of 152 coho (natural and hatchery) were captured at the BBT during the four spring monitoring periods (Table 10). Age 0 coho comprised 71% of the total four year catch. Natural age 1+ fish comprised 20% and hatchery fish comprised 9% of the total four year catch. No Fall trapping operations were conducted on the Klamath River from 1997-2000.

Table 10. BBT coho catch numbers by age, Spring monitoring, 1997-2000.

Year	Days trapped	Coho				% of Total		
		Nat Age 1	Hat Age 1	Nat Age 0	Total	% Nat 1	% Hat 1	% Nat 0
1997	126	17	3	13	33	52%	9%	39%
1998	97	1	2	12	15	7%	13%	80%
1999	118	4	6	38	48	8%	13%	79%
2000	92	8	3	45	56	14%	5%	80%
Totals		30	14	108	152	20%	9%	71%

Abundance Index and Hatchery Contributions

The total (fry, parr, smolt) coho abundance index for spring monitoring 1997-2000, ranged from 4,805 to 6,918, with the largest abundance index total occurring in spring 1999 (Figure 12). Hatchery contributions ranged from 6 to 17 percent with the greatest number occurring in 1998 (Table 11). All IGH coho were tagged with a left maxillary clip in 1997, 1998 and 2000. In 1999, 97% of the IGH coho received left maxillary clips, the remaining 3% were released unmarked.

Table 11. BBT coho abundance index by age, Spring monitoring, 1997-2000.

Year	Days trapped	Coho				% of Total		
		Nat Age 1	Hat Age 1	Nat Age 0	Total	% Nat 1	% Hat 1	% Nat 0
1997	126	1,268	196	811	2,275	56%	9%	36%
1998	97	160	368	1,580	2,108	8%	17%	75%
1999	118	457	885	5,576	6,918	7%	13%	81%
2000	92	799	284	3,722	4,805	17%	6%	77%
Totals		2,684	1,733	11,689	16,106	17%	11%	73%

Fork length and emigration timing

Spring 1997: A total of 32 coho were measured in 1997, between JW 17 and 27 (Appendix 25). Coho Age 0 were first observed during JW 17 with a mean fork length of 68mm (sd=16.9, n=2) (Figure 13). The last Age 0 coho was captured during JW 27 with a fork length of 63mm. Age 1 coho were captured throughout JW 17-24. The mean fork length during this period ranged from 100 to 180mm. Hatchery coho were captured beginning JW 19 through JW 22, with fork lengths ranging from 132 to 165mm (Figure 13).

Spring 1998: A total of 15 coho were measured in 1998, between JW 18 and 28 (Appendix 27). Coho Age 0 were first observed during JW 18 with a mean fork length of 63mm (sd=10.6, n=2) (Figure 13). The last Age 0 coho was captured during JW 28 with a fork length of 54mm. Only one age 1 coho was captured during JW 24 with a fork length of 115mm. Two hatchery coho were captured during JW 21 and 24 which measured 252 and 175mm respectively (Figure 12).

Spring 1999: A total of 55 coho were measured in 1999, between JW 16 and 30 (Appendix 29). Coho Age 0 were first observed during JW 16 with a mean fork length of 35mm (sd=2.1, n=2) (Figure 13). The last Age 0 coho was captured during JW 30 with a fork length of 76mm. Age 1 coho were captured during JW 22 and JW 25. The fork lengths of these fish ranged from 153mm to 164mm. Hatchery coho were captured beginning JW 22 through JW 24, with fork lengths ranging from 153 to 164mm (Figure 12).

Spring 2000: A total of 56 coho were measured in 2000, between JW 16 and 26 (Appendix 31). Coho Age 0 were first observed during JW 16 with a mean fork length of 48mm (sd=23.79, n=3) (Figure 13). The last Age 0 coho was captured during JW 26 with a mean fork length of 70mm (sd=.58, n=3). Age 1 coho were captured during JW 18 and JW 22. The fork lengths of these fish ranged from 110mm to 146mm. Hatchery coho were captured during JW 18 and JW 20, with fork lengths ranging from 147 to 183mm (Figure 12).

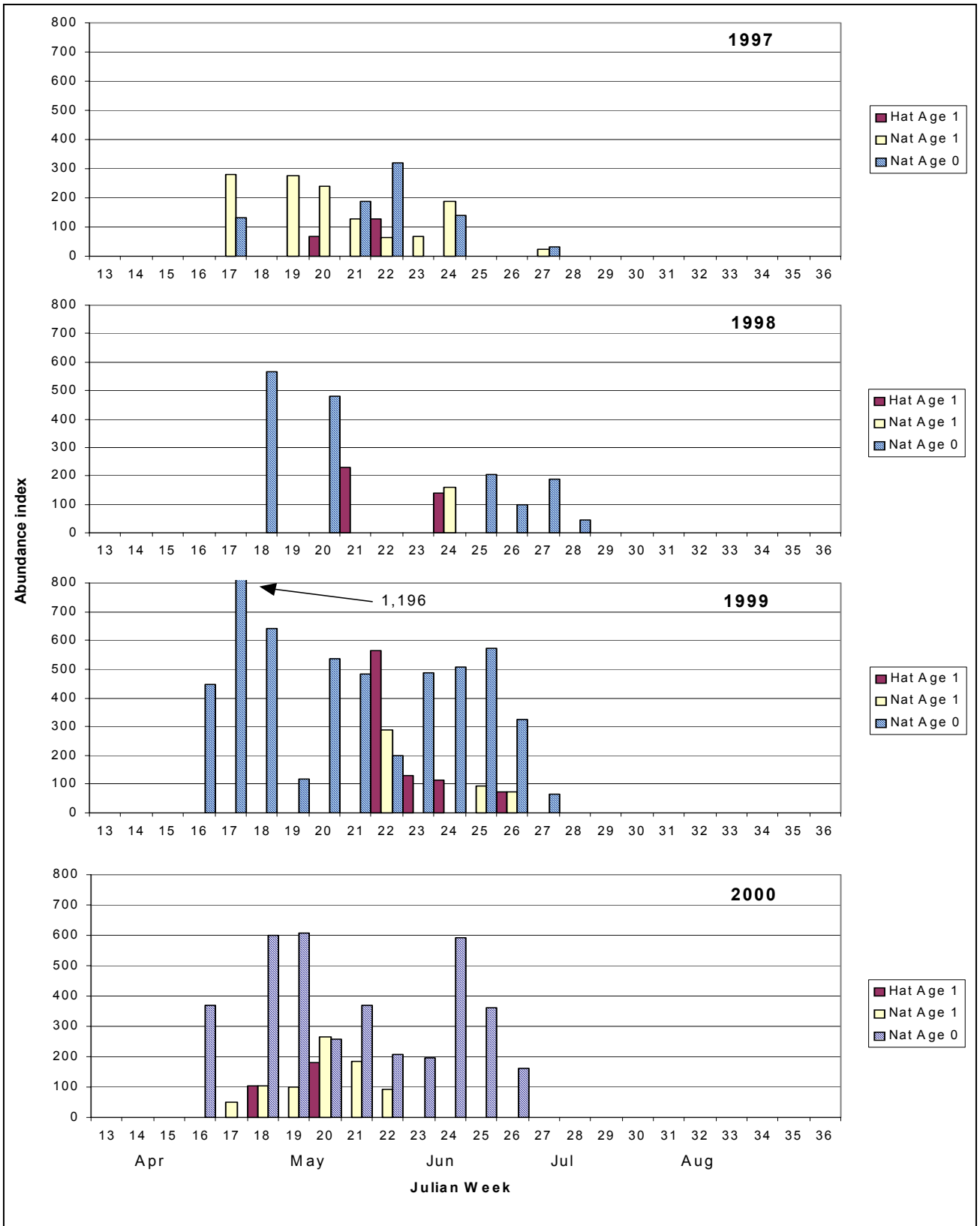


Figure 12. Weekly abundance index totals for natural and hatchery coho at the BBT, 1997-2000.

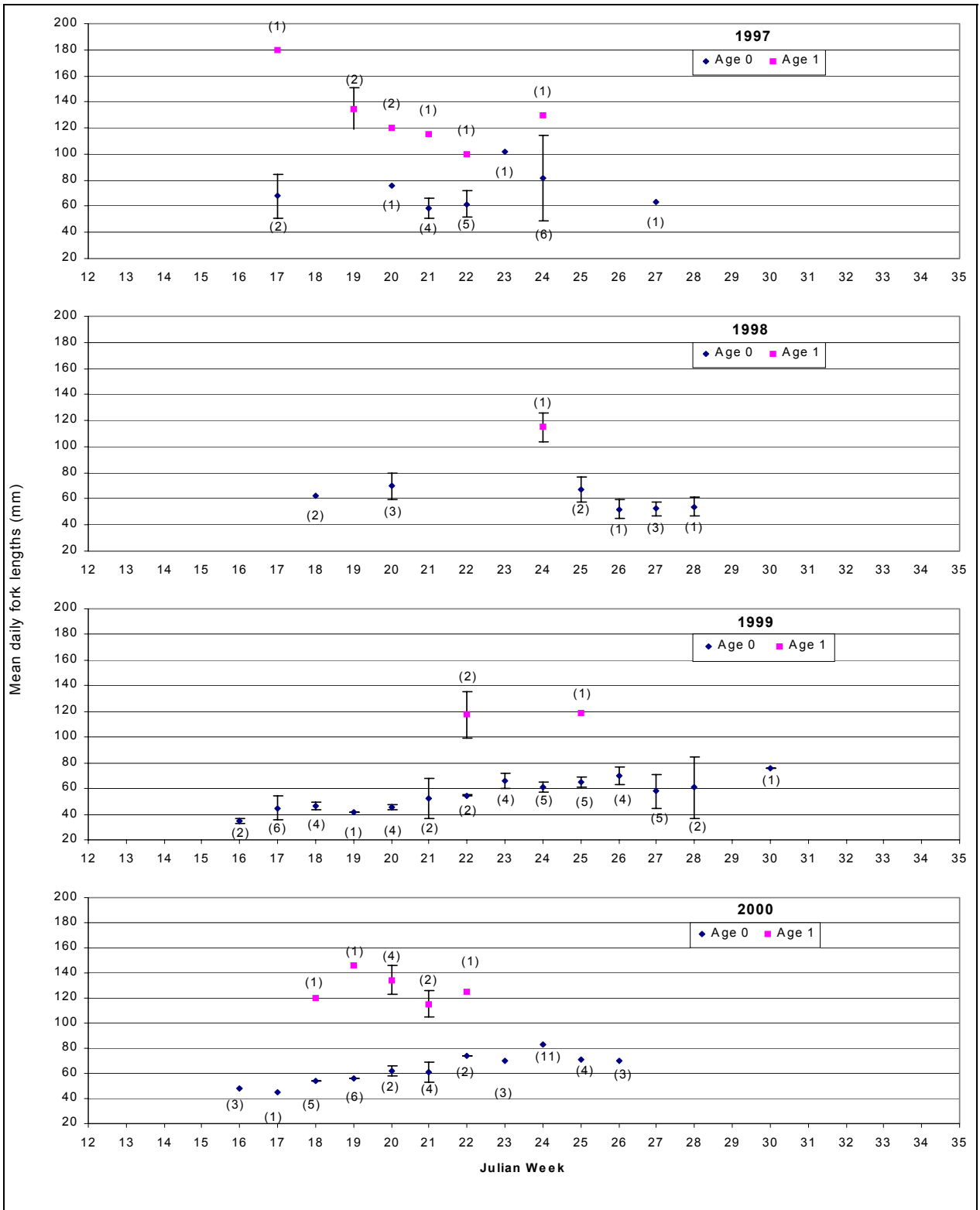


Figure 13. Natural coho Age 0 and Age 1 mean fork lengths (mm) by Julian week at the BBT, 1997-2000. (+/- 1 standard error, sample size).

Klamath River Steelhead

Fry, parr and smolt life history phases of natural steelhead juveniles were captured at the BBT during spring monitoring. IGH steelhead are typically reared one year and released in mid-May. In 1997 no steelhead release occurred. In 1998 100% of age 1+ steelhead were released with adipose clips. In 1999, 50% of age 1+ steelhead received AD and left maxillary clips. In 2000 100% of age 1+ steelhead received AD and right maxillary clips (Table 12).

Table 12. Iron Gate Hatchery steelhead releases, 1997-2000.

(AD-LM = adipose and left maxillary clip, AD-RM= adipose and right maxillary clip).

Brood Year & age	Date of Release	Size (grams)	Release # and mark				Total released
			AD	AD-LM	AD-RM	Un-Marked	
	1997	No release					
SH-97 1+	5/1/1998	44.5	35,802				35,802
SH-97 2+	4/30/1999	37.8		73,050		1,110	74,160
SH-99 1+	4/28/2000	NA			51320		51,320

Steelhead Catches

A total of 1,342 steelhead (natural and hatchery) were captured at the BBT during the four spring monitoring periods (Table 13). YOY steelhead comprised 34% of the total four year catch. Fish of age 1,2 and 3 comprised 37, 27 and 2 percent of the combined catch, respectively. No Fall trapping operations were conducted at the BBT during 1997-2000.

Table 13. BBT steelhead catch by age, Spring monitoring, 1997-2000.

Year	Steelhead						% of Total					
	Age0	Age1	Age2	Age3	Hat	Total	% Hat	% Nat	%Age 0	% Age1	% Age2	% Age3
1997	255	115	52	4	1	427	0%	100%	60%	27%	12%	1%
1998	77	185	198	8	0	468	0%	100%	16%	40%	42%	2%
1999	108	127	63	4	0	302	0%	100%	36%	42%	21%	1%
2000	14	68	52	10	1	145	1%	99%	10%	47%	36%	7%
Total	454	495	365	26	2	1,342	0.15%	99.85%	34%	37%	27%	2%

Abundance Index and Hatchery Contributions

The total steelhead abundance index for spring monitoring 1997-2000, ranged from 14,456 to 66,125 fish, with the largest abundance index total occurring in spring 1998 (Table 14). Hatchery contributions were small, ranging from 0 to 1 percent of each years catch. Natural Age 1 steelhead comprised the majority of the steelhead index.

Table 14. BBT steelhead abundance index by age, Spring monitoring, 1997-2000.

Year	Steelhead						% of Total					
	Age0	Age1	Age2	Age3	Hat	Total	% Hat	% Nat	%Age 0	% Age1	% Age2	% Age3
1997	7,639	5,951	4,563	325	140	18,618	1%	99%	41%	32%	25%	2%
1998	3,695	30,058	30,982	1,390	0	66,125	0%	100%	6%	45%	47%	2%
1999	4,510	19,727	9,163	678	0	34,078	0%	100%	13%	58%	27%	2%
2000	1,022	7,400	4,963	961	110	14,456	1%	99%	7%	52%	35%	7%
Total	16,866	63,136	49,671	3,354	250	133,277	0.19%	99.81%	13%	47%	37%	3%

Fork length and Emigration Timing

Spring 1997: A total of 386 steelhead were measured in 1997, between JW 13 and 34 (Appendix 26). Steelhead Age 0 were first observed during JW 21 with a mean fork length of 41mm (sd=7.5, n=4). Trapping concluded on JW 34 at which time, Age 0 mean fork length had increased to 70mm (sd=12.4, n=12). Age 1 steelhead were captured throughout the monitoring period. Age 1 mean fork lengths during the beginning of trapping (JW 13) were 82mm (sd=10.6, n=2). By the conclusion of the trapping period (JW 34), Age 1 mean fork lengths were 134mm (sd=4.8, n=4). Mean fork lengths for Age 2 and Age 3 steelhead did not show a consistent increase during the monitoring period. Age 2 mean weekly fork lengths ranged from 149 to 191mm (sd=17.3, n=59). Age 3 mean fork lengths ranged from 219 to 250mm (sd=13.6, n=4) (Figure 14). Only one hatchery steelhead was captured during 1997.

Spring 1998: A total of 428 steelhead were measured in 1998, between JW 18 and 33 (Appendix 28). In 1998 no steelhead age class showed a consistently increasing length frequency. Age 0 mean weekly fork lengths ranged from 53 to 83mm (sd=13.7, n=83). Age 1 mean weekly fork lengths ranged from 111 to 149mm (sd=16, n=115). Age 2 mean weekly fork lengths ranged from 152 to 190mm (sd=18.9, n=221). Age 3 mean weekly fork lengths ranged from 229 to 248mm (sd=11.5, n=9). No hatchery steelhead were observed during 1998 (Figure 14).

Spring 1999: A total of 302 steelhead were measured in 1999 between JW 18 and 33 (Appendix 30). In 1998 no steelhead age class showed a consistently increasing length frequency. Age 0 mean weekly fork lengths ranged from 41 to 59mm (sd=12, n=98). Age 1 mean weekly fork lengths ranged from 53 to 197mm (sd=53.4, n=165). Age 2 steelhead mean fork lengths ranged from 132 to 181mm (sd=37.6, n=39). No Age 3 or hatchery steelhead were observed during 1998 (Figure 14).

Spring 2000: A total of 137 steelhead were measured in 2000, between JW 14 and 29 (Appendix 32). Steelhead Age 0 were first observed during JW 17 with a fork length of 43mm (n=1). Trapping concluded on JW 29 at which time, Age 0 mean weekly fork length had increased to 52mm (sd=8.5, n=2). Age 1 steelhead were captured throughout the monitoring period. Age 1 mean weekly fork lengths at the beginning of trapping (JW 14) were 77mm (sd=8.3, n=4). By the conclusion of the trapping (JW 29), Age 1 mean weekly fork lengths were 153mm (sd=2.7, n=3). The mean weekly fork lengths for age 2 and age 3 steelhead did not show a consistent increase during the monitoring period. Age 2 mean weekly fork lengths ranged from 156 to 222mm (sd=41.8, n=51). Age 3 mean fork lengths ranged from 217 to 247mm (sd=18.4, n=10) (Figure 14). Only one hatchery steelhead was captured during 2000.

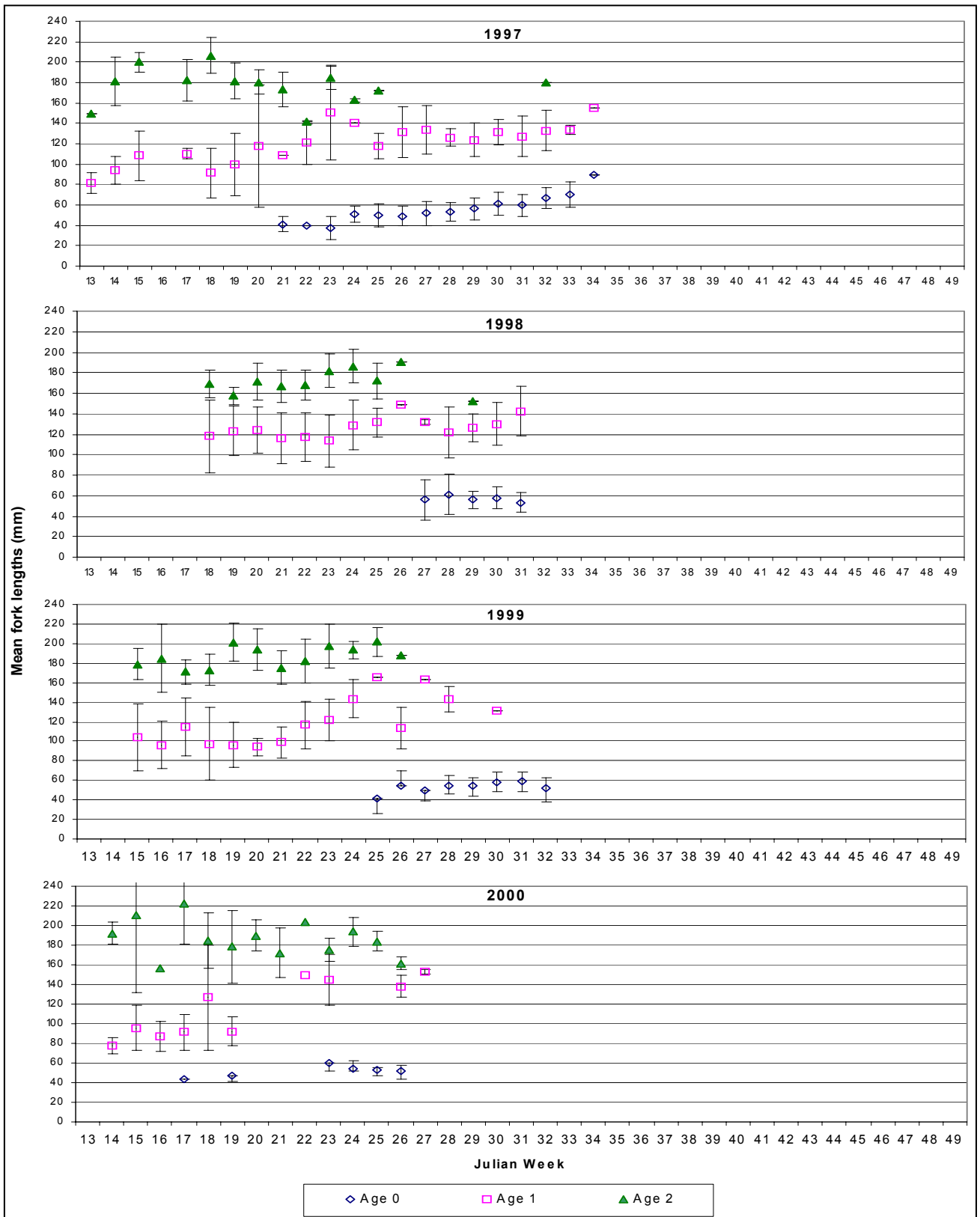


Figure 14. Mean lengths-at-age, standard deviation, and sample size by Julian week for natural steelhead at the BBT, 1997-2000.

Trinity River Coho

Trinity River coho catch numbers were significantly higher than those of the BBT. Coho smolts (Age 1+) were captured in early May to mid-June, and coho Age 0 from late February to early July. Coho smolts Age 1+ were released from Trinity River Hatchery during mid to late March in 1997 through 2000. TRH released smolts between 69,993 and 516,192 age 1+ coho smolts during the 1997-2000 monitoring period (Table 15).

Table 15. Trinity River Hatchery coho releases, 1997-2000.

Brood Year & age	Date of Release	Size (grams)	Release # and Mark		Total released
			Right Maxillary	Un-Marked	
coho-95 1+	3/18/97-3/31/97	9.7	71,675	0	71,675
coho-97 2+	3/16/98-3/20/98	54.7	516,192	0	516,192
coho-97 1+	3/15/99-3/22/99	45.8	69,993	0	69,993
coho-97 1+	3/15/99-3/22/99	48.4	147,677	0	147,677
coho-97 1+	3/15/99-3/22/99	41.6	301,603	0	301,603
coho-98 1+	3/15/00-3/20/00	40.1	415,341	0	415,341
coho-98 1+	3/15/00-3/20/00	50.4	78,386	0	78,386

Coho Catches

A total of 2,813 coho (natural and hatchery) were captured at the WCT during the four spring monitoring periods (Table 16; Appendix 14, 17, 20, and 23). Age 0 coho comprised 12% of the total four year catch. Natural Age 1 and hatchery Age 1 coho comprised the majority of the total catch (79% and 9% respectively). Four Age 0 coho were captured during the fall monitoring period in 1997 and 1998.

Table 16. WCT coho catch by age, Spring and Fall monitoring, 1997-2000.

Year	Days Fished	Coho				% of Total		
		Nat 1	Hat 1	Nat 0	Total	% Nat 1	% Hat 1	% Nat 0
1997	144	117	477	50	644	18%	74%	8%
1998	189	42	351	11	404	10%	87%	3%
1999	206	48	1,302	240	1,590	3%	82%	15%
2000	231	47	97	31	175	27%	55%	18%
Totals		254	2,227	332	2,813	9%	79%	12%

Abundance Index and Hatchery Contribution

The total coho abundance index for spring monitoring 1997-2000, ranged from 8,576 to 108,995 with the largest abundance index total occurring in spring 1999. Hatchery contributions were much larger on the Trinity River, ranging from 62 to 92 percent with the greatest number occurring in 1998 (Table 17). All coho were tagged with a right maxillary clip for 1997 through 2000 (Table 15).

Table 17. WCT coho abundance index by age, Spring and Fall monitoring, 1997-2000.

Year	Days trapped	Coho				% of Total		
		Nat 1	Hat 1	Nat 0	Total	% Nat 1	% Hat 1	% Nat 0
1997	144	4,326	16,275	1,613	22,214	19%	73%	7%
1998	189	2,311	39,100	1,098	42,509	5%	92%	3%
1999	206	3,564	96,448	8,983	108,995	3%	88%	8%
2000	231	2,286	5,346	944	8,576	27%	62%	11%
Totals		12,487	157,169	12,638	182,294	7%	86%	7%

Fork length and emigration timing

Spring and Fall 1997: A total of 609 coho were measured in 1997, between JW 13 and 49 (Appendix 33). Coho Age 0 were first observed during JW 18 with a mean fork length of 49mm (sd=1.0, n=3) (Figure 15). The last Age 0 coho was captured during JW 49 with a fork length of 85mm. Age 1 coho were captured throughout JW 14-27. The fork lengths of these fish ranged from 100 to 191mm. Hatchery coho (n=446) were captured from JW 13 through JW 29, with fork lengths ranging from 68 to 190mm (Figure 16).

Spring and Fall 1998: A total of 353 coho were measured in 1998, between JW 16 and 46 (Appendix 35). Coho Age 0 were first observed during JW 17 with a fork length of 47mm (n=1) (Figure 15). The last Age 0 coho was captured during JW 46 with a fork length of 93mm (n=1). Age 1 coho were captured during JW 24 through 35. The fork lengths of these fish ranged from 114 to 181mm. Hatchery coho (n=302) were captured from JW 16 through JW 27, with fork lengths ranging from 115 to 275mm (Figure 16).

Spring and Fall 1999: A total of 1,293 coho were measured in 1999, between JW 11 and 39 (Appendix 37). Coho Age 0 were first observed during JW 14 with a mean fork length of 36mm (sd=3.1, n=3) (Figure 15). The last Age 0 coho was captured during JW 39 with a fork length of 74mm (n=1). Age 1 coho were captured during JW 12 through JW 30. The fork lengths of these fish ranged from 95 to 188mm. Hatchery coho (1039) were captured from JW 11 through JW 27, with fork lengths ranging from 100 to 250mm (Figure 16).

Spring and Fall 2000: A total of 159 coho were measured in 2000, between JW 20 and 39 (Appendix 39). The first Coho Age 0 was first observed during JW 21 with a fork length of 58mm (n=1) (Figure 15). The last Age 0 coho was captured during JW 35 with a fork length of 104mm (n=1). Age 1 coho were captured during JW 19 through JW 39. The fork lengths of these fish ranged from 99 to 158mm. Hatchery coho (n=83) were captured during JW 20 through JW 24, with fork lengths ranging from 110 to 210mm (Figure 16).

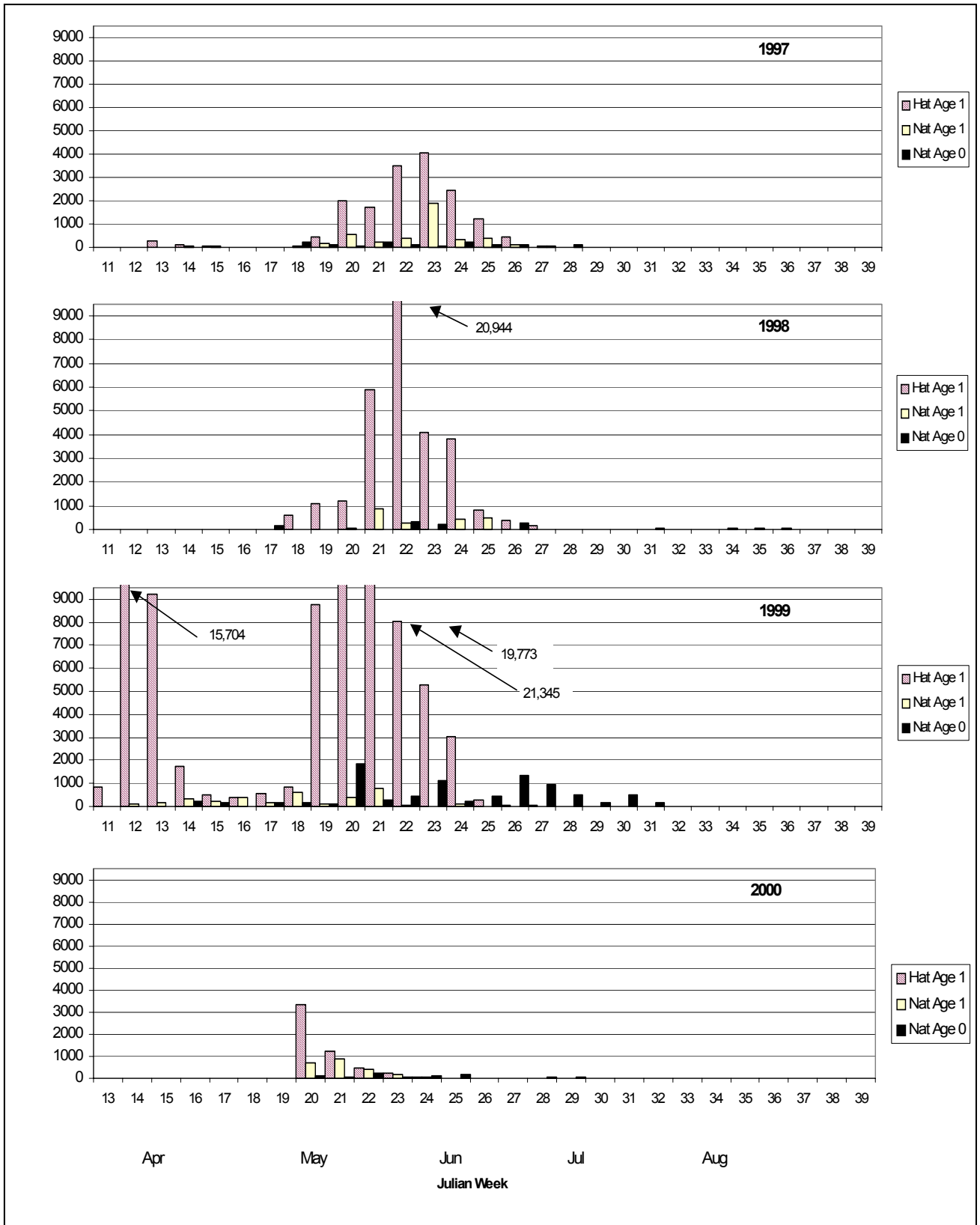


Figure 15. Weekly abundance index totals for natural and hatchery coho at the WCT, 1997-2000.

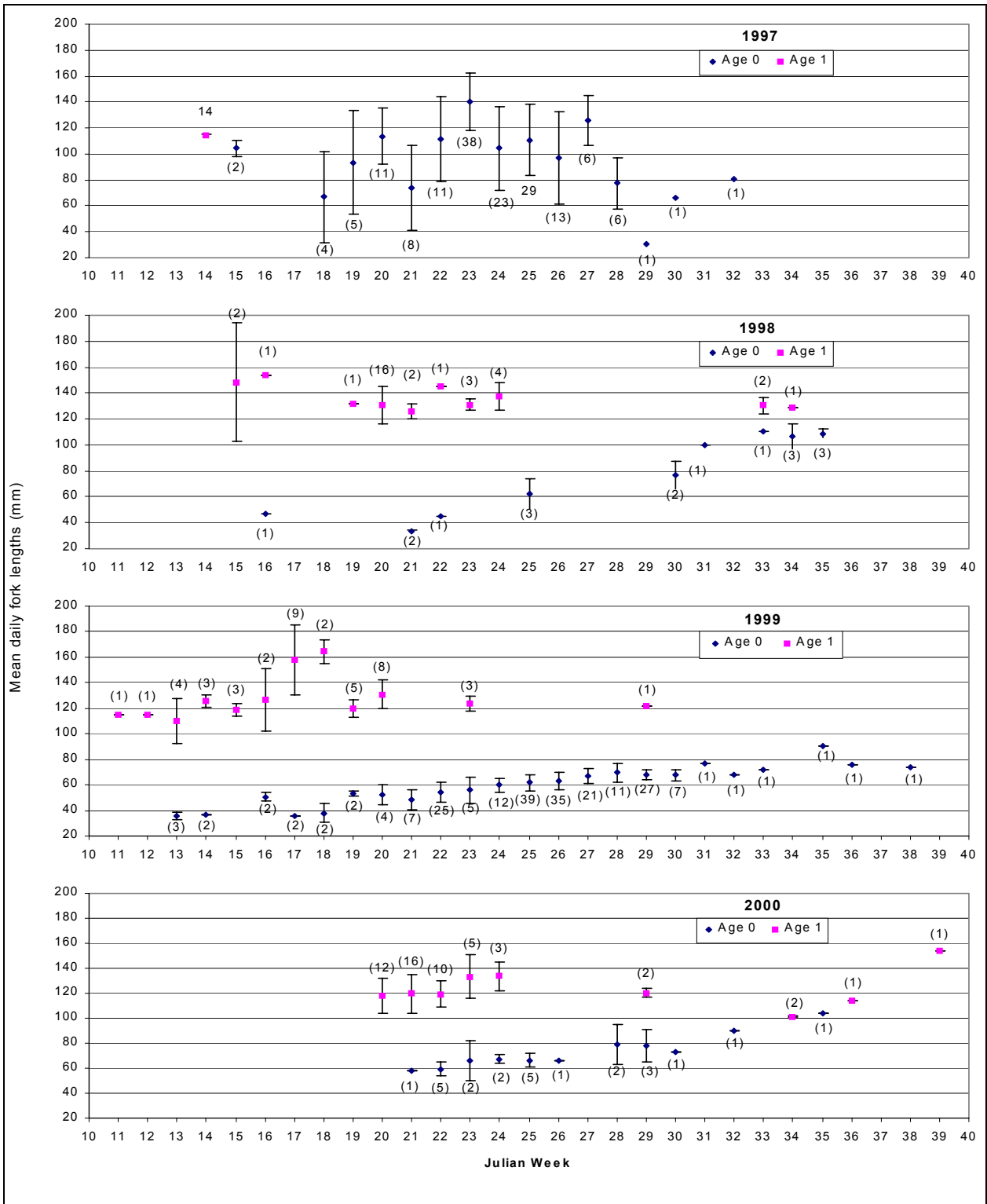


Figure 16. Coho Age 0 and Age 1 mean fork lengths (mm) by Julian week at the WCT, 1997-2000. (+/- 1 standard error, sample size).

Trinity River Steelhead

All life history phases of natural and hatchery steelhead juveniles were captured at the WCT during spring and fall monitoring. Trinity River Hatchery steelhead are typically reared one year and released in mid-May. In 1997 no steelhead release occurred. In 1998 through 2000 between 9,163 and 811,513 steelhead were released (Table 18).

Table 18. Trinity River Hatchery steelhead releases, 1997-2000.

(AD=adipose clip)

Brood Year & age	Date of Release	Size (grams)	Release # and Mark		Total released
			AD	Un-Marked	
1997-No Releases					
SH-97 1+	3/23/98-3/31/98	64.8	36,064	0	36,064
SH-97 1+	3/23/98-3/31/98	113.4	811,513	0	811,513
SH-98 1+	3/15/99-3/22/99	80.9	602,280	0	602,280
SH-98 1+	3/15/99-3/22/99	26.7	9,163	0	9,163
SH-99 1+	3/15/00-3/21/00	64.8	49,850	0	49,850

Steelhead Catches

A total of 6,988 steelhead (natural and hatchery) were captured at the WCT during the four spring monitoring periods. Age 0 comprised between 38% to 60% of the yearly catch. Age 1 steelhead comprised between 21% to 33% of the yearly catch. Age 2 steelhead comprised between 10% to 27% of the yearly catch. Age 3 steelhead comprised only 0 to 2% of the total catch (Table 19).

Table 19. WCT steelhead catch by age, Spring and Fall monitoring, 1997-2000.

Year	Steelhead						% of Total					
	Age0	Age1	Age2	Age3	Hat	Total	% Hat	% Nat	%Age 0	% Age1	% Age2	% Age3
1997	788	423	386	16	312	1,925	16%	84%	49%	26%	24%	1%
1998	660	205	94	4	144	1,107	13%	87%	69%	21%	10%	0%
1999	1,174	682	479	20	741	3,096	24%	76%	50%	29%	20%	1%
2000	311	272	222	17	38	860	4%	96%	38%	33%	27%	2%
Total	2,933	1,582	1,181	57	1,235	6,988	18%	82%	51%	27%	21%	1%

Abundance Index and Hatchery Contributions

The total steelhead abundance index for spring monitoring 1997-2000, ranged from 27,213 to 158,684, with the largest abundance index total occurring in spring 1999 (Table 20). No clear trend was apparent from the percent change in age class for a given spring period.

Table 20. WCT steelhead abundance index by age, Spring and Fall monitoring 1997-2000.

Date	Steelhead						% of Total					
	Age0	Age1	Age2	Age3	Hat	Total	% Hat	% Nat	%Age 0	% Age1	% Age2	% Age3
1997	11,195	14,192	10,775	412	11,123	47,697	23%	77%	31%	39%	29%	1%
1998	13,801	16,277	9,782	705	15,668	56,233	28%	72%	34%	40%	24%	2%
1999	22,495	41,323	36,630	1,865	56,371	158,684	36%	64%	22%	40%	36%	2%
2000	6,043	9,988	8,569	864	1,749	27,213	6%	94%	24%	39%	34%	3%
Total	53,534	68,780	65,756	3,846	84,911	276,827	31%	69%	28%	36%	34%	2%

Fork length and Emigration Timing

Steelhead Age 1 emigration timing ranged from March to June in the 1997-2000 monitoring period (Appendix 15, 18, 21, and 24). Fifty percent of Age 1 steelhead had been observed by JW 18, 23, 19, and 22 respectively for 1997, 1998, 1999 and 2000. By JW 28, 26, 25 and 32, 95% of Age 1 steelhead had been captured for 1997, 1998, 1999 and 2000.

Spring and Fall 1997: A total of 1,892 steelhead were measured in 1997, between JW 13 and 49. (Appendix 34) Steelhead Age 0 were first observed during JW 23 with a fork length of 54mm. By the end of the monitoring period (JW 49) the Age 0 mean fork length had increased to 93mm (sd=23.6, n=4). Age 1 steelhead were captured throughout the monitoring period. The mean fork length during the beginning of trapping (JW 13) was 91mm (sd=18.7, n=34). By the conclusion of the trapping period (JW 49) the mean fork length was 139mm (sd=11.3, n=2). The mean fork lengths for Age 2 and Age 3 steelhead did not show a consistent increase during the monitoring period. Age 2 mean fork lengths ranged from 150 to 220mm. Age 3 mean fork lengths ranged from 209 to 274mm. Hatchery steelhead were captured between JW 13 and JW 40. Hatchery fork lengths ranged from 130 to 248mm (Figure 17). No Age 2 hatchery fish were captured.

Spring and Fall 1998: A total of 1,074 steelhead were measured in 1998, between JW 16 and 47 (Appendix 36). Steelhead Age 0 were first observed during JW 22 with a fork length of 49mm. By the end of the monitoring period (JW 47) the Age 0 mean fork length had increased to 70mm (sd=9.8, n=13). Age 1 steelhead were captured throughout the monitoring period. The mean fork length during the beginning of trapping (JW 16) was 88mm (sd=22.9, n=7). By the conclusion of the trapping period (JW 47) the last steelhead captured measured 145mm. The mean fork lengths for Age 2 and Age 3 steelhead did not show a consistent increase during the monitoring period. Age 2 mean fork lengths ranged from 132 to 220mm. Age 3 mean fork lengths ranged from 225 to 280mm. Hatchery steelhead were captured between JW 16 and JW 40. Hatchery fork lengths ranged from 117 to 275mm. Two Age 2 hatchery fish were captured measuring 280 and 180mm during JW 27 and 46 respectively (Figure 17).

Spring and Fall 1999: A total of 3,108 steelhead were measured in 1999 between JW 11 and 39 (Appendix 38). Steelhead Age 0 were first observed during JW 23 with a fork length of 44mm. By the end of the monitoring period (JW 49) the Age 0 mean fork length had increased to 88mm (sd=13.4, n=28). Age 1 steelhead were captured throughout the monitoring period. The mean fork length during the beginning of trapping (JW 11) was 105mm (sd=15.1, n=3). By the conclusion of the trapping period (JW 40) the mean fork length was 140mm (sd=25.1, n=10). The mean fork lengths for Age 2 and Age 3 steelhead did not show a consistent increase during the monitoring period. Age 2 fork lengths ranged from 72 to 261mm. Age 3 fork lengths ranged from 170 to 400mm. Hatchery steelhead were captured between JW 12 and JW 27. Hatchery fork lengths ranged from 133 to 254mm

Spring and Fall 2000: A total of 859 steelhead were measured in 2000, between JW 20 and 40 (Appendix 40). Steelhead Age 0 were first observed during JW 21 with a fork length of 40mm (n=1). By the end of the monitoring period (JW 40) the Age 0 mean fork length had increased to 98mm (sd=15.7, n=6). Age 1 steelhead were captured throughout the monitoring period. The mean fork length during the beginning of trapping (JW 20) was 113mm (sd=31.9, n=29). By the conclusion of the trapping period (JW 40) a fork length of 152mm (n=1) was recorded. The mean fork lengths for age 2 and age 3 steelhead did not show a consistent increase during the monitoring period. Age 2 fork lengths ranged from 119mm to 215mm. Age 3 mean fork lengths ranged from 129mm to 210mm. Hatchery age 1 fish were captured from JW 20 through JW 24. Hatchery fork lengths ranged from 161mm to 235mm (Figure 17).

Chum Salmon

A total of three juvenile chum salmon (*Oncorhynchus keta*) were captured during the four years of monitoring from 1997-2000. All three were captured from the Trinity River at Willow Creek on June 21, 1999. Fork lengths measured 37, 38 and 40mm. No other chum observations were recorded (Appendix 41-47).

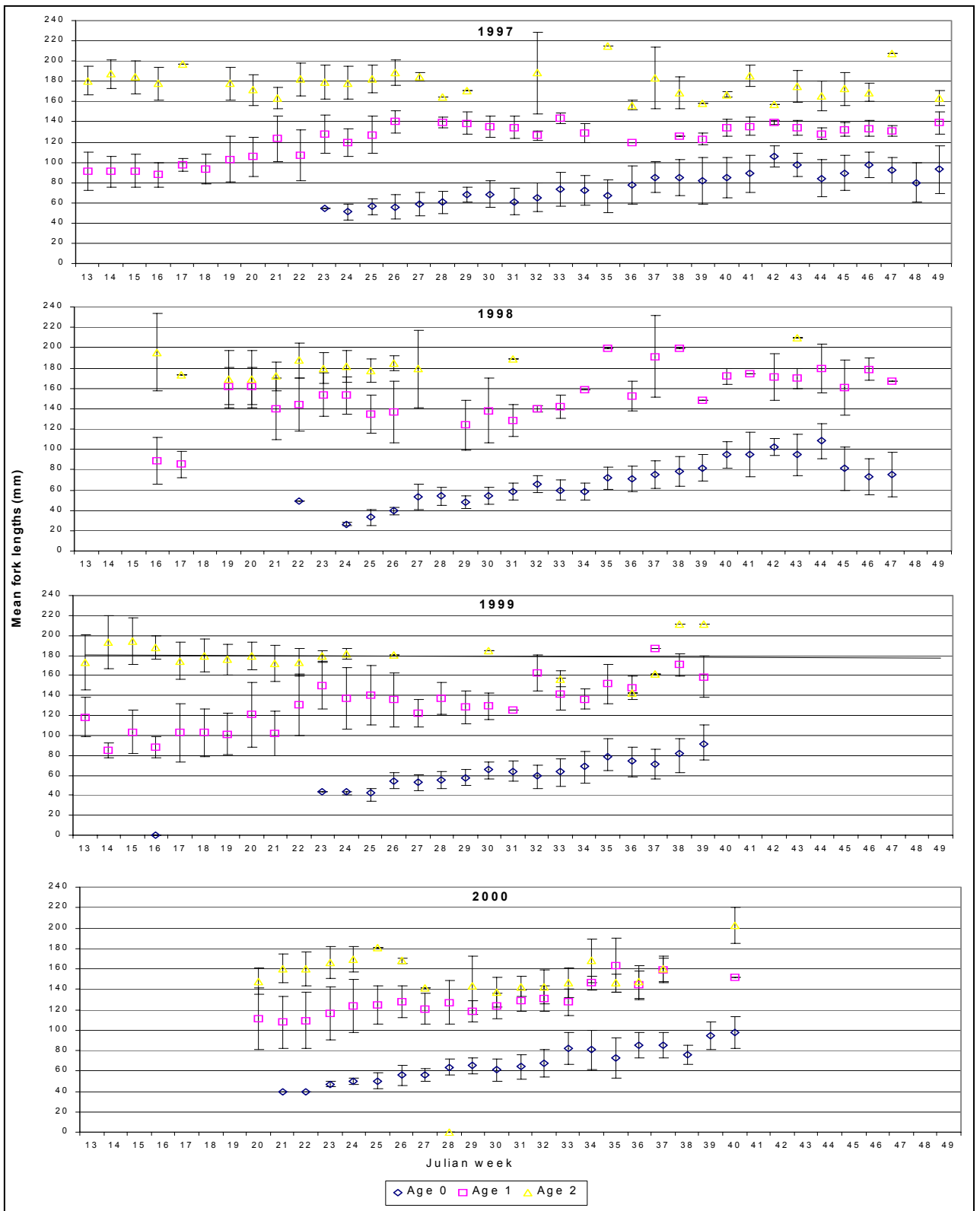


Figure 17. Mean lengths-at-age, standard deviation, and sample size by Julian week for natural steelhead at the WCT, 1997-2000

Non-target Species

Non-salmonid fish species captured in the Big Bar and Willow Creek rotary traps were enumerated and measured during both spring and fall of the monitoring period. The total catch for individual species varied greatly between years (Table 21), and much of this variation is likely attributable to trapping duration and discharge. One other factor that may have affected catch rates was the variation in trap placement. A total of 13,766 non-target fish were captured in the WCT. These were comprised of 13 species from 10 families. Total catch for the BBT was 3,729 fish comprised of 13 species from 9 families. Six introduced and six endemic species were captured at both the BBT and WCT. The BBT and WCT had four of the six introduced species in common (Appendix 41-Appendix 48).

Table 21. Season catch totals of non-target fish species captured at the BBT and the WCT, 1997-2000.

			Total number captured								Trinity Total		Species Total	
			Klamath				Trinity							
			Days Trapped	126	96	116	93	231	206	191				
Common Name	Species	Status*	1997	1998	1999	2000	Klamath Total	1997	1998	1999	2000	Trinity Total	Species Total	
Klamath smallscale sucker	Catostomus rimiculus	N	1,930	388	285	132	2,735	6,403	1,923	1,045	514	9,885	12,620	
Pacific lamprey	Entosphenus tridentatus	NA	1,085	1,444	2,121	815	5,465	1,281	1,140	387	28	2,836	8,301	
Speckled dace	Rhinichthys osculus	N	618	147	167	130	1,062	950	385	476	519	2,330	3,392	
Sculpin	Cottus sp.	N	186	24	42	14	266	123	16	61	31	231	497	
Threespine stickleback	Gasterosteus aculeatus	N	6	0	0	0	6	103	13	58	197	371	377	
Green Sturgeon	Acipenser medirostris	N/A	127	9	80	10	226	49	16	0	0	65	291	
Golden shiner	Notemigonus crysoleucas	I	3	49	196	20	268	3	4	7	8	22	290	
sockeye salmon	Oncorhynchus nerka	O/A	0	0	0	0	0	17	30	223	13	283	283	
American shad	Alosa sapidissima	I/A	11	0	2	1	14	148	2	0	73	223	237	
Brown Bullhead	Ameirus sp.	I	3	5	2	1	11	6	0	32	1	39	50	
Brown trout	Salmo trutta	I	2	1	0	0	3	6	0	3	10	19	22	
fathead minnow	Pimephales promelas	I	2	0	2	9	13	0	0	0	0	0	13	
Green Sunfish	Lepomis cyanellus	I	0	1	2	0	3	5	1	1	0	7	10	
Crappie	Pomoxis sp.	I	2	0	1	0	3	0	0	0	0	0	3	
Largemouth bass	Micropterus salmoides	I	0	0	0	0	0	0	0	0	0	0	0	
Season Total			2,045	1,680	2,615	1,000	7,340	2,691	1,607	1,248	880	6,426	13,766	

*N = native; O = occasional; A = anadromous; I = introduced.

To account for variation in weekly trapping effort and discharge, abundance indices were calculated for the more abundant non-target species in the same manner as was done for the salmonids. As with the salmonids, validity of this abundance index is contingent upon the assumption that catch rates are directly proportional to the percentage of river flow sampled. For fish emigrating downstream, such as the salmonid smolts, this assumption seems reasonable. However, this may not be the case for other species that are not actively emigrating, or for fish that preferentially use different parts of the river..

Weekly abundance indices were higher in the early part of the trapping season for many species. Because flows are higher during this period (sometimes several orders of magnitude), the higher indices may simply represent higher rates of “passive” fish displacement rather than “active” emigration. A brief discussion on each of the more abundant non-salmonid species captured in the Big Bar and Willow Creek rotary traps follows.

Due to the difficulty in identifying sculpin species, this group was identified to genus only. Potentially up to four species of sculpin could have been collected, with prickly sculpin *Cottus asper*, the most likely sculpin to be caught in both rivers. The coastrange sculpin *C. aleuticus* is probably also present in both rivers, but it is seldom as abundant as the prickly sculpin when they occur together (Moyle 1976). Marbled sculpin *C. klamathensis* are reportedly widely distributed in the Klamath River, and the reticulate sculpin *C. perplexus* may occasionally be found in the lower Klamath (Moyle 1976).

Sculpin captures were highest in the early part of the trapping season on both rivers and during all years, (Figures 20 - 23). In general, prickly and coastrange sculpin typically migrate downstream to breeding areas between January and March and may spawn between February and June (Moyle 1976). Thus, the high abundance index values early in the season likely reflect breeding related activity.

Speckled dace capture trends and numbers were variable between years and traps. Dace numbers at the WCT were less than the BBT, but were more consistent throughout the monitoring period. BBT dace numbers were greater than at WCT with a larger index being captured early in the monitoring period. Speckled dace numbers for 1997 at WCT and BBT do not show this trend. Catch numbers were larger and more consistent than 1998-2000, (Figures 20 - 23).

Four species of sucker are found in the Klamath drainage, Klamath smallscale sucker *Catostomus rimiculus*, Klamath largescale sucker *C. snyderi*, Lost River sucker *C. luxatus*, and shortnose sucker *Chasmistes brevirostris* (Moyle 1976). The Klamath smallscale sucker is the only sucker found in the Trinity River, and it is rare to find any other sucker species in the Klamath River below Klamath Falls (Moyle 1976). As such, all suckers captured were assumed to be of *C. rimiculus* species. Klamath largescale suckers are a relatively uncommon species found almost exclusively above Klamath Falls, though there are a few records for the lower Klamath River (Moyle 1976). Shortnose and Lost River suckers are confined to lakes and their tributaries in the upper Klamath drainage (Moyle 1976). Klamath smallscale suckers, almost all of which were juveniles, were the most frequently captured non-salmonid species at the WCT and second most captured at the BBT (Figures 20 - 23).

Threespine stickleback capture rates varied dramatically between rivers and monitoring years. On the Klamath, few sticklebacks were captured during 1997-2000. On the Trinity, stickleback captures were sporadic until May or June (JW 20-25) after which catches began to increase. Numbers peaked around August (JW 35). Stickleback numbers for the 1998 monitoring period on the Trinity do not conform to this trend (Figures 20-23).

Three different life history stages of Pacific lamprey were captured: ammocetes, eyed juveniles, and adults. Pacific lamprey ammocetes are a non-parasitic larval stage that are categorized by lack of developed eyes. Most ammocetes were captured between April and July, (Figures 18 and 19). All ammocete larvae captured in the traps were most likely Age 0, which often move downstream with the current to areas of greater organic bottom debris, where they take up a filter feeding existence and remain buried several years as a larval stage (M^cGinnis 1984). Metamorphosis to a macrophthalmia stage (obvious morphological change [i.e. eyes and lateral tooth plates]) marks the onset of parasitic feeding (Hardisty and Potter 1971, *in* Beamish 1980). Eyed juveniles were captured at both traps during their downstream migration throughout all trapping seasons. Catch numbers peaked in late May and early June (JW 18-24) for the BBT, while the peak of the WCT catch occurred during October to December, (JW 40-49) (Figures 18 and 19). Catch numbers for eyed juveniles were much greater for the periods of 1997 and 1998. Adult lamprey were captured during or following their spawning migration, primarily between late April (JW 17) and late July (JW 26), and looked to be in post-spawning condition (Figures 18 and 19).

American shad, a non-native anadromous species, spawn in the Trinity and Klamath Rivers annually. Live adults are rarely captured in the rotary traps but are commonly observed by crews in the late spring/early summer. Emigrating Age 0 were captured primarily between August (JW 32) and October (JW 44) on the Trinity River and very few on the Klamath.

Juvenile sturgeon were captured in two of the four monitoring periods at the WCT. Fifty nine juveniles were captured in 1997, sixteen in 1998, zero in 1999 and 2000. In 1997 captures occurred from mid May (JW 25) to late July (JW 31). In 1998 captures ranged from late July (JW 31) to mid October (JW 43). Total lengths ranged from 32 to 143mm. Juvenile sturgeon were present in trap catches as late as October (JW 43). (Figures 20 - 23).

Juvenile sturgeon were captured in all four of the monitoring periods at the BBT. One hundred and twenty seven were captured in 1997, only nine were captured in 1997, eighty were captured in 1999, and only ten were captured in 2000. In all years captures ranged from early May (JW 18) to mid August (JW 33), (Figures 20 - 23). Total lengths ranged from 22 to 400mm.

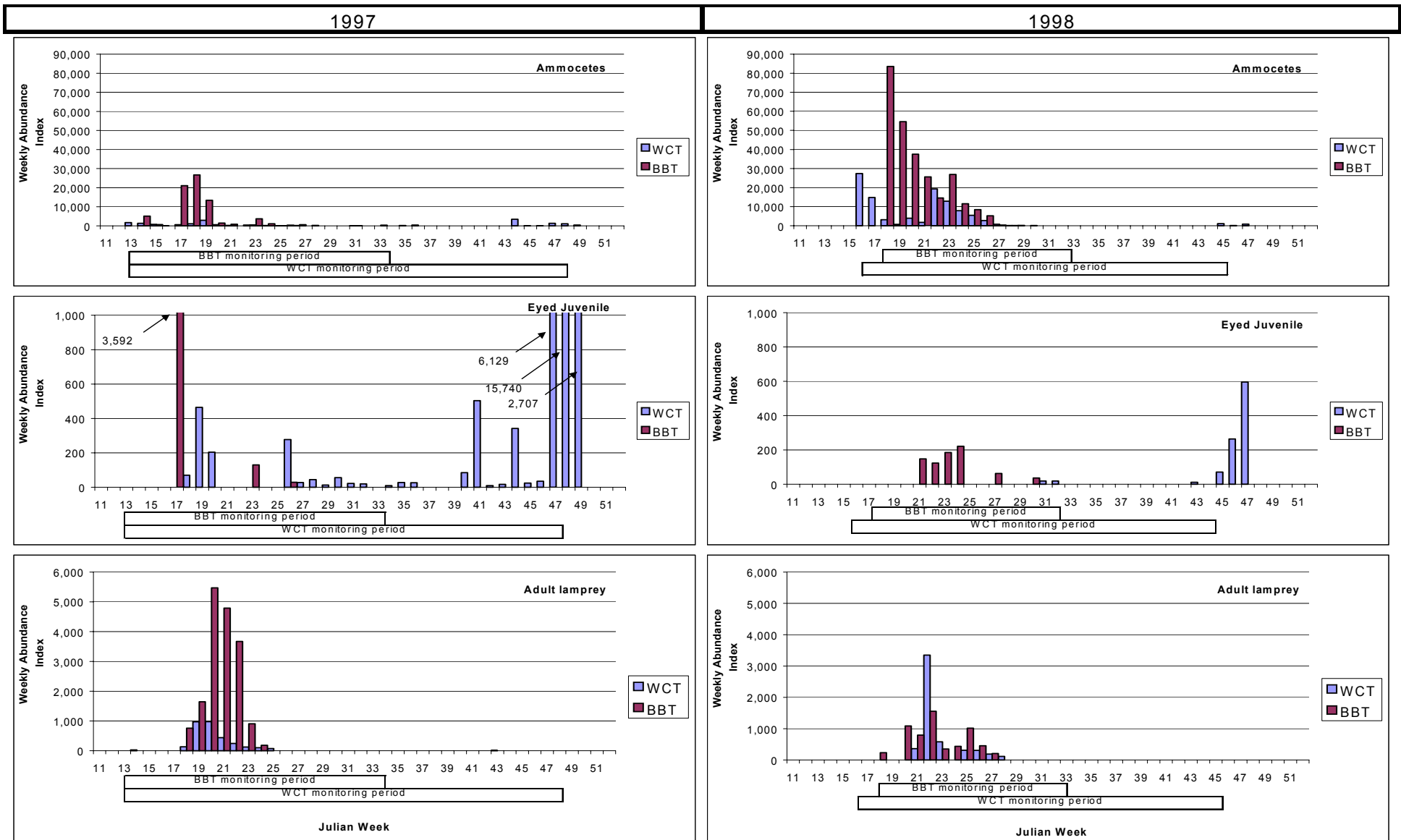


Figure 18. Weekly abundance index totals for lamprey ammocetes, eyed-juveniles, and adults captured at the BBT and WCT, 1997-1998.

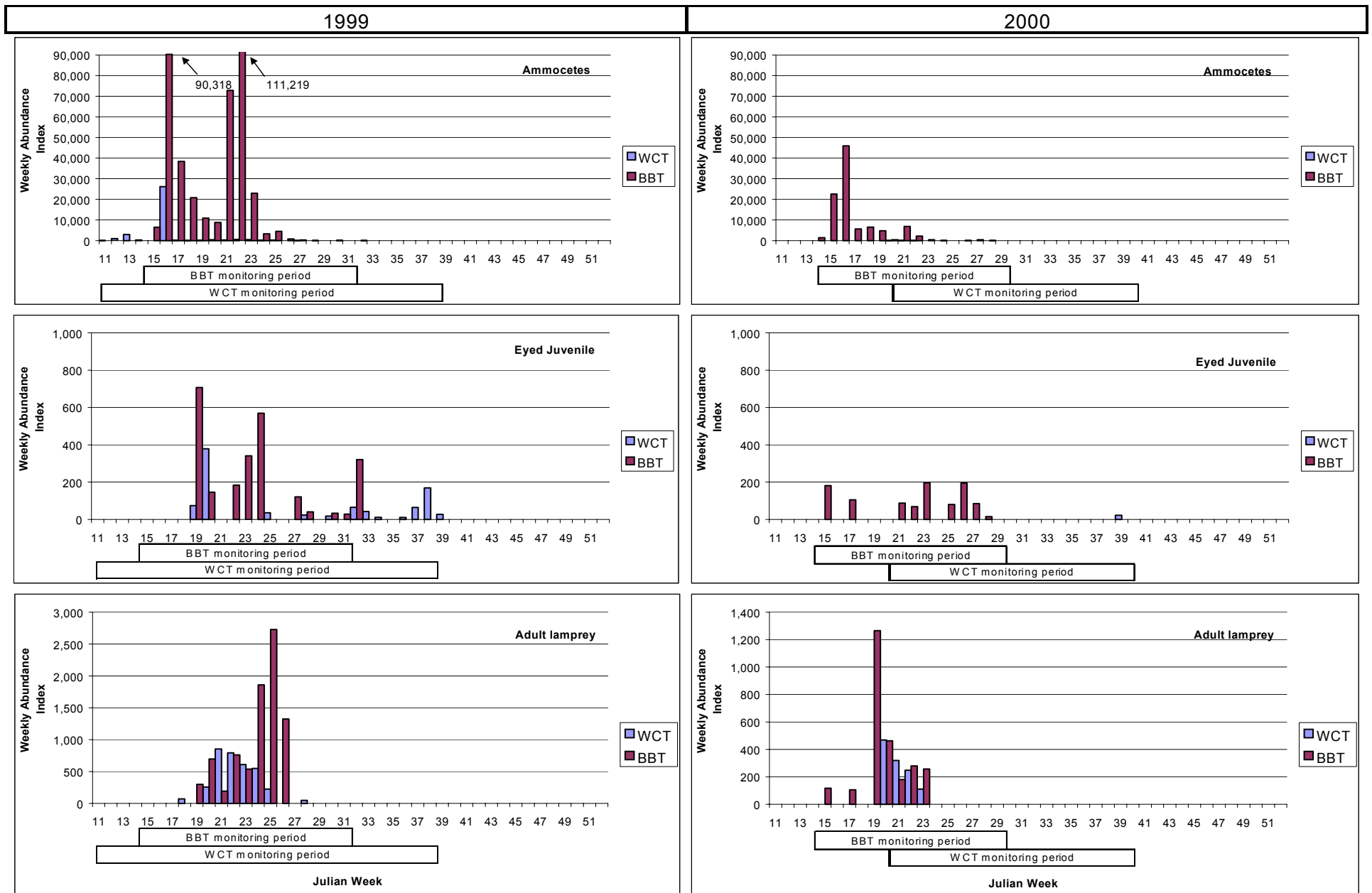


Figure 19. Weekly abundance index totals for lamprey ammocetes, eyed-juveniles, and adults captured at the BBT and WCT, 1999-2000.

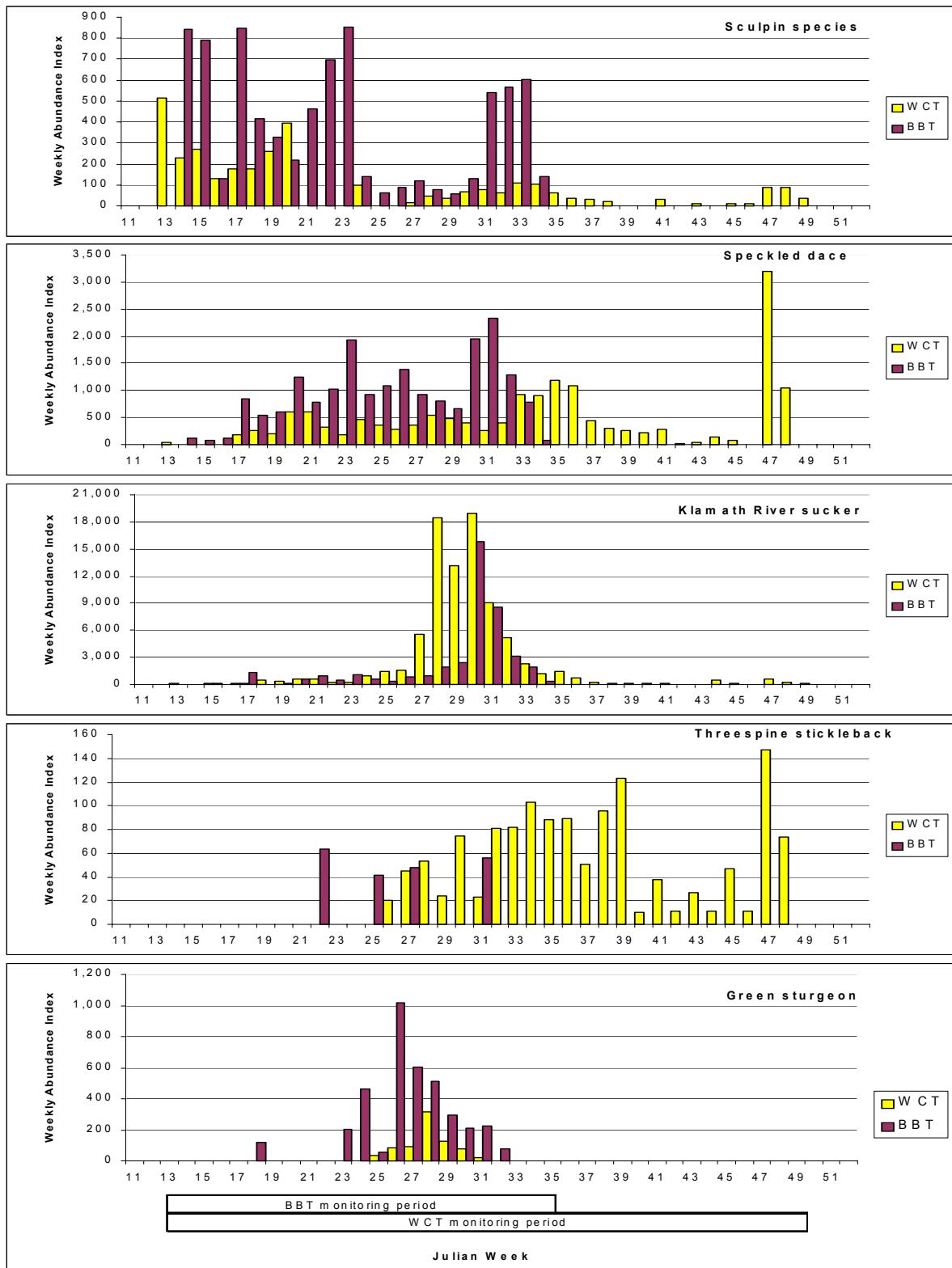


Figure 20. Non-Target Species abundance index at the BBT and WCT, 1997.

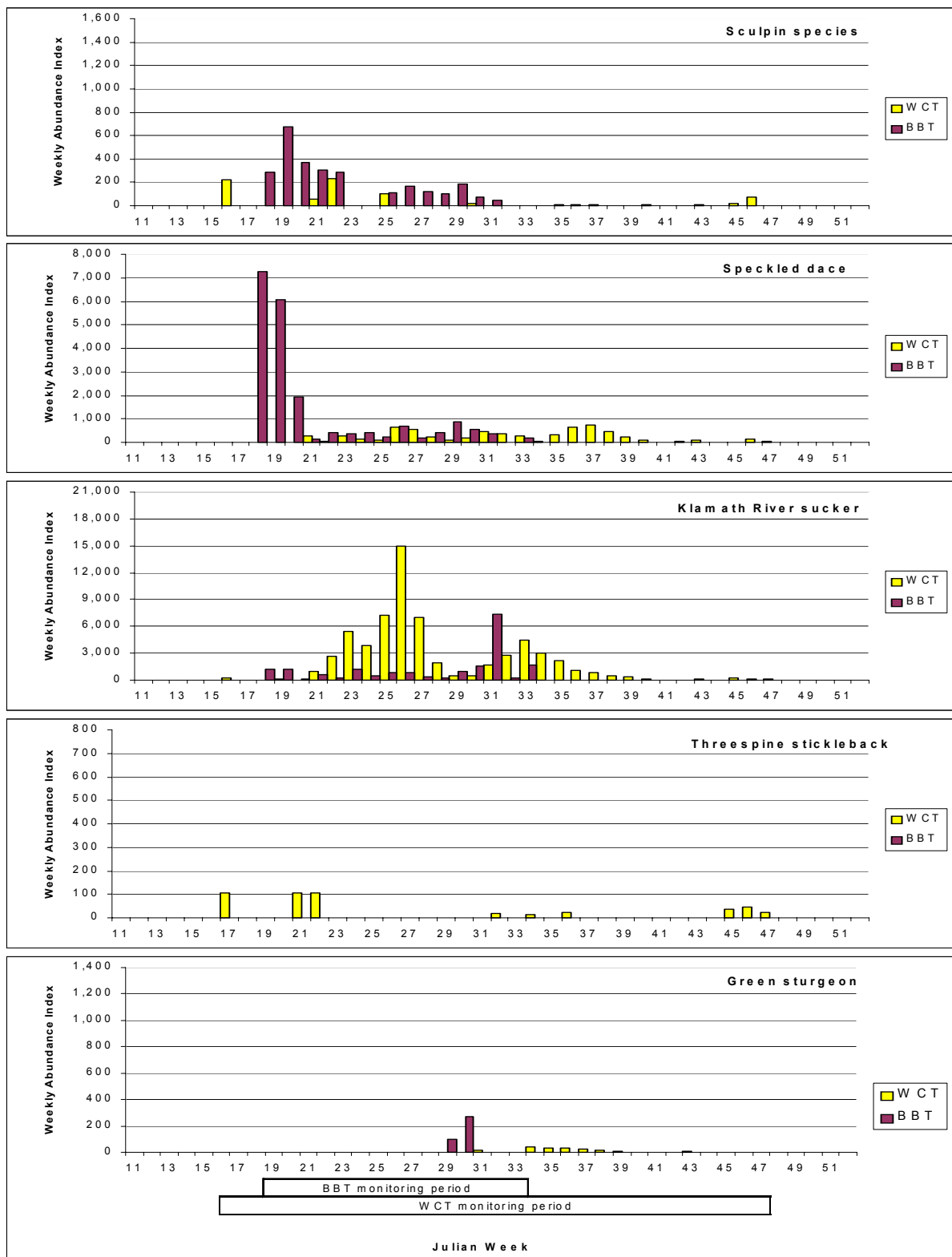


Figure 21. Non-Target Species abundance index at the BBT and WCT, 1998.

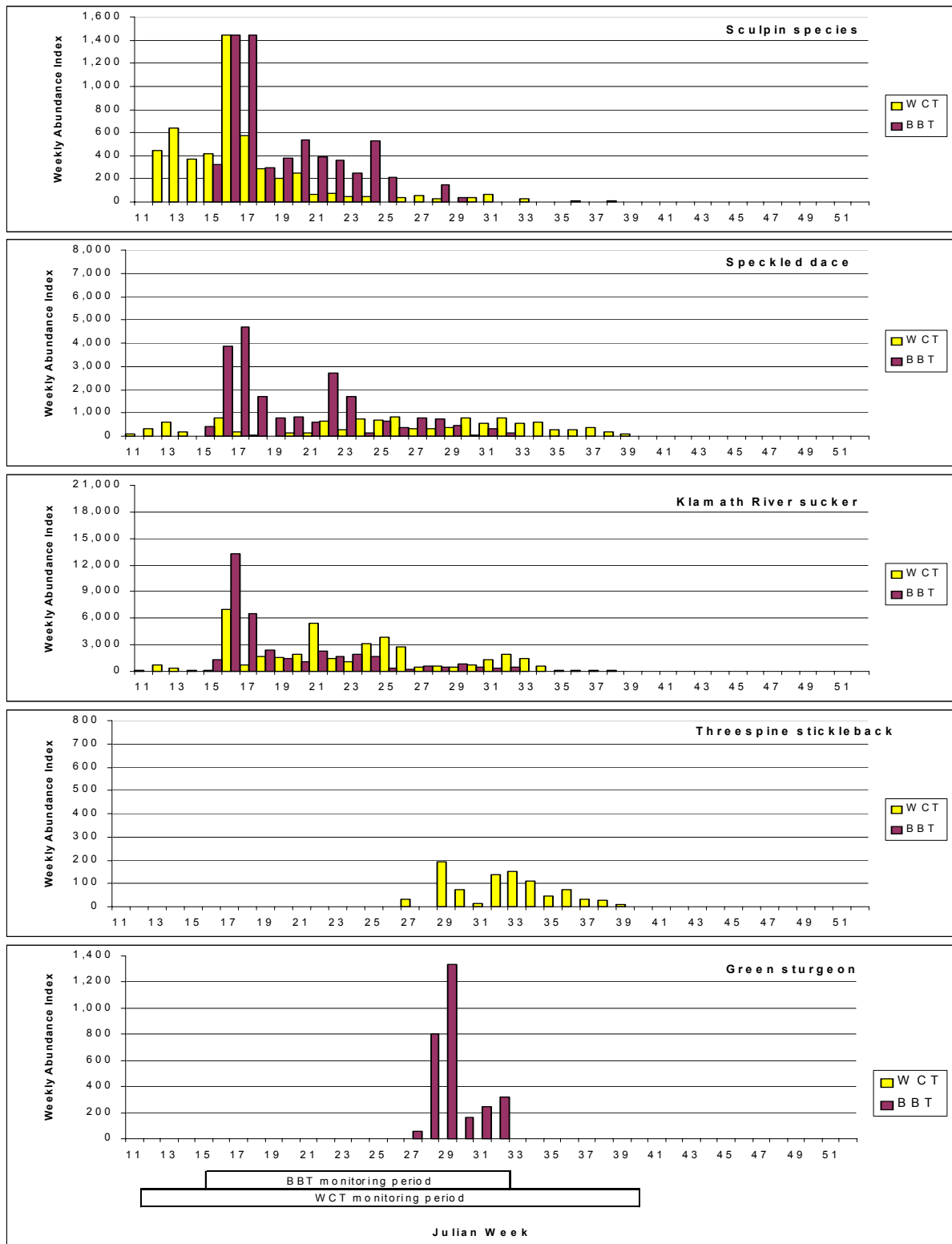


Figure 22. Non-Target Species abundance index at the BBT and WCT, 1999.

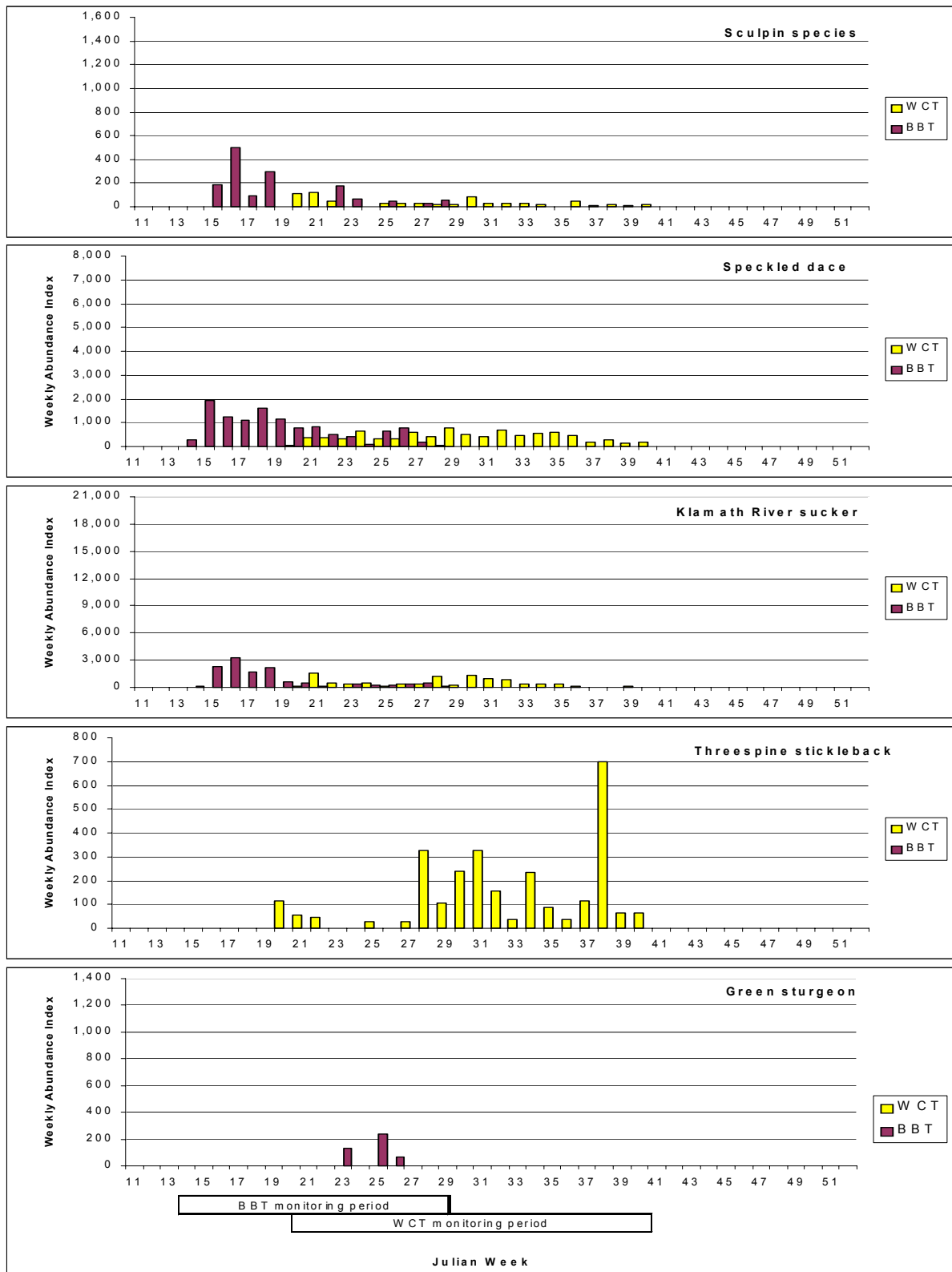


Figure 23. Non-Target Species abundance index at the BBT and WCT, 2000.

Recommendations

Rotary screw traps have proven to be an effective tool in assessing juvenile salmonid downstream migration. Traps can sample a large volume of water 24 hours a day, and can handle large amounts of debris. However, on large rivers such as the Klamath and Trinity, only a very small portion of the total river flow can be effectively sampled. Thus, an unknown portion of downstream migrants pass the traps unsampled, making it difficult to estimate the true population. Currently AFWO uses the trapping data to develop an abundance index that is used to compare relative abundance of fish caught at a particular site over time. The index method must be used because river flows, and thus the proportion of the flow sampled, vary daily. One assumption of the index is that the catch at the trapping site is directly proportional to the proportion of flow sampled. It is not known to what degree this assumption may be violated, but it likely depends on the trapping site. Currently, the abundance index does not account for other factors that may affect emigration and trapping efficiency, such as moon phase, temperature, turbidity, etc.

If known numbers of marked fish were released an appropriate distance above a trap each day the trap was operating, changes in flow, moon phase, temperature, turbidity, and other factors would not be an issue, and an actual population estimate could be made. The proportion of marked fish caught would then provide an estimate of trap efficiency for that particular day which could then be applied to the catch of unmarked fish to estimate the number of unmarked fish that passed the trap unsampled. The proportion of marked fish captured each day may vary according to a myriad of factors, but what those factors are and how much each one affects the catch does not need to be known to calculate the population estimate.

The AFWO has conducted varying numbers of efficiency tests each year at the WCT since 1989 (U.S. Fish and Wildlife Service 1991, 1992, 1994, 1998). Calculated efficiencies have ranged from 0% to 17.6% (0=3.61%). Several attempts to conduct efficiency tests on the Klamath River were aborted due to low catches, poor fish health and associated high mortalities (U.S. Fish and Wildlife Service 1991, 1992,).

A major obstacle to conducting valid efficiency tests on both rivers is lack of adequate fish capture in one day for a single marking event (U.S. Fish and Wildlife Service 1991, 1992, 1994, 1998). One or two day marking events have been desirable because of the extra manpower and equipment required to mark, transport, hold and release fish upstream, in addition to the regular trapping duties. Fish marked at the trap must be transported a sufficient distance upstream to allow random mixing with unmarked fish prior to their arrival at the trap. Also, the fish must be held in pens at the release site until dark.

One way to avoid many of the above problems would be to run two screw traps in the same river a relatively short distance apart. Fish captured at the upstream trap would be measured and marked (using a different mark each JW), then released. Captures of marked fish at the downstream trap would be used to calculate trap efficiency. This method was used successfully by Dempson and Stansbury (1991). The distance between the traps should be great enough to allow for random mixing of marked and unmarked fish, but close enough so that between trap mortality is negligible. It would also be desirable to have the traps far enough apart so that fish released in the morning or afternoon could not arrive at the trap before nightfall. One possibility would be to mark fish at the current WCT location and recapture somewhere downstream in the Hoopa Valley.

The AFWO recommends the continuation of annual rotary trapping programs to collect data used to assess: hatchery and natural contributions, salmonid abundance indices, size and emigration rate relationships and emigration duration. The traps also provide fish for health and disease assessment. Collecting abundance data on non-target species may also provide additional insight into the health of the Klamath River Basin.

The continuance of juvenile salmon monitoring may enable fisheries biologists a means of relating natural juvenile abundance indices and adult escapement estimates. Monitoring also provides information regarding the effects of water resource management policies on juvenile salmonid emigration. Such data are necessary for effectively implementing an "adaptive management" approach that will best meet the water needs of the fishery and various interests.

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Appendix 1. BBT weekly chinook catches, abundance index totals and hatchery contributions, 1997.

Week Starting	Julian Week	Mean River Flow (cfs)	Trap Days	WEEKLY CHINOOK CATCH								WEEKLY CHINOOK INDEX TOTALS								Cumulative Index (%)			
				Hatchery		Natural		Age 1		Catch Total	CPUE	Hatchery		Natural		Age 1		Index Total	Nat Age 0	Hat Age 0	Age 1	Hat Age 0	
				Age 0	AD	NC	AD	NC	AD			Age 0	AD	NC	AD	NC	AD						
03/12/1997	11	11,571	0																				
03/19/1997	12	12,043	0																				
03/26/1997	13	10,720	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%	0.00%	0%		
04/02/1997	14	8,510	4	0	0	0	0	0	0	0	0	0	35	0	0	35	0.03%	0.00%	0.00%	0%			
04/09/1997	15	7,123	4	0	0	3	0	0	3	1	0	0	214	0	0	214	0.24%	0.00%	0.00%	0%			
04/16/1997	16	12,576	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0.24%	0.00%	0.00%	0%			
04/23/1997	17	15,557	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0.24%	0.00%	0.00%	0%			
04/30/1997	18	12,943	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0.24%	0.00%	0.00%	0%			
05/07/1997	19	9,553	7	0	0	3	2	1	6	1	0	0	255	171	89	515	0.48%	0.00%	49.14%	0%			
05/14/1997	20	8,014	7	0	0	7	2	0	9	1	0	0	558	141	0	700	1.02%	0.00%	75.86%	0%			
05/21/1997	21	6,327	7	0	0	4	2	0	6	1	0	0	262	128	0	390	1.27%	0.00%	100.00%	0%			
05/28/1997	22	5,821	7	0	0	42	0	0	42	6	0	0	2,726	0	0	2,726	3.88%	0.00%		0%			
06/04/1997	23	5,734	7	0	0	135	0	0	135	19	0	0	7,497	0	0	7,497	11.06%	0.00%		0%			
06/11/1997	24	4,577	7	0	0	420	0	0	420	60	0	0	18,312	0	0	18,312	28.59%	0.00%		0%			
06/18/1997	25	3,654	7	985	50	674	0	0	1,709	244	39,680	2,002	28,637	0	0	70,319	56.00%	9.44%		59%			
06/25/1997	26	3,334	7	4,005	202	906	0	0	5,113	730	133,871	6,706	25,255	0	0	165,832	80.18%	41.26%		85%			
07/02/1997	27	2,893	7	6,460	510	263	0	0	7,234	1,033	167,416	13,093	7,708	0	0	188,216	87.56%	82.12%		96%			
07/09/1997	28	2,454	6	1,685	95	155	0	0	1,935	323	43,845	2,492	3,267	0	0	49,604	90.69%	92.61%		93%			
07/16/1997	29	2,180	7	1,077	48	342	0	0	1,467	210	20,910	937	6,820	0	0	28,666	97.22%	97.55%		76%			
07/23/1997	30	2,031	7	478	30	33	0	0	541	77	8,843	557	612	0	0	10,013	97.81%	99.68%		94%			
07/30/1997	31	2,099	7	50	5	89	0	0	144	21	941	94	1,676	0	0	2,711	99.41%	99.92%		38%			
08/06/1997	32	2,090	7	16	3	26	0	0	45	6	311	58	508	0	0	877	99.90%	100.00%		42%			
08/13/1997	33	1,981	5	0	0	3	0	0	3	1	0	0	81	0	0	81	99.97%			0%			
08/20/1997	34	2,144	1	0	0	1	0	0	1	1	0	0	28	0	0	28	100.00%			0%			
08/27/1997	35	2,124	0																				
09/03/1997	36	1,963	0																				
09/10/1997	37	2,217	0																				
09/17/1997	38	2,434	0																				
09/24/1997	39	2,063	0																				
10/01/1997	40	2,794	0																				
10/08/1997	41	4,283	0																				
10/15/1997	42	3,493	0																				
10/22/1997	43	3,060	0																				
10/29/1997	44	4,431	0																				
11/05/1997	45	4,177	0																				
11/12/1997	46	4,294	0																				
11/19/1997	47	6,594	0																				
11/26/1997	48	7,173	0																				
12/03/1997	49	6,150	0																				
12/10/1997	50	6,030	0																				
12/17/1997	51	9,153	0																				
12/24/1997	52	5,803	0																				
Spring total			126	14,756	944	3,108	6	1	18,814		415,817	25,939	104,451	440	89	546,736					81%		
Fall total																							
Total			126	14,756	944	3,108	6	1	18,814		415,817	25,939	104,451	440	89	546,736					81%		

Appendix 2. BBT weekly coho catch, abundance total and hatchery contribution, 1997.

Week Starting	Julian Week	Mean River Flow	Trap Days	WEEKLY COHO CATCH					WEEKLY COHO INDEX TOTALS				Cumulative Index (%)			
				Hatchery Age 1 (LMAX)	Natural		Catch Total	CPUE	Hatchery Age 1 (LMAX)	Natural		Index Total	Hat Age 1	Nat Age 1	Nat Age 0	
					Age 1	Age 0				Age 1	Age 0					
03/12/1997	11	11,571	0													
03/19/1997	12	12,043	0													
03/26/1997	13	10,720	1	0	0	0	0	0.0	0	0	0	0	0%	0%	0%	
04/02/1997	14	8,510	4	0	0	0	0	0.0	0	0	0	0	0%	0%	0%	
04/09/1997	15	7,123	4	0	0	0	0	0.0	0	0	0	0	0%	0%	0%	
04/16/1997	16	12,576	1	0	0	0	0	0.0	0	0	0	0	0%	0%	0%	
04/23/1997	17	15,557	6	0	2	1	3	0.5	0	280	131	412	0%	22%	16%	
04/30/1997	18	12,943	7	0	0	0	0	0.0	0	0	0	0	0%	22%	16%	
05/07/1997	19	9,553	7	0	3	0	3	0.4	0	275	0	275	0%	44%	16%	
05/14/1997	20	8,014	7	1	3	0	4	0.6	68	238	0	306	35%	63%	16%	
05/21/1997	21	6,327	7	0	2	3	5	0.7	0	130	190	319	35%	73%	40%	
05/28/1997	22	5,821	7	2	1	5	8	1.1	128	65	319	512	100%	78%	79%	
06/04/1997	23	5,734	7	0	1	0	1	0.1	0	68	0	68		83%	79%	
06/11/1997	24	4,577	7	0	4	3	7	1.0	0	187	139	326		98%	96%	
06/18/1997	25	3,654	7	0	0	0	0	0.0	0	0	0	0		98%	96%	
06/25/1997	26	3,334	7	0	0	0	0	0.0	0	0	0	0		98%	96%	
07/02/1997	27	2,893	7	0	1	1	2	0.3	0	24	31	56		100%	100%	
07/09/1997	28	2,454	6	0	0	0	0	0.0	0	0	0	0				
07/16/1997	29	2,180	7	0	0	0	0	0.0	0	0	0	0				
07/23/1997	30	2,031	7	0	0	0	0	0.0	0	0	0	0				
07/30/1997	31	2,099	7	0	0	0	0	0.0	0	0	0	0				
08/06/1997	32	2,090	7	0	0	0	0	0.0	0	0	0	0				
08/13/1997	33	1,981	5	0	0	0	0	0.0	0	0	0	0				
08/20/1997	34	2,144	1	0	0	0	0	0.0	0	0	0	0				
08/27/1997	35	2,124	0													
09/03/1997	36	1,963	0													
09/10/1997	37	2,217	0													
09/17/1997	38	2,434	0													
09/24/1997	39	2,063	0													
10/01/1997	40	2,794	0													
10/08/1997	41	4,283	0													
10/15/1997	42	3,493	0													
10/22/1997	43	3,060	0													
10/29/1997	44	4,431	0													
11/05/1997	45	4,177	0													
11/12/1997	46	4,294	0													
11/19/1997	47	6,594	0													
11/26/1997	48	7,173	0													
12/03/1997	49	6,150	0													
12/10/1997	50	6,030	0													
12/17/1997	51	9,153	0													
12/24/1997	52	5,803	0													
Spring total			126	3	17	13	33		196	1,268	811	2,274	8.6%			
Fall total																
Total			126	3	17	13	33	0.0	196	1,268	811	2,274	8.6%			

Appendix 3. BBT weekly Steelhead catch, abundance total and hatchery contribution, 1997.

Week of	Julian Week	Mean River Flow (cfs)	Steelhead Catch Totals						Steelhead Index Totals								Cumulative Index (%)								
			Trap Days	Age 0	Age 1	Age 2	Age 3	Hat 1	Catch Total	Age 0	Age 1	Age 2	Age 3	Hat 1	Index Total	Pre-Smolt	Smolt	Age 0	Age 1	Age 2	Age 3	Hat	Pre-Smolt	Smolt	
03/12/97	11	11,571	0																						
03/19/97	12	12,043	0																						
03/26/97	13	10,720	1	0	2	1	0	0	3	0	180	90	0	0	270	0	0	0%	3.0%	2.0%	0.0%	0.0%	0.0%	0.0%	
04/02/97	14	8,510	4	0	4	2	0	0	6	0	558	303	0	0	862	147	317	0.0%	12.2%	8.6%	0.0%	0.0%	4.3%	7.8%	
04/09/97	15	7,123	4	0	4	3	0	0	7	0	286	211	0	0	497	71	211	0.0%	16.9%	13.2%	0.0%	0.0%	6.3%	13.0%	
04/16/97	16	12,576	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	16.9%	13.2%	0.0%	0.0%	6.3%	13.0%	
04/23/97	17	15,557	6	0	3	8	0	0	11	0	429	1,109	0	0	1,539	446	812	0.0%	24.1%	37.6%	0.0%	0.0%	19.3%	33.0%	
04/30/97	18	12,943	7	0	11	2	0	1	14	0	1,393	255	0	140	1,787	260	230	0.0%	47.1%	43.1%	0.0%	100.0%	26.8%	38.7%	
05/07/97	19	9,553	7	0	10	10	2	0	22	0	869	891	168	0	1,928	293	947	0.0%	61.5%	62.7%	51.7%		35.3%	62.0%	
05/14/97	20	8,014	7	0	2	12	2	0	16	0	141	930	157	0	1,229	387	764	0.0%	63.8%	83.0%	100.0%		46.6%	80.9%	
05/21/97	21	6,327	7	4	1	5	0	0	10	259	66	324	0	0	649	131	259	3.4%	64.9%	90.2%		50.4%	87.2%		
05/28/97	22	5,821	7	1	3	2	0	0	6	64	188	127	0	0	379	315	0	4.2%	68.0%	92.9%		59.5%	87.2%		
06/04/97	23	5,734	7	9	5	3	0	0	17	549	305	178	0	0	1,031	120	229	11.4%	73.1%	96.8%		63.0%	92.9%		
06/11/97	24	4,577	7	22	1	2	0	0	25	995	47	79	0	0	1,122	47	79	24.5%	73.9%	98.6%		64.4%	94.8%		
06/18/97	25	3,654	7	7	4	1	0	0	12	300	177	46	0	0	524	40	0	28.4%	76.8%	99.6%		65.5%	94.8%		
06/25/97	26	3,334	7	51	3	0	0	0	54	1,875	102	0	0	0	1,977	102	0	53.0%	78.5%	99.6%		68.5%	94.8%		
07/02/97	27	2,893	7	25	5	0	0	0	30	731	137	0	0	0	868	137	40	62.6%	80.7%	99.6%		72.4%	95.8%		
07/09/97	28	2,454	6	27	1	0	0	0	28	725	33	0	0	0	758	33	0	72.1%	81.3%	99.6%		73.4%	95.8%		
07/16/97	29	2,180	7	12	6	0	0	0	18	232	115	0	0	0	348	38	0	75.2%	83.2%	99.6%		74.5%	95.8%		
07/23/97	30	2,031	7	21	13	0	0	0	34	393	242	0	0	0	635	186	18	80.3%	87.2%	99.6%		79.9%	96.2%		
07/30/97	31	2,099	7	34	11	0	0	0	45	641	207	0	0	0	848	225	37	88.7%	90.6%	99.6%		86.4%	97.2%		
08/06/97	32	2,090	7	20	21	1	0	0	42	393	409	19	0	0	821	275	77	93.9%	97.4%	100.0%		94.4%	99.1%		
08/13/97	33	1,981	5	22	4	0	0	0	26	437	129	0	0	0	566	193	38	99.6%	99.5%			100.0%	100.0%		
08/20/97	34	2,144	1	1	1	0	0	0	2	28	28	0	0	0	55	0	0	100.0%	100.0%						
08/27/97	35	2,124	0																						
09/03/97	36	1,963	0																						
09/10/97	37	2,217	0																						
09/17/97	38	2,434	0																						
09/24/97	39	2,063	0																						
10/01/97	40	2,794	0																						
10/08/97	41	4,283	0																						
10/15/97	42	3,493	0																						
10/22/97	43	3,060	0																						
10/29/97	44	4,431	0																						
11/05/97	45	4,177	0																						
11/12/97	46	4,294	0																						
11/19/97	47	6,594	0																						
11/26/97	48	7,173	0																						
12/03/97	49	6,150	0																						
12/10/97	50	6,030	0																						
12/17/97	51	9,153	0																						
12/24/97	52	5,803	0																						
Spring Total			126	256	115	52	4	1	428	7,623	6,041	4,563	325	140	18,693	3,447	4,057	40.8%	32.3%	24.4%	1.7%	0.7%	18.4%	21.7%	
Fall Total																									
Total			126	256	115	52	4	1	428	7,623	6,041	4,563	325	140	18,693	3,447	4,057	40.8%	32.3%	24.4%	1.7%	0.7%	18.4%	21.7%	

Appendix 4. BBT weekly chinook catches, abundance index totals and hatchery contributions, 1998.

Week Starting	Julian Week	Mean River Flow (cfs)	Trap Days	WEEKLY CHINOOK CATCH							WEEKLY CHINOOK INDEX TOTALS						Cumulative Index (%)			(%) Hat
				Hatchery		Natural	Age 1		Catch Total	CPUE	Hatchery		Natural	Age 1		Index Total	Nat Age 0	Hat Age 0	Age 1	Age 0
				Age 0	Age 0	Age 0	Age 1	Age 0			Age 0	Age 0	Age 1							
				NC	AD	NC	NC	AD	NC	AD	NC	AD	NC	NC	AD					
03/12/1998	11	19,814	0																	
03/19/1998	12	48,414	0																	
03/26/1998	13	29,871	0																	
04/02/1998	14	21,429	0																	
04/09/1998	15	17,657	0																	
04/16/1998	16	14,986	0																	
04/23/1998	17	16,271	0																	
04/30/1998	18	20,429	7	0	0	1	4	0	5	1	0	0	117	1,073	0	1,190	0.01%	0.00%	0%	
05/07/1998	19	20,900	7	0	0	6	0	0	6	1	0	0	1,436	0	0	1,436	0.18%	0.00%	0%	
05/14/1998	20	16,829	7	0	0	11	0	2	13	2	0	0	1,789	0	309	2,098	0.38%	0.00%	0%	
05/21/1998	21	16,686	7	0	0	17	1	0	18	3	0	0	2,766	159	0	2,926	0.70%	0.00%	0%	
05/28/1998	22	18,314	7	0	0	33	1	0	34	5	0	0	4,898	138	0	5,036	1.26%	0.00%	0%	
06/04/1998	23	18,971	7	0	0	67	2	0	69	10	0	0	14,287	339	0	14,626	2.89%	0.00%	0%	
06/11/1998	24	16,614	7	26	1	984	1	0	1,012	145	2,789	110	134,443	160	0	137,501	18.28%	0.28%	2%	
06/18/1998	25	12,086	7	4,117	193	1,991	0	0	6,301	900	429,401	19,896	216,743	0	0	666,039	43.07%	43.56%	67%	
06/25/1998	26	9,083	7	2,770	121	1,123	0	0	4,014	573	214,351	9,395	92,617	0	0	316,363	53.67%	65.11%	71%	
07/02/1998	27	7,323	7	2,356	95	1,128	0	0	3,579	511	147,059	5,948	68,679	0	0	221,686	61.53%	79.85%	69%	
07/09/1998	28	5,751	7	2,367	93	3,736	0	0	6,196	885	117,241	4,612	190,671	0	0	312,524	83.34%	91.58%	39%	
07/16/1998	29	4,556	7	1,929	79	2,448	0	0	4,456	637	74,614	3,072	93,665	0	0	171,350	94.06%	99.07%	45%	
07/23/1998	30	4,113	5	178	7	982	0	0	1,167	233	8,542	336	44,209	0	0	53,088	99.12%	99.92%	17%	
07/30/1998	31	3,224	5	25	1	171	0	0	197	39	778	31	7,440	0	0	8,248	99.97%	100.00%	10%	
08/06/1998	32	2,734	2	0	0	0	0	0	0	0	0	0	0	0	0	0	99.97%		0%	
08/13/1998	33	2,429	1	0	0	10	0	0	10	10	0	0	295	0	0	295	100.00%		0%	
08/20/1998	34	2,264	0																0%	
08/27/1998	35	2,127	0																0%	
09/03/1998	36	2,327	0																0%	
09/10/1998	37	2,387	0																0%	
09/17/1998	38	2,357	0																0%	
09/24/1998	39	2,404	0																0%	
10/01/1998	40	2,430	0																0%	
10/08/1998	41	2,636	0																0%	
10/15/1998	42	2,583	0																0%	
10/22/1998	43	2,811	0																0%	
10/29/1998	44	2,851	0																0%	
11/05/1998	45	3,626	0																0%	
11/12/1998	46	4,254	0																0%	
11/19/1998	47	23,661	0																0%	
11/26/1998	48	21,643	0																0%	
12/03/1998	49	19,571	0																0%	
12/10/1998	50	12,357	0																0%	
12/17/1998	51	10,451	0																0%	
12/24/1998	52	9,044	0																0%	
Spring total				97	13,768	591	12,708	9	2	27,077	994,774	43,399	874,056	1,869	309	1,914,406			54%	
Fall total																				
Total				97	13,768	591	12,708	9	2	27,077	994,774	43,399	874,056	1,869	309	1,914,406			54%	

Appendix 5. BBT weekly coho catch, abundance total and hatchery contribution, 1998.

Week Starting	Julian Week	Mean River Flow	Trap Days	WEEKLY COHO CATCH					WEEKLY COHO INDEX TOTALS				Cumulative Index (%)			
				Hatchery Age 1 (LMAX)	Natural		Catch Total	CPUE	Hatchery Age 1 (LMAX)	Natural		Index Total	Hat Age 1	Nat Age 1	Nat Age 0	
					Age 1	Age 0				Age 1	Age 0					
03/12/1998	11	19,814	0													
03/19/1998	12	48,414	0													
03/26/1998	13	29,871	0													
04/02/1998	14	21,429	0													
04/09/1998	15	17,657	0													
04/16/1998	16	14,986	0													
04/23/1998	17	16,271	0													
04/30/1998	18	20,429	7	0	0	2	2	0.3	0	0	566	566	0%	0%	36%	
05/07/1998	19	20,900	7	0	0	0	0	0.0	0	0	0	0	0%	0%	36%	
05/14/1998	20	16,829	7	0	0	3	3	0.4	0	0	481	481	0%	0%	66%	
05/21/1998	21	16,686	7	1	0	0	1	0.1	230	0	0	230	62%	0%	66%	
05/28/1998	22	18,314	7	0	0	0	0	0.0	0	0	0	0	62%	0%	66%	
06/04/1998	23	18,971	7	0	0	0	0	0.0	0	0	0	0	62%	0%	66%	
06/11/1998	24	16,614	7	1	1	0	2	0.3	138	160	0	298	100%	100%	66%	
06/18/1998	25	12,086	7	0	0	2	2	0.3	0	0	205	205			79%	
06/25/1998	26	9,083	7	0	0	1	1	0.1	0	0	97	97			85%	
07/02/1998	27	7,323	7	0	0	3	3	0.4	0	0	188	188			97%	
07/09/1998	28	5,751	7	0	0	1	1	0.1	0	0	43	43			100%	
07/16/1998	29	4,556	7	0	0	0	0	0.0	0	0	0	0				
07/23/1998	30	4,113	5	0	0	0	0	0.0	0	0	0	0				
07/30/1998	31	3,224	5	0	0	0	0	0.0	0	0	0	0				
08/06/1998	32	2,734	2	0	0	0	0	0.0	0	0	0	0				
08/13/1998	33	2,429	1	0	0	0	0	0.0	0	0	0	0				
08/20/1998	34	2,264	0													
08/27/1998	35	2,127	0													
09/03/1998	36	2,327	0													
09/10/1998	37	2,387	0													
09/17/1998	38	2,357	0													
09/24/1998	39	2,404	0													
10/01/1998	40	2,430	0													
10/08/1998	41	2,636	0													
10/15/1998	42	2,583	0													
10/22/1998	43	2,811	0													
10/29/1998	44	2,851	0													
11/05/1998	45	3,626	0													
11/12/1998	46	4,254	0													
11/19/1998	47	23,661	0													
11/26/1998	48	21,643	0													
12/03/1998	49	19,571	0													
12/10/1998	50	12,357	0													
12/17/1998	51	10,451	0													
12/24/1998	52	9,044	0													
Spring total			97	2	1	12	15		368	160	1,580	2,108	17.5%			
Fall total																
Total			97	2	1	12	15		368	160	1,580	2,108	17.5%			

Appendix 6. BBT weekly Steelhead catch, abundance total and hatchery contribution, 1998.

Week Starting	Julian Week	Mean River Flow (cfs)	Trap Days	Steelhead Catch Totals						Steelhead Index Totals								Cumulative Index (%)						
				Age 0	Age 1	Age 2	Age 3	Hat Age 1	Catch Total	Age 0	Age 1	Age 2	Age 3	Hat Age 1	Index Total	Pre-Smolt	Smolt	Age 0	Age 1	Age 2	Age 3	Hat	Pre-Smolt	Smolt
03/12/98	11	19,814	0																					
03/19/98	12	48,414	0																					
03/26/98	13	29,871	0																					
04/02/98	14	21,429	0																					
04/09/98	15	17,657	0																					
04/16/98	16	14,986	0																					
04/23/98	17	16,271	0																					
04/30/98	18	20,429	7	0	19	4	0	0	23	0	4,689	900	0	0	5,589	1,962	2,025	0.0%	15.6%	2.9%	0.0%		8.5%	12.1%
05/07/98	19	20,900	7	0	24	6	2	0	32	0	5,331	1,154	481	0	6,966	1,830	3,386	0.0%	33.3%	6.6%	34.6%		19.0%	23.4%
05/14/98	20	16,829	7	0	43	33	0	0	76	0	7,038	5,363	0	0	12,401	3,392	6,745	0.0%	56.7%	23.9%	34.6%		37.7%	44.4%
05/21/98	21	16,686	7	0	29	51	1	0	81	0	4,506	8,297	159	0	12,962	4,118	6,512	0.0%	71.7%	50.7%	46.1%		57.3%	69.8%
05/28/98	22	18,314	7	0	5	15	3	0	23	0	729	2,102	470	0	3,301	265	2,600	0.0%	74.2%	57.5%	79.9%		62.3%	71.5%
06/04/98	23	18,971	7	0	14	20	0	0	34	0	2,853	4,320	0	0	7,174	1,497	4,055	0.0%	83.7%	71.4%	79.9%		73.2%	80.7%
06/11/98	24	16,614	7	0	17	52	2	0	71	0	2,330	7,108	280	0	9,717	1,048	7,973	0.0%	91.4%	94.4%	100.0%		87.9%	87.2%
06/18/98	25	12,086	7	0	14	14	0	0	28	0	1,553	1,555	0	0	3,108	1,465	1,518	0.0%	96.6%	99.4%			92.6%	96.2%
06/25/98	26	9,083	7	0	3	2	0	0	5	0	228	146	0	0	374	223	73	0.0%	97.3%	99.9%			93.1%	97.6%
07/02/98	27	7,323	7	4	2	0	0	0	6	259	120	0	0	0	379	120	0	7.0%	97.7%	99.9%			93.7%	98.4%
07/09/98	28	5,751	7	6	6	0	0	0	12	289	287	0	0	0	576	0	44	14.8%	98.7%	99.9%			94.6%	98.4%
07/16/98	29	4,556	7	34	5	1	0	0	40	1,303	192	37	0	0	1,532	39	41	50.1%	99.3%	100.0%			96.9%	98.6%
07/23/98	30	4,113	5	32	2	0	0	0	34	1,690	141	0	0	0	1,831	0	0	95.8%	99.8%				99.7%	98.6%
07/30/98	31	3,224	5	1	2	0	0	0	3	155	61	0	0	0	217	226	45	100.0%	100.0%				100.0%	100.0%
08/06/98	32	2,734	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
08/13/98	33	2,429	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
08/20/98	34	2,264	0																					
08/27/98	35	2,127	0																					
09/03/98	36	2,327	0																					
09/10/98	37	2,387	0																					
09/17/98	38	2,357	0																					
09/24/98	39	2,404	0																					
10/01/98	40	2,430	0																					
10/08/98	41	2,636	0																					
10/15/98	42	2,583	0																					
10/22/98	43	2,811	0																					
10/29/98	44	2,851	0																					
11/05/98	45	3,626	0																					
11/12/98	46	4,254	0																					
11/19/98	47	23,661	0																					
11/26/98	48	21,643	0																					
12/03/98	49	19,571	0																					
12/10/98	50	12,357	0																					
12/17/98	51	10,451	0																					
12/24/98	52	9,044	0																					
Spring total			97	77	185	198	8	0	468	3,695	30,058	30,982	1,390	0	66,125	16,184	35,019	5.6%	45.5%	46.8%	2.1%		24.5%	53.0%
Fall total			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%
Total			97	77	185	198	8	0	468	3,695	30,058	30,982	1,390	0	66,125	16,184	35,019	5.6%	45.5%	46.8%	2.1%		24.5%	53.0%

Appendix 7. BBT weekly chinook catches, abundance index totals and hatchery contributions, 1999.

Week Starting	Julian Week	Mean River Flow (cfs)	Trap Days	WEEKLY CHINOOK CATCH							WEEKLY CHINOOK INDEX TOTALS									
				Hatchery		Natural	Age 1		Catch Total	CPUE	Hatchery		Natural	Age 1		Index Total	Cumulative Index (%)			(% Hat Age 0)
				Age 0		Age 0	NC	AD			Age 0		Age 0	NC	AD		Age 0	Nat	Hat	
				NC	AD	NC	NC	AD	NC	AD	NC	AD	NC	AD	NC	AD	Age 0	Age 0	Age 1	
03/12/1999	11	20,457	0																	
03/19/1999	12	21,171	0																	
03/26/1999	13	17,843	0																	
04/02/1999	14	16,229	0																	
04/09/1999	15	15,357	4	0	0	2	0	0	2	1	0	0	370	0	0	370	0.1%	0.0%	0%	
04/16/1999	16	22,071	7	0	0	50	0	0	50	7	0	0	1,998	0	0	1,998	0.6%	0.0%	0%	
04/23/1999	17	20,743	7	0	0	17	1	0	18	3	0	0	3,155	188	0	3,343	1.5%	0.0%	0%	
04/30/1999	18	16,914	7	0	0	5	0	0	5	1	0	0	882	0	0	882	1.8%	0.0%	0%	
05/07/1999	19	15,086	7	0	0	8	0	0	8	1	0	0	1,117	0	0	1,117	2.1%	0.0%	0%	
05/14/1999	20	15,043	7	0	0	12	0	0	12	2	0	0	1,710	0	0	1,710	2.5%	0.0%	0%	
05/21/1999	21	20,200	4	0	0	5	0	0	5	1	0	0	726	0	0	726	2.7%	0.0%	0%	
05/28/1999	22	17,943	7	0	0	3	2	0	5	1	0	0	489	394	0	882	2.9%	0.0%	0%	
06/04/1999	23	12,029	7	0	0	12	0	0	12	2	0	0	1,386	0	0	1,386	3.2%	0.0%	0%	
06/11/1999	24	12,443	7	0	0	185	0	0	185	26	0	0	19,086	0	0	19,086	8.5%	0.0%	0%	
06/18/1999	25	10,583	7	0	0	181	0	0	181	26	0	0	18,923	0	0	18,923	13.7%	0.0%	0%	
06/25/1999	26	7,783	7	0	0	391	0	0	391	56	0	0	29,675	0	0	29,675	21.8%	0.0%	0%	
07/02/1999	27	5,409	7	283	12	1,036	0	0	1,331	190	13,025	556	56,125	0	0	69,707	37.2%	3.1%	19%	
07/09/1999	28	4,271	7	8,022	343	3,736	0	0	12,101	1,729	332,304	14,193	156,100	0	0	502,597	79.9%	83.2%	69%	
07/16/1999	29	3,401	7	1,175	50	1,279	0	0	2,504	358	40,155	1,715	44,677	0	0	86,548	92.1%	92.8%	48%	
07/23/1999	30	2,950	7	696	31	668	0	0	1,394	199	21,206	931	20,847	0	0	42,984	97.9%	97.9%	52%	
07/30/1999	31	2,579	7	310	14	230	0	0	554	79	8,535	389	6,305	0	0	15,229	99.6%	100.0%	59%	
08/06/1999	32	2,426	5	0	0	57	0	0	57	11	0	0	1,509	0	0	1,509	100.0%		0%	
08/13/1999	33	2,184	0																	
08/20/1999	34	2,007	0																	
08/27/1999	35	1,986	0																	
09/03/1999	36	2,039	0																	
09/10/1999	37	1,979	0																	
09/17/1999	38	1,949	0																	
09/24/1999	39	1,921	0																	
10/01/1999	40	2,574	0																	
10/08/1999	41	2,613	0																	
10/15/1999	42	2,567	0																	
10/22/1999	43	3,133	0																	
10/29/1999	44	3,792	0																	
11/05/1999	45	4,065	0																	
11/12/1999	46	4,776	0																	
11/19/1999	47	5,893	0																	
11/26/1999	48	6,999	0																	
12/03/1999	49	6,657	0																	
12/10/1999	50	6,358	0																	
12/17/1999	51	5,218	0																	
12/24/1999	52	5,337	0																	
Spring total			118	10,485	450	7,877	3	0	18,815		415,227	17,785	365,081	582	0	798,674			54%	
Fall total																				
Total			118	10,485	450	7,877	3	0	18,815		415,227	17,785	365,081	582	0	798,674			54%	

Appendix 8. BBT weekly coho catch, abundance total and hatchery contribution, 1999.

Week Starting	Julian Week	Mean River Flow	Trap Days	WEEKLY COHO CATCH					WEEKLY COHO INDEX TOTALS				Cumulative Index (%)				
				Hatchery Age 1 (LMAX)	Natural		Catch Total	CPUE	Hatchery Age 1 (LMAX)	Natural		Index Total	Hat Age 1	Nat Age 1	Nat Age 0		
					Age 1	Age 0				Age 1	Age 0						
03/12/99	11	20,457	0														
03/19/99	12	21,171	0														
03/26/99	13	17,843	0														
04/02/99	14	16,229	0														
04/09/99	15	15,357	4	0	0	0	0	0.0		0	0	0	0	0%	0%	0%	
04/16/99	16	22,071	7	0	0	2	2	0.3		0	0	447	447	0%	0%	8%	
04/23/99	17	20,743	7	0	0	6	6	0.9		0	0	1,196	1,196	0%	0%	29%	
04/30/99	18	16,914	7	0	0	4	4	0.6		0	0	642	642	0%	0%	41%	
05/07/99	19	15,086	7	0	0	1	1	0.1		0	0	118	118	0%	0%	43%	
05/14/99	20	15,043	7	0	0	4	4	0.6		0	0	535	535	0%	0%	53%	
05/21/99	21	20,200	4	0	0	2	2	0.5		0	0	482	482	0%	0%	61%	
05/28/99	22	17,943	7	3	2	1	6	0.9		565	288	200	1,052	64%	63%	65%	
06/04/99	23	12,029	7	1	0	4	5	0.7		132	0	489	621	79%	63%	74%	
06/11/99	24	12,443	7	1	0	5	6	0.9		114	0	506	620	92%	63%	83%	
06/18/99	25	10,583	7	0	1	5	6	0.9		0	95	573	668	92%	84%	93%	
06/25/99	26	7,783	7	1	1	3	5	0.7		74	74	326	475	100%	100%	99%	
07/02/99	27	5,409	7	0	0	1	1	0.1		0	0	63	63			100%	
07/09/99	28	4,271	7	0	0	0	0	0.0		0	0	0	0				
07/16/99	29	3,401	7	0	0	0	0	0.0		0	0	0	0				
07/23/99	30	2,950	7	0	0	0	0	0.0		0	0	0	0				
07/30/99	31	2,579	7	0	0	0	0	0.0		0	0	0	0				
08/06/99	32	2,426	5	0	0	0	0	0.0		0	0	0	0				
08/13/99	33	2,184	0														
08/20/99	34	2,007	0														
08/27/99	35	1,986	0														
09/03/99	36	2,039	0														
09/10/99	37	1,979	0														
09/17/99	38	1,949	0														
09/24/99	39	1,921	0														
10/01/99	40		0														
10/08/99	41		0														
10/15/99	42		0														
10/22/99	43		0														
10/29/99	44		0														
11/05/99	45		0														
11/12/99	46		0														
11/19/99	47		0														
11/26/99	48		0														
12/03/99	49		0														
12/10/99	50		0														
12/17/99	51		0														
12/24/99	52		0														
Spring total			118	6	4	38	48			885	457	5,576	6,918	12.8%			
Fall total																	
Total			118	6	4	38	48			885	457	5,576	6,918	12.8%			

Appendix 9. BBT weekly steelhead catch, abundance total and hatchery contribution, 1999.

Week Starting	Julian Week	Mean River Flow (cfs)	Trap Days	Steelhead Catch Totals						Steelhead Index Totals								Cumulative Index (%)				Pre-Smolt						
				Age 0	Age 1	Age 2	Age 3	Hat Age 1	Catch Total	Age 0	Age 1	Age 2	Age 3	Hat Age 1	Index Total	Pre-Smolt	Smolt	Age 0	Age 1	Age 2	Age 3	Hat	Pre-Smolt	Smolt				
03/12/99	11	20,457	0																									
03/19/99	12	21,171	0																									
03/26/99	13	17,843	0																									
04/02/99	14	16,229	0																									
04/09/99	15	15,357	4	0	13	2	0	0	15	0	2,138	264	0	0	2,402	449	326	0.0%	10.8%	2.9%	0.0%				7.0%	8.9%		
04/16/99	16	22,071	7	0	20	2	1	0	23	0	4,055	430	190	0	4,675	221	846	0.0%	31.4%	7.6%	28.1%				20.8%	13.2%		
04/23/99	17	20,743	7	0	10	2	0	0	12	0	1,963	377	0	0	2,339	1,086	0	0.0%	41.3%	11.7%	28.1%				27.6%	34.7%		
04/30/99	18	16,914	7	0	16	9	0	0	25	0	2,632	1,278	0	0	3,911	483	1,287	0.0%	54.7%	25.6%	28.1%				39.1%	44.2%		
05/07/99	19	15,086	7	0	14	5	0	0	19	0	1,926	670	0	0	2,596	564	506	0.0%	64.5%	32.9%	28.1%				46.7%	55.3%		
05/14/99	20	15,043	7	0	9	5	2	0	16	0	1,214	692	281	0	2,188	140	974	0.0%	70.6%	40.5%	69.6%				53.1%	58.1%		
05/21/99	21	20,200	4	0	8	4	0	0	12	0	1,434	784	0	0	2,218	399	585	0.0%	77.9%	49.1%	69.6%				59.7%	66.0%		
05/28/99	22	17,943	7	0	11	15	1	0	27	0	1,863	2,598	206	0	4,668	575	2,420	0.0%	87.3%	77.4%	100.0%				73.4%	77.3%		
06/04/99	23	12,029	7	0	13	5	0	0	18	0	1,507	570	0	0	2,077	814	772	0.0%	95.0%	83.6%				79.4%	93.4%			
06/11/99	24	12,443	7	0	5	6	0	0	11	0	508	610	0	0	1,118	94	932	0.0%	97.5%	90.3%				82.7%	95.2%			
06/18/99	25	10,583	7	2	1	7	0	0	10	219	95	815	0	0	1,129	95	815	4.9%	98.0%	99.2%				86.0%	97.1%			
06/25/99	26	7,783	7	1	3	1	0	0	5	74	222	74	0	0	371	74	74	6.5%	99.1%	100.0%				87.1%	98.6%			
07/02/99	27	5,409	7	20	1	0	0	0	21	1,281	63	0	0	0	1,344	0	63	34.9%	99.5%						91.1%	98.6%		
07/09/99	28	4,271	7	22	2	0	0	0	24	894	79	0	0	0	973	38	0	54.7%	99.9%						93.9%	99.3%		
07/16/99	29	3,401	7	19	0	0	0	0	19	772	0	0	0	0	772	34	0	71.8%	99.9%						96.2%	100.0%		
07/23/99	30	2,950	7	17	1	0	0	0	18	502	27	0	0	0	530	0	0	83.0%	100.0%						97.7%			
07/30/99	31	2,579	7	8	0	0	0	0	8	233	0	0	0	0	233	0	0	88.1%							98.4%			
08/06/99	32	2,426	5	19	0	0	0	0	19	535	0	0	0	0	535	0	0	100.0%							100.0%			
08/13/99	33	2,184	0																									
08/20/99	34	2,007	0																									
08/27/99	35	1,986	0																									
09/03/99	36	2,039	0																									
09/10/99	37	1,979	0																									
09/17/99	38	1,949	0																									
09/24/99	39	1,921	0																									
10/01/99	40	2,430	0																									
10/08/99	41	2,636	0																									
10/15/99	42	2,583	0																									
10/22/99	43	2,811	0																									
10/29/99	44	2,851	0																									
11/05/99	45	3,626	0																									
11/12/99	46	4,254	0																									
11/19/99	47	23,661	0																									
11/26/99	48	21,643	0																									
12/03/99	49	19,571	0																									
12/10/99	50	12,357	0																									
12/17/99	51	10,451	0																									
12/24/99	52	9,044	0																									
Spring total				118	108	127	63	4	0	302	4,510	19,727	9,163	678	0	34,079	5,065	9,600										
Fall total																												
Total				118	108	127	63	4	0	302	4,510	19,727	9,163	678	0	34,079	5,065	9,600										

Appendix 10. BBT weekly chinook catches, abundance index totals and hatchery contributions, 2000.

Week Starting	Julian Week	Mean River Flow (cfs)	Trap Days	WEEKLY CHINOOK CATCH								WEEKLY CHINOOK INDEX TOTALS							Cumulative Index (%)			(%) Hat
				Hatchery		Natural		Age 1		Catch Total	CPUE	Hatchery		Natural		Age 1	Index Total	Nat Age 0	Hat Age 0	Age 1	Age 0	
				Age 0		Age 0		Age 1				Age 0		Age 0								Age 1
				NC	AD	NC	AD	NC	AD	NC	AD	NC	AD	NC	AD	NC	AD	NC	AD	NC	AD	NC
03/12/00	11	14,243	0																			
03/19/00	12	12,843	0																			
03/26/00	13	11,071	0																			
04/02/00	14	12,529	1	0	0	2	0	0	2	2	0	0	854	0	0	854	0.3%	0.0%	0%			
04/09/00	15	13,257	6	0	0	32	0	0	32	5	0	0	4,470	0	0	4,470	1.9%	0.0%	0%			
04/16/00	16	12,543	7	0	0	20	0	0	20	3	0	0	3,887	0	0	3,887	3.2%	0.0%	0%			
04/23/00	17	11,373	7	0	0	17	1	0	18	3	0	0	1,812	100	0	1,912	3.9%	0.0%	0%			
04/30/00	18	10,306	7	0	0	10	2	0	12	2	0	0	1,386	209	0	1,595	4.3%	0.0%	0%			
05/07/00	19	9,934	7	0	0	18	2	0	20	3	0	0	1,838	214	0	2,052	5.0%	0.0%	0%			
05/14/00	20	8,869	7	0	0	12	2	0	14	2	0	0	1,091	167	0	1,258	5.4%	0.0%	0%			
05/21/00	21	10,647	7	0	0	17	0	0	17	2	0	0	1,571	0	0	1,571	5.9%	0.0%	0%			
05/28/00	22	7,804	7	6	1	29	1	0	37	5	413	69	2,370	86	0	2,938	6.7%	0.2%	17%			
06/04/00	23	6,519	7	0	0	218	0	0	218	31	0	0	13,954	0	0	13,954	11.6%	0.2%	0%			
06/11/00	24	5,807	7	10	1	1,355	0	0	1,366	195	562	56	74,024	0	0	74,642	37.5%	0.5%	1%			
06/18/00	25	4,060	7	976	41	3,340	0	0	4,357	622	36,736	1,544	135,325	0	0	173,605	84.8%	17.5%	22%			
06/25/00	26	3,053	6	3,486	150	938	0	0	4,574	762	169,043	7,299	38,275	0	0	214,617	98.1%	96.0%	82%			
07/02/00	27	2,601	6	279	13	157	0	0	449	75	8,243	392	4,704	0	0	13,338	99.8%	99.8%	65%			
07/09/00	28	2,337	3	0	0	25	0	0	25	8	411	30	664	0	0	1,105	100.0%	100.0%	40%			
07/16/00	29	2,049	1	0	0	0	0	0	0	0	0	0	0	0	0	0			0%			
07/23/00	30	0	0																			
07/30/00	31	0	0																			
08/06/00	32	0	0																			
08/13/00	33	0	0																			
08/20/00	34	0	0																			
08/27/00	35	0	0																			
09/03/00	36	0	0																			
09/10/00	37	0	0																			
09/17/00	38	0	0																			
09/24/00	39	0	0																			
10/01/00	40	0	0																			
10/08/00	41	0	0																			
10/15/00	42	0	0																			
10/22/00	43	0	0																			
10/29/00	44	0	0																			
11/05/00	45	0	0																			
11/12/00	46	0	0																			
11/19/00	47	0	0																			
11/26/00	48	0	0																			
12/03/00	49	0	0																			
12/10/00	50	0	0																			
12/17/00	51	0	0																			
12/24/00	52	0	0																			
Spring total			93	4,756	206	6,191	8	0	11,161		215,408	9,390	286,224	776	0	511,798			44%			
Fall total																						
Total			93	4,756	206	6,191	8	0	11,161		215,408	9,390	286,224	776	0	511,798			44%			

Appendix 11. BBT weekly coho catch, abundance total and hatchery contribution, 2000.

Week Starting	Julian Week	Mean River Flow	Trap Days	WEEKLY COHO CATCH					WEEKLY COHO INDEX TOTALS				Cumulative Index (%)				
				Hatchery Age 1 (LMAX)	Natural Age 1	Natural Age 0	Catch Total	CPUE	Hatchery Age 1 (LMAX)	Natural Age 1	Natural Age 0	Index Total	Hat Age 1	Nat Age 1	Nat Age 0		
03/12/00	11	14,243	0														
03/19/00	12	12,843	0														
03/26/00	13	11,071	0														
04/02/00	14	12,529	1	0	0	0	0	0.0	0	0	0	0	0	0%	0%	0%	
04/09/00	15	13,257	6	0	0	0	0	0.0	0	0	0	0	0	0%	0%	0%	
04/16/00	16	12,543	7	0	0	3	3	0.4	0	0	369	369	0	0%	0%	11%	
04/23/00	17	11,373	7	0	0	1	1	0.1	0	0	102	102	0	0%	0%	13%	
04/30/00	18	10,306	7	1	1	5	7	1.0	104	102	600	806	37%	14%	31%		
05/07/00	19	9,934	7	0	1	6	7	1.0	0	101	606	707	37%	27%	48%		
05/14/00	20	8,869	7	2	3	3	8	1.1	180	267	257	704	100%	63%	55%		
05/21/00	21	10,647	7	0	2	4	6	0.9	0	186	369	556		88%	66%		
05/28/00	22	7,804	7	0	1	2	3	0.4	0	91	138	229		100%	70%		
06/04/00	23	6,519	7	0	0	3	3	0.4	0	0	197	197			75%		
06/11/00	24	5,807	7	0	0	11	11	1.6	0	0	594	594			92%		
06/18/00	25	4,060	7	0	0	4	4	0.6	0	0	162	162			97%		
06/25/00	26	3,053	6	0	0	3	3	0.5	0	0	114	114			100%		
07/02/00	27	2,601	5	0	0	0	0	0.0	0	0	0	0					
07/09/00	28	2,337	3	0	0	0	0	0.0	0	0	0	0					
07/16/00	29	2,049	1	0	0	0	0	0.0	0	0	0	0					
07/23/00	30	1,857	0														
07/30/00	31	1,707	0														
08/06/00	32	1,623	0														
08/13/00	33	1,553	0														
08/20/00	34	1,539	0														
08/27/00	35	1,516	0														
09/03/00	36	1,639	0														
09/10/00	37	1,770	0														
09/17/00	38	1,730	0														
09/24/00	39	1,740	0														
10/01/00	40		0														
10/08/00	41		0														
10/15/00	42		0														
10/22/00	43		0														
10/29/00	44		0														
11/05/00	45		0														
11/12/00	46		0														
11/19/00	47		0														
11/26/00	48		0														
12/03/00	49		0														
12/10/00	50		0														
12/17/00	51		0														
12/24/00	52		0														
Spring total			92	3	8	45	56		284	748	3,508	4,540	6.3%				
Fall total																	
Total			92	3	8	45	56		284	748	3,508	4,540	6.3%				

Appendix 12. BBT weekly steelhead catch, abundance total and hatchery contribution, 2000.

Week Starting	Julian Week	Mean River Flow (cfs)	Trap Days	Steelhead Catch Totals						Steelhead Index Totals								Cumulative Index (%)				Hat	Pre-Smolt	Smolt					
				Age 0	Age 1	Age 2	Age 3	Hat	Catch Total	Age 0	Age 1	Age 2	Age 3	Hat	Index Total	Pre-Smolt	Smolt	Age 0	Age 1	Age 2	Age 3								
03/12/00	11	14,243	0																										
03/19/00	12	12,843	0																										
03/26/00	13	11,071	0																										
04/02/00	14	12,529	1	0	4	2	0	0	6	0	858	369	30	0	1,257	0	369	0.0%	11.6%	7.4%	3.1%	0.0%	0.0%	6.8%					
04/09/00	15	13,257	6	0	14	7	2	0	23	0	2,131	1,064	297	0	3,492	0	1,328	0.0%	40.4%	28.9%	34.0%	0.0%	0.0%	31.1%					
04/16/00	16	12,543	7	0	4	1	1	0	6	0	521	141	122	0	784	0	263	0.0%	47.4%	31.7%	46.7%	0.0%	0.0%	35.9%					
04/23/00	17	11,373	7	1	11	3	0	0	15	124	1,128	301	0	0	1,553	0	301	12.1%	62.7%	37.8%	46.7%	0.0%	0.0%	41.4%					
04/30/00	18	10,306	7	0	11	7	2	0	20	0	1,214	797	206	0	2,216	97	1,202	12.1%	79.1%	53.9%	68.1%	0.0%	0.0%	63.4%					
05/07/00	19	9,934	7	4	8	6	0	1	19	417	845	616	0	110	1,989	0	313	52.9%	90.5%	66.3%	68.1%	100.0%	0.0%	22.4%	69.1%				
05/14/00	20	8,869	7	0	0	6	0	0	6	0	0	501	0	0	501	154	347	52.9%	90.5%	76.4%	68.1%	100.0%	0.0%	58.1%	75.5%				
05/21/00	21	10,647	7	0	0	4	0	0	4	0	0	365	0	0	365	92	273	52.9%	90.5%	83.7%	68.1%	100.0%	0.0%	79.4%	80.5%				
05/28/00	22	7,804	7	0	1	1	0	0	2	0	88	86	0	0	174	0	86	52.9%	91.7%	85.5%	68.1%	100.0%	0.0%	79.4%	82.1%				
06/04/00	23	6,519	7	2	2	3	4	0	11	129	129	186	267	0	710	0	524	65.5%	93.4%	89.2%	95.9%	100.0%	0.0%	79.4%	91.6%				
06/11/00	24	5,807	7	3	0	5	0	0	8	170	0	278	0	0	448	0	278	82.1%	93.4%	94.8%	95.9%	100.0%	0.0%	79.4%	96.7%				
06/18/00	25	4,060	7	2	0	2	1	0	5	81	0	82	39	0	202	0	121	90.0%	93.4%	96.5%	100.0%	100.0%	0.0%	79.4%	98.9%				
06/25/00	26	3,053	6	2	4	5	0	0	11	102	121	176	0	0	399	90	30	100.0%	95.1%	100.0%	100.0%	100.0%	0.0%	100.0%	99.5%				
07/02/00	27	2,601	6	0	9	0	0	0	9	0	290	0	0	0	290	0	28	100.0%	99.0%	100.0%	100.0%	100.0%	0.0%	100.0%	100.0%				
07/09/00	28	2,337	3	0	0	0	0	0	0	0	75	0	0	0	75	0	0	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	100.0%	100.0%				
07/16/00	29	2,049	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	100.0%	100.0%				
07/23/00	30	1,857	0																										
07/30/00	31	1,707	0																										
08/06/00	32	1,623	0																										
08/13/00	33	1,553	0																										
08/20/00	34	1,539	0																										
08/27/00	35	1,516	0																										
09/03/00	36	1,639	0																										
09/10/00	37	1,770	0																										
09/17/00	38	1,730	0																										
09/24/00	39	1,740	0																										
10/01/00	40		0																										
10/08/00	41		0																										
10/15/00	42		0																										
10/22/00	43		0																										
10/29/00	44		0																										
11/05/00	45		0																										
11/12/00	46		0																										
11/19/00	47		0																										
11/26/00	48		0																										
12/03/00	49		0																										
12/10/00	50		0																										
12/17/00	51		0																										
12/24/00	52		0																										
Spring total			93	14	68	52	10	1	145	1,022	7,400	4,963	961	110	14,456	433	5,462	7.1%	51.2%	34.3%	6.6%	0.8%	3.0%	37.8%					
Fall total																													
Total			93	14	68	52	10	1	145	1,022	7,400	4,963	961	110	14,456	433	5,462												

Appendix 13. WCT weekly chinook catch, abundance total and hatchery contributions, 1997.

Week Starting	Julian Week	Mean River flow	Trap Days	WEEKLY CHINOOK CATCH TOTALS									WEEKLY CHINOOK INDEX TOTALS											
				Hatchery		Natural		Total			Hatchery		Natural		Total	Index	Cumulative Index (%)			(% Hat Age 0)				
				Age 0		Age 0		Age 1	No- Tags	Catch Total	CPUE	Age 0		Age 0			Age 1	No- Tags	Total		Nat Age 0	Hat Age 0	Age 1	
NC	AD	NC	AD	Age 1	No- Tags	Catch Total	CPUE	NC	AD	NC	AD	Age 1	No- Tags	Total	Nat Age 0	Hat Age 0	Age 1	Age 0						
03/12/97	11	5,083	0																					
03/19/97	12	4,596	0																					
03/26/97	13	3,464	7	0	0	12	0	0	0	12	2	0	0	538	0	0	538	0.4%	0.0%	0.0%	0%			
04/02/97	14	2,650	7	0	0	2	0	0	0	2	0	0	0	59	0	0	59	0.4%	0.0%	0.0%	0%			
04/09/97	15	2,247	7	0	0	3	0	1	0	4	1	0	0	89	0	24	114	0.5%	0.0%	8.1%	0%			
04/16/97	16	3,686	2	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0.5%	0.0%	8.1%	0%			
04/23/97	17	4,891	1	0	0	6	0	0	0	6	6	0	0	353	0	0	353	0.7%	0.0%	8.1%	0%			
04/30/97	18	3,727	6	0	0	12	0	0	0	12	2	0	0	773	0	0	773	1.2%	0.0%	8.1%	0%			
05/07/97	19	4,141	7	0	0	13	0	1	0	14	2	0	0	719	0	51	770	1.7%	0.0%	25.0%	0%			
05/14/97	20	4,133	7	0	0	26	0	1	0	27	4	0	0	1,526	0	57	1,583	2.7%	0.0%	44.1%	0%			
05/21/97	21	3,557	7	0	0	27	0	3	0	30	4	0	0	1,282	0	128	1,410	3.5%	0.0%	86.6%	0%			
05/28/97	22	2,996	7	0	0	13	0	1	0	14	2	0	0	529	0	40	569	3.9%	0.0%	100.0%	0%			
06/04/97	23	3,027	7	0	0	31	0	0	0	31	4	0	0	1,104	0	0	1,104	4.6%	0.0%		0%			
06/11/97	24	2,161	7	116	42	30	42	0	0	230	33	2,660	958	766	961	0	0	5,345	5.7%	1.5%		68%		
06/18/97	25	1,620	7	646	314	10	142	0	0	1,112	159	10,891	5,293	179	2,463	0	0	18,826	7.5%	8.1%		86%		
06/25/97	26	1,480	7	1,455	648	72	101	0	0	2,276	325	24,997	11,191	1,415	1,799	0	0	39,402	9.6%	22.8%		92%		
07/02/97	27	1,421	7	2,023	465	878	133	0	0	3,499	500	31,127	7,153	13,866	2,056	0	0	54,202	20.1%	38.4%		71%		
07/09/97	28	1,249	5	2,197	385	2,170	77	0	0	4,828	966	42,429	7,649	42,690	1,476	0	0	94,243	49.3%	58.7%		53%		
07/16/97	29	1,139	7	1,564	239	1,205	128	0	0	3,135	448	18,802	2,878	14,596	1,554	0	0	37,831	60.0%	67.5%		57%		
07/23/97	30	1,012	7	1,825	234	1,650	129	0	0	3,838	548	21,352	2,731	18,930	1,504	0	0	44,517	73.5%	77.3%		54%		
07/30/97	31	990	7	1,308	165	1,033	91	0	0	2,597	371	14,560	1,843	11,419	1,011	0	0	28,834	81.7%	84.0%		57%		
08/06/97	32	853	7	1,074	128	1,001	70	0	0	2,273	325	10,707	1,271	9,980	702	0	0	22,660	88.7%	88.9%		53%		
08/13/97	33	788	6	424	66	150	56	0	2	697	116	4,370	665	1,915	573	0	21	7,545	90.4%	90.9%		67%		
08/20/97	34	811	6	561	71	210	67	0	1	910	152	6,533	839	2,186	796	0	10	10,363	92.3%	93.9%		71%		
08/27/97	35	863	6	410	49	221	46	0	0	726	121	5,244	626	2,678	588	0	0	9,136	94.5%	96.3%		64%		
09/03/97	36	769	7	509	60	316	57	0	0	941	134	4,610	539	2,986	517	0	0	8,652	96.8%	98.4%		60%		
09/10/97	37	771	6	206	34	192	25	0	0	457	76	2,146	347	2,376	259	0	0	5,128	98.5%	99.4%		49%		
09/17/97	38	863	7	59	11	94	11	0	0	175	25	566	104	923	104	0	0	1,698	99.2%	99.7%		39%		
09/24/97	39	734	7	73	9	128	7	0	0	217	31	637	79	1,125	62	0	0	1,903	100.0%	100.0%		38%		
10/01/97	40	890	7	2,292	255	732	8	0	198	3,486	498	27,184	2,824	7,849	89	0	2,445	40,391	30.9%	22.5%		79%		
10/08/97	41	1,244	6	2,883	301	562	0	0	275	4,021	670	43,458	4,618	8,642	0	0	4,102	60,820	64.5%	58.5%		85%		
10/15/97	42	840	7	1,675	63	460	4	0	211	2,414	345	15,682	596	4,586	35	0	1,972	22,872	82.5%	70.6%		78%		
10/22/97	43	688	7	2,118	40	64	3	0	290	2,515	359	18,471	357	543	27	0	2,523	21,921	84.7%	84.7%		97%		
10/29/97	44	1,167	7	1,126	22	99	2	0	142	1,391	199	15,178	270	1,372	24	0	1,909	18,754	90.1%	96.3%		92%		
11/05/97	45	1,010	7	306	13	68	8	0	40	435	62	3,580	152	908	94	0	471	5,204	94.0%	99.1%		79%		
11/12/97	46	1,757	5	64	3	25	3	0	8	103	21	528	37	293	13	0	62	932	95.2%	99.5%		65%		
11/19/97	47	3,303	5	8	1	15	2	0	1	27	5	347	56	586	87	0	37	1,114	97.8%	99.8%		38%		
11/26/97	48	4,240	4	3	1	4	0	0	1	9	2	179	69	399	14	0	34	695	99.4%	100.0%		37%		
12/03/97	49	3,887	5	0	1	6	1	0	1	9	2	0	0	147	0	0	0	147	100.0%			0%		
12/10/97	50	3,886	0																					
12/17/97	51	5,577	0																					
12/24/97	52	2,828	0																					
Spring total			171	14,449	2,919	9,505	1,182	7	3	28,064		201,632	44,166	135,005	16,424	300	31	397,558					62%	
Fall total			60	10,476	700	2,036	31	0	1,167	14,410		124,606	8,979	25,325	383	0	13,557	172,849					84%	
Total			231	24,925	3,618	11,541	1,213	7	1,170	42,474		326,238	53,145	160,329	16,807	300	13,588	570,408					68%	

Appendix 14. WCT weekly coho catch, abundance total and hatchery contribution, 1997

Week Starting	Mean Julian River Trap Week Flow Days			WEEKLY COHO CATCH TOTALS					WEEKLY COHO INDEX TOTALS					Cumulative Index (%)			
				Hatchery		Natural		Catch Total	CPUE	Hatchery			Index Totals				Hat Age 1
				Age 1 (LMAX)	Age 0	Age 1	Age 0			Age 1 (LMAX)	Age 1	Age 0					
03/12/97	11	5,083	0														
03/19/97	12	4,596	0														
03/26/97	13	3,464	7	6	0	0	6	0.9		270	0	0	270	2%	0%	0%	
04/02/97	14	2,650	7	3	1	0	4	0.6		95	48	0	143	2%	1%	0%	
04/09/97	15	2,247	7	2	2	0	4	0.6		52	53	0	104	3%	2%	0%	
04/16/97	16	3,686	2	0	0	0	0	0.0		0	0	0	0	3%	2%	0%	
04/23/97	17	4,891	1	0	0	0	0	0.0		0	0	0	0	3%	2%	0%	
04/30/97	18	3,727	6	0	1	3	4	0.7		0	66	207	273	3%	4%	15%	
05/07/97	19	4,141	7	8	3	2	13	1.9		435	180	101	716	5%	8%	22%	
05/14/97	20	4,133	7	35	10	1	46	6.6		2,005	566	54	2,625	18%	21%	26%	
05/21/97	21	3,557	7	40	4	4	48	6.9		1,741	214	238	2,192	28%	26%	44%	
05/28/97	22	2,996	7	86	9	2	97	13.9		3,478	378	85	3,942	50%	35%	50%	
06/04/97	23	3,027	7	105	40	1	146	20.9		4,071	1,882	38	5,990	75%	78%	53%	
06/11/97	24	2,161	7	95	14	10	119	17.0		2,432	360	236	3,029	90%	87%	70%	
06/18/97	25	1,620	7	69	22	7	98	14.0		1,235	402	130	1,768	97%	96%	80%	
06/25/97	26	1,480	7	27	7	6	40	5.7		449	117	100	666	100%	99%	87%	
07/02/97	27	1,421	7	0	4	2	6	0.9		0	60	28	88		100%	89%	
07/09/97	28	1,249	5	0	0	6	6	1.2		0	0	119	119			98%	
07/16/97	29	1,139	7	1	0	1	2	0.3		12	0	12	25			98%	
07/23/97	30	1,012	7	0	0	1	1	0.1		0	0	11	11			99%	
07/30/97	31	990	7	0	0	0	0	0.0		0	0	0	0			99%	
08/06/97	32	853	7	0	0	1	1	0.1		0	0	10	10			100%	
08/13/97	33	788	6	0	0	0	0	0.0		0	0	0	0				
08/20/97	34	811	6	0	0	0	0	0.0		0	0	0	0				
08/27/97	35	863	6	0	0	0	0	0.0		0	0	0	0				
09/03/97	36	769	7	0	0	0	0	0.0		0	0	0	0				
09/10/97	37	771	6	0	0	0	0	0.0		0	0	0	0				
09/17/97	38	863	7	0	0	0	0	0.0		0	0	0	0				
09/24/97	39	734	7	0	0	0	0	0.0		0	0	0	0				
10/01/97	40	890	7	0	0	0	0	0.0		0	0	0	0	0%	0%	0%	
10/08/97	41	1,244	6	0	0	0	0	0.0		0	0	0	0	0%	0%	0%	
10/15/97	42	840	7	0	0	0	0	0.0		0	0	0	0	0%	0%	0%	
10/22/97	43	688	7	0	0	0	0	0.0		0	0	0	0	0%	0%	0%	
10/29/97	44	1,167	7	0	0	0	0	0.0		0	0	0	0	0%	0%	0%	
11/05/97	45	1,010	7	0	0	0	0	0.0		0	0	0	0	0%	0%	0%	
11/12/97	46	1,757	5	0	0	0	0	0.0		0	0	0	0	0%	0%	0%	
11/19/97	47	3,303	5	0	0	2	2	0.4		0	0	56	56	0%	0%	46%	
11/26/97	48	4,240	4	0	0	0	0	0.0		0	0	28	28	0%	0%	69%	
12/03/97	49	3,887	5	0	0	1	1	0.2		0	0	38	38	0%	0%	100%	
12/10/97	50	3,886	0														
12/17/97	51	5,577	0														
12/24/97	52	2,828	0														
Spring total			171	477	117	47	641			16275	4326	1370	21971	74%			
Fall total			60	0	0	3	3			0	0	121	121	0%			
Total			231	477	117	50	644			16,275	4,326	1,492	22,092	74%			

Appendix 15. WCT weekly steelhead catch, abundance total and hatchery contribution, 1997.

Week Starting	Julian Week	Mean River Flow (cfs)	Trap Days	Steelhead Catch Totals						Steelhead Index Totals								Cumulative Index (%)							
				Age 0	Age 1	Age 2	Age 3	Hat Age 1	Catch Total	Age 0	Age 1	Age 2	Age 3	Hat Age 1	Index Total	Pre-Smolt	Smolt	Age 0	Age 1	Age 2	Age 3	Hat	Pre-Smolt	Smolt	
03/18/97	11	5,127	0																						
03/19/97	12	4,596	0																						
03/26/97	13	3,464	7	0	35	4	2	3	44	0	1,587	187	90	128	1,991	0	321	0	11.8%	1.8%	25.5%	1.1%	0.0%	3.1%	
04/02/97	14	2,650	7	0	45	16	2	15	78	0	1,450	555	65	464	2,533	28	1,041	0.0%	22.6%	7.2%	44.0%	5.3%	0.8%	13.0%	
04/09/97	15	2,247	7	2	63	47	4	39	155	48	1,758	1,205	126	1,099	4,236	159	1,295	0.7%	35.6%	18.9%	79.8%	15.2%	5.4%	25.3%	
04/16/97	16	3,686	2	0	45	8	2	20	75	0	1,154	213	46	514	1,927	185	158	0.7%	44.2%	20.9%	92.9%	19.8%	10.7%	26.8%	
04/23/97	17	4,891	1	0	5	1	0	0	6	0	295	59	0	0	353	0	59	0.7%	46.4%	21.5%	92.9%	19.8%	10.7%	27.4%	
04/30/97	18	3,727	6	0	17	0	0	0	17	0	1,111	0	0	0	1,111	0	0	0.7%	54.6%	21.5%	92.9%	19.8%	10.7%	27.4%	
05/07/97	19	4,141	7	0	42	9	0	15	66	0	2,310	516	0	792	3,618	585	617	0.7%	71.8%	26.5%	92.9%	26.9%	27.6%	33.3%	
05/14/97	20	4,133	7	0	34	14	0	31	79	0	1,960	816	0	1,722	4,497	859	576	0.7%	86.3%	34.4%	92.9%	42.4%	52.4%	38.8%	
05/21/97	21	3,557	7	0	7	13	0	48	68	0	354	617	0	2,219	3,190	535	288	0.7%	89.0%	40.3%	92.9%	62.4%	67.8%	41.5%	
05/28/97	22	2,996	7	0	9	10	0	47	66	0	363	423	0	1,871	2,657	156	344	0.7%	91.7%	44.4%	92.9%	79.2%	72.3%	44.8%	
06/04/97	23	3,027	7	1	5	53	0	19	78	30	189	2,173	0	813	3,206	99	2,214	1.1%	93.1%	65.5%	92.9%	86.5%	75.2%	65.9%	
06/11/97	24	2,161	7	7	12	58	0	24	101	185	317	1,500	0	628	2,630	188	1,548	3.8%	95.4%	80.0%	92.9%	92.2%	80.6%	80.7%	
06/18/97	25	1,620	7	23	3	77	0	26	129	404	53	1,376	0	453	2,285	37	1,322	9.5%	95.8%	93.3%	92.9%	96.2%	81.6%	93.3%	
06/25/97	26	1,480	7	45	3	29	0	16	93	819	49	496	0	291	1,656	33	512	21.2%	96.2%	98.1%	92.9%	98.8%	82.6%	98.2%	
07/02/97	27	1,421	7	42	0	5	0	3	50	648	0	77	0	49	774	0	77	30.4%	96.2%	98.9%	92.9%	99.3%	82.6%	98.9%	
07/09/97	28	1,249	5	36	1	1	0	1	39	704	19	25	0	25	773	0	25	40.5%	96.3%	99.1%	92.9%	99.5%	82.6%	99.1%	
07/16/97	29	1,139	7	63	8	1	0	1	73	765	100	12	0	12	889	38	25	51.4%	97.1%	99.2%	92.9%	99.6%	83.7%	99.4%	
07/23/97	30	1,012	7	66	8	0	0	1	75	743	90	0	0	11	844	122	0	62.0%	97.7%	99.2%	92.9%	99.7%	87.2%	99.4%	
07/30/97	31	990	7	26	5	0	0	1	32	296	58	0	0	11	365	46	0	66.2%	98.2%	99.2%	92.9%	99.8%	88.5%	99.4%	
08/06/97	32	853	7	41	3	0	1	1	46	413	30	0	10	10	463	30	20	72.1%	98.4%	99.2%	95.8%	99.9%	89.4%	99.6%	
08/13/97	33	788	6	28	10	0	0	0	38	285	101	0	0	0	386	110	0	76.2%	99.1%	99.2%	95.8%	99.9%	92.6%	99.6%	
08/20/97	34	811	6	23	5	0	1	1	30	259	48	0	15	10	331	53	19	79.9%	99.5%	99.2%	100.0%	100.0%	94.1%	99.8%	
08/27/97	35	863	6	33	0	1	0	0	34	381	0	10	0	0	391	15	10	85.3%	99.5%	99.3%			94.6%	99.9%	
09/03/97	36	769	7	25	2	2	0	0	29	228	24	17	0	0	269	46	0	88.6%	99.7%	99.5%			95.9%	99.9%	
09/10/97	37	771	6	28	0	2	0	0	30	315	0	24	0	0	339	24	16	93.0%	99.7%	99.7%			96.6%	100.0%	
09/17/97	38	863	7	29	1	2	0	0	32	287	10	20	0	0	316	30	0	97.1%	99.7%	99.9%			97.5%		
09/24/97	39	734	7	23	4	1	0	0	28	201	35	9	0	0	245	88	0	100.0%	100.0%	100.0%			100.0%		
10/01/97	40	890	7	41	8	2	0	0	51	443	85	21	0	0	549	97	10	10.6%	11.7%	4.7%	0.0%		9.4%	16.2%	
10/08/97	41	1,244	6	66	7	5	0	0	78	1,193	135	88	0	0	1,415	167	23	39.1%	30.1%	24.5%	0.0%		25.7%	52.5%	
10/15/97	42	840	7	8	3	1	0	0	12	78	29	9	0	0	116	48	0	41.0%	34.1%	26.5%	0.0%		30.4%	52.5%	
10/22/97	43	688	7	7	5	7	0	0	19	60	42	60	0	0	162	35	8	42.4%	39.9%	40.0%	0.0%		33.7%	65.8%	
10/29/97	44	1,167	7	57	11	7	3	0	78	741	123	74	50	0	987	139	10	60.1%	56.7%	56.6%	82.4%		47.3%	81.3%	
11/05/97	45	1,010	7	30	11	4	1	0	46	347	132	45	11	0	534	249	12	68.4%	74.8%	66.7%	100.0%		71.5%	100.0%	
11/12/97	46	1,757	5	10	2	3	0	0	15	136	24	47	0	0	206	100	0	71.6%	78.1%	77.2%			81.1%		
11/19/97	47	3,303	5	18	2	1	0	0	21	572	68	28	0	0	668	28	0	85.3%	87.3%	83.5%			83.9%		
11/26/97	48	4,240	4	6	0	0	0	0	6	493	34	14	0	0	541	14	0	97.1%	92.0%	86.7%			85.2%		
12/03/97	49	3,887	5	4	2	2	0	0	8	121	58	59	0	0	239	152	0	100.0%	100.0%	100.0%			100.0%		
12/10/97	50	3,886	0																						
12/17/97	51	5,577	0																						
12/24/97	52	2,828	0																						
Spring total			171	541	372	354	12	312	1,591	7,010	13,462	10,331	351	11,123	42,278	3,467	10,486						26.3%		
Fall total			60	247	51	32	4	0	334	4,184	729	444	60	0	5,418	1,028	63						0.0%		
Total			231	788	423	386	16	312	1,925	11,195	14,192	10,775	412	11,123	47,695	4,495	10,549						23.3%		

Appendix 16. WCT weekly chinook catch, abundance total and hatchery contribution, 1998

Week Starting	Julian Week	Mean River flow	Trap Days	WEEKLY CHINOOK CATCH TOTALS								WEEKLY CHINOOK INDEX TOTALS										
				Hatchery		Natural		Age 1	Total No- Tags	Catch Total	CPUE	Hatchery		Natural		Age 1	Total No- Tags	Index Total	Cumulative Index (%)			(% Hat Age 0)
				Age 0		Age 0						Age 0		Age 0					Age 0	Age 0	Age 1	
				NC	AD	NC	AD	NC	AD	NC	AD	Age 0	Age 0	Age 0	Age 0	Age 1	Age 0					
03/12/98	11	15,226	0																			
03/19/98	12	36,243	0																			
03/26/98	13	24,557	0																			
04/02/98	14	15,757	0																			
04/09/98	15	11,971	0																			
04/16/98	16	9,484	7	0	0	20	0	0	0	20	3	0	0	0	0	0	0	0.0%	0.0%	0.0%	0%	
04/23/98	17	10,204	7	0	0	13	0	0	0	13	2	0	0	463	0	0	463	0.1%	0.0%	0.0%	0%	
04/30/98	18	11,023	4	0	0	9	0	0	0	9	2	0	0	2,130	0	0	2,130	0.8%	0.0%	0.0%	0%	
05/07/98	19	8,713	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.8%	0.0%	0.0%	0%	
05/14/98	20	6,694	7	0	0	3	0	0	0	3	0	0	0	229	0	0	229	0.8%	0.0%	0.0%	0%	
05/21/98	21	6,249	7	0	0	16	0	0	0	16	2	0	0	900	0	0	900	1.1%	0.0%	0.0%	0%	
05/28/98	22	11,820	4	0	0	10	0	0	0	10	3	0	0	1,513	0	0	1,513	1.6%	0.0%	0.0%	0%	
06/04/98	23	11,286	7	0	0	3	0	0	0	3	0	0	0	465	0	0	465	1.7%	0.0%	0.0%	0%	
06/11/98	24	10,444	7	0	0	29	0	0	0	29	4	0	0	3,441	0	0	3,441	2.7%	0.0%	0.0%	0%	
06/18/98	25	8,840	7	16	2	85	0	0	1	104	15	1,600	198	9,072	0	102	10,972	5.4%	0.3%	0.0%	17%	
06/25/98	26	6,834	7	517	26	347	1	0	1	892	127	37,756	1,937	27,177	67	74	67,011	13.5%	7.2%	0.0%	59%	
07/02/98	27	4,240	7	548	30	199	0	0	0	777	111	31,149	1,716	11,512	0	0	44,376	16.9%	13.0%	0.0%	74%	
07/09/98	28	3,526	7	603	25	288	0	0	0	916	131	23,965	989	11,125	0	0	36,079	20.2%	17.3%	0.0%	69%	
07/16/98	29	2,823	7	1,357	31	406	0	0	4	1,798	257	42,758	988	12,705	0	119	56,569	24.0%	24.9%	0.0%	77%	
07/23/98	30	2,249	7	4,102	36	2,096	0	0	6	6,240	891	95,902	845	49,254	0	140	146,140	38.7%	41.8%	0.0%	66%	
07/30/98	31	1,686	7	6,023	37	2,872	0	0	5	8,937	1,277	117,067	717	55,895	0	97	173,776	55.3%	62.3%	0.0%	68%	
08/06/98	32	1,447	7	4,385	43	2,294	0	0	3	6,725	961	69,637	711	35,530	0	47	105,925	65.9%	74.6%	0.0%	66%	
08/13/98	33	1,306	7	3,812	53	2,535	0	0	2	6,402	915	53,286	731	34,732	0	27	88,777	76.2%	84.0%	0.0%	61%	
08/20/98	34	1,186	6	2,133	30	1,070	0	0	4	3,237	540	30,495	440	15,977	0	58	46,970	80.9%	89.4%	0.0%	66%	
08/27/98	35	1,059	7	1,168	24	818	0	0	2	2,012	287	13,675	279	9,438	0	23	23,415	83.7%	91.8%	0.0%	60%	
09/03/98	36	1,016	7	747	29	610	0	0	3	1,389	198	8,059	312	6,574	0	33	14,978	85.7%	93.3%	0.0%	56%	
09/10/98	37	1,006	7	1,562	34	1,742	0	0	2	3,340	477	16,520	361	18,276	0	21	35,179	91.1%	96.2%	0.0%	48%	
09/17/98	38	945	7	1,199	32	1,722	1	0	2	2,956	422	12,046	322	17,325	10	20	29,723	96.3%	98.4%	0.0%	42%	
09/24/98	39	949	7	898	30	1,249	3	0	2	2,182	312	8,870	299	12,479	31	20	21,699	100.0%	100.0%	0.0%	42%	
10/01/98	40	945	7	1,233	32	559	0	0	0	1,824	261	12,202	320	5,586	0	0	18,107	12.9%	4.4%	0.0%	69%	
10/08/98	41	980	7	9,713	33	1,706	0	0	2	11,454	1,636	98,584	333	16,926	0	20	115,864	51.8%	39.3%	0.0%	85%	
10/15/98	42	795	7	5,778	35	280	0	0	0	6,093	870	52,846	307	2,499	0	0	55,653	57.6%	58.0%	0.0%	96%	
10/22/98	43	886	7	7,919	36	878	0	0	0	8,833	1,262	82,442	342	7,953	0	0	90,737	75.9%	87.2%	0.0%	91%	
10/29/98	44	867	7	3,138	33	818	0	0	2	3,991	570	28,530	305	7,556	0	18	36,409	93.3%	97.4%	0.0%	79%	
11/05/98	45	1,399	6	517	21	106	0	0	0	644	107	5,871	335	1,585	0	0	7,792	96.9%	99.5%	0.0%	80%	
11/12/98	46	1,553	6	63	15	72	0	0	1	151	25	1,035	266	1,265	0	14	2,580	99.8%	100.0%	0.0%	51%	
11/19/98	47	10,270	2	0	0	4	0	0	0	4	2	0	0	81	0	0	81	100.0%		0.0%	0%	
11/26/98	48	11,757	0																			
12/03/98	49	11,479	0																			
12/10/98	50	6,223	0																			
12/17/98	51	5,036	0																			
12/24/98	52	3,916	0																			
Spring total			157	29,070	462	18,436	5	0	37	48,010		562,784	10,844	336,210	109	0	781	910,729				63%
Fall total			49	28,362	205	4,422	0	0	5	32,994		281,510	2,209	43,452	0	0	52	327,224				87%
Total			206	57,432	667	22,858	5	0	42	81,004		844,295	13,054	379,662	109	0	834	1,237,952				69%

Appendix 17. WCT weekly coho catch, abundance total and hatchery contribution, 1998.

Week Starting	Julian Week	Mean River Flow	Trap Days	WEEKLY COHO CATCH TOTALS					WEEKLY COHO INDEX TOTALS				Cumulative Index (%)				
				Hatchery		Natural		Catch Total	CPUE	Hatchery			Index Totals	Hat Age 1	Nat Age 1	Nat Age 0	
				Age 1 (RMAX)	Age 0	Age 1	Age 0			Age 1 (RMAX)	Age 1	Age 0					
03/12/98	11	15,226	0														
03/19/98	12	36,243	0														
03/26/98	13	24,557	0														
04/02/98	14	15,757	0														
04/09/98	15	11,971	0														
04/16/98	16	9,484	7	4	3	0	7	1.00	0	0	0	0	0%	0%	0%		
04/23/98	17	10,204	7	2	1	1	4	0.57	0	0	141	141	0%	0%	13%		
04/30/98	18	11,023	4	3	0	0	3	0.75	618	0	0	618	2%	0%	13%		
05/07/98	19	8,713	3	12	0	0	12	4.00	1,065	0	0	1,065	4%	0%	13%		
05/14/98	20	6,694	7	17	1	0	18	2.57	1,220	66	0	1,287	7%	3%	13%		
05/21/98	21	6,249	7	103	16	0	119	17.00	5,899	893	0	6,792	23%	42%	13%		
05/28/98	22	11,820	4	134	2	2	138	34.50	20,944	293	349	21,586	76%	54%	46%		
06/04/98	23	11,286	7	28	0	2	30	4.29	4,117	0	241	4,358	87%	54%	69%		
06/11/98	24	10,444	7	32	4	0	36	5.14	3,828	452	0	4,281	96%	74%	69%		
06/18/98	25	8,840	7	8	4	0	12	1.71	844	471	0	1,315	99%	94%	69%		
06/25/98	26	6,834	7	5	0	3	8	1.14	403	0	283	686	100%	94%	96%		
07/02/98	27	4,240	7	3	0	0	3	0.43	162	0	0	162		94%	96%		
07/09/98	28	3,526	7	0	0	0	0	0.00	0	0	0	0		94%	96%		
07/16/98	29	2,823	7	0	0	0	0	0.00	0	0	0	0		94%	96%		
07/23/98	30	2,249	7	0	0	0	0	0.00	0	0	0	0		94%	96%		
07/30/98	31	1,686	7	0	0	2	2	0.29	0	0	39	39		94%	100%		
08/06/98	32	1,447	7	0	1	0	1	0.14	0	18	0	18		95%			
08/13/98	33	1,306	7	0	0	0	0	0.00	0	0	0	0		95%			
08/20/98	34	1,186	6	0	3	0	3	0.50	0	37	0	37		96%			
08/27/98	35	1,059	7	0	4	0	4	0.57	0	48	0	48		99%			
09/03/98	36	1,016	7	0	3	0	3	0.43	0	33	0	33		100%			
09/10/98	37	1,006	7	0	0	0	0	0.00	0	0	0	0					
09/17/98	38	945	7	0	0	0	0	0.00	0	0	0	0					
09/24/98	39	949	7	0	0	0	0	0.00	0	0	0	0					
10/01/98	40	945	7	0	0	0	0	0.00	0	0	0	0	0%	0%	0%		
10/08/98	41	980	7	0	0	0	0	0.00	0	0	0	0	0%	0%	0%		
10/15/98	42	795	7	0	0	0	0	0.00	0	0	0	0	0%	0%	0%		
10/22/98	43	886	7	0	0	0	0	0.00	0	0	0	0	0%	0%	0%		
10/29/98	44	867	7	0	0	0	0	0.00	0	0	0	0	0%	0%	0%		
11/05/98	45	1,399	6	0	0	0	0	0.00	0	0	0	0	0%	0%	0%		
11/12/98	46	1,553	6	0	0	1	1	0.17	0	0	23	23	0%	0%	100%		
11/19/98	47	10,270	2	0	0	0	0	0.00	0	0	0	0	0%	0%			
11/26/98	48	11,757	0														
12/03/98	49	11,479	0														
12/10/98	50	6,223	0														
12/17/98	51	5,036	0														
12/24/98	52	3,916	0														
Spring total			157	351	42	10	403	75.04	39,100	2,311	1,052	42,464	92.1%				
Fall total			49	0	0	1	1	0.17	0	0	23	23	----				
Total			206	351	42	11	404	75.20	39,100	2,311	1,075	42,487	92.0%				

Appendix 18. WCT weekly steelhead catch, abundance total and hatchery contribution, 1998.

Week Starting	Julian Week	Mean River		Steelhead Catch Totals							Steelhead Index Totals							Cumulative Index (%)				Hat	Pre-Smolt	Smolt										
		Flow (cfs)	Trap Days	Age 0	Age 1	Age 2	Age 3	Hat Age 1	Catch Total	Age 0	Age 1	Age 2	Age 3	Hat Age 1	Index Total	Pre-Smolt	Smolt	Age 0	Age 1	Age 2	Age 3													
03/12/98	11	15,226	0																															
03/19/98	12	36,243	0																															
03/26/98	13	24,557	0																															
04/02/98	14	15,757	0																															
04/09/98	15	11,971	0																															
04/16/98	16	9,484	7																															
04/23/98	17	10,204	7																															
04/30/98	18	11,023	4																															
05/07/98	19	8,713	3																															
05/14/98	20	6,694	7																															
05/21/98	21	6,249	7																															
05/28/98	22	11,820	4																															
06/04/98	23	11,286	7																															
06/11/98	24	10,444	7																															
06/18/98	25	8,840	7																															
06/25/98	26	6,834	7																															
07/02/98	27	4,240	7																															
07/09/98	28	3,526	7																															
07/16/98	29	2,823	7																															
07/23/98	30	2,249	7																															
07/30/98	31	1,686	7																															
08/06/98	32	1,447	7																															
08/13/98	33	1,306	7																															
08/20/98	34	1,186	6																															
08/27/98	35	1,059	7																															
09/03/98	36	1,016	7																															
09/10/98	37	1,006	7																															
09/17/98	38	945	7																															
09/24/98	39	949	7																															
10/01/98	40	945	7																															
10/08/98	41	980	7																															
10/15/98	42	795	7																															
10/22/98	43	886	7																															
10/29/98	44	867	7																															
11/05/98	45	1,399	6																															
11/12/98	46	1,553	6																															
11/19/98	47	10,270	2																															
11/26/98	48	11,757	0																															
12/03/98	49	11,479	0																															
12/03/98	49	11,479	0																															
12/10/98	50	6,223	0																															
12/17/98	51	5,036	0																															
12/24/98	52	3,921	0																															
Spring Subtotal																																		
				157	339	178	93	4	142	756	8,134	15,923	9,771	705	15,643	50,177	1,941	20,513																
Fall Subtotal				49	321	27	1	0	2	349	5,667	353	11	0	24	6,031	328	81																
Total				206	660	205	94	4	144	1,105	13,801	16,277	9,782	705	15,668	56,208	2,268	20,594																

Appendix 19. WCTweekly chinook catch, abundance total and hatchery contribution, 1999

Week Starting	Julian Week	Mean River flow	Trap Days	WEEKLY CHINOOK CATCH TOTALS									WEEKLY CHINOOK INDEX TOTALS										
				Hatchery		Natural		Total			No- Tags	Index	Cumulative Index (%)			(% Hat Age 0)							
				Age 0		Age 0		Age 1	Total	CPUE			Age 0	Age 0	Age 1		Age 0	Age 0	Age 1				
				NC	AD	NC	AD				NC	AD				NC				AD	Age 1	Total	Age 0
03/12/99	11	9,641	1	0	0	1	0	0	0	0	1	1	0	0	96	0	0	96	0.0%	0.0%	0.0%	0%	
03/19/99	12	11,571	6	0	0	6	0	0	0	0	6	1	0	0	1,337	0	0	1,337	0.0%	0.0%	0.0%	0%	
03/26/99	13	11,606	5	0	0	21	0	0	0	0	21	4	0	0	4,310	0	0	4,310	1.8%	0.0%	0.0%	0%	
04/02/99	14	8,093	7	0	0	51	0	0	0	0	51	7	0	0	4,626	0	0	4,626	3.2%	0.0%	0.0%	0%	
04/09/99	15	8,729	7	0	0	18	0	0	0	0	18	3	0	0	1,433	0	0	1,433	3.7%	0.0%	0.0%	0%	
04/16/99	16	11,800	7	0	0	51	0	0	0	0	51	7	0	0	6,844	0	0	6,844	5.8%	0.0%	0.0%	0%	
04/23/99	17	9,031	7	0	0	71	0	0	0	0	71	10	0	0	6,785	0	0	6,785	7.9%	0.0%	0.0%	0%	
04/30/99	18	7,510	7	0	0	49	0	0	0	0	49	7	0	0	3,572	0	0	3,572	9.0%	0.0%	0.0%	0%	
05/07/99	19	7,009	7	0	0	85	0	0	0	0	85	12	0	0	5,925	0	0	5,925	10.8%	0.0%	0.0%	0%	
05/14/99	20	6,824	7	0	0	56	0	0	0	0	56	8	0	0	3,580	0	0	3,580	11.9%	0.0%	0.0%	0%	
05/21/99	21	7,393	7	0	0	14	0	0	0	0	14	2	0	0	897	0	0	897	12.2%	0.0%	0.0%	0%	
05/28/99	22	5,876	7	0	0	23	0	0	0	0	23	3	0	0	1,372	0	0	1,372	12.6%	0.0%	0.0%	0%	
06/04/99	23	4,230	7	6	0	127	0	0	0	0	133	19	285	0	5,782	0	0	6,067	14.4%	0.1%	0.0%	5%	
06/11/99	24	3,893	7	90	14	322	0	0	0	0	426	61	3,727	579	13,245	0	0	17,552	18.5%	2.1%	0.0%	25%	
06/18/99	25	3,261	7	1,016	35	798	0	0	0	0	1,849	264	37,254	1,297	29,552	0	0	68,103	27.7%	19.5%	0.0%	57%	
06/25/99	26	2,641	7	499	36	473	0	0	0	0	1,008	144	16,805	1,220	16,133	0	0	34,157	32.7%	27.7%	0.0%	53%	
07/02/99	27	2,144	7	584	31	690	0	0	2	1,307	187	15,553	868	19,206	0	0	50	35,678	38.6%	35.1%	0.0%	46%	
07/09/99	28	1,824	7	804	31	1,264	0	0	3	2,102	300	21,617	789	33,265	0	0	71	55,742	48.9%	45.3%	0.0%	40%	
07/16/99	29	1,437	6	1,097	34	1,251	0	0	1	2,383	397	21,481	709	26,400	0	0	21	48,612	57.1%	55.3%	0.0%	46%	
07/23/99	30	1,234	7	1,200	33	1,974	0	0	2	3,209	458	22,093	605	36,376	0	0	36	59,110	68.4%	65.6%	0.0%	38%	
07/30/99	31	1,090	6	1,317	34	1,382	0	0	1	2,734	456	25,093	615	27,354	0	0	26	53,086	76.8%	77.2%	0.0%	48%	
08/06/99	32	1,094	7	641	33	774	0	0	2	1,450	207	10,108	524	12,155	0	0	33	22,819	80.6%	82.1%	0.0%	47%	
08/13/99	33	973	7	675	32	1,144	0	0	3	1,854	265	9,045	429	15,029	0	0	41	24,543	85.2%	86.3%	0.0%	39%	
08/20/99	34	884	6	928	28	991	0	0	2	1,949	325	12,957	374	13,247	0	0	35	26,614	89.3%	92.4%	0.0%	50%	
08/27/99	35	848	7	518	26	790	0	0	2	1,336	191	5,860	295	8,940	0	0	23	15,119	92.1%	95.2%	0.0%	41%	
09/03/99	36	798	7	208	19	808	0	0	0	1,035	148	2,183	199	8,380	0	0	0	10,762	94.7%	96.2%	0.0%	22%	
09/10/99	37	1,002	5	238	18	404	0	0	1	661	132	3,078	240	5,053	0	0	11	8,382	96.3%	97.7%	0.0%	40%	
09/17/99	38	732	7	381	29	761	0	0	3	1,174	168	3,646	276	7,265	0	0	29	11,215	98.5%	99.5%	0.0%	35%	
09/24/99	39	711	7	102	13	520	0	0	1	636	91	942	120	4,761	0	0	9	5,833	100.0%	100.0%	0.0%	18%	
10/01/99	40		0																				
10/08/99	41		0																				
10/15/99	42		0																				
10/22/99	43		0																				
10/29/99	44		0																				
11/05/99	45		0																				
11/12/99	46		0																				
11/19/99	47		0																				
11/26/99	48		0																				
12/03/99	49		0																				
12/10/99	50		0																				
12/17/99	51		0																				
12/24/99	52		0																				
Spring total			189	10,303	446	14,920	0	0	23	25,692			211,728	9,140	322,920	0	0	385	544,172				41%
Fall total																							
Total			189	10,303	446	14,920	0	0	23	25,692			211,728	9,140	322,920	0	0	385	544,172				41%

Appendix 20. WCT weekly coho catch, abundance total and hatchery contribution, 1999.

Week Starting	Julian Week	Mean River Flow	Trap Days	WEEKLY COHO CATCH TOTALS					WEEKLY COHO INDEX TOTALS					Cumulative Index (%)		
				Hatchery		Natural		Catch Total	CPUE	Hatchery			Index Total	Hat Age 1	Nat Age 1	Nat Age 0
				Age 1 (RMAX)	Age 0	Age 1	Age 0			Age 1 (RMAX)	Age 1	Age 0				
03/12/99	11	9,641	1	9	0	0	9	9.0	863	0	0	863	0.9%	0.0%	0.0%	
03/19/99	12	11,571	6	112	1	0	113	18.8	15,704	98	0	15,802	17.2%	2.7%	0.0%	
03/26/99	13	11,606	5	43	1	0	44	8.8	9,246	153	0	9,399	26.8%	7.0%	0.0%	
04/02/99	14	8,093	7	21	4	3	28	4.0	1,744	342	227	2,313	28.6%	16.7%	2.5%	
04/09/99	15	8,729	7	6	3	2	11	1.6	503	249	159	911	29.1%	23.6%	4.3%	
04/16/99	16	11,800	7	3	3	0	6	0.9	414	408	0	823	29.5%	35.1%	4.3%	
04/23/99	17	9,031	7	6	2	2	10	1.4	568	195	195	957	30.1%	40.6%	6.5%	
04/30/99	18	7,510	7	12	9	2	23	3.3	841	639	154	1,634	31.0%	58.5%	8.2%	
05/07/99	19	7,009	7	127	2	2	131	18.7	8,745	124	136	9,005	40.1%	62.0%	9.7%	
05/14/99	20	6,824	7	310	6	30	346	49.4	19,773	381	1,861	22,015	60.6%	72.6%	30.4%	
05/21/99	21	7,393	7	331	12	4	347	49.6	21,345	759	287	22,391	82.7%	93.9%	33.6%	
05/28/99	22	5,876	7	128	1	7	136	19.4	8,040	70	470	8,580	91.0%	95.9%	38.8%	
06/04/99	23	4,230	7	112	0	25	137	19.6	5,267	0	1,126	6,393	96.5%	95.9%	51.4%	
06/11/99	24	3,893	7	72	3	5	80	11.4	3,036	126	213	3,375	99.6%	99.5%	53.7%	
06/18/99	25	3,261	7	8	0	12	20	2.9	291	0	439	730	99.9%	99.5%	58.6%	
06/25/99	26	2,641	7	1	0	39	40	5.7	34	0	1,331	1,366	100.0%	99.5%	73.4%	
07/02/99	27	2,144	7	1	0	35	36	5.1	33	0	958	991	100.0%	99.5%	84.1%	
07/09/99	28	1,824	7	0	0	21	21	3.0	0	0	522	522		99.5%	89.9%	
07/16/99	29	1,437	6	0	0	11	11	1.8	0	0	185	185		99.5%	92.0%	
07/23/99	30	1,234	7	0	1	27	28	4.0	0	19	494	513	100.0%		97.5%	
07/30/99	31	1,090	6	0	0	7	7	1.2	0	0	155	155			99.2%	
08/06/99	32	1,094	7	0	0	1	1	0.1	0	0	15	15			99.4%	
08/13/99	33	973	7	0	0	1	1	0.1	0	0	14	14			99.5%	
08/20/99	34	884	6	0	0	1	1	0.2	0	0	11	11			99.7%	
08/27/99	35	848	7	0	0	0	0	0.0	0	0	0	0			99.7%	
09/03/99	36	798	7	0	0	1	1	0.1	0	0	10	10			99.8%	
09/10/99	37	1,002	5	0	0	1	1	0.2	0	0	11	11			99.9%	
09/17/99	38	732	7	0	0	0	0	0.0	0	0	0	0			99.9%	
09/24/99	39	711	7	0	0	1	1	0.1	0	0	9	9			100.0%	
10/01/99	40		0													
10/08/99	41		0													
10/15/99	42		0													
10/22/99	43		0													
10/29/99	44		0													
11/05/99	45		0													
11/12/99	46		0													
11/19/99	47		0													
11/26/99	48		0													
12/03/99	49		0													
12/10/99	50		0													
12/17/99	51		0													
12/24/99	52		0													
Spring total			189	1,302	48	240	1,590	240.6	96,448	3,564	8,983	108,995	88.5%			
Fall total																
Total			189	1,302	48	240	1,590	240.6	96,448	3,564	8,983	108,995	88.5%			

Appendix 21. WCT weekly steelhead catch, abundance total and hatchery contribution, 1999.

Mean River				Steelhead Catch Totals						Steelhead Index Totals						Cumulative Index (%)									
Week Starting	Julian Week	Flow (cfs)	Trap Days	Age 0	Age 1	Age 2	Age 3	Hat	Catch Total	Age 0	Age 1	Age 2	Age 3	Hat	Index Total	Pre-Smolt	Smolt	Age 0	Age 1	Age 2	Age 3	Hat	Pre-Smolt	Smolt	
03/12/99	11	9,641	1	0	3	0	0	0	3	0	288	0	0	0	288	0	0	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	
03/19/99	12	11,571	6	0	11	15	0	2	28	0	1,505	2,063	0	310	3,878	395	1,650	0.0%	4.3%	5.6%	0.0%	0.6%	4.4%	3.6%	
03/26/99	13	11,606	5	0	5	20	1	35	61	0	1,006	3,261	242	6,689	11,199	1,797	2,003	0.0%	6.8%	14.5%	13.0%	12.4%	24.5%	8.0%	
04/02/99	14	8,093	7	0	11	23	0	14	48	0	879	1,760	0	1,132	3,770	146	1,760	0.0%	8.9%	19.3%	13.0%	14.4%	26.1%	11.9%	
04/09/99	15	8,729	7	0	20	52	6	31	109	0	1,650	4,316	504	2,555	9,024	928	4,243	0.0%	12.9%	31.1%	40.0%	19.0%	36.5%	21.1%	
04/16/99	16	11,800	7	0	24	15	4	43	86	0	3,127	1,934	510	5,754	11,325	1,336	2,444	0.0%	20.5%	36.4%	67.4%	29.2%	51.4%	26.5%	
04/23/99	17	9,031	7	0	55	41	1	54	151	0	5,223	3,867	94	5,106	14,291	469	4,443	0.0%	33.1%	47.0%	72.4%	38.2%	56.6%	36.2%	
04/30/99	18	7,510	7	0	61	60	1	86	208	0	4,322	4,141	65	5,921	14,450	426	4,641	0.0%	43.6%	58.3%	75.9%	48.7%	61.4%	46.4%	
05/07/99	19	7,009	7	0	75	67	2	136	280	0	5,244	4,680	125	9,373	19,421	409	5,349	0.0%	56.2%	71.0%	82.6%	65.4%	65.9%	58.1%	
05/14/99	20	6,824	7	0	76	45	1	95	217	0	4,858	2,897	64	6,017	13,836	512	4,490	0.0%	68.0%	78.9%	86.0%	76.0%	71.7%	67.9%	
05/21/99	21	7,393	7	0	27	47	4	93	171	0	1,692	2,956	260	5,885	10,794	0	3,533	0.0%	72.1%	87.0%	100.0%	86.5%	71.7%	75.7%	
05/28/99	22	5,876	7	0	34	57	0	57	148	0	2,131	3,310	0	3,507	8,948	244	4,669	0.0%	77.3%	96.1%		92.7%	74.4%	85.9%	
06/04/99	23	4,230	7	1	64	24	0	47	136	44	2,996	1,118	0	2,220	6,378	379	3,293	0.2%	84.5%	99.1%		96.6%	78.6%	93.1%	
06/11/99	24	3,893	7	2	74	5	0	31	112	83	3,108	212	0	1,292	4,696	583	1,943	0.6%	92.0%	99.7%		98.9%	85.1%	97.4%	
06/18/99	25	3,261	7	12	37	0	0	13	62	443	1,385	0	0	487	2,315	377	714	2.5%	95.4%	99.7%		99.8%	89.3%	98.9%	
06/25/99	26	2,641	7	20	12	1	0	3	36	680	410	32	0	98	1,221	68	172	5.6%	96.4%	99.8%		100.0%	90.1%	99.3%	
07/02/99	27	2,144	7	94	8	0	0	1	103	2,555	216	0	0	25	2,796	75	0	16.9%	96.9%	99.8%		90.9%	99.3%		
07/09/99	28	1,824	7	151	5	0	0	0	156	3,825	150	0	0	0	3,975	126	0	33.9%	97.3%	99.8%		92.3%	99.3%		
07/16/99	29	1,437	6	177	8	0	0	0	185	4,410	197	0	0	0	4,607	66	89	53.5%	97.7%	99.8%		93.1%	99.5%		
07/23/99	30	1,234	7	121	12	1	0	0	134	2,231	218	18	0	0	2,466	38	0	63.4%	98.3%	99.8%		93.5%	99.5%		
07/30/99	31	1,090	6	79	1	0	0	0	80	1,493	16	0	0	0	1,509	16	0	70.1%	98.3%	99.8%		93.7%	99.5%		
08/06/99	32	1,094	7	111	2	0	0	0	113	1,741	31	0	0	0	1,773	0	16	77.8%	98.4%	99.8%		93.7%	99.5%		
08/13/99	33	973	7	99	14	2	0	0	115	1,327	185	25	0	0	1,537	143	92	83.7%	98.8%	99.9%		95.3%	99.7%		
08/20/99	34	884	6	77	11	0	0	0	88	1,050	152	0	0	0	1,202	240	0	88.4%	99.2%	99.9%		98.0%	99.7%		
08/27/99	35	848	7	60	6	0	0	0	66	677	66	0	0	0	743	23	12	91.4%	99.4%	99.9%		98.2%	99.8%		
09/03/99	36	798	7	51	10	1	0	0	62	531	105	10	0	0	647	53	11	93.8%	99.6%	99.9%		98.8%	99.8%		
09/10/99	37	1,002	5	42	1	1	0	0	44	674	21	10	0	0	705	10	21	96.8%	99.7%	99.9%		98.9%	99.8%		
09/17/99	38	732	7	44	8	1	0	0	53	429	77	10	0	0	516	49	68	98.7%	99.8%	100.0%		99.5%	100.0%		
09/24/99	39	711	7	33	7	1	0	0	41	301	65	9	0	0	375	46	9	100.0%	100.0%			100.0%			
10/01/99	40	945	0																						
10/08/99	41	980	0																						
10/15/99	42	795	0																						
10/22/99	43	886	0																						
10/29/99	44	867	0																						
11/05/99	45	1,399	0																						
11/12/99	46	1,553	0																						
11/19/99	47	10,270	0																						
11/26/99	48	11,757	0																						
12/03/99	49	11,479	0																						
12/10/99	50	6,223	0																						
12/17/99	51	5,036	0																						
12/24/99	52	3,921	0																						
Spring total			189	1,174	682	479	20	741	3,096	22,495	41,323	36,630	1,865	56,371	158,684	8,958	45,663	14.2%	26.0%	23.1%	1.2%	35.5%	5.6%	28.8%	
Fall total																									
Total			189	1,174	682	479	20	741	3,096	22,495	41,323	36,630	1,865	56,371	158,684	8,958	45,663	14.2%	26.0%	23.1%	1.2%	35.5%	5.6%	28.8%	

Appendix 22. WCT weekly chinook catch, abundance total and hatchery contribution, 2000

Week Starting	Julian Week	Mean River flow	Trap Days	WEEKLY CHINOOK CATCH TOTALS									WEEKLY CHINOOK INDEX TOTALS														
				Hatchery		Natural		Total			Hatchery			Natural			Total			Cumulative Index (%)			(%)				
				Age 0		Age 0		Age 1	Tags	Total	Age 0		Age 0		Age 1	Tags	Index Total	Nat Age 0	Hat Age 0	Age 1	Hat Age 0						
				NC	AD	NC	AD				NC	AD	NC	AD													
03/12/00	11	11,947	0																								
03/19/00	12	8,026	0																								
03/26/00	13	5,590	0																								
04/02/00	14	5,297	0																								
04/09/00	15	4,946	0																								
04/16/00	16	7,359	0																								
04/23/00	17	4,763	0																								
04/30/00	18	3,934	0																								
05/07/00	19	4,160	0																								
05/14/00	20	5,136	5					0	0	83	17					0	0	4,862									
05/21/00	21	4,787	7					0	0	111	16					0	0	5,951									
05/28/00	22	3,454	7					0	0	282	40					0	0	12,418									
06/04/00	23	3,146	7					0	0	517	93					0	0	19,430									
06/11/00	24	2,880	7					0	0	580	167					0	0	20,233									
06/18/00	25	2,336	7					0	1	532	213					0	31	16,098									
06/25/00	26	2,053	7					0	0	551	214					0	0	15,204									
07/02/00	27	1,711	7					0	0	564	163					0	0	13,698									
07/09/00	28	1,440	7					0	0	1,197	309					0	0	24,851									
07/16/00	29	1,216	7					0	0	1,428	404					0	0	24,727									
07/23/00	30	987	7					0	0	2,107	496					0	0	29,716									
07/30/00	31	904	7					0	0	1,623	355					0	0	21,570									
08/06/00	32	824	7					0	0	749	209					0	0	9,103									
08/13/00	33	785	7					0	0	459	134					0	0	5,508									
08/20/00	34	765	6					0	0	727	179					0	179	10,010									
08/27/00	35	735	7					0	0	449	106					0	0	5,062									
09/03/00	36	807	7					0	0	533	93					0	0	6,173									
09/10/00	37	751	7					0	0	170	46					0	0	1,941									
09/17/00	38	728	7					0	0	204	66					0	0	2,271									
09/24/00	39	735	7					0	0	176	39					0	0	1,964									
10/01/00	40	733	6					0	0	56	76					0	0	622									
10/08/00	41	786	0																								
10/15/00	42	676	0																								
10/22/00	43	696	0																								
10/29/00	44	539	0																								
11/05/00	45		0																								
11/12/00	46		0																								
11/19/00	47		0																								
11/26/00	48		0																								
12/03/00	49		0																								
12/10/00	50		0																								
12/17/00	51		0																								
12/24/00	52		0																								
Spring total			137																								
Fall total			6																								
Total			143																								

Appendix 23. WCT weekly coho catch, abundance total and hatchery contribution, 2000.

				WEEKLY COHO CATCH TOTALS					WEEKLY COHO INDEX TOTALS							
Week Starting	Julian Week	Mean River Flow	Trap Days	Hatchery					Hatchery				Cumulative Index (%)			
				Age 1 (RMAX)	Natural Age 1	Natural Age 0	Catch Total	CPUE	Age 1 (RMAX)	Natural Age 1	Natural Age 0	Index Total	Hatchery Age 1	Nat Age 1	Nat Age 0	
03/12/00	11	11,947														
03/19/00	12	8,026														
03/26/00	13	5,590														
04/02/00	14	5,297														
04/09/00	15	4,946														
04/16/00	16	7,359														
04/23/00	17	4,763														
04/30/00	18	3,934														
05/07/00	19	4,160														
05/14/00	20	5,136	5	56	12	2	70	14.0	3,319	691	120	4,130	62.1%	30.2%	12.5%	
05/21/00	21	4,787	7	22	16	1	39	5.6	1,236	899	49	2,184	85.2%	69.6%	17.7%	
05/28/00	22	3,454	7	10	10	5	25	3.6	459	413	237	1,109	93.8%	87.6%	42.4%	
06/04/00	23	3,146	7	7	5	2	14	2.0	261	187	74	522	98.7%	95.8%	50.2%	
06/11/00	24	2,880	7	2	2	3	7	1.0	70	69	103	242	100.0%	98.8%	61.0%	
06/18/00	25	2,336	7	0	0	5	5	0.7	0	0	151	151		98.8%	76.7%	
06/25/00	26	2,053	7	0	0	1	1	0.1	0	0	28	28		98.8%	79.7%	
07/02/00	27	1,711	7	0	0	0	0	0.0	0	0	0	0		98.8%	79.7%	
07/09/00	28	1,440	7	0	0	2	2	0.3	0	0	40	40		98.8%	83.9%	
07/16/00	29	1,216	7	0	1	4	5	0.7	0	16	67	83		99.5%	91.0%	
07/23/00	30	987	7	0	0	1	1	0.1	0	0	14	14		99.5%	92.4%	
07/30/00	31	904	7	0	0	0	0	0.0	0	0	0	0		99.5%	92.4%	
08/06/00	32	824	7	0	0	1	1	0.1	0	0	12	12		99.5%	93.7%	
08/13/00	33	785	7	0	0	0	0	0.0	0	0	0	0		99.5%	93.7%	
08/20/00	34	764	6	0	0	2	2	0.3	0	0	38	38		99.5%	97.6%	
08/27/00	35	735	7	0	0	1	1	0.1	0	0	11	11		99.5%	98.8%	
09/03/00	36	807	7	0	0	1	1	0.1	0	0	12	12		99.5%	100.0%	
09/10/00	37	751	7	0	0	0	0	0.0	0	0	0	0		99.5%		
09/17/00	38	728	7	0	0	0	0	0.0	0	0	0	0		99.5%		
09/24/00	39	735	7	0	1	0	1	0.1	0	12	0	12		100.0%		
10/01/00	40	733	6	0	0	0	0	0.0	0	0	0	0				
10/08/00	41	786														
10/15/00	42	676														
10/22/00	43	696														
10/29/00	44	1,257														
11/05/00	45															
11/12/00	46															
11/19/00	47															
11/26/00	48															
12/03/00	49															
12/10/00	50															
12/17/00	51															
12/24/00	52															
Spring total			137	97	47	31	175	29.0	5,346	2,286	957	8,588	62.2%			
Fall total			6	0	0	0	0	0.0	0	0	0	0	-----			
Total			143	97	47	31	175	29.0	5,346	2,286	957	8,588	62.2%			

Appendix 24. WCT weekly steelhead catch, abundance total and hatchery contribution, 2000.

Week Starting	Julian Week	Mean River Flow (cfs)	Trap Days	Steelhead Catch Totals						Steelhead Index Totals								Cumulative Index (%)				Hat	Pre-Smolt	Smolt	
				Age 0	Age 1	Age 2	Age 3	Hat	Catch Total	Age 0	Age 1	Age 2	Age 3	Hat	Index Total	Pre-Smolt	Smolt	Age 0	Age 1	Age 2	Age 3				
																									Age 0
03/12/00	11	12,643	0																						
03/19/00	12	8,437	0																						
03/26/00	13	5,844	0																						
04/02/00	14	5,316	0																						
04/09/00	15	4,937	0																						
04/16/00	16	7,236	0																						
04/23/00	17	4,974	0																						
04/30/00	18	4,031	0																						
05/07/00	19	3,960	0																						
05/14/00	20	5,149	5	0	24	31	9	4	68	0	1,391	1,802	540	234	3,967	175	2,631	0.0%	13.9%	21.1%	62.5%	13.4%	6.6%	25.1%	
05/21/00	21	4,891	7	1	52	33	2	7	95	53	2,910	1,880	114	391	5,348	508	2,267	0.9%	43.1%	43.1%	75.7%	35.7%	25.5%	46.7%	
05/28/00	22	3,587	7	1	38	42	4	10	95	50	1,825	1,889	185	496	4,445	309	2,242	1.7%	61.4%	65.2%	97.2%	64.1%	37.1%	68.1%	
06/04/00	23	3,196	7	3	37	42	0	13	95	114	1,395	1,590	0	487	3,586	264	1,891	3.6%	75.4%	83.8%	97.2%	91.9%	46.9%	86.1%	
06/11/00	24	2,900	7	9	25	17	0	3	54	315	880	598	0	107	1,900	353	773	8.9%	84.2%	90.8%	97.2%	98.1%	60.1%	93.5%	
06/18/00	25	2,407	7	18	8	2	0	1	29	552	251	68	0	34	904	156	64	18.2%	86.7%	91.6%	97.2%	100.0%	65.9%	94.1%	
06/25/00	26	2,113	7	39	7	2	0	0	48	1,114	207	56	0	0	1,377	31	86	36.9%	88.8%	92.2%	97.2%		67.1%	94.9%	
07/02/00	27	1,731	7	39	5	1	0	0	45	963	121	22	0	0	1,106	24	48	53.1%	90.0%	92.5%	97.2%		68.0%	95.4%	
07/09/00	28	1,490	7	27	2	0	0	0	29	564	46	0	0	0	610	24	0	62.5%	90.5%	92.5%	97.2%		68.9%	95.4%	
07/16/00	29	1,256	7	22	5	2	0	0	29	389	91	36	0	0	516	92	0	69.1%	91.4%	92.9%	97.2%		72.3%	95.4%	
07/23/00	30	1,006	7	40	10	9	0	0	59	572	142	127	0	0	842	183	57	78.7%	92.8%	94.4%	97.2%		79.2%	95.9%	
07/30/00	31	915	7	16	15	9	0	0	40	215	199	120	0	0	534	119	134	82.3%	94.8%	95.8%	97.2%		83.6%	97.2%	
08/06/00	32	831	7	19	19	6	1	0	45	232	235	73	12	0	552	197	98	86.2%	97.1%	96.7%	98.5%		91.0%	98.1%	
08/13/00	33	790	7	8	9	5	1	0	23	97	110	60	13	0	279	73	13	87.8%	98.2%	97.4%	100.0%		93.7%	98.2%	
08/20/00	34	767	6	13	3	5	0	0	21	180	36	65	0	0	280	53	48	90.8%	98.6%	98.1%			95.7%	98.7%	
08/27/00	35	734	7	3	2	4	0	0	9	34	22	46	0	0	102	23	34	91.4%	98.8%	98.7%			96.6%	99.0%	
09/03/00	36	806	7	18	7	4	0	0	29	210	83	47	0	0	339	47	47	94.9%	99.7%	99.2%			98.3%	99.5%	
09/10/00	37	752	7	10	3	6	0	0	19	113	34	68	0	0	215	45	57	96.8%	100.0%	100.0%			100.0%	100.0%	
09/17/00	38	736	7	3	0	0	0	0	3	34	0	0	0	0	34	0	0	97.4%							
09/24/00	39	731	7	14	0	0	0	0	14	155	0	0	0	0	155	0	0	100.0%							
10/01/00	40	735	6	8	1	2	0	0	11	88	11	22	0	0	122	11	33								
10/08/00	41	774	0																						
10/15/00	42	687	0																						
10/22/00	43	683	0																						
10/29/00	44	1,149	0																						
11/05/00	45	0	0																						
11/12/00	46	0	0																						
11/19/00	47	0	0																						
11/26/00	48	0	0																						
12/03/00	49	0	0																						
12/10/00	50	0	0																						
12/17/00	51	0	0																						
12/24/00	52	0	0																						
Spring total			137	303	271	220	17	38	849	5,955	9,976	8,547	864	1,749	27,091	2,676	10,489	22.0%	36.8%	31.5%	3.2%	6.5%	9.9%	38.7%	
Fall total			6	8	1	2	0	0	11	88	11	22	0	0	122	11	33	72.5%	9.2%	18.3%	0.0%	0.0%	9.2%	27.5%	
Total			143	311	272	222	17	38	860	6,043	9,988	8,569	864	1,749	27,213	2,687	10,523	6.8%	51.6%	34.2%	6.6%	0.7%	2.9%	37.6%	

Appendix 25. BBT weekly fork length data for chinook and coho, 1997.

Julian Week	Chinook *										Natural Coho										Hatchery Coho				
	Age 0					Age 1					Age 0					Age 1					Age 1				
	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d
11																									
12																									
13																									
14																									
15	3	39	38	40	1.00	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
16	1	40	40	40	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
17	0	0	0	0	----	0	0	0	0	----	2	68	56	80	16.97	1	180	180	180	----	0	0	0	0	----
18	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
19	3	45	39	49	5.51	2	132	132	132	----	0	0	0	0	----	2	135	124	146	15.56	1	165	165	165	----
20	7	65	44	105	20.33	2	140	140	140	----	1	76	76	76	----	2	120	120	120	----	1	143	143	143	----
21	4	98	85	110	11.90	2	118	116	120	2.83	4	59	55	70	7.50	1	115	115	115	----	0	0	0	0	----
22	42	90	50	116	19.99	0	0	0	0	----	5	61	47	70	10.11	1	100	100	100	----	2	145	132	158	18.38
23	110	100	64	115	10.92	0	0	0	0	----	1	102	102	102	----	0	0	0	0	----	0	0	0	0	----
24	199	104	60	130	12.37	0	0	0	0	----	6	81	50	115	32.63	1	130	130	130	----	0	0	0	0	----
25	246	88	60	120	7.49	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
26	210	86	65	111	7.27	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
27	194	88	68	120	9.40	0	0	0	0	----	1	63	63	63	----	0	0	0	0	----	0	0	0	0	----
28	179	91	65	130	10.18	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
29	210	92	70	125	8.90	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
30	182	92	65	120	9.49	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
31	66	96	73	115	8.73	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
32	33	102	81	130	12.55	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
33	1	115	115	115	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
34	1	100	100	100	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
35																									
36																									
37																									
38																									
39																									
40																									
41																									
42																									
43																									
44																									
45																									
46																									
47																									
48																									
49																									
Total Count of fl	1691	92	38	130	12.04	6	130	116	140	10.04	20	70	47	115	21.70	8	129	100	180	24.24	4	150	132	165	14.84

*Includes hatchery releases

Appendix 26. BBT weekly fork length data for steelhead, 1997.

Julian Week	Natural Steelhead															Hatchery Steelhead														
	Age 0					Age 1					Age 2					Age 3				Age 1				Age 2						
	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d
11																														
12																														
13	0	0	0	0	----	2	89	74	89	10.61	1	149	149	149	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
14	0	0	0	0	----	3	109	85	109	13.32	3	198	164	198	18.15	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
15	0	0	0	0	----	3	115	88	115	14.80	4	210	140	210	31.09	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
16	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
17	0	0	0	0	----	3	113	105	113	4.62	8	215	157	215	20.42	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
18	0	0	0	0	----	9	141	65	141	24.24	1	190	190	190	----	1	219	219	219	----	0	0	0	0	----	1	194	194	194	----
19	0	0	0	0	----	9	150	70	150	22.79	11	205	160	205	17.90	2	250	245	250	3.54	0	0	0	0	----	0	0	0	0	----
20	0	0	0	0	----	1	75	75	75	----	14	198	160	198	13.24	1	236	236	236	----	0	0	0	0	----	0	0	0	0	----
21	4	50	35	50	7.50	2	150	109	150	28.99	4	190	160	190	13.15	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
22	1	40	40	40	----	5	142	100	142	18.58	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
23	9	55	25	55	10.82	3	131	110	131	11.59	5	205	172	205	12.02	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
24	22	65	38	65	8.09	1	140	140	140	----	2	164	161	164	2.12	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
25	7	62	30	62	11.68	4	135	106	135	12.52	1	172	172	172	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
26	50	69	34	69	9.69	3	146	103	146	24.54	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
27	23	75	35	75	11.56	3	146	110	146	18.90	2	210	160	210	35.36	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
28	27	70	35	70	9.36	2	132	120	132	8.49	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
29	12	100	40	100	16.19	4	143	120	143	11.45	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
30	17	86	40	86	11.39	11	141	115	141	8.86	1	160	160	160	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
31	26	120	40	120	20.45	5	140	110	140	11.30	1	170	170	170	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
32	22	115	50	115	22.16	11	160	130	160	9.29	1	180	180	180	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
33	12	90	50	90	12.41	4	140	130	140	4.79	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
34	1	90	90	90	----	1	155	155	155	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
35																														
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49																														
Totals	233	120	25	120	17.21	89	160	65	160	24.45	59	215	140	215	17.31	4	250	219	250	13.63	0	0	0	0	----	1	194	194	194	----

*Includes hatchery releases

Appendix 27. BBT weekly fork length data for chinook and coho, 1998.

Julian Week	Chinook *										Natural Coho										Hatchery Coho					
	Age 0					Age 1					Age 0					Age 1					Age 1					
	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18	5	73	47	116	30.39	4	165	149	193	19.67	2	63	55	70	10.61	0	0	0	0	----	0	0	0	0	----	
19	6	59	48	71	10.15	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
20	11	71	43	114	23.79	2	130	128	131	2.12	3	70	61	82	10.97	0	0	0	0	----	0	0	0	0	----	
21	17	96	47	114	20.15	1	136	136	136	----	0	0	0	0	----	0	0	0	0	----	1	252	252	252	----	
22	33	103	58	114	11.97	1	144	144	144	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
23	63	106	60	120	10.80	1	140	140	140	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
24	212	101	70	123	9.67	1	160	160	160	----	0	0	0	0	----	1	115	115	115	----	1	175	175	175	----	
25	210	91	60	116	7.01	0	0	0	0	----	2	67	64	70	4.24	0	0	0	0	----	0	0	0	0	----	
26	210	90	79	105	5.04	0	0	0	0	----	1	52	52	52	----	0	0	0	0	----	0	0	0	0	----	
27	210	91	70	113	6.97	0	0	0	0	----	3	52	30	79	24.79	0	0	0	0	----	0	0	0	0	----	
28	210	91	72	116	7.25	0	0	0	0	----	1	54	54	54	----	0	0	0	0	----	0	0	0	0	----	
29	180	89	77	111	6.62	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
30	150	87	65	111	7.20	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
31	125	93	73	114	9.12	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
32	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
33	8	87	75	97	6.80	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
34																										
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49																										
Total Count of fl	1650	92	43	123	9.93	10	150	128	193	19.34	12	61	30	82	14.32	1	115	115	115	----	2	214	175	252	54.45	

*Includes hatchery releases

Appendix 28. BBT weekly fork length data for steelhead, 1998.

Julian Week	Natural Steelhead															Hatchery Steelhead																					
	Age 0					Age 1					Age 2					Age 3					Age 1					Age 2											
	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d		
11																																					
12																																					
13																																					
14																																					
15																																					
16																																					
17																																					
18	4	72	50	85	16.22	9	120	95	136	12.48	8	165	140	195	19.86	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----		
19	2	78	75	81	4.24	15	119	93	139	16.87	11	153	140	168	8.76	2	229	225	233	5.66	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----		
20	4	83	77	89	4.92	26	119	95	136	14.15	44	165	140	215	18.63	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----		
21	6	80	60	90	11.10	16	118	91	150	16.62	58	164	140	204	16.64	1	244	244	244	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----		
22	0	0	0	0	----	4	112	97	145	22.52	16	166	142	196	15.37	3	248	242	251	5.20	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----		
23	0	0	0	0	----	11	105	81	125	14.60	20	180	155	210	16.41	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----		
24	0	0	0	0	----	11	121	81	148	19.11	49	184	151	217	16.92	3	232	220	247	13.65	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----		
25	0	0	0	0	----	8	128	110	140	9.44	11	171	150	193	15.95	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----		
26	0	0	0	0	----	1	149	149	149	----	1	190	190	190	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----		
27	4	56	44	85	19.51	2	132	130	133	2.12	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----		
28	4	61	45	88	19.69	3	111	102	125	12.50	1	155	155	155	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----		
29	32	56	40	75	8.68	5	126	110	143	13.66	1	152	152	152	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----		
30	24	58	40	86	10.57	2	130	115	145	21.21	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----		
31	3	53	42	59	9.81	2	129	124	133	6.36	1	170	170	170	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----		
32	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----		
33	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----		
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49																																					
Total Count of fl	83	61	40	90	13.65	115	119	81	150	15.96	221	170	140	217	18.91	9	238	220	251	11.47	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----		

*Includes hatchery releases

Appendix 29. BBT weekly fork length data for chinook and coho, 1999.

Julian Week	Chinook *										Natural Coho										Hatchery Coho					
	Age 0					Age 1					Age 0					Age 1					Age 1					
	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	
11																										
12																										
13																										
14																										
15	2	38	36	39	2.12	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
16	47	41	31	57	4.97	0	0	0	0	----	2	35	33	36	2.12	0	0	0	0	----	0	0	0	0	----	
17	18	41	32	53	5.41	1	152	152	152	----	6	45	32	54	9.50	0	0	0	0	----	0	0	0	0	----	
18	5	45	41	49	3.05	0	0	0	0	----	4	47	44	49	2.89	0	0	0	0	----	0	0	0	0	----	
19	8	50	40	62	8.62	0	0	0	0	----	1	42	42	42	----	0	0	0	0	----	0	0	0	0	----	
20	13	57	44	67	6.89	0	0	0	0	----	4	45	43	47	1.71	0	0	0	0	----	0	0	0	0	----	
21	5	57	40	80	14.87	0	0	0	0	----	2	52	41	63	15.56	0	0	0	0	----	0	0	0	0	----	
22	5	64	42	95	20.07	2	134	128	140	8.49	2	55	54	55	0.71	2	118	108	127	13.44	3	158	153	161	4.36	
23	12	61	48	101	14.21	0	0	0	0	----	4	66	61	73	5.60	0	0	0	0	----	1	157	157	157	----	
24	125	104	50	129	11.33	0	0	0	0	----	5	61	57	67	3.78	0	0	0	0	----	1	164	164	164	----	
25	154	102	60	125	9.95	0	0	0	0	----	5	65	59	69	4.06	1	119	119	119	----	0	0	0	0	----	
26	200	97	64	117	9.02	0	0	0	0	----	4	70	61	78	6.98	0	0	0	0	----	0	0	0	0	----	
27	180	92	72	110	6.67	0	0	0	0	----	5	58	42	78	13.46	0	0	0	0	----	0	0	0	0	----	
28	180	87	62	108	7.30	0	0	0	0	----	2	61	44	78	24.04	0	0	0	0	----	0	0	0	0	----	
29	210	87	69	114	8.18	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
30	210	92	70	120	9.44	0	0	0	0	----	1	76	76	76	----	0	0	0	0	----	0	0	0	0	----	
31	154	93	74	115	8.91	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
32	49	94	75	120	11.20	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
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49																										
Total Count of fi	1577	90	31	129	16.10	3	140	128	152	12.00	47	56	32	78	12.62	3	118	108	127	9.54	5	159	153	164	4.18	

*Includes hatchery releases

Appendix 30. BBT weekly fork length data for steelhead, 1999.

Julian Week	Natural Steelhead															Hatchery Steelhead														
	Age 0					Age 1					Age 2					Age 3				Age 1					Age 2					
	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d
11																														
12																														
13																														
14																														
15	0	0	0	0	----	10	131	68	131	18.87	5	198	110	198	39.10	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
16	0	0	0	0	----	17	105	73	105	8.76	5	225	131	225	37.81	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
17	0	0	0	0	----	7	180	71	180	37.12	5	162	121	162	18.30	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
18	0	0	0	0	----	9	100	56	100	13.91	13	200	129	200	21.85	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
19	0	0	0	0	----	9	220	61	220	62.34	10	220	80	220	52.94	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
20	0	0	0	0	----	16	270	74	270	63.92	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
21	0	0	0	0	----	12	196	72	196	40.64	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
22	0	0	0	0	----	24	250	80	250	45.71	1	153	153	153	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
23	0	0	0	0	----	17	226	89	226	41.06	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
24	0	0	0	0	----	11	204	113	204	29.46	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
25	2	52	30	52	15.56	8	225	165	225	18.61	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
26	1	54	54	54	----	4	188	100	188	41.21	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
27	20	72	32	72	10.66	1	163	163	163	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
28	15	72	34	72	8.83	9	152	46	152	40.46	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
29	21	78	35	78	11.24	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
30	17	74	39	74	9.84	1	131	131	131	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
31	8	74	46	74	10.63	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
32	14	78	22	78	18.17	10	66	46	66	6.24	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
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49																														
Totals	98	78	22	78	11.98	165	270	46	270	53.36	39	225	80	225	37.58	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----

*Includes hatchery releases

Appendix 31. BBT weekly fork length data for chinook and coho, 2000.

Julian Week	Chinook *										Natural Coho										Hatchery Coho				
	Age 0					Age 1					Age 0					Age 1					Age 1				
	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d
11																									
12																									
13																									
14	2	38	35	40	3.54	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
15	32	41	38	55	3.08	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
16	20	50	37	70	11.50	0	0	0	0	----	3	48	44	51	3.79	0	0	0	0	----	0	0	0	0	----
17	18	47	35	78	11.91	1	120	120	120	----	1	45	45	45	----	0	0	0	0	----	0	0	0	0	----
18	12	46	35	56	7.21	2	162	142	182	28.28	5	54	46	63	6.60	1	120	120	120	----	1	147	147	147	----
19	19	53	40	70	7.46	2	150	139	160	14.85	6	56	47	60	5.68	1	146	146	146	----	0	0	0	0	----
20	14	66	45	110	17.43	2	152	144	159	10.61	2	62	61	63	1.41	4	135	130	139	3.70	2	174	165	183	12.73
21	16	69	55	100	10.82	0	0	0	0	----	4	61	54	69	6.16	2	116	110	121	7.78	0	0	0	0	----
22	32	79	42	121	19.45	1	142	142	142	----	2	75	71	78	4.95	1	125	125	125	----	0	0	0	0	----
23	168	99	52	124	13.48	0	0	0	0	----	3	70	60	83	11.68	0	0	0	0	----	0	0	0	0	----
24	165	98	63	127	11.30	0	0	0	0	----	11	83	69	102	9.89	0	0	0	0	----	0	0	0	0	----
25	207	90	62	121	9.44	0	0	0	0	----	4	72	60	78	7.94	0	0	0	0	----	0	0	0	0	----
26	137	81	68	99	6.02	0	0	0	0	----	3	70	70	71	0.58	0	0	0	0	----	0	0	0	0	----
27	56	86	71	107	7.60	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
28	6	87	72	104	12.51	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
29	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
30																									
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Total Count of fl	904	86	35	127	19.21	8	149	120	182	18.41	44	67	44	102	13.97	9	129	110	146	11.03	3	165	147	183	18.00

*Includes hatchery releases

Appendix 32. BBT weekly fork length data for steelhead, 2000.

Julian Week	Natural Steelhead															Hatchery Steelhead														
	Age 0					Age 1					Age 2					Age 3				Age 1				Age 2						
	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d
11																														
12																														
13																														
14	0	0	0	0	----	4	77	70	89	8.34	2	192	184	200	11.31	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
15	0	0	0	0	----	14	96	71	160	22.55	7	211	108	360	78.95	2	247	227	266	27.58	0	0	0	0	----	0	0	0	0	----
16	0	0	0	0	----	4	87	71	106	15.34	1	156	156	156	----	1	247	247	247	----	0	0	0	0	----	0	0	0	0	----
17	1	43	43	43	----	11	92	72	136	18.40	3	222	179	260	40.80	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
18	0	0	0	0	----	11	113	71	214	50.64	6	179	150	228	28.79	2	222	221	222	0.71	0	0	0	0	----	0	0	0	0	----
19	4	47	41	55	6.06	8	98	80	116	12.39	6	183	150	256	38.01	0	0	0	0	----	1	221	221	221	----	0	0	0	0	----
20	0	0	0	0	----	0	0	0	0	----	6	190	167	213	15.39	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
21	0	0	0	0	----	0	0	0	0	----	4	172	145	205	24.97	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
22	0	0	0	0	----	1	150	150	150	----	1	203	203	203	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
23	2	60	54	65	7.78	2	145	126	163	26.16	3	175	162	186	12.22	4	217	195	226	14.72	0	0	0	0	----	0	0	0	0	----
24	2	55	52	57	3.54	0	0	0	0	----	6	171	55	216	58.16	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
25	2	53	49	57	5.66	0	0	0	0	----	2	184	177	191	9.90	1	223	223	223	----	0	0	0	0	----	0	0	0	0	----
26	2	52	46	58	8.49	4	138	125	152	11.05	4	162	155	170	6.65	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
27	0	0	0	0	----	3	153	150	155	2.65	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
28	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
29	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
30																														
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47																														
48																														
49																														
Total Count of fl	13	51	41	65	7.02	62	105	70	214	32.36	51	185	55	360	41.84	10	227	195	266	18.40	1	221	221	221	----	0	0	0	0	----

*Includes hatchery releases

Appendix 33. WCT weekly fork length data for chinook and coho, 1997.

Julian Week	Chinook*										Natural Coho										Hatchery Coho					
	Age 0					Age 1					Age 0					Age 1					Age 1					
	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	
11																										
12																										
13	14	38	35	40	1.45	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	6	146	133	155	8.64	
14	3	36	31	39	4.36	0	0	0	0	----	0	0	0	0	----	1	114	114	114	----	3	137	135	140	2.89	
15	3	38	38	39	0.58	1	115	115	115	----	0	0	0	0	----	2	105	100	109	6.36	2	130	127	132	3.54	
16	1	37	37	37	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
17	6	45	37	51	5.32	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
18	12	55	42	70	9.15	0	0	0	0	----	3	49	48	50	1.00	1	120	120	120	----	0	0	0	0	----	
19	12	51	36	111	20.45	0	0	0	0	----	2	50	45	55	7.07	3	123	119	129	5.51	8	158	141	184	12.81	
20	25	67	47	108	13.55	0	0	0	0	----	1	51	51	51	----	10	120	111	135	7.03	35	157	130	190	14.12	
21	29	69	37	111	16.60	0	0	0	0	----	5	51	45	58	5.26	3	112	104	128	13.58	40	150	121	170	10.68	
22	14	84	60	109	12.00	2	145	127	163	25.46	2	60	50	70	14.14	9	123	106	179	22.81	86	147	120	175	11.30	
23	24	86	51	112	13.39	0	0	0	0	----	1	55	55	55	----	37	143	114	191	16.90	73	144	110	172	11.76	
24	113	98	59	128	12.43	1	140	140	140	----	9	68	46	89	11.20	14	128	105	152	12.23	96	148	68	190	15.42	
25	208	100	56	122	10.09	0	0	0	0	----	7	67	59	78	6.05	22	125	105	155	10.73	69	152	125	181	12.04	
26	210	100	84	120	6.50	0	0	0	0	----	6	63	50	72	7.64	7	127	113	149	14.60	27	154	130	175	11.61	
27	191	96	51	121	8.97	0	0	0	0	----	2	107	102	111	6.36	4	136	118	156	15.95	0	0	0	0	----	
28	180	92	75	110	6.99	0	0	0	0	----	6	77	60	114	20.06	0	0	0	0	----	0	0	0	0	----	
29	209	91	78	110	5.72	0	0	0	0	----	1	31	31	31	----	0	0	0	0	----	1	155	155	155	----	
30	210	90	77	113	5.58	0	0	0	0	----	1	66	66	66	----	0	0	0	0	----	0	0	0	0	----	
31	210	93	78	112	6.43	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
32	210	91	76	115	6.92	0	0	0	0	----	1	81	81	81	----	0	0	0	0	----	0	0	0	0	----	
33	180	92	78	118	5.84	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
34	180	96	80	118	7.31	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
35	180	94	78	120	7.25	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
36	208	96	83	116	6.68	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
37	173	96	80	121	7.54	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
38	161	103	72	123	9.21	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
39	179	106	67	152	9.98	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
40	195	119	92	172	19.36	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
41	210	135	90	175	13.58	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
42	210	132	100	171	11.95	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
43	210	131	101	177	11.36	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
44	210	131	83	179	13.82	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
45	206	129	91	175	12.65	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
46	110	130	90	182	15.47	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
47	27	130	85	147	13.02	0	0	0	0	----	2	90	86	94	5.66	0	0	0	0	----	0	0	0	0	----	
48	7	132	104	158	17.23	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	
49	8	133	110	154	14.75	0	0	0	0	----	1	85	85	85	----	0	0	0	0	----	0	0	0	0	----	
Totals	4538	105	31	182	20.71	4	136	115	163	20.55	50	66	31	114	16.92	113	130	100	191	17.10	446	149	68	190	13.17	

*Includes hatchery releases

Appendix 34. WCT weekly fork length data for steelhead, 1997.

Julian Week	Natural Steelhead															Hatchery Steelhead														
	Age 0					Age 1					Age 2					Age 3					Age 1				Age 2					
	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d
11																														
12																														
13	0	0	0	0	----	34	145	66	145	18.70	4	200	169	200	14.20	2	235	209	235	18.38	4	199	152	199	21.70	0	0	0	0	----
14	0	0	0	0	----	32	141	69	141	15.08	27	214	160	214	14.21	4	240	214	240	11.43	15	235	185	235	13.21	0	0	0	0	----
15	0	0	0	0	----	60	134	58	134	16.14	54	215	150	215	16.25	2	244	222	244	15.56	39	248	162	248	17.78	0	0	0	0	----
16	0	0	0	0	----	42	119	71	119	11.75	13	207	156	207	15.99	0	0	0	0	----	20	217	174	217	13.91	0	0	0	0	----
17	0	0	0	0	----	5	106	88	106	6.58	1	197	197	197	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
18	0	0	0	0	----	17	117	71	117	14.40	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
19	0	0	0	0	----	39	145	71	145	22.52	12	202	158	202	16.18	0	0	0	0	----	15	203	165	203	11.92	0	0	0	0	----
20	0	0	0	0	----	31	148	70	148	19.83	17	199	150	199	15.03	0	0	0	0	----	31	240	166	240	19.05	0	0	0	0	----
21	0	0	0	0	----	7	149	99	149	22.51	13	192	151	192	10.18	0	0	0	0	----	48	226	158	226	15.55	0	0	0	0	----
22	0	0	0	0	----	9	146	71	146	25.08	10	205	158	205	16.03	0	0	0	0	----	47	219	156	219	14.84	0	0	0	0	----
23	1	54	54	54	----	5	145	106	145	19.11	53	220	150	220	16.72	0	0	0	0	----	19	220	160	220	16.24	0	0	0	0	----
24	7	63	43	63	8.07	12	145	97	145	13.67	58	217	150	217	16.18	0	0	0	0	----	24	224	156	224	14.30	0	0	0	0	----
25	23	69	44	69	8.04	3	145	108	145	18.52	76	217	151	217	14.01	1	274	274	274	----	26	215	161	215	14.74	0	0	0	0	----
26	45	92	30	92	12.32	3	149	128	149	10.82	29	216	164	216	12.82	0	0	0	0	----	16	212	161	212	13.45	0	0	0	0	----
27	42	107	41	107	11.57	0	0	0	0	----	5	189	177	189	4.44	0	0	0	0	----	3	202	170	202	16.37	0	0	0	0	----
28	41	82	40	82	10.90	3	145	135	145	5.13	1	165	165	165	----	0	0	0	0	----	1	180	180	180	----	0	0	0	0	----
29	60	85	52	85	7.63	7	154	123	154	10.70	1	171	171	171	----	0	0	0	0	----	1	180	180	180	----	0	0	0	0	----
30	59	106	46	106	13.33	6	150	120	150	10.42	0	0	0	0	----	0	0	0	0	----	1	168	168	168	----	0	0	0	0	----
31	22	80	38	80	13.35	5	143	115	143	11.08	0	0	0	0	----	0	0	0	0	----	1	157	157	157	----	0	0	0	0	----
32	31	99	46	99	14.04	2	130	123	130	4.95	2	217	160	217	40.31	0	0	0	0	----	1	142	142	142	----	0	0	0	0	----
33	14	98	45	98	16.83	5	148	137	148	5.03	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
34	20	104	53	104	14.76	3	139	120	139	9.50	0	0	0	0	----	1	239	239	239	----	1	160	160	160	----	0	0	0	0	----
35	36	105	38	105	15.78	0	0	0	0	----	1	215	215	215	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
36	21	110	50	110	18.69	1	119	119	119	----	2	160	153	160	4.95	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
37	28	113	50	113	15.17	0	0	0	0	----	2	205	162	205	30.41	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
38	29	115	50	115	17.58	1	126	126	126	----	2	180	158	180	15.56	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
39	23	115	48	115	23.05	4	130	117	130	5.48	1	158	158	158	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
40	41	119	54	119	19.60	7	147	123	147	8.98	2	169	165	169	2.83	0	0	0	0	----	1	130	130	130	----	0	0	0	0	----
41	73	115	50	115	18.41	10	150	123	150	8.68	6	198	170	198	10.48	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
42	8	120	93	120	10.66	3	141	137	141	2.00	1	157	157	157	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
43	7	109	75	109	11.25	5	140	122	140	7.07	7	197	154	197	15.68	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
44	58	119	49	119	18.50	11	139	121	139	5.58	7	190	152	190	15.03	3	236	227	236	4.58	0	0	0	0	----	0	0	0	0	----
45	30	117	55	117	17.17	11	145	125	145	6.83	4	189	157	189	15.86	1	215	215	215	----	0	0	0	0	----	0	0	0	0	----
46	11	116	73	116	12.41	2	139	128	139	7.78	3	177	159	177	9.17	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
47	18	111	76	111	12.52	2	135	127	135	5.66	1	208	208	208	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
48	6	105	55	105	19.27	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
49	4	120	64	120	23.59	2	147	131	147	11.31	2	169	158	169	7.78	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
Totals	758	120	30	120	19.64	389	154	58	154	23.74	417	220	150	220	16.08	14	274	209	274	16.30	314	248	130	248	17.32	0	0	0	0	----

*Includes hatchery releases

Appendix 35. WCT weekly fork length data for chinook and coho, 1998.

Julian Week	Chinook*										Natural Coho										Hatchery Coho				
	Age 0					Age 1					Age 0					Age 1					Age 1				
	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d
11																									
12																									
13																									
14																									
15																									
16	19	38	35	41	1.71	0	0	0	0	----	0	0	0	0	----	2	149	116	181	45.96	4	166	147	185	17.73
17	14	42	36	61	7.27	0	0	0	0	----	1	47	47	47	----	1	154	154	154	----	2	166	165	166	0.71
18	9	39	36	44	2.22	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	3	179	143	229	44.52
19	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	12	152	135	175	12.57
20	3	48	43	57	8.08	0	0	0	0	----	0	0	0	0	----	1	132	132	132	----	17	154	128	191	16.00
21	16	54	47	69	7.14	0	0	0	0	----	0	0	0	0	----	16	130	114	160	14.57	102	160	120	210	15.49
22	8	59	48	95	15.72	0	0	0	0	----	2	34	33	34	0.71	2	126	122	130	5.66	87	158	130	275	18.32
23	3	89	53	125	36.00	0	0	0	0	----	1	45	45	45	----	1	145	145	145	----	28	158	129	180	13.69
24	29	78	34	106	19.89	0	0	0	0	----	0	0	0	0	----	3	131	127	136	4.58	32	155	138	184	9.89
25	91	87	54	128	13.60	0	0	0	0	----	0	0	0	0	----	4	137	130	153	10.72	8	148	115	186	26.80
26	210	96	61	116	10.21	0	0	0	0	----	3	62	53	75	11.53	0	0	0	0	----	4	151	135	170	14.36
27	210	96	55	115	7.79	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	3	159	155	162	3.61
28	180	92	70	115	7.03	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
29	210	89	73	111	8.02	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
30	210	85	67	116	8.67	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
31	210	86	70	110	6.82	0	0	0	0	----	2	77	69	84	10.61	0	0	0	0	----	0	0	0	0	----
32	260	88	72	126	7.77	0	0	0	0	----	1	100	100	100	----	0	0	0	0	----	0	0	0	0	----
33	210	91	74	131	9.16	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
34	180	95	81	126	8.62	0	0	0	0	----	1	110	110	110	----	2	131	126	135	6.36	0	0	0	0	----
35	150	97	82	128	7.30	0	0	0	0	----	3	107	100	118	9.64	1	129	129	129	----	0	0	0	0	----
36	210	100	85	126	7.74	0	0	0	0	----	3	109	105	112	3.61	0	0	0	0	----	0	0	0	0	----
37	210	102	83	126	7.30	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
38	210	103	89	121	6.00	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
39	210	105	84	120	6.43	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
40	210	114	91	148	13.13	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
41	210	125	94	166	11.88	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
42	210	125	78	160	11.97	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
43	211	124	98	162	12.47	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
44	210	124	90	160	11.72	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
45	113	121	78	158	13.69	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
46	117	127	79	173	15.93	0	0	0	0	----	1	93	93	93	----	0	0	0	0	----	0	0	0	0	----
47	4	121	97	144	19.71	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
48																									
49																									
Totals	4347	102	34	173	18.70	0	0	0	0	----	18	81	33	118	29.10	33	133	114	181	14.94	302	158	115	275	16.47

*Includes hatchery releases

Appendix 36. WCT weekly fork length data for steelhead, 1998.

Julian Week	Natural Steelhead															Hatchery Steelhead														
	Age 0					Age 1					Age 2					Age 3				Age 1				Age 2						
	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d
11																														
12																														
13																														
14																														
15																														
16	0	0	0	0	----	7	135	60	135	22.93	6	218	158	218	22.75	2	280	268	280	8.49	39	275	117	275	24.65	0	0	0	0	----
17	0	0	0	0	----	3	100	76	100	12.86	1	173	173	173	----	0	0	0	0	----	11	252	205	252	15.40	0	0	0	0	----
18	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	1	241	241	241	----	2	224	223	224	0.71	0	0	0	0	----
19	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	1	251	251	251	----	0	0	0	0	----
20	0	0	0	0	----	0	0	0	0	----	4	189	149	189	19.89	0	0	0	0	----	5	248	205	248	17.31	0	0	0	0	----
21	0	0	0	0	----	10	120	71	120	14.48	51	220	136	220	16.85	1	266	266	266	----	29	260	126	260	29.08	0	0	0	0	----
22	1	49	49	49	----	3	114	73	114	22.85	36	220	132	220	22.41	0	0	0	0	----	17	250	180	250	21.19	0	0	0	0	----
23	0	0	0	0	----	3	128	100	128	16.17	31	214	140	214	16.25	0	0	0	0	----	15	255	200	255	18.10	0	0	0	0	----
24	5	28	25	28	1.52	2	119	109	119	7.07	35	215	136	215	17.90	0	0	0	0	----	10	256	215	256	14.15	0	0	0	0	----
25	8	47	24	47	7.92	9	130	106	130	8.08	14	202	146	202	15.33	0	0	0	0	----	7	248	124	248	41.16	0	0	0	0	----
26	6	46	35	46	3.78	7	150	86	150	23.62	9	192	135	192	17.68	0	0	0	0	----	1	238	238	238	----	0	0	0	0	----
27	15	77	30	77	12.95	0	0	0	0	----	2	206	152	206	38.18	0	0	0	0	----	0	0	0	0	----	1	280	280	280	----
28	3	60	44	60	8.72	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
29	15	60	36	60	6.35	4	145	93	145	24.92	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
30	31	81	39	81	8.11	3	128	102	128	14.22	3	180	153	180	13.87	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
31	85	83	35	83	8.21	4	140	113	140	11.95	2	189	150	189	27.58	0	0	0	0	----	1	237	237	237	----	0	0	0	0	----
32	23	85	55	85	8.19	3	143	137	143	3.06	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
33	21	75	46	75	9.96	1	134	134	134	----	1	150	150	150	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
34	27	77	40	77	8.58	0	0	0	0	----	1	159	159	159	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
35	12	88	49	88	11.15	0	0	0	0	----	1	199	199	199	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
36	9	93	48	93	12.70	3	146	131	146	7.94	3	170	159	170	5.57	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
37	19	106	56	106	13.71	1	147	147	147	----	1	202	202	202	----	1	225	225	225	----	0	0	0	0	----	0	0	0	0	----
38	23	101	51	101	14.62	0	0	0	0	----	1	199	199	199	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
39	27	118	55	118	13.30	1	148	148	148	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
40	21	117	70	117	13.06	0	0	0	0	----	2	170	165	170	3.54	0	0	0	0	----	1	180	180	180	----	0	0	0	0	----
41	8	116	52	116	22.05	0	0	0	0	----	1	174	174	174	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
42	11	114	90	114	8.06	0	0	0	0	----	2	187	155	187	22.63	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
43	51	119	47	119	19.28	2	129	126	129	2.12	4	210	159	210	21.67	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
44	21	111	72	111	10.23	8	135	117	135	6.63	7	188	146	188	12.77	1	230	230	230	----	0	0	0	0	----	0	0	0	0	----
45	114	112	46	112	17.67	11	140	118	140	6.58	2	183	169	183	9.90	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
46	44	104	54	104	13.62	1	149	149	149	----	6	193	165	193	11.71	0	0	0	0	----	0	0	0	0	----	1	180	180	180	----
47	13	85	56	85	9.76	1	145	145	145	----	1	167	167	167	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
48																														
49																														
Totals	613	119	24	119	20.32	87	150	60	150	21.70	227	220	132	220	18.31	6	280	225	280	22.67	139	275	117	275	25.51	2	280	180	280	70.71

*Includes hatchery releases

Appendix 37. WCT weekly fork length data for chinook and coho, 1999.

Julian Week	Chinook*										Natural Coho								Hatchery Coho						
	Age 0					Age 1					Age 0				Age 1				Age 1						
	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d
11	1	37	37	37	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	8	146	132	168	12.73
12	6	79	38	128	43.83	0	0	0	0	----	0	0	0	0	----	1	115	115	115	----	110	158	121	210	17.40
13	21	56	33	125	32.93	0	0	0	0	----	0	0	0	0	----	1	115	115	115	----	42	161	134	221	18.33
14	51	49	35	119	22.49	0	0	0	0	----	3	36	33	39	3.06	4	110	95	130	17.80	21	142	115	171	11.94
15	18	56	29	126	28.10	0	0	0	0	----	2	37	37	37	----	3	125	120	129	4.73	6	142	115	160	15.21
16	44	44	32	170	22.36	0	0	0	0	----	0	0	0	0	----	3	119	115	124	4.73	3	154	145	171	15.01
17	69	54	37	75	11.73	0	0	0	0	----	2	51	48	53	3.54	2	127	109	144	24.75	6	177	150	250	39.87
18	49	58	36	108	12.94	0	0	0	0	----	2	36	36	36	----	9	158	105	188	27.68	12	172	147	209	16.52
19	74	61	38	127	16.96	0	0	0	0	----	2	38	33	43	7.07	2	165	158	171	9.19	126	160	113	213	15.42
20	56	61	35	84	10.58	0	0	0	0	----	2	54	52	55	2.12	5	120	110	129	6.80	201	153	124	205	11.81
21	14	55	38	71	10.37	0	0	0	0	----	4	52	43	62	7.79	8	131	116	150	11.11	201	149	121	194	11.40
22	23	62	45	85	12.18	0	0	0	0	----	7	48	40	62	7.46	0	0	0	0	----	110	148	122	191	11.40
23	133	72	42	117	18.27	0	0	0	0	----	25	54	37	66	7.80	0	0	0	0	----	112	146	100	198	11.55
24	189	87	40	122	14.97	0	0	0	0	----	5	56	45	69	10.27	3	124	117	129	6.11	71	145	113	172	11.26
25	210	87	54	109	8.69	0	0	0	0	----	12	60	51	66	5.10	0	0	0	0	----	8	146	136	167	10.53
26	210	86	12	108	10.74	0	0	0	0	----	39	62	50	75	6.29	0	0	0	0	----	1	140	140	140	----
27	210	85	45	101	9.46	0	0	0	0	----	35	63	55	82	6.52	0	0	0	0	----	1	150	150	150	----
28	210	87	59	111	7.40	0	0	0	0	----	21	67	54	80	6.00	0	0	0	0	----	0	0	0	0	----
29	210	85	66	110	6.13	0	0	0	0	----	11	70	57	80	7.32	0	0	0	0	----	0	0	0	0	----
30	210	85	52	103	6.41	0	0	0	0	----	27	68	60	77	4.01	1	122	122	122	----	0	0	0	0	----
31	180	85	60	104	6.49	0	0	0	0	----	7	68	61	75	4.34	0	0	0	0	----	0	0	0	0	----
32	210	89	56	106	6.86	0	0	0	0	----	1	77	77	77	----	0	0	0	0	----	0	0	0	0	----
33	210	89	70	112	6.36	0	0	0	0	----	1	68	68	68	----	0	0	0	0	----	0	0	0	0	----
34	210	89	70	109	6.20	0	0	0	0	----	1	72	72	72	----	0	0	0	0	----	0	0	0	0	----
35	210	93	77	130	6.29	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
36	210	97	82	148	8.24	0	0	0	0	----	1	90	90	90	----	0	0	0	0	----	0	0	0	0	----
37	139	99	85	125	6.77	0	0	0	0	----	1	76	76	76	----	0	0	0	0	----	0	0	0	0	----
38	210	101	70	115	6.59	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
39	209	101	73	125	7.30	0	0	0	0	----	1	74	74	74	----	0	0	0	0	----	0	0	0	0	----
40																									
41																									
42																									
43																									
44																									
45																									
46																									
47																									
48																									
49																									
Totals	3796	86	12	170	16.05	0	0	0	0	----	212	61	33	90	9.96	42	132	95	188	22.93	1039	152	100	250	14.71

*Includes hatchery releases

Appendix 38. WCT weekly fork length data for steelhead, 1999.

Julian Week	Natural Steelhead															Hatchery Steelhead														
	Age 0					Age 1					Age 2					Age 3					Age 1					Age 2				
	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d
11	0	0	0	0	----	3	117	88	117	15.13	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
12	0	0	0	0	----	13	230	79	230	53.33	13	227	126	227	28.51	0	0	0	0	----	2	191	183	191	5.66	0	0	0	0	----
13	0	0	0	0	----	24	240	96	240	35.44	2	148	134	148	9.90	0	0	0	0	----	35	230	156	230	18.82	0	0	0	0	----
14	0	0	0	0	----	26	254	73	254	58.81	8	235	91	235	42.34	0	0	0	0	----	14	235	171	235	17.73	0	0	0	0	----
15	0	0	0	0	----	14	112	69	112	11.30	64	260	110	260	32.21	0	0	0	0	----	31	249	161	249	23.21	0	0	0	0	----
16	0	0	0	0	----	24	125	36	125	17.06	31	230	72	230	44.59	1	400	400	400	----	44	240	180	240	14.58	0	0	0	0	----
17	0	0	0	0	----	44	132	63	132	11.91	53	261	80	261	27.08	0	0	0	0	----	54	248	133	248	19.56	0	0	0	0	----
18	0	0	0	0	----	50	123	61	123	11.67	72	234	117	234	21.91	0	0	0	0	----	81	230	175	230	13.47	0	0	0	0	----
19	0	0	0	0	----	33	175	76	175	28.78	107	238	78	238	43.06	3	200	170	200	16.07	129	234	162	234	16.42	0	0	0	0	----
20	0	0	0	0	----	122	220	71	220	39.77	0	0	0	0	----	0	0	0	0	----	95	254	160	254	17.11	0	0	0	0	----
21	0	0	0	0	----	76	235	70	235	40.91	0	0	0	0	----	0	0	0	0	----	86	232	159	232	16.86	0	0	0	0	----
22	0	0	0	0	----	87	211	85	211	29.64	0	0	0	0	----	0	0	0	0	----	49	230	160	230	15.59	0	0	0	0	----
23	1	44	44	44	----	88	190	73	190	24.44	0	0	0	0	----	0	0	0	0	----	47	233	165	233	14.04	0	0	0	0	----
24	2	46	41	46	3.54	79	191	81	191	31.75	0	0	0	0	----	0	0	0	0	----	31	215	175	215	11.68	0	0	0	0	----
25	12	55	26	55	8.54	37	184	87	184	30.15	0	0	0	0	----	0	0	0	0	----	13	226	168	226	17.08	0	0	0	0	----
26	17	62	37	62	6.82	16	183	61	183	39.82	0	0	0	0	----	0	0	0	0	----	3	205	170	205	18.34	0	0	0	0	----
27	94	72	29	72	8.25	8	148	108	148	13.86	0	0	0	0	----	0	0	0	0	----	1	193	193	193	----	0	0	0	0	----
28	0	0	0	0	----	156	164	32	164	16.60	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
29	212	77	36	77	7.33	9	148	97	148	18.61	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
30	96	79	49	79	6.64	38	185	52	185	35.30	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
31	77	125	46	125	11.29	1	103	103	103	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
32	100	94	36	94	12.31	11	175	39	175	45.68	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
33	30	89	43	89	11.30	85	170	34	170	35.36	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
34	72	93	34	93	12.96	17	157	101	157	15.53	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
35	49	98	52	98	11.08	17	184	65	184	39.28	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
36	46	98	29	98	13.40	16	160	65	160	28.84	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
37	42	103	31	103	15.06	0	0	0	0	----	2	187	161	187	18.38	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
38	41	118	38	118	16.82	8	178	111	178	27.42	4	211	175	211	16.33	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
39	28	115	60	115	13.38	10	193	112	193	25.08	2	211	180	211	21.92	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
40																														
41																														
42																														
43																														
44																														
45																														
46																														
47																														
48																														
49																														
Totals	919	125	26	125	13.74	1112	254	32	254	47.21	358	261	72	261	38.26	4	400	170	400	109.95	715	254	133	254	16.94	0	0	0	0	----

*Includes hatchery releases

Appendix 39. WCT weekly fork length data for chinook and coho, 2000.

Julian Week	Chinook*										Natural Coho										Hatchery Coho				
	Age 0					Age 1					Age 0					Age 1					Age 1				
	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d
11																									
12																									
13																									
14																									
15																									
16																									
17																									
18																									
19																									
20	78	59	40	86	9.58	0	0	0	0	----	0	0	0	0	----	12	118	105	157	14.01	42	150	110	185	13.64
21	110	66	47	94	12.94	0	0	0	0	----	1	58	58	58	----	16	120	99	157	15.26	22	155	123	210	16.09
22	202	70	44	117	14.06	0	0	0	0	----	5	59	53	66	5.86	10	120	102	135	10.77	10	148	125	180	15.62
23	210	84	45	122	14.89	0	0	0	0	----	2	66	55	77	15.56	5	133	116	158	17.69	7	148	135	156	7.76
24	210	90	48	115	14.01	0	0	0	0	----	2	68	65	70	3.54	3	134	122	145	11.50	2	157	151	162	7.78
25	210	90	56	118	12.12	0	0	0	0	----	5	66	59	72	5.13	0	0	0	0	----	0	0	0	0	----
26	210	88	61	115	11.42	0	0	0	0	----	1	66	66	66	----	0	0	0	0	----	0	0	0	0	----
27	180	88	51	122	10.46	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
28	210	87	63	114	7.75	0	0	0	0	----	2	79	68	90	15.56	0	0	0	0	----	0	0	0	0	----
29	210	87	72	105	5.79	0	0	0	0	----	3	78	67	92	12.77	2	121	118	123	3.54	0	0	0	0	----
30	210	87	72	101	5.66	0	0	0	0	----	1	73	73	73	----	0	0	0	0	----	0	0	0	0	----
31	210	88	72	103	5.70	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
32	210	88	66	105	5.83	0	0	0	0	----	1	90	90	90	----	0	0	0	0	----	0	0	0	0	----
33	213	90	66	107	6.00	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
34	194	93	74	111	6.27	0	0	0	0	----	0	0	0	0	----	2	102	101	102	0.71	0	0	0	0	----
35	210	93	35	112	7.39	0	0	0	0	----	1	104	104	104	----	0	0	0	0	----	0	0	0	0	----
36	210	98	80	112	6.57	0	0	0	0	----	0	0	0	0	----	1	114	114	114	----	0	0	0	0	----
37	154	100	84	120	6.97	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
38	150	102	87	126	7.02	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
39	170	103	76	120	7.48	0	0	0	0	----	0	0	0	0	----	1	154	154	154	----	0	0	0	0	----
40	150	117	92	164	20.10	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
41																									
42																									
43																									
44																									
45																									
46																									
47																									
48																									
49																									
Totals	3911	90	35	164	14.45	0	0	0	0	----	24	70	53	104	12.88	52	121	99	158	15.05	83	151	110	210	14.11

*Includes hatchery releases

Appendix 40. WCT weekly fork length data for steelhead, 2000.

Julian Week	Natural Steelhead															Hatchery Steelhead														
	Age 0					Age 1					Age 2					Age 3				Age 1				Age 2						
	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d	n	avg	min	max	s.d
11																														
12																														
13																														
14																														
15																														
16																														
17																														
18																														
19																														
20	0	0	0	0	----	29	113	75	179	31.95	35	148	120	177	12.73	9	184	166	210	14.56	5	202	188	233	18.53	0	0	0	0	----
21	1	40	40	40	----	58	108	74	173	25.70	38	160	134	193	14.07	1	187	187	187	----	9	212	180	235	19.10	0	0	0	0	----
22	1	39	39	39	----	29	110	81	180	27.35	36	160	122	188	16.62	4	205	195	214	8.02	8	216	194	235	15.24	0	0	0	0	----
23	3	47	45	50	2.65	39	116	81	175	25.90	42	166	140	195	15.49	0	0	0	0	----	11	208	161	230	19.98	0	0	0	0	----
24	10	50	45	56	3.47	23	124	92	175	25.68	15	169	147	187	12.32	0	0	0	0	----	4	203	182	218	17.06	0	0	0	0	----
25	21	50	31	65	7.45	9	125	109	161	18.49	1	181	181	181	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
26	42	56	36	96	9.90	5	128	112	153	15.57	2	168	166	170	2.83	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
27	34	56	47	68	5.94	6	121	105	143	14.95	1	141	141	141	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
28	27	64	52	88	8.05	2	127	112	142	21.21	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
29	26	65	45	80	7.71	6	118	103	130	10.33	4	144	122	185	28.69	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
30	35	61	43	90	10.65	9	124	106	146	12.49	9	137	119	168	14.13	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
31	18	64	40	80	11.72	19	129	100	148	10.40	8	143	130	160	9.78	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
32	16	68	43	84	13.61	15	131	107	150	13.37	7	143	125	171	16.60	2	161	129	192	44.55	0	0	0	0	----	0	0	0	0	----
33	9	88	58	134	22.49	7	127	107	148	13.77	5	146	124	162	14.74	1	205	205	205	----	0	0	0	0	----	0	0	0	0	----
34	13	81	54	118	19.12	2	146	141	151	7.07	6	168	148	210	21.40	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
35	3	72	50	88	19.86	2	164	145	182	26.16	3	146	140	156	8.72	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
36	24	85	59	107	12.55	7	144	126	162	13.70	4	147	123	157	16.21	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
37	4	85	68	98	12.46	3	159	147	170	11.53	4	160	148	172	13.02	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
38	4	76	65	87	9.07	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
39	15	94	67	115	13.37	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
40	6	98	68	113	15.66	1	152	152	152	----	2	203	190	215	17.68	0	0	0	0	----	0	0	0	0	----	0	0	0	0	----
41																														
42																														
43																														
44																														
45																														
46																														
47																														
48																														
49																														
Totals	312	66	31	134	17.14	271	119	74	182	25.44	222	157	119	215	17.77	17	188	129	214	20.76	37	209	161	235	18.04	0	0	0	0	----

*Includes hatchery releases

Appendix 41. BBT miscellaneous species, index totals, 1997.

Week Starting	Julian Week	Mean River Flow (cfs)	Trap Days	Lamprey-Ammocoete	Lamprey-Eyed Juvenile	Lamprey-Adult	speckled dace	green sturgeon	Klamath smallscale sucker	prickly sculpin	American shad	crappie	fathead minnow	golden shiner	constrange sculpin	bullhead	bryana trout	large mouth bass	chum salmon	sockeye salmon	green sturgeon	marble d. sculpin	three-spine stickleback
03/12/97	11	11,571	0																				
03/19/97	12	12,043	0																				
03/26/97	13	10,720	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04/02/97	14	8,510	4	5,134	0	0	125	0	35	414	0	0	0	0	429	0	0	0	0	0	0	0	0
04/09/97	15	7,123	4	639	0	0	74	0	145	71	0	0	0	0	720	0	0	0	0	0	0	0	0
04/16/97	16	12,576	1	0	0	0	128	0	128	0	0	0	0	128	128	0	0	0	0	0	0	0	0
04/23/97	17	15,557	6	21,033	3,592	0	849	0	1,366	416	0	0	0	0	433	0	0	0	0	0	0	0	0
04/30/97	18	12,943	7	26,638	0	756	546	122	0	122	0	0	0	0	293	122	0	0	0	0	0	0	0
05/07/97	19	9,553	7	13,424	0	1,644	610	0	125	0	0	0	89	0	327	0	0	0	0	0	0	0	0
05/14/97	20	8,014	7	1,405	0	5,468	1,242	0	621	64	0	0	0	0	153	0	0	0	0	0	0	0	0
05/21/97	21	6,327	7	801	0	4,794	792	0	928	65	0	0	0	67	398	0	0	0	0	0	0	0	0
05/28/97	22	5,821	7	379	0	3,670	1,017	0	508	191	0	0	0	0	505	0	0	0	0	0	0	0	63
06/04/97	23	5,734	7	3,655	130	906	1,939	205	1,104	444	0	0	0	0	411	0	0	0	0	0	0	0	0
06/11/97	24	4,577	7	1,123	0	183	930	461	598	45	0	0	0	0	96	0	0	0	0	0	0	0	0
06/18/97	25	3,654	7	99	0	0	1,089	59	371	0	0	0	0	0	63	0	73	0	0	0	0	0	42
06/25/97	26	3,334	7	129	29	0	1,392	1,019	838	58	0	0	0	0	28	0	0	0	0	0	0	0	0
07/02/97	27	2,893	7	25	0	0	923	604	933	79	0	0	48	0	40	40	0	0	0	0	0	0	48
07/09/97	28	2,454	6	0	0	0	798	514	1,935	23	0	21	0	0	54	0	0	0	0	0	0	0	0
07/16/97	29	2,180	7	0	0	0	672	295	2,411	38	0	20	0	19	20	0	0	0	0	0	0	0	0
07/23/97	30	2,031	7	0	0	0	1,949	209	15,788	37	0	0	0	0	93	0	0	0	0	0	0	0	0
07/30/97	31	2,099	7	75	0	0	2,328	226	8,534	392	19	0	0	0	150	19	0	0	0	0	0	0	57
08/06/97	32	2,090	7	0	0	0	1,294	79	3,177	390	0	0	0	0	178	0	0	0	0	0	0	0	0
08/13/97	33	1,981	5	297	0	0	782	0	1,906	404	261	0	0	0	202	0	0	0	0	0	0	0	0
08/20/97	34	2,144	1	0	0	0	83	0	359	111	0	0	0	0	28	0	0	0	0	0	0	0	0
08/27/97	35	2,124	0																				
09/03/97	36	1,963	0																				
09/10/97	37	2,217	0																				
09/17/97	38	2,434	0																				
09/24/97	39	2,063	0																				
10/01/97	40	2,794	0																				
10/08/97	41	4,283	0																				
10/15/97	42	3,493	0																				
10/22/97	43	3,060	0																				
10/29/97	44	4,431	0																				
11/05/97	45	4,177	0																				
11/12/97	46	4,294	0																				
11/19/97	47	6,594	0																				
11/26/97	48	7,173	0																				
12/03/97	49	6,150	0																				
12/10/97	50	6,030	0																				
12/17/97	51	9,153	0																				
12/24/97	52	5,816	0																				
Spring total			126	74,857	3,750	17,422	19,561	3,793	41,808	3,365	279	41	137	213	4,750	180	73	0	0	0	0	0	209
Fall total			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals			0	74,857	3,750	17,422	19,561	3,793	41,808	3,365	279	41	137	213	4,750	180	73	0	0	0	0	0	209

Appendix 42. BBT miscellaneous species, index totals, 1998.

Week Starting	Julian Week	Mean River Flow (cfs)	Trap Days	Lamprey-Ammocoete	Lamprey-Eyed Juvenile	Lamprey-Adult	speckled dace	green sturgeon	Klamath smallscale sucker	Piedmont sculpin	American shad	crayfish	white and rainnow	golden shiner	cowtrout sculpin	bullhead	brown trout	large mouth bass	chum salmon	sockeye salmon	green sturgeon	marble d sculpin	three spine stickleback
03/12/98	11	19,814	0																				
03/19/98	12	48,414	0																				
03/26/98	13	29,871	0																				
04/02/98	14	21,429	0																				
04/09/98	15	17,657	0																				
04/16/98	16	14,986	0																				
04/23/98	17	16,271	0																				
04/30/98	18	20,429	7	83,577	0	236	7,280	0	1,235	290	0	0	0	236	0	0	0	0	0	0	0	0	0
05/07/98	19	20,900	7	54,595	0	0	6,048	0	1,172	386	0	0	0	1,342	286	503	0	0	0	0	0	0	0
05/14/98	20	16,829	7	37,510	0	1,087	1,935	0	171	171	0	0	0	675	195	0	0	0	0	0	0	0	0
05/21/98	21	16,686	7	25,610	147	797	147	0	555	305	0	0	0	503	0	0	0	0	0	0	0	0	0
05/28/98	22	18,314	7	14,510	123	1,559	419	0	300	138	0	0	0	576	0	158	0	0	0	0	0	146	0
06/04/98	23	18,971	7	26,885	184	354	366	0	1,220	0	0	0	0	1,879	0	0	208	0	0	0	0	0	0
06/11/98	24	16,614	7	11,521	221	440	434	0	437	0	0	0	0	1,559	0	361	0	0	0	0	140	0	0
06/18/98	25	12,086	7	8,428	0	1,016	213	0	816	109	0	0	0	339	0	0	0	0	0	0	0	0	0
06/25/98	26	9,083	7	5,185	0	454	670	0	884	0	0	0	0	415	97	0	0	0	0	0	0	71	0
07/02/98	27	7,323	7	374	62	209	185	0	338	120	0	0	0	0	0	0	0	0	0	0	0	0	0
07/09/98	28	5,751	7	104	0	0	432	0	203	106	0	0	0	93	0	0	0	0	0	0	0	0	0
07/16/98	29	4,556	6	0	0	0	854	99	945	128	0	0	0	0	0	0	0	0	0	0	0	55	0
07/23/98	30	4,113	5	36	36	0	554	268	1,541	75	0	0	0	35	0	0	0	0	0	0	0	0	0
07/30/98	31	3,224	5	28	0	0	350	0	7,399	48	0	0	0	28	0	0	0	0	0	0	0	0	0
08/06/98	32	2,734	2	14	0	0	14	0	251	0	0	0	0	14	0	0	0	0	0	0	0	0	0
08/13/98	33	2,429	1	0	0	0	177	0	1,653	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08/20/98	34	2,264	0																				
08/27/98	35	2,127	0																				
09/03/98	36	2,327	0																				
09/10/98	37	2,387	0																				
09/17/98	38	2,357	0																				
09/24/98	39	2,404	0																				
10/01/98	40		0																				
10/08/98	41		0																				
10/15/98	42		0																				
10/22/98	43		0																				
10/29/98	44		0																				
11/05/98	45		0																				
11/12/98	46		0																				
11/19/98	47		0																				
11/26/98	48		0																				
12/03/98	49		0																				
12/10/98	50		0																				
12/17/98	51		0																				
12/24/98	52		0																				
Spring total			96	268,377	775	6,151	20,079	367	19,119	1,877	0	0	0	7,693	578	1,022	208	0	0	0	140	272	0
Fall total			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals			0	268,377	775	6,151	20,079	367	19,119	1,877	0	0	0	7,693	578	1,022	208	0	0	0	140	272	0

Appendix 43. BBT miscellaneous species, index totals, 1999.

Week Starting	Julian Week	Mean River Flow (cfs)	Trap Days	Lamprey-Ammocoete	Lamprey-Eyed Juvenile	Lamprey-Adult	speckled dace	green sturgeon	Klamath smallmouth sucker	prickly sculpin	American shad	crayfish	fathead minnow	golden shiner	coastrange sculpin	bullhead	brown trout	large mouth bass	chum salmon	sockeye salmon	green sturgeon	triple d sculpin	three spine stickleback
03/12/99	11	20,457	0																				
03/19/99	12	21,171	0																				
03/26/99	13	17,843	0																				
04/02/99	14	16,229	0																				
04/09/99	15	15,357	4	6,485	0	0	400	0	1,321	136	0	0	0	442	185	0	0	0	0	0	0	0	0
04/16/99	16	22,071	7	90,318	0	0	3,863	0	13,223	853	0	0	0	2,571	587	186	0	0	0	0	0	0	0
04/23/99	17	20,743	7	38,434	0	0	4,673	0	6,471	621	377	0	0	2,022	636	0	0	0	0	0	0	184	0
04/30/99	18	16,914	7	20,873	0	0	1,696	0	2,457	110	0	0	0	2,891	186	0	0	0	0	0	0	0	0
05/07/99	19	15,086	7	10,898	707	300	803	0	1,494	0	0	0	0	3,577	380	0	0	0	0	0	134	0	0
05/14/99	20	15,043	7	8,807	146	699	821	0	1,060	0	0	0	0	1,613	0	0	0	0	0	0	0	539	0
05/21/99	21	20,200	4	72,827	0	194	610	0	2,271	390	0	0	0	2,827	0	223	0	0	0	0	0	0	0
05/28/99	22	17,943	7	111,219	184	763	2,735	0	1,696	0	0	0	0	8,597	191	0	0	0	0	0	0	169	0
06/04/99	23	12,029	7	22,955	341	539	1,691	0	1,918	0	0	0	116	2,115	0	0	0	0	0	0	0	246	0
06/11/99	24	12,443	6	3,242	569	1,861	153	0	1,734	0	0	0	0	1,231	0	0	0	0	0	0	0	531	0
06/18/99	25	10,583	7	4,474	0	2,730	635	0	306	0	0	0	0	807	106	0	0	0	0	0	0	104	0
06/25/99	26	7,783	7	845	0	1,325	381	0	184	0	0	0	0	681	0	0	0	0	0	0	0	0	0
07/02/99	27	5,409	7	328	122	0	787	56	600	0	0	0	0	388	0	0	0	0	0	0	54	0	0
07/09/99	28	4,271	6	81	41	0	731	806	446	41	0	0	0	43	65	0	0	0	0	0	0	41	0
07/16/99	29	3,401	7	0	0	0	463	1,331	799	0	0	0	0	71	0	0	0	0	0	0	0	36	0
07/23/99	30	2,950	7	129	34	0	67	162	532	0	0	0	0	34	0	0	0	0	0	0	0	0	0
07/30/99	31	2,579	7	28	29	0	317	248	376	0	0	29	0	28	0	0	0	0	0	0	0	0	0
08/06/99	32	2,426	5	107	321	0	159	320	428	0	0	0	26	164	0	0	0	0	0	0	0	0	0
08/13/99	33	2,184	0																				
08/20/99	34	2,007	0																				
08/27/99	35	1,986	0																				
09/03/99	36	2,039	0																				
09/10/99	37	1,979	0																				
09/17/99	38	1,949	0																				
09/24/99	39	1,921	0																				
10/01/99	40		0																				
10/08/99	41		0																				
10/15/99	42		0																				
10/22/99	43		0																				
10/29/99	44		0																				
11/05/99	45		0																				
11/12/99	46		0																				
11/19/99	47		0																				
11/26/99	48		0																				
12/03/99	49		0																				
12/10/99	50		0																				
12/17/99	51		0																				
12/24/99	52		0																				
Spring total			116	392,050	2,494	8,410	20,985	2,924	37,315	2,151	377	29	142	30,099	2,337	408	0	0	0	0	188	1,850	0
Fall total			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals			0	392,050	2,494	8,410	20,985	2,924	37,315	2,151	377	29	142	30,099	2,337	408	0	0	0	0	188	1,850	0

Appendix 44. BBT miscellaneous species, index totals, 2000.

Week Starting	Julian Week	Mean River Flow (cfs)	Trap Days	Lamprey - Ammocoete	Lamprey - Eyed Juvenile	Lamprey - Adult	speckle d dace	green sturgeon	Klamath smallmouth sucker	prickly sculpin	American shad	crayfish	fadged rainbow	golden shiner	coastrange sculpin	bullhead	brown trout	large mouth bass	chum salmon	sockeye salmon	green sturgeon	marble d sculpin	three spine stickleback
03/12/00	11	14,243	0																				
03/19/00	12	12,843	0																				
03/26/00	13	11,071	0																				
04/02/00	14	12,529	1	1,357	0	0	271	0	136	0	0	0	271	0	0	0	0	0	0	0	0	0	0
04/09/00	15	13,257	6	22,565	181	118	1,910	0	2,248	181	0	0	136	170	0	0	0	0	0	0	0	0	0
04/16/00	16	12,543	7	45,927	0	0	1,256	0	3,246	239	0	0	410	117	0	0	0	0	0	0	0	258	0
04/23/00	17	11,373	7	5,669	106	106	1,120	0	1,735	96	0	0	0	131	0	96	0	0	0	0	0	0	0
04/30/00	18	10,306	7	6,534	0	0	1,612	0	2,185	0	0	0	197	299	197	0	0	0	0	0	0	98	0
05/07/00	19	9,934	7	4,773	0	1,266	1,168	0	617	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05/14/00	20	8,869	7	372	0	462	797	0	443	0	0	0	0	232	0	0	0	0	0	0	0	0	0
05/21/00	21	10,647	7	6,895	88	180	807	0	181	0	0	0	0	88	0	0	0	0	0	0	0	0	0
05/28/00	22	7,804	7	2,200	69	280	511	0	0	88	88	0	0	714	0	0	0	0	0	0	0	86	0
06/04/00	23	6,519	7	391	196	258	394	134	325	0	0	0	0	63	0	0	0	0	0	0	0	0	0
06/11/00	24	5,807	7	112	0	0	109	0	222	0	112	0	0	0	0	0	0	0	0	0	0	0	0
06/18/00	25	4,060	7	0	81	0	638	239	204	42	0	0	0	85	0	0	0	0	0	0	0	0	0
06/25/00	26	3,053	6	90	195	0	788	63	331	0	0	0	29	36	0	0	0	0	0	0	0	0	0
07/02/00	27	2,601	6	388	86	0	207	0	527	0	0	0	30	0	27	0	0	0	0	0	0	0	0
07/09/00	28	2,337	3	91	15	0	42	0	67	38	0	0	15	0	14	0	0	0	0	0	0	0	0
07/16/00	29	2,049	1	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07/23/00	30	1,857	0																				
07/30/00	31	1,707	0																				
08/06/00	32	1,623	0																				
08/13/00	33	1,553	0																				
08/20/00	34	1,539	0																				
08/27/00	35	1,516	0																				
09/03/00	36	1,639	0																				
09/10/00	37	1,770	0																				
09/17/00	38	1,730	0																				
09/24/00	39	1,740	0																				
10/01/00	40		0																				
10/08/00	41		0																				
10/15/00	42		0																				
10/22/00	43		0																				
10/29/00	44		0																				
11/05/00	45		0																				
11/12/00	46		0																				
11/19/00	47		0																				
11/26/00	48		0																				
12/03/00	49		0																				
12/10/00	50		0																				
12/17/00	51		0																				
12/24/00	52		0																				
Spring total			93	97,385	1,016	2,669	11,632	436	12,466	685	88	0	1,088	1,872	300	96	0	0	0	0	0	442	0
Fall total			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals			0	97,385	1,016	2,669	11,632	436	12,466	685	88	0	1,088	1,872	300	96	0	0	0	0	0	442	0

Appendix 45. WCT miscellaneous species, index totals, 1997.

Week Starting	Julian Week	Mean River Flow (cfs)	Trap Days	Lamprey-Amnocoete	Lamprey-Eyed Juvenile	Lamprey-Adult	speckled dace	green sturgeon	Idanathi smelts/cle sucker	prickly sculpin	American shad	cryptic	fathead rainbow	golden shiner	cosctrange sculpin	bulthead	brown trout	largemouth bass	chum salmon	sockeye salmon	green smelt	marbled sculpin	three spine stickleback
03/12/97	11	5,083	0																				
03/19/97	12	4,596	0																				
03/26/97	13	3,464	7	1,641	0	0	47	0	110	143	0	0	0	0	372	0	0	0	0	0	0	0	0
04/02/97	14	2,650	7	1,303	0	28	0	0	31	0	0	0	0	0	229	0	0	0	0	0	0	0	0
04/09/97	15	2,247	7	783	0	0	0	0	76	0	0	0	0	0	269	0	0	0	0	0	0	0	0
04/16/97	16	3,686	2	51	0	0	0	0	0	0	0	0	0	0	130	0	0	0	0	0	0	0	0
04/23/97	17	4,891	1	589	0	0	177	0	118	0	0	0	0	0	177	0	0	0	0	0	0	0	0
04/30/97	18	3,727	6	1,065	70	135	267	0	510	0	0	0	0	0	178	0	0	0	0	0	0	0	0
05/07/97	19	4,141	7	2,917	464	973	206	0	397	0	0	0	52	259	67	67	0	0	0	0	0	0	0
05/14/97	20	4,133	7	553	204	977	605	0	546	286	0	0	0	110	110	110	0	0	0	0	0	0	0
05/21/97	21	3,557	7	211	0	440	606	0	603	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05/28/97	22	2,996	7	0	0	247	322	0	273	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06/04/97	23	3,027	7	489	0	126	179	0	269	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06/11/97	24	2,161	7	127	0	104	471	0	956	101	0	0	0	0	0	0	0	0	0	0	0	0	0
06/18/97	25	1,620	7	71	0	73	364	33	1,431	0	0	0	16	0	0	0	0	0	0	0	0	0	0
06/25/97	26	1,480	7	295	277	0	278	82	1,526	0	0	0	0	0	0	0	0	0	0	0	0	0	20
07/02/97	27	1,421	7	569	28	0	354	91	5,597	14	0	0	0	0	0	0	0	0	0	0	0	0	45
07/09/97	28	1,249	5	268	45	0	535	315	18,507	49	0	0	0	0	0	0	0	0	0	0	0	0	53
07/16/97	29	1,139	7	37	13	0	491	125	13,117	35	0	0	0	0	0	0	0	0	0	0	0	0	24
07/23/97	30	1,012	7	0	56	0	407	79	18,914	70	0	0	0	0	0	0	0	0	0	0	0	0	74
07/30/97	31	990	7	46	23	0	262	23	9,081	80	0	0	0	0	0	0	0	0	0	0	0	0	23
08/06/97	32	853	7	0	20	0	392	0	5,131	60	10	0	0	0	0	0	0	0	0	0	0	0	81
08/13/97	33	788	6	34	0	0	920	0	2,348	109	0	0	0	0	0	0	0	0	0	0	0	0	82
08/20/97	34	811	6	0	10	0	907	0	1,184	103	10	0	0	0	0	0	0	0	0	0	0	0	103
08/27/97	35	863	6	193	28	0	1,195	0	1,425	52	14	0	0	10	0	0	0	0	0	0	0	0	88
09/03/97	36	769	7	421	26	0	1,080	0	710	35	0	0	0	0	0	0	0	0	30	0	0	0	89
09/10/97	37	771	6	0	0	0	452	0	195	17	0	0	16	16	0	0	0	0	19	0	0	0	50
09/17/97	38	863	7	0	0	0	305	0	115	20	128	0	0	0	0	0	0	0	21	0	0	0	96
09/24/97	39	734	7	0	0	0	263	0	78	0	79	0	0	0	0	0	0	0	9	0	0	0	123
10/01/97	40	890	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/08/97	41	1,244	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/15/97	42	840	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/22/97	43	688	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/29/97	44	1,167	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/05/97	45	1,010	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/12/97	46	1,757	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/19/97	47	3,303	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/26/97	48	4,240	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/03/97	49	3,887	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/10/97	50	3,886	0																				
12/17/97	51	5,577	0																				
12/24/97	52	2,850	0																				
Spring total			171	11,662	1,262	3,103	11,084	748	83,248	1,175	242	0	0	84	1,749	177	177	0	0	78	0	0	951
Fall total			60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals			231	11,662	1,262	3,103	11,084	748	83,248	1,175	242	0	0	84	1,749	177	177	0	0	78	0	0	951

Appendix 46. WCT miscellaneous species, index totals, 1998.

Week Starting	Julian Week	Mean River Flow (cfs)	Trap Days	Lamprey-Ammonoete	Lamprey-Eyed Juvenile	Lamprey-Adult	speckled dace	green sturgeon	Idanmuth-smaltside sucker	prickly sculpin	American shad	cryptic	fathead rainbow	golden shiner	coastrange sculpin	bulthead	brown trout	largemouth bass	chum salmon	sockeye salmon	green smelt	marbled sculpin	three-spine stickleback
03/12/98	11	19,814	0																				
03/19/98	12	48,414	0																				
03/26/98	13	29,871	0																				
04/02/98	14	21,429	0																				
04/09/98	15	17,657	0																				
04/16/98	16	14,986	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04/23/98	17	16,271	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04/30/98	18	20,429	7	90,317	0	237	7,175	0	1,422	356	0	0	237	0	0	0	0	0	0	0	0	0	0
05/07/98	19	20,900	7	51,289	0	0	5,797	0	1,114	393	0	0	1,232	236	522	0	0	0	0	0	0	0	0
05/14/98	20	16,829	7	35,983	0	982	1,886	0	159	159	0	0	619	165	0	0	0	0	0	0	0	0	0
05/21/98	21	16,686	7	23,671	147	902	147	0	669	284	0	0	596	0	0	0	0	0	0	0	0	0	0
05/28/98	22	18,314	7	14,833	148	1,750	454	0	328	142	0	0	580	0	170	0	0	0	0	0	123	0	0
06/04/98	23	18,971	7	27,291	202	410	414	0	1,138	0	0	0	1,751	0	0	175	0	0	0	0	0	0	0
06/11/98	24	16,614	7	10,836	160	460	438	0	454	0	0	0	1,424	0	317	0	0	0	0	158	0	0	0
06/18/98	25	12,086	7	8,189	0	931	242	0	734	125	0	0	317	0	0	0	0	0	0	0	0	0	0
06/25/98	26	9,083	7	4,968	0	414	644	0	884	0	0	0	398	83	0	0	0	0	0	0	73	0	0
07/02/98	27	7,323	7	367	63	209	185	0	326	120	0	0	0	0	0	0	0	0	0	0	0	0	0
07/09/98	28	5,751	7	95	0	0	418	0	200	96	0	0	90	0	0	0	0	0	0	0	0	0	0
07/16/98	29	4,556	6	0	0	0	681	37	623	110	0	0	0	0	0	0	0	0	0	0	37	0	0
07/23/98	30	4,113	5	39	39	0	494	216	1,569	35	0	0	0	0	0	0	0	0	0	0	0	0	0
07/30/98	31	3,224	5	0	0	0	245	0	6,135	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08/06/98	32	2,734	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08/13/98	33	2,429	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08/20/98	34	2,264	0																				
08/27/98	35	2,127	0																				
09/03/98	36	2,327	0																				
09/10/98	37	2,387	0																				
09/17/98	38	2,357	0																				
09/24/98	39	2,404	0																				
10/01/98	40	2,430	0																				
10/08/98	41	2,636	0																				
10/15/98	42	2,583	0																				
10/22/98	43	2,811	0																				
10/29/98	44	2,851	0																				
11/05/98	45	3,626	0																				
11/12/98	46	4,254	0																				
11/19/98	47	23,661	0																				
11/26/98	48	21,643	0																				
12/03/98	49	19,571	0																				
12/10/98	50	12,357	0																				
12/17/98	51	10,451	0																				
12/24/98	52	9,001	0																				
Spring total			96	267,878	759	6,295	19,221	252	15,754	1,820	0	0	7,244	484	1,009	175	0	0	0	158	233	0	
Fall total			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals			96	267,878	759	6,295	19,221	252	15,754	1,820	0	0	7,244	484	1,009	175	0	0	0	158	233	0	

Appendix 47. WCT miscellaneous species, index totals, 1999.

Week Starting	Julian Week	Mean River Flow (cfs)	Trap Days	Lamprey-Amocete	Lamprey-Eyed Juvenile	Lamprey-Adult	speckled dace	green sturgeon	khramidi smeltscale sucker	prickly sculpin	American shad	crayfish	fathead minnow	golden shiner	cosctrange sculpin	bullhead	brown trout	large-mouth bass	chum salmon	sockeye salmon	green sturgeon	marbled sculpin	three-spine stickleback
03/12/99	11	9,641	1	96	0	0	96	0	96	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03/19/99	12	11,571	6	949	0	0	322	0	692	161	0	0	0	0	286	0	137	0	0	0	0	0	0
03/26/99	13	11,606	5	2,922	0	0	589	0	415	357	0	0	0	0	277	0	0	0	0	0	0	0	0
04/02/99	14	8,093	7	369	0	0	199	0	76	96	0	0	0	0	270	0	0	0	0	0	0	0	0
04/09/99	15	8,729	7	0	0	0	0	0	161	0	0	0	0	0	413	0	0	0	0	0	0	0	0
04/16/99	16	11,800	7	26,137	0	0	773	0	7,046	834	0	0	0	0	361	0	0	0	0	0	112	252	0
04/23/99	17	9,031	7	195	0	0	190	0	752	189	0	0	0	0	382	0	90	0	0	0	0	0	0
04/30/99	18	7,510	7	65	0	72	67	0	1,633	72	0	0	0	0	215	0	68	0	0	0	0	0	0
05/07/99	19	7,009	7	136	75	0	0	0	1,582	62	0	0	0	0	137	0	0	0	0	0	0	0	0
05/14/99	20	6,824	7	376	379	257	137	0	1,991	189	0	0	0	0	62	0	0	0	0	0	0	0	0
05/21/99	21	7,393	7	342	0	855	127	0	5,427	0	0	0	0	0	63	0	0	0	0	0	0	0	0
05/28/99	22	5,876	7	587	0	795	648	0	1,468	0	0	0	0	0	73	0	0	0	0	0	0	0	0
06/04/99	23	4,230	7	457	0	610	259	0	1,078	0	0	0	0	0	46	0	0	0	0	51	0	0	0
06/11/99	24	3,893	7	170	0	550	725	0	3,128	0	0	0	0	0	42	0	0	0	0	0	0	0	0
06/18/99	25	3,261	7	222	36	226	691	0	3,813	0	0	0	0	0	0	0	0	109	0	0	0	0	0
06/25/99	26	2,641	7	35	0	0	849	0	2,781	34	0	0	0	0	0	0	0	0	103	0	0	0	0
07/02/99	27	2,144	7	58	0	0	306	0	519	0	0	0	0	0	33	0	0	0	0	315	0	25	33
07/09/99	28	1,824	7	34	24	49	331	0	546	0	0	0	0	0	0	0	0	0	344	0	24	0	0
07/16/99	29	1,437	6	21	0	0	372	0	530	0	0	0	0	0	0	0	0	0	292	0	0	0	192
07/23/99	30	1,234	7	0	18	0	782	0	784	0	0	0	0	0	36	0	0	0	92	0	0	0	74
07/30/99	31	1,090	6	0	0	0	554	0	1,371	0	0	0	0	0	0	0	0	0	31	0	66	15	0
08/06/99	32	1,094	7	0	65	0	784	0	1,892	0	0	0	0	0	0	0	0	0	64	0	0	0	140
08/13/99	33	973	7	0	42	0	543	0	1,396	0	0	0	0	0	0	0	0	0	213	0	25	151	0
08/20/99	34	884	6	0	12	0	617	0	642	0	0	0	0	0	0	0	0	0	402	0	0	0	112
08/27/99	35	848	7	0	0	0	298	0	102	0	0	0	11	0	0	0	0	0	135	0	0	0	46
09/03/99	36	798	7	0	11	0	282	0	177	0	0	0	0	0	0	0	0	0	380	0	11	72	0
09/10/99	37	1,002	7	0	64	0	352	0	137	0	0	0	11	0	0	0	0	0	271	0	0	0	31
09/17/99	38	732	7	0	170	0	194	0	81	0	0	0	9	9	0	0	0	0	362	0	0	0	30
09/24/99	39	711	7	0	27	0	82	0	36	0	0	0	37	0	0	0	0	0	72	0	0	0	9
10/01/99	40		0																				
10/08/99	41		0																				
10/15/99	42		0																				
10/22/99	43		0																				
10/29/99	44		0																				
11/05/99	45		0																				
11/12/99	46		0																				
11/19/99	47		0																				
11/26/99	48		0																				
12/03/99	49		0																				
12/10/99	50		0																				
12/17/99	51		0																				
12/24/99	52		0																				
Spring total			191	33,170	923	3,415	11,168	0	40,352	1,995	0	0	0	68	2,705	0	295	0	109	3,128	112	403	903
Fall total			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals			191	33,170	923	3,415	11,168	0	40,352	1,995	0	0	0	68	2,705	0	295	0	109	3,128	112	403	903

Appendix 48. WCT miscellaneous species, index totals, 2000.

Week Starting	Julian Week	Mean River Flow (cfs)	Trap Days	Lamprey-Ammocoete	Lamprey-Eyed Jawhale	Lamprey-Adult	speckled dace	green sturgeon	Klamath smallmouth sucker	prickly sculpin	American shad	crayfish	fathead minnow	golden shiner	coastrange sculpin	bullhead	brown trout	largemouth bass	chum salmon	sockeye salmon	green sturgeon	marbled sculpin	three spine stickleback
03/12/00	11	11,947	0																				
03/19/00	12	8,026	0																				
03/26/00	13	5,590	0																				
04/02/00	14	5,297	0																				
04/09/00	15	4,946	0																				
04/16/00	16	7,359	0																				
04/23/00	17	4,763	0																				
04/30/00	18	3,934	0																				
05/07/00	19	4,160	0																				
05/14/00	20	5,136	5	58	0	469	56	0	170	0	0	0	0	112	0	0	0	0	0	0	0	0	116
05/21/00	21	4,787	7	113	0	320	376	0	1,545	0	0	0	0	117	0	0	0	0	0	0	0	0	56
05/28/00	22	3,454	7	50	0	248	375	0	435	0	0	0	0	49	0	0	0	0	0	0	0	0	46
06/04/00	23	3,146	7	0	0	111	301	0	341	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06/11/00	24	2,880	7	0	0	0	629	0	490	0	0	0	34	0	0	0	0	0	0	0	0	0	0
06/18/00	25	2,336	7	0	0	0	326	0	154	0	0	0	30	30	0	0	0	0	0	0	0	0	29
06/25/00	26	2,053	7	0	0	0	331	0	333	0	0	0	0	30	0	27	0	0	29	0	0	0	0
07/02/00	27	1,711	7	0	0	0	582	0	368	0	0	0	0	0	23	0	0	0	26	0	24	26	
07/09/00	28	1,440	7	0	0	0	414	0	1,168	0	0	0	20	20	0	0	0	0	20	0	0	324	
07/16/00	29	1,216	7	0	0	0	781	0	228	0	0	0	16	0	0	0	0	0	0	0	16	105	
07/23/00	30	987	7	0	0	0	489	0	1,302	44	0	0	15	14	0	14	0	0	0	0	29	238	
07/30/00	31	904	7	0	0	0	419	0	957	0	0	0	13	0	0	0	0	0	13	0	26	325	
08/06/00	32	824	7	0	0	0	700	0	814	0	0	0	0	12	0	0	0	0	37	0	12	157	
08/13/00	33	785	7	0	0	0	457	0	312	12	0	0	0	0	0	0	0	0	13	0	13	36	
08/20/00	34	764	6	0	0	0	549	0	358	0	0	0	0	0	0	12	0	0	0	0	19	233	
08/27/00	35	735	7	0	0	0	577	0	384	0	12	0	0	0	0	11	0	0	11	0	0	89	
09/03/00	36	807	7	0	0	0	452	0	105	24	128	0	0	0	0	46	0	0	34	0	23	35	
09/10/00	37	751	7	0	0	0	170	0	34	11	34	0	11	0	0	0	0	0	0	0	0	114	
09/17/00	38	728	7	0	0	0	266	0	56	12	44	0	0	11	0	0	0	0	0	0	0	701	
09/24/00	39	735	7	0	23	0	133	0	89	0	186	0	0	11	0	23	0	0	12	0	11	66	
10/01/00	40	733	6	0	0	0	165	0	33	0	407	0	0	0	0	0	0	0	0	0	22	66	
10/08/00	41	786	0																				
10/15/00	42	676	0																				
10/22/00	43	696	0																				
10/29/00	44	1,257	0																				
11/05/00	45		0																				
11/12/00	46		0																				
11/19/00	47		0																				
11/26/00	48		0																				
12/03/00	49		0																				
12/10/00	50		0																				
12/17/00	51		0																				
12/24/00	52		0																				
Spring total			137	222	23	1,147	8,383	0	9,642	102	404	0	0	151	394	23	133	0	0	196	0	174	2,697
Fall total			6	0	0	0	165	0	33	0	407	0	0	0	0	0	0	0	0	0	22	66	
Totals			143	222	23	1,147	8,548	0	9,675	102	811	0	0	151	394	23	133	0	0	196	0	195	2,763