PRIVATE-LANDS AQUATIC RESOURCE MONITORING ACTIVITIES IN COASTAL WATERSHEDS

Results of a Survey of Coastal Forest Landowners and Others Within the Presumed Range of Coho Salmon in Northwestern and Central California

Prepared for the
Environmental Services Division
California Department of Fish & Game

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INTRODUCTION

This report presents the results of a survey conducted by William M. Kier Associates ("contractor") during the summer of 1995 among a selection of forest landowners and other parties to determine the level and nature of non-government aquatic resource monitoring in the coastal watersheds of northern and central California. The survey was conducted as one element of a broader effort by the California Department of Fish and Game's (DFG) Environmental Services Division to encourage standard approaches to monitoring aquatic resource and to maintaining monitoring data in order to strengthen regional analyses of watershed and fish conditions. The Department specified the landowners and other groups it wished the contractor to survey. The quality of the information reflects the ability of the landowners and their representatives to make time for interviews and to review the draft survey results.

METHODOLOGY

Study area

The survey area encompasses that portion of the range of coho salmon, *Oncorhynchus kisutch*, between the Oregon border and Monterey Bay (Figure 1). The information developed from the survey (Table 2) was organized using the list of streams in DFG's January 4, 1994 "Petition to the Board of Forestry to List Coho Salmon as a Sensitive Species".

Methods

A survey instrument ("form") was designed by the contractor. Major landowners or their technical consultants (Table 1) were contacted by phone concerning the nature of the survey and then received the form in the mail. Personal interviews were conducted with interested parties to determine the nature and level of each private-land monitoring program, the methods used to gather data, systems used for data storage and retrieval, and the degree to which data is shared with others. The information gathered was compiled and reviewed with the survey participants, typically at meetings of the technical working group of the Fish, Farm and Forest Communities ("3FC") Forum.

In addition to private landowners the contractor surveyed several other entities including DFG field offices, the North Coast Regional Water Quality Control Board, the California Department of Forestry, National Park Service, U.S. Forest Service, U.S. Fish and Wildlife Service, and the Humboldt Resource Conservation District. These contacts assisted the identification of smaller private organizations gathering aquatic data. Resource constraints prevented surveying these smaller groups, however.

Table 1 - Organizations Surveyed

MANAGER	ADDRESS	PHONE	CONTACT
Arcata Redwood Co.	P.O. Box 245, Orick, CA 95555	707-488-3351	Lloyd Tangen
Barnum Timber Co.	1610 Highland Ave., Eureka, CA 95501	707-442-1761	Robert Barnum Ed Mendez
Big Creek Lumber	3564 Hwy 1, Davenport, CA 95017	408-423-4156	Bud McCrary
Blue Lake Forest Products	1619 Glendale Drive, Arcata, CA 95521	707-822-2968	Brian Anker
Coastal Forestlands Ltd.	P.O. Box 500, Miranda, CA 95553 P.O. Box 310, Willits, CA 95490	707-444-5813 707-459-3093	Jack Monschke Charlotte Morrison
Eel River Sawmills	1053 Northwestern Ave., Fortuna, CA 95540	707-725-6911	Kim Browning
Friends of the Garcia River	P.O. Box 916, Pt. Arena, CA 95468	707-882-3068	Eric Dahlhoff
Fruit Growers Supply Co.	1216 Fruit Growers Road, Hilt, CA 96044	916-475-3453	Charlie Brown
Georgia-Pacific Corp.	90 West Redwood Ave., Fort Bragg, CA	707-961-3334	Jon Ambrose
Gualala Redwoods	P.O. Box 197, Gualala, CA 95445	707-884-3521	John Williams
Louisana-Pacific Corp.	1508 Crannell Road., Trinidad, CA 95570 P.O. Box 340, Calpella, CA 95418	707-677-0911 707-485-8731	Malcolm Pious Tom Daugherty
Natural Resource Mgmt.	1434 Third Street, Eureka, CA 95501	707-442-1735	Dennis Halligan
Pacific Lumber Co.	P.O. Box 712, Scotia, CA 95565	707-764-2222	Joe Hiss
PacifiCorp	920 SW Sixth Ave, Portland, OR 97204-1256	503-464-6537	Todd Olson
Rellim Redwood Co.	P.O. Box 247, Crescent City, CA 95531-0247	707-464-5738	Chris Howard
Sierra-Pacific Industries	P.O. Box 496014, Redding, CA 96049-6014	916-378-8134	Julie Kelley
Simpson Timber Co.	P.O. Box 68, Korbel, CA 95550	707-668-4428 707-668-4436	Lowell Diller Ross Taylor

RESULTS

Arcata Redwood Company is currently engaged in temperature monitoring, using Hobo data loggers, on several Lower Klamath tributaries including Blue Creek, McGarvey Creek, Hunter Creek, Terwer Creek, Bear Creek, and Pecwan Creek. Wilson Creek, a tributary to the Pacific Ocean, is also monitored for stream temperatures. Personnel trained by DFG have habitat typed most of the stream reaches involved and some direct observations of fish populations have been completed. All data collected by Arcata Redwood personnel is analyzed and stored in a database system maintained by Simpson Timber Company.

Barnum Timber Company did not respond to the survey.

Big Creek Lumber is involved in several cooperative monitoring programs with local schools and DFG; however, they do not have trained personnel on staff for stream monitoring and they do not maintain an aquatic database. The Monterey Bay Salmon and Trout Project maintains a hatchery on the property. For information about this program contact Dave Streig, Hatchery Manager/Fisheries Biologist, Monterey Bay Salmon and Trout Project, P.O. Box 417, Davenport, CA 95017, (408) 485-3095.

Blue Lake Forest Products does not have trained personnel on staff for stream monitoring, nor does it maintain an aquatic database.

Coastal Forestlands Ltd. maintains approximately 17 temperature monitoring stations on eight stream systems, specifically the North Fork Big River, East Branch of the N.F. Big River, Big River (Martin Creek), North Fork Garcia River, Garcia River (Inman Creek and Signal Creek), North Fork Gualala River, Gualala (Rockpile Creek and Buckeye Creek), and South Fork Fuller Creek. CFL is also considering the establishment of long term monitoring programs to measure sediment, salmonid populations, large woody debris inventory, discharge, and canopy closure.

A total of 33 channel assessment stations (three per reach) have been surveyed on a preliminary basis. At each station pebble counts, large woody debris inventory, discharge measurements, and canopy closure measurements are taken. Because CFL has been working closely with Georgia Pacific their methods are almost identical and are detailed in Ambrose et. al., 1994. These assessment surveys are designed to collect baseline information for future monitoring programs.

For further information contact: Charlotte Morrison (Biologist) or Jack Monschke (Watershed Specialist), P.O. Box 310, Willits, CA 95490, (707) 462-1410

Eel River Sawmills does not have trained stream monitoring personnel on staff nor does it maintain an aquatic database.

Friends of the Garcia River maintains monitoring stations on the Garcia River. For further information contact Eric Dahlhoff, Monitoring Manager, Friends of the Garcia River, P.O. Box 916, Pt. Arena, CA 95468, (707) 887-3086.

Fruit Growers Supply Company maintains monitoring stations on French Creek, a tributary to the Scott River, in cooperation with DFG and the U. S. Forest Service. For more information contact Charlie Brown, Manager, 1216 Fruit Growers Road, Hilt, CA 96044, (916) 475-3453.

Georgia-Pacific Corporation currently monitors 46 streams. The monitoring plan was developed in conjunction with the North Coast Regional Water Quality Control Board in 1993. The purpose of the plan is to document the baseline instream aquatic habitat conditon and to monitor changes in the streams over time. In most of the study reaches G-P quantifies stream temperatures, distribution and density of aquatic vertebrates, sedimentation and coldwater fish habitat structure. Macroinvertebrate indices are also used to quantified diversity in a selection of the reaches.

Trained personnel use the methods adapted by Flosi and Reynolds, 1994, to collect habitat and population data. A detailed description of the methods used and a compilation of instream monitoring results from the Ten Mile River watershed are submitted in annual reports to the Department of Fish & Game. For further information contact Jon Ambrose, Georgia-Pacific Corporation, 90 West Redwood Avenue, Fort Bragg, CA 95437; (707) 961-3334.

Gualala Redwoods did not respond to the survey.

Louisana-Pacific Corporation is currently assessing the distribution of salmonid fishes using electrofishing, face-plate snorkeling and direct observation in streams within their ownership. L-P surveyed 206 sites in Mendocino and Sonoma counties and 55 sites in Humboldt and Glenn counties in 1994. During 1995 L-P biologists surveyed 342 sites in Mendocino and Sonoma counties and 125 sites in Humboldt, Glenn, Tehama and Plumas counties.

In the Albion and Little River watersheds fish population estimates are made using a three pass depletion electrofishing survey. Stream temperatures were monitored during the summer months using StowAway data loggers set to collect temperature readings every two hours. Seventy-two temperature data sites were monitored during 1994 and 81 sites were monitored on the L-P ownership during 1995. Selected watersheds were habitat typed using the method adapted by Flosi and Reynolds, 1994. The data is being used to evaluate the efficacy of these methods. Fish carcass surveys are being conducted on one stream in Humboldt County. Two streams in Mendocino County are being monitored for outmigrant salmonids. Macroinvertebrates were sampled, using the method adapted by DFG, in a few watersheds during 1995.

Two to four personned trained by DFG are involved in the collection and analysis of habitat typing data. Aquatic resources data are stored in a database structure developed by DFG. L-P has a GIS developed by Vestra Resources, Inc. using SPOT/orthophotos (1:24,000). Coverages include transportation, hydrology, public land survey, vegetation types and timber inventory. This GIS is not currently linked, however, to the aquatic resources data for spatial analysis.

For further information contact: Malcom Pious, Wildlife and Fisheries Program Leader, 1508 Crannell Road, Trinidad, CA, 95570; (707) 677-0911 or Thomas Daugherty, Fishery Biologist, P.O. Box 340, Calpella, CA, 95418; (707) 485-8731

Natural Resource Management does not have trained personnel on staff for stream monitoring and does not maintain an aquatic database.

Pacific Lumber Company maintains 28 permanent watershed monitoring stations. At each station aquatic macroinvertebrates, sediment, pebble count, temperature and crown cover is measured. In addition, six monitoring stations were installed in Yager Creek in 1980 by Winzler and Kelly and another 12 permanent monitoring stations are maintained on the property by the Inland Fisheries Division of the Department of Fish and Game.

Aquatic macroinvertebrates are analyzed using the California Stream Bioassessment Procedures prepared by DFG's Jim Harrington. The samples are identified by Louk, Inc. and measures of species richness, community diversity, and other biotic indicies are applied. Sediment samples are analyzed using the shovel sample technique described in "Field Comparison of Three Devices Used to Sample Substrate in Small Streams" by Grost and Hubert, 1991. The pebble count method used to estimate

sediment loading is described in "Stream Reference Sites" by Harrelson, Rawlins and Potyondy, 1994, RM-245.

Continuous recording thermometers (Hobos or StowAways) are used to measure water temperature during the summer. Crown cover is estimated using a spherical densiometer. All aquatic information is summarized by year, stream, planning watershed, and by large river system. Some of this information is incorporated into an Arc/Info-based geographic information system (GIS) with forest related coverages on the company's 200,000 acres (Everett, 1993). Most of the monitoring data from this property is maintained by DFG's Inland Fisheries Division, however.

For further information contact Joe Hiss, Wildlife Biologist, P.O. Box 712, Scotia, CA 95565; (707) 464-2222.

PacifiCorp monitors water temperature on Bogus Creek, a tributary to the Klamath River and on the mainstem Klamath River in cooperation with the Karuk Tribe.

For further information contact Todd Olson, Fish Biologist, 920 SW 6th Ave., Portland, OR 97204; (503) 464-6537.

Rellim Redwood Company began a long-term juvenile salmonid monitoring program in March, 1994. The company conducts spawning surveys and collects temperature data on major tributaries to the Smith River. In addition to habitat typing and riparian surveys, presence, abundance and distribution surveys of coho salmon in Mill Creek, tributary to Smith River, are conducted using a pipe trap. Dissolved oxygen, temperature data, suspended sediment concentrations and turbidity data were also collected by Winzler and Kelly from 1973 to 1980 in Mill Creek.

Personnel involved in aquatic data collection are trained by the Department of Fish and Game. The methods used for habitat typing and riparian surveys are those developed by Flosi et al. and the same database design is used. For further information contact Chris Howard, Wildlife Biologist, P.O. Box 247 (1500 Hamilton Road), Crescent City, CA 95531-0247; (707) 464-5738.

Sierra Pacific Industries is currently involved with temperature monitoring in the South Fork Elk River, Bear River, East Fork Trinity River and the Sacramento River tributaries Mill Creek and Deer Creek. They are also participating with Collins Pine Company and the U.S. Forest Service in a program monitoring road-related sediment processes on Mill and Deer Creeks.

SPI's instream monitoring data is maintained in a digital database using the system structure developed by Flosi & Reynolds. The personnel involved with aquatic data collection are trained by, and work in cooperation with DFG. SPI uses its own Intergraph-Arc/Info based GIS with detailed ownership-wide coverages of approximately 800,000 acres and broad-grained coverages for approximately 12-13 million acres (Everett, 1993).

For further information contact Julia Kelley, Wildlife Biologist
P.O. Box 496014, Redding, CA 96049; (916) 378-8134, fax (916)378-8190.

Simpson Timber Company is currently revising a long-term monitoring program implemented in 1994. Numerous sub-basins have been habitat typed using the method adapted by DFG's Flosi and Reynolds, 1994. Approximately 60 channel miles were habitat typed in 1994 and another 38 channel miles were habitat typed in 1995.

Riparian surveys are also conducted on these reaches using the method described by DFG with the exception of the 20% sampling scheme for instream large woody debris. STCO is currently surveying 100% of the instream large woody debris and 20% of the large woody debris in the recruitment zone for the habitat typed reaches, estimating length and diameters (dbh) to the nearest foot.

Hobo data loggers are used to collect temperatures on 23 Class 1 streams at 32 stations (including those maintained by Arcata Redwood Company) and 15 Class 2 creeks at 15 stations. Some selected reaches are also being used to evaluate the methods used to assess salmonid distribution and abundance by Overton and Hankin, 1995. All data collected is stored and manipulated in a database following structures developed by the DFG.

STCO maintains an Intergraph-based GIS, which is now used in aquatic data manipulation. Information concerning the locations of temperature monitoring stations, salmonid population estimates, and significant summer steelhead holding habitat along the Mad River are currently being entered into the GIS. The location of torrent salamander, *Rhyecotriton variegatus*, and tailed frog, *Ascaphus truel*, surveys are also inventoried on STCO's GIS system.

For further information contact Ross Taylor, Fisheries Biologist, P.O. Box 68, Korbel, CA 95550; (707) 668-4436.

DISCUSSION AND CONCLUSIONS

The information presented in Table 2 is incorporated in a list of streams that is available for direct export into a relational database. Because the list does not allow segmentation of specific study reaches, however, and does not include small streams not historically known to contain coho salmon, the data is truncated. Information about stream systems crossing several private ownerships having monitoring programs cannot, therefore, be described adequately.

In order to create an adequate inventory of private water quality monitoring programs, specific monitoring stations need to be located geographically. Metadata can then be organized into a single database and related to a standard hydrological coverage such as the U.S. Environmental Protection Agency's River Reach file. A single GIS, incorporating private metadata and agency data for the entire coho salmon range could bring land managers and regulatory agencies to agreement on the strength of available

information, as a basis for improved land- and water management decision-making.

The author found coastal forest landowners and their representatives very cooperative in the survey, given the demands of their 1995 field season. The 3FC technical technical meetings provided excellent opportunities to confer with landowner representatives. This group appears to be an appropriate forum for investigating further opportunites for developing and sharing aquatic resource monitoring metadata needed for coho salmon conservation planning. It is clearly in DFG's best interests to continue its participation in these private-lands aquatic monitoring and assessment efforts.

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Freshwater Biological and Instream Physical Habitat Data

Determining Availability and Consistency of Private Aquatic Databases

Survey Form

Today's Date: _____ Type(Phone, Personal, Mail-in):_____

Company: _____

Contact: _____

Title: _____

Address: _____

City, State, Zip Code: _____

Voice phone: _____ FAX phone:_____

E-mail address or data phone: _____

GENERAL

1. Have you collected freshwater biological data (e.g., estimates of fish, amphibian or macroinvertebrate populations)? ___**YES** ___**NO**

2. Have you collected instream physical habitat data (e.g., habitat typing, stream temperatures, riparian surveys, etc.)? ___**YES** ___**NO**

If you answered "yes" to either of the above please complete section two (Streams and Methods).

3. Do you maintain a digital database to store instream biological or physical habitat data? ___**YES** ___**NO**

If you answered "yes" to question 3 please complete section three (Computer Information & Database Design).

4. Number of personnel involved in aquatic data collection: _____

5. Number of personnel trained: _____ Describe(DFG, USFS...): _____

6. When did you start collection of biological and/or physical habitat data?
Biological: mo._____yr._____ Physical: mo._____yr._____

7. Do you collect fisheries data on an ongoing basis? ___**YES** ___**NO**

8. Are you interested in receiving a copy of this survey report? ___**YES** ___**NO**

William M. Kier Associates - 841 Bayside Road #24, Arcata, CA 95521 (707) 822-2102

Freshwater Biological and Instream Physical Habitat Data

Survey Form Continued - Section Three

Computer Information & Database Design

Do you use the database structures developed by the DFG (Flosi & Reynolds, Oct. 1994)? ___**Yes** ___**No**

If you answered "No" to the above question, how does your database structure differ from that of DFG? (please attach copy of database structure)

_____

_____

_____

_____

_____

_____

_____

Please indicate quantity over box:

Description		Currently Own	Used to Store or Manipulate Aquatic Data	In Budget
Hardware:				
Workstations	_____	☐	☐	☐
Minicomputers	_____	☐	☐	☐
Mainframes	_____	☐	☐	☐
Desktop PC's	_____	☐	☐	☐
Laptops	_____	☐	☐	☐
Notebooks	_____	☐	☐	☐
Handheld	_____	☐	☐	☐
Macintosh	_____	☐	☐	☐
Other	_____	☐	☐	☐

Please indicate quantity over box:

Description	Currently Own	Used to Store or Manipulate Aquatic Data	In Budget
Software:			
Word Processors _____	☐	☐	☐
Spreadsheets _____	☐	☐	☐
Database mgt. _____	☐	☐	☐
Statistics _____	☐	☐	☐
Communication _____	☐	☐	☐
CAD/CAM _____	☐	☐	☐
GIS _____	☐	☐	☐
Image Processing _____	☐	☐	☐
Peripherals:			
Laser printers _____	☐	☐	☐
Ink-jet printers _____	☐	☐	☐
Plotters _____	☐	☐	☐
CD-ROM _____	☐	☐	☐
Tape Drives _____	☐	☐	☐
Other _____	☐	☐	☐
Operating Systems:			
MS DOS _____	☐	☐	☐
OS/2 _____	☐	☐	☐
Macintosh _____	☐	☐	☐
Windows _____	☐	☐	☐
UNIX or Xenix _____	☐	☐	☐
Other _____	☐	☐	☐

9. Briefly describe current projects:

Table 2 - Freshwater Biological and Physical Habitat Data

Inventory of Private Data - Streams and Methods

Drainage	Stream	Population Estimates			Habitat Typing		Riparian Surveys		Temperature		Other	Landowner
		Group	Method	Yrs.	Method	Yrs.	Method	Yrs.	Method	Yrs.		
SF Winchuck R.	SF Winchuck R.	*Slmds.*	*Overton et al., 95*	*95*	*Flosi et al., 94*	*95*	*Flosi et al., 94*	*95*	*2 Hobo XT's*	*94,95*		*STCO*
Illinois R.												
WF Illinois R.	Broken Kettle Cr.				*Flosi et al., 94*	*95*						*STCO*
WF Illinois R.	Elk Cr.				*Flosi et al., 94*	*95*						*STCO*
EF Illinois R.	Dunn Cr.											
Smith R.	Smith R.											
	Rowdy Cr.				*Flosi et al., 94*	*95*	*Flosi et al., 94*	*95*	*2 Hobo XT's*	*94,95*		*STCO*
Rowdy Cr.	Dominie Cr.				*Flosi et al., 94*	*95*			*2 Hobo XT's*	*94*		*STCO*
Rowdy Cr.	Savoy Cr.								*2 Hobo XT's*	*94*		*STCO*
Rowdy Cr.	Copper Cr.											
	Morrison Cr.											
	Jaqua Cr.											
	Mill Cr.											
Mill Cr.	EF Mill Cr.	*Slmds.*	*Pipe Trap*	*94,95*	*Flosi et al., 94*	*94*	*Flosi et al., 94*	*94*	*Hobo XT*	*94,95*	*Temp., D.O., S.S.C.,*	*Rellim*
Mill Cr.	WF Mill Cr	*Slmds.*	*Pipe Trap*	*94,95*	*Flosi et al., 94*	*94*	*Flosi et al., 94*	*94*	*Hobo XT*	*94,95*	*and turbidity data*	*Rellim*
Mill Cr.	Bummer Lake Cr.				*Flosi et al., 94*	*94*	*Flosi et al., 94*	*94*	*Hobo XT*	*94,95*	*collected 1973-80*	*Rellim*
	MF Smith R.											
MF Smith R.	Hardscrabble Cr.											
MF Smith R.	Myrtle Cr.											
MF Smith R.	NF Smith R.											
NF Smith R.	Peridotite Cr.											
NF Smith R.	Still Cr.											
NF Smith R.	Diamond Cr.											
MF Smith R.	Eighteen Mile Cr.											
MF Smith R.	Patrick Cr.											
Patrick Cr.	Twelve Mile Cr.											
Patrick Cr.	Shelly Cr.											
Patrick Cr.	Eleven Mile Cr.											
Patrick Cr.	Ten Mile Cr.											
Patrick Cr.	WF Patrick Cr.											
MF Smith R.	Monkey Cr.											
MF Smith R.	Siskiyou Fk.											
MF Smith R.	Packsaddle Cr.											
MF Smith R.	Griffin Cr.											
MF Smith R.	Knopki Cr.											
	SF Smith R.											

Drainage	Stream	Population Estimates			Habitat Typing		Riparian Surveys		Temperature		Other	Landowner
		Group	Method	Yrs.	Method	Yrs.	Method	Yrs.	Method	Yrs.		
SF Smith R.	Craigs Cr.											
SF Smith R.	Coon Cr.											
SF Smith R.	Hurdy Gurdy Cr.	*Slmds.*	*Electro-fishing*	*94,95*								*H.S.U.*
SF Smith R.	Jones Cr.											
Jones Cr.	Muzzle Loader Cr.											
SF Smith R.	Buck Cr.											
SF Smith R.	Quartz Cr.											
SF Smith R.	Eight Mile Cr.											
Eight Mile Cr.	Williams Cr.											
SF Smith R.	Prescott Fk.											
Coastal (Lake Earl)	Jordan Cr.											
Coastal (Lake Earl)	Yonkers Cr.											
Coastal	Elk Cr.											
Coastal	Wilson Cr.	*Slmds.*	*Overton et al., 95*	*95*	*Flosi et al., 94*	*95*	*Flosi et al., 94*	*94*	*3 Hobo XT's*	*94*	*1 Hobo XT in 1995*	*STCO*
Klamath R.	Estuary											
	Hunter Cr.				*Flosi et al., 94*	*95*	*Flosi et al., 94*	*94*	*3 Hobo XT's*	*94*	*1 Hobo XT in 1995*	*STCO*
Hunter Cr.	Salt Cr.											
Salt Cr.	High Prairie Cr.											
Hunter Cr.	Mynot Cr.											
	Richardson Cr.											
	Saugep Cr.											
	Waukell Cr.											
	Hoppaw Cr.											
	Turwar Cr.				*Flosi et al., 94*	*95*	*Flosi et al., 94*	*94*	*3 Hobo XT's*	*94,95*		*STCO*
	McGarvey Cr.								*2 Hobo XT's*	*94*		*STCO*
	Tarup Cr.								*Hobo XT*	*95*		
	Omagar Cr.											
	Blue Cr.								*Hobo XT*	*94,95*		*STCO*
Blue Cr.	WF Blue Cr.				*Flosi et al., 94*	*95*			*2 Hobo XT's*	*94*	*1 Hobo XT in 1995*	*STCO*
Blue Cr.	Nickowitz Cr.											
Blue Cr.	Crescent City Fk.											
	Ah Pah Cr.				*Flosi et al., 94*	*95*					*Hobo XT, N.Fk. 95*	*STCO*
Ah Pah Cr.	SF Ah Pah Cr.				*Flosi et al., 94*	*95*			*Hobo XT*	*95*		
	Bear Cr.				*Flosi et al., 94*	*95*			*Hobo XT*	*94*	*3 Hobo XT's in 1995*	*STCO*
	Tectah Cr.								*2 Hobo XT's*	*95*		
	Pecwan Cr.								*Hobo XT*	*94*	*2 Hobo XT's in 1995*	*STCO*
	Mettah Cr.											

Drainage	Stream	Population Estimates			Habitat Typing		Riparian Surveys		Temperature		Other	Landowner
		Group	Method	Yrs.	Method	Yrs.	Method	Yrs.	Method	Yrs.		
	Roach Cr.											
	Miner's Cr.											
	Pine Cr.											
Pine Cr.	Little Pine Cr.											
	Bluff Cr.											
	Slate Cr.											
	Red Cap Cr.											
	Boise Cr.											
	Irving Cr.											
	Camp Cr.											
	Dillon Cr.											
	Ukonom Cr.											
	Independence Cr.											
	Clear Cr.											
	Elk Cr.											
Elk Cr.	EF Elk Cr.											
	Indian Cr.											
Indian Cr.	SF Indian Cr.											
Indian Cr.	EF Indian Cr.											
Indian Cr.	Mill Cr.											
	China Cr.											
	Thompson Cr.											
	Selad Cr.											
	Grider Cr.											
Grider Cr.	West Grider Cr.											
	Horse Cr.											
Horse Cr.	Buckhorn Cr.											
Horse Cr.	Middle Cr.											
Horse Cr.	Salt Gulch											
	Barkhouse Cr.											
	Beaver Cr.											
	Humbug Cr.											
	Cottonwood Cr.											
	Shasta R.											
Shasta R.	Big Springs Cr.											
	Willow Cr.											
	Bogus Cr.								*Menter*	*94,95*		*PacificCorp*

Drainage	Stream	Population Estimates			Habitat Typing		Riparian Surveys		Temperature		Other	Landowner
		Group	Method	Yrs.	Method	Yrs.	Method	Yrs.	Method	Yrs.		
	Shasta R.											
	Klamathon Racks											
	Fall Cr.											
Trinity R.	Trinity R.											
(trib. to Klamath R.)	Scottish Cr.											
	Mill Cr.											
	Hostler Cr.											
	Supply Cr.											
	Campbell Cr.											
	Tish Tang A Tang C											
	Horse Linto Cr.											
	Willow Cr.											
	SF Trinity R.											
SF Trinity R.	Eltapom Cr.											
SF Trinity R.	Pelletreu Cr.											
SF Trinity R.	HayFk. Cr.											
HayFk. Cr.	Olsen Cr.											
SF Trinity R.	Butter Cr.											
SF Trinity R.	Rattlesnake Cr.											
	New R.											
	Manzanita Cr.											
	NF Trinity R.	*Chink.*	*Spawning*									*SPI*
EF NF Trinity R.	Indian Cr.	*Chink.*	*Spawning*									*SPI*
	Canyon Cr.	*Chink.*	*Spawning*									*SPI*
	Browns Cr.	*Chink.*	*Spawning*									*SPI*
	Rush Cr.	*Chink.*	*Spawning*									*SPI*
	Deadwood Cr.											
Salmon R.	Salmon R.											
(trib. to Klamath	Wooley Cr.											
R.)	Nordheimer Cr.											
	NF Salmon R.											
NF Salmon R.	North Russian Cr.											
NF Salmon R.	South Russian Cr.											
	SF Salmon R.											
SF Salmon R.	Knownothing Cr.											
SF Salmon R.	Methodist Cr.											
SF Salmon R.	EF SF Salmon R.											

Drainage	Stream	Population Estimates			Habitat Typing		Riparian Surveys		Temperature		Other	Landowner
		Group	Method	Yrs.	Method	Yrs.	Method	Yrs.	Method	Yrs.		
EF SF Salmon R.	Taylor Cr.											
Scott R.	Tomkins Cr.											
(trib. to Klamath R.)	Kelsey Cr.											
	Canyon Cr.											
	Shackleford Cr.											
Shackleford Cr.	Mill Cr.											
	Kidder Cr.											
Kidder Cr.	Patterson Cr.											
	Etna Cr.											
	French Cr.	*Slmds.*	*	*	*	*	*	*	*	*	*	*F.G.S.*
French Cr.	Miners Cr.											
	Sugar Cr.											
	EF Scott R.											
EF Scott R.	Big Mill Cr.											
	SF Scott R.											
Redwood Cr.	Redwood Cr.											
	Prairie Cr.											
Prairie Cr.	Little Lost Man Cr.											
Prairie Cr.	Lost Man Cr.											
Prairie Cr.	May Cr.											
Prairie Cr.	Godwood Cr.											
Prairie Cr.	Boyes Cr.											
Prairie Cr.	Browns Cr.											
Prairie Cr.	Streelow Cr.											
	Tom McDonald Cr.											
	Bridge Cr.											
	Coyote Cr.											
	Panther Cr.											
	Lacks Cr.											
Big Lagoon	Big Lagoon											
Stone Lagoon	McDonald Cr.											
	Fresh Cr.											
Little R.	Little R.	*Slmds.*	*Electro-fishing*	*94-95*	*Flosi et.al., 94*	*94*			*Stowaways*	*94-95*	*Carcass #'s 93-95*	*L-P*
	SF Little R.											
SF Little R.	Lower SF Little R.	*Slmds.*	*Electro-fishing*	*94-95*	*Flosi et.al., 94*	*94*			*Stowaways*	*94-95*	*Carcass #'s 93-95*	*L-P*
SF Little R.	Upper SF Little R.	*Slmds.*	*Electro-fishing*	*94-95*	*Flosi et.al., 94*	*94*			*Stowaways*	*94-95*	*Carcass #'s 93-95*	*L-P*
Coastal	Strawberry Cr.											

Drainage	Stream	Population Estimates			Habitat Typing		Riparian Surveys		Temperature		Other	Landowner
		Group	Method	Yrs.	Method	Yrs.	Method	Yrs.	Method	Yrs.		
Mad R.	Mad R.	*Sthd.*	*Direct Observ.*	*94-95*							*Deer Cr. - Hatchery*	*STCO*
	Warren Cr.											
	Lindsay Cr.				*Flosi et al., 94*	*95*			*Hobo XT*	*94*		*STCO*
Lindsay Cr.	Squaw Cr.											
Lindsay Cr.	Grassy Cr.											
Lindsay Cr.	Mather Cr..				*Flosi et al., 94*	*95*					*Hab. type to barrier*	*STCO*
	Hall Cr.											
Hall Cr.	Mill Cr.											
Hall Cr.	Noisy Cr.											
	Camp Bauer Cr.											
	Leggit Cr.											
Leggit Cr.	Kelly Cr.											
	Powers Cr.											
	Quarry Cr.											
Quarry Cr.	Palmer Cr.											
	NF Mad R.				*Flosi et al., 94*	*94*	*Flosi et al., 94*	*94*	*2 Hobo XT's*	*94*	*1 Hobo XT in 1995*	*STCO*
NF Mad R.	Sullivan Cr.											
NF Mad R.	Long Prairie Cr.				*Flosi et al., 94*	*94*	*Flosi et al., 94*	*94*	*Hobo XT*	*94*		*STCO*
	Dry Cr.				*Flosi et al., 94*	*94*	*Flosi et al., 94*	*94*	*Hobo XT*	*94*		*STCO*
	Canon Cr.	*Slmds.*	*Overton et al., 95*	*95*	*Flosi et al., 94*	*94*	*Flosi et al., 94*	*94*	*3 Hobo XT's*	*94*	*1 Hobo XT in 1995*	*STCO*
	Maple Cr.								*2 Hobo XT's*	*94*		*STCO*
	Black Cr.											
	Boulder Cr.								*Hobo XT*	*94,95*		*STCO*
Humboldt Bay	Janes Cr.											
	Jolly Giant Cr.											
	Rocky Gulch Cr.											
	Cochran Cr.											
	Freshwater Cr.	*Inverts..*	*Harrington, J. 92*						*Hobo XT*	*94*	*Sediments sampled*	*PL / L-P*
Freshwater Cr.	Ryan Cr.											
Freshwater Cr.	McCready Gulch											
Freshwater Cr.	Little Freshwater Cr.											
Freshwater Cr.	Cloney Gulch											
Cloney Gulch	Falls Gulch											
Little Freshwater Cr.	Graham Gulch	*Inverts..*	*Harrington, J. 92*								*Sediments sampled*	*PL*
	Martin Slough											
	Elk R.										*Sediments sampled*	*PL*
Elk R.	NF Elk R.	*Inverts..*	*Harrington, J. 92*						*Hobo XT*			*PL*

Drainage	Stream	Population Estimates			Habitat Typing		Riparian Surveys		Temperature		Other	Landowner
		Group	Method	Yrs.	Method	Yrs.	Method	Yrs.	Method	Yrs.		
Elk R.	SF Elk R.	*Slmds.*	*Direct Observtn.*	*	*	*	*	*	*Hobo XT*	*94*	*	*SP & PL*
SF Elk R.	Little SF Elk R.	*Inverts..*	*Harrington, J. 92*	*	*	*	*	*	*Hobo XT*	*	*Sediments sampled*	*SP & PL*
	College of Redwoods											
	Salmon Cr.				*Flosi et al., 94*	*94*			*2 Hobo XT's*	*94*	*1 Hobo XT in 1995*	*STCO*
Eel R.	estuary											
	below Van Duzen R.											
	Salt R.											
Salt R.	Russ Cr.											
Salt R.	Reas Cr.											
	Rohner Cr.											
	Price Cr.											
	Howe Cr.											
Howe Cr.	Atwell Cr.											
	Dinner Cr.											
	Jordan Cr.											
Eel R.	near Pepperwood											
	Shively Cr.											
	Bear Cr.	*Inverts..*	*Harrington, J. 92*									*PL*
	Chadd Cr.											
	Larabee Cr.	*Inverts..*	*Harrington, J. 92*								*Sediments sampled*	*PL*
Larabee Cr.	Carson Cr.											
	Newman Cr.											
	Jewett Cr.											
	Kekawaka Cr.											
	Outlet Cr.											
Outlet Cr.	Bloody Run Cr.											
Outlet Cr.	Long Valley Cr.											
Outlet Cr.	Reeves Cayon Cr.											
Outlet Cr.	Ryan Cr.				*Flosi et. al., 94*	*95*			*Stowaways*	*94,95*		*L-P*
Outlet Cr.	Rowes Cr.											
Outlet Cr.	Mill Cr.											
Mill Cr.	Willits Cr.										*Sediments sampled*	*PL*
Willits Cr.	Dutch Henry Cr.											
Outlet Cr.	Broaddus Cr.											
Outlet Cr.	Haehl Cr.											
Outlet Cr.	Baechtel Cr.											
	Indian Cr.											

Drainage	Stream	Population Estimates			Habitat Typing		Riparian Surveys		Temperature		Other	Landowner
		Group	Method	Yrs.	Method	Yrs.	Method	Yrs.	Method	Yrs.		
Tomki Cr.	Rocktree Cr.											
Tomki Cr.	String Cr.											
Tomki Cr.	Tarter Cr.											
Van Duzen R.	Van Duzen R.											
(trib. to Eel R.)	Palmer Cr.											
	Wolverton Gulch											
	Yaeger Cr.	*Inverts.*	*Harrington, J. 92*	*94*					*Menter*	*92*	*Sediments sampled*	*PL*
Yaeger Cr.	Cooper Mill Cr.								*Hobo XT*	*92*		*PL*
Yaeger Cr.	Lawrence Cr.	*Inverts.*	*Harrington, J. 92*	*94*					*Menter*	*92*	*Sediments sampled*	*PL*
Lawrence Cr.	Shaw Cr.	*Inverts.*	*Harrington, J. 92*	*94*							*Sediments sampled*	*PL*
	Cuddeback Cr.											
	Fielder Cr.											
	Cummings Cr.											
	Hely Cr.											
	Root Cr.	*Inverts.*	*Harrington, J. 92*	*94*							*Sediments sampled*	*PL*
	Grizzly Cr.											
Grizzly Cr.	Stevens Cr.											
	Hoaglund Cr.											
	Little Larabee Cr.											
South Fk. Eel R.	SF Eel R.											
(trib. to Eel R.)	Bull Cr.	*Slmds.*	*Electro-fishing*	*87-91*							*Sediments sampled*	*PL*
Bull Cr.	Squaw Cr.											
Bull Cr.	Albee Cr.											
Bull Cr.	Mill Cr.											
	Canoe Cr.											
	Bridges Cr.											
	Elk Cr.											
	Salmon Cr.											
	Bear Butte Cr.											
	Slmds. Cr.											
	Anderson Cr.											
	Dean Cr.											
	Redwood Cr.										*Sediments sampled*	*PL*
Redwood Cr.	Seely Cr.											
Redwood Cr.	Miller Cr.											
Redwood Cr.	China Cr.											
Redwood Cr.	Dinner Cr.											

Drainage	Stream	Population Estimates			Habitat Typing		Riparian Surveys		Temperature		Other	Landowner
		Group	Method	Yrs.	Method	Yrs.	Method	Yrs.	Method	Yrs.		
	Sprowl Cr.	*Inverts.*	*Harrington, J. 92*	*94*							*Sediments sampled*	*PL*
Sprowl Cr.	Warden Cr.											
Sprowl Cr.	Little Sprowl Cr.											
Sprowl Cr.	WF Sprowl Cr.											
	EB SF Eel R.											
EB SF Eel R.	Squaw Cr.										*Sediments sampled*	*PL*
	Durphy Cr.											
	Milk Ranch Cr.											
	Low Gap Cr.											
	Indian Cr.	*Slmds.*	*Electro-fishing*	*93-95*	*Flosi et al., 94*	*93*			*Hobo XT's*	*93-95*	*Inverts. Sampled*	*G-P*
	Piercy Cr.	*Inverts.*	*Harrington, J. 92*	*94,95*	*Flosi et al., 94*	*95*			*Hobo XT's*	*94,95*		*G-P*
	Standley Cr.	*Inverts.*	*Harrington, J. 92*	*94,95*	*Flosi et al., 94*	*95*			*Hobo XT's*	*94,95*		*G-P*
	McCoy Cr.											
	Bear Pen Cr.				*Flosi et al., 94*	*95*			*Hobo XT's*	*94,95*		*G-P*
Bear Pen Cr.	Cub Cr.											
	Red Mountain Cr.											
	Wildcat Cr.				*Flosi et al., 94*	*95*			*Hobo XT's*	*94,95*		*G-P*
	Hollow Tree Cr.	*Inverts.*	*Harrington, J. 92*	*94,95*	*Flosi et al., 94*	*95*			*Hobo XT's/Stow.*	*94,95*		*L-P & G-P*
Hollow Tree Cr.	Mule Cr.											
Hollow Tree Cr.	Walters Cr.											
Hollow Tree Cr.	Redwood Cr.								*Stowaway*	*94*		*L-P*
Hollow Tree Cr.	Bond Cr.											
Hollow Tree Cr.	Michaels Cr.								*Stowaway*	*94*		*L-P*
Hollow Tree Cr.	Waldron Cr.											
Hollow Tree Cr.	Huckleberry Cr.											
Hollow Tree Cr.	Butler Cr.											
	Cedar Cr.											
	Rattlesnake Cr.											
Rattlesnake Cr.	Cummings Cr.											
	Ten Mile Cr.											
Ten Mile Cr.	Grub Cr.											
Ten Mile Cr.	Streeter Cr.											
Ten Mile Cr.	Big Rock Cr.											
Ten Mile Cr.	Mud Springs Cr.											
Ten Mile Cr.	Mill Cr.											
Ten Mile Cr.	Cahto Cr.											
	Fox Cr.											

Drainage	Stream	Population Estimates			Habitat Typing		Riparian Surveys		Temperature		Other	Landowner
		Group	Method	Yrs.	Method	Yrs.	Method	Yrs.	Method	Yrs.		
	Elder Cr.											
	Jack of Hearts Cr.											
	Deer Cr.											
	Little Charlie Cr.											
	Dutch Charlie Cr.											
	Redwood Cr.											
	Kenny Cr.											
	Haun Cr.											
	Rock Cr.											
	Bear Cr.											
	Taylor Cr.											
MF Eel R.	MF Eel R.											
(trib. to Eel R.)	Mill Cr.											
Mill Cr.	Grist Cr.											
	Rattlesnake Cr.											
NF of MF Eel R.	Rock Cr.											
NF Eel R.	Bluff Cr.											
(trib. to Eel R.)												
Coastal	Guthrie Cr.											
Bear R.	Bear R.	*Inverts.*	*Harrington, J. 92*						*Hobo XT*	*94*	*Sediments sampled*	*PL*
	Bonanza Gulch											
	SF Bear R.				*FFFC*	*94*						*SPI*
SF Bear Cr.	Hollister Cr.				*FFFC*	*94*						*SPI*
Coastal	McNut Gulch											
Mattole R.	Mattole R.											
	NF Mattole R.											
	Mill Cr. (Petrolia)											
	Clear Cr.											
	Conklin Cr.											
	McGinnis Cr.											
	Indian Cr.											
	Squaw Cr.								*Menter*	*95*		
	Pritchard Cr.											
	Granny Cr.											
	Saunders Cr.											
	Woods Cr.											
	Upper NF Mattole R.											

Drainage	Stream	Population Estimates			Habitat Typing		Riparian Surveys		Temperature		Other	Landowner
		Group	Method	Yrs.	Method	Yrs.	Method	Yrs.	Method	Yrs.		
Upper NF Mattole R.	Rattlesnake Cr.	*Inverts.*	*Harrington, J. 92*						*Menter*	*93*	*Sediments sampled*	*PL*
Upper NF Mattole R.	Oil Cr.	*Inverts.*	*Harrington, J. 92*						*Menter*	*91*	*Sediments sampled*	*PL*
Oil Cr.	Devils Cr.											
	Honeydew Cr.											
Honeydew Cr.	Bear Trap Cr.											
	Dry Cr.											
	Middle Cr.											
	Westlund Cr.											
	Gilham Cr.											
	Fourmile Cr.											
	Sholes Cr.											
	Marrow Cr.											
	Grindstone Cr.											
	Mattole Canyon											
	Blue Slide Cr.											
	Bear Cr.											
Bear Cr.	SF Bear Cr.											
	Big Finley Cr.											
	Eubank Cr.											
	Bridge Cr.											
	McKee Cr.											
	Vanbankin Cr.											
	Mill Cr.											
	Baker Cr.	*Inverts.*	*Harrington, J. 92*									*PL*
	Thompson Cr.											
Coastal	Whale Gulch Cr.											
Coastal	Indian Cr.											
Coastal	Jackass Cr.											
Coastal	Usal Cr.	*Slmds.*	*Electro-fishing*	*93-95*	*Flosi et al., 94*	*95*			*Hobo XT's*	*93-95*	*Inverts. Sampled*	*G-P*
Cottoneva Cr.	Cottoneva Cr.								*Stowaway*	*94*		*L-P*
	SF Cottoneva Cr.								*Stowavay*	*94*		*L-P*
	NF Cottonneva Cr.											
Coastal	Hardy Cr.								*Datapod*	*92-94*		*L-P*
Coastal	Juan Cr.								*Stowaway*	*94*		*L-P*
Coastal	Little Juan Cr.											
Coastal	Howard Cr.											
Coastal	DeHaven Cr.	*Slmds.*	*Electro-fishing*	*93-95*					*Hobo XT's*	*93-95*	*Sediments sampled*	*G-P*

Drainage	Stream	Population Estimates			Habitat Typing		Riparian Surveys		Temperature		Other	Landowner
		Group	Method	Yrs.	Method	Yrs.	Method	Yrs.	Method	Yrs.		
Coastal	Wages Cr.	Slmds.	Electro-fishing	93-95					Hobo XT's	93-95	Sediments sampled	G-P
Ten Mile R.	Ten Mile R.											G-P
	NF Ten Mile R.	Slmds.	Electro-fishing	93-95	Flosi et al., 94	95			Hobo XT's	93-95	Sediments sampled	PL / G-P
NF Ten Mile R.	Mill Cr.	Slmds.	Electro-fishing	93-95	Flosi et al., 94	94			Hobo XT's	93-95	Inverts. & Sediments	G-P
NF Ten Mile R.	Little NF Ten Mile R.	Slmds.	Electro-fishing	93-95	Flosi et al., 94	95			Hobo XT's	93-95	Sediments sampled	PL / G-P
	SF Ten Mile R.	Slmds.	Electro-fishing	93-95	Flosi et al., 94	94			Hobo XT's	93-95	Inverts.,Sediments,V*	G-P
SF Ten Mile R.	Smith Cr.	Slmds.	Electro-fishing	93-95	Flosi et al., 94	94			Hobo XT's	93-95	Inverts. & Sediments	G-P
SF Ten Mile R.	Campbell Cr.	Slmds.	Electro-fishing	93-95	Flosi et al., 94	94			Hobo XT's	93-95	Inverts. & Sediments	G-P
SF Ten Mile R.	Churchman's Cr.	Slmds.	Electro-fishing	93-95	Flosi et al., 94	94			Hobo XT's	93-95	Inverts. & Sediments	G-P
SF Ten Mile R.	Redwood Cr.	Slmds.	Electro-fishing	93-95	Flosi et al., 94	94			Hobo XT's	93-95	Inverts. & Sediments	G-P
	MF Ten Mile R.											
MF Ten Mile R.	Bear Haven Cr.	Slmds.	Electro-fishing	93-95	Flosi et al., 94	95			Hobo XT's	93-95	Inverts. & Sediments	G-P
Pudding Cr.	Pudding Cr.	Slmds.	Electro-fishing	93-95	Flosi et al., 94	94			Hobo XT's	93-95	Inverts. & Sediments	G-P
	LeValley Cr.	Slmds.	Electro-fishing	93-95	Flosi et al., 94	94			Hobo XT's	93-95	Inverts. & Sediments	G-P
Noyo R.	Noyo R.	Inverts.	Harrington, J. 92	95					Stowaway	92-94	& Hobo XT's	L-P / G-P
	SF Noyo R.											
SF Noyo R.	Kass Cr.	Inverts.	Harrington, J. 92	95					Hobo XT's	93-95		G-P
SF Noyo R.	NF SF Noyo R.											
SF Noyo R.	Parlin Cr.											
	Little NF Noyo R.	Slmds.	E-fishing, O. Trap	93-95					Hobo XT's	93	Inverts. & Sediments	G-P
	Duffy Gulch								Hobo XT	93		G-P
	NF Noyo R.											
NF Noyo R.	Marble Gulch								Stowaway	94		L-P
NF Noyo R.	Haysworth Cr.								Stowaway	94		L-P
NF Noyo R.	MF NF Noyo R.								Stowaway	94		L-P
	Olds Cr.								Stowaway	94		L-P
	Redwood Cr.								Stowaway	94		L-P
Hare Cr.												
Hare Cr.	SF Hare Cr.											
	Bunker Gulch Cr.											
Coastal	Jug Handle Cr.											
Caspar Cr.	SF Caspar Cr.											
	NF Casper Cr.											
Coastal	Doyle Cr.											
Coastal	Russian Gulch											
Big R.	Big R.	Slmds.	Electro-fishing	92-94					Hobo XT's	92-95	Inverts.	L-P / G-P
	Little NF Big R.	Slmds.	Electro-fishing	93-95					Hobo XT's	93-95	Inverts.	L-P / G-P

Drainage	Stream	Population Estimates			Habitat Typing		Riparian Surveys		Temperature		Other	Landowner
		Group	Method	Yrs.	Method	Yrs.	Method	Yrs.	Method	Yrs.		
Little NF Big R.	EB Little NF Big R.	*Inverts.*	*Harrington, J. 92*	*95*					*Hobo XT's*	*93-95*		*G-P*
Little NF Big R.	Berry Gulch											
	Two Log Cr.	*Slmds.*	*Electro-fishing*	*93-95*					*Hobo XT's*	*93-95*	*Inverts.*	*G-P*
	Tramway Gulch											
	NF Big R.	*Slmds.*	*Electro-fishing*	*95*					*Hobo XT*	*92*	*Sed. Samples ('95)*	*L-P,CFL*
NF Big R.	EB NF Big R.	*Slmds.*	*Electro-fishing*	*92-94*					*Hobo XT*	*93-94*		*L-P*
NF Big R.	Chamberlain Cr.											
Chamberlain Cr.	Arvola Gulch											
NF Big R.	James Cr.											
James Cr.	NF James Cr.											
	SF Big R.											
SF Big R.	Ramon Cr.											
SF Big R.	Daugherty Cr.								*Stowaway*	*94*		*L-P*
Daugherty Cr.	Johnson Cr.											
Coastal	Little R.											
Ten Mile (Corrected)	Buckhorn Cr.	*Slmds.*	*Electro-fishing*	*93-95*	*Flosi et. al., 94*	*95*			*Hobo XT's*	*93-95*	*Inverts. & Sediments*	*G-P*
Albion R.	Albion R.	*Slmds.*	*Electro-fishing*	*91-94*	*Flosi et. al., 94*	*94*			*Stowaway*	*92-94*		*L-P*
	SF Albion R.	*Slmds.*	*Electro-fishing*	*91-94*	*Flosi et. al., 94*	*94*			*Stowaway*	*92-94*		*L-P*
	Railroad Gulch	*Slmds.*	*Electro-fishing*	*88-94*	*Flosi et. al., 94*	*94*			*Temp. Mentor*	*92-94*		*L-P*
	NF Albion R.											
	Marsh Cr.											
Salmon Cr.	Salmon Cr.	*Slmds.*	*Electro-fishing*	*93-95*	*Flosi et. al., 94*	*95*			*Hobo XT's*	*93-95*	*Inverts. & Sediments*	*G-P*
	Little Salmon Cr.											
	Hazel Gulch	*Slmds.*	*Electro-fishing*	*93-95*	*Flosi et. al., 94*	*95*			*Hobo XT's*	*93-95*	*Inverts. & Sediments*	*G-P*
Navarro R.	Navarro R.								*Datapod*	*89-94*		*L-P*
	NF Navarro R.	*Slmds.*	*Migrant Trap*	*95*					*Stowaway*	*94*		*L-P*
NF Navarro R.	NF Flynn R.								*Datapod*	*93-94*		*L-P*
NF Navarro R.	SB NF Navarro R.								*Stowaway*	*94*		*L-P*
SB NF Navarro R.	Bridge Cr.											
NF Navarro R.	NB NF Navarro R.								*Datapod*	*92-94*		*L-P*
NB NF Navarro R.	Little NF Navarro											
NB NF Navarro R.	John Smith Cr.								*Datapod*	*90-94*		*L-P*
	Mill Cr.											
	Indian Cr.											
Indian Cr.	NF Indian Cr.								*Stowaway*	*93-94*		*L-P*
Indian Cr.	Gut Cr.											
Indian Cr.	Dick Cr.											

Drainage	Stream	Population Estimates			Habitat Typing		Riparian Surveys		Temperature		Other	Landowner
		Group	Method	Yrs.	Method	Yrs.	Method	Yrs.	Method	Yrs.		
	Rancheria Cr.											
Rancheria Cr.	Ham Canyon Cr.											
Rancheria Cr.	Horse Cr.											
Rancheria Cr.	Minnie Cr.											
Rancheria Cr.	Camp Cr.											
Camp Cr.	German Cr.											
Coastal	Greenwood Cr.	*Slmds.*	*Electro-fishing*	*92-94*					*Datapod*	*92-94*		*L-P*
Coastal	Mallo Pass Cr.											
Elk Cr.	Elk Cr.	*Slmds.*	*Electro-fishing*	*92-94*					*Datapod*	*92-94*		*L-P*
	Three Springs Cr.											
	Soda Fk.											
	Sulphur Fk.											
Coastal	Brush Cr.											
	Garcia R.	*Slmds.*	*Electro-fishing*	*94-95*					*Hobo XT's*	*94-95*	*Inverts. & Sediments*	*G-P*
Scooner Gulch	Scooner Gulch											
	NF Scooner Gulch											
Coastal	Slmds. Rock Gulch											
Coastal	Gualala											*CFL*
Gualala R.	NF Gualala R.	*	*	*	*	*	*	*	*	*	*	*Gualala Rwds.*
NF Gualala R.	Doty Cr											
Gualala R.	SF Gualala R.	*All*	*Electro-fishing*	*91*	*Bisson et al. 81*	*91*			*Omnidata*	*91*	*IFIM analysis*	*Sea Ranch*
SF Gualala R.	Franchini Cr.											
SF Gualala R.	Sproule Cr.											
SF Gualala R.	Marshall Cr.											
Gualala R.	Wheatfield Fk.											
Wheatfield Fk.	Fuller Cr.											*CFL*
Wheatfield Fk.	Haupt Cr.											
Wheatfield Fk.	House Cr.											
Coastal	Fort Ross Cr.											
Coastal	Russian Gulch											
Russian Gulch	Middle Branch											
Russian Gulch	East Branch											
Russian R.	Russian R.											
	Willow Cr.	*Slmds.*	*Electofishing*	*89-94*					*Hobo XT*	*94*		
	Sheephouse Cr.											
Sheephouse Cr.	unnamed trib.											
	Freeseout Cr.											

Drainage	Stream	Population Estimates			Habitat Typing		Riparian Surveys		Temperature		Other	Landowner
		Group	Method	Yrs.	Method	Yrs.	Method	Yrs.	Method	Yrs.		
	Austin Cr.											
Austin Cr.	Kidd Cr.											
Austin Cr.	Ward Cr.											
Austin Cr.	East Austin Cr.											
East Austin Cr.	Gilliam Cr.											
East Austin Cr.	Gray Cr.											
	Dutch Bill Cr.											
	Hulbert Cr.											
	Mark West Cr.											
	Dry Cr.											
Dry Cr.	Mill Cr.											
Mill Cr.	Wallace Cr.											
Dry Cr.	Pena Cr.											
Dry Cr.	Warm Springs Cr.											
	EF Russian R.											
	WF Russian R.											
WF Russian R.	York Cr.											
WF Russian R.	Forsythe Cr.											
Forsythe Cr.	Mill Cr.											
Forsythe Cr.	Seward Cr.											
Seward Cr.	Eldridge Cr.											
Seward Cr.	Jack Smith Cr.											
WF Russian R.	Salt Hollow Cr.											
WF Russian R.	Rocky Cr.											
WF Russian R.	Mariposa Cr.											
WF Russian R.	Slmds.er Cr.											
WF Russian R.	Corral Cr.											
Coastal	Scotty Cr.											
Salmon Cr.	Salmon Cr.	Slmds.	Electro-fishing	93								G-P
	Finley Cr.											
	Coleman Cr.											
	Fay Cr.											
	Tannery Cr.											
Walker Cr.	Walker Cr.											
	Salmon Cr.											
	Arroyo Sausal Cr.											
Lagunitas Cr.	Lagunitas Cr.											

Drainage	Stream	Population Estimates			Habitat Typing		Riparian Surveys		Temperature		Other	Landowner
		Group	Method	Yrs.	Method	Yrs.	Method	Yrs.	Method	Yrs.		
	Olema Cr.											
	Nicasio Cr.											
	San Geronimo Cr.											
Bolinas Lagoon	Pine Gulch Cr.											
Coastal	Redwood Cr.											
San Francisco	Alameda Cr.											
tributaries	San Pablo Cr.											
	Walnut Cr.											
	San Anselmo Cr.											
	Corte Madera Cr.											
	Mill Valley Cr.											
Sacramento R.	Sacramento R.								Hobo XT		Sediment Inven.	*SPI*
	Feather R.											
Coastal	San Gregorio Cr.											
Coastal	Pescadero Cr.											
Coastal	Butano Cr.											
Coastal	Gazos Cr.											
Coastal	Waddell Cr.											
Coastal	Scott Cr.											
Scott Cr.	Big Cr.											
Coastal	San Vicente Cr.											
San Lorenzo R.	San Lorenzo R.											
	Hare Cr.											
Coastal	Soquel Cr.											
Coastal	Aptos Cr.											
Coastal	Carmel R.											
Coastal	Big Sur R.											