

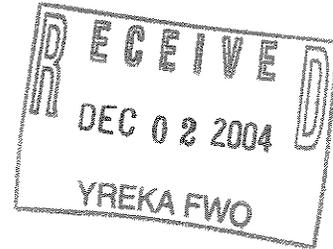


SISKIYOU RESOURCE CONSERVATION DISTRICT

P.O. Box 268 Etna, CA 96027

Phone (530) 467-3975 Fax (530) 467-5617

E-Mail sisqred@sisqtel.net



November 30th, 2004

Darla Eastman
U.S. Fish and Wildlife Service
1829 S. Oregon St.
Yreka, CA 96097

2003-Fisheries-FP-01

Draft Final report for Agreement # 113333J027(RCD ref # 34IIa), Scott River Coho Spawning Assessment II.

Funds from this contract were used to complete Adult coho spawning surveys in the Scott River Watershed during the winter of 2003-2004. The report for the 2003-2004 spawning season has been submitted previously, and a hard copy is attached. See **Attachment # 1** Scott River Coho Spawning Assessment: 2003-2004.

In addition, remaining funds from this contract were used to complete the following tasks for the 2004-2005 season: 1.) Obtain Landowner permission (match funding for this task from CDFG), 2.) Obtain necessary permits, 3.) Train Crew for the 2004_2005 Spawning Season (match funding for this task from CDFG), 4.) Conduct initial surveys during November 2004.

The following is a detailed list of activities occurring under the terms of this contract.

Task 1.) Obtain Landowner Permission

2003-2004 All landowner Access Agreements were obtained by December 1st, 2003.

2004-2005 All landowner Access Agreements were obtained by November 30th, 2004.

Task 2.) Obtain all necessary permits

2003-2004 RCD Project Coordinators Gary Black and Danielle Quigley had current CDFG Scientific collection permits. One additional permit was applied for and received for Crystal Bowman – field crew.

2004-2005 Applied for renewals on Gary Black and Danielle Quigley Scientific Collection Permits. Filed for and received one additional permit for Erich Yokel – field crew Leader. This gives the RCD a total of four current state scientific collection permits for the 2004-2005 season. In addition, the RCD was required to file for a Memorandum of Understanding

DATE APPROVED 12/2/04 INITIAL SP
DATE FILED _____ INITIAL _____

with the California Dept of Fish and Game (MOU) to complete Coho surveys and for collection of tissue and scale samples. See **Attachment # 2 - MOU**

Task 3.) Train Crew

2003-2004 Spawning Season

Training occurred on December 5th, 2003. Dennis Maria (CDFG-Yreka) lead the training. Topics covered included: Salmon and Steelhead identification, tissue and scale collection and sample disposition, GPS use and naming conventions, Redd identification, and filling out data sheets.

Participants:

Gary Black – Siskiyou RCD
Crystal Bowman – Siskiyou RCD
John Bowman – Siskiyou RCD
Bryon Drew - USFS
Mark Elfgen - CDFG
Beth Greenhalgh – Siskiyou RCD
Flick Flickinger – NOAA Fisheries
Jim Kilgore - USFS
Justin Ly – NOAA Fisheries
Bob McAllister - CDFG
Nat Pennington – Salmon River Restoration Council (SRRC)
Mark Pisano - CDFG
Danielle Quigley – Siskiyou RCD
Kayla Super – Quartz Valley Indian Reservation
Brian Thomas - USFS

2004-2005 Spawning Season

Training occurred on November 17th, 2004. The training was cooperatively organized by the Siskiyou RCD and California Dept. of Fish and Game. See **Attachment # 3 2004-2005 Training Agenda and Materials**

Participants:

Crystal Bowman – Siskiyou RCD
John Bowman – Siskiyou RCD
Susan Corum – USFS
Amaria Crocoll – Americorps
Bobbie Dimonte – NOAA Fisheries
Donald Flickinger – NOAA Fisheries
Christen Hardee – Volunteer
James Lee – Frutigrowers Supply Co.
Beth Marder – Siskiyou RCD
Christan Norman – Americorps
Megan Payne –USFS
Mark Pisano - CDFG
Danielle Quigley – Siskiyou RCD
Jim Whelan – CDFG

Erich Yokel – Siskiyou RCD

Task 4.) Conduct Spawning Ground Surveys

2003-2004 Spawning Season

Adult coho spawning ground surveys were completed in the Scott River watershed from December 2003 through January 15th, 2004. A total of 24.35 miles of stream were surveyed. Approximately 2 miles of additional survey reaches were added to lower French Creek and lower Shackelford Creek.

Surveys were conducted weekly by the RCD in the following reaches: Lower French Creek, Mid- French Creek, Miners Creek, Upper and Lower South Fork Scott, Upper and Lower Sugar Creek, Mainstem Tailings, Lower Mill, and East Fork Scott. The RCD and cooperators surveyed the following reaches a minimum of two times: Canyon Creek, Kelsey Creek, Kelsey Spawning Channel, Kangaroo Creek, Upper Mill Creek, and Lower Shackelford Creek. See **Attachment # 4** 2003-2004 Reach Map and descriptions. The California Dept. of Fish and Game surveyed the following reaches 2 times: Upper Kidder Creek, Scott Bar Mill Creek, and Thompkins Creek. They surveyed Wildcat creek once. The Quartz Valley Indian Reservation(QVIR) surveyed their property twice.

A total of 2.8 miles of previously established reaches were not surveyed due to flow barriers(Indian Cr., McAdams Cr. Moffet Cr., Patterson Cr., Rattlesnake Cr. Meamber Gulch, and Johnson Cr.). An additional 5.3 miles was not surveyed due to lack of access (N. Fork French Creek, Upper Etna Creek, Clarks Creek, Grouse Creek, East Fork at Lower Masterson)

Survey Results are presented in **Attachment # 1** Scott River Coho Spawning Assessment : 2003-2004 .

2004-2005 Spawning Season

The following stream reaches were surveyed once, in cooperation with the USFS and CDFG, in November 2004.

Canyon Creek, Kelsey Creek and Kelsey spawning channel,(USFS) Boulder Creek, and Middle Creek, Scott Mainstem Tailings, Upper South Fork, Upper Sugar Creek, Lower Sugar Creek, Lower French Creek, and Mid-French Creek, Upper Scott Bar Mill (CDFG) and Lower Scott Bar Mill(CDFG). In addition, hobotemps were maintained in French Cr., Sugar Cr., and the South Fork to monitor winter Water Temperatures.

Task 5.) Submit Tissue and Scale Samples to appropriate agency

2003-2004 Spawning Season

All tissue and scale samples were submitted to Dennis Maria (CDFG) either in person or placed in the locked box at the RCD office (only Dennis Maria had the combination to the lock box).

2004-2005 Spawning Season

All tissue and scale samples collected during November 2004 were submitted to Mark Pisano (CDFG).

Task 6.) Analyze Data

2003-2004 Spawning Season

Only six Redds, six carcasses and eight live fish were found in reaches surveyed in the Scott River Watershed. Almost all of the fish, redds, and carcasses were found in Shackleford-Mill and French-Miners Creek, with the exception of one live fish sighted in lower Sugar Creek, and one early season Redd (without fish) found in the South Fork Scott. Too few fish were found to produce any information regarding distribution, timing, and population estimates.

Task 7.) Final Reports

2003-2004 Spawning Season-

See **Attachment # 1** Scott River Coho Spawning Assessment : 2003-2004 Season

Final Report

Scott River Coho Spawning Assessment:2003-2004

October 8th, 2004

Prepared by Siskiyou RCD under Agreement #113333J027

2003 - Fisheries - FP-01

Abstract

Adult coho spawning ground surveys were completed in the Scott River watershed from December 2003 through January 15th, 2004. Surveys were completed on the Scott River mainstem, East and South Fork Scott River, Rail Creek, Kangaroo Creek, Sugar Creek, Wildcat Creek, French Creek, Miners Creek, Shackleford Creek, Shackleford-Mill Creek, Kidder Creek, Canyon Creek, Kelsey Creek, and Mill Creek (Scott Bar). Flow barriers, and lack of access prevented some reaches from being surveyed.

Surveys were completed cooperatively by the United States Forest Service (USFS), United States Fish and Wildlife Service (USFWS), Siskiyou Resource Conservation District (RCD), and the California Dept. of Fish and Game (CDFG).

A total of 24.35 miles of stream were surveyed. Approximately 2 miles of additional survey reach were added in French Creek and Shackleford Creek. A total of 2.8 miles of previously established reaches were not surveyed due to flow barriers, (Indian Cr., McAdams, Moffet, Patterson, Rattlesnake, Meamber Gulch, and Johnson Creek) and another 5.3 miles was not surveyed due to lack of access (N Fork French, Upper Etna, Clarks Creek, Grouse Creek, East Fork at Lower Masterson).

A total of six redds, six carcasses, and eight live fish, were found in reaches surveyed in the Scott River Watershed. Almost all fish and redds were found in Shackleford-Mill Creek and French-Miners Creek, with the exception of one live fish sighted in lower Sugar Creek, and one early season redd found in the South Fork.

Introduction

Adult coho spawning ground surveys have been performed cooperatively in the Scott River Watershed annually since the winter of 2001/2002. Previous to the organization of these surveys, little was known about the timing and distribution of adult coho spawning in the Scott River Watershed. Adult coho spawning ground surveys are conducted starting at the end of November or beginning of December and continuing to approximately the middle or end of January, depending on the run and flow conditions.

Index reaches were established in key anadromous tributaries in 2001/2002. Index reaches have been surveyed each year since 2001. (See Maurer 2002, Maurer 2003) During this project, additional stream mileage was added to index reaches in Shackleford-Mill Creek, and French-Miners Creek. In addition, a reach was added to lower French Creek.

During the spawning period of 2003/2004, attempts were made to survey all previously established reaches (index and other), however landowner access and flow barriers prevented some reaches from being surveyed. During this survey, index reaches were surveyed weekly, and other reaches were surveyed two to three times during the survey period. The first survey of the season was December 4th, and the final survey was January 15th. The Project Coordinator and Dennis Maria (CDFG) agreed to end surveys due to lack of fish sightings.

Cooperators include: local landowners and volunteers, Scott River Watershed Council (SRWC), Siskiyou Resource Conservation District (RCD), the California Dept. of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), the United States Forest Service (USFS) and NOAA Fisheries.

Project Objectives

- 1.) To identify sites for projects aimed at restoring coho spawning by identifying spawning ground areas of highest restoration priority.
- 2.) Continue to provide training and education on coho life history and habitat needs to volunteers and local communities.

Study Area

Spawning ground surveys were completed in the following Scott River tributaries; Scott Bar (Mill), Middle Creek, Thompkins Creek, Kelsey Creek and Spawning Channel, Canyon Creek, Boulder Creek Shackleford-Mill, Kidder Creek, French-Miners Creek, Sugar Creek, Wildcat Creek, South Fork Scott River, East Fork Scott River, Rail Creek, and Kangaroo Creek. In addition, the mainstem was surveyed in the tailings near Sugar Creek. See **Attached Map for reach locations**. See **Table I. Reach Descriptions** for detailed reach descriptions, and frequency of surveys.

Methods and Materials

Crew Training

Crew Training occurred on December 5th, 2003, and was held at the Siskiyou RCD office in Etna, CA. Training was organized by the RCD Project Coordinator (Danielle Quigley) and Dennis Maria (CDFG Biologist). Training topics included: stream safety, fish and Redd ID, tissue and scale sample collection, data collection and filling out the data sheet, and GPS use. **Appendix A** contains sample training materials and data sheets

Many of the crew had participated in Scott River adult coho surveys previously, so a field component was not included in the training day. However, Dennis Maria took new participants out for a field afternoon.

Participants

Gary Black	Siskiyou RCD
John Bowman	Siskiyou RCD
Crystal Bowman	Siskiyou RCD
Bryon Drew	United States Forest Service
Mark Elfgren	California Dept. of Fish and Game
Don Flickinger	NOAA
Beth Greenhalgh	Siskiyou RCD
Jim Kilgore	United States Forest Service
Justin Ly	NOAA
Dennis Maria	Ca. Dept. of Fish and Game
Nat Pennington	Salmon River Restoration Council
Mark Pisano	Ca. Dept. of Fish and Game
Rebekah Sluss	Quartz Valley Indian Reservation
Brian Thomas	United States Forest Service
Bill Watrous	Siskiyou RCD
Danielle Quigley	Siskiyou RCD

Stream Survey

Stream surveys were completed by a two person field crew. A stream survey is completed by walking instream, or on the bank beginning upstream and moving downstream. Each crew member walks on opposite sides of the stream, looking for redds and fish. The location of any fish, redd, or carcasses is recorded by GPS, and noted on the data sheet. In addition, flagging is hung to mark the spot for the next survey crew. Tissue and scale samples are taken from any carcass found, and the species, sex, forklength, and any marking recorded on the data sheet. One member of each crew had a State of California Scientific Collection Permit, or went on survey with a CDFG employee.

GPS data collection

Hand-held Global Positioning system (GPS) units were used to record the location of the beginning and end of survey reach, and location of each carcass, redd, and live fish identified. GPS waypoints were assigned an ID based on a stream code, sequential number, and a letter code denoting carcass (C), redd (R), or fish (F).

Ex.) F C 0 4 C = French Creek # 4 Carcass

In addition, the GPS coordinates in Lat/Long were recorded on the field data sheet, along with the ID code assigned to that datapoint.

Tissue and Scale Sample Collection

Two sets of tissue and scale samples were taken from each carcass. Tissue samples were collected by clipping a one cm² piece of operculum tissue. Each tissue sample was taken from opposite sides, unless the carcass was too degraded. Samples were placed in absorptive paper, and placed into labeled envelopes. Scale samples were collected just below the dorsal fin, and above the lateral line. Sample collection was by scraping with a knife blade from head to tail. Scale samples were placed in a labeled scale envelope. Both sets of samples were either hand delivered to Dennis Maria (CDFG), or placed in a locked box located at the Siskiyou RCD office, which only Dennis could unlock.

Temperature Data

Stream temperature data was collected in Sugar Creek, French Creek, and the South Fork of the Scott River during the survey period. Data collection was done using Onset HoboTemps continuous dataloggers. During the survey period, temperatures ranged between 2 and 6°C. See **Appendix B** for graphs of temperature data.

Results and Discussion

A total of six redds, seven live fish, and five carcasses were found in the Scott River Watershed during the survey period. A total of four redds, four live fish and two carcasses were found in the Shackleford-Mill watershed. One redd, three carcasses and three live fish were found in French-Miners Creek, and one live fish was identified in Sugar Creek, near the mouth. One Redd was identified in the upper South Fork, in very early December. However, only one redd (Lower Shackleford) was positively identified with live coho on it. **Table II. Survey Results**, summarizes findings by stream reach for the 2003/2004 survey period.

Table II.) Survey Results

Location	Carcass	Redd	Live Fish	Notes
Lower Shackleford	2	1	2	Male and female pair
Lower Mill		2	2	
Mid-Mill		1		No fish seen on Redd
Lower French	3			Male and female pair
Mid-French			1	
Miners	1	1	2	
Lower Sugar			1	
Upper South Fork		1		No fish seen on Redd

Lower French and the upper section of lower Shackleford were new stream reaches this season, and both reaches had identified fish activity. In addition, both reaches were the only ones identified with paired (male and female) coho. All other reaches where coho were found are previously established index reaches.

Flow and other access barriers.

Flow barriers

Access to Shackleford-Mill was not open until December 8th, when the mouth reconnected with the Scott River. Passage through to the upper section of Mill (near Emmigrant Creek) was not open until December 14th (J. Menke pers communication). However, beaver activity in lower Shackleford-Mill may have prevented access further into the season. In addition, on January 9th, Moffet Creek, Patterson Creek (Fort Jones) Indian Creek, Meamber Gulch, and Rattlesnake Creek were also not yet connected to the Scott River.

Beaver Activity

Sugar Creek had a beaver dam at the mouth, which was potentially an access barrier until late December 2003. Mill Creek had a beaver dam approximately ½ mile upstream from the confluence with Shackleford, this was probably a low flow barrier into late December as well.

Comparison to previous years

Fish were seen in the same locations as the year before, another low population year. In 2002/2003 flows had peaked by December 14th, providing access at all locations. Most fish and redds were seen in Mill Creek in 2002/2003. During the 2003 survey period access to Mill was a problem, in addition not surveyed in late December. No Redds were seen on January 13th, flows were never high.

Summary and Conclusions

Adult coho spawning numbers in the Scott River Watershed were low during the 2003/2004 spawning season. This was expected based on existing juvenile population survey data(CDFG-French Creek WAG). This data indicates that the Scott River Watershed has one good run of coho, and then two years of low numbers. In addition to the low estimated number of spawners, flow barriers may have prevented/delayed spawning in some prime locations (ex. Mill Creek).

Coho activity was identified in locations previously not surveyed (lower French and part of lower Shackleford). Unfortunately, access issues prevented surveying the lower index reach on the East Fork Scott (Lower Masterson Road near Grouse Creek). This location had good coho spawner numbers in 2001/2002. CDFG habitat typing data from 2002 indicates that this location could have suitable spawning habitat, and steelhead and coho salmon juveniles were found rearing in this reach.

Lower French should be included as an index reach for future surveys. If access is not granted for the lower East Fork index reach, effort should be made to survey upstream or

downstream of this location. In addition, it is recommended that effort be made to extend survey reaches to include all potential habitat in Shackleford and French Creek during the 2004/2005 survey season. Both streams have adequate habitat (RCD Habitat Typing 2003), and it is likely that spawning occurs in the reaches not surveyed previously.

Potential Restoration Locations

Based on data collected during the past three coho spawning seasons, the following locations are likely “hotspots” for coho spawning:

Mill Creek, Lower Shackleford, Miners Creek, and French Creek have had consistent coho spawning activity during the past three spawning seasons. Habitat typing completed in 2003 indicates that these tributaries have adequate spawning and rearing habitat. However, during dry years, access to these tributaries can be delayed until mid to late December. Restoration activities have been ongoing in these tributaries for the past decade. Projects include: Fish Screens, fish friendly crossings, weirs, riparian exclusion fencing and riparian replanting.

Based on previous coho survey data, the East and South Fork Scott River provide spawning habitat. However, flow barriers in the Scott River tailings section can delay access to these tributaries. Habitat Typing should be completed in these two tributaries to determine the extent of suitable spawning and rearing habitat.

Choosing potential restoration locations

Additional data needs to be collected in the Scott River Watershed before reaches can be prioritized for restoration project development.

Expand spawning survey area

Expanded spawning surveys to include more of the lower gradient spawning grounds in French and Shackleford Mill, as well as Patterson (south) are recommended before selecting prime locations for restoration projects. The upcoming (2003/2004) survey season is expected to be a good year. Expanding the survey efforts will give more information on the extent of coho spawning in the Scott River Watershed.

Juvenile Habitat Utilization Studies

The Siskiyou RCD and Scott River Watershed Council have determined that juvenile habitat utilization studies should be completed in the Scott River Watershed. This is scheduled to take place in summer of 2005. This study will provide information on reaches juvenile salmonids are using for summer rearing, as well as specific data to what type of habitats they are utilizing. This information will allow the RCD and SRWC to develop effective restoration projects targeted specifically at locations which can provide the optimal benefit for salmonids.

Darla Eastman
 U.S. Fish and Wildlife Service
 1829 S. Oregon Street
 Yreka, Ca 96097

Scott River Coho Spawning Assessment II
 2003-FISHERIES-FP-01
 Agreement # 113333J027
 RCD ref. # 34 II

	Budget Page	Estimated Budget	Revised Budget	Actual Cost
Salaries (including benefits)		11,500.00	12,409.70	12,409.70
Materials and Supplies		1,000.00	995.32	995.32
Operating Expenses		1,500.00	594.98	594.98
<i>Subtotal</i>		14,000.00	14,000.00	14,000.00
<i>General and administrative @ 14.3 %</i>		2,000.00	2,000.00	2,000.00
Total		16,000.00	16,000.00	16,000.00

Agreement # 113333J027
 Scott River Coho Spawning Assesment II
 Expenditure and cost share to date (2003/2004 survey season)

Cost Share

Salaries	
CDFG	\$3,600.00 180 Hours @ \$20.00
USFS	\$3,000.00 150 Hours @ \$20.00
NOAA	\$1,600.00 80 hours @ \$20.00
LO Volunteer	\$300.00 20 hours @ \$15.00
QVIR	\$240.00 12 hours @ \$20.00
Materials and Supplies	
	\$775.00 2500 miles @ .31
Operating Expense	\$0.00
Subtotal	\$9,515.00
Admin	\$0.00
Total	\$9,515.00

Table I. Reach Descriptions

Watershed	Reach Description	Surveyed	Miles	Total Miles
Mill Creek (ScottBar)				
Lower (INDEX)	Approximately ½ mile up from mouth of Mill Creek	12/11, 1/13	.5	.5
Upper (INDEX)	Approximately 1 ¾ mile up from mouth	12/11, 1/13	1.0	1.0
Thompkins Cr.	Lowest 1.25 miles of Thompkins Creek	12/11	1.25	1.25
Middle Creek	Lowest .4 miles of Middle Creek		.4	.4
Kelsey Creek	Lower Kelsey from barrier to mouth	12/11, 12/24, 1/6	.6	.6
Kelsey Spawning Channel	Spawning channel	12/24, 1/6	.1	.1
Canyon Creek	From the uppermost Maurer property line to the mouth of Canyon Creek	12/12, 12/16, 1/6	1.1	1.1
Boulder Creek	County bridge to mouth	12/12,	.2	.2
Meamber Gulch	Lowest ~ ½ mile	Not Surveyed	.6	.6
Indian Creek		Not Surveyed	.8	
Shackleford Creek				
Lower Shackleford Mill (INDEX)	Gutleben property line to mouth (located just upstream from wier off Dangle lane)	12/5, 1/07	1.0	2.5
Mill Creek				
Lower Mill	Confluence w/Shackleford up	12/8, 12/16, 12/30, 1/07, 1/13	.8	
Middle	From the Quartz Valley	12/19, 1/13	1.4	3.3

Table I. Reach Descriptions

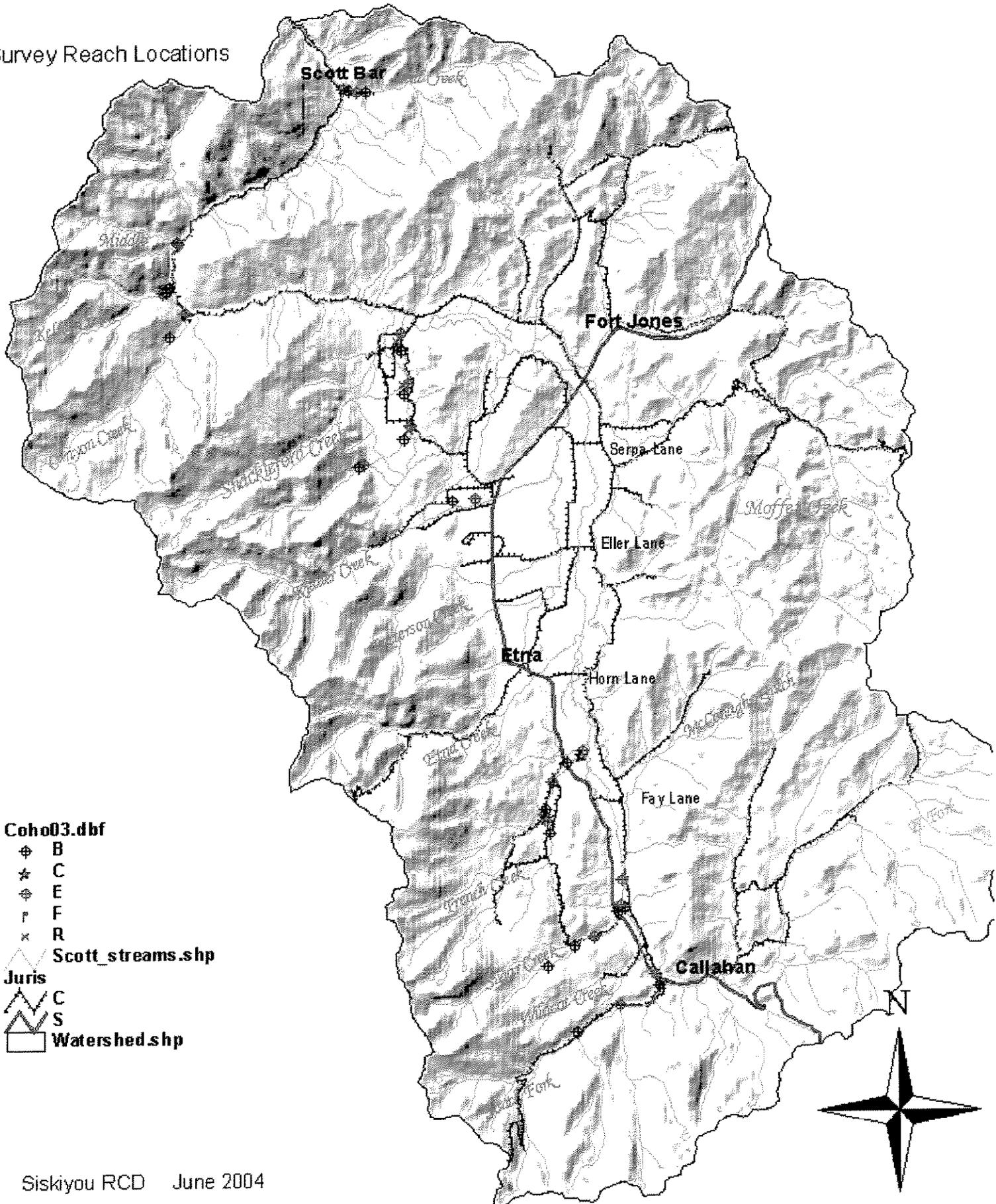
(INDEX)	Rd bridge to above Emigrant Cr.			
Upper	Approximately .5 miles up from the uppermost diversion	12/10, 12/17, 1/06	.5	
Emmigrant Creek	Confluence with Mill Creek to County Road	12/19, 1/13	.8	.8
Patterson Creek(Scott)	Lowest .2 mile	Not Surveyed	.2	.2
Rattlesnake Creek		Not Surveyed	.3	.3
McAdams		Not Surveyed	.2	.2
Moffet	USFS piece	Not Surveyed		
Kidder Creek				
Lower	Below Hwy 3 bridge	1/12	1.1	1.1
Upper	Above Hwy 3 bridge outside of Greenview	12/12	.7	.7
Patterson(Etna)				
Mid	Below the Hwy 3 bridge	Not Surveyed	.3	.75
Upper	Timber Products	Not Surveyed	1.4	N/A
Johnson Creek	Kramer property above EHS	Not Surveyed	.3	.3
Etna Creek				
Lower	Above Etna	12/22/2003	.5	1.0
Upper	Timber Products/FGS	Not Surveyed		N/A
Ruffy Gap (Trib to Etna)				
Clark Creek	Timber Products/FGS	Not Surveyed		
French Creek				
Lower(new)	Hwy 3 to mouth	12/3, 12/11, 12/22, 1/5	.5	3.0
Mid(INDEX)	Miners road bridge to confil with Miners Creek	12/4, 12/12, 12/18, 12/23, 1/05, 1/12	.8	.
Upper(INDEX)	Horse Range Creek area	Not Surveyed		N/A

Table I. Reach Descriptions

Miners Creek(INDEX)	Confluence with French Creek to upper Phelps Property(above second miners road bridge)	12/09, 12/18, 12/23, 1/05, 1/12	1.0	1.0
North Fork French	Timber Products			
Mainstem Tailings (INDEX)	Moores Gravel to Sugar Creek.	12/11, 12/24, 12/30, 1/08	1.1	3.0
Sugar Creek				
Lower (INDEX)	From Marx bridge to mouth	12/11, 12/18, 12/24, 12/30, 1/08	.5	.75
Upper	From upper FGS bridge to cattle guard. OR break reach @tiger fork.	12/4, 12/15, 12/22, 1/05, 1/12	2.1	2.1
Wildcat	Mouth up 2 mile	12/8, 1/07	2	2.0
South Fork				
Lower (INDEX)	Cecilleville rd bridge to pullout on left	12/04, 12/22, 12/30, 1/12	.4	2.0
Upper (INDEX)	Fox Cr. To Boulder Cr.	12/08, 12/15, 12/18, 12/26, 12/31, 1/08, 1/15	1.9	1.9
East Fork				
Lower Masterson(INDEX)		N/A		N/A
Grouse Cr.	Mouth up ~ one mile	N/A	.6	N/A
Kangaroo Cr.		4 passes	.7	
Rail Creek(new)	Rd 41N39 to end of USFS land	4 passes	.5	
Upper Masterson	AP Cattle Ranch	Weekly	2.0	
	Total			

Final Report
 Scott River Coho Spawning Assessment
 Agreement # 113333J027

Survey Reach Locations



- Coho03.dbf
- ⊕ B
 - ★ C
 - ⊕ E
 - ⊖ F
 - × R
- Scott_streams.shp
- Juris
- ▲ C
 - ▲ S
- Watershed.shp

2003-2004 Scott River Adult Coho Spawning Ground Surveys
Training Agenda
December 5th 2003
Siskiyou RCD Office
10:00 –1:00

Agenda

- 1.) Introductions
 - 2.) Objectives (Hand-out)
 - 3.) Survey Reaches & Access (Hand-out)
 - 4.) Survey Protocols
 - a. Redd Identification & Flagging
 - b. Stations (Break into three groups)**
 - ◆Data Forms
 - ◆Species Identification & Tissue Collection
 - ◆GPS Use
 - 5.) Scheduling/Availability
Please sign up with your availability.
 - 6.) Optional
Field trip w/ Dennis
Redd Identification
- 

2003-2004 Scott River Adult Coho Spawning Ground Surveys

Scott River Adult Coho Surveys 2003-2004

Project Objectives:

- 1) Document the presence of coho salmon in streams within the historic range of distribution and in new tributaries not previously documented within the Scott River system. Survey “index reaches”, as delineated in the 2001-2002 survey, once per week once the spawning begins (December 1, 2002-January 31, 2003), or as determined by run timing.
- 2) Document the extent of distribution in each of the tributaries where adult coho salmon were observed.
- 3) Determine the run timing and duration of adult coho salmon spawning.
- 4) Collect two sets of tissue samples for DNA analysis to understand the genetic relationship of the Scott River coho salmon to other stocks and collect two sets of scale samples to understand the life history of the Scott River coho salmon. One set of tissue and scale samples will go to NOAA Fisheries and one to CDFG.
- 5) Determine additional site specific information as they relate to spawning: velocity, substrate composition, temperature and stream gradient.

Redd Identification and Marking

Redd identification will follow the standard identification process used during the Fall Chinook salmon surveys. Redds will be counted if they are nearly completed and if there is an **80%** confidence by the surveyor that it is a redd. Redds with coho salmon on them are counted as “**Redds with Fish**” and distinguished from “**Redds without Fish**” in the field notes.

Redd Identification

The redd is the “nest” where the eggs have been deposited. The female coho salmon constructs her redd similarly to that of other salmonids. She selects an appropriate site, usually with the right 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 deep. 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.

2003-2004 Scott River Adult Coho Spawning Ground Surveys

Caudal Peduncle - The caudal peduncle of a coho is generally thicker than that of a chinook. It will be noticeable when picking up the carcasses, however, as it is 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 are 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 will be sampled (cut off with a knife) to determine the hatchery origin by coded-wire tag.

Scott River Watershed Adult Coho Salmon Spawning Survey, 2002-2003
GPS Codes for Streams

Datum for all Garmin GPS units is WGS84 and projection in Lat/Long decimal degrees.
 Sequential Numbering for each stream was updated after each survey.

Code Convention: S F K 0 7 R = South Fork #7 Redd

Last character is: R=redd(s)-individual
 F=fish-ok to group (if fish on redd, use "R", indicate # of fish in notes)
 C=carcass-one for each

Canyon Cr.	CAN	Scott River-Mainstem Index	SRM04
Emigrant Cr.	EMI	*Reach 7	SR7
East Fork Scott	EFK	*Reach 6	SR6
South Fork Scott	SFK	*Reach 5	SR5
Kidder Cr.	KID	*Note: Chinook redds gps'd on Scott River are coded with "K" in name and no "R" for redd (i.e. SR7K02). Coho redds are coded per convention.	
Patterson Cr.(Etna)	PAT		
Wildcat Cr.	WIL		
Etna Cr.	ETN		
Wooliver	WOO		
Mill Cr. (Scott Bar)	SBM		
Shackleford	SHK		
Mill Cr. (Shackleford)	SML		
Sugar Cr.	SUG		
French Cr.	FRE		
Miners Cr.	MIN		
Tompkins Cr.	TOM		
Grouse Cr.	GRO		
Kelsey Channel	KCH		
Kelsey Cr.	KEL		
Middle Cr.	MID		
Indian Cr.	IND		
Rattlesnake Cr.	RAT		
Boulder Cr. (Scott River)	SRB		
Boulder Cr. (South Fork)	BOU		
Moffett Cr.	MOF		
Johnson Cr.	JOH		
Clark Cr.	CLA		
North Fork French Cr.	NFF		
Kangaroo Cr.	KAN		
Patterson Cr. (Scott River)	PSR		
Ruffy Gap Trib	RUF		
Meamber Gulch	MEA		
McAdams Cr.	MCA		
Horse Range Cr.	HRC		

Garmin 12 Series

NAV SETUP

POSITION FRMT

hddd.ddddd

MAP DATUM

WGS 84

CDI: ±0.25

ANGLE: **DEGREES**

UNITS: **STATUTE**

HEADING:

AUTO E017

MARK POSITION

Waypoint

001 °

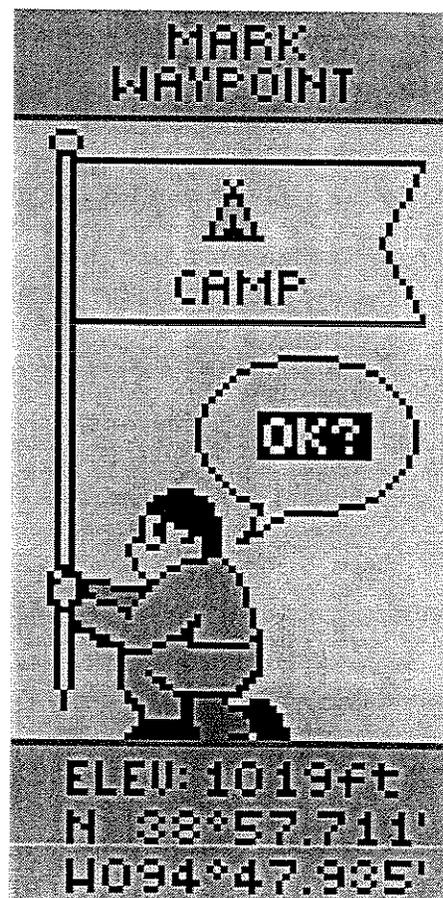
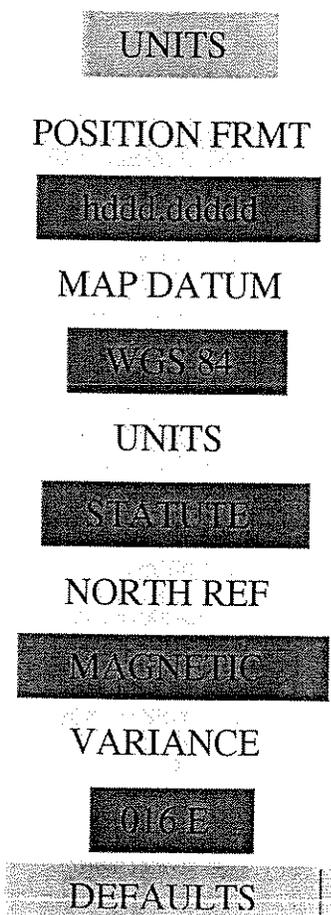
N 40.57446 °
W 122.37544 °

Add to route
number: 2

FOM 16.5^F_T

AVERAGE?
SAVE?

Garmin etrex models



TO IDENTIFY CHINOOK, COHO, & STEELHEAD

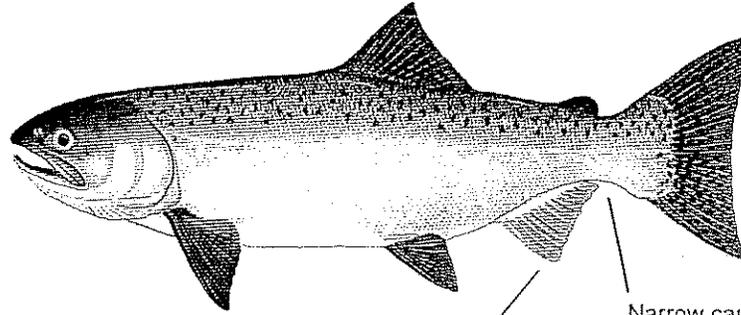


CHINOOK
(Pascua)



Black gums
lower jaw.

Chinook have large black spots scattered on upper back & both lobes of caudal (tail) fin.



13-19 Anal fin rays

Narrow caudal peduncle

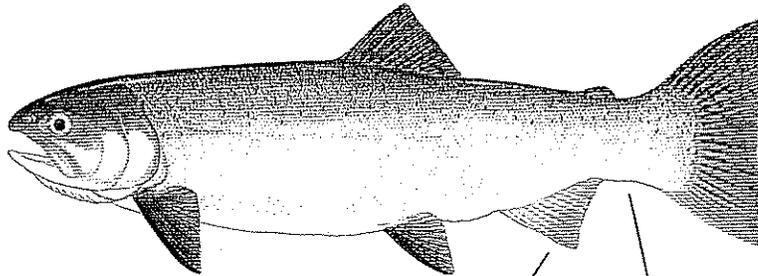
Caudal fin rays are smooth
(Rub thumbnail along rays
- feels smooth)

COHO



White gums
lower jaw.

Coho have small black spots scattered on upper back & upper lobe only of the caudal (tail) fin.

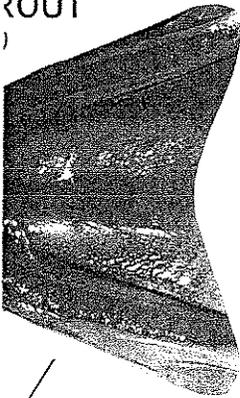


13-19 Anal fin rays

Wide caudal peduncle

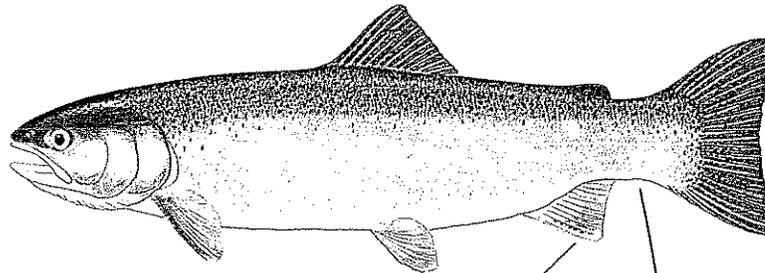
Caudal fin rays are rough
(Rub thumbnail along rays
- feels like edge of dime)

STEELHEAD



White gums
lower jaw.

Steelhead have small black spots scattered on upper back & in uniform rows along caudal (tail) fin.



8-12 Anal fin rays

Wide caudal peduncle

Caudal fin rays are smooth
(Rub thumbnail along rays
- feels smooth)

Pinkish color may appear on cheeks
and along lateral line in freshwater

2003-2004 Scott River Adult Coho Survey Reach Descriptions

Watershed	Reach Description	Survey Schedule	Access Restriction	Miles	Primary Crew
Mill Creek (ScottBar) Lower (INDEX)	Approximately ½ mile up from mouth of Mill Creek	Weekly or EEOW	None	.5	CDFG
Upper (INDEX) Thompkins Cr.	Approximately 1 ¾ mile up from mouth	Weekly or EEOW	DFG only	1.0	CDFG
Middle Creek	Lowest 1.25 miles of Thompkins Creek	EEOW	DFG only	1.25	CDFG
Kelsey Creek	Lowest .4 miles of Middle Creek	Two passes	None	.4	USFS/RCD
Kelsey Spawning Channel	Lower Kelsey from barrier to mouth	Two passes	None	.6	USFS/RCD
Canyon Creek	Spawning channel	Two passes	None	.1	USFS/RCD
Boulder Creek	From the uppermost Maurer property line to the mouth of Canyon Creek	Two passes	None – Call Sue in Advance	1.1	any
Meamber Gulch	County bridge to mouth	Two passes	None	.2	any
Indian Creek	Lowest ~ ½ mile	Depends on connectivity		.6	
Shackleford Creek		Depends on connectivity		.8	
Lower (INDEX) Mill Creek	Gutleben property line to mouth (located just upstream from wier off Dangle lane)	Weekly or EEOW	Okay 2 people –call ahead Tozier 468-2942	1.0	RCD or DFG
Lower Mill	Confluence w/Shackleford up	EEOW	RCD	.8	RCD

2003-2004 Scott River Adult Coho Survey Reach Descriptions

Upper(INDEX)	Horse Range Creek area	N/A	No access – LO might call if they see anything.		N/A
Miners Creek(INDEX)	Confluence with French Creek to upper Phelps Property(above second miners road bridge)	Weekly or EEW	Okay – RCD Call ahead Becky Schenone	1	RCD
North Fork French	Timber Products		TP will do		
Mainstem Tailings (INDEX)	Moore gravel to Sugar Creek.	EEOW	Call Moores & Kalpine in advance RCD	1.1	RCD
Sugar Creek					
Lower (INDEX)	From Marx bridge to mouth	Weekly or EEW	RCD	.5	RCD
Upper	From upper FGS bridge to cattle guard. OR break reach @tiger fork.	EEOW	None	2.1	Any
Wildcat	Mouth up 2 mil	EEOW	Lower section DFG only	2	
South Fork					
Lower (INDEX)	Cecilville rd bridge to pullout on left	Weekly or EEW	None	.4	Any
Upper (INDEX)	Fox Cr. To Boulder Cr.	Weekly or EEW	None	1.9	Any
East Fork					
Lower Masterson(INDEX)		N/A	LO will complete survey & call if anything is seen	5.1	N/A
Grouse Cr.	Mouth up ~ one mile	N/A	LO will complete survey & call if anything is seen	.6	N/A
Kangaroo Cr.		Once or twice		.7	
Rail Creek(new)	Rd 41N39 to end of USFS land	Once or twice		.5?	
Upper Masterson	AP Cattle Ranch		Contact Bob Axton prior		

Guidelines for sample collection and delivery

Collection Protocols

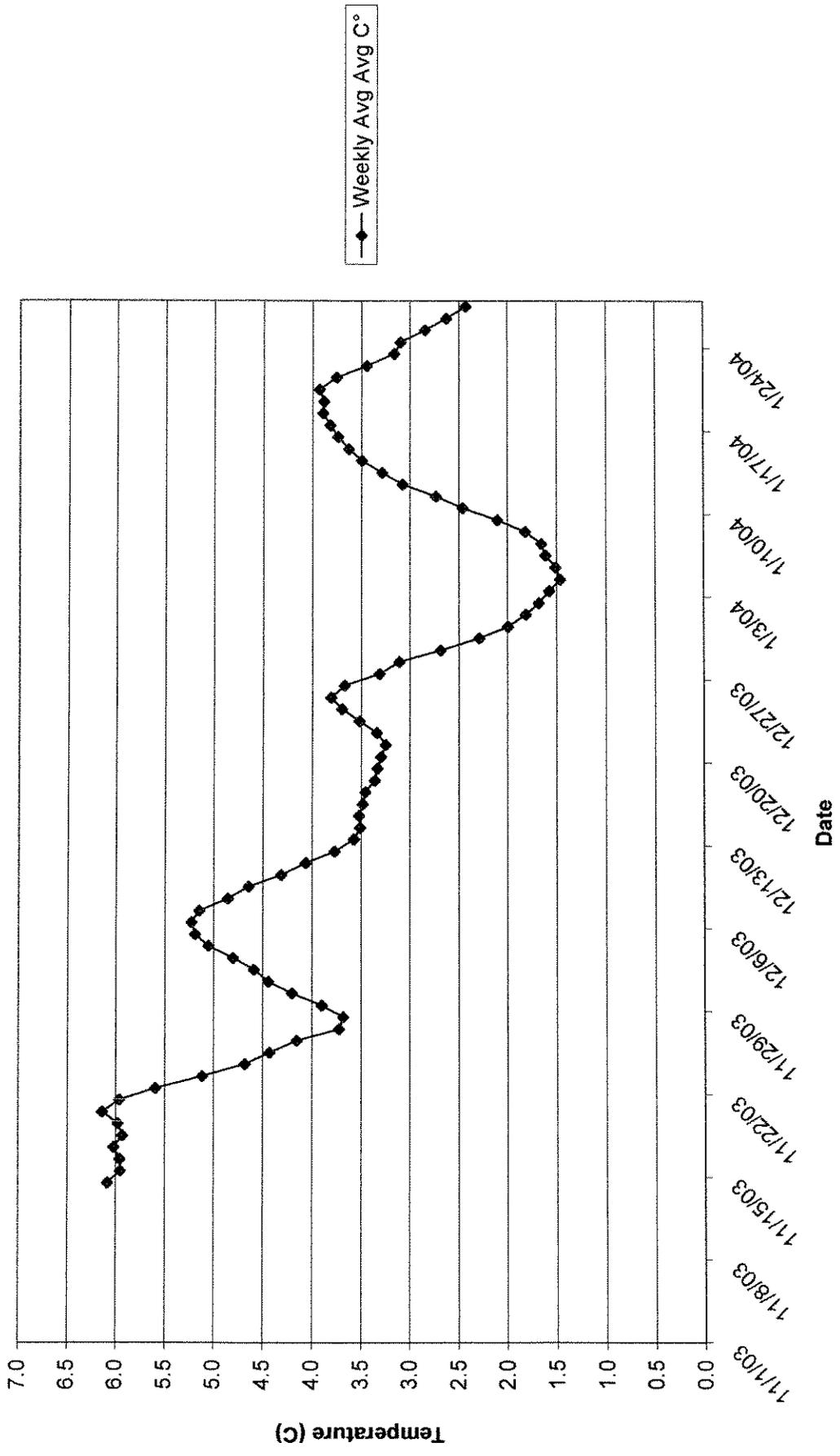
- 1). Live fish: Cut a 1cm square clip from tail fin using clean scissors and place in a piece of dry blotter/filter paper (e.g. Whatman brand). Fold blotter paper over for temporary storage. Samples must be air-dried as soon as possible (don't wait more than 8 hours). Air-drying inside takes about 24 hours. Air-drying 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 air-dried 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

South Fork Water Temperature
Weekly Avg C°(MWAT)



Sugar Creek Water Temperature (MWAT)

