2010 Fall Chinook Salmon Spawning Ground Survey

Salmon-Scott Rivers Ranger District
Klamath National Forest

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March 23, 2011

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ABSTRACT

Cooperative spawning ground surveys between the U.S. Forest Service, California Department of Fish and Game, Yurok Tribe, Karuk Tribe, Quartz Valley Indian Reservation, Salmon River Restoration Council, and local schools and volunteers have occurred on the Klamath National Forest since 1992. In addition to providing information to land managers in regard to where these fish spawn, these surveys are used to estimate the total in-river spawner escapement of fall Chinook salmon (*Oncorhynchus tshawytscha*) by the Klamath Fisheries Management Council and the Pacific Fisheries Management Council for determination of harvest allocations for the subsequent year.

The Salmon River and Scott River are surveyed on an annual basis using both carcass mark-recapture and redd count techniques. Mark-recapture of carcasses (and in some cases, redd counts) are used for population estimations. Redd counts are utilized on the rivers' smaller tributaries, which may not be regularly visited during the spawning season. The 2010 cooperative survey began October 11th and ended on December 2nd. There was a storm and high water event during October that forced the cancellation of surveys on both systems; and due to discharges subsequently remaining too high for safe navigation throughout the remaining of the season, Salmon River surveys upon the mainstem and forks were irregular. However, the high water did provide an opportunity to shift surveys to include multiple tributary systems.

Approximately 2,834 fish returned to the Salmon River and 2,507 fish returned to the Scott River. Estimates are conservative due to cancellation of surveys due to weather, elevated river flows, and limited survey access in some reaches on the Scott River. Run estimates, made by California Department of Fish and Game, are compiled through a combination of redd count and mark-recapture carcass surveys. The Scott River also employs weir videography. Using data collected since initiation of organized surveys in 1978, year 2010 returns appear to be close to average for the Salmon River, and below average [7th lowest] for the Scott River.

INTRODUCTION

Since 1978, the California Department of Fish and Game (CDFG) has determined fall Chinook salmon spawner escapement in the Klamath River watershed using a combination of weirs, mark-recapture surveys, redd surveys, and hatchery return information. This data is used in the determination of stock size projections for the management of Klamath River fall Chinook salmon stocks by the Klamath Fisheries Management Council and the Pacific Fisheries Management Council.

The CDFG, Six Rivers National Forest (SRNF), and Klamath National Forest (KNF) (the Forests are hereafter collectively referred to as USFS) have conducted Chinook spawner surveys for many years. Since missions differ among agencies, the objectives for these surveys were always slightly different. The USFS traditionally counted redds and live fish in order to estimate number and distribution of spawning Chinook salmon. Beginning in 1992, the CDFG and USFS joined together to accomplish spawner escapement surveys, partially due to shrinking budgets in both State and Federal programs, but also the desire to increase cooperative operations between agencies. These surveys now include collaboration with the Karuk Tribal Government, Yurok Tribal Government, Quartz Valley Tribal Government, Salmon River Restoration Council, Siskiyou Resource Conservation District, and local volunteers and public schools. The cooperative effort has improved the accuracy of CDFG estimates by enabling surveys that are more extensive and frequent in nature.

In fall 2010, a combination of redd and mark-recapture counts were completed in the Salmon River and Scott River drainages, including mainstems and tributaries, in order to determine fall Chinook spawner escapement and distribution (**Table 1**). When discharge conditions were unsafe on the Salmon River, KNF crews were diverted to survey tributaries within the watershed, performed additional reach surveys upon the Scott River, else assisted survey efforts for the Klamath River out of Happy Camp. This report summarizes redd count surveys conducted from October 11th through December 2nd on the KNF portion of the Salmon and Scott Rivers (i.e., within the Salmon-Scott Rivers Ranger District). The exception of this is Wooley Creek and the Salmon River below Nordheimer Creek, which were surveyed by SRNF personnel. Data from these locations will be covered in the KNF-wide compilation of spawning survey activities (which will also include the mainstem Klamath River and its tributaries).

A separate report is prepared by CDFG biologists for the escapement estimates to be used by the fisheries management councils. The most recent draft of the 2010 MegaTable has been included in **Appendix A** (CDFG 2011).

Table 1. The 2010 survey schedule for KNF crews for the Salmon River and Scott River.

Survey Week	Scott River (Monday)	Salmon River (Tuesday)		Scott River (Thursday)	Salmon River (Friday)
1	Oct-11 (ns - holiday)	Oct-12	No surveys on Wednesday	Oct-14	Oct-15
2	Oct-18	Oct-19		Oct-21	Oct-22
3	Oct-25 (ns - high water)	Nov-26 (ns - high water)		Oct-28	Oct-29 (extra Scott R reaches)
4	Nov-01	Nov-02 (Scott/Klamath tribs)		Nov-04	Nov-05 (Salmon tribs)
5	Nov-08 (ns - high water)	Nov-09 (Klamath tribs)		Nov-11	Nov-12 (Scott/Salmon tribs)
6	Nov-15	Nov-16 (Salmon tribs)		Nov-18	Nov-19 (Scott tribs)
7	Nov-22	Nov-23 (Klamath tribs)		Nov-25 (ns - holiday)	Nov-26 (ns - holiday)
8	Nov-29	Nov-30 (extra Scott R reaches)			

*ns - no survey

METHODS

In 2010, redd surveys were conducted on the Salmon River and Scott River, as well as various tributaries. **Table 2** summarizes each reach for 2010, including reach number and length, number of times surveyed, and maximum number of redds observed in a single visit.

- Salmon River was surveyed twice weekly from mile marker 12 on the North Fork (NF) to the confluence with the South Fork (SF); Matthews Creek campground on the SF to the confluence with the NF; and the mainstem Salmon River from the confluences to Nordheimer Creek. The mainstem below Nordheimer Creek and Wooley Creek were surveyed on a differing schedule by SRNF personnel, and is detailed in a separate report.
    - Tributaries surveyed included Black Bear Creek, Indian Creek, Knownothing Creek, Little North Fork Salmon River, Matthews Creek, Methodist Creek, Nordheimer Creek, North Russian Creek, Plummer Creek, and St. Claire Creek.
- Scott River was surveyed from about one mile upstream Fay Lane in the upper Scott Valley to the confluence of the Klamath River. Lack of access across or through private property excluded some segments or portions within reaches from survey.
    - Tributaries surveyed included Canyon Creek, Kelsey Creek, Tompkins Creek, and Wooliver Creek.
- High discharge on the Salmon River throughout much of the survey season made for dangerous conditions. Because safety concerns cancelled multiple Salmon River surveys, KNF crew assigned to survey the Salmon River were made available to assist the Happy Camp/Oak Knoll District to visit Klamath River mainstem tributaries. Systems surveyed included Grider Creek, Horse Creek, and Indian Creek.

- In addition to the above locations, Humbug Creek and upper (WF) Humbug Creek were surveyed. This system is not regularly surveyed; and while located upon the Oak Knoll District, it is administered by the Salmon-Scott Rivers District.

The USFS and CDFG held two training sessions for agency employees, Tribal employees, and volunteers. On October 6th, the red survey/carcass mark-recapture training was held at Indian Scotty Group campground on the Scott River. Similar training was held at Oak Bottom River Access on the mainstem Salmon River on October 7th. Topics discussed at the trainings included redd and fish identification; carcass marking, including the explanation of Petersen mark-recapture estimates; scale, tissue, and otolith sampling; data collection; salmonid life cycles; and survey safety procedures. An expanded swift-water training and safety session was held on October 8th at Indian Scotty campground.

Table 2. Fall Chinook spawning survey reach descriptions for Salmon River and Scott Rivers in 2010. Salmon River reaches surveyed by Six Rivers National Forest not included.

Stream Name	Reach Name	Reach Number	Miles	# of Times Surveyed	Maximum Number of Redds as of…
Salmon River					**12/1/2010**
Mainstem	Otter Bar to Nordheimer Ck	4A	1.6	5	17
	Forks to Otter Bar	4B	2.4	6	58
North Fork	Mile 2 to Forks	9A	2	5	54
	Mile 4 to Mile 2	9B	2	5	19
	Mile 6 to Mile 4	10A	2	4	48
	Mile 8 to Mile 6	10B	2	3	25
	Mile 10 to Mile 8	11A	2	2	19
	Mile 12 to Mile 10	11B	2	1	Not mapped
South Fork	Henry Bell to Forks	5A	3	4	36
	O'Farrell Gulch to Henry Bell	5B	2	5	17
	Indian Ck to O'Farrell Gulch	6A	3	6	15
	Matthews Ck to Indian Ck	6B	2.2	4	9
Tributaries	Black Bear Creek		1.7	1	0
	Indian Creek		1.5	1	0
	Knownothing Creek		1	1	0
	Little NF Salmon River		3	1	0
	Methodist Creek		1.3	1	8
	Nordheimer Creek		2.5	2	29
	North Russian Creek		4	1	0
	Matthews Creek		1.5	1	0
	Plummer Creek		1.4	1	0
	St. Claire Creek		1	1	0

Stream Name	Reach Name	Reach Number	Miles	# of Times Surveyed	Maximum Number of Redds as of…
Scott River					**12/1/2010**
	Midpoint to Confluence	1	2.5	10	26
	Pat Ford to Midpoint	2	2.5	9	25
	George Allen to Alreds	3	1.9	8	12
	Townsend Gulch to George Allen	4	2.5	9	22
	Bridge Flat to Townsend Gulch	5	4	10	20
	CDFG Weir to Bridge Flat	6	3.8	9	13
	USGS Gauge to CDFG Weir	7	3.5	9	14
	Sniktaw Creek to USGS Gauge [start ~0.2 mile upcanyon from Sniktaw Ck]	8	2.9	5	72
	Dunlap to Duvall	9	3	0	Not surveyed
	Hwy 3 to Dunlap	10	3	0	Not surveyed
	Eller Lane to Hwy 3	11	7	0	Not surveyed
	Sweezy to Eller Lane	12	2.5	9	7
	Horn Lane to Sweezy Lane	13	3	10	41
	Young's Dam to Horn Lane	14	2	9	39
	Fay Lane to Young's Dam	15	3.5	7	34
	Top of Barnes to Fay Lane	16	1	1	4
Tributaries	Canyon Creek		1.2	2	0
	Kelsey Creek		0.5	3	1
	Tompkins Creek		2.6	2	0
	Wooliver Creek		1.2	1	0
Klamath River Tributaries					**11/2/2010**
	Humbug Creek (mainstem) [FS only - mouth to SF Humbug confluence]		1.7	1	0
	Humbug Creek (upper) [SF Humbug confluence to Sweetwater Ck]		1.7	1	0

On the Salmon and Scott Rivers, crews conducted two concurrent surveys on survey reaches, using redd counts and carcass counts (CDFG 2010). A typical crew consisted of two people. Each crew walked two to five miles of river each survey day unless health or safety concerns limited ability to survey. The number of times a reach was surveyed was directly related to the number of people available on the survey dates. When a lack of available surveyors was a concern, the reaches to be surveyed were determined by the level of activity observed on the prior survey date and personnel knowledge of the system. Access to private land was also a concern on the Scott River. An attempt was made to have people survey differing reaches throughout the season so as to reduce estimator bias.

On both rivers, each redd was counted and then tallied at the end of the reach. Once a week, new redds on the Salmon River were flagged; and redds were mapped at least once a week during the season for both drainages, marking the location on a map. The original field maps of redd locations are available at the Salmon-Scott Rivers District Office in Fort Jones, CA.

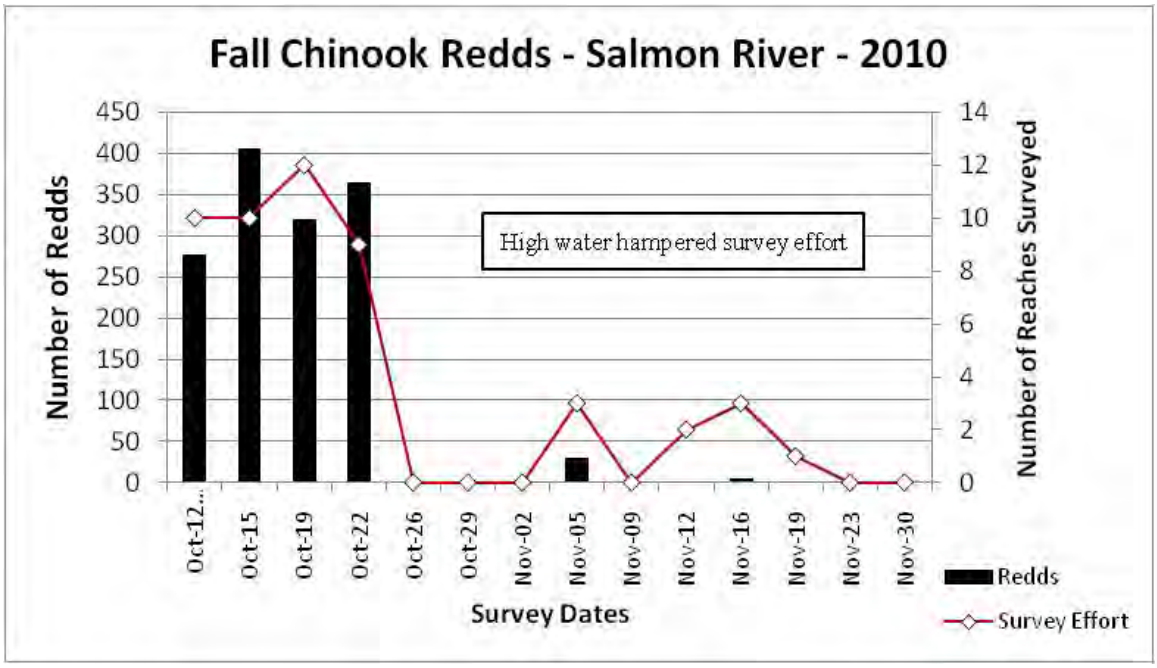
RESULTS

Salmon River

Survey efforts on the Salmon River were hampered due early season storms beginning late-October increasing discharge above safe flows (**Appendix B**). A few surveys did occur in November, but they were limited in extent due to continuing safety issues and availability of specialized equipment (e.g., drysuits and rafts) and personnel experienced with high water conditions.

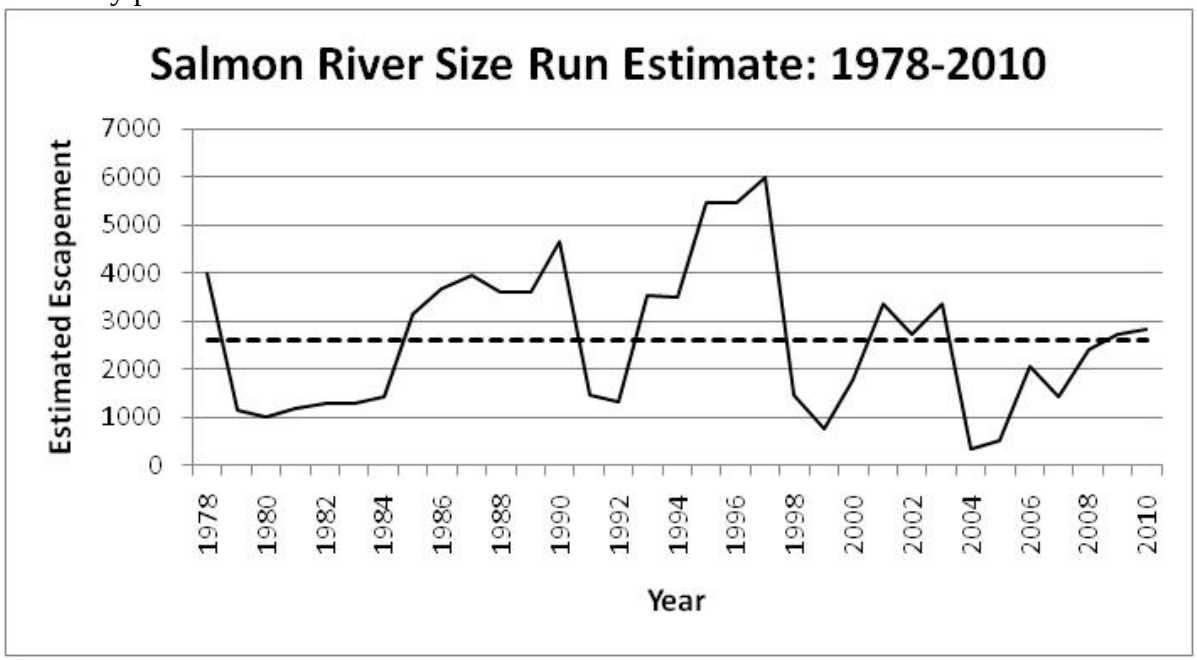
The Salmon River probably reached peak spawning (or most redds observed) in mid- to late-October, although this speculation cannot be confirmed due to lack of data past October 22nd (**Figure 1**). However, this time period is consistent with peaks recorded in past surveys. Overall survey effort was affected by amount of surveyors available, weather, and flows. See **Appendix C** for a table of redd numbers organized by reach and date.

Figure 1. Fall Chinook redds observed and survey effort on the Salmon River in 2010. Surveys occurred (up to 12 reaches total) on NF Salmon River from Mile 12 to Forks of Salmon; on SF Salmon River from Matthews Creek to Forks of Salmon; and on the mainstem Salmon River from Forks of Salmon to Nordheimer Creek.



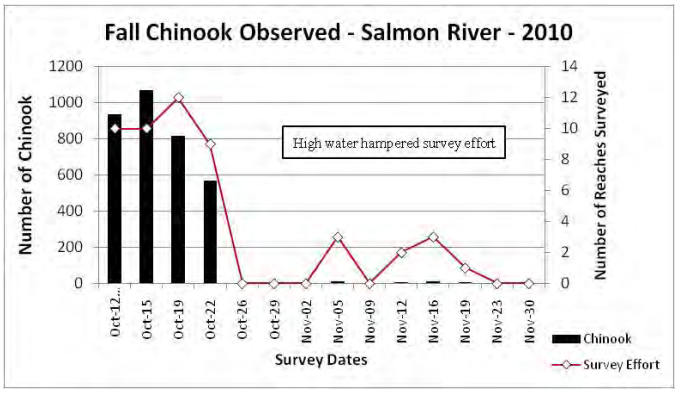
Using redd data, the Salmon River is estimated to have had about 2,834 Chinook salmon return in the fall of 2010 (**Figure 2**; **Appendix A**). Due to adverse survey conditions, escapement projections were built via redd counts from the first two weeks of survey and expanded for the season based on historical cumulative averages. Draft MegaTable results indicate 2010 was just above average, ranking 19th for run size.

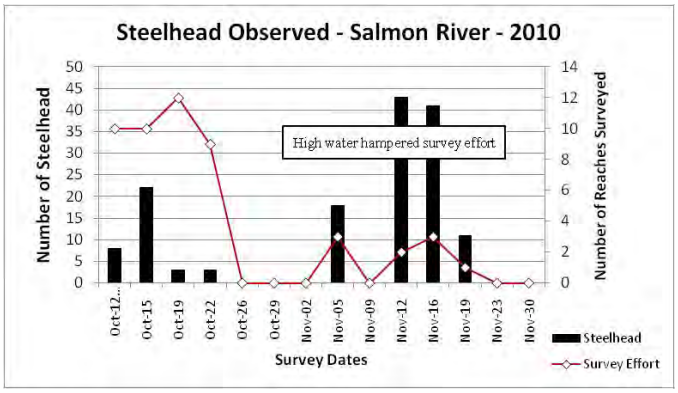
Figure 2. Salmon River run size estimates for 1978 to 2010. Dashed line is average over long-term survey period.



Live Chinook and steelhead were tallied during surveys. As with redds, survey efforts declined following high flows; and fish observation is affected by number of surveyors, weather, and discharge conditions. Peak live Chinook were observed on October 15th, with subsequent numbers declining within the survey area. Although survey effort in November was lower than October, steelhead numbers appear to have increased, perhaps in response to the higher flows. See **Appendix C** for a table of fish numbers organized by species, reach, and date.

Figure 3. Observation of fall Chinook and steelhead during the 2010 Salmon River surveys.





Coho were also incidentally observed during the fall Chinook surveys:

- October 15th
  - Two coho reported in Reach 4B (Otter Bar to Nordheimer Creek)
- October 22nd
  - Three coho reported Reach 6A (Indian Creek to O'Farrell Gulch)

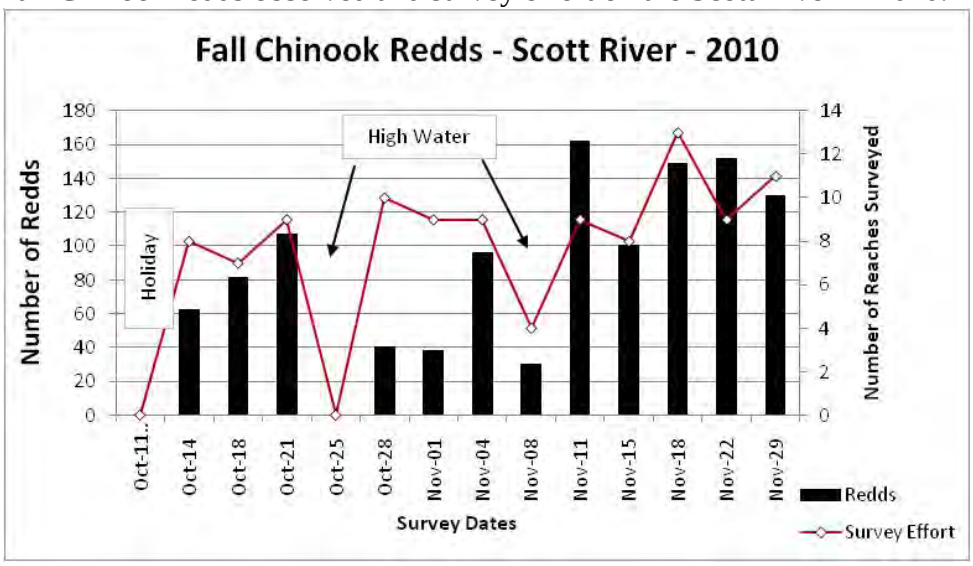
- Two possible coho in Reach 4A (Forks of Salmon to Otter Bar)

Salmon River tributary surveys occurred during November (**Appendix A**). Chinook salmon redds and fish were found on Methodist Creek and Nordheimer Creek. Steelhead were observed on Black Bear Creek and Nordheimer Creek.

Scott River

Based on the available data, the Scott River reached the peak of spawning (or the greatest number of redds at one time) on November 11th (**Figure 4**). This date is similar to that observed in other years. An examination of the data split by reach and date [see **Appendix A**] suggests spawning may have peaked below the USGS gauge several weeks prior to that upstream the gauge. This may have been a result of fish moving to the middle and upper portions of Scott Valley following elevated flow events in October and November. However, as surveys were not begun at Reaches 12 through 16 until late-October, this observation cannot be confirmed. Overall survey effort was affected by the amount of surveyors available, weather, and flows. Similar to the Salmon River, some surveys had to be cancelled or limited on the Scott River for crew safety (**Appendix B**).

Figure 4. Fall Chinook redds observed and survey effort on the Scott River in 2010.



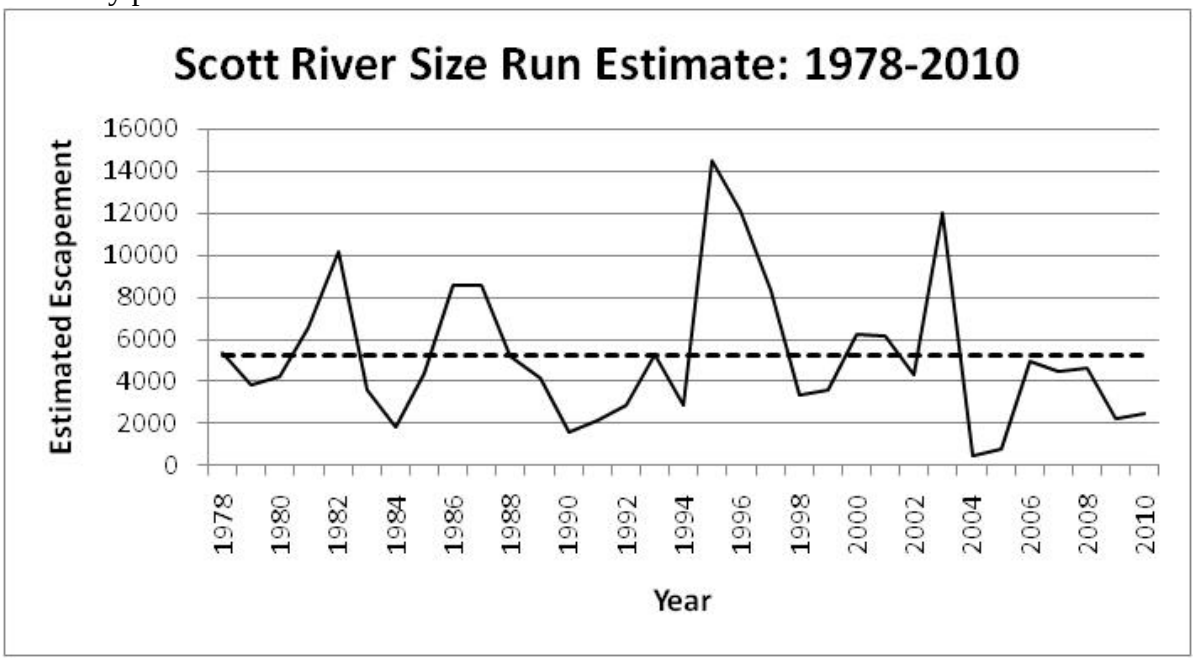
Redds are not flagged during the Scott River surveys. Therefore, because "new" and "old" redds cannot be reliably differentiated, all are counted during each survey date. Theoretically, total redd number for each reach should increase until a maximum is achieved, and then remain thereabouts until the end of the survey period. In reality, weather and water conditions, scouring by high flows, superimposition of redds, surveyor experience, and other factors create conditions whereupon this does not necessarily occur. If maximum number of redds by reach are tallied, regardless of date, a total of 329 redds is calculated (**Table 3**). This number is greater than that observed at any single date via **Figure 4**.

Table 3. Maximum number of redds and date observed by reach for Scott River in 2011.

	Reach 1	Reach 2	Reach 3	Reach 4	Reach 5	Reach 6	Reach 7	Reach 8	Reach 12	Reach 13	Reach 14	Reach 15	Reach 16	Total
Maximum Redds	26	25	12	22	20	13	14	72	7	41	39	34	4	329
	Oct-21	Oct-18	Oct-14	Oct-21	Oct-21	Oct-21	Oct-21	Nov-11	Nov-29	Nov-29	Nov-29	Nov-15	Nov-18	

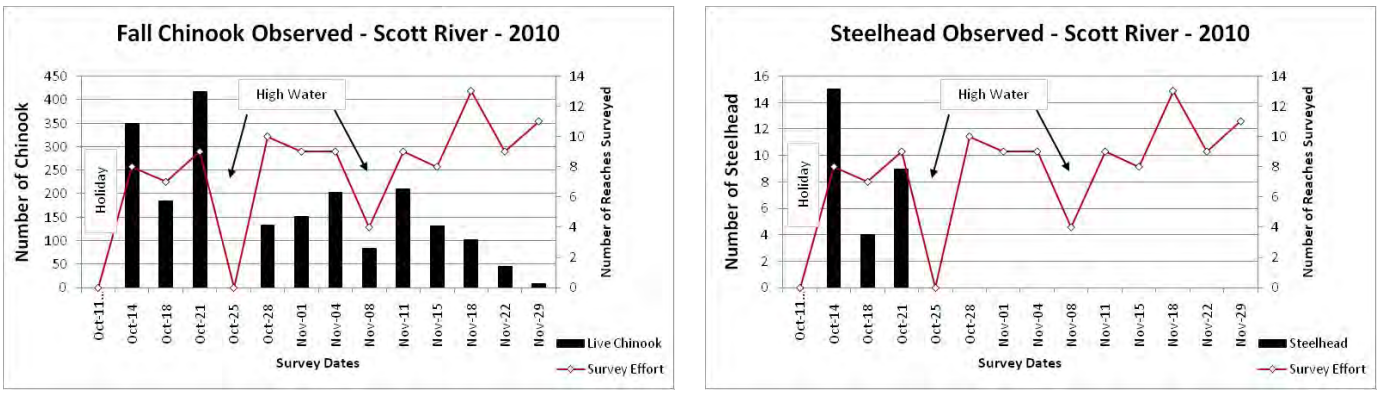
Using redd data and video weir observation, the Scott River is estimated to have had about 2,507 fall Chinook salmon return in 2010 (**Figure 5**; **Appendix A**). Based on draft MegaTable results, 2010 was well below average and ranked as the 7th lowest for run size.

Figure 5. Scott River run size estimates for 1978 to 2010. Dashed line is average over long-term survey period.



Live Chinook and steelhead were tallied during surveys. As with redds, fish observation is affected by number of surveyors, weather, and discharge conditions. Peak live Chinook were observed on October 21th, with fish numbers subsequently declining after the first high flow event, increasing again, and finally tapering off by the end. Similar to the redd count, numbers of live Chinook appear to have increased at reaches higher in the Scott River during the latter half of the survey period. This observation likely reflects upmigrating fish movement, particularly as elevated discharge opened additional spawning habitats. Steelhead were only observed during the first several surveys. See **Appendix C** for a table of fish numbers organized by species, reach, and date.

Figure 6. Observation of fall Chinook and steelhead during the 2010 Scott River surveys.



Coho were also incidentally observed during the fall Chinook surveys:

- November 22nd
  - One female coho carcass retrieved from Reach 14 (Youngs Dam to Horn Lane)
- November 30th
  - One female coho carcase retrieved from Reach 13 (Horn Lane to Sweezy)

Scott River tributary surveys occurred during November (**Appendix A**). A Chinook redd was found on Kelsey Creek.

Other Tributaries

Forest Service personnel from Salmon-Scott Rivers District assisted surveys on Happy Camp-Oak Knoll District. Results from these surveys can be found in the Happy Camp-Oak Knoll report.

The Humbug Creek drainage, while located upon Oak Knoll District, is managed by Salmon-Scott Rivers District. No spawning anadromous fish were found during November surveys of mainstem and upper (West Fork) Humbug Creek. However, the Forest Service managed land was well upstream of where Chinook would have been expected, it was too early for coho to be present, and adult steelhead are generally not found until the spring months.

DISCUSSION

A series of storms starting in the latter half of October had both positive and negative effects on fall Chinook spawning in the Salmon and Scott Rivers drainages. The initial October event caused flows to reach over 4,000 cubic-feet-per-second (cfs) and 700 cfs in the Salmon and Scott Rivers, respectively (**Appendix B**); and these numbers represent average discharge on a specific day, with instantaneous flows higher.

The elevated flows allowed access to spawning areas that had previously been blocked or difficult to get to because of low flow. Chinook in the Scott River had access to valley reaches and associated tributaries, the East Fork, and the South Fork. This upmigration appears to have been observed via the increased numbers of redds and fish present above the USGS gauge, particularly Reaches 12 through 16, as compared to below following the storms. Unfortunately, while it is assumed that salmon accessed tributaries and the forks, distribution and numbers are

unknown due to lack of surveys. A similar situation is assumed to have occurred on the Salmon River where higher flows likely allowed fall Chinook into the upper portions of the NF and SF Salmon River. However, reaches were not surveyed above Matthews Creek on the SF and above Reach 11 on the NF; and tributary surveys above the mainstem forks reaches may have occurred too late or not have been sufficiently extensive to capture fish or redds.

While the high flows undoubtedly allowed greater access to the spawning grounds for fall Chinook, it should also be noted that negative impacts could have occurred via scouring, thusly affecting survival of eggs in redds. Salmon River may have been particularly vulnerable as storm timing occurred right after the apparent peak of spawning and while redds were still under active construction.

The high water affected efforts to flag and map redds. In particular, only two weeks (four surveys) were completed upon the Salmon River, with subsequent surveys upon the mainstem and forks sporadic. Emplaced flags were reported to have been swept away when high water submerged riparian brush and trees; and in both drainages, redds were scoured, making post-high water identification difficult, particularly for surveyors with less experience.

Recommendations

It is recommended that redd flagging occur on the Scott River on Forest Service managed property and upon private land where the owners are agreeable. An accurate redd count is important in estimating fall Chinook salmon returns to the Scott River sub-basin, particularly in regards to fish which spawn downstream of the video weir (at the Reach 6/7 break). Identifying and tracking redds can be difficult, especially following storm events. Also, early-spawned redds can become less distinct as the survey season progresses or where later fish superimpose their own nests.

The redd survey process upon the Salmon River requires clarification. The protocol requires redd flagging and mapping to be completed once a week, and all redds to be tallied with each survey. For 2010, Tuesday was designated to be the flag/map day. However, upon examination of the Tuesday redd forms, it is unclear in most instances if *all* redds were being reported or only *new* redds; and as maps were not always turned in with forms, double checking is difficult to accomplish. One possible remedy is to flag and map one both survey days, thus eliminating confusion in regards to protocol adjustments dependent upon day. Another possibility is to alter the redd forms to include space for “new” and “old” tallies. Prior to crew training for the 2011 fall Chinook survey season, Forest Service and CDFG survey administrators need to discuss how to proceed to ensure accurate data acquisition.

It is suggested that an attempt be made to GPS redds. The purpose would be to more accurately define spawning locations: not all crew members have the same facility in reading and marking paper maps. For Salmon River, GPSing should be done prior to removing flagging. On the Scott River, if a decision is made to continue to not flag redds, GPSing might be done once at the end of October, and again at the end of November. Details will need to be discussed between survey administrators concerning GPS unit availability, who would accomplish the mapping, reach priority, and other issues. Due to cumulative time required to GPS redds within a reach, it is unlikely that the mapping would occur concurrently with an already scheduled survey.

At both training and the staging area prior to daily surveys, the importance of mapping needs to be emphasized. Because there may not be sufficient resources to consistently GPS redds, the use of paper maps in regards to redd distribution, both spatially and temporally, is critical. For a complete record, all maps should be turned in, regardless if redds are observed or not. A negative result still represents an important addition to the final record. Maps also serve as a backup to data provided on the redd survey form should the latter be lost.

For both the Scott and Salmon Rivers, it is recommended that tributary surveys be pre-identified in the event of discharge flows above safe levels. This action may require approaching landowners prior to the survey season, either for access to Forest Service segments or to include private reaches into the overall survey. While maps for tributary surveys for the Salmon River drainage do exist, the switch in 2010 to these systems did not occur until mid-November; and as the spawning peak appeared to have occurred in mid-October, the entry of Chinook into the tributaries may have been missed. By comparison, only a few days on the Scott River mainstem were missed; and on those days, discharges on tributaries were also at unsafe levels.

LITERATURE CITED

California Department of Fish and Game (CDFG). 2011. Klamath River Basin fall Chinook salmon spawner escapement, in-river harvest and run-size estimates – 1979-2010.

California Department of Fish and Game (CDFG). 2010. Klamath Basin cooperative spawning ground survey – 2010 training manual. 45 pp.

Appendix A – California Department Fish and Game "MegaTable"

Klamath River Basin Fall Chinook Salmon Spawner Escapement, In-river Harvest and Run-size Estimates
1978-2010 a/

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SPAWNER ESCAPEMENT

	1978			1979			1980		
Hatchery Spawners	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
Iron Gate Hatchery (IGH)	925	6,945	7,870	257	2,301	2,558	451	2,412	2,863
Trinity River Hatchery (TRH)	1,325	6,034	7,359	964	1,335	2,299	2,256	4,099	6,355
Subtotals	2,250	12,979	15,229	1,221	3,636	4,857	2,707	6,511	9,218
Natural Spawners									
Trinity River basin (above Willow Creek, excluding TRH)	4,712	31,052	35,764	3,936	8,028	11,964	16,837	7,700	24,537
Salmon River basin	1,400	2,600	4,000	150	1,000	1,150	200	800	1,000
Scott River basin	1,909	3,423	5,332	428	3,396	3,824	2,245	2,032	4,277
Shasta River basin	6,707	12,024	18,731	1,040	7,111	8,151	4,334	3,762	8,096
Bogus Creek basin	651	4,928	5,579	494	5,444	5,938	1,749	3,321	5,070
Main Stem Klamath River (excluding IGH)	300	1,700	2,000	466	4,190	4,656	867	2,468	3,335
Misc. Klamath tributaries (above Hoopa and Yurok Reservations)	735	2,765	3,500	147	1,068	1,215	500	1,000	1,500
Hoopa and Yurok Reservation tribs.	-- b/	-- b/	-- b/	100 c/	400 c/	500 c/	250 c/	400 c/	650 c/
Subtotals	16,414	58,492	74,906	6,761	30,637	37,398	26,982	21,483	48,465
Total Spawner Escapement	18,664	71,471	90,135	7,982	34,273	42,255	29,689	27,994	57,683

IN-RIVER HARVEST

	1978			1979			1980		
Angler Harvest	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
Klamath River (below Hwy 101 bridge)	122	854	976	216	484	700	835	727	1,562
Trinity River basin (above Willow Creek)	-- d/	-- d/	-- d/	765	1,157	1,922	2,456	998	3,454
Balance of Klamath system	1,960	840	2,800	1,200	500	1,700	2,600	2,771	5,371
Subtotals	2,082	1,694	3,776	2,181	2,141	4,322	5,891	4,496	10,387
Indian Net Harvest e/									
Klamath River (below Hwy 101 bridge)	--	--	--	--	--	--	495	9,605	10,100
Klamath River (Hwy 101 to Trinity mouth	--	--	--	--	--	--	272	1,528	1,800
Trinity River (Hoopa Reservation)	--	--	--	--	--	--	220	880	1,100
Subtotals	1,800	18,200	20,000	1,350	13,650	15,000	987	12,013	13,000
Total In-river Harvest	3,882	19,894	23,776	3,531	15,791	19,322	6,878	16,509	23,387

IN-RIVER RUN

	1978			1979			1980		
Totals	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
In-river Harvest and Escapement	22,546	91,365	113,911	11,513	50,064	61,577	36,567	44,503	81,070
Angling Mortality (2.04% of harvest) f/	42	35	77	45	44	88	120	92	212
Net Mortality (8.70% of harvest) f/	157	1,583	1,739	117	1,187	1,304	86	1,045	1,130
Total In-river Run	22,745	92,983	115,728	11,675	51,295	62,970	36,773	45,640	82,413

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Klamath River Basin Fall Chinook Salmon Spawner Escapement, In-river Harvest and Run-size Estimates
1978-2010 a/

SPAWNER ESCAPEMENT

	1981			1982			1983		
Hatchery Spawners	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
Iron Gate Hatchery (IGH)	540	2,055	2,595	1,833	8,353	10,186	514	8,371	8,885
Trinity River Hatchery (TRH)	1,004	2,370	3,374	4,235	2,058	6,293	271	5,494	5,765
Subtotals	1,544	4,425	5,969	6,068	10,411	16,479	785	13,865	14,650
Natural Spawners									
Trinity River basin (above Willow Creek, excluding TRH)	5,906	15,340	21,246	8,149	9,274	17,423	853	17,284	18,137
Salmon River basin	450	750	1,200	300	1,000	1,300	75	1,200	1,275
Scott River basin	3,409	3,147	6,556	4,350	5,826	10,176	170	3,398	3,568
Shasta River basin	4,330	7,890	12,220	1,922	6,533	8,455	753	3,119	3,872
Bogus Creek basin	912	2,730	3,642	2,325	4,818	7,143	335	2,713	3,048
Main Stem Klamath River (excluding IGH)	1,000	3,000	4,000	1,000	3,000	4,000	200	1,800	2,000
Misc. Klamath tributaries (above Hoopa and Yurok Reservations)	500	1,000	1,500	600	1,500	2,100	140	1,270	1,410
Hoopa and Yurok Reservation tribs.	-- b/	-- b/	-- b/	-- b/	-- b/	-- b/	-- b/	-- b/	-- b/
Subtotals	16,507	33,857	50,364	18,646	31,951	50,597	2,526	30,784	33,310
Total Spawner Escapement	18,051	38,282	56,333	24,714	42,362	67,076	3,311	44,649	47,960

IN-RIVER HARVEST

	1981			1982			1983		
Angler Harvest	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
Klamath River (below Hwy 101 bridge)	536	1,714	2,250	1,252	3,539	4,791	60	750	810
Trinity River basin (above Willow Creek)	1,456	3,174	4,630	2,554	2,321	4,875	116	2,360	2,476
Balance of Klamath system	5,260	1,095	6,355	8,678	2,479	11,157	175	1,125	1,300
Subtotals	7,252	5,983	13,235	12,484	8,339	20,823	351	4,235	4,586
Indian Net Harvest e/									
Klamath River (below Hwy 101 bridge)	912	23,097	24,009	290	4,547	4,837	12	800	812
Klamath River (Hwy 101 to Trinity mouth)	1,104	8,405	9,509	1,195	8,424	9,619	121	5,700	5,821
Trinity River (Hoopa Reservation)	449	1,531	1,980	314	1,511	1,825	30	1,390	1,420
Subtotals	2,465	33,033	35,498	1,799	14,482	16,281	163	7,890	8,053
Total In-river Harvest	9,717	39,016	48,733	14,283	22,821	37,104	514	12,125	12,639

IN-RIVER RUN

	1981			1982			1983		
Totals	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
In-river Harvest and Escapement	27,768	77,298	105,066	38,997	65,183	104,180	3,825	56,774	60,599
Angling Mortality (2.04% of harvest) f/	148	122	270	255	170	425	7	86	94
Net Mortality (8.70% of harvest) f/	214	2,872	3,087	156	1,259	1,416	14	686	700
Total In-river Run	28,130	80,292	108,422	39,408	66,612	106,020	3,846	57,546	61,392

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Klamath River Basin Fall Chinook Salmon Spawner Escapement, In-river Harvest and Run-size Estimates
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SPAWNER ESCAPEMENT

	1984			1985			1986		
Hatchery Spawners	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
Iron Gate Hatchery (IGH)	764	5,330	6,094	2,159	19,951	22,110	1,461	17,096	18,557
Trinity River Hatchery (TRH)	766	2,166	2,932	18,166	2,583	20,749	3,609	15,795	19,404
Subtotals	1,530	7,496	9,026	20,325	22,534	42,859	5,070	32,891	37,961
Natural Spawners									
Trinity River basin									
(above Willow Creek, excluding TRH)	3,416	5,654	9,070	29,454	9,217	38,671	20,459	92,548	113,007
Salmon River basin	216 g/	1,226 g/	1,442 g/	905	2,259	3,164	949	2,716	3,665
Scott River basin	358	1,443	1,801	1,357	3,051	4,408	4,865	3,176	8,041
Shasta River basin	480	2,362	2,842	2,227	2,897	5,124	683	3,274	3,957
Bogus Creek basin	465	3,039	3,504	1,156	3,491	4,647	1,184	6,124	7,308
Main Stem Klamath River									
(excluding IGH)	200	1,350	1,550	156	468	624	196	603	799
Misc. Klamath tributaries									
(above Hoopa and Yurok Reservations)	150	990	1,140	646	4,214	4,860	606	4,919	5,525
Hoopa and Yurok Reservation tribs.	-- b/	-- b/	-- b/	50 h/	80 h/	130 h/	-- b/	-- b/	-- b/
Subtotals	5,285	16,064	21,349	35,951	25,677	61,628	28,942	113,360	142,302
Total Spawner Escapement	6,815	23,560	30,375	56,276	48,211	104,487	34,012	146,251	180,263

IN-RIVER HARVEST

	1984			1985			1986		
Angler Harvest	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
Klamath River (below Hwy 101 bridge)	175	548	723	1,479	2,427 i/	3,906	704	2,456	3,160
Trinity River basin (above Willow Creek)	393	736	1,129	5,442	154 i/	5,596	3,438	12,039	15,477
Balance of Klamath system	384	2,056	2,440	4,274	1,001 i/	5,275	5,266	6,532	11,798
Subtotals	952	3,340	4,292	11,195	3,582 i/	14,777	9,408	21,027	30,435
Indian Net Harvest e/									
Klamath River (below Hwy 101 bridge)	132	11,878	12,010	132	5,700	5,832	191	15,286	15,477
Klamath River (Hwy 101 to Trinity mouth	183	5,622	5,805	476	3,925	4,401	377	5,033	5,410
Trinity River (Hoopa Reservation)	140	1,170	1,310	947 j/	1,941 j/	2,888 j/	286	4,808	5,094
Subtotals	455	18,670	19,125	1,555	11,566	13,121	854	25,127	25,981
Total In-river Harvest	1,407	22,010	23,417	12,750	15,148	27,898	10,262	46,154	56,416

IN-RIVER RUN

	1984			1985			1986		
Totals	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
In-river Harvest and Escapement	8,222	45,570	53,792	69,026	63,359	132,385	44,274	192,405	236,679
Angling Mortality (2.04% of harvest) f/	19	68	88	228	73	302	192	429	621
Net Mortality (8.70% of harvest) f/	40	1,623	1,663	135	1,006	1,141	74	2,185	2,259
Total In-river Run	8,281	47,261	55,542	69,389	64,438	133,827	44,540	195,019	239,559

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Klamath River Basin Fall Chinook Salmon Spawner Escapement, In-river Harvest and Run-size Estimates
1978-2010 a/

SPAWNER ESCAPEMENT

	1987			1988			1989		
Hatchery Spawners	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
Iron Gate Hatchery (IGH)	1,825	15,189	17,014	609	16,106	16,715	831	10,859	11,690
Trinity River Hatchery (TRH)	2,453	13,934	16,387	4,752	17,352	22,104	239	11,132	11,371
Subtotals	4,278	29,123	33,401	5,361	33,458	38,819	1,070	21,991	23,061
Natural Spawners									
Trinity River basin									
(above Willow Creek, excluding TRH)	5,949	71,920	77,869	10,626	44,616	55,242	2,543	29,445	31,988
Salmon River basin	118	3,832	3,950	327	3,273	3,600	695	2,915	3,610
Scott River basin	797	7,769	8,566	473	4,727	5,200	1,188	3,000	4,188
Shasta River basin	398	4,299	4,697	256	2,586	2,842	137	1,440	1,577
Bogus Creek basin	1,208	9,748	10,956	225	16,215	16,440	444	2,218	2,662
Main Stem Klamath River									
(excluding IGH)	65	863	928	164	2,982	3,146	214	1,011	1,225
Misc. Klamath tributaries									
(above Hoopa and Yurok Reservations)	237	3,286	3,523	418	4,167	4,585	248	3,239	3,487
Hoopa and Yurok Reservation tribs.	-- b/	-- b/	-- b/	55 k/	820 k/	875 k/	40 k/	600 k/	640 k/
Subtotals	8,772	101,717	110,489	12,544	79,386	91,930	5,509	43,868	49,377
Total Spawner Escapement	13,050	130,840	143,890	17,905	112,844	130,749	6,579	65,859	72,438

IN-RIVER HARVEST

	1987			1988			1989		
Angler Harvest	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
Klamath River (below Hwy 101 bridge)	146	2,455	2,601	124	3,367	3,491	137	1,328	1,465
Trinity River basin (above Willow Creek)	923	9,433	10,356	2,735	9,341	12,076	209	3,054	3,263
Balance of Klamath system	4,367	8,281	12,648	2,552	9,495	12,047	1,921	4,393	6,314
Subtotals	5,436	20,169	25,605	5,411	22,203	27,614	2,267	8,775	11,042
Indian Net Harvest e/									
Klamath River (below Hwy 101 bridge)	36	39,978	40,014	138	36,914	37,052	0	37,130	37,130
Klamath River (Hwy 101 to Trinity mouth)	117	8,136	8,253	173	9,667	9,840	120	4,961	5,081
Trinity River (Hoopa Reservation)	262	4,982	5,244	267	5,070	5,337	71	3,474	3,545
Subtotals	415	53,096	53,511	578	51,651	52,229	191	45,565	45,756
Total In-river Harvest	5,851	73,265	79,116	5,989	73,854	79,843	2,458	54,340	56,798

IN-RIVER RUN

	1987			1988			1989		
Totals	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
In-river Harvest and Escapement	18,901	204,105	223,006	23,894	186,698	210,592	9,037	120,199	129,236
Angling Mortality (2.04% of harvest) f/	111	412	523	110	453	564	46	179	225
Net Mortality (8.70% of harvest) f/	36	4,617	4,653	50	4,491	4,542	17	3,962	3,979
Total In-river Run	19,048	209,134	228,182	24,054	191,642	215,696	9,100	124,340	133,440

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Klamath River Basin Fall Chinook Salmon Spawner Escapement, In-river Harvest and Run-size Estimates
1978-2010 a/

SPAWNER ESCAPEMENT

	1990			1991			1992		
Hatchery Spawners	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
Iron Gate Hatchery (IGH)	321	6,719	7,040	65	4,002	4,067	3,737	3,581	7,318
Trinity River Hatchery (TRH)	371	1,348	1,719	205	2,482	2,687	211	3,779	3,990
Subtotals	692	8,067	8,759	270	6,484	6,754	3,948	7,360	11,308
Natural Spawners									
Trinity River basin									
(above Willow Creek, excluding TRH)	241	7,682	7,923	382	4,867	5,249	2,563	7,139	9,702
Salmon River basin	596 l/	4,071 l/	4,667 l/	143	1,337	1,480	547	778	1,325
Scott River basin	236	1,379	1,615	146	2,019	2,165	965	1,873	2,838
Shasta River basin	118	415	533	10	716	726	66	520	586
Bogus Creek basin	53	732	785	20	1,261	1,281	556	598	1,154
Main Stem Klamath River									
(excluding IGH)	59	505	564	8	572	580	234	366	600
Misc. Klamath tributaries									
(above Hoopa and Yurok Reservations)	30	694	724	9	495	504	153	280	433
Hoopa and Yurok Reservation tribs.	17 k/	118 k/	135 k/	0 k/	382 k/	382 k/	59 k/	474 k/	533 k/
Subtotals	1,350	15,596	16,946	718	11,649	12,367	5,143	12,028	17,171
Total Spawner Escapement	2,042	23,663	25,705	988	18,133	19,121	9,091	19,388	28,479

IN-RIVER HARVEST

	1990			1991			1992		
Angler Harvest	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
Klamath River (below Hwy 101 bridge)	58	291	349	19	314	333	13	20	33
Trinity River basin (above Willow Creek)	22	328	350	94	1,177	1,271	158	314	472
Balance of Klamath system	2,020	2,934	4,954	573	1,892	2,465	3,949	668	4,617
Subtotals	2,100	3,553	5,653	686	3,383	4,069	4,120	1,002	5,122
Indian Net Harvest e/									
Klamath River (below Hwy 101 bridge)	13	3,648	3,661	7	3,902	3,909	124	1,152	1,276
Klamath River (Hwy 101 to Trinity mouth)	141	3,447	3,588	25	5,016	5,041	200	3,687	3,887
Trinity River (Hoopa Reservation)	36	811	847	30	1,280	1,310	42	946	988
Subtotals	190	7,906	8,096	62	10,198	10,260	366	5,785	6,151
Total In-river Harvest	2,290	11,459	13,749	748	13,581	14,329	4,486	6,787	11,273

IN-RIVER RUN

	1990			1991			1992		
Totals	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
In-river Harvest and Escapement	4,332	35,122	39,454	1,736	31,714	33,450	13,577	26,175	39,752
Angling Mortality (2.04% of harvest) f/	43	73	115	14	69	83	84	20	105
Net Mortality (8.70% of harvest) f/	17	687	704	5	887	892	32	503	535
Total In-river Run	4,392	35,882	40,274	1,755	32,670	34,425	13,693	26,698	40,391

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Klamath River Basin Fall Chinook Salmon Spawner Escapement, In-river Harvest and Run-size Estimates
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SPAWNER ESCAPEMENT

	1993			1994			1995		
Hatchery Spawners	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
Iron Gate Hatchery (IGH)	883	20,828	21,711	758	13,808 m/	14,566	259	22,681 m/	22,940
Trinity River Hatchery (TRH)	736	815	1,551	4,442	3,264	7,706	76	15,178	15,254
Subtotals	1,619	21,643	23,262	5,200	17,072	22,272	335	37,859	38,194
Natural Spawners									
Trinity River basin									
(above Willow Creek, excluding TRH)	2,465	5,905	8,370	2,505	10,906	13,411	9,262	77,876	87,138
Salmon River basin	456	3,077	3,533	277	3,216	3,493	1,335	4,140	5,475
Scott River basin	265	5,035	5,300	505	2,358	2,863	3,279	11,198	14,477
Shasta River basin	85	1,341	1,426	1,840	3,363	5,203	695	12,816	13,511
Bogus Creek basin	431	3,285	3,716	443	7,817	8,260	1,207	45,225	46,432
Main Stem Klamath River									
(excluding IGH)	31 n/	647 n/	678 n/	625 n/	3,249 n/	3,874 n/	768 n/	6,472 n/	7,240 n/
Misc. Klamath tributaries									
(above Hoopa and Yurok Reservations)	92	2,470	2,562	50	1,202	1,252	744 o/	3,654 o/	4,398 o/
Hoopa and Yurok Reservation tribs.	0 h/	98 h/	98 h/	0 h/	222 h/	222 h/	34 p/	413 p/	447 p/
Subtotals	3,825	21,858	25,683	6,245	32,333	38,578	17,324	161,794	179,118
Total Spawner Escapement	5,444	43,501	48,945	11,445	49,405	60,850	17,659	199,653	217,312

IN-RIVER HARVEST

	1993			1994			1995		
Angler Harvest	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
Klamath River (below Hwy 101 bridge)	23	669	692	246	662	908	323	956	1,279
Trinity River basin (above Willow Creek)	172	391	563	547	260	807	554	2,779	3,333
Balance of Klamath system	1,730	2,112	3,842	1,763	910	2,673	3,543	2,346 q/	5,889
Subtotals	1,925	3,172	5,097	2,556	1,832	4,388	4,420	6,081	10,501
Indian Net Harvest e/									
Klamath River (below Hwy 101 bridge)	62	3,017	3,079	81	4,362	4,443	137	5,119	5,256
Klamath River (Hwy 101 to Trinity mouth)	80	5,127	5,207	118	5,064	5,182	152	7,055	7,207
Trinity River (Hoopa Reservation)	33	1,492	1,525	94	2,266	2,360	268	3,383	3,651
Subtotals	175	9,636	9,811	293	11,692	11,985	557	15,557	16,114
Total In-river Harvest	2,100	12,808	14,908	2,849	13,524	16,373	4,977	21,638	26,615

IN-RIVER RUN

	1993			1994			1995		
Totals	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
In-river Harvest and Escapement	7,544	56,309	63,853	14,294	62,929	77,223	22,636	221,291	243,927
Angling Mortality (2.04% of harvest) f/	39	65	104	52	37	90	90	124	214
Net Mortality (8.70% of harvest) f/	15	838	853	25	1,017	1,042	48	1,353	1,401
Total In-river Run	7,598	57,212	64,810	14,371	63,983	78,354	22,774	222,768	245,542

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Klamath River Basin Fall Chinook Salmon Spawner Escapement, In-river Harvest and Run-size Estimates
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SPAWNER ESCAPEMENT

	1996			1997			1998		
Hatchery Spawners	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
Iron Gate Hatchery (IGH)	543	13,622	14,165	452	13,275	13,727	403	14,923	15,326
Trinity River Hatchery (TRH)	249	6,411	6,660	820	5,387	6,207	192	14,296	14,488
Subtotals	792	20,033	20,825	1,272	18,662	19,934	595	29,219	29,814
Natural Spawners									
Trinity River basin									
(above Willow Creek, excluding TRH)	4,478	42,646	47,124	2,845	11,507	14,352	1,974	24,460	26,434
Salmon River basin	274	5,189	5,463	217	5,783	6,000	116	1,337	1,453
Scott River basin	145	11,952	12,097	277	8,284	8,561	266	3,061	3,327
Shasta River basin	46	1,404	1,450	334	1,667	2,001	76	2,466	2,542
Bogus Creek basin	377	10,420	10,797	221	9,809	10,030	205	6,630	6,835
Main Stem Klamath River									
(excluding IGH)	218 n/	2,790 n/	3,008 n/	104 n/	3,472 n/	3,576 n/	109 n/	2,913 n/	3,022 n/
Misc. Klamath-Trinity tributaries									
(above Hoopa and Yurok Reservations)	581 o/	5,804 o/	6,385 o/	174 o/	5,174 o/	5,348 o/	83 o/	1,232 o/	1,315 o/
Hoopa and Yurok Reservation tribs.	55 p/	1,121 p/	1,176 p/	53 p/	448 p/	501 p/	26 p/	389 p/	415 p/
Subtotals	6,174	81,326	87,500	4,225	46,144	50,369	2,855	42,488	45,343
Total Spawner Escapement	6,966	101,359	108,325	5,497	64,806	70,303	3,450	71,707	75,157

IN-RIVER HARVEST

	1996			1997			1998		
Angler Harvest	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
Klamath River (below Hwy 101 bridge)	100	3,110	3,210	49	2,182	2,231	124	1,603	1,727
Klamath River (Hwy 101 to Coon Cr Falls	1,128	4,052	5,180	1,226	512	1,738	406	1,270	1,676
Trinity River basin (above Willow Creek)	331	1,214	1,545 r/	353	1,331	1,684 s/	275	3,262	3,537 u/
Balance of Klamath system	753	4,390	5,143	781	1,651	2,432 t/	303	1,575	1,878 v/
Subtotals	2,312	12,766	15,078	2,409	5,676	8,085	1,108	7,710 x/	8,818
Indian Net Harvest e/									
Klamath River (below Hwy 101 bridge)	163	49,113	49,276	21	5,574	5,595	16	3,454	3,470
Klamath River (Hwy 101 to Trinity mouth	19	4,593	4,612	8	5,275	5,283	32	5,198	5,230
Trinity River (Hoopa Reservation)	8	2,770	2,778	6	1,238	1,244	5	1,535	1,540
Subtotals	190	56,476	56,666	35	12,087	12,122	53	10,187	10,240
Total In-river Harvest	2,502	69,242	71,744	2,444	17,763	20,207	1,161	17,897	19,058

IN-RIVER RUN

	1996			1997			1998		
Totals	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
In-river Harvest and Escapement	9,468	170,601	180,069	7,941	82,569	90,510	4,611	89,604	94,215
Angling Mortality (2.04% of harvest) f/	47	261	308	49	116	165	23	157	180
Net Mortality (8.70% of harvest) f/	17	4,911	4,927	3	1,051	1,054	5	886	890
Total In-river Run	9,532	175,773	185,305	7,993	83,736	91,729	4,639	90,647	95,286

(continued next page)

Klamath River Basin Fall Chinook Salmon Spawner Escapement, In-river Harvest and Run-size Estimates
1978-2010 a/

SPAWNER ESCAPEMENT

	1999			2000			2001		
Hatchery Spawners	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
Iron Gate Hatchery (IGH)	4,830	9,290	14,120	839	71,635	72,474	1,364	37,204	38,568
Trinity River Hatchery (TRH)	2,027	5,037	7,064	1,070	25,976	27,046	267	17,908	18,175
Hatchery Spawner Subtotals:	6,857	14,327	21,184	1,909	97,611	99,520	1,631	55,112	56,743
Natural Spawners									
Main Stem Klamath River n/									
(excluding IGH)	630	1,978	2,608	184	3,271	3,455	1,016	9,832	10,848
Salmon River basin	110	670	780	228	1,544	1,772	743	2,607	3,350
Scott River basin	563	3,021	3,584	524	5,729	6,253	744	5,398	6,142
Shasta River basin	1,901	1,296	3,197	1,271	11,025	12,296	2,641	8,452	11,093
Bogus Creek basin	2,628	3,537	6,165	373	34,678	35,051	648	11,927	12,575
Misc. Klamath tributaries o/									
(above Yurok Reservation)	251	777	1,028	158	1,345	1,503	538	2,240	2,778
Yurok Reservation tribs. (Klamath River) p/	210	381	591	153	796	949	48	488	536
Klamath Natural Spawner Subtotals:	**6,293**	**11,660**	**17,953**	**2,891**	**58,388**	**61,279**	**6,378**	**40,944**	**47,322**
Main Stem Trinity River dd/									
(excluding TRH)	4,154	6,753	10,907	3,376	23,468	26,844	1,336	35,991	37,327 cc/
Misc. Trinity tributaries o/									0
(above Hoopa Reservation)				103	706	809	27	729	756
Hoopa Reservation tribs. (Trinity River) p/	0	44	44	24	166	190	6	170	176
Trinity Natural Spawner Subtotals:	**4,154**	**6,797**	**10,951**	**3,503**	**24,340**	**27,843**	**1,369**	**36,890**	**38,259**
Natural Spawner Subtotals:	**10,447**	**18,457**	**28,904**	**6,394**	**82,728**	**89,122**	**7,747**	**77,834**	**85,581**
Total Spawner Escapement	**17,304**	**32,784**	**50,088**	**8,303**	**180,339**	**188,642**	**9,378**	**132,946**	**142,324**

IN-RIVER HARVEST

	1999			2000			2001		
Angler Harvest	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
Klamath River (below Hwy 101 bridge)	37	177	214	108	1,190	1,298	298	4,620	4,918
Klamath River (Hwy 101 to Coon Cr Falls)	869 y/	1,112 y/	1,981 y/	972	1,006	1,978	825	1,960	2,785
Klamath River (Coon Cr Falls to IGH)	138 z/	571 z/	709 z/	117	1,549	1,666 bb/	242	3,041	3,283
Trinity River basin above Weitchpec aa/	572	422	994	385	1,905	2,290	135	2,513	2,648
Angler Harvest Subtotals:	1616	2282	3898	1582	5650	7232	1,500	12,134	13,634
Indian Net Harvest e/									
Klamath River (below Hwy 101 bridge)	126	4,387	4,513	35	17,278	17,313	261	28,967	29,228
Klamath River (Hwy 101 to Trinity mouth)	49	7,295	7,344	140	6,175	6,315	78	4,724	4,802
Trinity River (Hoopa Reservation)	96	2,978	3,074	128	5,962	6,090	60	4,954	5,014
Indian Net Harvest Subtotals:	271	14,660	14,931	303	29,415	29,718	399	38,645	39,044
Total In-river Harvest	1,887	16,942	18,829	1,885	35,065	36,950	1,899	50,779	52,678

IN-RIVER RUN

	1999			2000			2001		
Totals	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
In-river Harvest and Escapement	19,191	49,726	68,917	10,188	215,404	225,592	11,277	183,725	195,002
Angling Mortality (2.04% of harvest) f/	33	47	80	32	115	148	31	248	278
Net Mortality (8.70% of harvest) f/	24	1,275	1,298	26	2,558	2,584	35	3,360	3,395
Total In-river Run	**19,248**	**51,048**	**70,296**	**10,246**	**218,077**	**228,323**	**11,343**	**187,333**	**198,676**

(continued next page)

Klamath River Basin Fall Chinook Salmon Spawner Escapement, In-river Harvest and Run-size Estimates
1978-2010 a/

SPAWNER ESCAPEMENT

	2002			2003			2004		
Hatchery Spawners	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
Iron Gate Hatchery (IGH)	1,294	23,667	24,961	290	31,970	32,260	937	10,582	11,519
Trinity River Hatchery (TRH)	1,037	3,516	4,553	574	29,812	30,386	1,044	12,399	13,443
Hatchery Spawner Subtotals:	**2,331**	**27,183**	**29,514**	**864**	**61,782**	**62,646**	**1,981**	**22,981**	**24,962**
Natural Spawners									
Main Stem Klamath River n/									
(excluding IGH)	658	21,650	22,308	298	17,722	18,020	205	5,037	5,242
Salmon River basin	78	2,669	2,747	73	3,302	3,375	51	282	333
Scott River basin	47	4,261	4,308	65	11,988	12,053	22	445	467
Shasta River basin	386	6,432	6,818	155	4,134	4,289	129	833	962
Bogus Creek basin	304	17,530	17,834	188	15,422	15,610	295	3,493	3,788
Misc. Klamath tributaries o/									
(above Yurok Reservation)	44	1,344	1,388	38	1,761	1,799	80	477	557
Yurok Reservation tribs. (Klamath River) p/	12	339	351	31	1,094	1,125	64	144	208
Klamath Natural Spawner Subtotals:	**1,529**	**54,225**	**55,754**	**848**	**55,423**	**56,271**	**846**	**10,711**	**11,557**
Main Stem Trinity River dd/									
(excluding TRH)	2,230	10,880	13,110	1,065	31,173	32,238	3,722	12,718	16,440
Misc. Trinity tributaries o/									
(above Hoopa Reservation)	66	324	390	109	602	711	75	258	333
Hoopa Reservation tribs. (Trinity River) p/	42	206	248	80	444	524	42	144	186
Trinity Natural Spawner Subtotals:	**2,338**	**11,410**	**13,748**	**1,254**	**32,219**	**33,473**	**3,839**	**13,120**	**16,959**
Natural Spawner Subtotals:	**3,867**	**65,635**	**69,502**	**2,102**	**87,642**	**89,744**	**4,685**	**23,831**	**28,516**
Total Spawner Escapement	**6,198**	**92,818**	**99,016**	**2,966**	**149,424**	**152,390**	**6,666**	**46,812**	**53,478**

IN-RIVER HARVEST

	2002			2003			2004		
Angler Harvest	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
Klamath River (below Hwy 101 bridge)	274	3,285	3,559	180	1,589	1,769	748	725	1,473
Klamath River (Hwy 101 to Coon Cr Falls)	284	3,268	3,552	369	3,336	3,705	1,493	1,472	2,965
Klamath River (Coon Cr Falls to IGH)	93	3,216	3,309	40	2,397	2,437	52	1,266	1,318
Trinity River basin above Weitchpec aa/	219	726	945	225	2,358	2,583	448	540	988
Angler Harvest Subtotals:	**870**	**10,495**	**11,365**	**814**	**9,680**	**10,494**	**2,741**	**4,003**	**6,744**
Indian Net Harvest e/									
Klamath River (below Hwy 101 bridge)	17	20,149	20,166	15	22,688	22,703	75	21,037	21,112
Klamath River (Hwy 101 to Trinity mouth)	41	3,257	3,298	17	4,575	4,592	73	3,077	3,150
Trinity River (Hoopa Reservation)	68	1,168	1,236	12	2,771	2,783	20	1,689	1,709
Indian Net Harvest Subtotals:	**126**	**24,574**	**24,700**	**44**	**30,034**	**30,078**	**168**	**25,803**	**25,971**
Total In-river Harvest	**996**	**35,069**	**36,065**	**858**	**39,714**	**40,572**	**2,909**	**29,806**	**32,715**

IN-RIVER RUN

	2002			2003			2004		
Totals	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
In-river Harvest and Escapement	7,194	127,887	135,081	3,824	189,138	192,962	9,575	76,618	86,193
Angling Mortality (2.04% of harvest) f/	18	214	232	17	198	214	56	82	138
Net Mortality (8.70% of harvest) f/	11	2,137	2,148	4	2,612	2,615	15	2,243	2,258
Fish Die Off ee/	2,003	30,550	32,553						
Total In-river Run	**9,226**	**160,788**	**170,014**	**3,845**	**191,948**	**195,791**	**9,646**	**78,943**	**88,589**

(continued next page)

Klamath River Basin Fall Chinook Salmon Spawner Escapement, In-river Harvest and Run-size Estimates
1978-2010 a/

SPAWNER ESCAPEMENT

	2005			2006			2007		
Hatchery Spawners	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
Iron Gate Hatchery (IGH)	42	13,955	13,997	2,386	11,604	13,990	180	16,969	17,149
Trinity River Hatchery (TRH)	59	13,744	13,803	4,076	7,918	11,994	33	18,081	18,114
Hatchery Spawner Subtotals:	**101**	**27,699**	**27,800**	**6,462**	**19,522**	**25,984**	**213**	**35,050**	**35,263**
Natural Spawners									
Main Stem Klamath River n/ (excluding IGH)	32	4,622	4,654	853	4,538	5,391	41	6,914	6,955
Salmon River basin	105	401	506	791	1,278	2,069	55	1,377	1,432
Scott River basin	58	698	756	1,953	3,007	4,960	11	4,494	4,505
Shasta River basin	37	2,018	2,055	1,395	789	2,184	27	2,009	2,036
Bogus Creek basin	58	5,341	5,399	765	3,368	4,133	64	4,677	4,741
Misc. Klamath tributaries o/ (above Yurok Reservation)	40	361	401	739	1,165	1,904	26	1,414	1,440
Yurok Reservation tribs. (Klamath River) p/	68	113	181	20	119	139	8	407	415
Klamath Natural Spawner Subtotals:	**398**	**13,554**	**13,952**	**6,516**	**14,264**	**20,780**	**232**	**21,292**	**21,524**
Main Stem Trinity River dd/ (excluding TRH)	760	12,885	13,645	7,607	15,375	22,982	832	39,038	39,870
Misc. Trinity tributaries o/ (above Hoopa Reservation)	8	164	172	71	142	213	5	246	251
Hoopa Reservation tribs. (Trinity River) p/	4	84	88	189	382	571	2	94	96
Trinity Natural Spawner Subtotals:	**772**	**13,133**	**13,905**	**7,867**	**15,899**	**23,766**	**839**	**39,378**	**40,217**
Natural Spawner Subtotals:	**1,170**	**26,687**	**27,857**	**14,383**	**30,163**	**44,546**	**1,071**	**60,670**	**61,741**
Total Spawner Escapement	**1,271**	**54,386**	**55,657**	**20,845**	**49,685**	**70,530**	**1,284**	**95,720**	**97,004**

IN-RIVER HARVEST

	2005			2006			2007		
Angler Harvest	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
Klamath River (below Hwy 101 bridge)	311	243	554	60	1	61	20	1,097	1,117
Klamath River (Hwy 101 to Weitchpec)	595	468	1,063	4,421	38	4,459	218	2,211	2,429
Klamath River (Weitchpec to IGH)	6	318	324	721	18	739	19	1,667	1,686
Trinity River basin above Weitchpec aa/	118	956	1,074	325	5	330	112	1,337	1,449
Angler Harvest Subtotals:	**1,030**	**1,985**	**3,015**	**5,527**	**62** ff/	**5,589**	**369**	**6,312**	**6,681**
Indian Net Harvest e/									
Klamath River (below Hwy 101 bridge)	21	2,293	2,314	30	2,726	2,756	16	23,475	23,491
Klamath River (Hwy 101 to Trinity mouth)	38	3,314	3,352	240	3,396	3,636	5	1,800	1,805
Trinity River (Hoopa Reservation)	11	2,409	2,420	145	4,161	4,306	0	2,298	2,298
Indian Net Harvest Subtotals:	**70**	**8,016**	**8,086**	**415**	**10,283**	**10,698**	**21**	**27,573**	**27,594**
Total In-river Harvest	**1,100**	**10,001**	**11,101**	**5,942**	**10,345**	**16,287**	**390**	**33,885**	**34,275**

IN-RIVER RUN

	2005			2006			2007		
Totals	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
In-river Harvest and Escapement	2,371	64,387	66,758	26,787	60,030	86,817	1,674	129,605	131,279
Angling Mortality (2.04% of harvest) f/	21	41	62	113	76	114	8	129	137
Net Mortality (8.70% of harvest) f/	6	697	703	36	894	930	2	2,397	2,399
Catch and Release Mortality gg/				0	373	373			
Total In-river Run	**2,398**	**65,125**	**67,523**	**26,936**	**61,373**	**88,309**	**1,684**	**132,131**	**133,815**

(continued next page)

Klamath River Basin Fall Chinook Salmon Spawner Escapement, In-river Harvest and Run-size Estimates
1978-2010 a/

SPAWNER ESCAPEMENT

	2008			2009			2010		
Hatchery Spawners	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
Iron Gate Hatchery (IGH)	2,130	9,101	11,231	1,229	12,263	13,492	1,071	10,276	11,347
Trinity River Hatchery (TRH)	801	4,451	5,252	143	7,351	7,494	1,432	7,774	9,206
Hatchery Spawner Subtotals:	**2,931**	**13,552**	**16,483**	**1,372**	**19,614**	**20,986**	**2,503**	**18,050**	**20,553**
Natural Spawners									
Main Stem Klamath River n/									
(excluding IGH)	1,199	5,830	7,029	295	7,945	8,240	275	3,684	3,959
Salmon River basin	650	1,749	2,399	516	2,204 hh/	2,720	356	2,478 hh/	2,834
Scott River basin	1,228	3,445	4,673	44	2,167	2,211	394	2,113	2,507
Shasta River basin	3,621	2,741	6,362	151	6,145	6,296	87	1,259	1,346
Bogus Creek basin	1,565	3,001	4,566	471	5,455	5,926	291	3,179	3,470
Misc. Klamath tributaries o/									0
(above Yurok Reservation)	1,073	1,845	2,918	175	3,094	3,269	274	1,663	1,937
Yurok Reservation tribs. (Klamath River) p/	89	409	498	296	733	1,029	134	790	924
Klamath Natural Spawner Subtotals:	**9,425**	**19,020**	**28,445**	**1,948**	**27,743**	**29,691**	**1,811**	**15,166**	**16,977**
Main Stem Trinity River dd/									
(excluding TRH)	7,255	11,006	18,261	5,958	16,168	22,126	9,779	21,579	31,358
Misc. Trinity tributaries o/									
(above Hoopa Reservation)	158	240	398	70	190	260	69	152	221
Hoopa Reservation tribs. (Trinity River) p/	385	584	969	114	308	422	147	324	471
Trinity Natural Spawner Subtotals:	**7,798**	**11,830**	**19,628**	**6,142**	**16,666**	**22,808**	**9,995**	**22,055**	**32,050**
Natural Spawner Subtotals:	**17,223**	**30,850**	**48,073**	**8,090**	**44,409**	**52,499**	**11,806**	**37,221**	**49,027**
Total Spawner Escapement	**20,154**	**44,402**	**64,556**	**9,462**	**64,023**	**73,485**	**14,309**	**55,271**	**69,580**

IN-RIVER HARVEST

	2008			2009			2010		
Angler Harvest	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
Klamath River (below Hwy 101 bridge)	521	141	662	319	1,191	1,510	162	510	672
Klamath River (Hwy 101 to Weitchpec)	3,358	896	4,254	1,559	2,015	3,574	1,320	1,225	2,545
Klamath River (Weitchpec to IGH)	160	523	683	155	1,614	1,769	89	875	964
Trinity River basin	269	359	628	181	831	1,012	261	425	686
Angler Harvest Subtotals:	**4,308**	**1,919**	**6,227**	**2,214**	**5,651**	**7,865**	**1,832**	**3,035**	**4,867**
Indian Net Harvest e/									
Klamath River (below Hwy 101 bridge)	302	17,710	18,012	43	19,465	19,508	20	21,725	21,745
Klamath River (Hwy 101 to Trinity mouth)	187	2,636	2,823	39	4,769	4,808	156	4,461	4,617
Trinity River (Hoopa Reservation)	152	1,913	2,065	96	4,153	4,249	260	3,810	4,070
Indian Net Harvest Subtotals:	**641**	**22,259**	**22,900**	**178**	**28,387**	**28,565**	**436**	**29,996**	**30,432**
Total In-river Harvest	**4,949**	**24,178**	**29,127**	**2,392**	**34,038**	**36,430**	**2,268**	**33,031**	**35,299**

IN-RIVER RUN

	2008			2009			2010		
Totals	Grilse	Adults	Totals	Grilse	Adults	Totals	Grilse	Adults	Totals
In-river Harvest and Escapement	25,103	68,580	93,683	11,854	98,061	109,915	16,577	88,302	104,879
Angling Mortality (2.04% of harvest) f/	88	39	127	45	115	161	37	62	99
Net Mortality (8.70% of harvest) f/	56	1,935	1,991	15	2,468	2,484	38	2,608	2,646
Catch and Release Mortality gg/									
Total In-river Run	**25,247**	**70,554**	**95,801**	**11,914**	**100,644**	**112,558**	**16,652**	**90,972**	**107,624**

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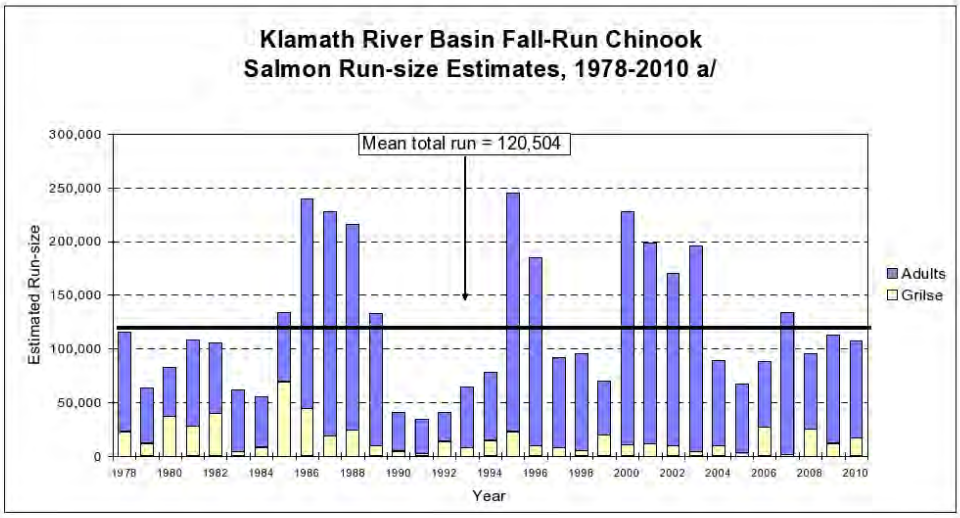
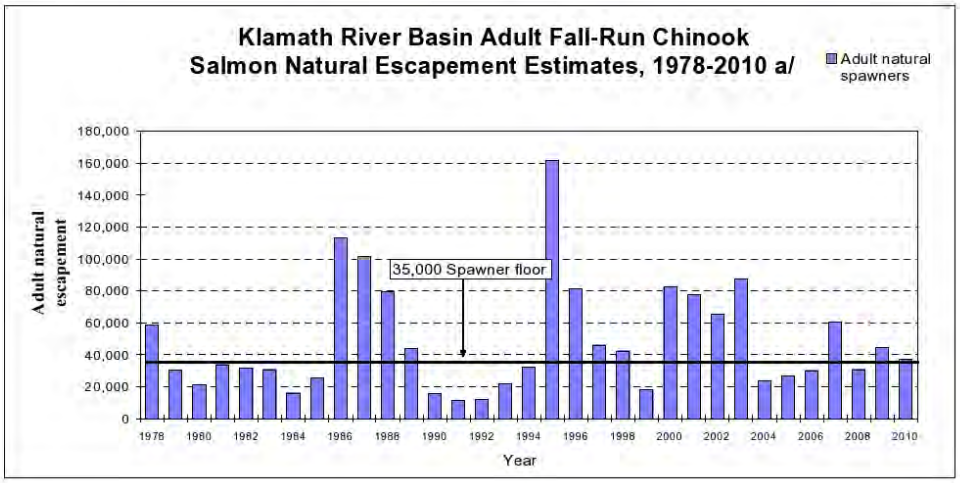




a/ 2010 data preliminary

Footnotes for Klamath River Basin Fall Chinook Salmon Spawner Escapement, In-river Harvest and Run-size Estimates, 1978-2010 [a]

a/ Prepared February 11, 2011. All figures are California Department of Fish and Game (CDFG) counts/estimates unless otherwise indicated. All figures for Iron Gate and Trinity River hatcheries represent counts of fish entering those facilities. All spawner escapement figures for the Shasta River basin for 1978-1987 and 1989-2010, plus those for Bogus Creek basin for 1980-1991 and 2003-2010 are based on counts made at counting/video stations located near the mouths of those streams. All remaining spawner escapements and all harvest figures are estimates developed from data obtained through ongoing field investigations in the Klamath-Trinity system. Figures for years through 2009 are final; 2010 figures are preliminary, subject to revision.

b/ Figure not available.

c/ USFWS estimate.

d/ In 1978, the Klamath River system sport salmon fishing season was closed August 25. There was essentially no sport harvest of fall Chinook in the Trinity River basin in 1978.

e/ USFWS estimates for years through 1982; 1983 through 1993 estimates jointly made by USFWS and Hoopa Valley Business Council Fisheries Department (HVBCFD); 1994 through 2007 estimates made by HVBCFD for the Hoopa Reservation and Yurok Tribal Fisheries Department for the Yurok Reservation.

f/ Factors for non-landed catch mortality calculated by the Klamath River Technical Advisory Team (KRTAT, 1986, "Recommended Spawning Escapement Policy for Klamath River Fall-run Chinook"). Modified non-landed catch mortality rates of 2.04% and 8.70% were applied to sport and net harvest respectively following the 2003 season. These rates were applied retrospectively to all years, replacing the historical rates of 2.0% (sport harvest) and 8.0% (net harvest).

g/ U.S. Forest Service estimate.

h/ HVBCFD estimate. Estimate for streams in Hoopa Reservation only.

i/ In 1985, the Klamath River system sport salmon fishing season was closed to the taking of all salmon below the U.S. Highway 101 bridge from September 9 through December 31; the Klamath from the U.S. Highway 101 bridge to Iron Gate Dam and the Trinity River from its mouth to Lewiston Dam were closed to the taking of salmon 22 inches and longer from September 23 through December 31, 1985.

j/ Estimates for Hoopa Reservation portion of catch (=947 grilse and 1,941 adults) are of catch occurring during open fishing periods only.

k/ Estimates jointly made by USFWS and HVBCFD.

l/ Final figures for Salmon River basin natural spawners shown in the December 11, 1991 table were incorrect. Corrected figures, plus necessary revisions to the 1990 totals, are presented here.

m/ Figure does not include adults that, following entry into Iron Gate Hatchery, were returned to the river alive and un-spawned, and which are presumed to have spawned naturally. This includes 2,333 fish in 1994 and 8,932 fish in 1995.

n/ CDFG estimate based on USFWS redd count data through 2000. Estimates for 2001-2010 are USFWS estimates based on a combination of redd count data (Shasta River downstream to Indian Cr.) and carcass mark-recapture estimates upstream of the Shasta River.

o/ CDFG and USFS, estimates.

p/ HVBCFD and YTFD estimates. YTFD fish count for Blue Creek is a based on several dive surveys conducted at peak of spawning and should not be construed as an escapement estimate. HVBCFD tributary estimates based on redd counts.

q/ 750 of these adults were harvested between I-5 and IGH after the river reopened to sport angling on 13 OCT. 1995

r/ Includes 51 grilse and 178 adults harvested in the main stem Trinity River between Willow Creek weir and the mouth of the Trinity River. HVBCFD estimate.

s/ Includes 251 grilse and 645 adults harvested in the main stem Trinity River between Willow Creek weir and the mouth of the Trinity River. HVBCFD estimate.

t/ Additional, but unknown harvest occurred upstream of Interstate 5 for jacks between Oct.2-18 and Oct.18-Nov.30th.for all Chinook after Iron Gate Hatchery reached its= required 8,000 adult Chinook spawning escapement.

u/ Includes 298 grilse and 799 adults harvested in the main stem Trinity River between Willow Creek weir and the mouth of the Trinity River. HVBCFD estimate.

v/ Additional, but unknown harvest occurred upstream of Interstate 5 for jacks between Oct.4-17 after the 28 day window and Oct.17-Nov.30th.for all Chinook after Iron Gate Hatchery reached its required 8,000 adult Chinook spawning escapement.

Footnotes for Klamath River Basin Fall Chinook Salmon Spawner Escapement, In-river Harvest and Run-size Estimates, 1978-2010 [a]

x/ Includes fish originally classified as grilse, based on the 24 inch TL specified in the 1998 sport angling regulations, which were re-classified as adult based on preliminary analysis of 1998 data.

y/ Includes 21 Grilse and 42 adults harvested after the lower river reopened on Oct 15, 1999.

z/ Harvest estimate based on creel census data and includes 54 grilse and 206 adults harvested during the secondary season allowed above the Interstate 5 bridge after IGH achieved 8,000 adult spawners.

aa/ Harvest estimate based on HVBCFD creel census below the Willow Creek Weir and CDFG's estimate based on tag returns for the Trinity River above Willow Creek Weir.

bb/ Harvest estimate based on creel census data and includes 113 grilse and 938 adults harvested during the secondary season allowed above the Interstate 5 bridge after IGH achieved 8,000 adult spawners.

cc/ Includes 9 jacks and 252 adults estimated to have spawned in the mainstem Trinity River downstream of the Willow Creek Weir. Estimate based on HVBCFD expanded redd count data.

dd/ Estimates upstream of Willow Creek weir provided by CDFG and are inclusive of the total basin upstream of weir; estimates downstream of Willow Creek weir provided by HVBCFD and only include the main stem Trinity to its confluence with the Klamath River.

ee/ Prespawn mortality estimate for Chinook salmon that died in the lower Klamath River fish die off, 2002. Estimate provided by USFWS.

ff/ Estimated 2006 river recreational fishery adult impacts (incidental mortality). Estimation methods documented in 2007 PFMC pre-season report I.

gg/ The 2006 sport fishery was closed to the take of adult fall Chinook (greater than 22 inches).

hh/ The 2009 and 2010 Salmon River adult escapement estimates were based on total redd counts (2009) and expanded redd counts from the first two weeks of survey expanded for the season based on historical cumulative average (2010).

List of acronyms

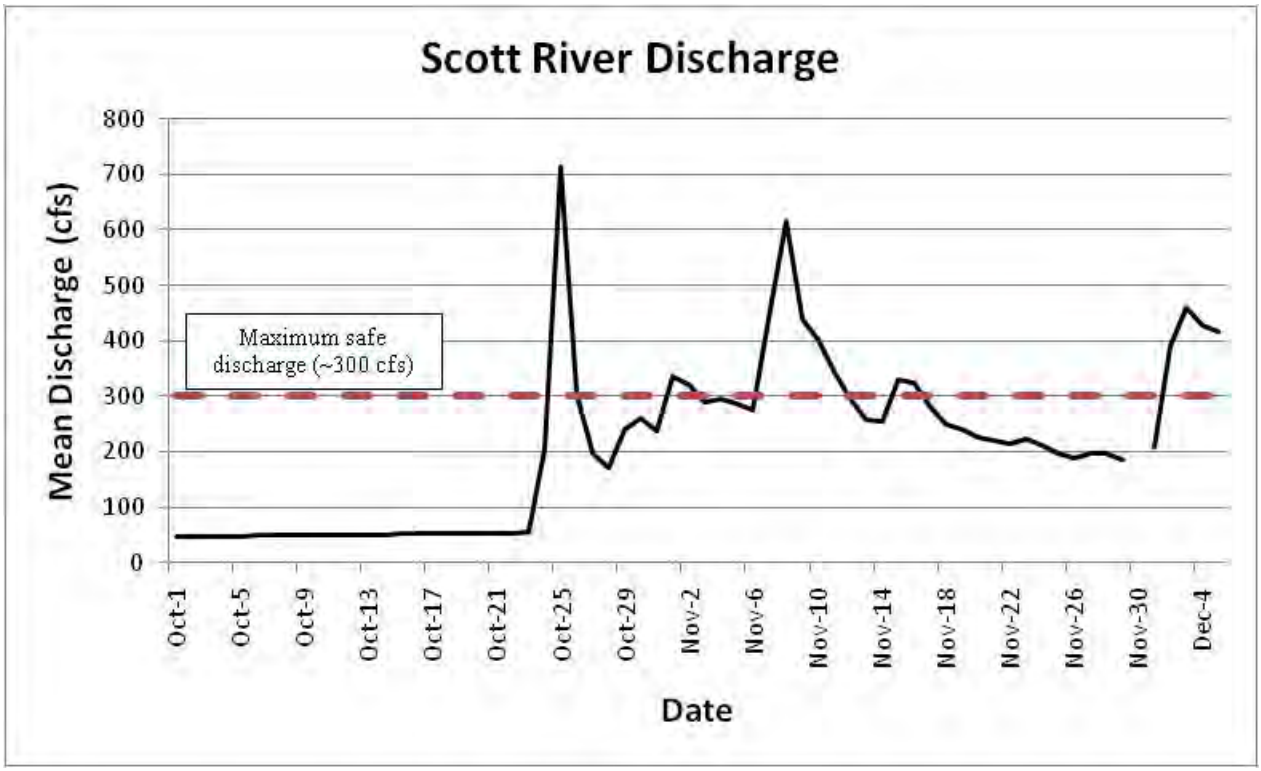
CDFG - California Department of Fish and Game
HVBCFD- Hoopa Valley Business Council Fisheries Department
IGH – Iron Gate Hatchery
KRTAT – Klamath River Technical Advisory Team
PFMC – Pacific Fishery Management Council
TRH – Trinity River Hatchery
USFS – United States Forest Service
USFWS – United States Fish and Wildlife Service
YTFD – Yurok Tribe Fisheries Department

Appendix B – USGS Discharge Charts

Scott River
The Scott River gauge (11519500) is located 10.8 miles downstream from Fort Jones, CA.

- Legal location T.44N., R.10W., Sec. 29 (Mount Diablo Meridian); or
- Lat. 41°38'27" by Long. 123°00'50" (referenced NAD 1927)

Graph provided here provides a daily mean of discharge at the gauge and includes November 1st through December 5th, 2010, which encompasses the redd/carcass survey dates. Instantaneous discharges measured at the gauge can be higher or lower than that pictured. Variability in flow during an actual survey day may have provided a window of safe discharge not reflected in the figure.

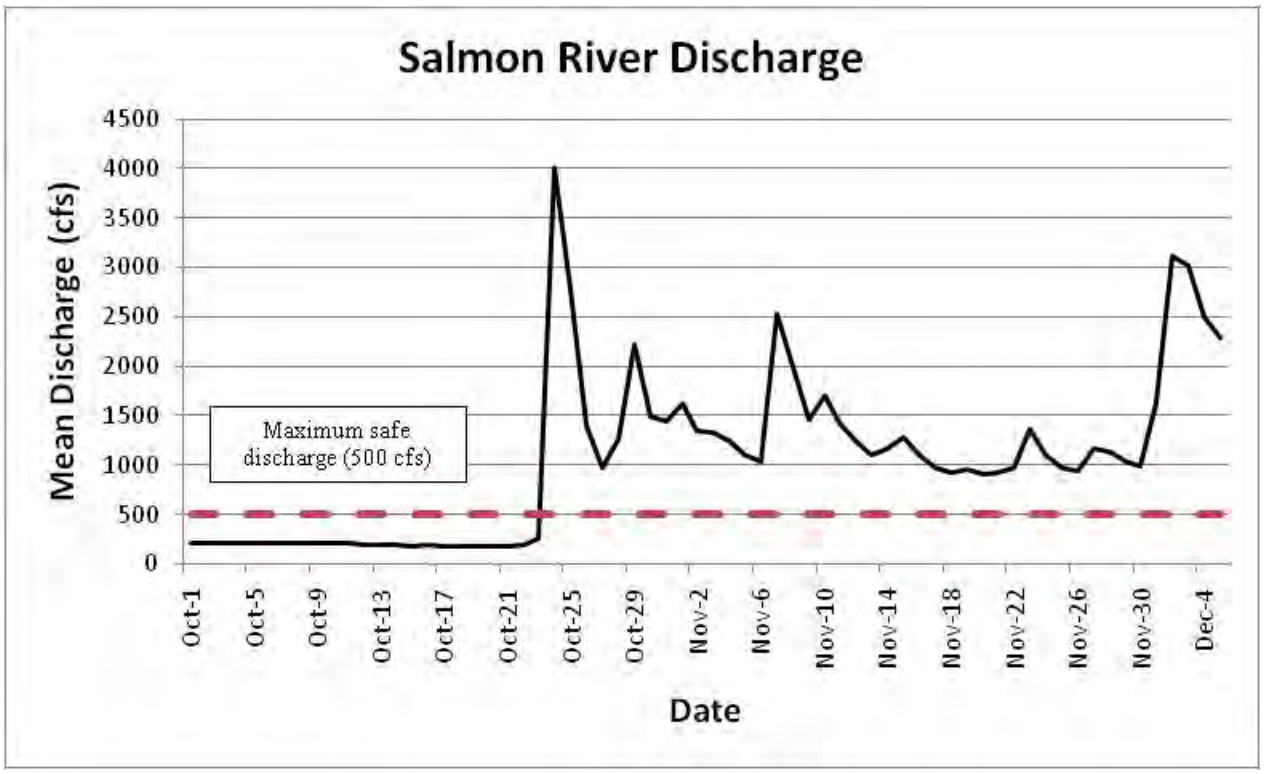


Salmon River

The Salmon River gauge (11522500) is located 1.0 miles upstream from Somes Bar, CA, at the confluence with the Klamath River.

- Legal location T.11N., R.6E., Sec. 3 (Humboldt Meridian); or
- Lat. 41°22'36" by Long. 123°28'33" (referenced NAD 1927)

Graph provided here provides a daily mean of discharge at the gauge and includes November 1st through December 5th, 2010, which encompasses the redd/carcass survey dates. Instantaneous discharges measured at the gauge can be higher or lower than that pictured.



Appendix C – Redd and Fish Survey Tables (2010)

Salmon River Redds

Reach	Survey Dates													
	Oct-12	Oct-15	Oct-19	Oct-22	Oct-26	Oct-29	Nov-02	Nov-05	Nov-09	Nov-12	Nov-16	Nov-19	Nov-23	Nov-30
Mainstem														
4A – Otter Bar to Nordheimer	9	17	17	0				14		0				
4B – Forks to Otter Bar	4	39	40	58				1						
North Fork														
9A - Mile 2 to Forks	43	54	14	13							5			
9B - Mile 4 to Mile 2	19	9	3	0										
10A - Mile 6 to Mile 4	10	48	4	37										
10B - Mile 8 to Mile 6	25		9	24										
11A - Mile 10 to Mile 8		19	21											
11B - Mile 12 to Mile 10														
South Fork														
5A - Henry Bell to Forks	27	63	109	42										
5B - O'Farrell Gul to Henry Bell	40	69	61	73							0			
6A - Indian Ck to O'Farrell Gul	91	62	10	80				14*				0^		
6B - Matthews Ck to Indian Ck	8	25	31	37										

Salmon River Tributary Surveys

Tributary	Date	Redds	Chinook	Steelhead
Black Bear Creek	Nov-16	0	0	1
Indian Creek	Nov-16	0	0	0
Knownothing Creek	Nov-16	Datasheets missing		
Little NF Salmon R	Nov-17	0	0	0
Methodist Creek	Nov-16	8	1	0
Nordheimer Creek	Nov-12	29	22	1
	Nov-16	8	6	0
North Russian Creek	Nov-05	0	0	0
Matthews Creek	Nov-16	Datasheets missing		
Plummer Creek	Nov-16	0	0	0
St. Claire Creek	Nov-16	Datasheets missing		

Salmon River (Live) Chinook Observation

Reach	Date													
	Oct-12	**Oct-15**	**Oct-19**	**Oct-22**	**Oct-26**	**Oct-29**	**Nov-02**	**Nov-05**	**Nov-09**	**Nov-12**	**Nov-16**	**Nov-19**	**Nov-23**	**Nov-30**
Mainstem														
4A – Otter Bar to Nordheimer	18	196	93					2		5				
4B – Forks to Otter Bar	133	211	102	129				5						
North Fork														
9A - Mile 2 to Forks	104	124	141	58							4			
9B - Mile 4 to Mile 2	45	37	35	49										
10A - Mile 6 to Mile 4	62	75	29	13										
10B - Mile 8 to Mile 6	73		47	47										
11A - Mile 10 to Mile 8		13	18											
11B - Mile 12 to Mile 10														
South Fork														
5A - Henry Bell to Forks	132	163	186	77										
5B - O'Farrell Gul to Henry Bell	107	88	62	77							5			
6A - Indian Ck to O'Farrell Gul	222	123	81	93				0				2^		
6B - Matthews Ck to Indian Ck	37	37	23	24										

^Only portion of reach accomplished - Methodist Ck to O'Farrell Gulch

Salmon River (Live) Steelhead Observation

Reach	Date													
	Oct-12	**Oct-15**	**Oct-19**	**Oct-22**	**Oct-26**	**Oct-29**	**Nov-02**	**Nov-05**	**Nov-09**	**Nov-12**	**Nov-16**	**Nov-19**	**Nov-23**	**Nov-30**
Mainstem														
4A – Otter Bar to Nordheimer	0	1*	0					0		43				
4B – Forks to Otter Bar	4	19	0	0				18						
North Fork														
9A - Mile 2 to Forks	0	2	0	0							41			
9B - Mile 4 to Mile 2	4	0	0	0										
10A - Mile 6 to Mile 4	0	0	2	0										
10B - Mile 8 to Mile 6	0		0	2										
11A - Mile 10 to Mile 8		0	1											
11B - Mile 12 to Mile 10														
South Fork														
5A - Henry Bell to Forks	0	0	0	0										
5B - O'Farrell Gul to Henry Bell	0	0	0	0							0			
6A - Indian Ck to O'Farrell Gul	0	0	0	1				0				11^		
6B - Matthews Ck to Indian Ck	0	0	0	0										

*Steelhead observed was dead

^Only portion of reach accomplished - Methodist Ck to O'Farrell Gulch

Scott River Redds

Reach	Date													
	Oct-11	**Oct-14**	**Oct-18**	**Oct-21**	**Oct-25**	**Oct-28**	**Nov-01**	**Nov-04**	**Nov-08**	**Nov-11**	**Nov-15**	**Nov-18**	**Nov-22**	**Nov-29**
R1 - Midpoint to Confluence	Holiday	9	16	26	High Water - No Survey	9	6	15	High Water - No Survey	12	1	8		0
R2 - Pat Ford to Midpoint		24	25	2		9		8		0	5	3		0
R3 - George Allen to Alreds		12	3	9		4	0	6				4		0
R4 - Townsend Gul to George Allen		0	17	22		4		0		5		0	2	0
R5 - Bridge Flat to Townsend Gul		5	17	20		0	0	14			6	0	4	4
R6 - CDFG Weir to Bridge Flat		3	3	13		6	1	10				9	12	7
R7 - USGS Gauge to CDFG Weir		1	0	14		0				1	0	1	0	0
R8 - Sniktaw Ck to USGS Gauge		8					21			72		49	68	
R12 - Sweezy to Eller Lane						1	0	0	2	2	5	5	3	7
R13 - Horn Lane to Sweezy				1		4	1	12	16	19	17	14	21	41
R14 - Youngs Dam to Horn Lane				0		3	4		12	23	32	36	31	39
R15 - Fay Lane to Youngs Dam							5	31		28	34	16	11	32
R16 - Top of Barnes to Fay Lane												4		

Scott River Tributary Surveys

Tributary	Date	Redds	Chinook	Steelhead
Canyon Creek	Nov-02	0	0	0
	Nov-19	0	0	0
Kelsey Creek	Nov-02	0	0	0
	Nov-12	0	0	0
	Nov-19	1	0	0
Tompkins Creek	Nov-02	0	0	0
	Nov-18	0	0	0
Wooliver Creek	Nov-30	0	0	0

Scott River (Live) Chinook Observations

Reach	Date													
	Oct-11	**Oct-14**	**Oct-18**	**Oct-21**	**Oct-25**	**Oct-28**	**Nov-01**	**Nov-04**	**Nov-08**	**Nov-11**	**Nov-15**	**Nov-18**	**Nov-22**	**Nov-29**
R1 - Midpoint to Confluence	Holiday	13	nd	75	High Water - No Survey	13	6	15	High Water - No Survey	6	5	3		0
R2 - Pat Ford to Midpoint		23	20	38		14		14		0	nd	1		0
R3 - George Allen to Alreds		92	nd	107		5	0	9				0		0
R4 - Townsend Gul to George Allen		11	nd	31		16		37		9		5	nd	0
R5 - Bridge Flat to Townsend Gul		146	86	37		3	nd	20			6	0	0	0
R6 - CDFG Weir to Bridge Flat		37	78	69		8	13	nd				7	nd	0
R7 - USGS Gauge to CDFG Weir		6	nd	46		8				2	6	1	2	0
R8 - Sniktaw Ck to USGS Gauge		21					41			79		36	11	
R12 - Sweezy to Eller Lane						2	1	3	6	5	3	4	2	0
R13 - Horn Lane to Sweezy				9		43	38	58	48	35	34	7	11	2
R14 - Youngs Dam to Horn Lane				5		21	12		30	25	43	22	9	3
R15 - Fay Lane to Youngs Dam							41	46		49	35	14	10	4
R16 - Top of Barnes to Fay Lane												2		

*nd = no data (datasheets missing)

Scott River (Live) Steelhead Observations

Reach	Date													
	Oct-11	**Oct-14**	**Oct-18**	**Oct-21**	**Oct-25**	**Oct-28**	**Nov-01**	**Nov-04**	**Nov-08**	**Nov-11**	**Nov-15**	**Nov-18**	**Nov-22**	**Nov-29**
R1 - Midpoint to Confluence	Holiday	0	nd	0	High Water - No Survey	0	0	0	High Water - No Survey	0	0	0		0
R2 - Pat Ford to Midpoint		1	0	0		0		0		0	nd	0		0
R3 - George Allen to Alreds		6	nd	1		0	0	0				0		0
R4 - Townsend Gul to George Allen		0	nd	0		0		0		0		0	nd	0
R5 - Bridge Flat to Townsend Gul		6	0	2		0	nd	0			0	0	0	0
R6 - CDFG Weir to Bridge Flat		0	4	5		0	0	nd				0	nd	0
R7 - USGS Gauge to CDFG Weir		2	nd	0		0				0	0	0	0	0
R8 - Sniktaw Ck to USGS Gauge		0					0			0		0	0	
R12 - Sweezy to Eller Lane						0	0	0	0	0	0	0	0	0
R13 - Horn Lane to Sweezy				0		0	0	0	0	0	0	0	0	0
R14 - Youngs Dam to Horn Lane				1		0	0		0	0	0	0	0	0
R15 - Fay Lane to Youngs Dam							0	0		0	0	0	0	0
R16 - Top of Barnes to Fay Lane												0		

*nd = no data (datasheets missing)

Klamath River Tributary Surveys (managed by Salmon/Scott District)

Tributary	Date	Redds	Chinook	Steelhead
Humbug Creek	Nov-02	0	0	0
Upper (WF) Humbug Creek	Nov-02	0	0	0

Appendix D – List of Cooperators and Contributions

Federal
U.S. Fish and Wildlife Service

U.S. Forest Service
-Klamath National Forest
-Six Rivers National Forest

State
California Department of Fish and Game
-Arcata Office
-Yreka Office

Tribal
Karuk Tribe
Yurok Tribe
Quartz Valley Indian Reservation

Other
Local volunteers
Forks of Salmon School District
Northern California Resource Center
Salmon River Restoration Council
Siskiyou Resource Conservation District