SCOTT RIVER WATERSHED
ADULT COHO SALMON SPAWNING SURVEY
December 2001- January 2002

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USDA, Forest Service
Klamath National Forest
Scott River Ranger District
Fort Jones, California

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PREFACE & ACKNOWLEDGMENTS

This project began as a community, volunteer effort to observe and document an exceptional event. Conditions were right this year for the coho salmon that came all the way up the Klamath River, then up the Scott River over sixty miles to spawn and conditions were right for viewing them.

A concerted effort was made to bring all interested and responsible parties together in order to begin to understand the rhythms and complexities of the coho salmon in our watershed. Working together we tried to cover as much area as possible and to share our findings with each other. What we have learned is just the beginning.

It is our hope that we can continue to learn together, to build trust and reduce fear and polarization through acquiring knowledge and by working together toward solutions.

This project was made possible by the efforts and contributions of the following individuals:

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Cover photo courtesy of CDFG. Adult male coho salmon, East Fork Scott River, December 4, 2001.

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INTRODUCTION

Coho Spawner History

Coho salmon (Oncorhynchus kisutch) migrate, spawn, and rear in the Scott River watershed, a sub-basin of the Klamath River System, (CDFG, 1974) but information on the run is quite limited (Leidy & Leidy, 1984). The habitat distribution of coho salmon in the Scott River stream system was referenced in the 1970s by the California Department of Fish and Game through stream lists (CDFG, 1972) and several maps, one of spawning areas (CDFG, 1974) and one of relative value of habitat (USSCS, 1972). More recently, the Klamath National Forest has compiled and updated a "map of anadromy" from various sources and surveys for the Scott River watershed (USFS, 2000). Brown et al. (1994) state that the Scott River probably holds the largest number of native coho fish of the Klamath River basin's larger tributary systems. Spawning data are incomplete. Adult coho salmon in the mainstem of the Scott River were seen during the end of the annual CDFG/USFS spawning surveys for the fall-run Chinook salmon (Oncorhynchus tshawytscha), but were not noted in the annual reports (Mark Pisano, CDFG, pers. comm.). Spawning coho adults (20+ redds) were observed in the Kelsey Creek spawning channel in 1987 (Jim Kilgore, USFS, pers.comm.). Apparently, no previous surveys have targeted the coho spawning population in the Scott River.

Juvenile Coho Research

Recent data on juvenile coho in the Scott River system are scattered but improving. They are annually monitored by CDFG/USFS in French Creek (found in 1993, 1996, 1999, 2000, 2001) as part of a watershed monitoring effort (Maria, 2001) and were incidentally observed in other tributaries: Tompkins Cr. (1989); Canyon Cr. (1988); Shackleford / Mill Cr. (1996); Kidder Creek (1996, 1997); upper Scott River (1996, 1997); and Big Mill Creek - Callahan (1994) (Dennis Maria, CDFG, pers.comm.). Klamath National Forest biologists have also noted juvenile coho in Mill Cr.- Scott Bar (early 1980s) and lower Scott River (1989). Beginning in 2000, downstream migrant coho are now monitored in the spring and summer by a rotary screw trap in the lower Scott (at river mile 4.8) as part of a monitoring effort by CDFG and USFS to measure abundance and timing during salmonid emigration (Chesney, 2002).

2001 Existing Conditions

Reports of large incidental ocean catches of coho salmon during the summer of 2001 and the detection of coho salmon during Chinook spawning surveys (Jim Kilgore, per.comm.), coupled with good viewing conditions in the fresh water in late 2001, provided an opportunity to observe the spawning distribution of the coho salmon in the Scott River Watershed. The 2001 fall flows were extremely low as will be discussed later. The fall Chinook salmon spawning was restricted to the lower reaches of the Scott River until this time. Observations in the Scott River canyon by local fishermen and Chinook survey crews (G. Black and J. Kilgore, pers. comm.) indicated a low flow barrier near the Scott River Lodge at river mile 11.8 on November 10, 2001, when approximately 200 Chinook salmon were observed below. No coho salmon were observed at that time.

River Connectivity Allows Coho to Return to Scott Valley

The USGS gage station at river mile 21.0 read 5.1 cfs, daily mean value, on November 10, 2001. Slight flow increases due to rain November 11-12, 2001 brought the river up to 5.6 cfs and Chinook salmon were observed at approximate river mile 15.5 and from Canyon Cr. Bridge, river mile 15.6. Another low flow barrier blocking fish passage was observed on November 21, 2001 at approximate river mile 15.8, just below Boulder Cr. near the old Scott River Resort. An estimate of 1000 salmon, of which approximately two-thirds were believed to be coho, were observed below this barrier by a local fisherman. Some of these were observed with white hook-shaped marks in front of the dorsal fin (net marks?). Fish observed from Eller Lane Bridge and Horn Lane Bridge also had these marks. (G. Black, pers. comm.). Within days following the high flows of November 22, 2001, salmon were reported in the

Scott Valley. The Scott River regained connectivity at the Meamber Bridge, river mile 24.3, on November 22, 2001 (Thanksgiving Day). By December 4, 2001, fish previously observed by landowner, Jay Phelps, spawning in the East Fork of the Scott River at his property, 6.3 miles above the confluence of the East Fork and the South Fork Scott River near Callahan (river mile 56.5), were confirmed to be adult coho salmon by Dennis Maria, DFG Fisheries Biologist (DFG Memo 12/10/01 to Bob McAllister).

Coho Spawning Surveys Organize

Recognizing the need and the opportunity to observe this spawning event, a grassroots, volunteer effort to coordinate local community volunteers, landowners, organizations and agencies commenced. On December 20, 2001, a cooperative survey was initiated, with the primary objective to identify where coho salmon were spawning and holding. (See Meeting Notes, 12/20/01, in Appendix). Initially, the cooperative group agreed to do another survey in January, scheduled for 1/10/02. However, the results of the 12/20/01 survey indicated good conditions for viewing and recording spawning activity and the opportunity to gather tissue and scale samples. This prompted the support of a more intensive effort, available via a contract funded by the USFS.

Project Objectives: Contract objectives in order of priority were as follows:

1) Collect tissue sample for DNA analysis to understand the genetic relationship of the Scott River coho salmon to other stocks and within meta-stocks such as the protected Southern Oregon/Northern California Coho ESU (SONCC).
2) Collect scale samples to understand the life history of the Scott River coho salmon.
3) Document the presence of coho salmon in the known and expected historic range of their distribution and in new tributaries where they had not been previously documented.
4) Document the extent of distribution in each of the tributaries where adult coho salmon were observed.
5) Determine the run timing and duration of adult coho salmon spawning.

No abundance estimates, which would have required a fully developed study plan, increased access to stream reaches, adequate funding and field personnel, were expected due to the spontaneity of this project.

The contractor coordinated efforts with private landowners, local organizations and agency personnel to accomplish these objectives from December 21, 2001-January 31, 2002. The survey took place on federal land, private corporate timber land and on other private property. Access onto private corporate timber land and other private property proceeded only as permission access was obtained. An interim meeting of the cooperative working group took place on January 3, 2002, where preliminary findings through December 31, 2001 were presented. (See Meeting Notes, 1/3/02 in Appendix). On February 14, 2002, the group met again to review the final findings and to discuss further assessment needs, issues and possible funding sources. (See Meeting Notes, 2/14/02 in Appendix).

This report documents the findings during the survey period, December 20, 2001-January 31, 2002 and includes confirmed observations of coho salmon in early December by DFG personnel. The data set and other supportive documents are included in the Appendix. An ArcInfo GIS coverage, as well as the electronic database, photos and this report are maintained at the Scott River District Office in Fort Jones (Klamath National Forest).

STUDY AREA

Table 1: List of Streams Surveyed by Reach describes the Scott River tributary stream/river reaches surveyed, both physically and in stream/river miles. Figure 1:Vicinity Map follows Table 1 and illustrates the geographic location of the Scott River sub-basin within the Klamath River system.

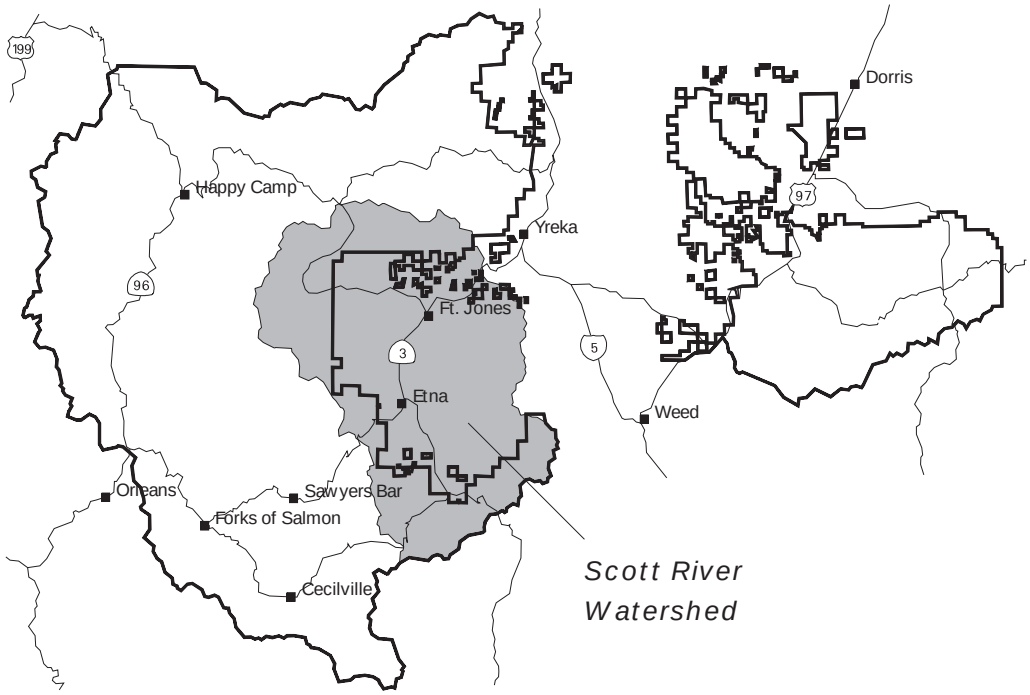
TABLE 1: LIST OF STREAMS SURVEYED BY REACH

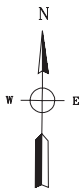
STREAM	REACH #	REACH DESCRIPTION	BEGINNING (RIVER MILE) UPSTREAM	END (RIVER MILE) DOWNSTREAM	LENGTH
Boulder Cr. (Canyon)	1	Lower Bridge- Scott River	0.2	0.0	0.2
Canyon Cr.	1	**Lower Canyon Creek**- Scott River	1.1	0.0	1.1
East Fork Scott	1	East Side Rd Bridge	0.1	0.1	0.0
East Fork Scott	1	Lower Callahan Guard Sta.- Hwy 3 Bridge	0.3	0.1	0.2
East Fork Scott	2	**Lower Masterson Road**	6.3	4.9	1.4
East Fork Scott	3	**Upper Masterson Road A**	6.6	6.4	0.2
East Fork Scott	3	**Upper Masterson Road B**	6.9	6.9	0.0
East Fork Scott	3	**Upper Masterson Road C**			0.0
East Fork Scott	3	**Upper Masterson Road C**			0.0
Etna Cr.	1	Mill Cr. Confluence- Dam	8.0	5.5	2.5
French Cr.	1	Hwy 3 Bridge	0.7	0.7	0.0
French Cr.	1	**Miners Cr Bridge area**	1.4	1.3	0.1
French Cr.	2	**Mid-Mainstem** French	2.3	1.5	0.8
French Cr.	3	**Horse Range Cr. Confluence Area**	5.8	5.7	0.1
French Cr.	3	**Upper-Mainstem** French	2.9	2.9	0.0
French Cr.	3	Bridge- N Line Sec 5	5.9	5.6	0.3
Miners Cr. (trib. to French)	1	Miners Cr. Rd Lower Bridge	0.5	0.5	0.0
Miners Cr. (trib. to French)	1	**0.3 mi Upstream** - Conf. of French Cr.	0.3	0.0	0.3
Horse Range Cr. (trib. to French)	1	Lower Braids-1000 ft up	0.2	0.0	0.2
Kelsey Channel	1	Channel	0.1	0.0	0.1
Kelsey Cr.	1	Barrier-Scott River	0.6	0.0	0.6
Kidder Cr	1	Barker Ditch Site Hwy 3 Bridge- 1 mile downstream			1.0
Kidder Cr	2	Upper-FGS	10.3	10.1	0.2
Kidder Cr	2	Upper-FGS	11.0	10.8	0.2

STREAM	REACH #	REACH DESCRIPTION	BEGINNING (RIVER MILE) UPSTREAM	END (RIVER MILE) DOWNSTREAM	LENGTH
Middle Cr.	1	Scott River Rd. Bridge- 250 ft. above	0.1	0.0	0.1
Mill Cr. (Scott Bar)	1	Lower 1/8 mi Singleton Cr.	2.6	2.5	0.1
Mill Cr. (Scott Bar)	1	Road-spot check	2.5	0.0	2.5
Moffett Cr.	1	USFS- South of HWY 3	8.0	7.3	0.7
Patterson Cr (Etna)	1	Hwy 3 Bridge DFG Screen Site 1 Mile Eller Ln.	4.3	3.3	1.0
Patterson Cr (Etna)	1	Upper-FGS	7.9	7.6	0.3
Scott River	1	Canyon Cr.- Kelsey Cr.	14.9	14.9	0.0
Scott River	2	Below E Fk & S Fk Confluence	56.5	56.4	0.1
Shackleford Cr.	1	Lower Bridge area	0.7	0.7	0.0
Shackleford Cr.	2	Upper-Falls to 1/2 Mile below	5.0	4.5	0.5
Mill Cr. (trib. to Shackleford)	1	DFG Fish Screen Site	1.5	1.5	0.0
Mill Cr. (trib. to Shackleford)	1	Lower 0.6 miles- Shackleford Cr. Conf.	0.6	0.0	0.6
Mill Cr. (trib. to Shackleford)	1	Upper-FGS 500 ft. above to Mill Cr. Rd Bridge	3.7	3.3	0.4
South Fork Scott	1	Lower-Hwy 3 Bridge	0.7	0.3	0.4
South Fork Scott	2	Fox Cr.- Boulder Cr.	4.0	2.1	1.9
South Fork Scott	3	40N21Y Xing- Fox Cr.	4.8	4.0	0.8
South Fork Scott	4	Upper-1000 ft.above 40N21Y Bridge Xing	5.0	4.8	0.2
Boulder Cr. (trib. to S.Fork)	1	1000' from Confluence- South Fork	0.2	0.0	0.2
Fox Cr. (trib. to S. Fork)	1	350' above Bridge- South Fork	0.1	0.0	0.1
Sugar Cr	1	Hwy 3 Bridge- Scott River	0.3	0.0	0.3
Sugar Cr	2	Upper FGS Bridge- FGS Lower Prop Line	3.3	1.2	2.1
Tompkins Cr.	1	Low Water Crossing- Potato Patch	2.4	0.6	1.8
Wildcat Cr.	1	Hwy 3 Bridge- Scott River	0.1	0.0	0.1
Wooliver	1	Lower	0.2	0.0	0.2
TOTAL MILES					**23.7**

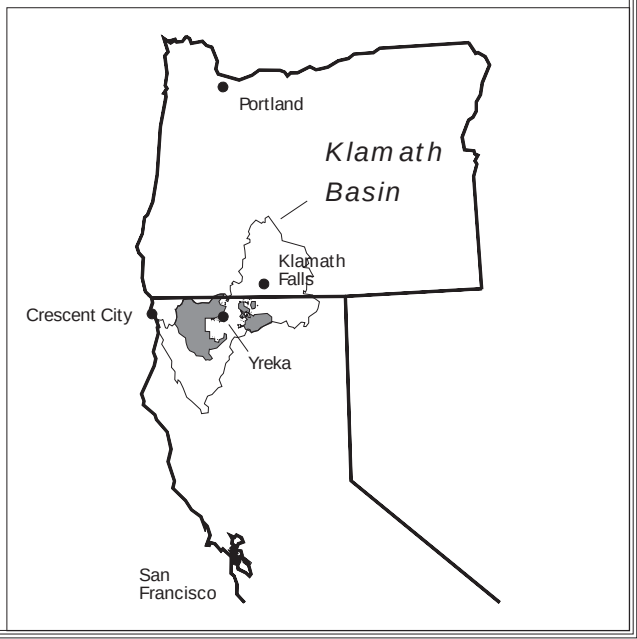
Figure 1

Klamath Basin Vicinity





20 0.0 20 *Miles*



STUDY METHODS

Methods were different for each of the following two survey periods:

December 20, 2001 Cooperative Survey:

The original purpose of this one-day survey was to document where adult coho salmon were holding and spawning in as many streams as possible within the Scott River Watershed. Participants were all experienced fisheries biologists or trained field technicians. Fish identification was reviewed (see details in next section), potential streams were targeted, field maps, data sheets and hand-held Garmin GPS units were utilized to map sightings. Surveyors worked in teams of two, covering as much of the watershed as possible. "Spot" checks at public bridge crossings and at targeted locations on public lands, as well as on private property where access permission was granted, took place on this day. The total number of live fish, redds and carcasses were counted and recorded on data sheets for each location checked. One tissue and scale sample was taken from a carcass, according to NMFS protocol. All data was collected at the end of the day and housed at the USFS, Klamath NF, Scott/Salmon River Ranger District Aquatics Office in Fort Jones, CA.

December 21, 2001-January 31, 2002:

The prioritized objectives of this inventory, detailed in the contract, guided the field strategy, as did the availability of personnel over the holiday vacation period. Collecting approximately 50 tissue and scale samples from carcasses focused the initial field effort on the areas of high concentrations of spawning, as identified on December 20, 2001. Integrated with that strategy was the development of several index reaches, where total numbers of redds with fish, redds without fish, live fish and carcasses were counted over time for the purpose of understanding run timing. Five streams, involving seven reaches were identified as index streams and were surveyed two or three times between 12/21/01-1/31/02.

Index Reaches

East Fork Scott River	Lower Masterson Rd	3 passes
	Callahan Guard Station - Hwy 3 Bridge	2 passes
South Fork Scott River	Fox Cr.- Boulder Cr.	3 passes
	Lower Public - Callahan Bridge	3 passes
Sugar Creek	Hwy 3 Bridge - Scott River	3 passes
French Creek	Mid-Mainstem French	3 passes
Canyon Creek	Lower Canyon Creek - Scott River	2 passes

Three passes were made during the following time periods:
Pass 1: December 20, 2001- January 2, 2002
Pass 2: January 8- 19, 2002
Pass 3: January 28-31, 2002

The upper extent of the spawning distribution was investigated in these streams, where access was allowed, as well as in as many other tributaries as possible. Presence was indicated by the sighting of a live fish, redd or carcass.

Surveyors usually worked in teams of two (often accompanied by the landowner on private property), wading the stream in neoprene waders, felt soled boots and wading staff, walking in a downstream direction. Streams with high flows, like Canyon Cr., required the use of dry suits for safety reasons.

Other tools used were polarized glasses, measuring tape, knife, scissors, pocket thermometer, flagging, permanent marking pen, GPS unit, field notebook, maps and data sheet.

Weather and flow conditions played a major role in field observations. Viewing conditions were excellent through December 31, 2001, until a winter storm increased the flow at the USGS gage from 454 cfs to 737 cfs, then to 2100 cfs on January 3, 2002 (daily mean value). Field surveys were not possible due to high flows from December 31, 2001 until January 8, 2002. (See Figure 2: USGS Discharge in Results).

Additionally, only three field personnel were available during the 12/21/01-12/31/01 period because of the holiday season. Assistance from landowners and community members was invaluable, without whose help the survey could not have been accomplished as thoroughly.

The following methods were employed during the field survey:

Tissue and Scale Sample Collection

A Federal ESA Section 10 collection permit was authorized by NMFS for coho tissue sample collection by USFS Fisheries Biologist, Jim Kilgore and his agents. Tissue Collection protocol was followed, under the direction of Tommy Williams and Carlos Garza, NMFS Tissue Repository, Southwest Fisheries Science Center, Santa Cruz, CA. (See protocol in the Appendix). Throughout this report, the term "sampling" refers to the process of collecting either tissue samples, scale samples or both.

Two sets of tissue samples were taken from each carcass by clipping with scissors a minimum of 1 cm^2 operculum tissue (gill plate). Tissue samples were taken from each side of the fish unless degraded operculum conditions required both samples to be taken from only one side. Each tissue was placed between absorptive paper and placed in a separate sample envelope. Information about the carcass was taken, which included: species identification, fork length measurement (cm), sex determination (cut open, if necessary) and a check for hatchery markings. A unique code was assigned for each carcass. All of this information was noted on the sample envelope and on the data sheet and also included the date, location and surveyors initials. GPS location was recorded electronically using the Garmin GPS unit and the coordinates were recorded manually on the data sheet, as well. (See GPS procedure below).

Two sets of scale samples were also taken from each carcass. First, the protective coating (the slime) was scraped from the sample area, just below the dorsal fin and above the lateral line, with a knife in the direction from head to tail. Then scraping in the opposite direction (tail to head), scales were lifted up with the knife. Approximately 20 scales were placed between absorptive paper and then into a scale envelope, labeled as described above. A total of four samples were obtained from each carcass (2 tissues and 2 scales). The carcass was then returned to the stream. Later in the survey, tissues and scales were only collected from fresh carcasses.

Each tissue and scale sample was air dried for several days in the sample envelope and assigned a sample number (a unique number per carcass). (See Genetic Tissue Sample Collection table in Appendix).
A Chain-of-Custody (COC) tracking form was established indicating the date of the sample collection, the name of the collector and every date and name when the sample was passed onto a new responsible party. (See copy of COC in Appendix).

One set of tissue and scale samples was hand-delivered by the contractor to Tommy Williams, NMFS, Southwest Fisheries Science Center on February 5, 2002 in Arcata. A COC form accompanying the collection was signed. The other set of tissue samples will be sent via Federal Express directly to the

Southwest Fisheries Science Center in Santa Cruz, to be held in the repository. The other set of scale samples was hand-delivered by the contractor to the California Dept. of Fish & Game, Eureka and signed over to the custody of Bill Jong on February 4, 2002. These will be archived.

Flow

Discharge data for the Scott River during the period of the survey were obtained from the USGS Gage (#11519500), located in the Scott River canyon. All references to discharge measurements in this document are from this gage. No measurements were taken in the tributaries where the flows were much less. Reference to river discharge is intended to indicate relative flow changes in the tributaries, where the surveys took place.

Fish Identification

Positive identification of coho salmon was a crucial first step in conducting spawning surveys and in the gathering of tissue and scale samples. This is of particular importance to this project given that mixed stocks of coho and Chinook were observed at a lower water barrier in the upper portions of the Scott River canyon prior to the survey period.

Morphological variation present in both coho and Chinook requires utilizing a suite of characteristics to confirm the identity of coho salmon. Identification of live fish was considerably more difficult than carcasses due to field constraints (e.g. not spooking the fish, glare and fish movement, etc.) and a limited number of characteristics [spots, nares, coloration and kypes] were visible from a distance. Information from the Biological Sampling Manual for Salmonids was utilized in species identification. The following characteristics were used:

Gums - White gums at the base of the teeth has been acknowledged as the most reliable characteristic for identification of coho. The interior of the mouth and the exterior gums of coho found in the Scott River system were jet black with whites gums visible only at the base of the teeth. This is contrary to many common identification charts, which show much more of the interior of the mouth as white.

Spots - These are black in color and can vary from circular "trout" spots to irregularly shaped spots and are generally small in size. The majority of the fish examined displayed fine spots on the head and rectangular spots on the dorsal surface.

Color - Coho salmon, both male and female, can exhibit extremely brilliant pink to red coloration over the lower 2/3rds of the body. In contrast, most Chinook exhibit olive to red coloration and usually only in males.

Kype - Both males and females have a fairly pronounced kype (the curved or hooked lower jaw of a salmon), with the male being larger and more hooked than the female. In Chinook only the male has a kype and it is much less pronounced than coho.

Nares –Nares, or nasal openings, are enlarged and white in coloration. This characteristic was extremely useful in identification of live fish due to the relative ease of visibility.

Caudal Peduncle - The caudal peduncle, narrow posterior body section located just anterior to the caudal or tail fin, of a coho is generally thicker than that of a Chinook. However, this characteristic was hard to see on live fish. It was noticeable when picking up the carcasses, however, as it was difficult to grip the coho by the peduncle, similar to a steelhead trout.

Sex - Males were identified by their larger more hooked kype, brilliant pink to red coloration and larger size.
Females were identified by their smaller kype, slightly duller coloration and smaller body size.
Jacks (2 yr. old males) were distinguished from other males and females by their smaller size (<40cm).
Additionally, if there was doubt on the sex of a carcass the anal opening was squeezed to determine the presence of milt, which indicates a male. Sometimes the carcass was opened up with a knife in order to view the egg skeins (female) or milt sacs (male).

Origin – Hatchery fish were identified by either the lack of an adipose fin or by a maxillary clip (right indicating Trinity River Hatchery and left indicating Irongate Hatchery). For adipose clipped fish the head was sampled (cut off with a knife) to determine the hatchery origin by coded-wire tag.

Redd Identification

The redd is the "nest" where the eggs have been deposited. The female coho salmon constructs her redd similar to other salmonids. She selects an appropriate site, usually with a preferred size of gravel (generally 1/2"-4" diameter), depth and velocity of water (1-3 fps), then begins by digging a depression (pott) and depositing some of her eggs while the male fertilizes them. She then moves slightly upstream, digging another depression and at the same time backfilling and covering the eggs she has deposited. The eggs are buried in the cleaned gravel several inches to a foot or more in depth. Over the course of several days, the female continues to deposit her eggs, working in an upstream direction. When the redd is completed it looks like a tear-dropped shaped mound of gravel extending downstream, approximately 4-5 feet long and 2-3 feet wide, below the last excavation, or pott (approx. 3-8 inches deep). The gravels are generally uniform in size and are often very shiny from recently being moved.

Redd identification followed the standard identification process used during the fall Chinook salmon surveys. Redds were counted if they were nearly complete and if there was an 80% confidence by the surveyor that it was a redd. Redds with coho salmon on them were counted as "Redds with Fish" and were distinguished from "Redds without Fish" in the field notes**.** "Redds without Fish" were recorded because coho salmon spawn during the latter part of the fall Chinook spawning period and during the early part of the steelhead spawning period. Redds on index reaches were marked with orange/white striped flagging hung on the bank opposite the head of the pott of the upper most redd in the group to prevent duplicate counting on subsequent passes. The flag was labeled with the date, number of redds and number of fish. Redds on non-index reaches were counted in the same manner, but not flagged.

Following the January 2, 2002 high flows, redd identification became much more difficult. High flows moved gravels and flattened previously constructed redds. Only new redds constructed after the high flows were counted, unless they were very obvious. Bedload movement had to be distinguished from gravel movement by a fish, relying much more on the form of the redd and less on the shiny appearance of the gravels.

Location by GPS

Hand-held Global Positioning System (GPS) units were used when possible to record the location electronically (waypoint) of each carcass, redd or live fish. GPS waypoints were labeled with a stream code, sequential number and a single letter code, denoting carcass (C), redd (R), or fish (F).

Ex.: S F K 0 7 R = South Fork #7 Redd

GPS coordinates, in either Lat/Long or UTM were recorded in the field notes, along with the code and the data for that location. A single code was assigned to each carcass that was sampled, while more than one redd or fish may be associated with one code and GPS location. In most cases, locations were also located onto a topographic field map.

Three Garmin GPS units were used during the survey (See GPS settings in Metadata in Appendix). Data upload from each unit to a Garmin MapSource software on an office computer occurred throughout the survey to protect the data. Final GPS locations were exported to a .txt file, then brought into an ArcInfo coverage. (See Metadata in Appendix).

Accuracy of Garmin GPS locations, according to Garmin Corporation, Technical Support, (per phone conversation, 1/4/02) is ± 40 ft. However, due to steep topography, some of the locations obtained during this survey may have greater error than this. Field locations, where no GPS readings were obtained, were noted in the data sheet and were later manually ("heads-up") digitized from field maps into the ArcInfo coverage. In some cases, these digitized locations are only accurate within the reach surveyed (i.e. Mill Cr. (Shackleford) and Miners Cr.). All GPS locations are indicated by a "Y" and the digitized locations are indicated by an "N" in the GPS field of the data set. (See Field Data Set in Appendix)

Data Management

All field data were entered from field forms into an Excel spreadsheet. GPS locations were linked by code using Microsoft Access, in order to exhibit coordinates in Lat/Long in the final data set. Summary tables were created using Access, then exported to Excel. The database is available in Access, all other electronic data is available in Excel and the final report is in Microsoft Word. The spatial data is in an ArcInfo coverage (ver. 7.2.1).

RESULTS

Tissue and Scale Sample Collection

Tissue and scale samples were successfully collected from 75 carcasses during the survey period. Sixty-five of these were collected during Pass 1 (Dec 20-Jan 2), ten were collected during Pass 2 (Jan 8- Jan 19) and none were collected during Pass 3 (Jan 28-31). Of the carcasses sampled, forty-six of them were females ranging in fork length from 64-78 cm, with the average length equal to 75 cm. Twenty-nine of the sampled carcasses were males, ranging in fork length from 70-85 cm, with an average length of 76 cm. The fork length of two of the males could not be determined because the carcasses were partially eaten. No jack coho salmon were observed.

No genetic analysis of the tissue samples has been done to date. This analysis will be completed by the NMFS Tissue Repository, Southwest Fisheries Science Center and the results will be forthcoming. No scale analysis has been completed at this time. The NMFS Tissue Repository, Southwest Fisheries Science Center will also analyze the scales and the results will be forthcoming.

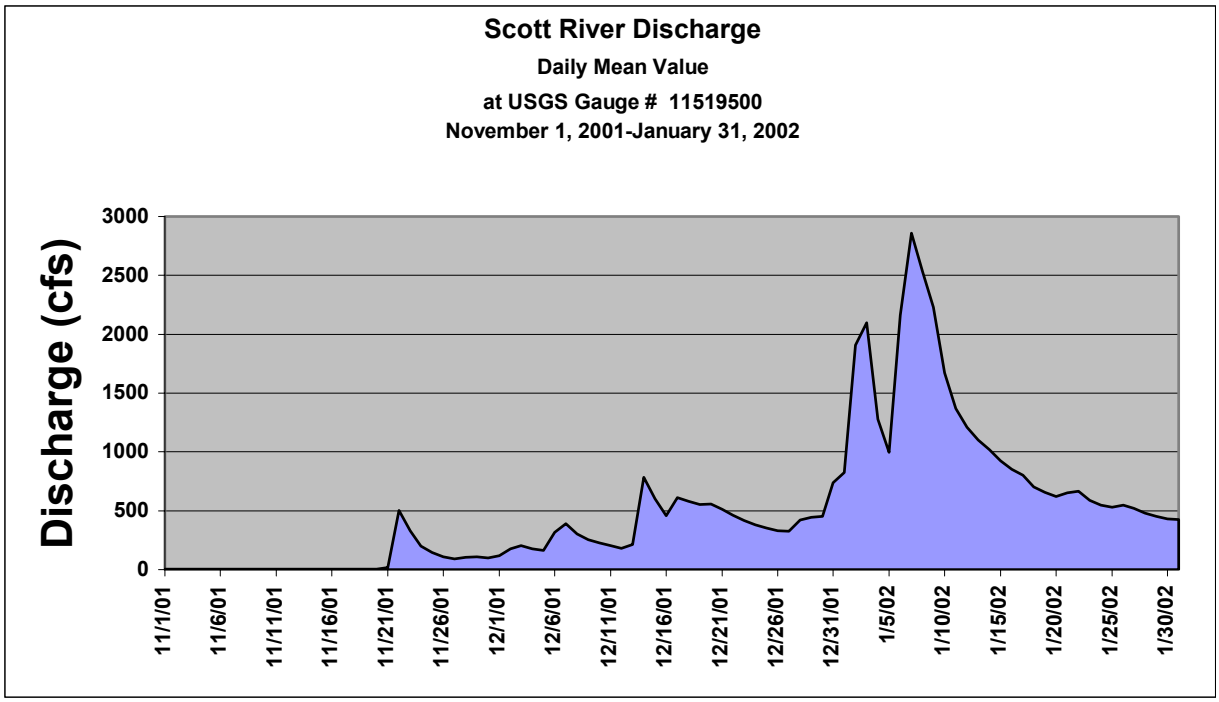
Hatchery Markings

A total of 115 carcasses were observed and handled during the survey, with 75 of these carcasses sampled for tissue collection from the operculum and scales, as noted above. One carcass on the South Fork during pass 2 was suspected of a left maxillary clip and one carcass on the South Fork during pass 2 had a suspected adipose clip. The head was taken for coded wire nose tag reading by DFG, but no head tag found (Dennis Maria, CDFG, pers.comm.). All other carcasses showed no hatchery marking signs.

Flow

Figure 2 shows the discharge at the USGS gage (#11519500) in the Scott River canyon from November 1, 2001- January 31, 2002.

Figure 2



Distribution and Run Timing

Adult coho salmon were first observed in large numbers in the Scott River canyon, holding below a low flow barrier at river mile 15.8, on November 21, 2001 (G. Black, pers. comm.). Spawning was first reported in the East Fork of the Scott River by landowner, Jay Phelps on December 4, 2001 (D. Maria, Memo 12/10/01 in Appendix). Spawning continued in the upper reaches of the Scott River sub-basin through December, then tapered during January, 2002. The last live coho was observed in the Scott River canyon on January 19, 2002 and on January 14, 2002 in upper reaches of the watershed on the East Fork. Little to no spawning was observed in the canyon tributaries of the Scott River below Shackleford Cr. during the survey period.

Figure 3: Coho Salmon Range and Recent Observation map, illustrates the extent of the observations (adult fish, carcasses, and redds with and without fish) during the 2001-2002 survey period compared to the known and suspected range of historic coho presence (based on USFS, 2000 mapping).

Table 2 shows the total number of redds, live fish and carcasses in all the streams surveyed through January 31, 2002. The uppermost sighting (redd, fish or carcass) is noted in each stream, as well as the total number of sampled carcasses by stream. These new sightings, as compared to the USFS historic range map indicate a new range or confirm the suspected range in the East Fork of the Scott River, French Cr., Etna Cr., Patterson Cr. and possibly in Moffett Cr (see Discussion section).

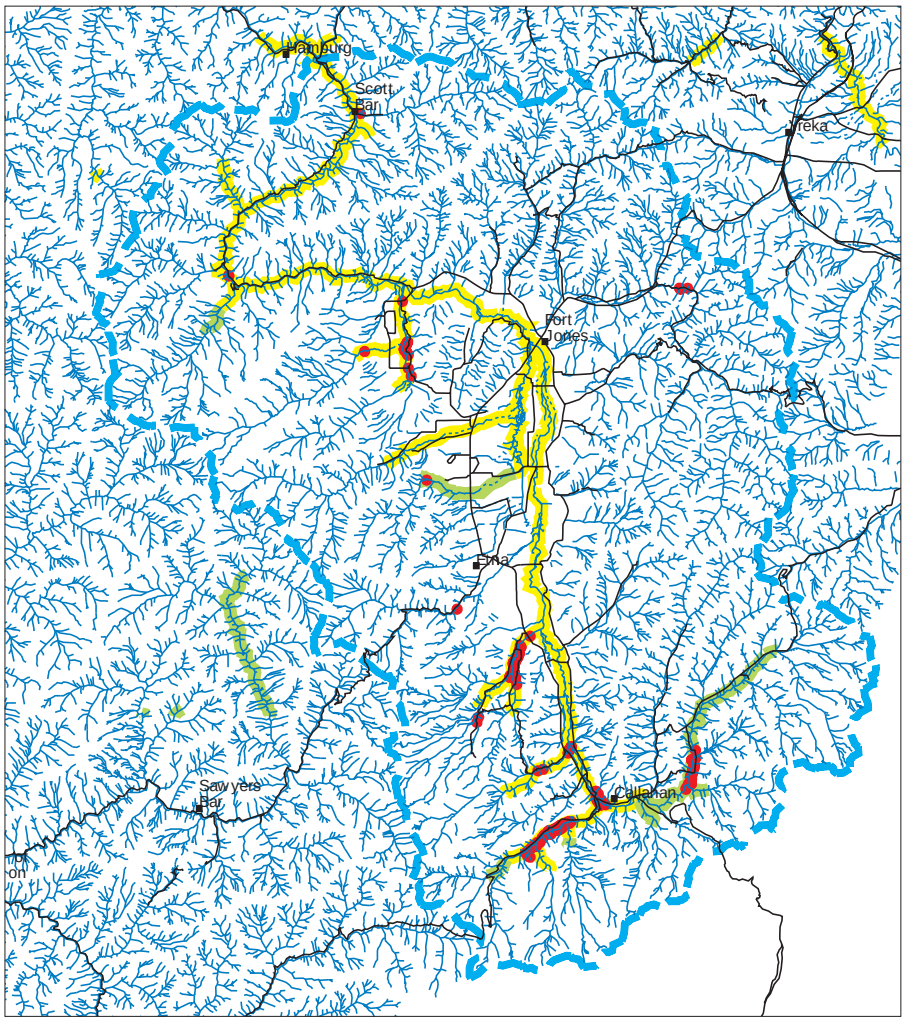
Table 3 shows in detail the total number of redds, live fish and carcasses for all stream reaches surveyed by reach and during each pass. A total of 212 redds, 173 live fish and 115 carcasses were observed during the survey period. As illustrated in the Figure 4 bar graph below, 92% of the total redds constructed were observed on Pass 1 (December 20, 2001-January 2, 2002), 6.5% were observed on Pass 2 (January 8-19, 2002) and 1.5% on Pass 3 (January 28-31, 2001). Ninety-seven percent of the live fish observed were during Pass 1, with 3% on Pass 2 and no live fish were observed during Pass 3. Fifty-seven and one-half percent of the carcasses were retrieved during Pass 1, 39% during Pass 2 and 3.5% during Pass 3.

Table 4 shows the total number of redds, live fish and carcasses for the index stream reaches during each pass. A total of 110 redds, 115 live fish and 90 carcasses were observed on these index reaches. The bar graph illustrated in Figure 5 below shows that 91% of the redds constructed were observed during Pass 1 (December 20, 2001-January 2, 2002), 9% during Pass 2 (January 8-19, 2002) and no new redd construction was observed during Pass 3 (January 28-31, 2001). Ninety-seven and one-half percent of the live fish were observed during Pass 1, 2.5% were observed during Pass 2 and no live fish were observed during Pass 3. Forty-six and one-half percent of the carcasses were retrieved during Pass 1, 49% during Pass 2 and only 4.5% during Pass 3. Table 3 indicates that a total of 12 redds without fish were detected during Pass 2 in the East and South Forks of the Scott River, French Creek and Sugar Creek and 3 redds without fish were found in Moffett Creek during Pass 3.

A complete field data set containing all data by site is included in the Appendix. The Access database file and the spatial data in an ArcInfo GIS coverage is available at the USFS, Scott River Ranger District.

Coho Salmon Range & Recent Observations

Scott River Watershed



Currently Mapped Range of Coho Salmon (Present)

Currently Mapped Range of Coho Salmon (Suspected)

December 2001 - January 2002 Observations (includes adult fish, carcasses, or redds)

Scott River Watershed Boundary

Perennial Stream

Intermittent Stream

State Highway/County Road

7 0.0 7 Miles

March 11, 2002

Figure 2

Figure 3

TABLE 2: TOTAL NUMBER REDDS, LIVE FISH & CARCASSES BY STREAM									
STREAM	**# REDDS W/FISH**	**# REDDS WO/FISH**	**# REDDS TOTAL**	**# LIVE FISH**	**# CARCASSES**	**# CARCASSES SAMPLED**	**UPPER SITE (CODE)**	**EASTING (x)**	**NORTHING (y)**
Boulder Cr. (Canyon)			0						
Canyon Cr.			0						
East Fork Scott	18	21	39	30	21	13	EFK50R		
Etna Cr.	1		1	2			ETN01R	506806.719	4586207
French Cr.	5	22	27	16	28	25	FRE01R	508196.969	4578240.5
Horse Range Cr. (trib to French)			0						
Miners Cr. (trib to French)	2	12	14	8	4	4	MIN01F	511000.844	4580915
Kelsey Channel			0						
Kelsey Cr.			0						
Kidder Cr			0						
Middle Cr.			0						
Mill Cr. (Scott Bar)		1	1				SBM01R	500002.188	4621037
Moffett Cr.		3	3				MOF01R	523002	4608754.5
Patterson Cr (Etna)	1		1	1			PAT01R	504665.375	4595271
Scott River		1	1	1	3	3			
Shackleford Cr.		3	3				SHK01R	500308.125	4604312
Mill Cr. (trib to Shackleford)	7	23	30	9	6	5	SML02R	503580.25	4602578.5
South Fork Scott	30	38	68	64	48	20	SFK13R	511598.562	4569070
Boulder Cr. (trib to S.Fork)		1	1				BOU01R	514711.344	4571154.5
Fox Cr. (trib to S. Fork)			0						
Sugar Cr	15	8	23	42	5	5	SUG22R	512482.906	4574843.5
Tompkins Cr.			0						
Wildcat Cr.			0						
Wooliver			0						
TOTAL	**79**	**133**	**212**	**173**	**115**	**75**			

TABLE 3: TOTAL NUMBER REDDS, LIVE FISH & CARCASSES BY STREAM, REACH, PASS									
STREAM	REACH	LENGTH	PASS #	# REDDS W/FISH	# REDDS WO/FISH	# REDDS TOTAL	# LIVE FISH	TOTAL # CARCASSES	TOTAL # CARCASSES SAMPLED
Boulder Cr. (Canyon)	1	0.2	1			0			
Canyon Cr.	1	1.1	1			0			
Canyon Cr.	1	1.1	3			0			
East Fork Scott	1	0.0	1		3	3			
East Fork Scott	1	0.2	1	1	1	2	3		
East Fork Scott	1	0.2	2			0			
East Fork Scott	2	1.4	1	5	15	20	9	12	12
East Fork Scott	2	1.4	2		1	1	1	6	1
East Fork Scott	2	1.4	3			0		3	
East Fork Scott	3	0.0	1		1	1			
East Fork Scott	3	0.0	2			0			
East Fork Scott	3	0.2	1	12		12	17		
Etna Cr.	1	2.5	1	1		1	2		
Etna Cr.	1	2.5	2			0			
French Cr.	1	0.0	1	1		1	3		
French Cr.	1	0.1	1			0		5	5
French Cr.	1	0.1	2			0			
French Cr.	2	0.8	1	4	16	20	13	14	14
French Cr.	2	0.8	2		4	4		2	
French Cr.	2	0.8	3			0		1	
French Cr.	3	0.0	2		1	1			
French Cr.	3	0.1	1		1	1			
French Cr.	3	0.1	1			0		6	6
Horse Range Cr. (trib to French)	1	0.2	1			0			
Miners Cr. (trib to French)	1	0.0	1			0	5		
Miners Cr. (trib to French)	1	0.3	1	2	12	14	3	4	4
Kelsey Channel	1	0.2	1			0			
Kelsey Channel	1	0.2	2			0			
Kelsey Cr.	1	0.6	1			0			
Kelsey Cr.	1	0.6	2			0			
Kidder Cr	1	0.0	1			0			
Kidder Cr	2	0.2	2			0			
Kidder Cr	2	0.2	2			0			
Kidder Cr	2	1.0	2			0			

STREAM	REACH	LENGTH	PASS #	# REDDS W/FISH	# REDDS WO/FISH	# REDDS TOTAL	# LIVE FISH	TOTAL # CARCASSES	TOTAL # CARCASSES SAMPLED
Middle Cr.	1	0.1	1			0			
Mill Cr. (Scott Bar)	1	0.1	2			0			
Mill Cr. (Scott Bar)	1	2.5	1		1	1			
Moffett Cr.	1	0.7	3		3	3			
Patterson Cr (Etna)	1	0.3	2	1		1	1		
Patterson Cr (Etna)	1	1.0	1			0			
Scott River	1	0.0	2			0	1	1	1
Scott River	2	0.1	1		1	1		2	2
Shackleford Cr.	1	0.0	1		2	2			
Shackleford Cr.	2	0.5	1		1	1			
Mill Cr.(trib to Shackleford)	1	0.0	1	2		2	2		
Mill Cr.(trib to Shackleford)	1	0.4	2			0			
Mill Cr.(trib to Shackleford)	1	0.6	1	5	23	28	7	6	5
South Fork Scott	1	0.0	3			0			
South Fork Scott	1	0.4	1	12	5	17	20	4	4
South Fork Scott	1	0.4	2			0		3	
South Fork Scott	2	1.9	1	9	12	21	27	7	7
South Fork Scott	2	1.9	2		4	4		33	8
South Fork Scott	2	1.9	3			0			
South Fork Scott	3	0.8	1	9	17	26	17	1	1
South Fork Scott	4	0.2	2			0			
Boulder Cr. (trib to S.Fork)	1	0.2	1		1	1			
Fox Cr. (trib to S. Fork)	1	0.1	1			0			
Sugar Cr	1	0.3	1	14	6	20	40	5	5
Sugar Cr	1	0.3	2	1		1	2		
Sugar Cr	1	0.3	3			0			
Sugar Cr	2	2.1	2		2	2			
Tompkins Cr.	1	1.8	1			0			
Tompkins Cr.	1	1.8	2			0			
Wildcat Cr.	1	0.0	1			0			
Wildcat Cr.	1	0.1	2			0			
Wooliver	1	0.2	2			0			
TOTAL				**79**	**133**	**212**	**173**	**115**	**75**

TABLE 4: TOTAL NUMBER OF REDDS, LIVE FISH & CARCASSES BY INDEX STREAM/ REACH BY PASS									
STREAM	**REACH**	**LENGTH (MILES)**	**PASS #**	**# REDDS W/FISH**	**# REDDS WO/FISH**	**#REDDS TOTAL**	**# LIVE FISH**	**TOTAL # CARCASSES**	**TOTAL # CARCASSES SAMPLED**
Canyon Cr.	1	1.1	1			0			
Canyon Cr.	1	1.1	3			0			
Total				**0**	**0**	**0**	**0**	**0**	**0**
East Fork Scott	1	0.2	1	1	1	2	3		
East Fork Scott	1	0.2	2			0			
Total				**1**	**1**	**2**	**3**	**0**	**0**
East Fork Scott	2	1.4	1	5	15	20	9	12	12
East Fork Scott	2	1.4	2		1	1	1	6	1
East Fork Scott	2	1.4	3			0		3	
Total				**5**	**16**	**21**	**10**	**21**	**13**
French Cr.	2	0.8	1	4	16	20	13	14	14
French Cr.	2	0.8	2		4	4		2	
French Cr.	2	0.8	3			0		1	
Total				**4**	**20**	**24**	**13**	**17**	**14**
South Fork Scott	1	0.4	1	12	5	17	20	4	4
South Fork Scott	1	0.4	2			0		3	
South Fork Scott	1	0.4	3			0			
Total				**12**	**5**	**17**	**20**	**7**	**4**
South Fork Scott	2	1.9	1	9	12	21	27	7	7
South Fork Scott	2	1.9	2		4	4		33	8
South Fork Scott	2	1.9	3			0			
Total				**9**	**16**	**25**	**27**	**40**	**15**
Sugar Cr	1	0.3	1	14	6	20	40	5	5
Sugar Cr	1	0.3	2	1		1	2		
Sugar Cr	1	0.3	3			0			
Total				**15**	**6**	**21**	**42**	**5**	**5**
TOTAL				**46**	**64**	**110**	**115**	**90**	**51**

Figure 4, below, illustrates in a bar graph the total numbers of redds (both with and without fish), live fish and carcasses observed during each pass for all streams surveyed.

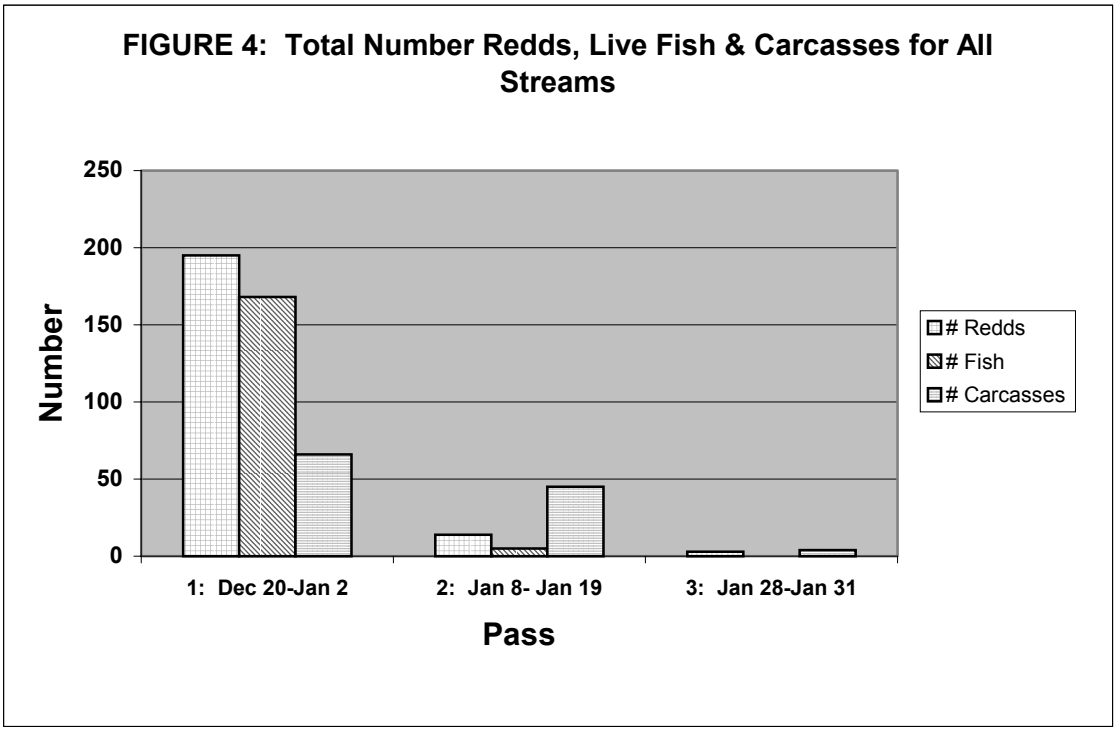
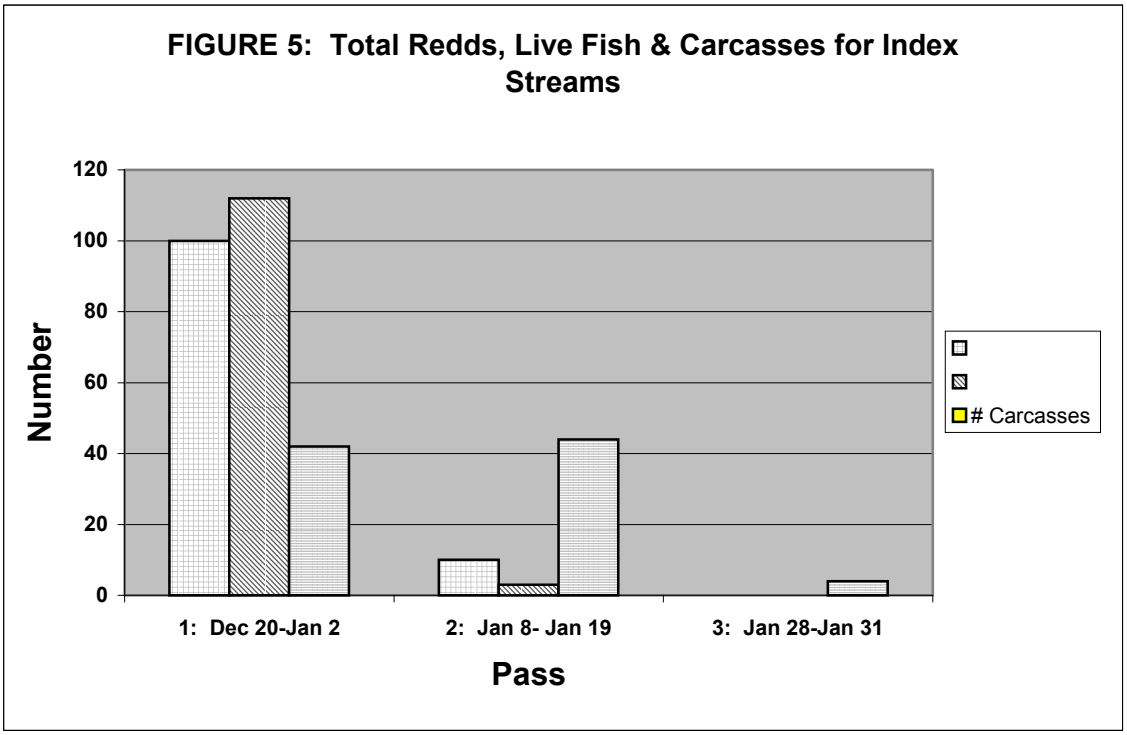


Figure 5 illustrates in a bar graph the total number of redds (both with and without fish), fish and carcasses observed during each pass in the index stream reaches.



DISCUSSION

Tissue and Scale Sample Collection

The robustness of the DNA analysis to be derived from the tissue samples will depend upon the collection of suitable numbers of tissues from other coho stocks throughout the Pacific Northwest. This will allow comparison of genetic similarity to other coho stocks. That collection effort is underway, but is currently not adequate for analysis that will allow genetic comparison of Scott River coho stocks with other coho stocks. The NMFS Southwest Fisheries Science Center projects that an analysis may occur in 2002, but it may be delayed even longer until adequate samples can be collected throughout the range of the coho salmon (T. Williams, pers.comm.).

Scale analysis will help determine the life history and age of these adult spawners. Interpretation of the annuli of the fish scale, similar in concept to the rings of a tree, indicate the time the fish has spent in fresh and salt water. Scale analysis will be done by the NMFS, Southwest Fisheries Science Center by late summer 2002. The length of time these fish spend in the fresh water system will be important to understand for management purposes. A second set of scales samples has been archived by the California Department of Fish and Game, Eureka. These scales are available to be analyzed if funding can be secured.

Flow

Stream discharge appears to have a direct relationship with the spawning run timing of this year's adult coho salmon. Shortly after the November 22, 2001 high flows, of approximately 500 cfs (daily mean value), the Scott River regained connectivity and the adult coho moved quickly up into the upper tributaries of the sub-basin. Most of the spawning occurred when the river discharge was between 300-700 cfs (daily mean value). Although some redds were constructed during higher flows (>1000 cfs), these were located in side channels or on stream margins, which became exposed once the flows dropped back down below 500 cfs late in January. High flows limited observation because of safety reasons and also made the identification of the redds constructed between Pass 1 and Pass 2 difficult due to bedload movement.

Distribution and Run Timing

The primary spawning period for adult coho salmon in the Scott River sub-basin was during the month of December. The first confirmed spawning occurred on December 4, 2001, although redds may have been constructed a few days prior to this time. There is high certainty of redds identified that were constructed prior to the December 20, 2001 survey because the flows were stable and the redds were easily identifiable. Because only coho salmon carcasses were observed during the survey period, there is also high certainity that the redds without fish on them were very likely coho salmon redds, though it is possible that a few redds may have been either very late Chinook or very early steelhead redds. This is especially the case in Moffett Creek and Mill Creek (Scott Bar) where only isolated redds without fish were found. In most other locations, adult coho salmon were visible and abundant. In addition, most Chinook spawning occurred before November 22, 2001 and was limited to the lower canyon area of the Scott (because of low flows due to the drought year) and most coho spawning occurred in the valley portion of the Scott subbasin, after November 22. After the January 2, 2002 high flows, few fresh fish, new redds or fresh carcasses of coho salmon were observed. Only one previously sampled carcass was found during Pass 2, indicating that most carcasses had been flushed by the high flows. Older carcasses

found on the index stream reaches probably washed down from above. These were counted, but not sampled.

Observation of redds was not difficult prior to the high flows, especially when fish were on them. They were clearly defined in shape and the gravels were shiny and clean. Of the 212 total redds counted, 37% of those had fish on them. The other 63% (133 redds) were clearly identified, in most cases, and followed the protocol for redd identification of 80% confidence. However, many redds may have been constructed between Pass 1 and the high flows of January 2, 2002, based on the numbers of fish observed during that first pass. These redds were not counted, for the most part, as identification was difficult during Pass 2, when all the gravels were shiny and clean and the redds had been flattened by the high flows. Total redd numbers for coho salmon are probably conservative because of this factor. Fifteen redds without fish on them were recorded during Passes 2 and 3 (see Table 3).

It appears that most of the spawning took place in the tributaries in the upper part of the Scott River sub-basin, above Shackelford Creek. Mainstem spawning was not evaluated and limited surveys occurred in some of the tributaries, such as Wildcat Cr., Kidder Cr. and most of the eastside tributaries. Limitations in surveying were mainly due to limited crew size and restricted access to private land. Moffett Cr. and Rattlesnake Cr. were disconnected from the river until early January and Indian Creek was never connected during the survey period. Moffett Cr. became connected on January 8, 2002 and has remained connected as of February 28, 2002. Rattlesnake Creek became disconnected again in late January. Moffett and Scott Bar Mill Creeks will be surveyed by snorkel diving and electrofishing after projected emergence to determine if coho salmon juveniles are present in the vicinity of redds created in the winter of 2001/2002.

Other Observations

Spawning Habitat

The adult coho salmon appeared to migrate as far up a stream as possible to spawn, provided the habitat was available within a given sub-watershed. This is consistent with the spawning distribution of Pacific salmon in a hypothetical watershed as found in the literature (Lichatowich, 1999). (See "The spawning distribution of Pacific salmon in a hypothetical watershed" in the Appendix). The upper extent seemed to be due to either a natural barrier or at a point where the habitat was no longer suitable (i.e. steep gradient or large substrate). The fish seemed to prefer side channels, braids and even irrigation diversion intake channels above screen sites. In these areas, the gradient was usually < 2% (ocular estimate) and the gravels more uniform (1-4 in. diameter). They seemed to prefer areas where nearby medium to large woody debris cover was available. Spawning occurred in pool tailouts, low-gradient riffles (LGR) and in run habitats. Female coho did not appear as territorial as Chinook females. Male coho exhibited similar competitive behavior to Chinook males, ramming each other with their kypes and chasing each other away from the female's side.

The coho redds appeared slightly smaller than Chinook redds, approximately 4-6 ft. long and 2-3 ft. wide, though no measurements were taken. Some of the spawning grounds were completely worked over by the fish, making the total number of redds difficult to determine. Little superimposition was observed, but some marginal gravels were utilized, mostly of decomposed granitic sand-sized sediment in some reaches of Sugar Cr., French Cr. and in the South Fork of the Scott River. At one location in the South Fork, eggs were observed on the surface of the gravels. Spawning in the irrigation diversion channels was also not optimal in terms of gravel, as there was usually more sand in these areas.

Adult Coho Spawners in Sugar Creek, December 28, 2001

Temperature

Water temperatures fluctuated during the survey period, but seemed to be similar throughout the sub-basin, probably a function of air temperature. During Pass 1 and 2 they ranged between 3-7°C (37-44°F). In late January, air temperatures dropped to –13°C (8°F) in the Scott Valley and the water temperature ranged between 0-0.5°C (32-33°F). Ice formed on the stream banks and sheets of ice extended out into the stream channel from each side, covering nearly half of the stream in places. Observation under these ice sheets was limited. Slushy ice was observed on the cobble/gravel substrate in both the upper reaches of the East Fork of the Scott River and the South Fork of the Scott River in the more confined, shaded areas.

Icy Conditions in the East Fork Scott River, January 28, 2002

Beaver Activity

Beaver activity, noted by fresh cuttings and bank dens, was observed in the East Fork (Reach 2-Lower Masterson Bridge), South Fork (Reach 1-Lower), Sugar Cr. (Reach 1) and in French Cr. (Reach 2-Mid-mainstem). A beaver was sighted in the East Fork and new dam construction was observed in Sugar Cr., just above the confluence with the Scott River and in French Creek, in the braided area of the mid-Mainstem French (Reach 2).

Beaver Dam in Sugar Creek just above the confluence with the Scott River

Stream Characteristics

The total stream length of accessible habitat for coho salmon within the Scott River Watershed for the 2001/2002 spawning period is roughly estimated to be 92 miles, not including the mainstem Scott River. This distance also includes Moffett and Scott Bar Mill Creek, which had redds created during the period of coho spawning but which had no observed adult coho salmon. The length of accessible habitat was estimated using the upper extent of coho distribution and is based on the range and distribution maps from CDFG (1974) and USFS (2000) and 2001-2002 survey results. The amount of spawning habitat (area and quality) is unknown within the accessible habitat length referred to in this discussion. During this survey, approximately 26% (23.7 miles) of this estimated habitat was surveyed at least once, but only 6.5% (6.1 miles) was surveyed more than once. Access limitations were primarily due to time constraints in pursuing landowner permission.

East Fork of the Scott River

There is estimated to be about 13 miles of accessible habitat in the East Fork of the Scott River, of which only 14% (1.8 miles) of stream length was surveyed. The upper extent of spawning in the East Fork was not determined due to access limitations above the Masterson Road. Bridge at mile 6.9. Stream gradient and available habitat appears to be good for several miles above this point. Tributaries to the East Fork of the Scott River were not surveyed, except for the lower portion of Grouse Cr. (J. Phelps, pers.comm.) and approximately 200 yards up Kangaroo Cr. (D. Maria, CDFG Memo, 12/18,01). No coho salmon were observed in either stream. The following tributaries to the East Fork of the Scott River should be checked in the future, dependent upon access permission: Grouse, Kangaroo, Rail, Houston, Crater and Mountain House creeks.

A total of 39 redds, 30 live fish and 21 carcasses, of which 13 were sampled (tissue and scales), were observed in the East Fork of the Scott River. The spawning was dense on Reach 2 and upstream on private property, near the mouth of Kangaroo Creek. Some gravel areas were completely worked over by spawners. Reach 3 and the upper part of Reach 2 are wide and shallow, there is limited riparian vegetation, and considerable bedload movement. On Reach 2, one redd observed before the January 2, 2002 high water was completely buried by deposition

during that event. Another redd was built on a side channel during the high flows, but was dewatered during the cold period when the flows dropped considerably. Some surface runoff through adjacent fields was causing some streambank sluffing as observed by the landowner and surveyor. A beaver was observed working in the lower portion of the reach.
The lower survey reach in the East Fork of the Scott River, behind the USFS, Callahan Guard Station also offered good spawning gravels, but had larger substrate than the reach above.

South Fork of the Scott River
There is roughly 4.7 miles of accessible habitat in the South Fork of the Scott River, of which 3.3 miles was surveyed (70%). The upper extent of coho spawning in the South Fork of the Scott River appears to be limited by a natural barrier in the gorge at mile 4.7, just below the USFS 40N21Y bridge crossing. Observation above this possible barrier revealed no redds, fish or carcasses. The gradient increases and the substrate is larger above this point.

Spawners utilized habitat from this barrier downstream to the end of the survey area at Boulder Creek. The reach between Boulder Cr. (lower end of FGS property) and the beginning of Reach 1, (lower-public reach), was not surveyed. It is assumed that spawning occurred throughout this part of the South Fork of the Scott River, as well, since it was prevalent in the reaches above and below.

There were a total of 69 redds, 64 live fish and 48 carcasses, of which 20 were sampled, observed in the South Fork. This includes one redd in the mouth of Boulder Creek. Several braided channels, as well as a small tributary, on river right, above Boulder Cr. were used for spawning. No redds were found further upstream Boulder Creek or in Fox Creek in the areas surveyed. Both tributaries appear to lack spawning habitat, having steeper gradients (> 3%) and larger substrate, with considerable quantities of decomposed granitic sand, than what was observed in the South Fork of the Scott River. There were no barriers observed.

Two intake channels for irrigation diversions on Reach 2 (Fox Cr.- Boulder Cr.) were utilized for spawning. The lower diversion was used extensively for spawning in the diversion channel paralleling the stream above the culvert. Below the 300 ft. long culvert, many carcasses were observed in the ditch, as well as two redds, with possibly more redds that were constructed, but with < 80% confidence. Efforts are underway by the Siskiyou RCD to install a fish screen at this diversion to prevent such ditch spawning from occurring in the future.

The lower reach of the South Fork of the Scott River (Reach 1 near Callahan) also was actively used for spawning. This reach is densely vegetated, with braids and woody debris dams. Most spawning occurred in pool tailouts.

Sugar Creek
There may be up to 4 miles of accessible habitat in Sugar Creek, of which 2.4 miles (60%) were surveyed. A total of 23 redds, 42 live fish and 5 carcasses, all of which were sampled for tissues and scales, were observed in Sugar Creek. The lower portion of Sugar Cr., Reach 1 (Hwy 3 Bridge –Scott River), was extensively utilized by spawners. It is a low gradient, almost glide-like habitat, with some braiding. An active beaver dam was observed just above the confluence with the Scott River. Upstream of Hwy 3 for approximately one-half mile, the habitat is similar, with good riparian vegetation, except with many more braids. It is assumed that spawners utilized this area as well, although it was not surveyed due to time constraints. Current landowners are cooperative and this reach could be surveyed in the future.

Reach 2 (FGS property) is steeper in gradient than reach 1, with larger substrate but with pockets of good spawning habitat. The reach has good canopy cover and has lots of instream large wood. This reach was spot checked prior to the high flows and some spawning was evident. After the high water of January 2, 2002, the reach was surveyed for its entire length, but no new redds or live fish were observed. Possible spawning could have occurred prior to the high flows but redds could not be counted with any confidence later. One redd was found at a low water crossing and the other in an irrigation diversion intake channel.

French Creek & Miners Creek (tributary)
A total of 7.9 miles of estimated accessible habitat may be available in the French Creek System (5.9 miles in French Creek and 2.0 miles in Miners Creek). 1.3 miles of stream (22%) were surveyed in French Creek and 0.3 miles (15%) in Miners Creek, for a combined distance of 1.6 miles (20%) of the accessible habitat. The upper extent of spawning in French Creek was videotape by a landowner just above the confluence with Horse Range Creek, at mile 5.7. This extends the known range of adult coho salmon presence, according to the USFS, 2000 historic range map. CDFG surveys in 1996 and 1999 have documented juvenile coho presence just above the bridge crossing upstream of Horse Range Creek. A survey above this location for ½ mile revealed no other adult sightings, however redd identification was difficult due to the high flows.

In French Creek, a total of 27 redds, 16 live fish, 28 carcasses, of which 25 were sampled, were observed. In Miners Creek, a total of 14 redds, 8 live fish and 4 carcasses, of which all 4 were sampled, were observed. This totals 41 redds, 24 live fish and 32 carcasses, of which 29 were sampled, within the French Creek drainage.

The lower portion of French Creek (Reach 2), was extensively used by spawners. This reach is characterized by low gradient, multiple side channels, with lots of riparian vegetation. Spawners utilized these braided areas, preferring those with large and small woody debris cover. Beaver activity was observed in this reach as well. It is assumed that spawning occurred above this reach, as spawning was observed upstream at a low water crossing and several carcasses were brought in from a landowner for samples. This area was not surveyed, however. The reach downstream of the lower Miners Creek Road Bridge crossing of French Creek was not surveyed except to retrieve carcasses. Spawning was observed throughout the area and it is assumed to have continued downstream through the remainder of the reach to the confluence of the Scott River. Fish and a redd were observed from the Hwy 3 bridge crossing.

Spawners also actively utilized Miners Creek, a tributary to French Creek. Only the lower portion of the stream was surveyed, but many redds and fish were observed. The upper extent of spawning is not known at this time. Fish and redds were observed from the Miners Creek Road crossing over Miners Creek just above the survey reach. Juvenile coho have been observed just upstream of this location in 1993, 1999 and 2001 (CDFG, D.Maria)

Etna Creek
Eight miles of accessible habitat is estimated in Etna Creek. Spot surveys were conducted in 2.5 miles (31%) of this length. Early surveys in the upper reach of Etna Creek, near the Mill Creek. confluence, were difficult due to deep snow and only one redd and two live fish were observed just below the fish ladder at the City of Etna municipal water intake. This is the first apparent sighting in Etna Creek, according to the USFS historic range, but not according to the CDFG map from 1974. Inspection of the fish ladder on January 8, 2002 found the ladder plugged with small woody debris, preventing fish passage. Whether the ladder was plugged prior to the January 2,

2002 high flows, is not known. No surveys took place on the lower reaches of Etna Creek through Old Etna or through the town proper.

Patterson Creek (Etna)
There is an estimated 8 miles of accessible habitat in Patterson Creek, of which 1.3 miles (16%) were surveyed. The suspected range of coho presence in Patterson Creek was confirmed by the sighting of a redd with a fish at stream mile 7.8. No other redds, live fish or carcasses were observed. The upper extent of spawning is not known, as the survey was limited. No barriers were observed in the survey reach, however. Spawning below Hwy 3 is probable, but uncertain with no other confirmed observations this year. Local landowners, however, reported seeing "several salmon" in Patterson Cr. below Hwy 3 (G.Black, pers.comm.)

Kidder Creek
Eleven miles of Kidder Creek is estimated to have accessible habitat, of which 1.4 miles (13%) were surveyed. This stream was not adequately surveyed, due to access limitations and lack of personnel prior to the high flows. No redds, live fish or carcasses were observed. Spot checks took place at the CDFG screen sites and in the upper reach after the high flows. Redds that may have been constructed prior to these flows could not be identified with confidence. The habitat appears to be good, especially in pool tailouts, but the gradient may be too steep in the upper reach. The lower reach, below Hwy 3 in Greenview and above the Hwy 3 bridge for approximately 3 miles, may have more preferred habitat for spawning, but lacks adequate rearing habitat. (D.Maria, pers.comm.)

Shackleford Creek & Mill Creek (tributary)
There are a total of 8.7 miles of estimated accessible habitat in Shackleford and Mill Creeks, 5.0 miles in Shackleford Creek and 3.7 in Mill Creek. Only 0.5 miles (10%) was surveyed in Shackleford Creek and 1.0 miles (27%) in Mill Creek, with a total of 1.5 miles (17%) of the Shackleford drainage surveyed. The Shackleford Falls barrier is probably the upper extent of the anadromous coho range in Shackleford Creek. A total of 33 redds, 9 live fish and 6 carcasses, of which 5 were sampled, were observed in the combined Shackleford/Mill Creek drainage. But only 3 redds, no live fish and no carcasses were observed in Shackleford Creek itself. One redd (70% confidence) was located downstream of the falls. Most of Shackleford Creek was not surveyed due to access limitations, but fish were observed at the lower Quartz Valley Road crossing, just above Scott River. It is assumed that some spawning occurred between the Scott River and the confluence with Mill Creek and probably additional spawning between Mill Creek and Shackleford Falls.

Dense spawning was observed in the lower reach of Mill Creek. 30 redds, 9 live fish, and 6 carcasses, of which 5 were sampled, were observed in Mill Creek. This reach has good riparian cover and some side channels. No survey occurred between the upper Hayden property line and the Quartz Valley Road bridge. The uppermost sighting was behind Quartz Valley School, river mile 1.5, at the CDFG screen site. Surveys above this point to the FGS property line did not take place due to time constraints, but landowners were willing. Beaver dams are prevalent in this reach. Surveys in the upper reach of Mill Creek revealed no activity. From the upper bridge crossing to ¼ mile above the diversion ditch, the spawning gravel is not suitable due to steep gradient (>2.5%) and larger substrate, mostly small cobble-sized material (D. Maria, pers.comm.)

Moffett Creek
Moffett Creek was disconnected from the Scott River at the mouth until January 8, 2002. Only the 0.7 miles of mid Moffett Creek that is on federal land was surveyed. No surveys were done in the

lower portion through the town of Fort Jones, up to the base of Forest Mountain. A redd was observed on the USFS property above the Hwy 3 crossing shortly after the stream reconnected to the river. This was confirmed by a survey in late January when three redds were identified. No fish were present at this time, however, so the species is uncertain. Timing would indicate they may be either coho salmon redds or steelhead redds. The presence or absence of coho salmon juveniles, in the vicinity of the above redds, will be determined by snorkel diving and/or electrofishing later in 2002.

Scott River Canyon

Several tributaries in the canyon reach of the Scott River were surveyed: Boulder Cr., Canyon Cr., Kelsey Cr., Middle Cr., Tompkins Cr., Wooliver Cr. and Mill Cr. (Scott Bar). There may be up to 8.5 miles of combined accessible habitat in these Scott River canyon tributaries. 6.6 miles (56%) of stream were surveyed, but only one redd was observed in this entire portion of the watershed (in Mill Cr. (Scott Bar)). This was also a redd without fish so the associated species (coho or steelhead) is uncertain. Although several of these streams appear to have adequate habitat, the spawners did not seem to utilize them this year.

Three redds were found in the Kelsey Spawning Channel in early December. No fish were observed, lending uncertainty to whether they were late Chinook or early coho redds.
One coho carcass and one live coho salmon were observed in late January (1/19/02) in the Scott River between Canyon Creek and Kelsey Creek. Where the carcass came from is not known. No mainstem surveys were done in the canyon reach of the Scott River.

RECOMMENDATIONS

Future Adult Coho Spawning Survey Needs

Locations: Future adult spawning surveys need to focus on those streams that were not surveyed thoroughly or not included in the winter of 2001-2002, such as East Fork tributaries (Grouse Cr., Kangaroo Cr., Rail Cr., Houston Cr., Crater Cr. and Mountain House Cr.), Wildcat Cr., Etna Cr., Kidder Cr., Moffett Cr., Rattlesnake Cr., Indian Cr., Patterson Cr. (Etna), Patterson Cr. (Meamber School), Oro Fino Creek, Sniktaw Creek, and Mill Cr. (Scott Bar). The upper extent of spawning in the East Fork of the Scott River, Miners Cr. fork of French Creek, Sugar Cr., Etna Cr., Mill Cr. (Shackleford) and Moffett Cr. needs to be ascertained. Continued observation in the main canyon tributaries such as Canyon Cr., Kelsey Cr., Tompkins Cr., and Mill Cr. (Scott Bar) needs to occur, as spawning use may vary from year to year. Index reaches that were established this year should continue to be monitored several times during the spawning period in subsequent years to establish long-term trend information and to help in the understanding of run timing. Landowner permission needs to be obtained in advance so access to most spawning areas is available.

Timing: The entire coho spawning run needs to be monitored, beginning in late November through the end of January. This survey occurred from Dec 20, 2001 to the end of January 2002.

Population Estimate: To get adult abundance estimates, an acceptable study design must be employed and adequate field personnel must be available to accomplish the task during the entire period of the coho run.

Genetics: Additional genetic collections will are needed in order to determine the genetic relationship of Scott River coho salmon in future years. It will also be important to understand if there are any genetic differences between fish of different run timings or between fish that may spawn in the lower tributaries of the watershed.

Other Needed Coho Information:

Emergent Survival Rates: Information about the survival rates, from eggs to emergence, for the progeny of these adult spawners would be valuable to know at the different sites (this will depend on various factors, such as sediment, flow, temp).

Juvenile Rearing: The life history and habitat usage during the over-summering and the over-wintering rearing phase of the juvenile coho salmon may be the most critical element needed at this time. Available rearing habitat during the low-flow period, in late summer and early fall, needs to be mapped and quantified.

Outmigration: Coho salmon leaving the Scott River and entering the Klamath River can be monitored by the outmigrant screw trap, which has been operating since 2000, at river mile 4.75, just above Scott Bar. This data could provide information about the timing, the relative abundance and the age class of Scott River coho salmon. Possible pit tag studies and scale analysis of the juveniles handled at the trap could help with the understanding of the life history phase of the coho salmon in the Scott River watershed.

Beaver Dams: The role of beaver dams in the life cycle of the coho salmon, both as adults and juveniles, would be valuable to understand. Areas of beaver use could be mapped and correlated with areas of coho spawning and rearing utilization, with landowner permission.

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Coho survey meeting December 20, 2001 8:00am at Scott/ Salmon Fisheries Office
Attending: Jim Kilgore, Sue, Tom, Casey, Flick, Andrew, Denis, Shawn, and Nicole

Streams verified for Coho presence in 2001

1. Scott Bar Mill – 70 yards mouth Juveniles (Maria)
2. Canyon Creek – Juveniles (Maria)
3. French Creek – at Hwy 3 Adults
   Miners
4. Sugar Creek- at Hwy 3 Adults
5. East Fork of Scott – between the two bridges a total of 23 Adults (J. Phillip/ Maria)
   Fish were building redds
6. Etna Creek – just below last log cabin 2 adults
7. Beaver Creek – 1 adult carcass in the lower to miles

Streams To Survery

Historical (presence of Coho) 1. S. Fork Scott
2. Boulder Creek

1. Big Mill
2. Sugar
3. French/ Miner
4. Etna Creek – 1st locked Gate above and below pool, and check pool below City of Etna
5. Patterson Creek
6. Kidder Creek
7. Shackleford/ Mill
8. Crystal, Johnson- Big Slough
9. Canyon Creek
10. Kelsey Creek
11. Boulder Creek
12. Tompkins Creek
13. Middle Creek - Pat Ford, Big Ferry and Franklin Gulch
14. Scott Bar Mill - Bridges

Objectives for Survey

1. Presence and absence of Coho
2. Distribution of Coho in Creek/ Stream (Range)

Stream Assignments

Tompkins Creek – Andrew and Jim
Scott Bar Mill, Kelsey, Boulder (Scott River mainstem) – Casey and Flick
Shackelford/Mill, Kidder, Patterson – Denise and Shawn
Big Mill, Wildcat, Boulder, and S. Fork of Scott - Sue and Tom

USFS Redds forms were used. GPS units were used to take Lat, Long for Coho and redds (with Coho presence???)

Notes:
Jim will call Dennis after New Years about Etna Creek
Next schedule Coho spawning survey is January 10, 2002

SCOTT RIVER ADULT COHO SURVEY 2001-2002
JANUARY 3, 2002 MEETING
9:00-11:00
USFS AQUATICS OFFICE-Ft. Jones

AGENDA

Introductions (Sue Maurer)

Review of Dec 20, 2001 Cooperative Effort (Jim Kilgore)
- Purpose
- Priorities

What we have learned to date- Summary Sheet (All field crew)

Explanation of DNA analysis (Casey Baldwin)
- Duplicate samples
- Repository-where?
- Scale analysis-why and who?

Open question and answer time:
- Who should talk to landowners about concerns?
- Others…

Where do we go from here?
- Determine purpose and need for further assessment
- Identify field personnel available
- Determine streams for further assessment (i.e.index reaches-redd counts, more tissue samples)

Scott River Coho Spawning Survey Meeting Notes
January 3, 2002 Meeting

In Attendance:
Sue Maurer, USFS Scott/Salmon River contractor
Casey Baldwin, National Marine Fisheries Service employee
Don Howell, member of the Save Our Scott and Shasta (SOSS) Valleys and Towns committee
Jim Kilgore, District Fisheries Biologist for the Scott River
Andrew Eller
Dennis Maria, California Department of Fish and Game Fisheries Biologist
Rich Klug, Fruit Growers Corporation Scientist
Jenny Whitaker, Timber Products Scientist
Stu Farber, Timber Products Scientist
Gary Black, Resources Conservation District employee
Becca Kreidler, AmeriCorps*Watershed Steward Project Volunteer with the Scott/Salmon River Forest Service Districts

Introduction

Sue Maurer and Jim Kilgore discussed how the 2001-2002 Coho spawning survey arose out of a response to local landowners' salmon sightings, a need to collect Coho tissue for genetic analysis, and an interest to establish the extent of Coho range. Kilgore (assisted by Klamath National Forest Fisheries biologist, Al Olson) obtained a permit to collect the carcass tissue. Maurer, Casey Baldwin and Gary Black were commended for their hard work, which made the majority of the survey possible. Also, the cooperation of many private and corporate landowners was noted as being crucial for collecting this data, as that is where the majority of the Coho have been found.

Results of Survey

Eighteen separate tributaries were checked in one of two ways to establish Coho range and to collect Coho tissue. The first method was a spot check where the river was surveyed from bridges, pull-outs and other points. The other methodology was an actual river survey, where surveyors walked the river. Four reaches, French Creek, Sugar Creek, and the East and South Forks of the Scott River, were identified as index reaches. These will be monitored to help establish the temporal aspects of Coho spawning.

These two methodologies yielded redd, fish and carcass counts. Every time data was collected, it was recorded on the data sheet. Additionally, a GPS unit was used to help precisely pinpoint the location of the data. Each point was stored as a three letter location, followed by a sequential number, followed by a c, r, f or r/f to indicate the type of data collected at that point (c for carcass, r for redd, f for fish and r/f for fish on redd). The location data was stored on the GPS unit and the coordinates were logged on the data

sheet. This data was downloaded frequently and will be used to help map the Coho range.

Coho behavior was observed and the antecdotal evidence was shared. Coho seemed more skittish than Chinook salmon. They seem to prefer side channels and braided areas for building their redds. Generally, Coho seek out more overhead cover when building redds than the Chinook.

In all 56 carcasses were sampled for both operculum tissue and scales. All data was collected in duplicate. The operculum tissue will be used in genetic testing, while scales will be analyzed to help understand the life cycle behaviors of Coho in the area. The National Marine Fisheries Lab in Santa Cruz, CA will analyze one set of data. These samples will be public domain and held in a repository in Santa Cruz. If weather conditions are favorable, the work will continue into January, with the hope of more clearly mapping the limits of Coho range.

Tissue Analysis

Baldwin discussed how the tissue samples will undergo DNA extraction followed by PCR (which acts as a genetic Xerox machine). The DNA will then be analyzed by either sequencing or microsattelites.

Gary Black asked if this data could be used to declare that the Scott River Coho were a unique species or if a certain segment of the Scott River Coho population (i.e. the Scott River Coho in the Northwest Bend of the XXX creek) were unique and would therefore require more protection.

Baldwin informed the group that NMFS does not use such narrow qualifications in describing a population. Instead, NMFS uses a unit called ESU or evolutionarily significant unit. The Scott River Coho actually belong to an ESU that goes from Elk River south. This ESU was determined using allozymes, a type of protein analysis. Baldwin indicated that because proteins are created from DNA sequences they reflect the genetic characteristics of a population. However, Baldwin stated that the genetic analysis being performed has a much higher resolution and is far more precise then allozyme analysis.

Because NMFS uses ESUs, it is prevented from specifying one specific population of Coho (such as the Scott River Coho) within the ESU as being more valuable than other populations. Likewise, NMFS can not choose to put more protection on a specific segment of that population than on a different segment.

While salmon usually return to spawn in the stream where they were born, there is quite a bit of "wandering". These salmon spawn in streams not their own and they keep any one population of Coho from being completely genetically unique by mixing in their own DNA through sexual reproduction.

NMFS will use the Scott River Coho genetic data to help take a "peek" into the Coho's past. One question that interested the Scott River Spawning Survey group was whether or not the Scott River Coho are native. Baldwin set up three scenarios to describe the Scott Valley Coho's lineage: non-native, native or mixed.

If the Scott Valley Coho is non-native, their genetic sequence will be most similar to the genetic sequence of the population they were introduced from. For example, if the Scott Valley Coho were introduced from central Oregon, their genetic sequence would be most similar to central Oregon's genes and less similar to other Klamath Coho population's genes.

If the local Coho are native, their genetic sequence will either be very similar to other Klamath Coho or completely different from all other Coho. The first scenario is obvious. If area Coho are native then they will be most similar to other local, native Coho. However, it could be that local Coho stopped breeding with other Coho's so long ago that they are completely different from all other Coho. Given the allozyme analysis performed to establish the NMFS ESU in the first place, this is not likely the case. If the local Coho's genes were so different, it's likely their proteins would have been different as well.

Finally, the Scott River Coho could be mixed. This would mean that non-native and native individuals interbred. The Coho's genetic sequence would have mutations that were unique to Northern California's Coho population. It would also have genetic mutations that were unique to other regions (Oregon, Washington) population.

Until the data is analyzed to prove one scenario, all of these scenarios are possible. However, the allozyme data that helped to group the Coho populations initially show that the Scott River Coho were most similar to other Klamath populations. This would indicate that they are native. The genetic data may support this finding. Hopefully, the results will provide the best answer to this question.

New Business

The group discussed which areas still needed to be surveyed. The following areas were deemed priority places to survey:

1. South Fork Scott River- above the bridge
2. East Fork Scott River- upstream of Ploughman's Valley
3. Wildcat
4. French Creek- up to Horse Range
5. Miner's Creek
6. Sugar Creek- both above and below the bridge as habitat seems similar to other areas where many Coho and their redds have been found.
7. Shackleford and Shackleford Mill- resurvey more thoroughly
8. Patterson Creek
9. Etna
10. Kidder Creek – as an eagle was seen eating a salmon at the intersection of the creek and Highway 3

11. Scott Bar Mill- below road towards the Lookout

The Fruit Grower and Timber Product representatives indicated that they would like to be contacted before surveying was done on their property. They also volunteered to help if they had the time.

Maurer also asked about setting up a cooperative effort for next year. Dennis Maria discussed a Regional Coho Abundance Survey that is being planned. This project led by Dana McCain is under consideration for grant support from the former Forest Science Project Board at Humboldt State University (Arcata, CA). Maria and Maurer agreed that research on both juveniles and adults are needed for a greater understanding of local Coho.

Gary Black and Don Howell discussed some of the problems still facing Coho surveys. The group agreed that establishing positive, cooperative relationships between the various agencies and private landowners was paramount to any sort of success in this undertaking. Black and Howell both brought up that fact that fear has stopped the development of these relationships. Black described the combination of fear and pride that many local landowners' face when they have Coho on their lands. They are glad to help the Coho, and are proud to have them on their lands, even as they fear the additional regulations and legalities that seem to loom in the distance.

All parties agreed that a better understanding of the responsibilities and purpose of the National Marine Fisheries Service would help to alleviate some of the fear in the community. There was a request that the results from these surveys as well as the intent of NMFS be distributed to the public in layman's terms. Baldwin and Kilgore agreed to distribute such data to interested parties.

Howell pointed out that many landowners feel that the scientific collection of data has been skipped over in favor of lawsuits. Black described landowners that were interested in using science to establish the facts, yet they fear these facts will be manipulated in the courts. Black indicated that many landowners would like to cooperate with the local agencies in collecting Coho data but they fear that their cooperation makes them vulnerable. Black asked if there was a way for landowners to gather their data but stop it from being used against them in court. Rich Klug from Fruit Grower's suggested a solution. Companies like Fruit Grower's allow other agencies to collect data on their land but they keep a legal right to the specifics of that data. He suggested that a landowner cooperative could act in the same way. Also, he brought up how some data is not freely shared in cases where it might be harmful to an organism (such as government data on the location of spotted owls in a forest is not released to the public in order to protect the owl). Howell was interested in similar measures to protect both the Coho and the landowners.

Finally, Black and Howell brought up landowners' frustrations with groups that are politically but not personally involved with the Coho surveys. There was agreement that

offers of a cooperative effort should be made to such groups in a hope of creating an environment in which farmer, rancher and fish can thrive.

Finally, Baldwin, Maurer, Maria, Kilgore and Black worked out the logistics of surveying the remaining priority reaches.

SCOTT RIVER ADULT COHO SURVEY 2001-2002
February 14, 2002 MEETING
9:00-11:00
Siskiyou RCD Office-Etna

AGENDA

Introductions

Review of 2001-2002 Findings
- Distribution in relationship to Historic Range-[Map]
  - USFS Map
  - DFG Map
- Overview of Numbers of Redds, Fish & Carcasses- [Table 2]
- Timing- [Graph-Figure 4]
- Influences: Flows- [Graph]
  Water Temperatures
- Tissue Samples/Scales-Status Report
- Hatchery Markings
- Final Report- Process
  Mailing list

Follow-up Discussion from Jan. 3, 2002 Meeting
- Hatchery Plant- info from USFWS
- Areas of Concern

Where do we go from here?
- Generate List of Questions
- Steelhead

Possible Funding Sources

Schedule next Meeting

Fish Committee meeting
Feb 14th, 2002
RCD office Etna

Present: Don Howell, George Thackery, Vinnie McNeil, Sue Maurer, Jennifer S. Flick Flickinger, Casey ?, Mike?, Gary Black, Danielle Quigley, Jim Kilgore, Andrew Eller.

Old Agenda Item - Fish Screen on Fruitgrower ditch on S. Fork.

Coho spawned in ditch, how to install screen w/o killing eggs and fry? Eggs will be "eyed -up" by approximately early March. Need to get screen in place ASAP to protect eggs in the South Fork above the point of diversion. A meeting will be arranged next week between agencies/landowner/RCD. *This issue needs to be established in a timely fashion to show that cooperation is possible.*

Status Report on Coho Surveys 2001/2002 - Sue Maurer

1.) Sue passed out a packet of information.

Coho spawning found in S. Fork, E. Fork, Sugar, French, Miner's, Patterson, Shackleford, Mill(many), Etna up to the Etna City dam, 2 in Scott R. Canyon. None found in Kelsey, Canyon, Tompkins or Kidder (Kidder not surveyed well). No surveys done in the Scott River mainstem.

In November, low flow barriers were holding coho and chinook below Thompkins. Rains at Thanksgiving brought flows up, and fish moved quickly upstream. Good water clarity in December made surveying coho good, big flows at New Years made surveys impossible until Jan 8th. Extremely cold water temperatures and ice were observed.

2.) Tissue and Scale Samples - 75 samples collected out of 115 fish handled. Double sets of tissue/scales were collected. Tissue samples are with NMFS, and the scale samples archived with DFG in Arcata. All fish were carefully examined for hatchery markings - 2 suspected hatchery fish. One head was collected for inspection for coded wire tag.

Genetic analysis of tissue samples in line behind chinook and steelhead. Results could be a year away. Scale sample analysis will be completed in 6 months.

How will this data be used? - NMFS is looking at DNA analysis to define independent populations in order to plan recovery. Scale samples will define how much time coho spend in fresh water.

The second set of tissue samples could be sent out for independent analysis, but there is not a broad base of samples to compare with at this point, just hatchery fish.

3.) Final Report- Sue will try to complete report by end of month and distribute to the group. GIS layers courtesy of Richard Vandewater (USFS). Photos will be scanned to disc.

Sue thanks all the landowners, agency members and volunteers for their great cooperation!

Hatchery plants - of coho in the Scott River.

Gary Curtis (USFWS) researched back to the pre-1900. A 1966 report was passed around. There is no data specific to the Scott, but info from the Klamath. Some adult plants in the E Fork and Shackleford. CDFG cannot share the data they have collected until status review is done on April 25th. Don Howell reported that SOSS is the data from status review sooner.

What do we want to know?

1.) Distribution - Where are the juvenile rearing areas in the Scott watershed at various times of year? How far do they travel up into the tribs?(concern for fish screening)
2.) Life history pattern - emergence and outmigration

3.) Where are the over-summering habitat areas, cold-water refugia?
4.) What are bottlenecks to production? Sources of mortality?
5.) Adult surveys next year

Areas of Concern:

1.) South Fork fish screen (see notes above)
2.) Spawning in low-water crossings
   a.) informational article about timing, not using low-water crossings, etc. To be included in Council Newsletter.
   b.) Biologist to explain life/cycle timing, meaning of DNA analysis, distribution of fish found this year. March SRWC meeting? Also- photos comparing all three species.
3.) How do weather patterns affect fish life-cycles?
4.) Mainstem spawning, and use of mainstem at various lifestages.
   Video weir near Fay Lane or SVID fish ladder? CDFG has found weir good for identifying different species, and sizing adults.

Ideas for this summer

1.) Dennis reported on a proposal w/in DFG to map potential habitat in Scott and Shasta. Look into tribs we have not explored(subject to landowner approval)
2.) Design of Survey(presence/absence)
   a.) Habitat identification from aerial photos
   b.) Landowner approval for access
   c.) Survey by direct observation(electrofishing would be hard for this year due to take issues) Use volunteer and agency folks.

   Concern: What is the incentive for landowners? Is there a possibility for Safe Harbor?
   Ex.) Walla Walla got a two-year moratorium for their cooperative efforts.
   How do we ensure data won't be misused by outside parties? Must have a good protocol, include an observe from the public.

NXT mtg March 12th
0900-1200
RCD Office Etna
Discuss design of survey, public involvement

Sue suggested a steelhead survey meeting. March 25th. Contact Sue for more information.

F16J — EAST FORK SCOTT

State of California **The Resources Agency**

Memorandum F16

Date: December 10, 2001

To : Bob McAllister

From :**Department of Fish and Game** - Klamath Watershed Biologist

Subject: Recent Adult Coho Sightings

The purpose of this memo is to provide written documentation regarding recent observations of adult coho. Observations were made my myself and/or Mr. Ron Dotson, Habitat Supervisor of the California Department of Fish and Game's Yreka Stream Improvement Center.

On Tuesday 12/04/01, Ron Dotson and I, drove to property owned by CDFG employee, Jay Phelps and his wife Raylene. Earlier in the day Jay Phelps had indicated to Mr. Ron Dotson that he had large adult salmon spawning in East Fork Scott River on his property and he believed they were coho salmon. Ron contacted me about this sighting and we decided it would be best to visit the site to confirm the species identity of these fish.

We arrived about 1040 hours at the Phelps property and stopped at the Masterson Road bridge which bisects their property. We immediately saw a pair of adult salmon immediately upsteam of the bridge. This spawning pair was positioned over a nearly completed redd. It was difficult to make a positive identification because of the glare on top of the water. These fish subsequently abandoned the redd as a result of our movement on the bridge overhead.

After our brief stop on the bridge we met Mrs. Phelps at her residence. She accompanied us to the river location to show us where the adult salmon were seen spawning. Three additional salmon were seen over a partially constructed redd about 150-yards upstream of the Masterson Road Bridge. These fish (1 adult female and two males) were identified as coho salmon. One of the male coho was captured by hand and digitally photographed to photo-document coho presence at this location (Section 18 of T40N, R7W(mdb&m). See attached location map.

We walked upstream towards the Masterson Road bridge where we looked for the spawning pair we had seen earlier from the bridge. These fish had swam off in two different directions with the male going downstream. Using a large dip-net Ron Dotson was able to capture the male which I photographed (see photo next page). After taking several photographs this fish was released unharmed back to the river.

Photograph above - Head view of adult male coho captured with dip-net about 40-yards downstream of Masterson Road Bridge on Phelps property (12/04/01).

Photograph below - Whole body view of adult male coho captured by hand approximately 175-yards upstream of Masterson Road Bridge on Phelps property (12/04/01).

Ron Dotson, accompanied by Habitat specialist Rick Davis surveyed several Scott River tributary streams on December 6, 2001, and made the following observations:

Shackleford Creek: Water levels higher than during previous week with good fish access having been re-established at the mouth. No adult salmon seen in this lowermost 300 yard reach (mouth to about 50 yards upstream of the lowermost (old metal) bridge near Ben Tozier's lower diversion.

Mill Creek (trib. To Shackleford Creek) Very low flows noted and no adult salmon were observed.

Kidder Creek: Higher flows than previous week noted (access available) but no adult salmon seen.

Etna Creek: (same observations as Kidder creek)

French Creek: Higher flows were noted and five (5) adult coho were seen at the following locations: at Hwy 3 bridge (four (4) adult coho spawning and one (1) adult coho seen just beneath the Miners Creek Road Bridge.

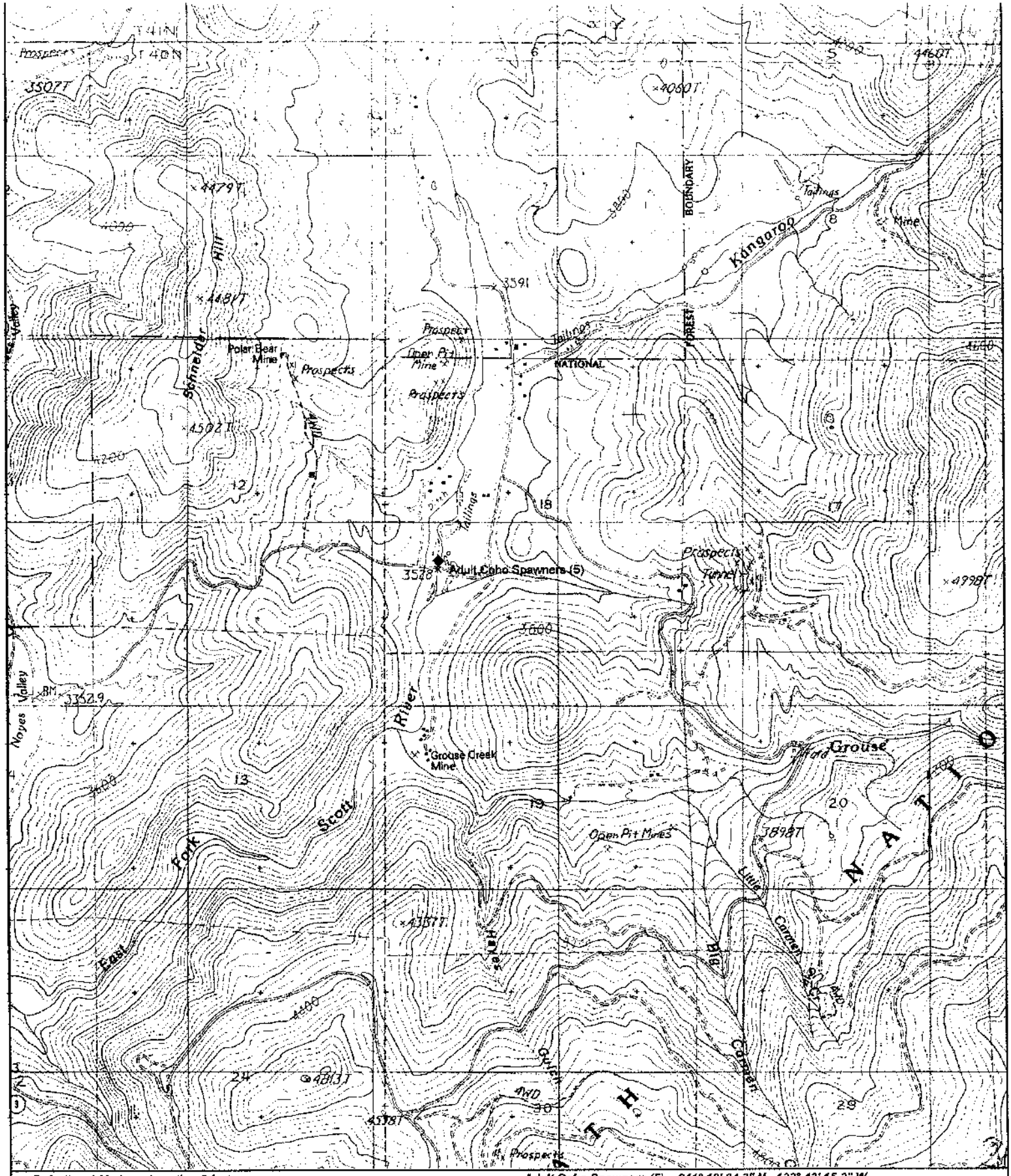
Miners creek (trib. To French Creek): Five (5) adult coho observed spawning a short distance (approx. 25') downstream of Miners Creek Road bridge. ? Photos ? - GPS ? NO. MINOLF

Additional photos are available upon request. These photos are on file at the Yreka DFG office at 1625 South Main Street.

Please call me at 841-2552 if you have any questions.

Dennis L. Maria

Dennis Maria
Associate Fishery Biologist



<Default> - 1 Markers, Length = 0 feet

Adult Coho Spawners (5) - 041° 19' 34.3" N, 122° 43' 15.3" W

Name: SCOTT MT
Date: 1/3/102
Scale: 1 inch equals 2222 feet

Location: 041° 19' 30.4" N 122° 42' 59.9" W
Caption: LOCATION MAP: Adult Coho Spawner Location on the East Fork of the Scott River (Dec. 4, 2001)

File: E.F. Scott River

State of California **The Resources Agency**

Memorandum

Date: December 18, 2001

To : Bob McAllister

From :**Department of Fish and Game** - Klamath Watershed Biologist

Subject: Additional Adult Coho Sightings in Scott River Sub-basin

The purpose of this memo is to provide an update on additional recent sightings of adult coho. These observations were made my Mr. Bob McAllister (Senior Fishery Biologist Supervisor, Mr. Ron Dotson, Habitat Supervisor of the California Department of Fish and Game's Yreka Stream Improvement Center, and myself.

East Fork of the Scott River:

On the morning of Friday, 12/14/01, the three of us drove to the East Fork of the Scott River to confirm reported coho sightings by Mr. Jay Phelps. These fish were reported to be at the mouth of Kangaroo Creek about one-half mile upstream of the Phelps property where adult coho were observed spawning ten days earlier. The landowner, Ms. Michell Fashing, who provided access permission by telephone, was physically contacted when we arrived at her residence. She guided us part way to the area where the coho were last seen and informed us of where her property boundaries lay. As soon as we got to the East Fork of the Scott River, we immediately observed three adult coho salmon holding near a redd site. In all, we counted 17 adult salmon and 12 partially or totally completed redds along the extent of Ms. Fashings property (see photo next page). These fish were confirmed to be coho based on color, spotting and a white gum lining. A suspected coho redd was noted on the East Fork of the Scott River beneath the Masterson Road bridge located approximately 1/4 mile upstream of the mouth of Kangaroo Creek. The survey area was located in Township 40 N, Range 7W in sections 7 & 18 (mdb&m). [See attached location map].

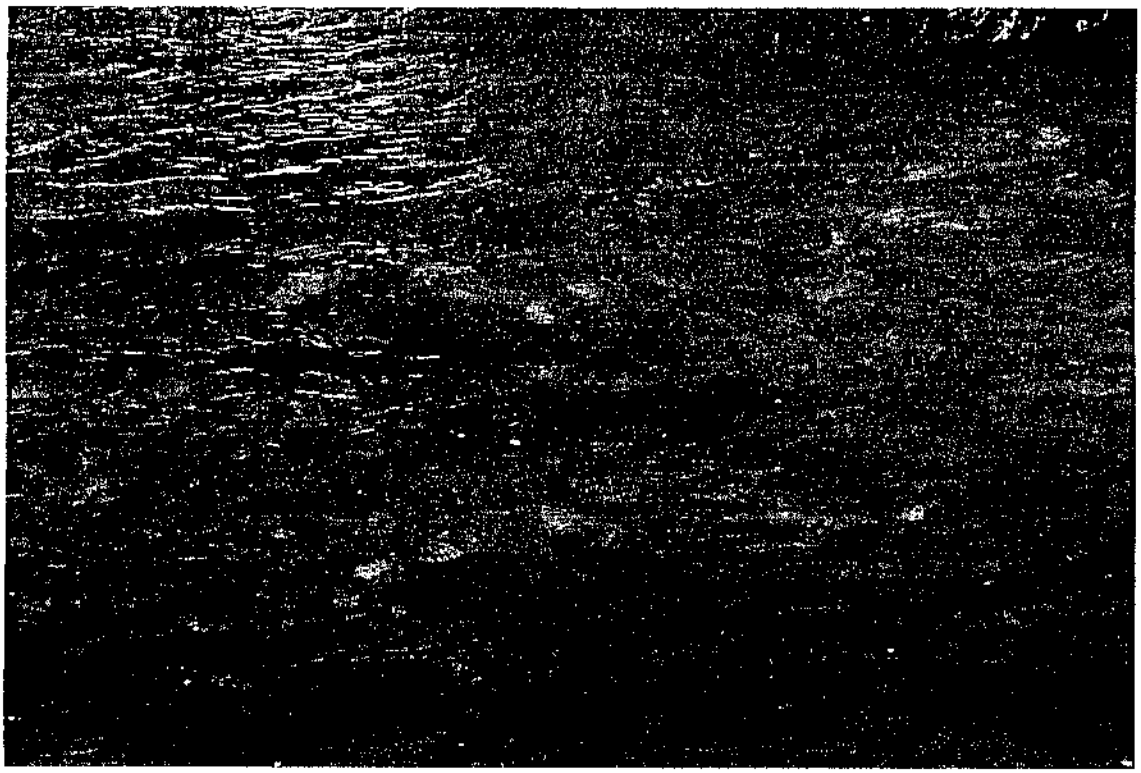
EFK49R

EFK50R

The air temperature was 38°F and the water temperature was 41°F. Total dissolved solids (TDS) equaled 170 micro-siemens.

Sugar Creek:

After surveying the East Fork of the Scott River site, we decided to stop at a few of the State Hwy 3 bridge crossings on our return to Yreka. We stopped first at the Sugar Creek bridge crossing and observed three adult coho salmon spawning in Sugar Creek immediately upstream of the bridge. A photograph was taken of these fish.



Photograph - A pair of adult coho salmon spawning in the East Fork of the Scott River near the mouth of Kangaroo Creek located approximately 1/4 mile downstream of the upper Masterson Road Bridge crossing (12/14/01).

French Creek :

FRE57A

At the Hwy 3 bridge crossing we observed three adult coho holding near a redd that appeared to be under construction. Further upstream, on French Creek immediately downstream of the Miners Creek Road bridge crossing four adult coho were seen holding near a partially completed redd. Due to the angle and reflection on the surface of the water, digital photos taken were of poor quality and of little value.

Kidder Creek :

An unconfirmed report of an adult coho spotted in Kidder Creek near Barker Ditch was received second-hand from Mr. Gary Black. Attempts will be made later this week to confirm adult coho presence in Kidder, Patterson, Etna and Shackleford/Mill creeks. All these streams have historically contained coho.

Additional photos are available upon request. These photos are on file (digitally) at the Yreka DFG office at 1625 South Main Street.

Dennis K. Maria

Dennis Maria
Associate Fishery Biologist

0 - 1 Markers, Length = 0 feet

<Default> - 3 Markers, Length = 13 miles, 5236 feet

Adult Coho Spawners (4) - 041° 24' 10.7" N, 122° 52

Adult Coho Spawners (3) - 041° 24' 40.8" N, 122° 51

Adult Coho Spawners (3) - 041° 20' 13.4" N, 122° 4

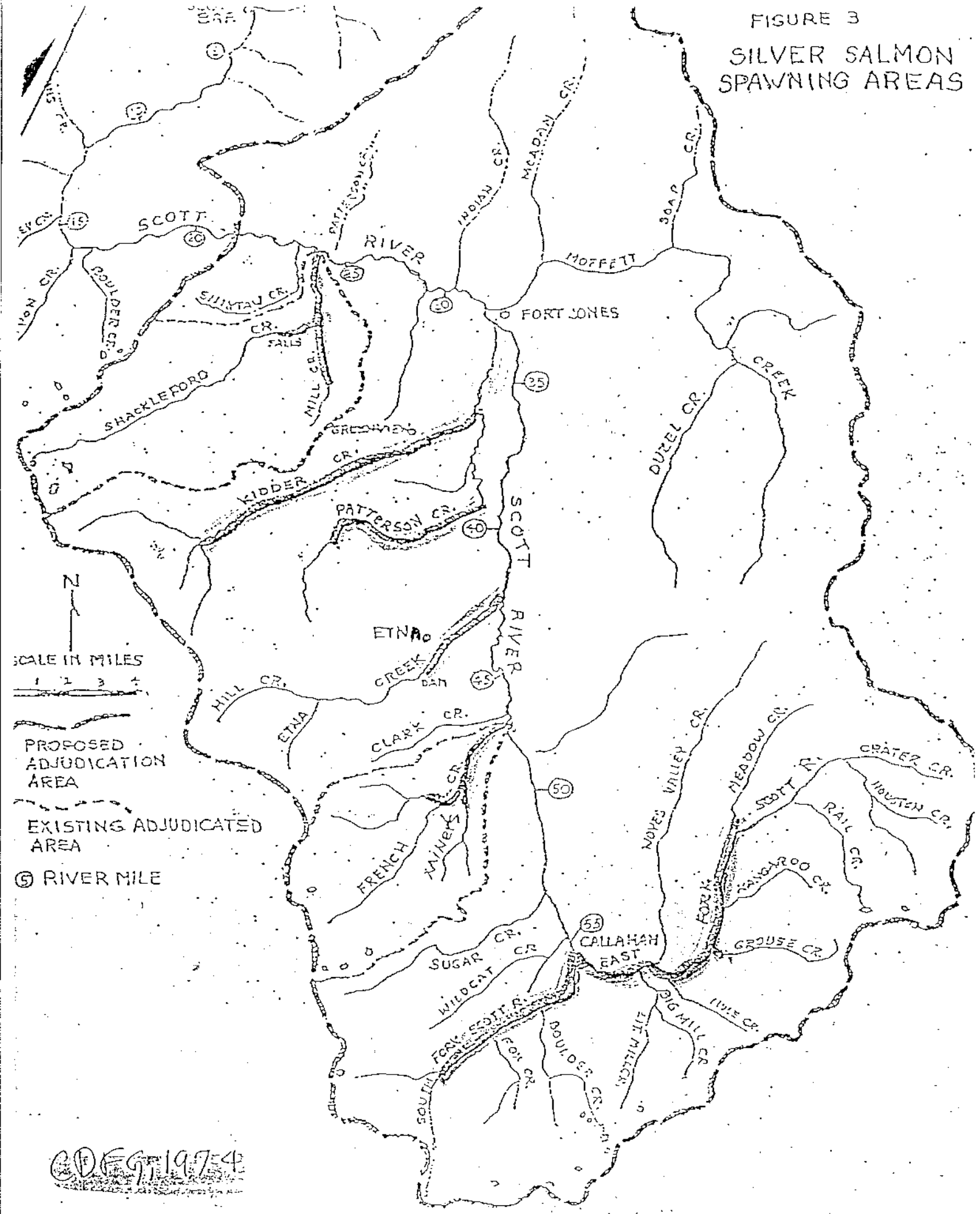
Adult coho Spawners (17) - 041° 20' 04.1" N, 122° 4

Name: MT SHASTA
Date: 12/18/101
Scale: 1 inch equals 1.610 miles

Location: 041° 21' 57.6" N 122° 47' 59.0" W
Caption: Observed Adult Coho Spawners (December 14, 2001)

FIGURE 3

SILVER SALMON SPAWNING AREAS



ODFG 1974

Guidelines for sample collection and delivery

Collection Protocols

1). Live fish: Cut a 1cm square clip from **tail** fin using clean scissors and place in a piece of dry blotter/filter paper (e.g. Whatman brand). Fold blotter paper over for temporary storage. Samples must be airdried as soon as possible (don't wait more than 8 hours). Airdrying inside takes about 24 hours. Airdrying in the sun is much quicker. When tissue/paper is dry to the touch, place both into a clean envelope labeled with Sample ID Number. Seal envelope.

2). Live fish (alternate method): Cut a 1cm square clip from **tail** fin using clean scissors and store in small (e.g. 2ml) vial filled with pure ethanol. Sample must be fully immersed in ethanol. Ethanol dissolves all inks, so make sure vials are well sealed and outside is dry. Label with Sample ID Number.

3). Carcasses: Either a 1cm square clip from the operculum or **tail** fin, or alternately, complete scales (20-30) should be removed and placed on a piece of dry blotter/filter paper (e.g. Whatman brand). Fold blotter paper over for temporary storage. Samples must be airdried as soon as possible (don't wait more than 8 hours). When tissue/paper is dry to the touch, place into a clean envelope labeled with Sample ID Number. Seal envelope.

4). Previously frozen tissues: Excise a small (1cm square) clip from tail fin or gill and place in tube on regular ice for express shipping. Tissue should remain frozen during the whole process. Thawing/refreezing will destroy tissue.

-Never cut adipose fin

-Each sample must be stored in a separate tube or envelope

-Each sample must be clearly labeled with the Sample ID number

-Samples may be sent surface mail (except frozen tissues)

-Samples are for scientific research. Please take care in their collection.

Send samples to:

Genetic Tissue Repository
Southwest Fisheries Science Center
110 Shaffer Road
Santa Cruz CA 95060

Questions? Call 831 420-3903

Genetic Tissue Collection Data

Scott River Watershed - Siskiyou County; Jim Kilgore - USDA Forest Service [Klamath National Forest]

December, 2001 - January, 2002

Sample ID number	Code	Stream	Tissue Type	Fork Length [cm]	Sex [M, F or Unk]	Adipose Fin Clip? [Y or N]	Maxillary Clip? [Y or N]	Other Clip? [Y or N]	Latitude	Longitude	Notes
1	SFK01C	South Fork Scott	OPERCULUM	76	M	N	UNK	N	N41.30933	W122.80277	HEAD GONE. MAXILLARY CLIP UNKOWN.
2	SFK23C	South Fork Scott	OPERCULUM	72	F	N	N	N	N41.28086	W122.85225	SOME QUESTION ABOUT SPECIES-LATER CONFIRMED AS COHO. PHOTOS:2-3
3	SFK27C	South Fork Scott	OPERCULUM	72	F	N	N	N	N41.28400	W122.84859	CARCASS COUGHT IN DIVERSION'S ROCKS
4	SFK31C	South Fork Scott	OPERCULUM	69	F	N	N	N	N41.28641	W122.84585	
5	SFK32C	South Fork Scott	OPERCULUM	76	F	N	N	N			JUST AT DIVERSION TO HEADGATE IN CASCADE. PHOTO: 4-5.
6	SFK35C	South Fork Scott	OPERCULUM	77	M	N	N	N	N41.28891	W122.84290	FOUND IN DIVERSION CHANNEL. RED ANAL FIN!. PHOTO: 7
7	SFK37C	South Fork Scott	OPERCULUM	77	M	N	N	N	N41.28770	W122.84365	FOUND AT END OF CHANNEL.
8	SFK40C	South Fork Scott	OPERCULUM	81	M	N	N	N	N41.28953	W122.83631	GOOD CONDITION. REACH NOT FINISHED.
9	EFK15C	East Fork Scott	OPERCULUM	83	M	N	N	N			"BIG OLE RED MALE". CARCASS AT RD. XING.
10	SCR03C	Scott River	OPERCULUM	71	F	N	N	N	N41.31369	W122.80337	CTB01
11	SUG04C	Sugar Cr	OPERCULUM	74	M	N	N	N	N41.33954	W122.82601	
12	SUG08C	Sugar Cr	OPERCULUM	74	M	N	N	N	N41.34025	W122.82534	
13	SUG09C	Sugar Cr	OPERCULUM	75	F	N	N	N	N41.34023	W122.82539	
14	SUG11C	Sugar Cr	OPERCULUM	75	F	N	N	N	N41.34148	W122.82416	
15	SUG12C	Sugar Cr	OPERCULUM	71	F	N	N	N	N41.34196	W122.82414	
16	FRE02C	French Cr.	OPERCULUM	64	F	N	N	N	N41.39214	W122.87183	
17	FRE03C	French Cr.	OPERCULUM	77	F	N	N	N	N41.39273	W122.87189	
18	FRE04C	French Cr.	OPERCULUM	72	F	N	N	N	N41.39300	W122.87195	
19	FRE05C	French Cr.	OPERCULUM	74	M	N	N	N	N41.39308	W122.87198	
20	FRE06C	French Cr.	OPERCULUM	80	M	N	N	N	N41.39355	W122.87226	
21	FRE07C	French Cr.	OPERCULUM	75	M	N	N	N	N41.39366	W122.87225	
22	FRE08C	French Cr.	OPERCULUM	72	F	N	N	N	N41.39406	W122.87203	
23	FRE12C	French Cr.	OPERCULUM	73	F	N	N	N	N41.39625	W122.87035	
24	FRE14C	French Cr.	OPERCULUM	74	M	N	N	N	N41.39807	W122.86953	
25	FRE17C	French Cr.	OPERCULUM	77	M	N	N	N	N41.39529	W122.87235	
26	FRE20C	French Cr.	OPERCULUM	70	F	N	N	N	N41.39673	W122.87121	

Sample ID number	Code	Stream	Tissue Type	Fork Length [cm]	Sex [M, F or Unk]	Adipose Fin Clip? [Y or N]	Maxillary Clip? [Y or N]	Other Clip? [Y or N]	Latitude	Longitude	Notes
27	FRE21C	French Cr.	OPERCULUM	74	F	N	N	N	N41.39837	W122.86905	
28	FRE22C	French Cr.	OPERCULUM	71	F	N	N	N	N41.39883	W122.86841	
29	FRE27C	French Cr.	OPERCULUM	76	F	N	N	N	N41.40200	W122.86796	
30	FRE28C	French Cr.	OPERCULUM	74	F	N	N	N	N41.40500	W122.86619	IN TOBIAS DITCH. NO REDDS COUNTED OR FLAGGED.
31	FRE29C	French Cr.	OPERCULUM	73	F	N	N	N	N41.40498	W122.86610	IN TOBIAS DITCH.
32	FRE30C	French Cr.	OPERCULUM	73	F	N	N	N	N41.40493	W122.86607	IN TOBIAS DITCH.
33	FRE31C	French Cr.	OPERCULUM	75	F	N	N	N	N41.40600	W122.86667	IN DEEP LATERAL SCOUR POOL. FURTHEST DOWNSTREAM OF SURVEY.
34	FRE32C	French Cr.	OPERCULUM	72	F	N	N	N	N41.40354	W122.86727	UNDER MINERS CR. BRIDGE.
35	FRE33C	French Cr.	OPERCULUM	73	F	N	N	N			LANDOWNER BROUGHT CARCASSES TO ETNA. TISSUE SAMPLES WERE COLLECTED AND FISH RETURNED TO FRENCH CR. REACH WAS NOT SURVEYED.
36	FRE34C	French Cr.	OPERCULUM	78	M	N	N	N			LANDOWNER BROUGHT CARCASSES TO ETNA. TISSUE SAMPLES WERE COLLECTED AND FISH RETURNED TO FRENCH CR. REACH WAS NOT SURVEYED.
37	FRE35C	French Cr.	OPERCULUM	73	F	N	N	N			LANDOWNER BROUGHT CARCASSES TO ETNA. TISSUE SAMPLES WERE COLLECTED AND FISH RETURNED TO FRENCH CR. REACH WAS NOT SURVEYED.
38	FRE36C	French Cr.	OPERCULUM	78	M	N	N	N			LANDOWNER BROUGHT CARCASSES TO ETNA. TISSUE SAMPLES WERE COLLECTED AND FISH RETURNED TO FRENCH CR. REACH WAS NOT SURVEYED.

Sample ID number	Code	Stream	Tissue Type	Fork Length [cm]	Sex [M, F or Unk]	Adipose Fin Clip? [Y or N]	Maxillary Clip? [Y or N]	Other Clip? [Y or N]	Latitude	Longitude	Notes
39	FRE37C	French Cr.	OPERCULUM	72	F	N	N	N			LANDOWNER BROUGHT CARCASSES TO ETNA. TISSUE SAMPLES WERE COLLECTED AND FISH RETURNED TO FRENCH CR. REACH WAS NOT SURVEYED.
40	FRE38C	French Cr.	OPERCULUM	77	F	N	N	N			LANDOWNER BROUGHT CARCASSES TO ETNA. TISSUE SAMPLES WERE COLLECTED AND FISH RETURNED TO FRENCH CR. REACH WAS NOT SURVEYED.
41	SFK43C	South Fork Scott	OPERCULUM	67	F	N	N	N	N41.29340	W122.82829	PARTIALLY EATEN, SAMPLE TAKEN ON ONE SIDE ONLY.
42	SFK57C	South Fork Scott	OPERCULUM	68	F	N	N	N	N41.31050	W122.80297	
43	EFK02C	East Fork Scott	OPERCULUM	67	F	N	N	N	N41.33340	W122.72276	
44	EFK03C	East Fork Scott	OPERCULUM	71	F	N	N	N	N41.33340	W122.72276	
45	EFK04C	East Fork Scott	OPERCULUM	72	F	N	N	N	N41.33340	W122.72276	
46	EFK05C	East Fork Scott	OPERCULUM	80	M	N	N	N	N41.33340	W122.72276	
47	EFK06C	East Fork Scott	OPERCULUM	69	F	N	N	N	N41.32422	W122.72254	
48	EFK07C	East Fork Scott	OPERCULUM	66	F	N	N	N	N41.31934	W122.72357	
49	EFK08C	East Fork Scott	OPERCULUM	80	M	N	N	N	N41.31932	W122.72344	
50	EFK09C	East Fork Scott	OPERCULUM	77	M	N	N	N	N41.31810	W122.72324	
51	EFK10C	East Fork Scott	OPERCULUM	70	F	N	N	N	N41.31771	W122.72420	
52	EFK11C	East Fork Scott	OPERCULUM	64	F	N	N	N	N41.31744	W122.72590	
53	EFK12C	East Fork Scott	OPERCULUM	76	M	N	N	N	N41.31482	W122.72771	
54	SFK59C	South Fork Scott	OPERCULUM	75	M	N	N	N	N41.31050	W122.80297	SAME LOCATION AS SFK57C
55	SCR02C	Scott River	OPERCULUM	75	M	N	N	N	N41.31326	W122.80348	
56	SFK55C	South Fork Scott	OPERCULUM	70	M	N	N	N	N41.30907	W122.80281	UNDER BRIDGE
57	SFK62C	South Fork Scott	OPERCULUM	70	F	N	N	N	N41.28136	W122.85279	
58	SFK63C	South Fork Scott	OPERCULUM	76	M	N	N	N	N41.28599	W122.84671	
59	SFK65C	South Fork Scott	OPERCULUM	78	M	N	N	N	N41.28586	W122.84642	
60	SFK66C	South Fork Scott	OPERCULUM	77	M	N	N	N	N41.28611	W122.84628	

Sample ID number	Code	Stream	Tissue Type	Fork Length [cm]	Sex [M, F or Unk]	Adipose Fin Clip? [Y or N]	Maxillary Clip? [Y or N]	Other Clip? [Y or N]	Latitude	Longitude	Notes
61	SFK69C	South Fork Scott	OPERCULUM	72	F	Y	N	N	N41.28652	W122.84116	POSSIBLE AD CLIP. HEAD TAKEN. FRESH CARCASS. NO REDDS ABOVE IN DITCH TO UPPER PIPE. PROBABLY DRIFTED DOWN INTO DITCH.
62	SFK74C	South Fork Scott	OPERCULUM	69	F	N	N	N	N41.28977	W122.83866	FRESH CARCASS IN DITCH.
63	SFK84C	South Fork Scott	OPERCULUM	78	F	N	N	N	N41.28901	W122.83696	SAME LOCATION AS SFK85R
64	SFK91C	South Fork Scott	OPERCULUM	74	F	N	Y	N	N41.29326	W122.82869	FRESH CARCASS. POSSIBLE LEFT MAX CLIP.
65	EFK29C	East Fork Scott	OPERCULUM	73	F	N	N	N	N41.32322	W122.72380	FRESH CARCASS
66	SML03C	Mill Cr.(Shackleford)	OPERCULUM	74	F	N	N	N			
67	SML04C	Mill Cr.(Shackleford)	OPERCULUM	76	F	N	N	N			
68	SML05C	Mill Cr.(Shackleford)	OPERCULUM	72	F	N	N	N			
69	SML06C	Mill Cr.(Shackleford)	OPERCULUM	71	F	N	N	N			
70	SML07C	Mill Cr.(Shackleford)	OPERCULUM	85	M	N	N	N			VERY BIG MALE
71	MIN02C	Miners Cr.	OPERCULUM	74	F	N	N	N			
72	MIN03C	Miners Cr.	OPERCULUM	UNK	M	N	N	N			CARCASS BADLY EATEN
73	MIN04C	Miners Cr.	OPERCULUM	UNK	M	N	N	N			CARCASS BADLY EATEN
74	MIN05C	Miners Cr.	OPERCULUM	75	F	N	N	N			
75	SCR04C	Scott River	OPERCULUM	73	M	N	N	N			PARTIALLY EATEN, FULL OF MILT.

SCOTT RIVER ADULT COHO SURVEY
2001-2002
TISSUE COLLECTION
CHAIN-OF-CUSTODY (COC) RECORD

SAMPLE #	CODE #	SAMPLE DATE	SAMPLED BY: (SIGN & DATE)	RECEIVED BY: (SIGN & DATE)	RECEIVED BY: (SIGN & DATE)	RECEIVED BY: (SIGN & DATE)
1	SFKϕ1C	12/20/01	Sue Maurer 12/20/01	1/10/02 James R. Kilgore		
2	SFK23C	12/26/01	Sue Maurer 12/26/01	1/10/02 James R. Kilgore		
3	SFK27C	12/27/01	Sue Maurer 12/27/01	1/10/02 James R. Kilgore		
4	SFK31C	12/27/01	Sue Maurer 12/27/01	1/10/02 James R. Kilgore		
5	SFK32C	12/27/01	Sue Maurer 12/27/01	1/10/02 James R. Kilgore		
6	SFK35C	12/27/01	Sue Maurer 12/27/01	1/10/02 James R. Kilgore		
7	SFK37C	12/27/01	Sue Maurer 12/27/01	1/10/02 James R. Kilgore		
8	SFK40C	12/27/01	Sue Maurer 12/27/01	1/10/02 James R. Kilgore		
9	EFK15C	12/27/01	[illegible] 12/27/01	Sue Maurer 1/2/02	1/10/02 James R. Kilgore	
10	SCRϕ3C	12/27/01	[illegible] 12/27/01	Sue Maurer 1/2/02	1/10/02 James R. Kilgore	
11	SUGϕ4C	12/28/01	Sue Maurer 12/28/01	1/10/02 James R. Kilgore		
12	SUGϕ8C	12/28/01	Sue Maurer 12/28/01	1/10/02 James R. Kilgore		
13	SUGϕ9C	12/28/01	Sue Maurer 12/28/01	1/10/02 James R. Kilgore		
14	SUG11C	12/28/01	Sue Maurer 12/28/01	1/10/02 James R. Kilgore		
15	SUG12C	12/28/01	Sue Maurer 12/28/01	1/10/02 James R. Kilgore		
16	FREϕ2C	12/29/01	Sue Maurer 12/29/01	1/10/02 James R. Kilgore		
17	FREϕ3C	12/29/01	Sue Maurer 12/29/01	1/10/02 James R. Kilgore		

SCOTT RIVER ADULT COHO SURVEY
2001-2002
TISSUE COLLECTION
CHAIN-OF-CUSTODY (COC) RECORD

SAMPLE #	CODE #	SAMPLE DATE	SAMPLED BY: (SIGN & DATE)	RECEIVED BY: (SIGN & DATE)	RECEIVED BY: (SIGN & DATE)	RECEIVED BY: (SIGN & DATE)
18	FRE04C	12/29/01	Sue Maurer 12/29/01	James R. Kilgore 1/10/02		
19	FRE05C	12/29/01	Sue Maurer 12/29/01	James R. Kilgore 1/10/02		
20	FRE06C	12/29/01	Sue Maurer 12/29/01	James R. Kilgore 1/10/02		
21	FRE07C	12/29/01	Sue Maurer 12/29/01	James R. Kilgore 1/10/02		
22	FRE08C	12/29/01	Sue Maurer 12/29/01	James R. Kilgore 1/10/02		
23	FRE12C	12/29/01	Sue Maurer 12/29/01	James R. Kilgore 1/10/02		
24	FRE14C	12/29/01	Sue Maurer 12/29/01	James R. Kilgore 1/10/02		
25	FRE17C	12/29/01	Sue Maurer 12/29/01	James R. Kilgore 1/10/02		
26	FRE20C	12/29/01	Sue Maurer 12/29/01	James R. Kilgore 1/10/02		
27	FRE21C	12/29/01	Sue Maurer 12/29/01	James R. Kilgore 1/10/02		
28	FRE22C	12/29/01	Sue Maurer 12/29/01	James R. Kilgore 1/10/02		
29	FRE27C	12/29/01	Sue Maurer 12/29/01	James R. Kilgore 1/10/02		
30	FRE28C	12/29/01	Sue Maurer 12/29/01	James R. Kilgore 1/10/02		
31	FRE29C	12/29/01	Sue Maurer 12/29/01	James R. Kilgore 1/10/02		
32	FRE30C	12/29/01	Sue Maurer 12/29/01	James R. Kilgore 1/10/02		
33	FRE31C	12/29/01	Sue Maurer 12/29/01	James R. Kilgore 1/10/02		
34	FRE32C	12/29/01	Sue Maurer 12/29/01	James R. Kilgore 1/10/02		

SCOTT RIVER ADULT COHO SURVEY
2001-2002
TISSUE COLLECTION
CHAIN-OF-CUSTODY (COC) RECORD

SAMPLE #	CODE #	SAMPLE DATE	SAMPLED BY: (SIGN & DATE)	RECEIVED BY: (SIGN & DATE)	RECEIVED BY: (SIGN & DATE)	RECEIVED BY: (SIGN & DATE)
35	FRE33C	12/31/01	Sue Maurer 12/31/01	James R. Kilgore 1/10/02		
36	FRE34C	12/31/01	Sue Maurer 12/31/01	James R. Kilgore 1/10/02		
37	FRE35C	12/31/01	Sue Maurer 12/31/01	James R. Kilgore 1/10/02		
38	FRE36C	12/31/01	Sue Maurer 12/31/01	James R Kilgore 1/10/02		
39	FRE37C	12/31/01	Sue Maurer 12/31/01	James R Kilgore 1/10/02		
40	FRE38C	12/31/01	Sue Maurer 12/31/01	1/10/02 James R Kilgore		
41	SFK43C	12/28/01	12/28/01	Sue Maurer 1/2/02	James R Kilgore 1/10/02	
42	SFK57C	12/31/01	12/31/01	Sue Maurer 1/2/02	James R. Kilgore 1/10/02	
43	EFKϕ2C	12/28/01	12/28/01	Sue Maurer 1/2/02	James R. Kilgore 1/10/02	
44	EFKϕ3C	12/28/01	12/28/01	Sue Maurer 1/2/02	James R. Kilgore 1/10/02	
45	EFKϕ4C	12/28/01	12/28/01	Sue Maurer 1/2/02	James R. Kilgore 1/10/02	
46	EFKϕ5C	12/28/01	12/28/01	Sue Maurer 1/2/02	James R. Kilgore 1/10/02	
47	EFKϕ6C	12/28/01	12/28/01	Sue Maurer 1/2/02	James R. Kilgore 1/10/02	
48	EFKϕ7C	12/28/01	12/28/01	Sue Maurer 1/2/02	James R Kilgore 1/10/02	
49	EFKϕ8C	12/28/01	12/28/01	Sue Maurer 1/2/02	James R. Kilgore 1/10/02	
50	EFKϕ9C	12/28/01	12/28/01	Sue Maurer 1/2/02	James R. Kilgore 1/10/02	
51	EFK1ϕC	12/28/01	12/28/01	Sue Maurer 1/2/02	James R Kilgore 1/10/02	

SCOTT RIVER ADULT COHO SURVEY
2001-2002
TISSUE COLLECTION
CHAIN-OF-CUSTODY (COC) RECORD

SAMPLE #	CODE #	SAMPLE DATE	SAMPLED BY: (SIGN & DATE)	RECEIVED BY: (SIGN & DATE)	RECEIVED BY: (SIGN & DATE)	RECEIVED BY: (SIGN & DATE)
52	EFK11C	12/28/01	12/28/01	Sue Maurer 1/2/02	James R. Kilgore 1/10/02	
53	EFK12C	12/28/01	12/28/01	Sue Maurer 1/2/02	James R. Kilgore 1/10/02	
54	SFK59C	12/31/01	12/31/01	Sue Maurer 1/2/02	James R. Kilgore 1/10/02	
55	SCR02C	12/31/01	12/31/01	Sue Maurer 1/2/02	James R. Kilgore 1/10/02	
56	SFK55C	12/31/01	12/31/01	Sue Maurer 1/2/02	James R. Kilgore 1/10/02	
57	SFK62C	1/11/02	Sue Maurer 1/11/02	James R. Kilgore 1/22/02		
58	SFK63C	1/11/02	Sue Maurer 1/11/02	James R. Kilgore 1/22/02		
59	SFK65C	1/11/02	Sue Maurer 1/11/02	James R. Kilgore 1/22/02		
60	SFK66C	1/11/02	Sue Maurer 1/11/02	James R. Kilgore 1/22/02		
61	SFK69C	1/11/02	Sue Maurer 1/11/02	James R. Kilgore 1/22/02		
62	SFK74C	1/11/02	Sue Maurer 1/11/02	James R. Kilgore 1/22/02		
63	SFK84C	1/11/02	Sue Maurer 1/11/02	James R. Kilgore 1/22/02		
64	SFK91C	1/11/02	Sue Maurer 1/11/02	James R. Kilgore 1/22/02		
65	EFK29C	1/14/02	Sue Maurer 1/14/02	James R. Kilgore 1/22/02		

SCOTT RIVER ADULT COHO SURVEY
2001-2002
TISSUE COLLECTION
CHAIN-OF-CUSTODY (COC) RECORD

SAMPLE #	CODE #	SAMPLE DATE	SAMPLED BY: (SIGN & DATE)	RECEIVED BY: (SIGN & DATE)	RECEIVED BY: (SIGN & DATE)	RECEIVED BY: (SIGN & DATE)
66	SMLØ3C	12/31/01	[signature] 1/16/02	Sue Maurer 1/16/02	James R. Kilgore 1/22/02	
67	SMLØ4C	12/31/01	[signature] 1/16/02	Sue Maurer 1/16/02	James R. Kilgore 1/22/02	
68	SMLØ5C	12/31/01	[signature] 1/16/02	Sue Maurer 1/16/02	James R. Kilgore 1/22/02	
69	SMLØ6C	12/31/01	[signature] 1/16/02	Sue Maurer 1/16/02	James R. Kilgore 1/22/02	
70	SMLØ7C	12/31/01	[signature] 1/16/02	Sue Maurer 1/16/02	James R. Kilgore 1/22/02	
71	MINØ2C	1/2/02	[signature] 1/16/02	Sue Maurer 1/16/02	James R. Kilgore 1/22/02	
72	MINØ3C	1/2/02	[signature] 1/16/02	Sue Maurer 1/16/02	James R. Kilgore 1/22/02	
73	MINØ4C	1/2/02	[signature] 1/16/02	Sue Maurer 1/16/02	James R. Kilgore 1/22/02	
74	MINØ5C	1/2/02	[signature] 1/16/02	Sue Maurer 1/16/02	James R. Kilgore 1/22/02	
75	SCRØ4C	1/19/02	[signature] 1/22/02	Sue Maurer 1/22/02	James R. Kilgore 1/22/02	

Biological Sampling Manual for Salmonids

Schematic Drawings of Coho Salmon

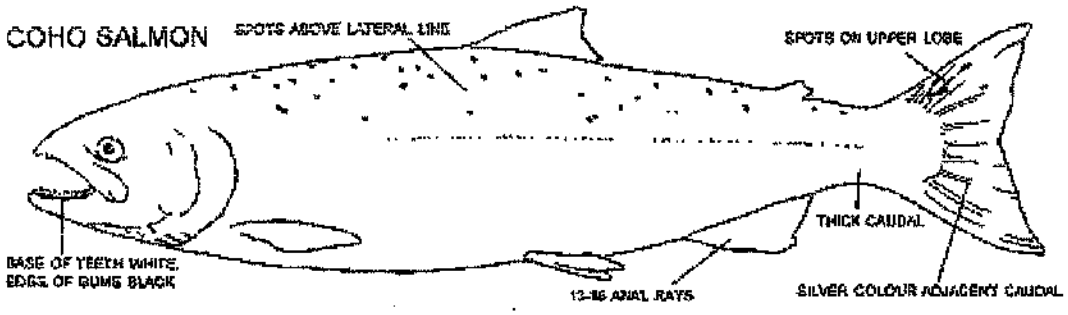


Figure 3. Schematic drawing of side profile of coho salmon, displaying important identification characteristics and description.

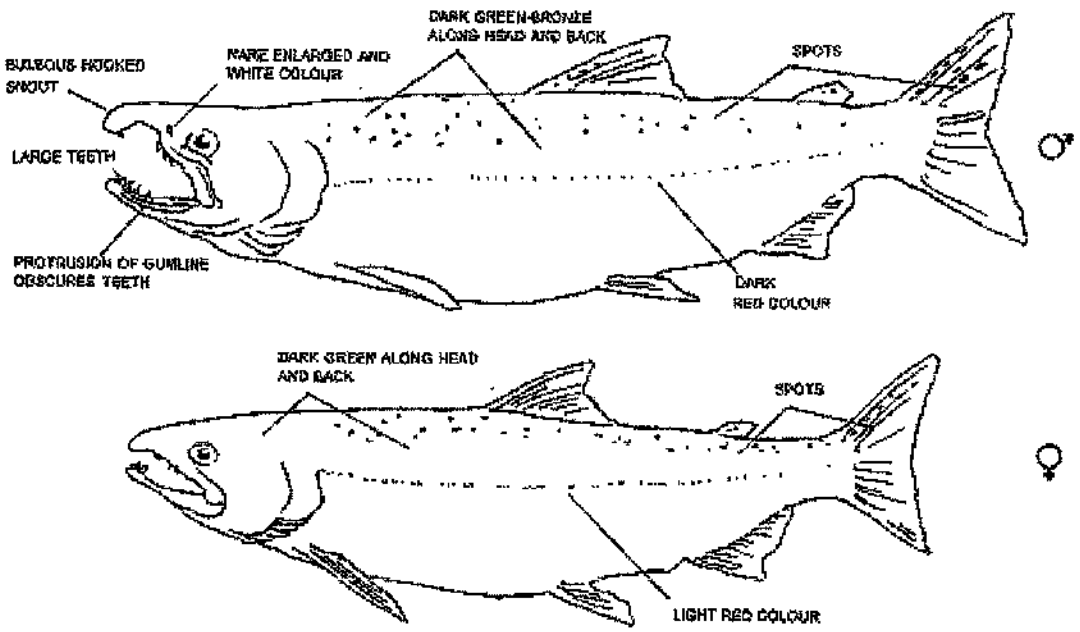


Figure 6. Schematic drawing of male and female coho salmon, displaying important identification characteristics and description.

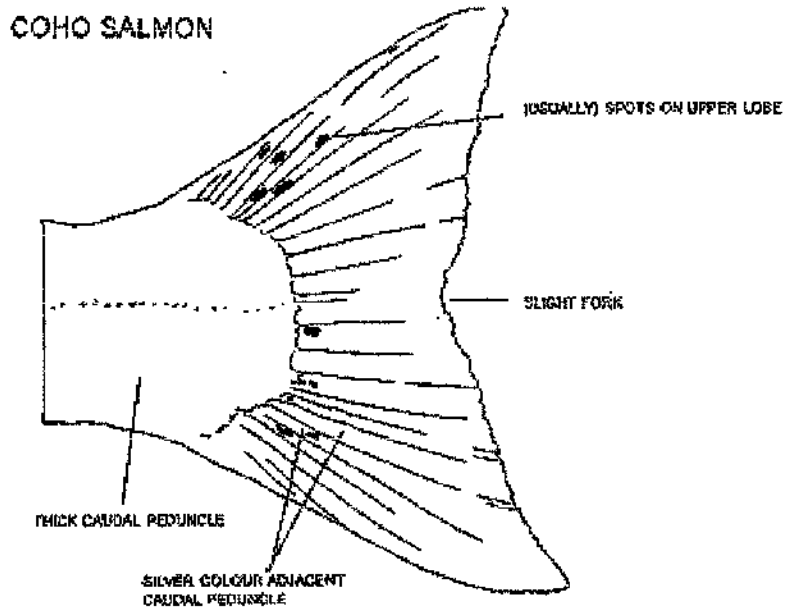


Figure 10. Schematic drawing of the caudal fin of coho salmon, displaying important identification characteristics and description.

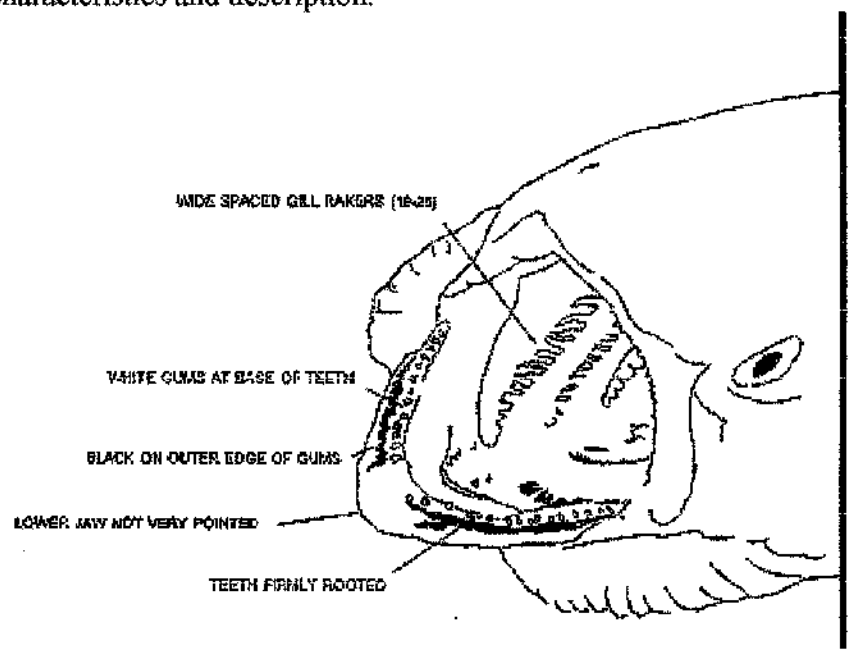


Figure 14. Schematic drawing of the lower jaw of coho salmon, displaying important identification characteristics and description.

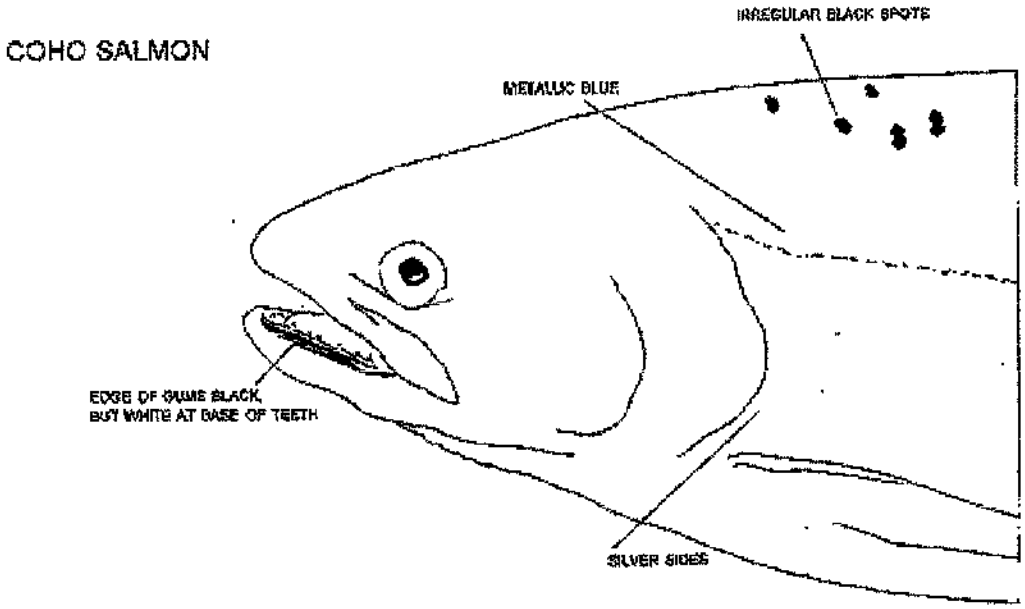
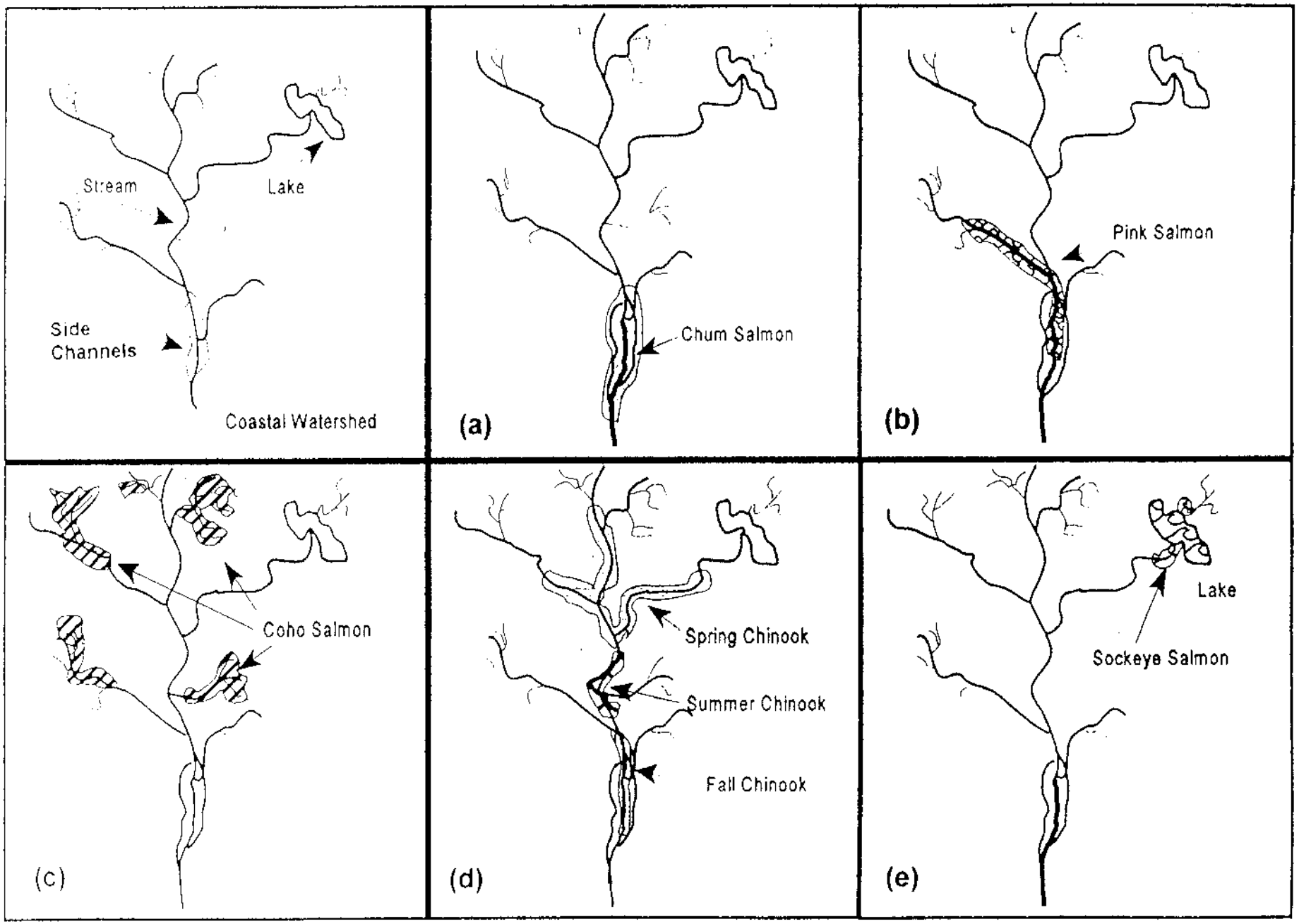


Figure 19. Schematic drawing of a coho salmon head, displaying important identification characteristics and description.

from Salmon Without Rivers, Lichatowich 1999



A33

Figure 1.3. The spawning distribution of Pacific salmon in a hypothetical watershed. Typical distribution of chum (a), pink (b), coho (c), chi-

Metadata for GIS and GPS

Scott River Watershed Adult Coho Salmon Spawning Survey
2001-2002

GIS: ArcInfo (ver.7.2.1) Coverage
Projection: UTM Zone 10
Datum: NAD 27
Units: Meters°

GPS Settings:

Garmin, GPS II Plus
Datum: NAD 27
Pos: UTM/UPS
CDI: ± 0.25
Units: Metric
Heading: User Mag W017°*
*note: incorrect declination, only affects navigation use

Garmin, GPS 48
Datum: NAD 27
Pos: hddd°mm'ss.s" (Lat/Long)
CDI: ± 0.25
Units: Statute
Heading: Auto E017°

Garmin, Extrex Vista
Datum: NAD 27
Units: Degrees
Dist: Statute
Heading: Auto E017°

All Garmin GPS units export in the following projection, regardless of setting:
Projection: Lat/Long (decimal degrees)
Datum; WGS 84

REDD SURVEY FORM

STREAM:_____ REACH:_____

DATE:_____ SPECIES:_____ CREW:_____

START TIME:____ WATER TEMP°C:____ AIR TEMP°C:____
END TIME:____ WATER TEMP°C:____ AIR TEMP°C:____
WEATHER: Clear Cloudy Rain METHOD: Walk Float Tube Boat

******Record Following Info by Dot Talley*********

HABITAT TYPE	# REDDS	# ~~CHINOOK~~ CK HC	# ~~STEELHEAD~~ CARCASSES
NON-ENHANCED			
ENH. WEIR			
ENH. DEFL			
ENH. PKT			

TTL REDDS:_____ TTL ~~CHNK~~ CK HC:____ TTL ~~STHD~~ CARCASSES:____

COMMENTS:_____

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
BOC	Boulder Cr. (Canyon)	1	Lower Bridge-Scott River	0.2	C.Baldwin D.Flickinger	12/20/01	1		walk		
BOU01R	Boulder Cr. (S.Fork)	1	1000' from Confluence-South Fork	0.2	S.Maurer T.Weseloh	12/20/01	1	snowy	walk	N	
CAN	Canyon Cr.	1	Sue's Cabin-Scott River	1.1	S.Maurer	01/25/02	3	rainy	walk		
CAN01S	Canyon Cr.	1	Sue's Cabin-Scott River	1.1	S.Maurer E.Yokel	12/19/01	1	snowy	walk		
CAN02S	Canyon Cr.	1	Sue's Cabin-Scott River	1.1	S.Maurer E.Yokel	12/19/01	1	snowy	walk		
CAN03S	Canyon Cr.	1	Sue's Cabin-Scott River	1.1	S.Maurer E.Yokel	12/19/01	1	snowy	walk		
CAN04S	Canyon Cr.	1	Sue's Cabin-Scott River	1.1	S.Maurer E.Yokel	12/19/01	1	snowy	walk		
CAN05S	Canyon Cr.	1	Sue's Cabin-Scott River	1.1	S.Maurer E.Yokel	12/19/01	1	snowy	walk		
CANBEG	Canyon Cr.	1	Sue's Cabin-Scott River	1.1	S.Maurer E.Yokel	12/19/01	1	snowy	walk		
EFK	East Fork Scott	1	Lower Callahan Guard Sta.-Hwy 3 Bridge	0.2	S.Maurer M.Bennett	01/18/02	2	clear	walk		
EFK02C	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk		
EFK03C	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk		

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
												NO FISH OR REDDS SIGHTED. MOUTH APPEARS TO BE IMPASSABLE.
1									Y	41 17 37.016425	-122 49 27.476908	LIMITED SPAWNING GRAVEL. LOTS OF DG & COBBLE. REDD AT MOUTH.
												WALKED LEFT BANK. NO FISH, REDDS OR CARCASSES OBSERVED. SEVERAL PLACES WITH GOOD GRAVELS-MAY HAVE BEEN RECENTLY DEPOSITED FROM HIGH FLOWS. NO CLEAR EVIDENCE OF RECENT USE.
									Y	41 37 20.403835	-123 6 45.310501	SNORKEL SITE-NO FISH OBSERVED
									Y	41 37 32.786354	-123 6 33.107489	SNORKEL SITE-NO FISH OBSERVED
									N	41 37 34.854181	-123 6 23.797948	SNORKEL SITE-NO FISH OBSERVED
									Y	41 37 49.923150	-123 6 16.367545	SNORKEL SITE- ONE 1+ STHD OBSERVED
									Y	41 37 57.773505	-123 6 12.911810	SNORKEL SITE-NO FISH OBSERVED
									Y	41 37 17.448474	-123 6 49.918315	START OF SURVEY
												NO NEW REDDS OR FISH OBSERVED OR CARCASSES FOUND. MAY HAVE BEEN SOME SPAWNING PRIOR TO HIGH FLOWS, BUT COULD NOT DETERMINE NOW.
		1	43	67	F	N	N	N	Y	41 20 .723189	-122 43 17.841517	
		1	44	71	F	N	N	N	Y	41 20 .723189	-122 43 17.841517	

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
EFK04C	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk		
EFK05C	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk		
EFK06C	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk		
EFK07C	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk		
EFK08C	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk		
EFK09C	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk		
EFK10C	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk		
EFK11C	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk		
EFK12C	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk		
EFK13R	East Fork Scott	1	East Side Rd Bridge	0	C.Baldwin D.Flickinger	12/31/01	1		spot	N	

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
		1	45	72	F	N	N	N	Y	41 20 .723189	-122 43 17.841517	
		1	46	80	M	N	N	N	Y	41 20 .723189	-122 43 17.841517	
		1	47	69	F	N	N	N	Y	41 19 27.676891	-122 43 17.049283	
		1	48	66	F	N	N	N	Y	41 19 10.093505	-122 43 20.757389	
		1	49	80	M	N	N	N	Y	41 19 10.027521	-122 43 20.289908	
		1	50	77	M	N	N	N	Y	41 19 5.631750	-122 43 19.570613	
		1	51	70	F	N	N	N	Y	41 19 4.229446	-122 43 23.025573	
		1	52	64	F	N	N	N	Y	41 19 3.255061	-122 43 29.145385	
		1	53	76	M	N	N	N	Y	41 18 53.833952	-122 43 35.661954	
3									Y	41 18 43.645039	-122 48 .720809	3 REDDS AROUND BRIDGE. NO FISH

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
EFK14R	East Fork Scott	1	Lower Callahan Guard Sta.- Hwy 3 Bridge	0.2	C.Baldwin	12/27/01	1		walk	Y	1
EFK15C	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin	12/27/01	1		walk		
EFK17F	East Fork Scott	1	Lower Callahan Guard Sta.- Hwy 3 Bridge	0.2	C.Baldwin	12/27/01	1				
EFK22R	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk	Y	2
EFK23R	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk	Y	
EFK24R	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk	Y	
EFK25R	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk	Y	
EFK26R	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk	Y	
EFK27R	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk	Y	
EFK28R	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk	Y	

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
1	2								Y	41 18 19.203595	-122 47 38.545268	2 REDDS, ONE WITH 1 MALE & 1 FEMALE. 1 REDD= 2 YDS X 10 YDS
		1	9	83	M	N	N	N	N	41 19 32.991711	-122 43 15.639357	"BIG OLE RED MALE". CARCASS AT RD. XING.
	1								N	41 18 29.992630	-122 47 51.403471	1 FEMALE 50 YDS ABOVE HWY 3 BRIDGE
	2								Y	41 19 50.488980	-122 43 9.886089	GPS'D AND FLAGGED ON 1/14/02. DATA FROM 12/28/01.
2									Y	41 19 43.228035	-122 43 11.109672	GPS'D AND FLAGGED ON 1/14/02. DATA FROM 12/28/01.
1									Y	41 19 41.320373	-122 43 13.413945	GPS'D AND FLAGGED ON 1/14/02. DATA FROM 12/28/01.
1									Y	41 19 37.644222	-122 43 15.249819	GPS'D AND FLAGGED ON 1/14/02. DATA FROM 12/28/01.
1									Y	41 19 35.811588	-122 43 15.069439	GPS'D AND FLAGGED ON 1/14/02. DATA FROM 12/28/01.
1									Y	41 19 33.607689	-122 43 15.573538	GPS'D AND FLAGGED ON 1/14/02. DATA FROM 12/28/01.
1									Y	41 19 27.240330	-122 43 17.553867	GPS'D AND FLAGGED ON 1/14/02. DATA FROM 12/28/01.

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
EFK29C	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	S.Maurer J.Phelps V.McNeil	01/14/02	2	snowy	walk		
EFK30R	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk	Y	
EFK31R	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk	Y	
EFK32R	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk	Y	1
EFK33R	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk	Y	
EFK34R	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk	Y	
EFK35R	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk	Y	1
EFK36R	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk	Y	
EFK38R	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk	Y	1
EFK39R	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	S.Maurer J.Phelps V.McNeil	01/14/02	2	snowy	walk	Y	

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
		1	65	73	F	N	N	N	Y	41 19 24.072093	-122 43 21.585264	FRESH CARCASS
1									Y	41 19 23.665700	-122 43 21.154126	GPS'D AND FLAGGED ON 1/14/02. DATA FROM 12/28/01.
1									Y	41 19 22.266940	-122 43 19.353440	GPS'D AND FLAGGED ON 1/14/02. DATA FROM 12/28/01.
	2								Y	41 19 19.058539	-122 43 20.181674	GPS'D AND FLAGGED ON 1/14/02. DATA FROM 12/28/01.
1									Y	41 19 18.957951	-122 43 18.813692	GPS'D AND FLAGGED ON 1/14/02. DATA FROM 12/28/01.
1									Y	41 19 17.724808	-122 43 18.454650	GPS'D AND FLAGGED ON 1/14/02. DATA FROM 12/28/01.
	3								Y	41 19 16.477274	-122 43 18.849788	GPS'D AND FLAGGED ON 1/14/02. DATA FROM 12/8/01. RECENT BEDLOAD MOVEMENT HAS BURIED REDD.
1									Y	41 19 10.676434	-122 43 20.433654	GPS'D AND FLAGGED ON 1/14/02. DATA FROM 12/28/01.
	2								Y	41 19 9.166087	-122 43 19.426564	GPS'D AND FLAGGED ON 1/14/02. DATA FROM 12/28/01.
1									Y	41 19 9.019204	-122 43 19.030700	FRESH REDD IN UPPER END OF SIDE CHANNEL SINCE HIGH FLOWS.

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
EFK40F	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	S.Maurer J.Phelps V.McNeil	01/14/02	2	snowy	walk		
EFK41R	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk	Y	
EFK42R	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	C.Baldwin D.Flickinger J.Phelps	12/28/01	1	rainy	walk	Y	
EFK43	East Fork Scott	3	Newton's Lower Screen	0	D.Maria R.Dotson	01/08/02	2		spot		
EFK44	East Fork Scott	3	Newton's Upper Screen	0	D.Maria R.Dotson	01/08/02	2		spot		
EFK45C	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	S.Maurer J.Phelps V.McNeil	01/14/02	2	snowy	walk		
EFK46C	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	S.Maurer J.Phelps	01/28/02	3	clear	walk		
EFK47C	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	S.Maurer J.Phelps	01/28/02	3	clear	walk		
EFK48C	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	S.Maurer J.Phelps	01/28/02	3	clear	walk		
EFK49R	East Fork Scott	3	Fashing Property	0.2	D.Maria R.Dotson B.McAllister	12/14/01	1		walk	N	12
EFK50R	East Fork Scott	3	Masterson Rd. Bridge	0	D.Maria R.Dotson B.McAllister	12/14/01	1		spot	N	

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
	1								Y	41 19 5.745335	-122 43 19.606433	VERY FRESH FISH
1									Y	41 19 6.252440	-122 43 28.209355	GPS'D AND FLAGGED ON 1/14/02. DATA FROM 12/28/01.
2									Y	41 18 56.200535	-122 43 35.373833	GPS'D AND FLAGGED ON 1/14/02. DATA FROM 12/28/01. MULTIPLE REDD SITE.
									Y	41 23 13.236010	-122 40 20.640573	NO REDDS, CARCASSES OR FISH OBSERVED. BINOCULARS USED TO VIEW CREEK AT SEVERAL LOCATIONS ALONG GAZELLE/CALLAHAN RD.
									Y	41 24 .408684	-122 39 27.139588	NO REDDS, CARCASSES OR FISH OBSERVED. BINOCULARS USED TO VIEW CREEK AT SEVERAL LOCATIONS ALONG GAZELLE/CALLAHAN RD.
		5				N	N	N	N	41 19 38.957475	-122 43 15.211952	5 OLD CARCASSES FOUND, NONE WITH CLIPS OR PREVIOUSLY SAMPLED. NO LENGTHS OR SEX RECORDED. NO TISSUES OR SCALES TAKEN.
		1		71	F	N		N	N	41 19 48.673657	-122 43 10.156039	OLD CARCASS- NO TISSUES OR SCALES TAKEN. LEFT MAX DECAYED.
		1		72	F	N	N	N	N	41 19 45.433192	-122 43 11.124400	OLD CARCASS- NO TISSUES OR SCALES TAKEN.
		1							N	41 19 43.454510	-122 43 10.894942	HALF EATEN FEMALE CARCASS- FRESH. NO TISSUES OR SCALES TAKEN.
	17								N	41 20 5.815421	-122 43 4.931869	OBSERVATIONS OVER LENGTH OF FASHING PROPERTY
1									N	41 20 22.730503	-122 43 6.475055	OBSERVED FROM MASTERSON RD. BRIDGE 1/4 MILE UPSTREAM OF MOUTH OF KANGAROO CR.

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
EFKBEG	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	S.Maurer J.Phelps V.McNeil	01/14/02	2	snowy	walk		
EFKEND	East Fork Scott	2	Raelene & Jay Phelps Ranch	1.4	S.Maurer J.Phelps V.McNeil	01/14/02	2	snowy	walk		
ETN	Etna Cr.	1	Etna Dam/Ladder	2.5	D.Maria R.Dotson	01/08/02	2		spot		
ETN	Etna Cr.	1	Mill Cr. Confluence-Dam	2.5	D.Maria R.Davis	01/11/02	2		spot		
ETN01R	Etna Cr.	1	FGS-Mill Cr. Bridge	2.5	C.Baldwin D.Flickinger	12/17/01	1		spot	N	1
ETNBAR	Etna Cr.	1	Mill Cr. Confluence-Dam	2.5	D.Maria R.Davis	01/11/02	2		spot		
FOX	Fox Cr.	1	350' above Bridge-South Fork	0.1	S.Maurer T.Weseloh	12/20/01	1	snowy	walk		
FRE	French Cr.	1	Miners Cr Bridge-400 ft blw Tobais Ditch Hoffman Property	0.1	S.Maurer	01/15/02	2	clear	walk		
FRE	French Cr.	2	Krum Ranch	0.8	S.Maurer	01/31/02	3	cloudy	walk		

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
									Y	41 19 50.488980	-122 43 9.886089	START OF SURVEY
									Y	41 18 53.897013	-122 43 34.906356	END OF SURVEY
												WATER TOO HIGH & TURBID TO SURVEY. FISH LADDER WAS PLUGGED WITH SMALL WOODY DEBRIS-TRIED TO CLEAN. UNSUCCESSFUL. DFG WILL CLEAN FIRST THING IN THE MORNING.
												SURVEYED AT ETNA/SAWYERS BAR RD CROSSING AT MILL CREEK TO DAM AT SEVERAL TURNOUTS. NO REDDS OR FISH OBSERVED. WATER VISIBILITY GOOD. SPAWNING GRAVELS SCARCE AND SCATTERED IN POCKETS.
	2								N	41 25 45.519410	-122 55 6.732439	SPOT CHECKED. SNOW DID NOT ALLOW MUCH ACCESS ABOVE BRIDGE AT MILL CR.
												6 FT FALLS. BOULDER/LARGE TREES FORM BARRIER. NOT TOTAL BARRIER, EXCEPT TO JUVENILES.
												NO FISH OR REDDS OBSERVED. HIGH GRADIENT, LACK OF SPAWNING GRAVELS. NO APPARENT BARRIERS.
												NO FRESH FISH, REDDS, OR CARCASSES FOUND. REDDS NOT PREVIOUSLY MAPPED ON THIS REACH. MAY BE SOME PRE-HIGH FLOW REDDS.
												ICY CONDITIONS. LOW FLOWS. SOME SMALLER BRAIDS DRY AND ICED OVER. FRESH BEAVER CUTTINGS. PHOTO 35 AT ICY INFLOW NEAR BEGINNING OF REACH. ONE OLD CARCASS FOUND-PREVIOUSLY SAMPLED.

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
FRE01R	French Cr.	3	Bridge at McGill Property- Horse Range Cr. Confluence	0.1	S.Maurer	12/28/01	1	cloudy	walk	Y	
FRE02C	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk		
FRE03C	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk		
FRE04C	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk		
FRE05C	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk		
FRE06C	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk		
FRE07C	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk		
FRE08C	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk		
FRE09R	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk	Y	
FRE10R	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk	Y	
FRE11R	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk	Y	
FRE12C	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk		
FRE13R	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk	Y	
FRE14C	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk		
FRE15R	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk	Y	1
FRE16R	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk	Y	
FRE17C	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk		
FRE18R	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk	Y	

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
1									Y	41 21 27.135971	-122 54 7.221749	ROBERT MCGILL SHOWED VIDEO FOOTAGE FROM 12/20/01 OF 3 COHO SPAWNING (ONE FEMALE, 2 MALES?) IN FRONT OF DECK. NO FISH OBSERVED TODAY.
		1	16	64	F	N	N	N	Y	41 23 32.196784	-122 52 14.472423	
		1	17	77	F	N	N	N	Y	41 23 34.321056	-122 52 14.688901	
		1	18	72	F	N	N	N	Y	41 23 35.294136	-122 52 14.904992	
		1	19	74	M	N	N	N	Y	41 23 35.586109	-122 52 15.013402	
		1	20	80	M	N	N	N	Y	41 23 37.273490	-122 52 16.020671	
		1	21	75	M	N	N	N	Y	41 23 37.662585	-122 52 15.984894	
		1	22	72	F	N	N	N	Y	41 23 39.104740	-122 52 15.193454	
2									Y	41 23 41.550617	-122 52 13.032832	MARGINAL GRAVEL
2									Y	41 23 45.878117	-122 52 11.593718	GOOD LWD
1									Y	41 23 46.444341	-122 52 10.476995	LARGE REDD
		1	23	73	F	N	N	N	Y	41 23 46.994104	-122 52 9.144983	
2									Y	41 23 51.807474	-122 52 7.237799	
		1	24	74	M	N	N	N	Y	41 23 53.541172	-122 52 6.192709	
	1								Y	41 23 54.480262	-122 52 5.041506	ONE FEMALE
1									Y	41 23 40.648327	-122 52 18.109234	VERY POOR GRAVEL. LOTS OF DG. ON FAR LEFT BRAID.
		1	25	77	M	N	N	N	Y	41 23 43.532440	-122 52 16.344714	
1									Y	41 23 43.759234	-122 52 16.165298	

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
FRE19R	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk	Y	2
FRE20C	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk		
FRE21C	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk		
FRE22C	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk		
FRE23R	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk	Y	
FRE24R	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk	Y	1
FRE25R	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk	Y	
FRE26R	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk	Y	
FRE27C	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk		
FRE28C	French Cr.	1	Miners Cr Bridge-400 ft blw Tobais Ditch Hoffman Property	0.1	S.Maurer S.Hoffman	12/29/01	1	cloudy	walk		
FRE29C	French Cr.	1	Miners Cr Bridge-400 ft blw Tobais Ditch Hoffman Property	0.1	S.Maurer S.Hoffman	12/29/01	1	cloudy	walk		
FRE30C	French Cr.	1	Miners Cr Bridge-400 ft blw Tobais Ditch Hoffman Property	0.1	S.Maurer S.Hoffman	12/29/01	1	cloudy	walk		
FRE31C	French Cr.	1	Miners Cr Bridge-400 ft blw Tobais Ditch Hoffman Property	0.1	S.Maurer S.Hoffman	12/29/01	1	cloudy	walk		
FRE32C	French Cr.	1	Miners Cr Bridge-400 ft blw Tobais Ditch Hoffman Property	0.1	S.Maurer S.Hoffman	12/29/01	1	cloudy	walk		

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
	6								Y	41 23 45.007507	-122 52 15.985198	2 FEMALES 4 MALES. MAY BE MORE REDDS.
		1	26	70	F	N	N	N	Y	41 23 48.716290	-122 52 12.240772	
		1	27	74	F	N	N	N	Y	41 23 54.625526	-122 52 4.465223	
		1	28	71	F	N	N	N	Y	41 23 56.276698	-122 52 2.161953	
1									Y	41 24 3.941805	-122 51 58.633779	POOR GRAVELS-DG. AT HEAD DAM TO "SCHOOL" DITCH.
3	6								Y	41 24 4.411674	-122 51 58.344788	5 FISH BELOW REDDS JUST BELOW "SCHOOL" DITCH.
1									Y	41 24 5.677364	-122 51 59.208909	
2									Y	41 24 7.072724	-122 52 .037803	MAY BE MORE REDDS.
		1	29	76	F	N	N	N	Y	41 24 7.689436	-122 52 .541203	
		1	30	74	F	N	N	N	Y	41 24 18.496702	-122 51 54.169168	IN TOBIAS DITCH. NO REDDS COUNTED OR FLAGGED.
		1	31	73	F	N	N	N	Y	41 24 18.415252	-122 51 53.844984	IN TOBIAS DITCH.
		1	32	73	F	N	N	N	Y	41 24 18.236773	-122 51 53.737681	IN TOBIAS DITCH.
		1	33	75	F	N	N	N	Y	41 24 22.098217	-122 51 55.897942	IN DEEP LATERAL SCOUR POOL. FURTHEST DOWNSTREAM OF SURVEY.
		1	34	72	F	N	N	N	Y	41 24 13.231718	-122 51 58.057522	UNDER MINERS CR. BRIDGE.

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
FRE33C	French Cr.	3	Buchter Ranch	0.1	S.Maurer J.Kilgore	12/31/01	1	cloudy			
FRE34C	French Cr.	3	Buchter Ranch	0.1	S.Maurer J.Kilgore	12/31/01	1	cloudy			
FRE35C	French Cr.	3	Buchter Ranch	0.1	S.Maurer J.Kilgore	12/31/01	1	cloudy			
FRE36C	French Cr.	3	Buchter Ranch	0.1	S.Maurer J.Kilgore	12/31/01	1	cloudy			
FRE37C	French Cr.	3	Buchter Ranch	0.1	S.Maurer J.Kilgore	12/31/01	1	cloudy			
FRE38C	French Cr.	3	Buchter Ranch	0.1	S.Maurer J.Kilgore	12/31/01	1	cloudy			
FRE39R	French Cr.	3	JH Ranch Bridge-N Line Sec 5	0	R.VandeWater R.VandeWater	01/05/02	2	cloudy	walk	N	
FRE50R	French Cr.	2	Krum Ranch	0.8	S.Maurer	01/15/02	2	clear	walk	Y	
FRE51R	French Cr.	2	Krum Ranch	0.8	S.Maurer	01/15/02	2	clear	walk	Y	
FRE52R	French Cr.	2	Krum Ranch	0.8	S.Maurer	01/15/02	2	clear	walk	Y	
FRE53R	French Cr.	2	Krum Ranch	0.8	S.Maurer	01/15/02	2	clear	walk	Y	
FRE54C	French Cr.	2	Krum Ranch	0.8	S.Maurer	01/15/02	2	clear	walk		
FRE55C	French Cr.	2	Krum Ranch	0.8	S.Maurer	01/15/02	2	clear	walk		

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
		1	35	73	F	N	N	N	N	41 23 9.739111	-122 52 27.915561	LANDOWNER BROUGHT CARCASSES TO ETNA. TISSUE SAMPLES WERE COLLECTED AND FISH RETURNED TO FRENCH CR. REACH WAS NOT SURVEYED.
		1	36	78	M	N	N	N	N	41 23 10.840860	-122 52 27.181479	LANDOWNER BROUGHT CARCASSES TO ETNA. TISSUE SAMPLES WERE COLLECTED AND FISH RETURNED TO FRENCH CR. REACH WAS NOT SURVEYED.
		1	37	73	F	N	N	N	N	41 23 11.764252	-122 52 26.446356	LANDOWNER BROUGHT CARCASSES TO ETNA. TISSUE SAMPLES WERE COLLECTED AND FISH RETURNED TO FRENCH CR. REACH WAS NOT SURVEYED.
		1	38	78	M	N	N	N	N	41 23 13.044887	-122 52 26.200353	LANDOWNER BROUGHT CARCASSES TO ETNA. TISSUE SAMPLES WERE COLLECTED AND FISH RETURNED TO FRENCH CR. REACH WAS NOT SURVEYED.
		1	39	72	F	N	N	N	N	41 23 13.222974	-122 52 25.956479	LANDOWNER BROUGHT CARCASSES TO ETNA. TISSUE SAMPLES WERE COLLECTED AND FISH RETURNED TO FRENCH CR. REACH WAS NOT SURVEYED.
		1	40	77	F	N	N	N	N	41 23 13.773712	-122 52 25.466974	LANDOWNER BROUGHT CARCASSES TO ETNA. TISSUE SAMPLES WERE COLLECTED AND FISH RETURNED TO FRENCH CR. REACH WAS NOT SURVEYED.
1									N	41 21 39.713481	-122 54 1.861927	REDD AT JH RANCH LOW WATER XING-PREVIOUSLY NOTED BY C.BALDWIN.
1									Y	41 23 41.698447	-122 52 14.725402	PROBABLY PRE-HIGH WATER REDD.
1									Y	41 23 46.412118	-122 52 10.657364	NEXT TO FRE11R. PROBABLY PRE-HIGH WATER REDD.
1									Y	41 23 46.412118	-122 52 10.657364	SAME LOCATION AS SFK51R
1									Y	41 23 52.682862	-122 52 7.093408	JUST BELOW FRE13R. PRE-HIGH WATER REDD.
		1		72	M				N	41 23 53.267772	-122 52 8.152691	OLD. NO TISSUE OR SCALES TAKEN.
		1		77	F				N	41 23 39.817852	-122 52 14.924284	OLD. NO TISSUE OF SCALES TAKEN.

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
FRE56C	French Cr.	2	Krum Ranch	0.8	S.Maurer	01/31/02	3	cloudy	walk		
FRE57R	French Cr.	1	Hwy 3 Bridge	0	D.Maria R.Dotson B.McAllister	12/14/01	1		spot	N	1
FREBEG	French Cr.	2	Krum Ranch	0.8	S.Maurer	01/15/02	2	clear	walk		
FREBRD	French Cr.	2	Krum Ranch	0.8	S.Maurer	01/15/02	2	clear	walk		
FREEND	French Cr.	2	Krum Ranch	0.8	S.Maurer B.Krum	12/29/01	1	cloudy	walk		
HRC	Horse Range Cr.	1	Lower Braids- 1000 ft up	0.2	S.Maurer	12/28/01	1	cloudy	walk		
KEC	Kelsey Channel	1	Channel	0.2	C.Baldwin D.Flickinger	12/20/01	1	cloudy	walk		
KEC	Kelsey Channel	1	Channel	0.2	S.Maurer	01/07/02	2	rainy	walk		
KEC	Kelsey Channel	1	Channel	0.2	S.Maurer A.Eller	01/19/02	2	clear	walk		
KEL	Kelsey Cr.	1	Barrier-Scott River	0.6	C.Baldwin D.Flickinger	12/20/01	1	cloudy	walk		
KEL	Kelsey Cr.	1	Old Bridge Abutment- Scott River	0.6	S.Maurer A.Eller	01/19/02	2	clear	walk		
KID	Kidder Cr	1	Barker Ditch Site Hwy 3 Bridge- 1 mile downstream	0	D.Maria S.Smith	12/20/01	1		spot		

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
		1			M				Y	41 23 47.532996	-122 52 12.528380	FRESH CARCASS. EATEN. NO LENGTH, TISSUES OR SCALES TAKEN. ON MIDDLE BRAID
	3								N	41 24 43.561681	-122 51 25.870436	REDD UNDER CONSTRUCTION. VIEWED FROM BRIDGE.
									Y	41 23 32.841649	-122 52 11.197201	START OF SURVEY
									Y	41 23 39.753581	-122 52 15.445202	BEGINNING OF BRAIDED REACH
									Y	41 24 9.925750	-122 51 59.497635	END OF SURVEY
												CHECKED LOWER 1000 FT OF TWO BRAIDS OF HORSE RANGE CREEKS. NO REDDS OR FISH OBSERVED. LITTLE SUITABLE SPAWNING HABITAT. LOTS OF DG.
												3 REDDS IN THE SPAWNING CHANNEL, PROBABLY CHINOOK, BUT COULD BE COHO. NOT COUNTED.
												NO NEW REDDS OR FISH OBSERVED. FLOWS UP AT 0.9 ON LADDER GAUGE. SLIGHTLY TURBID. ONE POSSIBLE REDD IN #4 (FROM BOTTOM)-OLDER, NOT FLAGGED.
												NO FRESH FISH, REDDS, OR CARCASSES FOUND. GAUGE HT=0.8 FT. UNPLUGGED DEBRIS FROM INTAKE.
												NO FISH OR REDDS SIGHTED IN THE CREEK.
												ONE POSSIBLE REDD AT TAILOUT OF POOL JUST ABOVE KELSEY CHANNEL BRIDGE. NOT COUNTED. OTTER TRACKS IN SNOW ALONG STREAM. NO OTHER SIGNS OF FISH, REDDS OR CARCASSES.
												NO SALMON OR SALMON REDDS NOTED.

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
KID	Kidder Cr	2	Upper-FGS	0.89	S.Maurer	01/09/02	2	cloudy	spot		
KID1	Kidder Cr	2	Upper-FGS	0.2	S.Maurer	01/09/02	2	cloudy	spot		
KID2	Kidder Cr	2	Upper-FGS	0.2	S.Maurer	01/09/02	2	cloudy	spot		
MID	Middle Cr.	1	Scott River Rd. Bridge- 250 ft. above	0.1	A.Eller J.Kilgore	12/20/01	1		walk		
MIN01F	Miners Cr.	1	Miners Cr. Rd Lower Bridge	0	R.Dotson R.Davis	12/06/01	1		spot		
MIN02C	Miners Cr.	1	Schenone Prop Line- Conf. of French Cr.	0.3	G.Black Landowner	01/02/02	1	cloudy	walk		
MIN03C	Miners Cr.	1	Schenone Prop Line- Conf. of French Cr.	0.3	G.Black Landowner	01/02/02	1	cloudy	walk		
MIN04C	Miners Cr.	1	Schenone Prop Line- Conf. of French Cr.	0.3	G.Black Landowner	01/02/02	1	cloudy	walk		
MIN05C	Miners Cr.	1	Schenone Prop Line- Conf. of French Cr.	0.3	G.Black Landowner	01/02/02	1	cloudy	walk		
MIN06R	Miners Cr.	1	Schenone Prop Line- Conf. of French Cr.	0.3	G.Black Landowner	01/02/02	1	cloudy	walk	N	

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
												SPOT CHECKED TWO LOCATIONS FOR 1/8 MI EACH (KID1-MP 4.7 & KID2 MP 5.45). FLOWS WERE STILL HIGH, COULD NOT GET INTO STREAM. VISIBILITY VERY GOOD FROM BANK ABOVE. LOOKS LIKE GOOD GRAVELS AT TAILOUTS AND SOME SIDE CHANNELS. NO FISH, REDDS OR CARCASSES OBSERV
									Y	41 31 20.395419	-122 58 34.333655	START OF LOWER SPOT CHECK REACH
									Y	41 31 11.744564	-122 59 22.968079	START OF UPPER SPOT CHECK REACH
												NO COHO OR REDDS OBSERVED. VERY LIMITED AREA-SMALL BARRIER 200 FT. ABOVE ROAD. WATER CLEAR.
	5								N	41 22 53.744268	-122 52 6.375154	SPOT CHECK. 5 ADULT COHO OBSERVED SPAWNING 25' BELOW BRIDGE.
		1	71	74	F	N	N	N	N	41 23 17.149016	-122 52 13.400218	
		1	72		M	N	N	N	N	41 23 11.892630	-122 52 10.692695	CARCASS BADLY EATEN
		1	73		M	N	N	N	N	41 23 10.919318	-122 52 10.274837	CARCASS BADLY EATEN
		1	74	75	F	N	N	N	N	41 23 7.240491	-122 52 11.817437	
1									N	41 23 19.921901	-122 52 13.662491	

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
MIN07R	Miners Cr.	1	Schenone Prop Line- Conf. of French Cr.	0.3	G.Black Landowner	01/02/02	1	cloudy	walk	N	
MIN08R	Miners Cr.	1	Schenone Prop Line- Conf. of French Cr.	0.3	G.Black Landowner	01/02/02	1	cloudy	walk	N	1
MIN09R	Miners Cr.	1	Schenone Prop Line- Conf. of French Cr.	0.3	G.Black Landowner	01/02/02	1	cloudy	walk	N	
MIN10R	Miners Cr.	1	Schenone Prop Line- Conf. of French Cr.	0.3	G.Black Landowner	01/02/02	1	cloudy	walk	N	
MIN11R	Miners Cr.	1	Schenone Prop Line- Conf. of French Cr.	0.3	G.Black Landowner	01/02/02	1	cloudy	walk	N	
MIN12F	Miners Cr.	1	Schenone Prop Line- Conf. of French Cr.	0.3	G.Black Landowner	01/02/02	1	cloudy	walk		
MIN13R	Miners Cr.	1	Schenone Prop Line- Conf. of French Cr.	0.3	G.Black Landowner	01/02/02	1	cloudy	walk	N	
MIN14R	Miners Cr.	1	Schenone Prop Line- Conf. of French Cr.	0.3	G.Black Landowner	01/02/02	1	cloudy	walk	N	1
MIN15R	Miners Cr.	1	Schenone Prop Line- Conf. of French Cr.	0.3	G.Black Landowner	01/02/02	1	cloudy	walk	N	
MIN16R	Miners Cr.	1	Schenone Prop Line- Conf. of French Cr.	0.3	G.Black Landowner	01/02/02	1	cloudy	walk	N	

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
1									N	41 23 19.662458	-122 52 13.645524	
	1								N	41 23 19.354425	-122 52 13.674382	ADULT ON REDD-?SEX
1									N	41 23 19.159870	-122 52 13.685533	
1									N	41 23 18.965373	-122 52 13.747793	
1									N	41 23 18.851973	-122 52 13.835512	STILL WITHIN 200 FT. FROM CONFLUENCE.
	1					N			N	41 23 18.560271	-122 52 13.967935	ADULT LIVE MALE IN POOL-VERY BIG, WITH ADIPOSE FIN.
1									N	41 23 13.774802	-122 52 11.886485	
	1								N	41 23 11.584281	-122 52 10.443065	ADULT ON REDD
1									N	41 23 11.211185	-122 52 10.289065	
1									N	41 23 8.909725	-122 52 11.105018	

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
MIN17R	Miners Cr.	1	Schenone Prop Line- Conf. of French Cr.	0.3	G.Black Landowner	01/02/02	1	cloudy	walk	N	
MIN18R	Miners Cr.	1	Schenone Prop Line- Conf. of French Cr.	0.3	G.Black Landowner	01/02/02	1	cloudy	walk	N	
MIN19R	Miners Cr.	1	Schenone Prop Line- Conf. of French Cr.	0.3	G.Black Landowner	01/02/02	1	cloudy	walk	N	
MIN20R	Miners Cr.	1	Schenone Prop Line- Conf. of French Cr.	0.3	G.Black Landowner	01/02/02	1	cloudy	walk	N	
MOF01R	Moffett Cr.	1	USFS- South of HWY 3	0.7	C.Baldwin	01/29/02	3		walk		
MOF02R	Moffett Cr.	1	USFS- South of HWY 3	0.7	C.Baldwin	01/29/02	3		walk		
MOF03R	Moffett Cr.	1	USFS- South of HWY 3	0.7	C.Baldwin	01/29/02	3		walk		
PAT	Patterson Cr (Etna)	1	Hwy 3 Bridge DFG Screen Site 1 Mile Eller Ln.	1	D.Maria S.Smith	12/20/01	1		spot		
PAT01R	Patterson Cr (Etna)	1	Upper-FGS	0.3	D.Maria R.Davis	01/11/02	2		walk	N	1
SBM	Mill Cr. (Scott Bar)	1	Lower 1/8 mi Singleton Cr.	0.1	J.Kilgore C.Baldwin	01/09/02	2		walk		
SBM01R	Mill Cr. (Scott Bar)	1	Road-spot check	2.5	C.Baldwin D.Flickinger	12/20/01	1	cloudy	spot	N	
SCR01R	Scott River	2	Below E Fk & S Fk Confluence	0.1	C.Baldwin D.Flickinger	12/31/01	1		walk	N	

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
1									N	41 23 7.791462	-122 52 11.548574	
1									N	41 23 7.078573	-122 52 12.014181	
1									N	41 23 6.770672	-122 52 12.160108	
1									N	41 23 5.522091	-122 52 12.067053	
1									Y	41 37 55.580034	-122 43 25.859252	NO FISH OBSERVED ON REDD. SPECIES UNKNOWN. MAY BE COHO OR STEELHEAD REDD.
1									Y	41 37 53.312526	-122 43 47.315164	NO FISH OBSERVED ON REDD. SPECIES UNKNOWN. MAY BE COHO OR STEELHEAD REDD.
1									Y	41 37 55.833182	-122 43 50.554202	NO FISH OBSERVED ON REDD. SPECIES UNKNOWN. MAY BE COHO OR STEELHEAD REDD.
												GPS DFG SCREEN SITE-WP10. NO FISH OR REDDS OBSERVED.
	1								Y	41 30 39.497066	-122 56 38.739876	1 FEMALE ON REDD. WATER-GOOD VISIBILILTY
												NO REDDS, CARCASSES OR FISH OBSERVED. WATER WAS HIGH.
1									N	41 44 35.049490	-122 59 59.905273	1 REDD SIGHTED 25 YDS ABOVE LOW WATER FORD TO ROCK PIT. STREAM MOSTLY SPOT CHECKED FORM ROAD.
1									N	41 18 49.770405	-122 48 8.028406	1 REDD & 1 CARCASS OBSERVED AT 1ST POOL BELOW CONFLUENCE OF S FORK AND E FORK SCOTT RIVER. CARCASS NOT RETRIEVED.

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
SCR02C	Scott River	2	Below E Fk & S Fk Confluence	0.1	C.Baldwin D.Flickinger	12/31/01	1		walk		
SCR03C	Scott River	2	Below E Fk & S Fk Confluence	0.1	C.Baldwin	12/27/01	1		walk		
SCR04C	Scott River	1	Canyon Cr.-Kelsey Cr.	0	G.Black	01/19/02	2		walk		
SCR05F	Scott River	1	Canyon Cr.-Kelsey Cr.	0	G.Black	01/19/02	2		walk		
SFK	South Fork Scott	1	Lower-Hwy 3 Bridge	0	C.Baldwin	01/31/02	3		walk		
SFK	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer B.Kreidler N.Reid	01/30/02	3	clear	walk		
SFK	South Fork Scott	4	Upper-1000 ft.above 40N21YBridge Xing	0.2	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK01C	South Fork Scott	1	Callahan Bridge	0.4	S.Maurer T.Weseloh	12/20/01	1	snowy	spot		
SFK02R	South Fork Scott	1	Callahan Bridge	0.4	S.Maurer T.Weseloh	12/20/01	1	snowy	spot	N	1
SFK03R	South Fork Scott	1	Callahan Bridge	0.4	S.Maurer T.Weseloh	12/20/01	1	snowy	spot	N	
SFK04R	South Fork Scott	3	above Fox Cr.	0.8	S.Maurer T.Weseloh	12/20/01	1	snowy	spot	N	1
SFK05R	South Fork Scott	3	above Fox Cr.	0.8	S.Maurer T.Weseloh	12/20/01	1	snowy	spot	N	1
SFK06R	South Fork Scott	3	above Fox Cr.	0.8	S.Maurer T.Weseloh	12/20/01	1	snowy	spot	N	1

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
		1	55	75	M	N	N	N	Y	41 18 48.214524	-122 48 8.424185	
		1	10	71	F	N	N	N	N	41 18 49.770405	-122 48 8.028406	CTB01
		1	75	73	M	N	N	N	N	41 38 24.436032	-123 6 39.181343	PARTIALLY EATEN, FULL OF MILT.
	1								N	41 38 25.667709	-123 6 39.730514	FRESH MALE.
												NO FISH OR NEW REDDS OBSERVED.
												NO FISH, NEW REDDS OR CARCASSES OBSERVED. VERY ICY CONDITIONS. SLUSH FORMING ON BOTTOM ON UPPER PART OF REACH. FLOWS LOW.
												NO REDDS, FISH OR CARCASSES OBSERVED. HIGH GRADENT. MARGINAL SPAWNING HABITAT EXCEPT IN TAILOUTS OF POOLS. NEED TO CHECK IN FUTURE DURING HEIGHT OF THE RUN.
		1	1	76	M	N	UNK	N	Y	41 18 34.071357	-122 48 5.867749	HEAD GONE. MAXILLARY CLIP UNKOWN.
	1								Y	41 18 34.751175	-122 48 5.184299	SPOT CHECK.
1									Y	41 18 34.606054	-122 48 5.652431	SPOT CHECK.
	1								Y	41 16 45.176245	-122 51 9.173408	SPOT CHECK. ALL COHO SALMON. BEAUTIFUL RED SIDES! 65-80CM, ACTIVELY SPAWNING. NO JACKS OBSERVED. AD FIN PRESENT ON 7 FISH, 4 UNKNOWN.
	2								Y	41 16 44.558857	-122 51 8.202238	SPOT CHECK. ALL COHO SALMON. BEAUTIFUL RED SIDES! 65-80CM, ACTIVELY SPAWNING. NO JACKS OBSERVED. AD FIN PRESENT ON 7 FISH, 4 UNKNOWN.
	2								Y	41 16 47.511379	-122 51 9.389791	SPOT CHECK. ALL COHO SALMON. BEAUTIFUL RED SIDES! 65-80CM, ACTIVELY SPAWNING. NO JACKS OBSERVED. AD FIN PRESENT ON 7 FISH, 4 UNKNOWN.

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
SFK07R	South Fork Scott	3	above Fox Cr.	0.8	S.Maurer T.Weseloh	12/20/01	1	snowy	spot	N	1
SFK08R	South Fork Scott	3	above Fox Cr.	0.8	S.Maurer T.Weseloh	12/20/01	1	snowy	spot	N	1
SFK09R	South Fork Scott	3	40N21Y Xing-1000' below Gorge	0.8	S.Maurer T.Weseloh	12/20/01	1	snowy	spot	N	1
SFK10R	South Fork Scott	2	200' above Boulder Cr.	1.9	S.Maurer T.Weseloh	12/20/01	1		spot	N	
SFK11R	South Fork Scott	2	200' above Boulder Cr.	1.9	S.Maurer T.Weseloh	12/20/01	1		spot	N	1
SFK12R	South Fork Scott	2	200' above Boulder Cr.	1.9	S.Maurer T.Weseloh	12/20/01	1		spot	N	
SFK13R	South Fork Scott	3	Gorge-Fox Cr.	0.8	S.Maurer C.Baldwin	12/26/01	1	cloudy	walk	Y	
SFK14R	South Fork Scott	3	Gorge-Fox Cr.	0.8	S.Maurer C.Baldwin	12/26/01	1	cloudy	walk	Y	1
SFK15R	South Fork Scott	3	Gorge-Fox Cr.	0.8	S.Maurer C.Baldwin	12/26/01	1	cloudy	walk	Y	
SFK16R	South Fork Scott	3	Gorge-Fox Cr.	0.8	S.Maurer C.Baldwin	12/26/01	1	cloudy	walk	Y	
SFK17R	South Fork Scott	3	Gorge-Fox Cr.	0.8	S.Maurer C.Baldwin	12/26/01	1	cloudy	walk	Y	
SFK18R	South Fork Scott	3	Gorge-Fox Cr.	0.8	S.Maurer C.Baldwin	12/26/01	1	cloudy	walk	Y	
SFK19F	South Fork Scott	3	Gorge-Fox Cr.	0.8	S.Maurer C.Baldwin	12/26/01	1	cloudy	walk		
SFK20R	South Fork Scott	3	Gorge-Fox Cr.	0.8	S.Maurer C.Baldwin	12/26/01	1	cloudy	walk	Y	

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
	3								Y	41 16 47.510363	-122 51 8.597250	SPOT CHECK. ALL COHO SALMON. BEAUTIFUL RED SIDES! 65-80CM, ACTIVELY SPAWNING. NO JACKS OBSERVED. AD FIN PRESENT ON 7 FISH, 4 UNKNOWN.
	1								Y	41 16 48.045297	-122 51 8.489911	SPOT CHECK. ALL COHO SALMON. BEAUTIFUL RED SIDES! 65-80CM, ACTIVELY SPAWNING. NO JACKS OBSERVED. AD FIN PRESENT ON 7 FISH, 4 UNKNOWN.
	1								Y	41 16 22.313000	-122 51 34.229619	SPOT CHECK FROM TERRACE ABOVE. 1 VERY LARGE MALE ON REDD. 2 POSSIBLE REDDS UPSTREAM. NO FISH OBSERVED. POSSIBLE BARRIER IN GORGE. NO FISH OBSERVED BETWEEN GORGE AND BRIDGE. MAY BE SPAWNING AREA ABOVE-RECOMMEND SURVEY.
1									Y	41 17 38.915906	-122 49 29.061328	
	2								Y	41 17 39.823575	-122 49 28.845251	1 FEMALE & 1 MALE
1									Y	41 17 40.212772	-122 49 28.881831	
1									N	41 16 29.601975	-122 51 41.455346	POSSIBLY UP TO 3 REDDS
	1								Y	41 16 19.936684	-122 51 26.884870	SPECIES UNK. EGGS VISIBLE ON SURFACE.
1									Y	41 16 35.457764	-122 51 30.124626	
1									Y	41 16 35.927581	-122 51 29.801227	80%CONFIDENCE REDD. NO FISH PRESENT.
1									Y	41 16 37.578595	-122 51 27.496639	
1									Y	41 16 39.991221	-122 51 24.833021	SPOT REDDS. POSSIBLY UP TO 2.
	2								Y	41 16 44.169206	-122 51 20.585738	ONE REDD SEEMS TO BE IN PROGRESS. NOT COUNTED.
2									Y	41 16 45.346137	-122 51 15.258234	POSSIBLY A 3RD REDD.

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
SFK21R	South Fork Scott	3	Gorge-Fox Cr.	0.8	S.Maurer C.Baldwin	12/26/01	1	cloudy	walk	Y	
SFK22R	South Fork Scott	3	Gorge-Fox Cr.	0.8	S.Maurer C.Baldwin	12/26/01	1	cloudy	walk	Y	2
SFK23C	South Fork Scott	3	Gorge-Fox Cr.	0.8	S.Maurer C.Baldwin	12/26/01	1	cloudy	walk		
SFK24F	South Fork Scott	2	Fox Cr-Boulder Cr.	1.9	S.Maurer D.Flickinger	12/27/01	1	rainy	walk		
SFK25F	South Fork Scott	2	Fox Cr-Boulder Cr.	1.9	S.Maurer D.Flickinger	12/27/01	1	rainy	walk		
SFK26R	South Fork Scott	2	Fox Cr-Boulder Cr.	1.9	S.Maurer D.Flickinger	12/27/01	1	rainy	walk	Y	1
SFK27C	South Fork Scott	2	Fox Cr-Boulder Cr.	1.9	S.Maurer D.Flickinger	12/27/01	1	rainy	walk		
SFK28R	South Fork Scott	2	Fox Cr-Boulder Cr.	1.9	S.Maurer D.Flickinger	12/27/01	1	rainy	walk	Y	
SFK29F	South Fork Scott	2	Fox Cr-Boulder Cr.	1.9	S.Maurer D.Flickinger	12/27/01	1	rainy	walk		
SFK30R	South Fork Scott	2	Fox Cr-Boulder Cr.	1.9	S.Maurer D.Flickinger	12/27/01	1	rainy	walk	Y	1
SFK31C	South Fork Scott	2	Fox Cr-Boulder Cr.	1.9	S.Maurer D.Flickinger	12/27/01	1	rainy	walk		
SFK32C	South Fork Scott	2	Fox Cr-Boulder Cr.	1.9	S.Maurer D.Flickinger	12/27/01	1	rainy	walk		
SFK33R	South Fork Scott	2	Fox Cr-Boulder Cr.	1.9	S.Maurer D.Flickinger	12/27/01	1	rainy	walk	Y	3

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
1									Y	41 16 46.751883	-122 51 11.405156	
9	2								Y	41 16 50.147683	-122 51 4.241534	MAY BE MORE REDDS. SOME IN SIDE CHANNEL DOWNSTREAM. EGGS COLLECTED ON TOP OF GRAVEL-SUPERIMPOSITION.
		1	2	72	F	N	N	N	Y	41 16 51.574214	-122 51 3.989784	SOME QUESTION ABOUT SPECIES-LATER CONFIRMED AS COHO. PHOTOS:2-3
	2								Y	41 16 53.559856	-122 50 57.293940	2 MALES IN POOL
	2								Y	41 16 54.647155	-122 50 58.014193	1 MALE 1 FEMALE
	1								Y	41 17 2.696264	-122 50 50.886333	REDD IN DIVERSION CHANNEL JUST ABOVE HEADGATE. 1 FEMALE ON REDD.
		1	3	72	F	N	N	N	Y	41 17 2.890741	-122 50 50.814690	CARCASS COUGHT IN DIVERSION'S ROCKS
2									Y	41 17 2.921640	-122 50 49.661944	2 REDDS ADJACENT TO EACH OTHER. 2.5m X 1m & 2.0m X 1.5m
	3								Y	41 17 3.389653	-122 50 48.007090	3 FISH IN POOL
	3								Y	41 17 6.048503	-122 50 47.789958	2 FEMALES, 1 MALE. 1 REDD @ POOL TALIOUT, IN PROCESS OF CONSTRUCTION.
		1	4	69	F	N	N	N	Y	41 17 11.552184	-122 50 40.950924	
		1	5	76	F	N	N	N	N	41 17 15.694399	-122 50 34.586370	JUST AT DIVERSION TO HEADGATE IN CASCADE. PHOTO: 4-5.
	6								Y	41 17 17.103211	-122 50 33.247576	SPAWNING IN DIVERSION CHANNEL

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
SFK34F	South Fork Scott	2	Fox Cr-Boulder Cr.	1.9	S.Maurer D.Flickinger	12/27/01	1	rainy	walk		
SFK35C	South Fork Scott	2	Fox Cr-Boulder Cr.	1.9	S.Maurer D.Flickinger	12/27/01	1	rainy	walk		
SFK36R	South Fork Scott	2	Fox Cr-Boulder Cr.	1.9	S.Maurer D.Flickinger	12/27/01	1	rainy	walk	Y	1
SFK37C	South Fork Scott	2	Fox Cr-Boulder Cr.	1.9	S.Maurer D.Flickinger	12/27/01	1	rainy	walk		
SFK38R	South Fork Scott	2	Fox Cr-Boulder Cr.	1.9	S.Maurer D.Flickinger	12/27/01	1	rainy	walk	Y	1
SFK39R	South Fork Scott	2	Fox Cr-Boulder Cr.	1.9	S.Maurer D.Flickinger	12/27/01	1	rainy	walk	Y	
SFK40C	South Fork Scott	2	Fox Cr-Boulder Cr. (partial)	1.9	S.Maurer D.Flickinger	12/27/01	1	rainy	walk		
SFK41F	South Fork Scott	2	Fox Cr-Boulder Cr. (completed)	1.9	C.Baldwin D.Flickinger	12/28/01	1		walk		
SFK42R	South Fork Scott	2	Fox Cr-Boulder Cr. (completed)	1.9	C.Baldwin D.Flickinger	12/28/01	1		walk	Y	
SFK43C	South Fork Scott	2	Fox Cr-Boulder Cr. (completed)	1.9	C.Baldwin D.Flickinger	12/28/01	1		walk		
SFK44R	South Fork Scott	2	Fox Cr-Boulder Cr. (completed)	1.9	C.Baldwin D.Flickinger	12/28/01	1		walk	Y	
SFK45R	South Fork Scott	2	Fox Cr-Boulder Cr. (completed)	1.9	C.Baldwin D.Flickinger	12/28/01	1		walk	Y	1
SFK46R	South Fork Scott	2	Fox Cr-Boulder Cr. (completed)	1.9	C.Baldwin D.Flickinger	12/28/01	1		walk	Y	

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
	1								N	41 17 15.092297	-122 50 32.994460	1 FEMALE UNDER ROCK
		1	6	77	M	N	N	N	Y	41 17 20.552848	-122 50 30.330578	FOUND IN DIVERSION CHANNEL. RED ANAL FIN!. PHOTO: 7
	1								Y	41 17 16.063673	-122 50 31.914664	1 FEMALE. REDD IN DIVERSION CHANNEL.
		1	7	77	M	N	N	N	Y	41 17 16.211130	-122 50 33.030720	FOUND AT END OF CHANNEL.
	1								Y	41 17 16.738381	-122 50 27.343774	SPOOKED FEMALE FROM REDD.
1									N	41 17 24.052932	-122 49 54.476520	LESS THAN OPTIMAL SUBSTRATE.
		1	8	81	M	N	N	N	Y	41 17 22.789554	-122 50 6.607830	GOOD CONDITION. REACH NOT FINISHED.
	1								Y	41 17 31.627849	-122 49 45.408034	1 FEMALE. POSSIBLE REDD IN PROGRESS, NOT COUNTED.
1									Y	41 17 35.964464	-122 49 39.500985	ABOVE BOULDER CR AT SMALL INLET.
		1	41	67	F	N	N	N	Y	41 17 36.723889	-122 49 37.737502	PARTIALLY EATEN, SAMPLE TAKEN ON ONE SIDE ONLY.
1									Y	41 17 38.421778	-122 49 34.677650	
	2								Y	41 17 40.251864	-122 49 33.272711	REDD 20 FT UP FROM MOUTH OF VERY SMALL CREEK. 2 COHO PRESENT-PAIR?
1									Y	41 17 36.718957	-122 49 34.461815	UPSTREAM 100 YDS FROM BOULDER CR. GREAT COHO PLACE. FLOWS SUBSURFACE AND POPS OUT 100 FT. FROM RIVER

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
SFK47R	South Fork Scott	2	Fox Cr-Boulder Cr. (completed)	1.9	C.Baldwin D.Flickinger	12/28/01	1		walk	Y	
SFK48R	South Fork Scott	2	Fox Cr-Boulder Cr. (completed)	1.9	C.Baldwin D.Flickinger	12/28/01	1		walk	Y	
SFK49F	South Fork Scott	2	Fox Cr-Boulder Cr. (completed)	1.9	C.Baldwin D.Flickinger	12/28/01	1		walk		
SFK50R	South Fork Scott	1	Lower-Hwy 3 Bridge	0.4	C.Baldwin D.Flickinger	12/31/01	1		walk	N	1
SFK51R	South Fork Scott	1	Lower-Hwy 3 Bridge	0.4	C.Baldwin D.Flickinger	12/31/01	1		walk	N	1
SFK52R	South Fork Scott	1	Lower-Hwy 3 Bridge	0.4	C.Baldwin D.Flickinger	12/27/01	1		walk	N	1
SFK53R	South Fork Scott	1	Lower-Hwy 3 Bridge	0.4	C.Baldwin D.Flickinger	12/31/01	1		walk	N	1
SFK54R	South Fork Scott	1	Lower-Hwy 3 Bridge	0.4	C.Baldwin D.Flickinger	12/27/01	1		walk	N	
SFK55C	South Fork Scott	1	Lower-Hwy 3 Bridge	0.4	C.Baldwin D.Flickinger	12/31/01	1		walk		
SFK56R	South Fork Scott	1	Lower-Hwy 3 Bridge	0.4	C.Baldwin D.Flickinger	12/31/01	1		walk	N	
SFK57C	South Fork Scott	1	Lower-Hwy 3 Bridge	0.4	C.Baldwin D.Flickinger	12/31/01	1		walk		
SFK58R	South Fork Scott	1	Lower-Hwy 3 Bridge	0.4	C.Baldwin D.Flickinger	12/31/01	1		walk	N	2
SFK59C	South Fork Scott	1	Lower-Hwy 3 Bridge	0.4	C.Baldwin D.Flickinger	12/31/01	1		walk		

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
2									Y	41 17 39.498962	-122 49 28.629808	
2									Y	41 17 39.382771	-122 49 26.865949	
	1								Y	41 17 40.900894	-122 49 22.941126	1 COHO
	2								Y	41 18 20.027326	-122 47 55.068074	1 MALE & 1 FEMALE SEEN. LARGE POOL WITH NICE TAILOUT.
	1								Y	41 18 18.016260	-122 47 54.779948	ONE FEMALE PRESENT. REDDS ON SIDE CHANNEL.
	2								Y	41 18 22.980953	-122 47 56.580252	ONE PAIR COHO SEEN ON SIDE CHANNEL.
1	1								Y	41 18 26.326283	-122 47 59.568174	ONE FEMALE. 1 REDD IN PROGRESS IN BOTTOM OF EDDY. 2ND REDD AT TAILOUT OF POOL.
1									Y	41 18 28.668553	-122 48 3.852138	
		1	56	70	M	N	N	N	Y	41 18 33.131182	-122 48 6.011700	UNDER BRIDGE
2									Y	41 18 34.687310	-122 48 5.759700	
		1	42	68	F	N	N	N	Y	41 18 38.288286	-122 48 6.587415	
	2								Y	41 18 44.070100	-122 48 2.735502	
		1	54	75	M	N	N	N	Y	41 18 38.288286	-122 48 6.587415	SAME LOCATION AS SFK57C

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
SFK60F	South Fork Scott	3	above Fox Cr.	0.8	S.Maurer T.Weseloh	12/20/01	1	snowy	spot	N	
SFK61R	South Fork Scott	1	Lower-Hwy 3 Bridge	0.4	C.Baldwin D.Flickinger	12/27/01	1	rainy	walk	N	1
SFK62C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK63C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK64C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK65C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK66C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK67C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK68C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK69C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK70C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK71C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK72C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK73C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
	2								N	41 16 49.160384	-122 51 5.613984	SPOT CHECK. ALL COHO SALMON. BEAUTIFUL RED SIDES! 65-80CM, ACTIVELY SPAWNING. NO JACKS OBSERVED. AD FIN PRESENT ON 7 FISH, 4 UNKNOWN.
	1								Y	41 18 18.016260	-122 47 54.779948	GPS 12/31/01. 1 FEMALE. DATA FORMS NOTES 4 ADDITONAL REDDS PREVIOUSLY COUNTED ON 12/21/01.
		1	57	70	F	N	N	N	Y	41 16 53.376508	-122 51 5.933544	
		1	58	76	M	N	N	N	Y	41 17 10.048422	-122 50 44.047109	
		1		82	M	N		N	Y	41 17 9.544862	-122 50 43.363155	VERY OLD CARCASS. NO TISSUE OR SCALES TAKEN. MAX GONE ON BOTH SIDES.
		1	59	78	M	N	N	N	Y	41 17 9.576807	-122 50 43.003034	
		1	60	77	M	N	N	N	Y	41 17 10.484127	-122 50 42.498415	
		2							N	41 17 15.919826	-122 50 33.434468	2 OLD CARCASSES IN DIVERSION INTAKE. 73 CM MALE & 81 CM MALE. NO TISSUES OR SCALES TAKEN.
		1		77	M	N	N	N	N	41 17 16.985548	-122 50 30.211553	OLD CARCASS IN CONCRETE BYPASS STRUCTURE IN DIVERSION. PROBABLY DRIFTED DOWN. NO TISSUES OR SCALES TAKEN.
		1	61	72	F	Y	N	N	Y	41 17 11.950636	-122 50 24.067965	POSSIBLE AD CLIP. HEAD TAKEN. FRESH CARCASS. NO REDDS ABOVE IN DITCH TO UPPER PIPE. PROBABLY DRIFTED DOWN INTO DITCH.
		2				N	N	N	N	41 17 18.146684	-122 50 25.654288	TWO 73 CM FEMALES. OLD AND SPAWNED OUT. PROBABLY DRIFTED INTO DITCH. NO TISSUES OR SCALES TAKEN.
		1		78	M	N	N	N	N	41 17 19.618752	-122 50 23.185345	OLD CARCASS IN DITCH. NO TISSUES OR SCALES TAKEN.
		1		74	F	N	N	N	N	41 17 21.056686	-122 50 19.508619	OLD CARCASS IN DITCH. NO TISSUES OR SCALES TAKEN.
		1		73	M	N	N	N	N	41 17 21.315338	-122 50 18.954451	OLD CARCASS IN DITCH. NO TISSUES OR SCALES TAKEN.

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
SFK74C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK75C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK76R	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk	Y	
SFK77C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK78R	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk	Y	
SFK79C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK80C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK81C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK82C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK83C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK84C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK85R	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk	Y	
SFK86C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK87C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK88C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK89C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
		1	62	69	F	N	N	N	Y	41 17 23.660936	-122 50 15.067205	FRESH CARCASS IN DITCH.
		1		79	M	N	N	N	N	41 17 24.222670	-122 50 10.997575	OLD CARCASS IN DITCH. NO TISSUES OR SCALES TAKEN.
1									Y	41 17 25.710487	-122 50 8.263769	1 REDD IN DITCH-2 SPOTS.
		1		67	F	N	N	N	N	41 17 26.469550	-122 50 6.161882	OLD CARCASS IN DITCH 300 FT. BELOW REDD. NO TISSUES OR SCALES TAKEN.
1									Y	41 17 28.233045	-122 50 3.475690	1 REDD IN DITCH.
		1		72	M	N	N	N	N	41 17 29.574851	-122 50 .719331	OLD CARCASS IN DITCH. NO TISSUES OR SCALES TAKEN. PHOTO #22-23.
		2				N	N	N	N	41 17 31.353667	-122 49 57.443182	TWO OLD CARCASSES IN DITCH ABOVE RANCH HOUSE: 78 CM MALE & 71 CM FEMALE. NO TISSUES OR SCALES TAKEN.
		2				N	N	N	N	41 17 31.952127	-122 49 56.435319	TWO OLD CARCASSES IN DITCH ABOVE RANCH HOUSE: 76 CM MALE & 77 CM FEMALE. NO TISSUES OR SCALES TAKEN.
		2				N	N	N	N	41 17 32.291086	-122 49 55.378372	TWO OLD CARCASSES IN PASTURE ABOVE RANCH HOUSE: 72 CM MALE & 74 CM FEMALE. NO TISSUES OR SCALES TAKEN.
		1		74	F	N	N	N	N	41 17 21.100501	-122 50 16.071805	OLD CARCASS IN STREAM. NO TISSUES OR SCALES TAKEN.
		1	63	78	F	N	N	N	Y	41 17 20.912045	-122 50 8.947572	SAME LOCATION AS SFK85R
1									Y	41 17 20.912045	-122 50 8.947572	POSSIBLE HIGH FLOW REDD. FRESH CARCASS SFK84C FOUND IN EDDY ABOVE.
		1		72	F	N	N	N	N	41 17 21.767725	-122 50 6.376607	OLD CARCASS. NO TISSUES OR SCALES TAKEN.
		1		76	M	N	N	N	N	41 17 22.356822	-122 49 58.863445	OLD CARCASS. NO TISSUES OR SCALES TAKEN.
		1		75	M	N	N	N	N	41 17 27.870140	-122 49 48.107658	OLD CARCASS. NO TISSUES OR SCALES TAKEN.
		1		76	F	N	N	N	N	41 17 31.950681	-122 49 44.429064	OLD CARCASS. NO TISSUES OR SCALES TAKEN.

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
SFK90C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK91C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK92R	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk	Y	
SFK93C	South Fork Scott	2	Fox Cr.-Boulder Cr.	1.9	S.Maurer R.Klug	01/11/02	2	cloudy	walk		
SFK94C	South Fork Scott	1	Lower-Hwy 3 Bridge	0.4	S.Maurer M.Bennett	01/18/02	2	clear	walk		
SFK95C	South Fork Scott	1	Lower-Hwy 3 Bridge	0.4	S.Maurer M.Bennett	01/18/02	2	clear	walk		
SFK96C	South Fork Scott	1	Lower-Hwy 3 Bridge	0.4	S.Maurer M.Bennett	01/18/02	2	clear	walk		
SFK97R	South Fork Scott	1	Lower-Hwy 3 Bridge	0.4	C.Baldwin	12/21/01	1		walk	N	1
SFK98R	South Fork Scott	1	Lower-Hwy 3 Bridge	0.4	C.Baldwin	12/21/01	1		walk	N	3
SFK99F	South Fork Scott	2	Fox Cr-Boulder Cr. (completed)	1.9	C.Baldwin D.Flickinger	12/28/01	1		walk		
SHK01R	Shackleford Cr.	2	Upper-Falls to 1/2 Mile below	0.5	C.Baldwin D.Flickinger	12/31/01	1		walk		
SHK02R	Shackleford Cr.	1	Lower Bridge-Toziers	0	D.Maria S.Smith	12/20/01	1		spot	N	

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
		1		77	F	N	N	N	N	41 17 34.588910	-122 49 41.278155	OLD CARCASS. NO TISSUES OR SCALES TAKEN.
		1	64	74	F	N	Y	N	Y	41 17 36.223405	-122 49 39.176505	FRESH CARCASS. POSSIBLE LEFT MAX CLIP.
1									Y	41 17 38.195375	-122 49 35.073253	REDD BUILT PRIOR TO HIGH FLOWS.
		1		74	M	N	N	N	N	41 17 38.790406	-122 49 31.834900	OLD CARCASS. NO TISSUES OR SCALES TAKEN.
		1		72	F				N	41 18 34.882139	-122 48 5.909631	OLD CARCASS ON BRAID JUST ABOVE CALLAHAN/CECILVILLE BRIDGE. NO TISSUES OR SCALES TAKEN.
		1							N	41 18 35.287197	-122 48 5.737711	OLD CARCASS AT CALLAHAN/CECILVILLE BRIDGE. NO MEASUREMENT, TISSUES OR SCALES TAKEN.
		1							N	41 18 25.096277	-122 48 .876859	FRESH CARCASS ON SIDE CHANNEL NOT RETRIEVED. NO MEASUREMENT, TISSUES OR SCALES TAKEN.
	1								N	41 18 19.054613	-122 47 55.147655	IN POOL ABOVE SFK62R.
	9								Y	41 18 20.027326	-122 47 55.068074	3 REDDS IN TAILOUT OF LARGE POOL BEHIND CALLAHAN. 9 OF THE FISH SPOTTED WERE ALSO IN THIS POOL. GPS ON 12/31/01.
	1								Y	41 17 22.495117	-122 50 4.808199	
1									N	41 35 32.718463	-122 59 46.691067	70% CONFIDENCE ON BEING A REDD. ONE REDD OBSERVED ABOUT 100 YDS BELOW FALLS. THE REMAINDER OF STRETCH SEEMS TO BE TOO HIGH OF A GRADIENT FOR COHO.
2									Y	41 37 27.051515	-122 57 51.636789	WPT 009. ATTEMPTED TO REACH UPPER REACH NEAR SHACKLEFORD FALLS, BUT COULD NOT DUE TO DEEP SNOW. LOOKED OFF OF UPPER AND LOWER BRIDGE. REDDS AT LOWER BRIDGE. NO ADULT SALMON SEEN.

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
SML01R	Mill Cr.(Shackleford)	1	DFG Fish Screen Site	0	D.Maria S.Smith	12/20/01	1		spot	N	1
SML02R	Mill Cr.(Shackleford)	1	DFG Fish Screen Site	0	D.Maria S.Smith	12/20/01	1		spot	N	1
SML03C	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk		
SML04C	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk		
SML05C	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk		
SML06C	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk		
SML07C	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk		
SML08F	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk		
SML09R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	
SML10R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	
SML11R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	1
SML12R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	1
SML13R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
	1								Y	41 34 54.559128	-122 57 34.393571	WPT 008. 1 FEMALE ON REDD AT FISH SCREEN BYPASS OUTFLOW BEHIND QUARTZ VALLEY SCHOOL IN MUGGINSVILLE.
	1								Y	41 34 36.477889	-122 57 25.394484	WPT 007?.FISH WAS SITTING NEXT TO COMPLETED REDD (THIN TAIL) REST OFBODY IN GOOD SHAPE.
		1	66	74	F	N	N	N	N	41 35 43.591691	-122 57 43.880792	
		1	67	76	F	N	N	N	N	41 35 40.365450	-122 57 44.560313	
		1	68	72	F	N	N	N	N	41 35 38.258260	-122 57 46.252853	
		1	69	71	F	N	N	N	N	41 35 37.236999	-122 57 46.817641	
		1	70	85	M	N	N	N	N	41 35 33.263092	-122 57 41.856730	VERY BIG MALE
	1								N	41 35 54.419555	-122 57 35.980164	LIVE ADULT-MALE?
1									N	41 35 53.755120	-122 57 36.882315	
1									N	41 35 52.134093	-122 57 37.785045	
	1								N	41 35 50.950826	-122 57 38.688836	ADULT ON REDD-FEMALE
	1								N	41 35 49.605385	-122 57 39.479368	ADULT ON REDD-FEMALE
1									N	41 35 48.243690	-122 57 40.156468	

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
SML14R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	
SML15R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	1
SML16R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	1
SML17R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	1
SML18R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	
SML19R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	
SML20R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	
SML21C	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk		
SML22R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	
SML23R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	
SML24R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	
SML25R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	
SML26R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
1									N	41 35 47.222475	-122 57 40.833356	
	1								N	41 35 46.217473	-122 57 41.511612	ADULT ON REDD-FEMALE?
	1								N	41 35 45.277585	-122 57 42.978099	ADULT ON REDD-?
	2								N	41 35 44.775157	-122 57 43.542658	PAIR SPAWNING ON REDD, LAST LIVE FISH NOTED.
1									N	41 35 44.272616	-122 57 43.768345	
1									N	41 35 42.327010	-122 57 43.769482	
1									N	41 35 41.224611	-122 57 44.107607	
		1		71	F	N	N	N	N	41 35 39.522611	-122 57 45.349103	BADLY DECOMPOSED. NO TISSUE OR SCALES TAKEN.
1									N	41 35 38.939040	-122 57 45.688214	
1									N	41 35 38.598632	-122 57 45.913841	
1									N	41 35 38.517601	-122 57 46.027273	
1									N	41 35 35.712685	-122 57 46.028884	
1									N	41 35 34.788155	-122 57 44.900980	

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
SML27R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	
SML28R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	
SML29R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	
SML30R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	
SML31R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	
SML32R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	
SML33R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	
SML34R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	
SML35R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	
SML36R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	
SML37R	Mill Cr.(Shackleford)	1	Lower 0.6 miles-Shackleford Cr. Conf.	0.6	G.Black Landowner	12/31/01	1	cloudy	walk	N	
SML38D	Mill Cr.(Shackleford)	1	Upper-FGS 500 ft. above to Mill Cr. Rd Bridge	0.4	D.Maria R.Davis	01/11/02	2		walk		

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
1									N	41 35 33.847372	-122 57 43.661051	
1									N	41 35 32.419655	-122 57 40.842188	
1									N	41 35 31.819570	-122 57 40.279696	
1									N	41 35 30.895178	-122 57 39.602639	
1									N	41 35 29.111359	-122 57 38.588686	
1									N	41 35 28.430204	-122 57 38.026257	
1									N	41 35 27.165092	-122 57 36.673209	
1									N	41 35 26.565041	-122 57 36.222781	
1									N	41 35 25.462530	-122 57 36.223461	
1									N	41 35 24.700146	-122 57 35.208923	
1									N	41 35 24.456866	-122 57 34.983656	
												DIVERSION DAM. HIGH TUBIDITY. UNABLE TO SEE REDDS. NO FISH, CARCASSES OR REDDS OBSERVED. LARGE WOODY DEBRIS BELOW DAM. GOOD COHO HABITAT.

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
SUG	Sugar Cr	1	Hwy 3 Bridge-Scott River	0.3	S.Maurer	01/31/02	3	cloudy	walk		
SUG01R	Sugar Cr	1	Hwy 3 Bridge-Scott River	0.3	S.Maurer J.Davis-Marx	12/28/01	1	rainy	walk	Y	1
SUG02R	Sugar Cr	1	Hwy 3 Bridge-Scott River	0.3	S.Maurer J.Davis-Marx	12/28/01	1	rainy	walk	Y	3
SUG03R	Sugar Cr	1	Hwy 3 Bridge-Scott River	0.3	S.Maurer J.Davis-Marx	12/28/01	1	rainy	walk	Y	4
SUG04C	Sugar Cr	1	Hwy 3 Bridge-Scott River	0.3	S.Maurer J.Davis-Marx	12/28/01	1	rainy	walk		
SUG05R	Sugar Cr	1	Hwy 3 Bridge-Scott River	0.3	S.Maurer J.Davis-Marx	12/28/01	1	rainy	walk	Y	1
SUG06R	Sugar Cr	1	Hwy 3 Bridge-Scott River	0.3	S.Maurer J.Davis-Marx	12/28/01	1	rainy	walk	Y	1
SUG07R	Sugar Cr	1	Hwy 3 Bridge-Scott River	0.3	S.Maurer J.Davis-Marx	12/28/01	1	rainy	walk	Y	2
SUG08C	Sugar Cr	1	Hwy 3 Bridge-Scott River	0.3	S.Maurer J.Davis-Marx	12/28/01	1	rainy	walk		
SUG09C	Sugar Cr	1	Hwy 3 Bridge-Scott River	0.3	S.Maurer J.Davis-Marx	12/28/01	1	rainy	walk		
SUG10R	Sugar Cr	1	Hwy 3 Bridge-Scott River	0.3	S.Maurer J.Davis-Marx	12/28/01	1	rainy	walk	Y	2

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
												NO FISH, FRESH REDDS OR CARCASSES FOUND. VERY ICY-ICE SHEETS COVER 1/2 OF SURFACE AREA. FLOW LOW. REDD ON LOWER BRAID EXPOSED 2". FRESH BEAVER CUTTINGS. WATER TEMP AT END=3C MAY BE DUE TO WARMER SUB-SURFACE FLOWS. DOUBLE CHECKED AT BEGINNING-STILL 0C. S
	1								Y	41 20 17.105817	-122 49 31.975938	1 FEMALE
	8								Y	41 20 21.204761	-122 49 29.851370	PHOTOS: 9-10
	11								Y	41 20 22.533443	-122 49 29.276344	
		1	11	74	M	N	N	N	Y	41 20 22.825680	-122 49 29.528381	
	2								Y	41 20 23.650790	-122 49 28.340244	
1	1								Y	41 20 24.056252	-122 49 28.411741	1 FEMALE
	8								Y	41 20 25.027670	-122 49 27.476024	6 MALES, 2 FEMALES
		1	12	74	M	N	N	N	Y	41 20 25.383831	-122 49 27.116055	
		1	13	75	F	N	N	N	Y	41 20 25.319250	-122 49 27.296423	
2	2								Y	41 20 26.499465	-122 49 25.063916	2 FEMALES. POOR SPAWNING GRAVELS, LOTS OF DG.

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
SUG11C	Sugar Cr	1	Hwy 3 Bridge-Scott River	0.3	S.Maurer J.Davis-Marx	12/28/01	1	rainy	walk		
SUG12C	Sugar Cr	1	Hwy 3 Bridge-Scott River	0.3	S.Maurer J.Davis-Marx	12/28/01	1	rainy	walk		
SUG13R	Sugar Cr	1	Hwy 3 Bridge-Scott River	0.3	S.Maurer J.Davis-Marx	12/28/01	1	rainy	walk	Y	
SUG14F	Sugar Cr	1	Hwy 3 Bridge-Scott River	0.3	S.Maurer J.Davis-Marx	12/28/01	1	rainy	walk		
SUG20X	Sugar Cr	2	Upper FGS Bridge-FGS Lower Prop Line	2.1	S.Maurer	01/10/02	2	cloudy	walk		
SUG21X	Sugar Cr	2	Upper FGS Bridge-FGS Lower Prop Line	2.1	S.Maurer	01/10/02	2	cloudy	walk		
SUG22R	Sugar Cr	2	Upper FGS Bridge-FGS Lower Prop Line	2.1	S.Maurer	01/10/02	2	cloudy	walk	Y	
SUG23X	Sugar Cr	2	Upper FGS Bridge-FGS Lower Prop Line	2.1	S.Maurer	01/10/02	2	cloudy	walk		
SUG24D	Sugar Cr	2	Upper FGS Bridge-FGS Lower Prop Line	2.1	S.Maurer	01/10/02	2	cloudy	walk		
SUG25R	Sugar Cr	2	Upper FGS Bridge-FGS Lower Prop Line	2.1	S.Maurer	01/10/02	2	cloudy	walk	N	
SUG30R	Sugar Cr	1	Hwy 3 Bridge-Scott River	0.3	S.Maurer	01/12/02	2	clear	walk	Y	1

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
		1	14	75	F	N	N	N	Y	41 20 29.819986	-122 49 22.868663	
		1	15	71	F	N	N	N	Y	41 20 31.538570	-122 49 22.796758	
3									Y	41 20 31.942149	-122 49 21.644679	MAY BE MORE REDDS
	7								N	41 20 28.622780	-122 49 24.586268	FISH OBSERVED BETWEEN SUG10 & SCOTT RIVER.
									Y	41 18 58.377559	-122 52 3.710326	1ST LOW WATER CROSSING
												2ND LOW WATER CROSSING
1									Y	41 19 36.779556	-122 51 3.017018	OBSERVED 12/28/01 DURING SPOT CHECK. AT MARX-DAVIS DITCH INTAKE.
									Y	41 19 40.131173	-122 50 47.106112	3RD LOW WATER CROSSING
									N	41 19 44.916203	-122 50 36.450399	INTAKE TO BARNES IRRIGATION DIVERSION
1									Y	41 19 40.131173	-122 50 47.106112	OBSERVED 12/28/01 DURING SPOT CHECK. AT 3RD LOW WATER CROSSING. NO FRESH REDDS, FISH OR CARCASSES OBSERVED.
	2								Y	41 20 22.177225	-122 49 29.599991	ONE OLD FEMALE AND ONE FRESH MALE NEAR REDD.

Code	Stream	Reach #	Reach Description	Length (Miles)	Surveyor	Date	Pass #	Weather	Method	Flag	# Redds w/Fish
SUGEND	Sugar Cr	2	Upper FGS Bridge-FGS Lower Prop Line	2.1	S.Maurer	01/10/02	2	cloudy	walk		
SUGTFK	Sugar Cr	2	Upper FGS Bridge-FGS Lower Prop Line	2.1	S.Maurer	01/10/02	2	cloudy	walk		
TOM	Tompkins Cr.	1	Low Water Crossing-Potato Patch (USFS Boundary)	1.8	A.Eller J.Kilgore	12/20/01	1	cloudy	walk		
TOMBAR	Tompkins Cr.	1	Mi 2.1-Potato Patch	1.8	S.Maurer A.Eller	01/19/02	2	clear	walk		
TOMBEG	Tompkins Cr.	1	Mi 2.1-Potato Patch	1.8	S.Maurer A.Eller	01/19/02	2	clear	walk		
TOMEND	Tompkins Cr.	1	Mi 2.1-Potato Patch	1.8	S.Maurer A.Eller	01/19/02	2	clear	walk		
WIL	Wildcat Cr.	1	Hwy 3 Bridge	0	S.Maurer T.Weseloh	12/20/01	1	snowy	spot		
WIL	Wildcat Cr.	1	Hwy 3 Bridge-Scott River	0.1	D.Maria R.Dotson	01/08/02	2		walk		
WOO	Wooliver	1	Lower	0.2	J.Kilgore C.Baldwin	01/09/02	2		walk		

# Redds wo/Fish	# Live Fish	#Carc	Sample #	Fork Length (cm)	Sex	Ad. Clip	Left Max. Clip	Other Clips	GPS	Lat	Long	Notes
									Y	41 19 42.943494	-122 50 28.566589	END OF SURVEY-FGS UPPER REACH
									Y	41 19 28.361139	-122 51 13.096563	CONFLUENCE WITH TIGER FORK
												NO COHO OR REDDS SEEN.
									Y	41 41 58.074196	-123 6 42.033100	APPARENT BARRIER AT MI. 1.2. PHOTO: 29-30. LARGE BOULDER PLUG WITH 5 FT. FIRST JUMP AND NO HOLDING. STREAM 6 FT. WIDE WITH BOULDER PLUB ABOVE. NO ROUTE AROUND. NO REDDS, FISH OR CARCASSES OBSERVED. 1997 FLUVIAL SCOUR HAS MOVED LOTS OF GRAVEL AND WOOD. VER
									Y	41 42 26.373305	-123 6 51.105225	START OF SURVEY 1/19/02
									Y	41 41 33.661488	-123 6 20.435094	END OF SURVEY USFS BOUNDARY POTATO PATCH
												NO REDDS OR FISH OBSERVED.
												NO REDDS, CARCASSES OR FISH OBSERVED.
												NO FISH OR REDDS OBSERVED. MOUTH APPEARS TO PROHIBIT FISH PASSAGE. SUBSTRATE APPEARS TO BE UNSUITABLE DUE TO TRAVERTINE DEPOSITS.