NOAA Technical Memorandum NMFS

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U.S. DEPARTMENT OF COMMERCE
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RECENT EFFORTS TO MONITOR ANADROMOUS ONCORHYNCHUS SPECIES IN THE CALIFORNIA COASTAL REGION: A COMPILATION OF METADATA

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Erratum: Omission on p. 197 of the original, corrected in this version (11/2005)

Abstract

In the coastal zone of California, recent efforts to monitor salmon and steelhead populations are insufficient for assessing extinction risk, which by law must be done at the scale of entire ESUs (Evolutionarily Significant Units). Recent efforts tend to be conducted at a smaller scale, and are not useful for assessing risk because 1) they are not co-ordinated with one another, and 2) they are designed for other purposes. To assess risk, it is necessary to make and implement a monitoring plan; and to make a plan, it is useful to have an understanding of where these recent efforts are taking place, what data they are collecting, and why. Therefore, we collected this information. We identified recent monitoring efforts, and collected descriptive information (metadata) for 270 monitoring efforts, where a unit "effort" is defined as a data-collection effort conducted on a particular ESU by a particular organization using a consistent study design for each life stage monitored. As expected, recent monitoring efforts are quite diverse in design and intent. Notably, geographic consistency is quite low—some basins get monitored intensively, whereas for many others data gets collected sporadically (opportunistically) or not at all. Randomized-sampling—necessary for statistical inference—was popular at the reach scale (*i.e.*, habitat units within reaches), but not at the basin scale (*i.e.*, reaches within basins). Study designs tended to fall into two categories—"snapshots" in which a large number of basins are concurrently monitored for 1 or 2 years (usually with low-density, non-random sampling within basins); and "time-series" in which a basin is chosen for logistical reasons or to address a specific management concern, and then monitored over the long term. Overall, the diversity of sampling designs and field methods is likely problematic for ESU-scale risk assessment. We provide a list of the 270 efforts, and maps of where they are being conducted, as a resource for stakeholders interested in recent efforts to monitor salmon and steelhead in the coastal zone.

Part 1: Collection of Metadata

Introduction

The coastal region of California is inhabited by three anadromous species of *Oncorhynchus*, and in most parts of the coastal region one or more of these species is currently listed as threatened or endangered under the Federal Endangered Species Act or California Endangered Species Act. The listing of a species under either Act engages an extensive regulatory process aimed at preventing the further decline of the species, and, it is hoped, the eventual recovery of the species to non-threatened status. A key part of the process is the collection of data describing the ongoing trajectory of the species toward either extinction or recovery. Such data-collection activities are clearly not "boots on the ground" salmon conservation, but neither are they properly described as research and development. They are monitoring efforts, aimed at tracking the responses of the three species to the vast array of threats and recovery actions to which they are exposed. By providing feedback on how each species is responding to the sum total of human activities impacting it, monitoring efforts provide an information feedback loop by which to judge progress towards recovery.

Both legally and ecologically, progress toward recovery vs. extinction is assessed at the scale of an entire Evolutionarily Significant Unit, or ESU. At present there is no co-ordinated effort to monitor entire ESUs in the coastal zone, in part because the geographic ranges of ESUs span multiple jurisdictions and ecological regions. Existing monitoring efforts tend to be conducted by a diverse set of entities operating at smaller geographic scales; these entities include county, state, and federal agencies; watershed groups; environmental consultants; timber companies; academic researchers; and so on. Their monitoring efforts appear to have arisen piecemeal in response to specific needs for information, and tend to be uniquely tailored to specific goals and circumstances. Not surprisingly, the resulting datasets, though suitable for their intended purposes, are not suitable for assessing the risk status of entire ESUs. In a recent assessment of extinction risk in salmonid ESUs (West Coast BRT 2003), Federal scientists considered sparse data on fish abundance to be one of the most widespread risk factors. Sparse data affected more ESUs than any other risk except habitat degradation (Figure 1). In essence, uncertainty about risk was itself considered one of the primary risks to the fish.

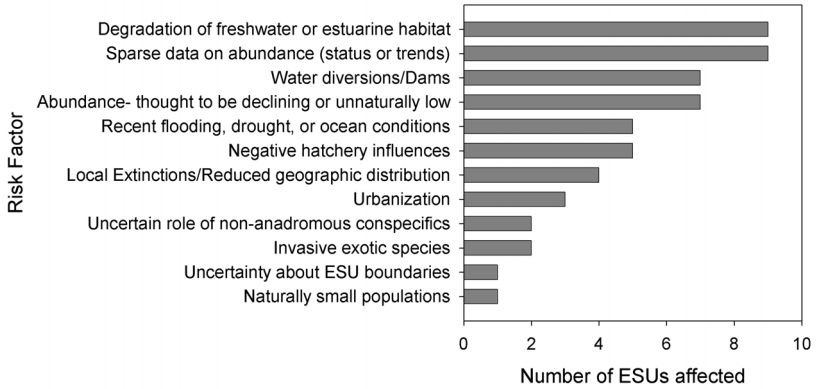


Figure 1. Prevalence of risk factors across Evolutionarily Significant Units (ESUs) inhabiting the coastal region of California, as noted by Federal biological review teams. Compiled from qualitative descriptions of risk in the text of West Coast BRT (2003).

This report describes a comprehensive summary of the existing efforts to monitor *Oncorhynchus* species in the coastal region of California. Our intent is that citzens with a stake in salmon recovery can better understand what sorts of data are, and are not, being collected for each ESU. The information we describe is metadata, or "data about data," and does not describe the salmon and steelhead themselves, but rather the efforts to monitor them. What is the geographic or temporal scope of each of these individual efforts? What are their goals? What types of data are they producing, and with what regularity? And finally, what is lacking that limits their application to risk assessment at the scale of entire ESUs? While we do not attempt to answer this last question in this report, our intent is to provide information that will help others to do so.

For the purposes of this report, the coastal region is defined as the watersheds draining directly into the ocean or into San Francisco Bay below the Carquinez Straits (Figure 2). We endeavored to systematically identify and characterize all extant monitoring efforts in the coastal region of California as of 1 January 2004, where "monitoring" is understood to mean collection of data on the fish populations themselves rather than some aspect of their environment. The primary method for gathering the information was to methodically identify persons and organizations conducting monitoring efforts anywhere in the coastal region, and then contact each with a request to complete a standard questionnaire. Follow-up phone-calls were conducted and usually became informational interviews of the correspondent. Beyond simple classification schemes for organizing the metadata, it was beyond the scope of this project to independently evaluate our correspondents' accounts of their efforts. The metadata should thus be regarded as representing a diversity of viewpoints and interpretations of the questionnaire.

Figure 2. The coastal region

Methods

Strategy for identifying existing monitoring efforts

A pilot effort was conducted by T. Williams and B. Spence of the NOAA Fisheries Santa Cruz Lab in 2001. This effort involved mailing one-page questionnaires to professional contacts of the fisheries staff at the Santa Cruz Lab. The authors of the present study began a more concerted effort to gather monitoring metadata in July 2003.

Given the nature and scope of the project, it was not possible to conduct a complete census of data-gathering activities currently underway in the coastal region; nor was there even a clear way to determine when the set of metadata should be judged reasonably complete. We adopted the following strategy to identify as many monitoring efforts as practical. First, we attempted to contact everyone who had submitted a response to the 2001 pilot study. Second, we met with the chairs of the three Federal Technical Recovery Teams (TRTs) that are currently active in the coastal region of California: the Southern Oregon/Northern California Coast TRT (chair: T.

Williams); the North-Central California Coast TRT (chair: E. Bjorkstedt); and the South-Central California Coast TRT (chair: D. Boughton). These TRTs are teams of scientists convened for the purpose of developing viability criteria for ESUs listed as Federally threatened or endangered, and were assumed to be familiar with most of the datasets currently being produced in their domain. The chairs provided us with extensive information on groups they knew to be collecting data on salmon or steelhead, as well as names of professional contacts in a position to know of additional monitoring efforts in specific geographic areas. This latter group included individuals in NOAA Fisheries' SW Regional Office who manage databases of monitoring permit-holders; authors of studies cited in various status reviews published by NOAA Fisheries; researchers from NOAA Fisheries, the California Department of Fish and Game (CDFG), the US Forest Service, various academic institutions (*e.g.*, Humboldt State University, UC Davis, San Jose State University, *etc*.), private timber companies, and volunteer organizations potentially involved in salmonid population monitoring, such as watershed groups.

A third tactic for acquiring metadata was to identify categories of sources that seemed under-represented in our database, such as non-profit organizations, volunteer groups, water districts, other municipal entities, and private consultants. By searching under these categories on the internet and initiating contact via phone or email, we identified additional monitoring efforts. We also entered metadata from written reports brought to our attention if they identified relevent monitoring activities. Finally, in the course of gathering the metadata itself from our list of contacts, we queried each correspondent on his awareness of other salmonid monitoring efforts going on in his vicinity; this led us to still more contacts and was a source of much useful information. We believe that this "networking approach" to gathering metadata was the most efficient way to build a relatively complete database of existing programs within a reasonable time.

Although we believe that this process made us aware of all the major monitoring efforts in the coastal region (and many of the smaller ones), there are some unknown number of efforts that we missed. There is no objective way to estimate this number. As success in tracking down leads and identifying new useful information slowed down to a trickle, we were eventually forced to set an arbitrary cut-off day (22 December 2003) to end the metadata collection itself, so that we could proceed with the project. The probability of a given monitoring effort being omitted from our database is likely influenced by the following factors: lack of co-ordination within governmental agencies; difficulty in identifying programs not legally mandated to monitor but which do so anyway (particularly volunteer organizations); and lack of external documentation of monitoring activities by private entities.

Characterization of monitoring efforts

We developed a standard questionnaire and datasheet for collecting metadata from each correspondent. Correspondents were either sent the materials to complete and return to us; or we contacted them via phone and filled out the datasheet while conducting an informational interview.

A separate datasheet was completed for each "unit monitoring effort," where a unit effort is defined as a data collection effort conducted on a particular ESU by a particular entity using a consistent study design for each life stage monitored. Note that under this definition a single

effort can involve multiple life stages or only a single life stage, and can be conducted at any geographic scale. Many correspondents had numbers of loosely-connected data-gathering activities that might be validly classified into "unit efforts" in a number of different ways; thus our definition is subjective. We allowed correspondents to divide up their activities into unit efforts in the way that they saw fit. However, when correspondents included information for several species or ESUs on a single datasheet; we divided these responses into a separate response for each species/ESU.

The information solicited on the questionnaire was as follows:

Species and ESU: The name of the species and ESU monitored.

Target: Binary response on whether the effort was specifically designed to collect data on the species (= "target"), or the data were collected incidentally to data collection on another species (= "incidental") (for example, counts of juvenile steelhead gathered during a coho salmon study).

Geographic location: A written description of the geographic location(s) of monitoring activities. Ideally, the description was specific to exact location, given by Lat/Long coordinates or kilometers upstream of the river mouth.

Method of site selection: The correspondents were asked to classify their method of site selection as one of the following: 1) randomly sampled; 2) dictated by logistics or the circumstances of the study; 3) qualitative selection, in which the site selection was not random but was under the control of the investigator; 4) other.

Life stages monitored: Correspondents could indicate any combination of the following categories: juvenile, smolt, or adult. "Smolt" was used to refer to downstream migrants as well as to fish that had fully transformed into smolts.

Field methods used: For each life stage monitored, correspondents were queried as to the field methods used to gather data. They could indicate any combination of the following categories (see Table 2 for further description of field techniques):

1) Downstream traps: rotary screw traps, pipe traps, inclined pipes, fyke nets, weirs (category for juveniles and smolts only).
2) Direct observation: bankside observations or snorkel surveys.
3) Electrofishing.
4) Minnow traps.
5) Ladders or weirs (adults only).
6) Spawner counts (adults only).
7) Redd counts (adults only).
8) Carcass counts (adults only).
9) Seining.
10) Other.

Data type: For each life stage/field method combination, correspondents were queried as to the type of data being collected. They could indicate any combination of the following categories (see Table 1 for further description): Presence/absence data; population indices; population abundance; demographic or life-history; population genetic structure.

Formal field protocol used: Whether a formal protocol was used during data collection, and if so, what type. Categories were as follows:

1) Yes, in-house: a protocol was developed by the individual or program for their specific project.
2) Yes, external: a protocol was developed by someone else, usually widely used.
3) Yes, modified external: an external protocol was used, but was modified for the particular study according to specific needs.
4) No: no formal protocol was used.

Method for assessing uncertainty: For each life stage monitored, correspondents were asked to classify the method for characterizing uncertainty in estimates made from the data; categories were as follows:

1) Qualitative: estimates are accompanied by a descriptive, non-numerical assessment of their uncertainty, or a subjective numerical assessment.
2) Basic quantitative: estimates include a numerical estimate of uncertainty, but the method is not based on probabilistic sampling.
3) Statistical: estimates of uncertainty are based on probabilistic sampling (*i.e.*, standard errors, 95% confidence intervals, *etc*.)
4) None: no effort was made to assess uncertainty.

Impact study: Three checkboxes indicating whether the monitoring effort was in response to a 1) positive impact (*e.g.*, restoration of habitat or fish passage); 2) a negative impact (*e.g.*, logging or dam construction); and 3) whether control populations were also monitored.

Years data were collected: Length in years of study, subsequently categorized by us as 0–5 yrs, 6–10 yrs, 11–20 yrs, 20+ yrs, or unknown.

Field season: Months of the year during which data were collected.

Sampling interval: Frequency of sampling during the field season: 1) daily; 2) weekly; 3) monthly; 4) yearly; 5) one-time; and 6) other.

Funding source: Correspondents chose one of the following categories: 1) Fisheries Restoration Grant Program (FRGP); 2) Sportfish Restoration Act (CDFG SFRA); 3) NOAA Fisheries; 4) agency base funding; 5) private grant; 6) commercial; 7) unfunded.

Data summaries: The frequency with which data are summarized or analyzed; categories were 1) monthly; 2) seasonally; 3) yearly; 4) once; 5) none.

Intended duration of study: Years into the future (from 2003) that the correspondent intends to continue the data collection effort, assuming funding is not limiting. Categories were 1) 0–5 yrs; 2) 6–10 yrs; 3) 11–20 yrs; 4) ongoing (no intent to stop collecting data); 5) indefinite (intended duration of the effort has not yet been determined by the principals); 6) unknown (unreported intent); and 7) ended (as of 31 Dec. 2003).

Duration of committed support: Years into the future that the monitoring is currently funded. Categories were 1) 2–5 yrs; 2) 6–10 yrs; 3) 11–20 yrs; 4) 20+years/ongoing; 5) year-to year; 6) indefinite (unknown by correspondent); 7) unknown (unreported); 8) ended; 9) currently unfunded.

Circumstances under which monitoring would stop: Partially redundant to the previous two questions, but asked in order to gauge whether data were being collected in response to either a particular research question, monitoring goal, or restoration goal and would stop when the goal was reached. Also asked in terms of priority of project within a program's budget (*e.g.*, whether it would be cut in response to programmatic necessity). Correspondents answered with a short description, and answers were subsequently evaluated by us under the general categories of restoration criteria, monitoring criteria, research question, budget concerns, or no stopping criteria.

Correspondents were also asked to provide brief descriptions of the technical and programmatic goals of the monitoring effort; brief characterizations of preliminary results (if any); citations of any reports or scientific papers; and additional comments if necessary.

Table 1. Descriptions of the data categories considered in this study.

Data types	
Presence/absence:	A presence/absence survey is a simple determination of whether or not a target species is observed in a particular stream or watershed. If the species is observed the result of the survey will indicate presence; otherwise it will indicate absence of observation although not necessarily of occurrence.
Population index:	A rough count of population size between a high and low value; an ordinal variable with a monotonic but otherwise unknown relationship with population size.
Population abundance:	An estimate of the size or density of a population.
Demographic and life history:	Information on the distribution, run timing, life span, and related factors of a population.
Population genetic structure:	Information about the genetic make-up of a population, usually obtained by analyzing tissue samples.

Table 2. Descriptions of selected field techniques considered in this study.

Field techniques	
Rotary screw trap:	A trap with a rotating drum, placed in a stream and built to move up and down with varying river flows. Samples only a fraction of the water column.
Pipe trap:	Consists of a pipe through which fish are transported into a holding trap. Typically used with a fyke net to direct fish into the pipe, or constructed on a weir in order to move fish and water into the pipe. An inclined pipe will follow a gradient and can allow water to drain from the pipe while moving fish into a trap.
Fyke net:	A fyke net functions as a funnel to direct fish into a trap. In this case the fyke net will direct fish into a net where they can be sampled.
Minnow trap:	A small wire or mesh trap. Not commonly used in California; more common in Alaska and British Columbia.
Seine:	A net circled around an area in order to trap fish. Depending on the size of the stream this can be done by two or more people directly in the stream, by using a single boat to circle the seine or by using a boat on both ends.
Direct observation:	Refers to either snorkel surveys or stream bank observations along a pre-determined length of stream. For snorkel surveys divers typically count and record fish of the species being sampled as they slowly ascend the stream. Stream bank observations are done by walking a length of stream and recording all observed fish of the species being sampled. Adult direct observation surveys (in coastal California) generally target spring-run chinook in the Klamath Basin or summer steelhead in the Klamath or Eel Basins. Other adult 'direct observation' surveys are spawner, redd and carcass counts (see below).
Electrofishing:	The use of electrical current to stun and collect fish (usually juveniles). Typically, one person (occasionally two) directs electrical current into the stream using a back-pack electrofisher. Netters positioned behind the electrofishers collect stunned fish and place them into buckets or live cars. Electrofishing to derive quantitative estimates of abundance in a reach requires bounding the sample area with nets (to avoid emigration of fish from the disturbed area) and mulitple passes of the electrofisher to obtain either depletion or mark-recapture estimates. Electrofishing of adults is rare because of high risk of mortality.
Spawner, redd, and/or carcass counts:	Spawner counts are observations of spawning fish; redd counts are systematic observations of redds (egg clutches deposited in stream gravel); carcass counts are counts of dead, spawned-out adults. A survey can include one or more of these methods. They are used to develop either an estimate of abundance or a population index. The combination of methods will usually depend on their effectiveness in a given river or creek. Different techniques are used within as well as across methods depending on whether the goal is a population index or a statistical estimate of abundance.

Georeferencing

The descriptive geographic information provided by correspondents was used to geo-reference their data-collecting activities in a GIS (Geographic Information System). Specifically, we obtained a route-based coverage of California streams from T. Christy of the Pacific Marine Fisheries Commission ("Bigroutes"); this coverage was based on 100k hydrography, modified to approximate the natural flow pattern in each basin. We then used ESRI (Environmental Systems Research Institute) ArcMap software to superimpose this routed stream network on digitized versions of USGS 7.5' topographic maps (National Geographic Society). Locations of monitoring activities were pinpointed on the topographic maps using the descriptive information, and then georeferenced on the stream network using route-based linear referencing. In route-based linear referencing, the geographic location of an activity is specified in terms of three variables: 1) a unique stream identifier; 2) a variable indicating the downstream end of the study reach (in meters from the mouth of the stream); and 3) a variable indicating the upstream end of the study reach (also in meters from the mouth of the stream). Certain data, such as the location of downstream traps, could be characterized as point locations rather than as stream reaches.

The various correspondents provided descriptive geographic information of varying levels of detail and precision. To account for this variation, during the process of georeferencing we assigned a geoprecision score to each monitoring effort. The seven scores were defined thus:

1) Located within 400 m of the true location ("very precise").
2) Located within 1600 m of the true location ("precise").
3) Located to within 3000 m of the true location or within the same first-order stream as the true location ("accurate").
4) Accurate to named stream.
5) Accurate to subwatershed.
6) Accurate to watershed.
7) Not determined.

Summary Results

Of 57 correspondents to the 2001 pilot study, 18 provided us with updated information. In addition we identified 57 new correspondents, for a total of 75. These 75 correspondents (see Part 4) provided us with metadata on 270 monitoring efforts throughout the coastal region of California. Immediately below we describe the aggregated properties of these monitoring efforts, and investigate their suitability for assessing salmonid status at the population (basin) or ESU level. More detailed summaries at the ESU level are provided in Part 2 of this report, and a listing of all monitoring efforts is provided in Part 3.

Geoprecision

Three-fourths of our correspondents provided geographic information that was accurate enough to map to individual streams in our stream layer (Figure 3), but less than a quarter of the efforts could be georeferenced at a precision within 1600 m of the true location. Thus, it was not possible for us to make a reasonable estimate of monitoring effort in terms of "stream kilometers surveyed," *etc*. All subsequent discussion of relative amounts of effort devoted to this or that

activity are in terms of our original definition of a "unit monitoring effort:" a data collection effort conducted on a particular ESU by a particular entity using a consistent study design. It is important to note that under this convention, a unit effort may denote a large-scale project, an extremely local-scale project, or anything in between.

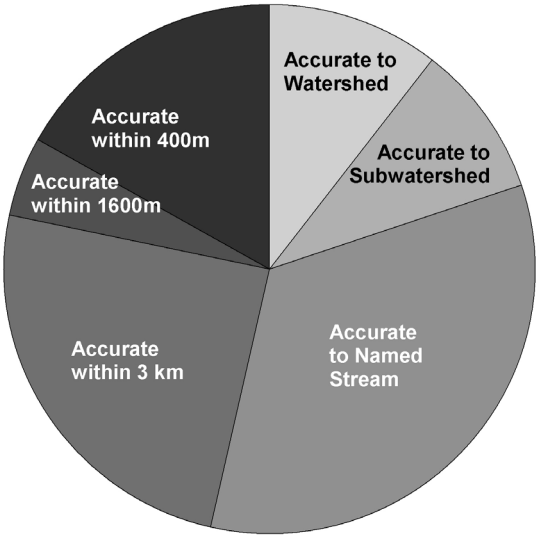


Figure 3. Precision achieved in georeferencing the various monitoring metadata collected. Approximately half of the records could be referenced at a precision greater than that of "named stream." Most of the highly precise georeferences were for point locations, particularly weirs and up/downstream traps.

In general, correspondents tended to report the locations of surveys conducted at single points with greater accuracy than stream reach surveys. The proportion of reach versus single location surveys was quite high in southern California, where particular individuals are sometimes responsible for conducting general descriptive surveys of extremely large geographic areas. In addition, various types of data and sampling methods seemed to correlate with varying levels of geoprecision; for example, stream bank walking to assess presence/absence tended to be imprecise and was more common in poorly studied areas such as southern California.

Life stages, field methods and data types

The metadata we collected indicated that more than 90% of data-collection was on "target" species. Most monitoring efforts focused on collecting data during a particular stage of the life cycle, but a significant minority of projects were more comprehensive, collecting data on multiple life stages (Figure 4). For Chinook salmon, projects were about equally split among those that focused on adult data, those that focused on juvenile data (including outmigrants), and those that collected both types of data. In contrast, for coho salmon and especially steelhead, there was a marked emphasis on the collection of juvenile data, presumably because of the flexibility and practicality offered by methods involving direct observation or electrofishing.

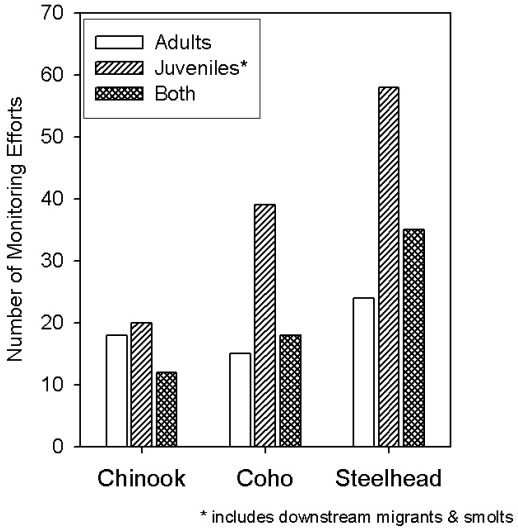


Figure 4. Distribution of monitoring effort among juvenile and adult populations in the freshwater stage of the life-cycle. Depicts only targetted observations.

In Figure 5, we have depicted for each species the frequency of the most popular field techniques. For Chinook salmon there was a slight emphasis on upstream and downstream traps, whereas for coho salmon and steelhead there was a definite emphasis on the use of direct observation or electrofishing. This result largely corresponds to our expectations, which were that the predominant approach to estimating salmonid abundance in coastal California would be reach-level surveys of juvenile abundance, conducted using bankside observations or combinations of snorkel surveys and electrofishing (*e.g.*, Hankin-Reeves sampling). We also expected that these techniques would be most emphasized in steelhead studies. Informal bankside observations were common in southern California where steelhead are the only *Oncorhynchus* present.

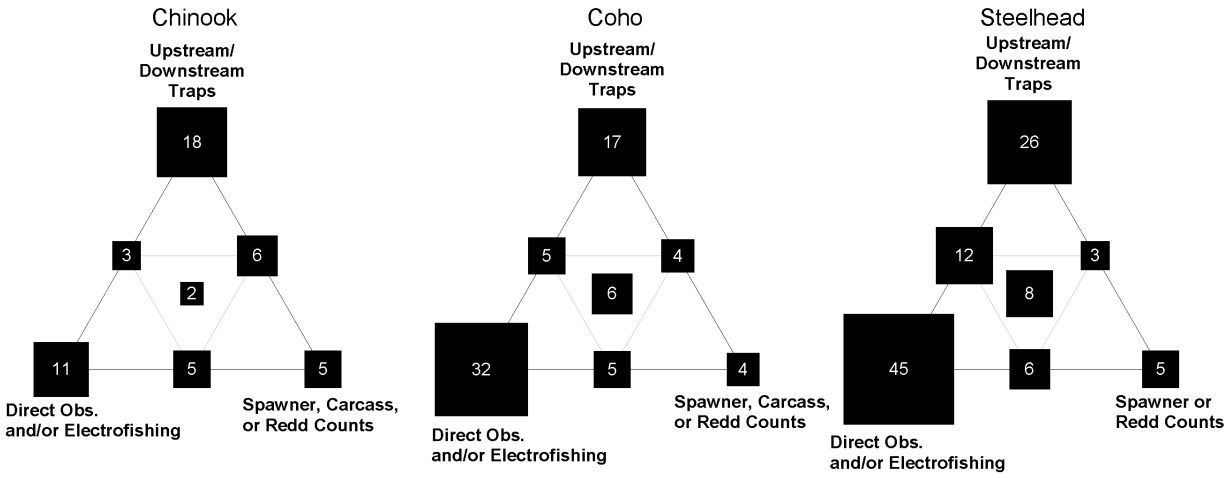


Figure 5. Distribution of monitoring effort among different field techniques. Numbers and sizes of squares indicate the number of unit efforts for each combination of field techniques. Vertices of the triangles refer to studies in which a single technique is used; internal nodes refer to studies where a combination of field techniques are used. Seining, minnow traps, and the category "other" are not depicted in this figure. Depicts both targetted and incidental observations.

Less expected were the number of programs employing some combination of techniques (as depicted in the internal boxes in Figure 5); generally, such projects were simultaneously monitoring several life stages, but were not necessarily collecting the same type of data for each. For example, population indices might be collected for juveniles at the reach level, whereas ladder counts of adults might yield abundance data for entire basins.

Many correspondents reported that they collected multiple data types; for example, we had 15 reports of correspondents collecting all three of the following data types: presence/absence , population index, and population abundance. Overall, presence/absence data were the most commonly collected data-type (the figures below exclude "incidental" data):

Data type	Number of reported "unit efforts"
Presence/absence data	148 (62%)
Population abundance	122 (51%)
Demographic and life-history studies	121 (51%)
Population indices	98 (41%)
Genetic studies	81 (34%)

It seems reasonable to assume that abundance data are the type most appropriate for assessing long-term trends in population size. The numbers of unit efforts producing data on adult abundance were:

17 out of 49 total efforts for Chinook salmon (35%),
16 out of 70 for coho salmon (23%),
22 out of 118 for steelhead (19%).

Correspondents were asked to state the geographic extent for which they intended to make inferences about adult abundance. Their answers indicated that about 30%-40% of the efforts to monitor adult abundance were intended to collect data for an entire coastal basin, corresponding roughly to scale necessary to monitor an entire population. The others appear to monitor sub-units of populations, such as the number of adults spawning in a particular tributary. The numbers of unit efforts estimating juvenile or outmigrant abundance were

17 out of 49 for Chinook salmon (35%),
26 out of 70 for coho salmon (37%),
44 out of 118 for steelhead (37%).

Of the efforts targetting Chinook salmon, uncertainty was estimated statistically in 7 efforts focused on downstream migrants (41%), and 6 efforts focused on non-migratory juveniles (35%). For coho salmon the corresponding figures were 8 (31%) and 13 (50%) efforts respectively. For juvenile coho salmon the statistical inferences were mainly limited to the reach that was actually being sampled for fish. Only three efforts (11%) reported randomized site selection, which would be necessary for estimating statistical uncertainty at the population level rather than the stream-reach level. The situation for steelhead was similar. Uncertainty was estimated statistically for 14 efforts (32%) targetting smolts, and 20 efforts (45%) targetting juveniles, but only 3 of the latter involved randomized site selection (7%). More detailed information on the breakdown of the type of data collected for each ESU may be found in Part 2.

A variety of field techniques were used for acquiring data on adults (Table 3). In general the methods used to describe uncertainty were not based on statistical inference; various qualitative methods were more popular. They did not appear to be a result of operational constraints of a particular field technique: Each technique (except seining) had some examples in which statistical methods were used to quantify uncertainty (except electrofishing; see Table 3).

Table 3. Methods used for describing uncertainty in adult data under various field techniques. Integers are the numbers of unit efforts combining the given field technique and uncertainty method. Numbers include both targetted and incidental monitoring efforts.

	Field technique							
Method for describing uncertainty	Weirs/traps	Spawner counts	Redd counts	Carcass counts	Direct observation	Electrofishing	Seining	Other
Basic quantitative	9	1			3	1	1	
None	2	2	3	1	2			
Qualitative	7	24	28	22	16	4		
Statistical	12	12	15	17	8			2
Unknown	21	13	5	1	9	1		20

Site selection itself was rarely randomized (Figure 6); most studies had site selection dictated by the circumstances or logistics of the study. This might be appropriate for whole-population monitoring in cases where the life stage being monitored is either the upstream or downstream migrants—one would want to place the counting stations strategically so that all spawning areas are upstream from it. However, in many of these cases the circumstances were not dictated by biological considerations but by pre-existing infrastructure. For example, in the Carmel River a pre-existing dam is used to make counts of adult steelhead ascending the fishway, even though the dam is positioned such that some fraction of the population spawns below it and does not get counted. For reach-based monitoring strategies, such as juvenile electrofishing, spawner surveys, or redd surveys, some sort of randomized sampling of reaches would be necessary for producing whole-population estimates of abundance. Many correspondents were aware of this limitation,

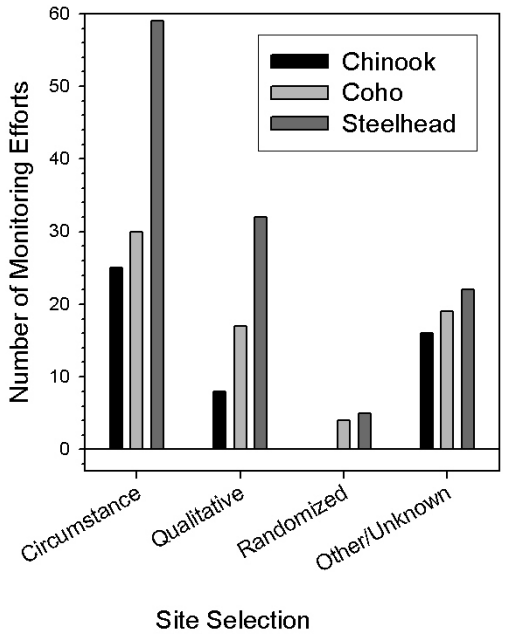


Figure 6. Frequency of different methods for site selection, as reported by correspondents. Numbers are for targetted efforts only.

indicating for example that a statistically rigorous estimate of juvenile abundance at the reach level did not necessarily allow valid inferences beyond that reach.

Duration of data-collecting activities

Most of the correspondents reporting metadata on steelhead indicated a fairly recent initiation of their monitoring effort, *i.e.*, 0 to 5 years ago (Figure 7). A similar pattern was also present for coho salmon, but was less striking. Chinook salmon had monitoring efforts that were about equally divided among recently-initiated and longer term. Overall, each species had about 9 to 12 monitoring efforts that have been collecting data for 20+ years. These were not evenly distributed across ESUs.

For the future, most of the correspondents indicated an intended duration of either very short term (0 to 5 yr) or very long term (ongoing without plans to stop; Figure 7). This suggests that monitoring efforts tend to be divided between "snapshot" style studies intended to answer a specific question relatively quickly, and studies collecting time-series data over the long term. Many of the long-term studies were reported to be "ramping up," that is, adding sites over the years and collecting data with greater consistency with each passing year. A substantial fraction of the correspondents indicated "indefinite" future intent; in other words, the principals of the monitoring effort had yet to decide on a time horizon.

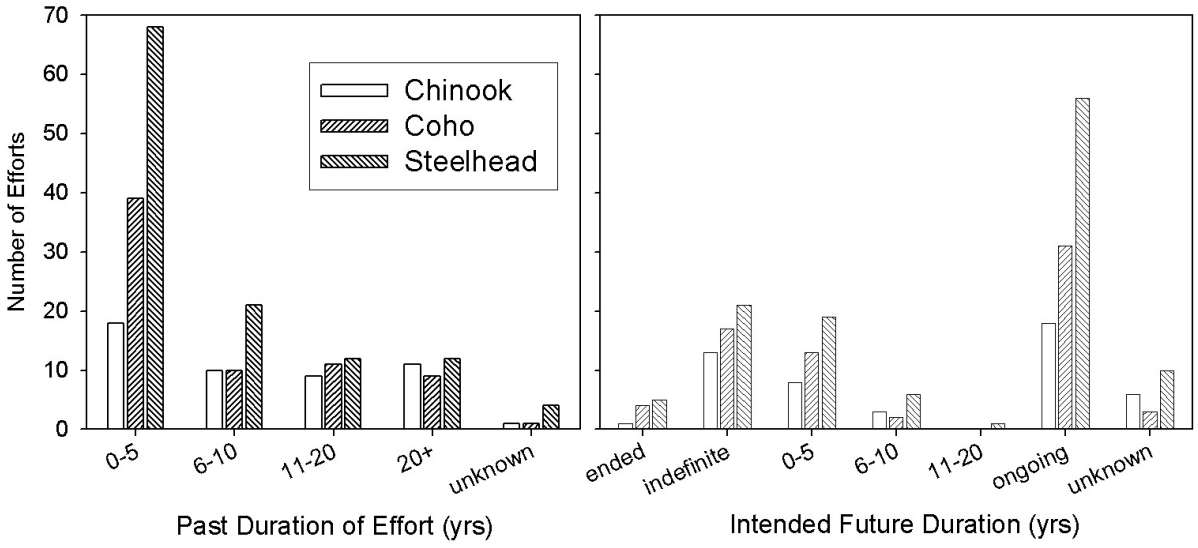


Figure 7. Past duration and intended future duration of monitoring efforts as of the year 2003. For the intended future duration, "ongoing" means that an intention to monitor as long as possible, whereas "indefinite" means that no decision has been made on a time horizon of the effort. "Ended" indicates the effort had terminated within the past two years.

Considerations regarding status reviews under the ESA

One of the striking features of the metadata is the concentration of monitoring in a relative handful of watersheds across the region (evident in the maps in Part 2). It appears that the majority of streams in the region with the potential to support salmonid runs are not monitored. Most watersheds are either not surveyed at all or are occasionally surveyed by single-event sampling. This indicates that population-level assessments of risk—which require at least a modicum of information on trends over time—are currently possible for only a small minority of populations. Consequently, ESU-level assessments of risk are also problematic. ESU-level assessments must necessarily be made "on the basis of the best scientific and commercial data available,"[1] which in this case would be the high-quality data from the small minority of heavily-monitored populations, combined with an assumption that they are representative of the entire ESU. This assumption seems questionable, since intensively-monitored populations are going to tend to occur in intensively-managed basins. In essence, these populations serve as "index populations" for the entire ESU, reminiscent of the well-known problem of using "index reaches" to infer status of populations.

Many of the contributors to our study indicated that they monitor *Oncorhynchus* in conjunction with assessments of habitat quality. For example, the California Coastal Conservancy (CCC) monitors the Gualala River and its estuary along the border of Sonoma and Mendocino counties. They conduct population monitoring with the purpose of assessing habitat quality and determining appropriate enhancement actions (Michael Bowen, CCC). The Santa Cruz Lab of NOAA Fisheries monitors estuaries and downstream pools of several streams between Monterey and Marin counties, to determine the role of small estuarine habitat in the lifecycle of coho salmon and steelhead (Ellen Freund, NOAA Fisheries). The City of San Luis Obispo monitors steelhead populations in San Luis Obispo Creek and its tributaries. One of their monitoring goals is to determine how steelhead populations are responding to restoration efforts in the watershed. (Michael Clarke, City of San Luis Obispo). These sorts of studies are often undertaken to increase our understanding of how best to recover the fish, and their production of data useful for assessing response at the level of entire populations is incidental to the primary goal. As such they illustrate the idea that data tends to be produced most often in intensively-managed basins. Even so, many are conducted at geographic scales too small, or time scales too short or irregular, to produce useful data for risk assessments at the population- or ESU-level.

The metadata indicate that in many reach-based efforts (juvenile surveys, redd surveys, etc.), stratified-random sampling is popular at the reach scale but is rare at the basin scale (*i.e.*, reaches are rarely randomly sampled from basins). This prevents much of the monitoring effort on reaches from being useful for making inferences about population size, because populations are spread across many reaches throughout entire basins or sub-basins. Consequently, inferences are usually limited to local fish density for each of the particular (non-random) set of reaches being monitored. However, there is apparently a small but growing minority who are instituting stratified-random designs at the basin scale.

[1] Endangered Species Act of 1973, Sec 4(b)(1)(A). The California Endangered Species Act similarly states that reviews of listed species should be based on "the best scientific information available to the department" (Fish and Game Code §§2077 (a)).

At present, the intensive monitoring efforts alluded to in the beginning of this section occur mainly in the following streams listed north-to-south: The Upper Klamath River watershed (Siskiyou Co.), the Lower Klamath and Trinity River watersheds (Del Norte Co.), Humboldt Bay and the lower Eel, Van Duzen and Mad rivers (Humboldt Co.), Freshwater and Redwood creeks (Humboldt Co.), the South Fork and Upper Trinity River basins (Trinity Co.), the Upper Noyo River, the Russian River (Sonoma and Mendocino Co.), a few coastal streams in southern Mendocino and northern Sonoma counties such as Pudding and Hare Creeks, the Napa River (Sonoma Co.), Lagunitas Creek (Marin Co.), Scott Creek and the San Lorenzo River (Santa Cruz Co.), the Carmel River, San Luis Obispo Creek (San Luis Obispo Co.), Arroyo Hondo (Santa Barbara County) and San Mateo Creek (San Diego Co.). The concentration of monitoring can be seen most clearly in the maps in Part 2. Note that the maps of southern California seem to show extensive monitoring, but that the low level of geographic precision and the focus on "opportunistic" sampling belies this somewhat misleading impression. While the intensity of monitoring is generally higher in northern California, it is nevertheless focused on a minority of watersheds.

Reference Cited

West Coast Salmon BRT. 2003. Preliminary conclusions regarding the updated status of listed ESUs of West Coast salmon and steelhead. NOAA Fisheries Co-manager Draft Report. Available from: http://www.nwfsc.noaa.gov/trt/brt/brtrpt.cfm

Part 2: Brief Summaries of Monitoring in Each ESU

Overview

Part 2 summarizes data on the monitoring efforts in each ESU, depicted in terms of "unit efforts." A unit effort is defined as a data collection effort conducted on a particular ESU by a particular entity using a consistent study design for each life stage monitored. We do not include incidental efforts in the summary. These are monitoring efforts in which the data for a species was collected incidentally to a program targetting one of the other two species of *Oncorhynchus*.

The summary tables include the total number of monitoring efforts being conducted on the ESU; their distribution among juvenile, smolt (outmigrant), and adult data-collection efforts; the field techniques used; and the types of data being collected. Note that the columns do not sum to equal the righthand-side "overall" column, because a given "unit effort" might involve data collection on any number of life stages using any number of techniques.

The variety of methods used to characterize uncertainty and to make site selections are also depicted (as counts of unit efforts for each category of each variable), as are the past duration of data collection and the intended future duration. For more complete descriptions of these categories, please see the methods section of Part 1.

The maps depict the geographic distribution of the monitoring efforts to give a rough idea of the amount of area covered and the evenness of coverage. These maps were generated from written locality descriptions reported to us by correspondents, and are necessarily imprecise. Note that for each entry the legend lists the geoprecision (assigned by us during the georeferencing process), as an aid to interpreting the maps.

All monitoring efforts are keyed via their ID numbers, which provide the means to cross-reference with their individual descriptions in Part 3. If you wish to look up an entry in Part 3, please note that the entries in that section are sorted first by ESU and then alphabetically by the name of the corresponding organization, and that ID numbers are clearly marked in the header of each entry.

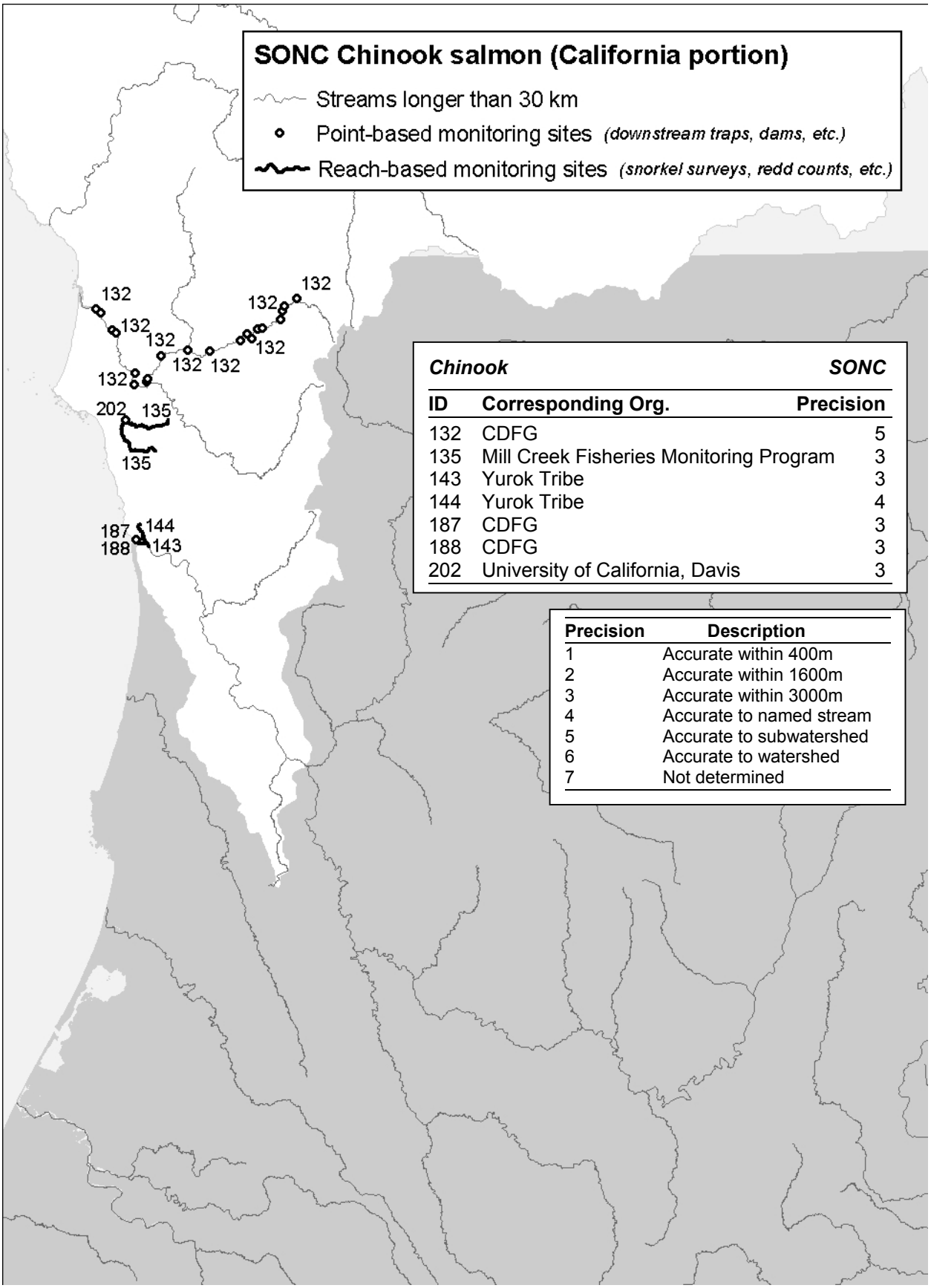
Monitoring efforts for Chinook salmon, Southern Oregon/Northern California ESU

Integers indicate the number of efforts for each category

	Juvenile	Out-migrant	Adult	Overall*
Total number of monitoring efforts	4	4	3	7
Percent targetting Chinook salmon	100%	100%	100%	100%
Field techniques used				
Weirs or downstream traps	2	2	1	29%
Spawner counts			2	29%
Redd counts			2	29%
Carcass counts			2	29%
Direct obs. (snorkel, bankside)	1	1		14%
Electrofishing	1	1		29%
Minnow traps	1			14%
Seining	1	3		43%
Other			1	14%
Type of data collected				
Presence/absence	3	2	2	71%
Population index		3	1	57%
Abundance estimates	1	1	1	29%
Demographic or life history studies	1	3	1	43%
Genetic			2	29%
Method for assessing uncertainty				
None				
Qualitative				
Basic quantitative	2	1		
Statistical	1	1	2	
Unknown		2		

Method of site selection		**Past duration**		**Intended future duration**	
Dictated by circumstance	4			Ended:	1
Qualitative	2	0–5 yr:	3	0–5 yr:	2
Randomized		6–10 yr:	3	6–10 yr:	
Unknown		11–20 yr:		11–20 yr:	
Other	1	20+:	1	Ongoing:	4
		Unknown:		Indefinite:	
				Unknown:	

* Percentages refer to the overall number of efforts using the field technique on any lifestage



Chinook		*SONC*
ID	**Corresponding Org.**	**Precision**
132	CDFG	5
135	Mill Creek Fisheries Monitoring Program	3
143	Yurok Tribe	3
144	Yurok Tribe	4
187	CDFG	3
188	CDFG	3
202	University of California, Davis	3

Precision	Description
1	Accurate within 400m
2	Accurate within 1600m
3	Accurate within 3000m
4	Accurate to named stream
5	Accurate to subwatershed
6	Accurate to watershed
7	Not determined

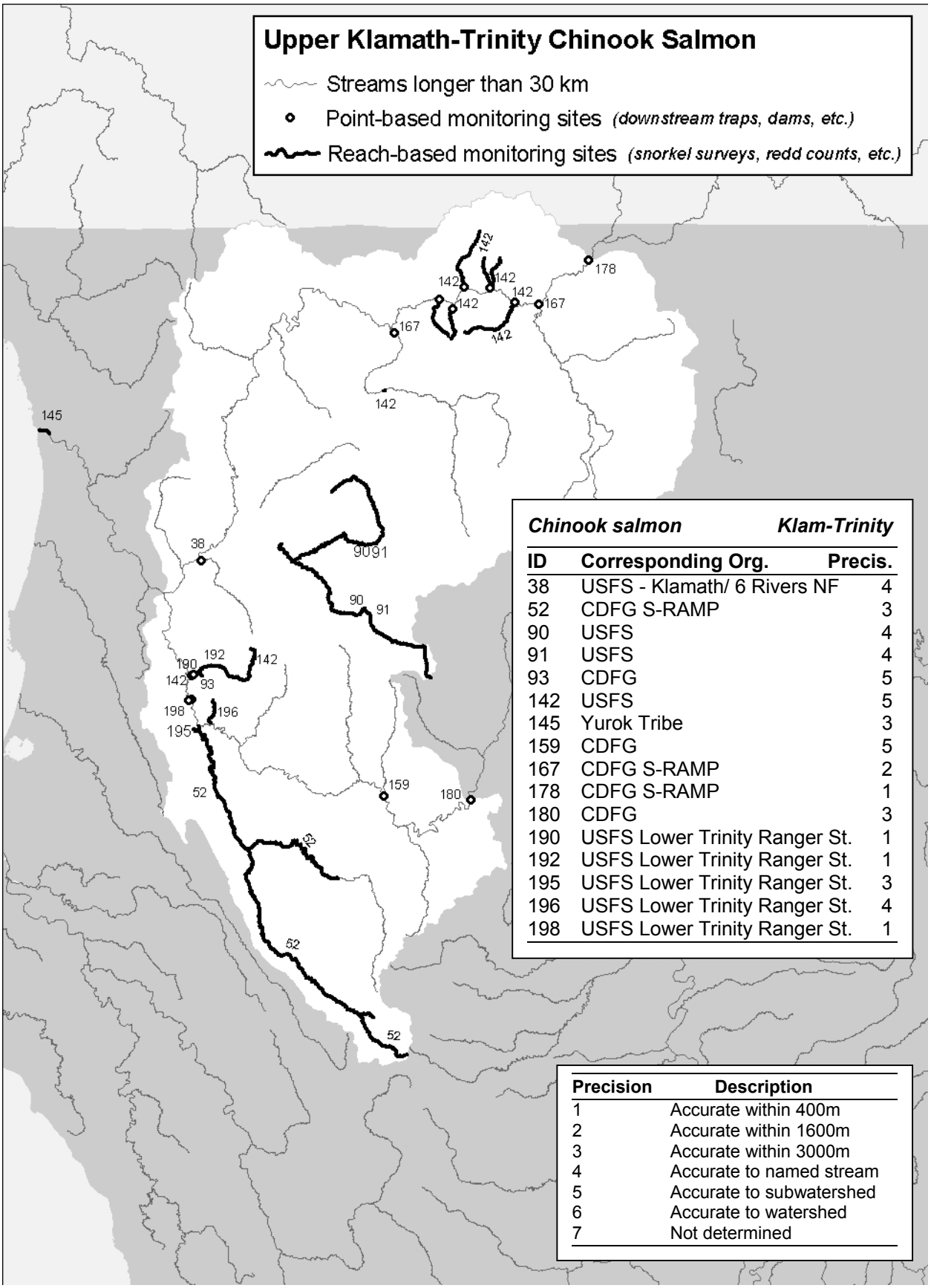
Monitoring efforts for Chinook salmon, Upper Klamath-Trinity ESU

Integers indicate the number of efforts for each category

	Juvenile	Out-migrant	Adult	Overall*
Total number of monitoring efforts	8	10	18	21
Percent targetting Chinook salmon	100%	90%	94%	95%
Field techniques used				
Weirs or downstream traps	3	7	4	52%
Spawner counts			8	38%
Redd counts			10	48%
Carcass counts			9	43%
Direct obs. (snorkel, bankside)	7	2	6	52%
Electrofishing	2	1		14%
Minnow traps				-
Seining				-
Other		2	3	19%
Type of data collected				
Presence/absence	6	6	11	62%
Population index	4	2	9	52%
Abundance estimates	2	6	12	62%
Demographic or life history studies	4	4	5	43%
Genetic	2	3	3	19%
Method for assessing uncertainty				
None	1	1		
Qualitative	1		8	
Basic quantitative	1	3		
Statistical	2	3	5	
Unknown	1	1	2	

Method of site selection		**Past duration**		**Intended future duration**	
Dictated by circumstance	8			Ended:	
Qualitative	5	0–5 yr:	7	0–5 yr:	3
Randomized		6–10 yr:	3	6–10 yr:	
Unknown	5	11–20 yr:	6	11–20 yr:	
Other	3	20+:	4	Ongoing:	7
		Unknown:	1	Indefinite:	8
				Unknown:	3

* Percentages refer to the overall number of efforts using the field technique on any lifestage



Chinook salmon ***Klam-Trinity***

ID	Corresponding Org.	Precis.
38	USFS - Klamath/ 6 Rivers NF	4
52	CDFG S-RAMP	3
90	USFS	4
91	USFS	4
93	CDFG	5
142	USFS	5
145	Yurok Tribe	3
159	CDFG	5
167	CDFG S-RAMP	2
178	CDFG S-RAMP	1
180	CDFG	3
190	USFS Lower Trinity Ranger St.	1
192	USFS Lower Trinity Ranger St.	1
195	USFS Lower Trinity Ranger St.	3
196	USFS Lower Trinity Ranger St.	4
198	USFS Lower Trinity Ranger St.	1

Precision	Description
1	Accurate within 400m
2	Accurate within 1600m
3	Accurate within 3000m
4	Accurate to named stream
5	Accurate to subwatershed
6	Accurate to watershed
7	Not determined

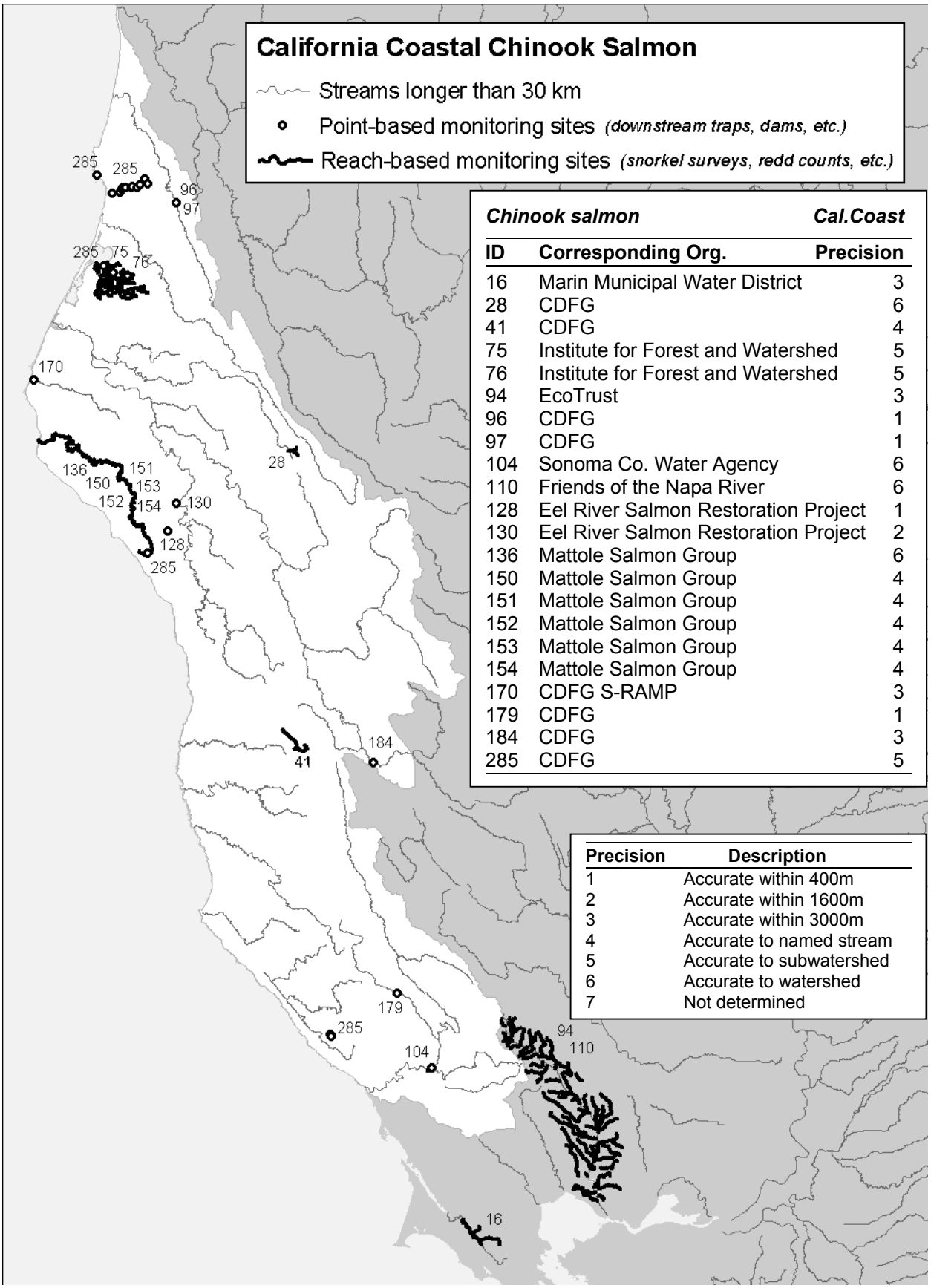
Monitoring efforts for Chinook salmon, California Coastal ESU

Integers indicate the number of efforts for each category

	Juvenile	Out-migrant	Adult	Overall*
Total number of monitoring efforts	5	17	12	28
Percent targetting Chinook salmon	100%	76%	92%	86%
Field techniques used				
Weirs or downstream traps	1	13	6	61%
Spawner counts			6	21%
Redd counts			5	18%
Carcass counts			4	14%
Direct obs. (snorkel, bankside)	4	3	2	21%
Electrofishing				-
Minnow traps				-
Seining				-
Other		2	2	11%
Type of data collected				
Presence/absence	3	6	6	43%
Population index	3	7	4	39%
Abundance estimates	5	13	7	64%
Demographic or life history studies	3	11	5	57%
Genetic	3	6	4	32%
Method for assessing uncertainty				
None			1	
Qualitative			4	
Basic quantitative	1	2	1	
Statistical	4	11	1	
Unknown		3	3	

Method of site selection		**Past duration**		**Intended future duration**	
Dictated by circumstance	15			Ended:	
Qualitative	3	0–5 yr:	13	0–5 yr:	5
Randomized		6–10 yr:	4	6–10 yr:	4
Unknown	5	11–20 yr:	3	11–20 yr:	
Other	5	20+:	6	Ongoing:	8
		Unknown:	2	Indefinite:	7
				Unknown:	4

* Percentages refer to the overall number of efforts using the field technique on any lifestage



Chinook salmon ***Cal.Coast***

ID	Corresponding Org.	Precision
16	Marin Municipal Water District	3
28	CDFG	6
41	CDFG	4
75	Institute for Forest and Watershed	5
76	Institute for Forest and Watershed	5
94	EcoTrust	3
96	CDFG	1
97	CDFG	1
104	Sonoma Co. Water Agency	6
110	Friends of the Napa River	6
128	Eel River Salmon Restoration Project	1
130	Eel River Salmon Restoration Project	2
136	Mattole Salmon Group	6
150	Mattole Salmon Group	4
151	Mattole Salmon Group	4
152	Mattole Salmon Group	4
153	Mattole Salmon Group	4
154	Mattole Salmon Group	4
170	CDFG S-RAMP	3
179	CDFG	1
184	CDFG	3
285	CDFG	5

Precision	Description
1	Accurate within 400m
2	Accurate within 1600m
3	Accurate within 3000m
4	Accurate to named stream
5	Accurate to subwatershed
6	Accurate to watershed
7	Not determined

Monitoring efforts for Chinook salmon, no specific ESU

Integers indicate the number of efforts for each category

	Juvenile	Out-migrant	Adult	Overall*
Total number of monitoring efforts	0	0	1	1
Percent targetting Chinook salmon	-	-	100%	100%
Field techniques used				
Weirs or downstream traps				-
Spawner counts				-
Redd counts				-
Carcass counts				-
Direct obs. (snorkel, bankside)			1	100%
Electrofishing				-
Minnow traps				-
Seining				-
Other				-
Type of data collected				
Presence/absence				-
Population index				-
Abundance estimates			1	100%
Demographic or life history studies			1	100%
Genetic			1	100%
Method for assessing uncertainty				
None				
Qualitative				
Basic quantitative				
Statistical			1	
Unknown				

Method of site selection		**Past duration**		**Intended future duration**	
Dictated by circumstance	1			Ended:	
Qualitative		0–5 yr:		0–5 yr:	
Randomized		6–10 yr:		6–10 yr:	
Unknown		11–20 yr:		11–20 yr:	
Other		20+:	1	Ongoing:	1
		Unknown:		Indefinite:	
				Unknown:	

* Percentages refer to the overall number of efforts using the field technique on any lifestage

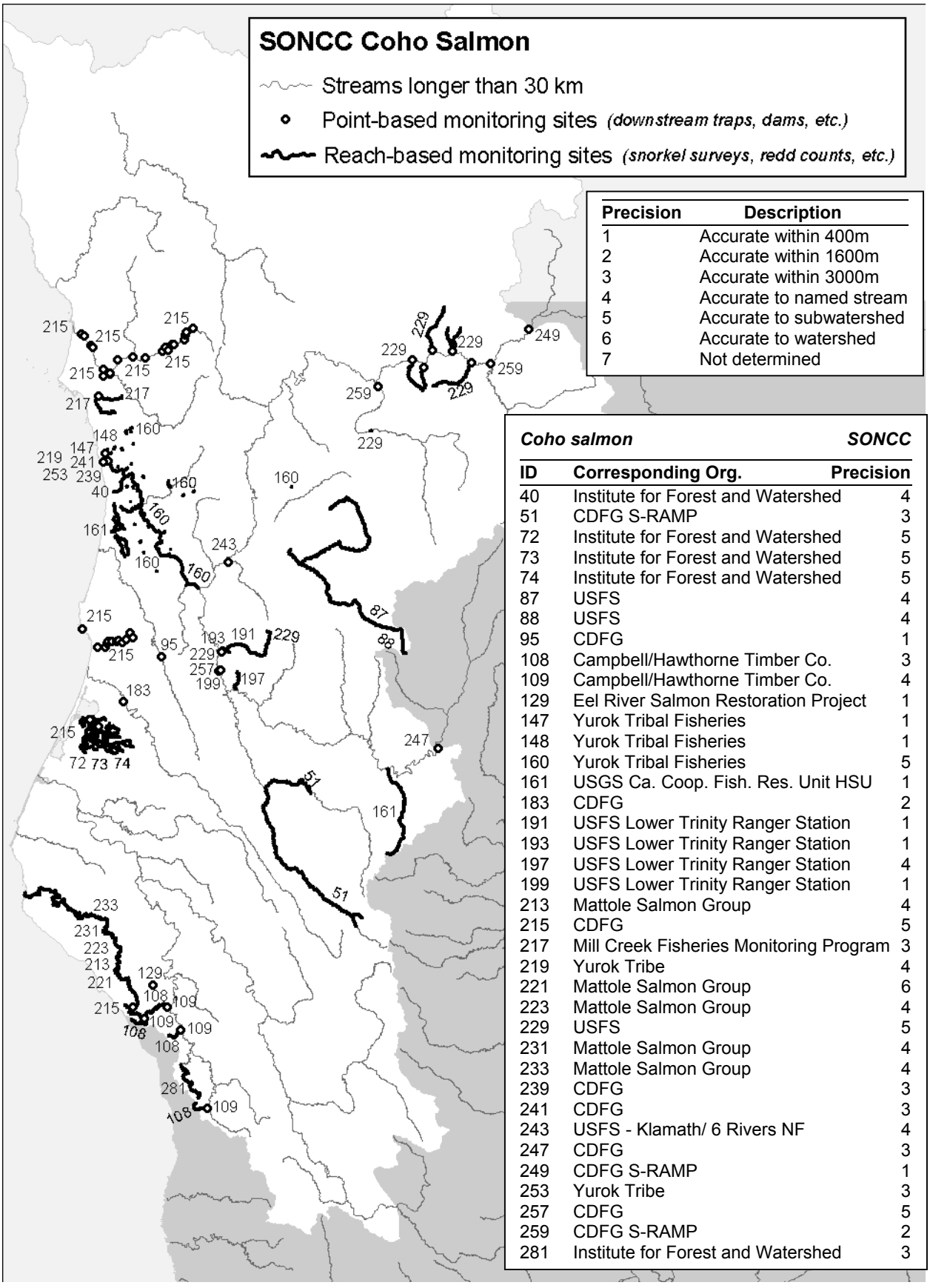
Monitoring efforts for coho salmon, Southern Oregon/Northern California Coastal ESU

Integers indicate the number of efforts for each category

	Juvenile	Out-migrant	Adult	Overall*
Total number of monitoring efforts	26	21	24	46
Percent targetting coho salmon	92%	95%	96%	91%
Field techniques used				
Weirs or downstream traps	8	14	10	48%
Spawner counts			12	26%
Redd counts			12	26%
Carcass counts			10	22%
Direct obs. (snorkel, bankside)	16	5	5	43%
Electrofishing	13	3	2	33%
Minnow traps	2			4%
Seining	3	3		7%
Other	2	1	3	11%
Type of data collected				
Presence/absence	15	8	16	61%
Population index	11	9	8	41%
Abundance estimates	13	14	13	57%
Demographic or life history studies	13	12	6	43%
Genetic	7	8	7	33%
Method for assessing uncertainty				
None	2			
Qualitative	3	2	10	
Basic quantitative	2	4	2	
Statistical	11	9	6	
Unknown	4	5	4	

Method of site selection		**Past duration**		**Intended future duration**	
Dictated by circumstance	18			Ended:	3
Qualitative	9	0–5 yr:	22	0–5 yr:	6
Randomized	3	6–10 yr:	8	6–10 yr:	3
Unknown	8	11–20 yr:	8	11–20 yr:	
Other	8	20+:	7	Ongoing:	18
		Unknown:	1	Indefinite:	13
				Unknown:	3

* Percentages refer to the overall number of efforts using the field technique on any lifestage



Precision	Description
1	Accurate within 400m
2	Accurate within 1600m
3	Accurate within 3000m
4	Accurate to named stream
5	Accurate to subwatershed
6	Accurate to watershed
7	Not determined

Coho salmon ***SONCC***

ID	Corresponding Org.	Precision
40	Institute for Forest and Watershed	4
51	CDFG S-RAMP	3
72	Institute for Forest and Watershed	5
73	Institute for Forest and Watershed	5
74	Institute for Forest and Watershed	5
87	USFS	4
88	USFS	4
95	CDFG	1
108	Campbell/Hawthorne Timber Co.	3
109	Campbell/Hawthorne Timber Co.	4
129	Eel River Salmon Restoration Project	1
147	Yurok Tribal Fisheries	1
148	Yurok Tribal Fisheries	1
160	Yurok Tribal Fisheries	5
161	USGS Ca. Coop. Fish. Res. Unit HSU	1
183	CDFG	2
191	USFS Lower Trinity Ranger Station	1
193	USFS Lower Trinity Ranger Station	1
197	USFS Lower Trinity Ranger Station	4
199	USFS Lower Trinity Ranger Station	1
213	Mattole Salmon Group	4
215	CDFG	5
217	Mill Creek Fisheries Monitoring Program	3
219	Yurok Tribe	4
221	Mattole Salmon Group	6
223	Mattole Salmon Group	4
229	USFS	5
231	Mattole Salmon Group	4
233	Mattole Salmon Group	4
239	CDFG	3
241	CDFG	3
243	USFS - Klamath/ 6 Rivers NF	4
247	CDFG	3
249	CDFG S-RAMP	1
253	Yurok Tribe	3
257	CDFG	5
259	CDFG S-RAMP	2
281	Institute for Forest and Watershed	3

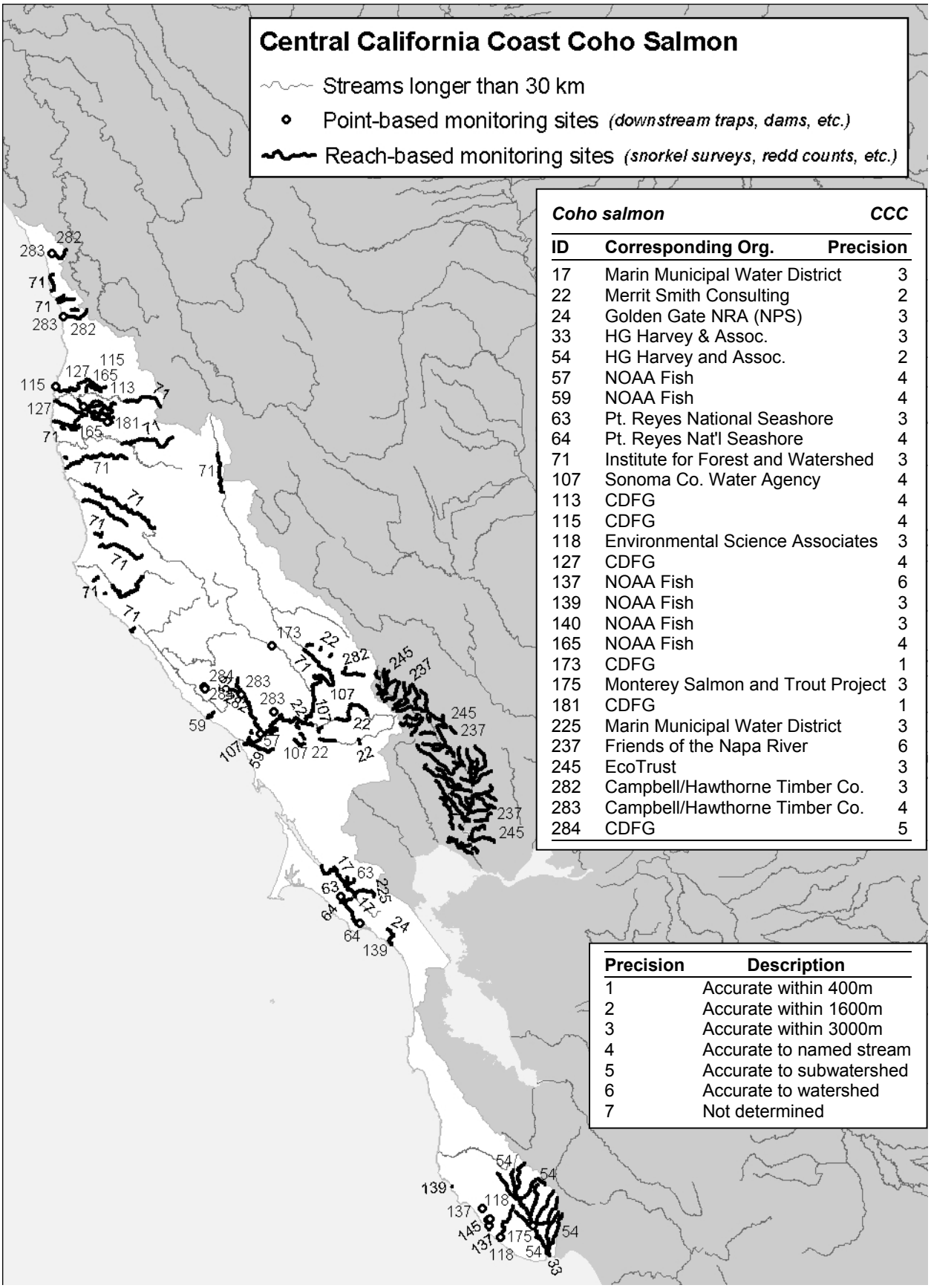
Monitoring efforts for coho salmon, Central California Coast ESU

Integers indicate the number of efforts for each category

	Juvenile	Out-migrant	Adult	Overall*
Total number of monitoring efforts	26	11	13	35
Percent targetting coho salmon	92%	82%	92%	89%
Field techniques used				
Weirs or downstream traps	5	5	6	31%
Spawner counts			5	14%
Redd counts			4	11%
Carcass counts			3	9%
Direct obs. (snorkel, bankside)	14	4	3	51%
Electrofishing	15	3		43%
Minnow traps				-
Seining	6	4		17%
Other	1	1	2	9%
Type of data collected				
Presence/absence	14	6	7	60%
Population index	12	3	4	43%
Abundance estimates	9	6	6	46%
Demographic or life history studies	15	7	6	54%
Genetic	10	5	7	43%
Method for assessing uncertainty				
None	3	1	1	
Qualitative	3	1	2	
Basic quantitative	5		2	
Statistical	11	5	2	
Unknown	3	3	3	

Method of site selection		**Past duration**		**Intended future duration**	
Dictated by circumstance	17			Ended:	2
Qualitative	11	0–5 yr:	21	0–5 yr:	8
Randomized	2	6–10 yr:	2	6–10 yr:	
Unknown	2	11–20 yr:	7	11–20 yr:	
Other	3	20+:	5	Ongoing:	20
		Unknown:		Indefinite:	4
				Unknown:	1

* Percentages refer to the overall number of efforts using the field technique on any lifestage



Coho salmon ***CCC***

ID	Corresponding Org.	Precision
17	Marin Municipal Water District	3
22	Merrit Smith Consulting	2
24	Golden Gate NRA (NPS)	3
33	HG Harvey & Assoc.	3
54	HG Harvey and Assoc.	2
57	NOAA Fish	4
59	NOAA Fish	4
63	Pt. Reyes National Seashore	3
64	Pt. Reyes Nat'l Seashore	4
71	Institute for Forest and Watershed	3
107	Sonoma Co. Water Agency	4
113	CDFG	4
115	CDFG	4
118	Environmental Science Associates	3
127	CDFG	4
137	NOAA Fish	6
139	NOAA Fish	3
140	NOAA Fish	3
165	NOAA Fish	4
173	CDFG	1
175	Monterey Salmon and Trout Project	3
181	CDFG	1
225	Marin Municipal Water District	3
237	Friends of the Napa River	6
245	EcoTrust	3
282	Campbell/Hawthorne Timber Co.	3
283	Campbell/Hawthorne Timber Co.	4
284	CDFG	5

Precision	Description
1	Accurate within 400m
2	Accurate within 1600m
3	Accurate within 3000m
4	Accurate to named stream
5	Accurate to subwatershed
6	Accurate to watershed
7	Not determined

Monitoring efforts for coho salmon, no specific ESU

Integers indicate the number of efforts for each category

	Juvenile	Out-migrant	Adult	Overall*
Total number of monitoring efforts	2	0	0	2
Percent targetting coho salmon	100%	-	-	100%
Field techniques used				
Weirs or downstream traps				-
Spawner counts				-
Redd counts				-
Carcass counts				-
Direct obs. (snorkel, bankside)	2			100%
Electrofishing	2			100%
Minnow traps				-
Seining	1			50%
Other				-
Type of data collected				
Presence/absence	2			100%
Population index				-
Abundance estimates				-
Demographic or life history studies				-
Genetic				-
Method for assessing uncertainty				
None	1			
Qualitative	1			
Basic quantitative				
Statistical				
Unknown				

Method of site selection		**Past duration**		**Intended future duration**	
Dictated by circumstance	1			Ended:	
Qualitative	1	0–5 yr:		0–5 yr:	
Randomized		6–10 yr:	1	6–10 yr:	
Unknown		11–20 yr:		11–20 yr:	
Other		20+:		Ongoing:	
		Unknown:		Indefinite:	1
				Unknown:	1

* Percentages refer to the overall number of efforts using the field technique on any lifestage

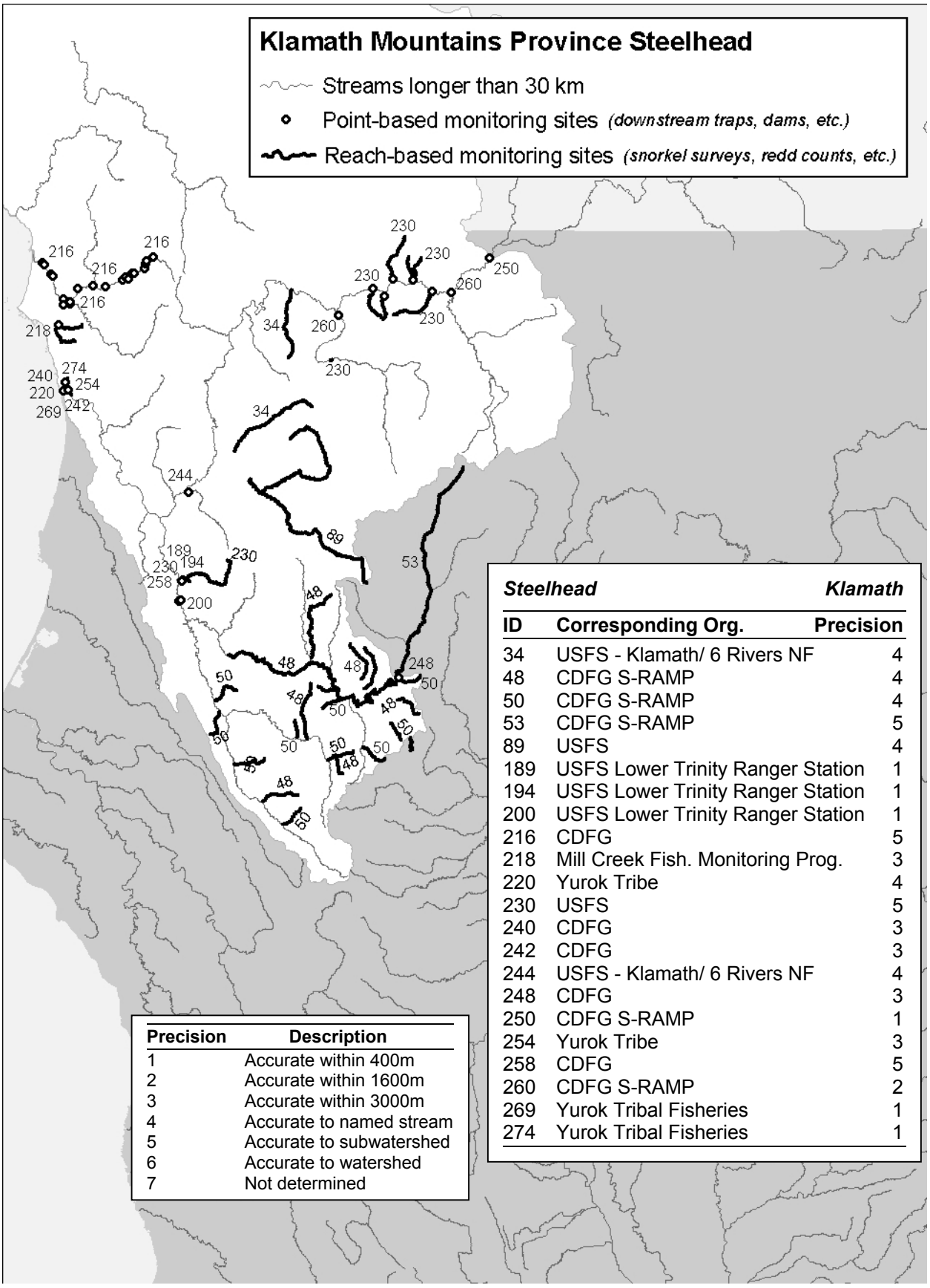
Monitoring efforts for steelhead, Klamath Mountain Province ESU

Integers indicate the number of efforts for each category

	Juvenile	Out-migrant	Adult	Overall*
Total number of monitoring efforts	15	12	16	25
Percent targetting steelhead	93%	92%	94%	96%
Field techniques used				
Weirs or downstream traps	7	8	5	48%
Spawner counts			7	28%
Redd counts			9	36%
Carcass counts			8	32%
Direct obs. (snorkel, bankside)	7	2	4	40%
Electrofishing	8	1	2	36%
Minnow traps	2			8%
Seining	3	3		12%
Other	2	2	4	24%
Type of data collected				
Presence/absence	10	6	11	68%
Population index	7	5	7	56%
Abundance estimates	6	6	7	40%
Demographic or life history studies	9	8	7	60%
Genetic	3	3	6	32%
Method for assessing uncertainty				
None	1			
Qualitative	1		7	
Basic quantitative	3	5		
Statistical	5	3	6	
Unknown	3	3	1	

Method of site selection		**Past duration**		**Intended future duration**	
Dictated by circumstance	10			Ended:	2
Qualitative	9	0–5 yr:	12	0–5 yr:	7
Randomized	2	6–10 yr:	6	6–10 yr:	
Unknown	2	11–20 yr:	3	11–20 yr:	
Other	2	20+:	2	Ongoing:	9
		Unknown:	2	Indefinite:	5
				Unknown:	2

* Percentages refer to the overall number of efforts using the field technique on any lifestage



Steelhead		Klamath
ID	**Corresponding Org.**	**Precision**
34	USFS - Klamath/ 6 Rivers NF	4
48	CDFG S-RAMP	4
50	CDFG S-RAMP	4
53	CDFG S-RAMP	5
89	USFS	4
189	USFS Lower Trinity Ranger Station	1
194	USFS Lower Trinity Ranger Station	1
200	USFS Lower Trinity Ranger Station	1
216	CDFG	5
218	Mill Creek Fish. Monitoring Prog.	3
220	Yurok Tribe	4
230	USFS	5
240	CDFG	3
242	CDFG	3
244	USFS - Klamath/ 6 Rivers NF	4
248	CDFG	3
250	CDFG S-RAMP	1
254	Yurok Tribe	3
258	CDFG	5
260	CDFG S-RAMP	2
269	Yurok Tribal Fisheries	1
274	Yurok Tribal Fisheries	1

Precision	Description
1	Accurate within 400m
2	Accurate within 1600m
3	Accurate within 3000m
4	Accurate to named stream
5	Accurate to subwatershed
6	Accurate to watershed
7	Not determined

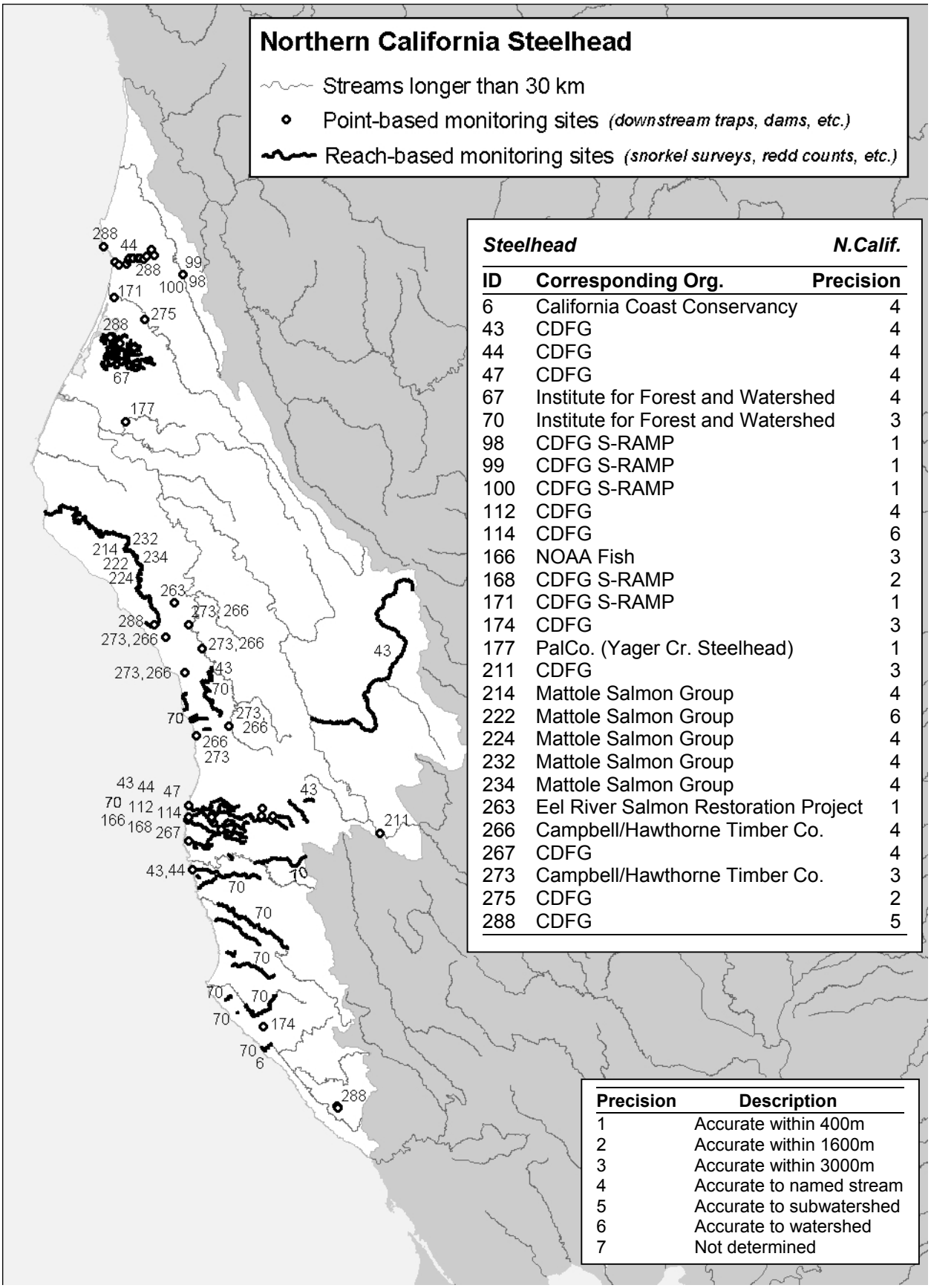
Monitoring efforts for steelhead, Northern California ESU

Integers indicate the number of efforts for each category

	Juvenile	Out-migrant	Adult	Overall*
Total number of monitoring efforts	18	16	13	34
Percent targetting steelhead	89%	81%	85%	91%
Field techniques used				
Weirs or downstream traps	4	12	7	53%
Spawner counts			4	12%
Redd counts			4	12%
Carcass counts			4	12%
Direct obs. (snorkel, bankside)	10	2	1	32%
Electrofishing	11	1		32%
Minnow traps				-
Seining	1	1		3%
Other	1		3	12%
Type of data collected				
Presence/absence	7	6	7	47%
Population index	8	5	3	38%
Abundance estimates	11	12	8	62%
Demographic or life history studies	11	10	4	53%
Genetic	8	5	6	41%
Method for assessing uncertainty				
None	2			
Qualitative	3	2	3	
Basic quantitative			1	
Statistical	12	9	2	
Unknown	3	3	4	

Method of site selection		**Past duration**		**Intended future duration**	
Dictated by circumstance	13			Ended:	
Qualitative	8	0–5 yr:	17	0–5 yr:	4
Randomized		6–10 yr:	4	6–10 yr:	5
Unknown	5	11–20 yr:	5	11–20 yr:	
Other	8	20+:	7	Ongoing:	13
		Unknown:	1	Indefinite:	9
				Unknown:	3

* Percentages refer to the overall number of efforts using the field technique on any lifestage



Steelhead		*N.Calif.*
ID	**Corresponding Org.**	**Precision**
6	California Coast Conservancy	4
43	CDFG	4
44	CDFG	4
47	CDFG	4
67	Institute for Forest and Watershed	4
70	Institute for Forest and Watershed	3
98	CDFG S-RAMP	1
99	CDFG S-RAMP	1
100	CDFG S-RAMP	1
112	CDFG	4
114	CDFG	6
166	NOAA Fish	3
168	CDFG S-RAMP	2
171	CDFG S-RAMP	1
174	CDFG	3
177	PalCo. (Yager Cr. Steelhead)	1
211	CDFG	3
214	Mattole Salmon Group	4
222	Mattole Salmon Group	6
224	Mattole Salmon Group	4
232	Mattole Salmon Group	4
234	Mattole Salmon Group	4
263	Eel River Salmon Restoration Project	1
266	Campbell/Hawthorne Timber Co.	4
267	CDFG	4
273	Campbell/Hawthorne Timber Co.	3
275	CDFG	2
288	CDFG	5

Precision	Description
1	Accurate within 400m
2	Accurate within 1600m
3	Accurate within 3000m
4	Accurate to named stream
5	Accurate to subwatershed
6	Accurate to watershed
7	Not determined

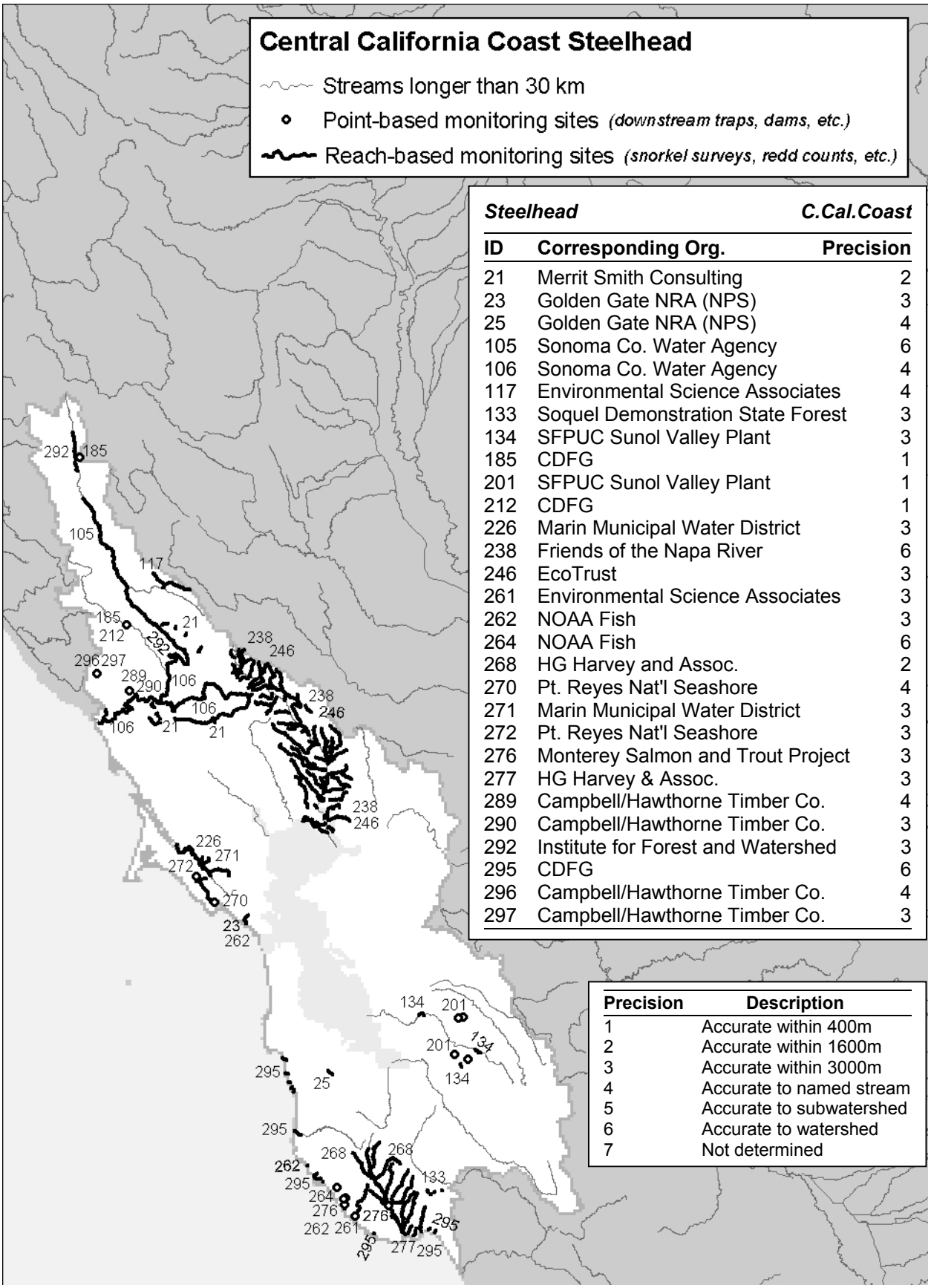
Monitoring efforts for steelhead, Central California Coast ESU

Integers indicate the number of efforts for each category

	Juvenile	Out-migrant	Adult	Overall*
Total number of monitoring efforts	22	13	15	32
Percent targetting steelhead	95%	85%	100%	94%
Field techniques used				
Weirs or downstream traps	3	6	8	38%
Spawner counts			7	22%
Redd counts			4	13%
Carcass counts			1	3%
Direct obs. (snorkel, bankside)	12	5	3	50%
Electrofishing	14	5	1	44%
Minnow traps				-
Seining	6	3		19%
Other	1	2	2	9%
Type of data collected				
Presence/absence	12	7	8	63%
Population index	9	5	5	44%
Abundance estimates	9	4	6	47%
Demographic or life history studies	15	5	5	56%
Genetic	9	5	4	38%
Method for assessing uncertainty				
None	1	2	2	
Qualitative	4	2	1	
Basic quantitative	7	1	3	
Statistical	8	3	1	
Unknown	2	4	7	

Method of site selection		**Past duration**		**Intended future duration**	
Dictated by circumstance	17			Ended:	1
Qualitative	6	0–5 yr:	17	0–5 yr:	5
Randomized	2	6–10 yr:	8	6–10 yr:	1
Unknown	2	11–20 yr:	2	11–20 yr:	1
Other	5	20+:	5	Ongoing:	22
		Unknown:		Indefinite:	2
				Unknown:	

* Percentages refer to the overall number of efforts using the field technique on any lifestage



Steelhead ***C.Cal.Coast***

ID	Corresponding Org.	Precision
21	Merrit Smith Consulting	2
23	Golden Gate NRA (NPS)	3
25	Golden Gate NRA (NPS)	4
105	Sonoma Co. Water Agency	6
106	Sonoma Co. Water Agency	4
117	Environmental Science Associates	4
133	Soquel Demonstration State Forest	3
134	SFPUC Sunol Valley Plant	3
185	CDFG	1
201	SFPUC Sunol Valley Plant	1
212	CDFG	1
226	Marin Municipal Water District	3
238	Friends of the Napa River	6
246	EcoTrust	3
261	Environmental Science Associates	3
262	NOAA Fish	3
264	NOAA Fish	6
268	HG Harvey and Assoc.	2
270	Pt. Reyes Nat'l Seashore	4
271	Marin Municipal Water District	3
272	Pt. Reyes Nat'l Seashore	3
276	Monterey Salmon and Trout Project	3
277	HG Harvey & Assoc.	3
289	Campbell/Hawthorne Timber Co.	4
290	Campbell/Hawthorne Timber Co.	3
292	Institute for Forest and Watershed	3
295	CDFG	6
296	Campbell/Hawthorne Timber Co.	4
297	Campbell/Hawthorne Timber Co.	3

Precision	Description
1	Accurate within 400m
2	Accurate within 1600m
3	Accurate within 3000m
4	Accurate to named stream
5	Accurate to subwatershed
6	Accurate to watershed
7	Not determined

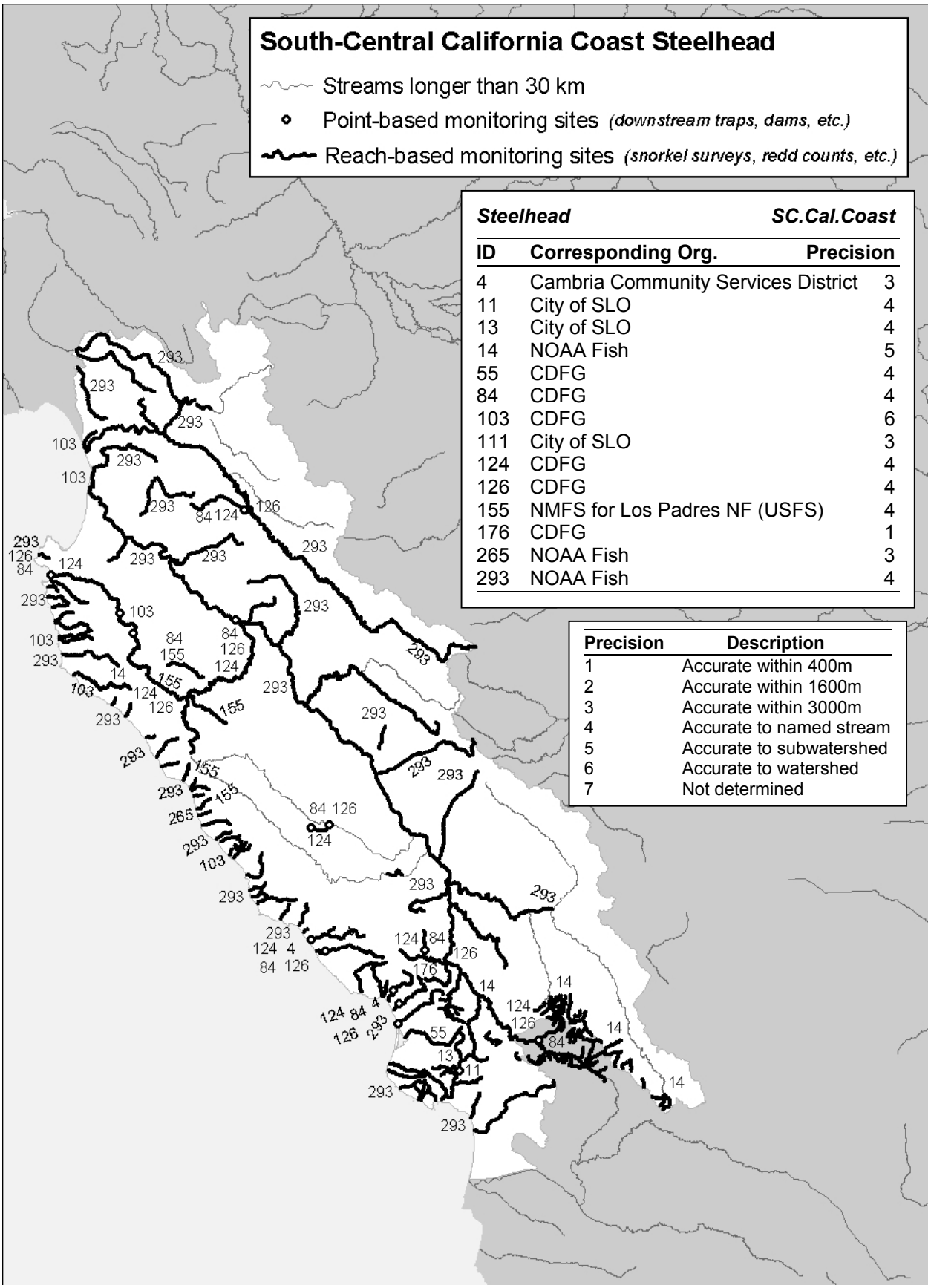
Monitoring efforts for steelhead, South-Central California Coast ESU

Integers indicate the number of efforts for each category

	Juvenile	Out-migrant	Adult	Overall*
Total number of monitoring efforts	12	8	4	14
Percent targetting steelhead	100%	100%	100%	100%
Field techniques used				
Weirs or downstream traps	4	1	1	36%
Spawner counts				-
Redd counts				-
Carcass counts				-
Direct obs. (snorkel, bankside)	6	4	2	43%
Electrofishing	6	2		43%
Minnow traps				-
Seining	4	4		29%
Other	1		2	14%
Type of data collected				
Presence/absence	11	8	4	86%
Population index		3	1	29%
Abundance estimates	7	2	1	57%
Demographic or life history studies	8	4	1	64%
Genetic	1	1		7%
Method for assessing uncertainty				
None	3			
Qualitative				
Basic quantitative	2	2		
Statistical	3	1	1	
Unknown	4	3	1	

Method of site selection		**Past duration**		**Intended future duration**	
Dictated by circumstance	8			Ended:	1
Qualitative	5	0–5 yr:	8	0–5 yr:	3
Randomized	1	6–10 yr:	2	6–10 yr:	
Unknown		11–20 yr:		11–20 yr:	
Other		20+:	1	Ongoing:	3
		Unknown:	3	Indefinite:	4
				Unknown:	3

* Percentages refer to the overall number of efforts using the field technique on any lifestage



Steelhead ***SC.Cal.Coast***

ID	Corresponding Org.	Precision
4	Cambria Community Services District	3
11	City of SLO	4
13	City of SLO	4
14	NOAA Fish	5
55	CDFG	4
84	CDFG	4
103	CDFG	6
111	City of SLO	3
124	CDFG	4
126	CDFG	4
155	NMFS for Los Padres NF (USFS)	4
176	CDFG	1
265	NOAA Fish	3
293	NOAA Fish	4

Precision	Description
1	Accurate within 400m
2	Accurate within 1600m
3	Accurate within 3000m
4	Accurate to named stream
5	Accurate to subwatershed
6	Accurate to watershed
7	Not determined

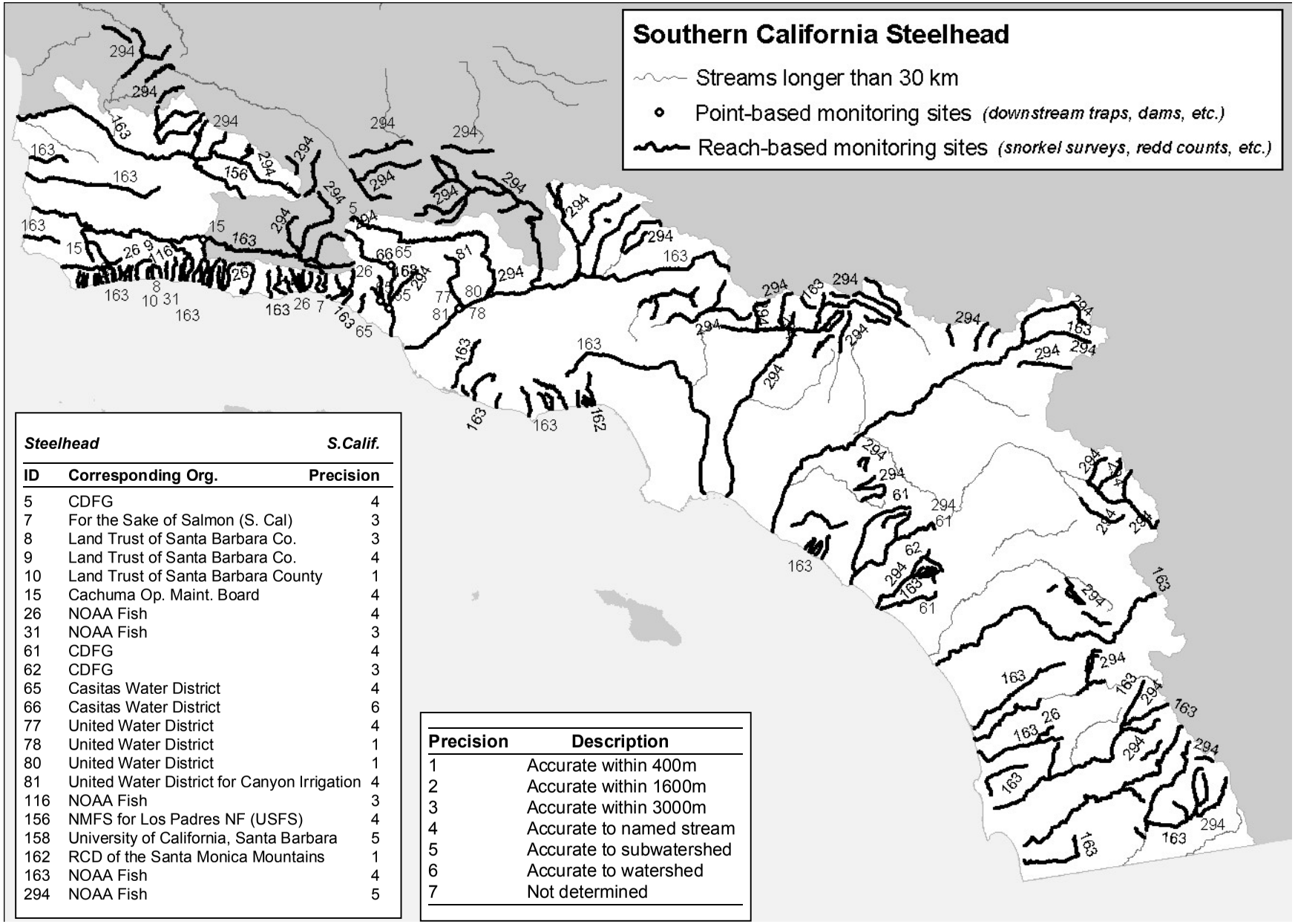
Monitoring efforts for steelhead, Southern California ESU

Integers indicate the number of efforts for each category

	Juvenile	Out-migrant	Adult	Overall*
Total number of monitoring efforts	16	12	14	23
Percent targetting steelhead	100%	100%	100%	100%
Field techniques used				
Weirs or downstream traps	3	5	3	26%
Spawner counts			1	4%
Redd counts			1	4%
Carcass counts				-
Direct obs. (snorkel, bankside)	13	8	11	74%
Electrofishing	2		1	9%
Minnow traps				-
Seining			1	4%
Other				-
Type of data collected				
Presence/absence	14	9	12	70%
Population index	4	2	3	26%
Abundance estimates	4	5	3	30%
Demographic or life history studies	6	5	3	35%
Genetic	3	2	3	17%
Method for assessing uncertainty				
None	3	5	4	
Qualitative	3	1	1	
Basic quantitative	3	3	3	
Statistical	2	1	2	
Unknown	4	1	1	

Method of site selection		**Past duration**		**Intended future duration**	
Dictated by circumstance	16			Ended:	1
Qualitative	5	0–5 yr:	17	0–5 yr:	1
Randomized		6–10 yr:	1	6–10 yr:	
Unknown	1	11–20 yr:	2	11–20 yr:	
Other	1	20+:	2	Ongoing:	14
		Unknown:		Indefinite:	3
				Unknown:	4

* Percentages refer to the overall number of efforts using the field technique on any lifestage



Steelhead		*S.Calif.*
ID	**Corresponding Org.**	**Precision**
5	CDFG	4
7	For the Sake of Salmon (S. Cal)	3
8	Land Trust of Santa Barbara Co.	3
9	Land Trust of Santa Barbara Co.	4
10	Land Trust of Santa Barbara County	1
15	Cachuma Op. Maint. Board	4
26	NOAA Fish	4
31	NOAA Fish	3
61	CDFG	4
62	CDFG	3
65	Casitas Water District	4
66	Casitas Water District	6
77	United Water District	4
78	United Water District	1
80	United Water District	1
81	United Water District for Canyon Irrigation	4
116	NOAA Fish	3
156	NMFS for Los Padres NF (USFS)	4
158	University of California, Santa Barbara	5
162	RCD of the Santa Monica Mountains	1
163	NOAA Fish	4
294	NOAA Fish	5

Precision	**Description**
1	Accurate within 400m
2	Accurate within 1600m
3	Accurate within 3000m
4	Accurate to named stream
5	Accurate to subwatershed
6	Accurate to watershed
7	Not determined

Monitoring efforts for Steelhead, no specific ESU
Integers indicate the number of efforts for each category

	Juvenile	Out migrant	Adult	Overall*
Total number of monitoring efforts	1	0	0	1
Percent targetting Steelhead	100	-	-	100
Field Techniques Used				
Weirs or Downstream Traps				-
Spawner Counts				-
Redd Counts				-
Carcass Counts				-
Direct Obs. (snorkel, bankside)	1			100%
Electrofishing	1			100%
Minnow Traps				-
Seining				-
Other				-
Type of Data Collected				
Presence/Absence	1			100%
Population Index				-
Abundance Estimates				-
Demographic or Life History Studies				-
Genetic				-
Method for Assessing Uncertainty				
None				
Qualitative	1			
Basic Quantitative				
Statistical				
Unknown				

Method of Site Selection		**Past Duration**	**Intended Future Duration**	
Dictated by circumstance	1	0–5 yr:	Ended:	
Qualitative		6–10 yr:	0–5 yr:	
Randomized		11–20 yr:	6–10 yr:	
Unknown		20+:	11–20 yr:	
Other		Unknown:	Ongoing:	
			Indefinite:	
			Unknown:	1

* Percentages refer to the overall number of efforts using the field technique on any lifestage

Part 3: Detailed Listing of Monitoring Efforts

Overview

Part 3 is a complete listing of every monitoring effort reported to us during the course of preparing this report. Correspondents were asked to report their activities in terms of a "unit effort," defined as a data collection effort conducted on a particular ESU by a particular entity using a consistent study design for each life stage monitored. Each entry in Part 3 corresponds to one of these reported unit efforts. The listing does not include incidental monitoring efforts, defined as data collected on one species during a monitoring effort targetting another species. Further detail on compilation methods is described in Part 1.

The diversity of monitoring efforts reported to us was quite high, both in terms of study design and in terms of goals. The reader should bear in mind that the metadata reported here are a relatively terse description of this diversity, and are intended to give an overall picture of the types of datasets being produced for each ESU. Errors should be brought to the attention of D. Boughton[2]. Part 3 is organized as follows:

Arrangement of entries:

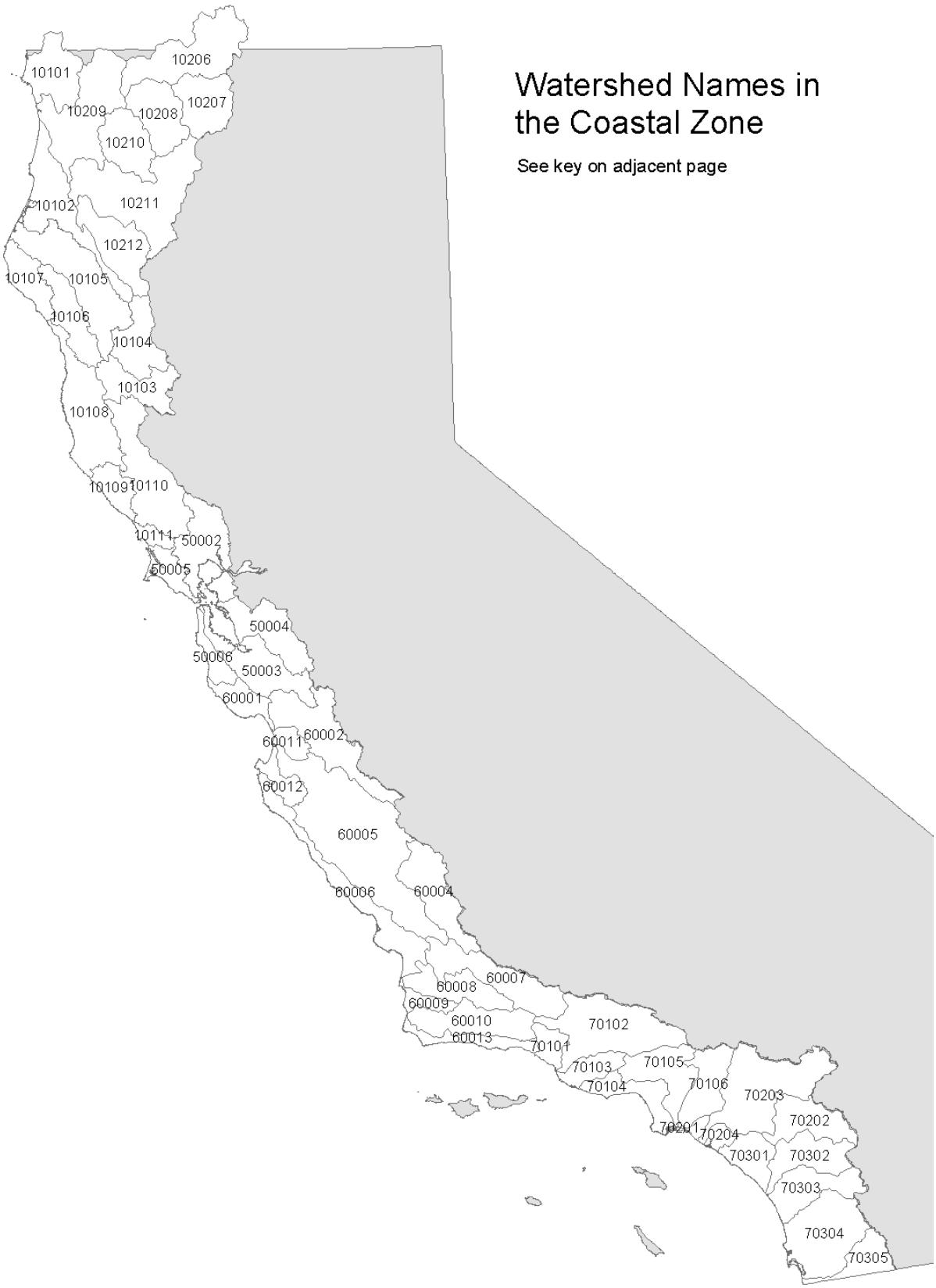
Sorted by species (Chinook salmon, coho salmon, steelhead).
Sorted by ESU (from north to south)
Sorted alphabetically by the name of the corresponding organization.

Identification of entries: Each unit effort is listed once, and is identified by the name of the corresponding organization; the name of the correspondent who sent us the metadata (or in some cases, authored a report from which we obtained metadata); and a unique ID number that cross-references the entries with the maps in Part 2.

Metadata: We report selected fields from those described in the methods section of Part 1. Refer to that section for more details on the meaning of each particular item.

Stream Names and HUCs: For each entry, we solicited from correspondents a list of the streams or watersheds included in the monitoring effort, along with a description of sampling localities. We then used this information to identify localities in the CDFG 100k stream layer (as described in the methods section of Part 1), and later cross-referenced the information with USGS Hydrologic Unit Codes (HUCs) using a GIS. This allowed us to present standardized locality information for the entire set of monitoring efforts: Names and LLID numbers for streams, and USGS names and HUC numbers for watersheds. Refer to the map on the next page for a guide to HUCs. Note that for brevity we omit the first 3 digits of HUC numbers; for all watersheds in the coastal region of California these first three digits are "180" (For example, HUC 10101 is equivalent to 18010101 in the USGS National Hydrological Database). Also note that some entries could not be georeferenced for various reasons; in these cases we printed the descriptive geographic information that was reported to us by our correspondents.

[2] email: David.Boughton@noaa.gov


Watershed Names in the Coastal Zone
See key on adjacent page
10101
10206
10207
10209
10208
10210
10211
10102
10212
10107
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10106
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10103
10108
10109
10110
10111
50002
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70102
70101
70103
70105
70104
70106
70203
70201
70202
70204
70301
70302
70303
70304
70305

Key to coastal HUC names referenced in Part 3.

HUC*	Name
10101	Smith.
10102	Mad-Redwood.
10102	Mad-Redwood.
10103	Upper Eel.
10104	Middle Fork Eel.
10105	Lower Eel.
10106	South Fork Eel.
10107	Mattole.
10108	Big-Navarro-Garcia.
10109	Gualala-Salmon.
10110	Russian.
10111	Bodega Bay.
10206	Upper Klamath.
10207	Shasta.
10208	Scott.
10209	Lower Klamath.
10210	Salmon.
10211	Trinity.
10212	South Fork Trinity.
50002	San Pablo Bay.
50002	San Pablo Bay.
50002	San Pablo Bay.
50003	Coyote.
50004	San Francisco Bay.
50004	San Francisco Bay.
50005	Tomales-Drake Bays.
50006	San Francisco Coastal South.
60001	San Lorenzo-Soquel.
60002	Pajaro.
60004	Estrella.
60005	Salinas.
60006	Central Coastal.
60007	Cuyama.
60008	Santa Maria.
60009	San Antonio.
60010	Santa Ynez.
60011	Alisal-Elkhorn Sloughs.
60012	Carmel.
60013	Santa Barbara Coastal.
70101	Ventura.
70102	Santa Clara.
70103	Calleguas.
70104	Santa Monica Bay.
70105	Los Angeles.
70106	San Gabriel.
70201	Seal Beach.
70202	San Jacinto.
70203	Santa Ana.
70204	Newport Bay.
70301	Aliso-San Onofre.
70302	Santa Margarita.
70303	San Luis Rey-Escondido.
70304	San Diego.
70304	San Diego.
70305	Cottonwood-Tijuana.

***** Prefix “180” omitted for brevity. For example, HUC 10101 is equivalent to 18010101 in the National Hydrological Database.

Chinook salmon, Southern Oregon/Northern California ESU

CDFG ID# 132

Correspondent: Larry Preston

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	other
Data types:	n/a	n/a	presence/absence
Uncertainty:			

Site selection:	qualitative selection	**Year began:**	2000	**Interval:**	daily
Geoprecision:	accurate to subwatershed	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	various:CDFG SFRA/FRGP
Negative impact?	no	**Start:**	May	**Support:**	2004
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	0–5

Technical Goal:

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Eighteenmile Creek	1239208418458	Smith.	10101
Griffin Creek	1237628419202	Smith.	10101
Hardscrabble Creek	1240250418387	Smith.	10101
Hutsinpillar Creek	1241317418786	Smith.	10101
Idlewild Creek	1237703418976	Smith.	10101
Kelly Creek	1238554418635	Smith.	10101
Knopti Creek	1237366419316	Smith.	10101
Little Jones Creek	1238320418677	Smith.	10101
Little Mill Creek	1241231418733	Smith.	10101
Mill Creek	1240825417920	Smith.	10101
Monkey Creek	1238189418830	Smith.	10101
Morrison Creek	1241566419048	Smith.	10101
Myrtle Creek	1240535418010	Smith.	10101
North Fork Smith River	1239681418479	Smith.	10101
Packsaddle Creek	1237664419111	Smith.	10101
Patrick Creek	1238422418744	Smith.	10101
Rock Creek	1240805418093	Smith.	10101
Rowdy Creek	1241650419119	Smith.	10101
Siskiyou Fork	1238096418841	Smith.	10101
South Fork Smith River	1240565417956	Smith.	10101

CDFG ID# 187

Correspondent: Michael Wallace

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	electrofishing, seining	n/a

Chinook salmon, Southern Oregon/Northern California ESU

Data types:	n/a	population index, demographic	n/a
Uncertainty:		unknown	

Site selection:	dictated by logistics/circumstance	**Year began:**	1993	**Interval:**	weekly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete with gaps, regular	**Summaries:**	seasonally
Positive impact?	no	**Season:**		**Funding source:**	CDFG SFRA
Negative impact?	no	**Start:**	Mar	**Support:**	ongoing
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	ongoing

Programmatic Goal: Determine annual proportions of natural vs. hatchery juveniles emigrating from Klamath. Monitor timing and patterns of juvenile salmonids leaving the Klamath basin.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1240749415436	Lower Klamath.	10209
Klamath River	1240807415471	Upper Klamath.	10206
Klamath River	1240807415471	Lower Klamath.	10209

CDFG ID# 188

Correspondent: Michael Wallace

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, direct observation	downstream trap, direct observation, seining	n/a
Data types:	presence/absence	presence/absence, population index, demographic	n/a
Uncertainty:		unknown	

Site selection:	dictated by logistics/circumstance	**Year began:**	1997	**Interval:**	weekly
Geoprecision:	accurate	**Year ended:**	1999	**Duration:**	6–10 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	seasonally
Positive impact?	no	**Season:**		**Funding source:**	FRGP
Negative impact?	no	**Start:**	Mar	**Support:**	ongoing
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal: Determine critical mainstem river rearing areas for juvenile salmonids and emigration patterns on a basin-wide level.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1240749415436	Lower Klamath.	10209
Klamath River	1240807415471	Upper Klamath.	10206
Klamath River	1240807415471	Lower Klamath.	10209

Chinook salmon, Southern Oregon/Northern California ESU

Mill Creek Fisheries Monitoring Program ID# 135

Correspondent: Zack Larson

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, minnowtrap	downstream trap	upstream trap, spawner count, redd count, carcass count
Data types:	population abundance, demographic	population index, demographic	presence/absence, population abundance, demographic, genetic
Uncertainty:	statistical	statistical	statistical

Site selection:	qualitative selection	**Year began:**	1994	**Interval:**	daily
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	CDFG SFRA
Negative impact?	yes	**Start:**	Feb	**Support:**	2005
Impact controls?	no	**End:**	Jul	**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal: Long-term population trend monitoring. Mill Creek is considered a typical tributary of the Smith - disturbed with some old growth. Treated as reference stream.

Stream name	LLID	Watershed name	HUC
East Fork Mill Creek	1240987417345	Smith.	10101
West Branch Mill Creek	1240987417344	Smith.	10101

University of California, Davis ID# 202

Correspondent: Jim Waldvogel

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	spawner count, redd count, carcass count
Data types:	n/a	n/a	population index, genetic
Uncertainty:			statistical

Site selection:	unknown	**Year began:**	1980	**Interval:**	weekly
Geoprecision:	accurate	**Year ended:**	2002	**Duration:**	20+ yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	seasonally
Positive impact?	no	**Season:**		**Funding source:**	agency base
Negative impact?	no	**Start:**	Nov	**Support:**	completed
Impact controls?	no	**End:**	Mar	**Future intent (yr):**	0–5

Technical Goal:

Programmatic Goal: Long-term monitoring of Chinook salmon population-related data to inform management decisions. Implemented due to lack of historic spawning data.

Chinook salmon, Southern Oregon/Northern California ESU

Stream name	LLID	Watershed name	HUC
West Branch Mill Creek	1240987417344	Smith.	10101

Yurok Tribe ID# 143

Correspondent: Monica Hiner

	Juvenile	Outmigrants	Adults
Field techniques:	seining	seining	n/a
Data types:	presence/absence	presence/absence, population abundance	n/a
Uncertainty:	basic quantitative	basic quantitative	

Site selection:	dictated by logistics/circumstance	**Year began:**	2002	**Interval:**	other
Geoprecision:	accurate	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	CDFG
Negative impact?	no	**Start:**	see notes	**Support:**	2003
Impact controls?	no	**End:**	see notes	**Future intent (yr):**	ongoing

Technical Goal: Beach seining in South Slough: Determine habitat suitability and use by juvenile salmonids. Purse seining: Determine relative abundance and emigration patterns for juvenile Chinook salmon; also compare size of juvenile Chinook salmon compared w/ CDFG beach seine efforts.

Programmatic Goal: Management evaluation.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1240749415436	Lower Klamath.	10209
Klamath River	1240807415471	Lower Klamath.	10209
Klamath River	1240807415471	Upper Klamath.	10206

Yurok Tribe ID# 144

Correspondent: Monica Hiner

	Juvenile	Outmigrants	Adults
Field techniques:	electrofishing	n/a	n/a
Data types:	presence/absence	n/a	n/a
Uncertainty:	basic quantitative		

Site selection:	dictated by logistics/circumstance	**Year began:**	2002	**Interval:**	other
Geoprecision:	accurate to stream	**Year ended:**	2002	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	none
Positive impact?	no	**Season:**		**Funding source:**	agency base
Negative impact?	no	**Start:**	May	**Support:**	single sampling event
Impact controls?	no	**End:**	May	**Future intent (yr):**	ended

Chinook salmon, Southern Oregon/Northern California ESU

Technical Goal: Assessment of fish presence for proposed study: Sarah Beesley's study of salmonid habitat quality for restoration recommendations.

Programmatic Goal: Assessment of fish presence.

Stream name	LLID	Watershed name	HUC
High Prairie Creek	1240705415679	Lower Klamath.	10209
Salt Creek	1240589415474	Lower Klamath.	10209

Chinook salmon, Upper Klamath-Trinity ESU

CDFG ID# 131

Correspondent: Larry Preston

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	direct observation, electrofishing	other
Data types:	n/a	presence/absence	presence/absence
Uncertainty:		none	

Site selection:	qualitative selection	**Year began:**	2000	**Interval:**	once
Geoprecision:	accurate to watershed	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	various:CDFG SFRA/FRGP
Negative impact?	no	**Start:**	May	**Support:**	2004
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	0–5

Technical Goal:

Programmatic Goal: Respond to California ESA and develop recovery parameters.

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

CDFG ID# 209

Correspondent: Larry Preston

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	n/a	other
Data types:	presence/absence	n/a	presence/absence
Uncertainty:	none		

Site selection:	qualitative selection	**Year began:**	2000	**Interval:**	once
Geoprecision:	accurate to watershed	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	various:CDFG SFRA/FRGP
Negative impact?	no	**Start:**	May	**Support:**	2004

Chinook salmon, Upper Klamath-Trinity ESU

Impact controls? no **End:** Oct **Future intent (yr):** 0–5
Technical Goal:
Programmatic Goal: Respond to California ESA and develop recovery parameters.

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

CDFG ID# 180

Correspondent: Gary Ramsden

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	population index, genetic
Uncertainty:			statistical

Site selection: dictated by logistics/circumstance **Year began:** 1963 **Interval:** daily
Geoprecision: accurate **Year ended:** ongoing **Duration:** 20+ yr
Response to: **Years missed:** complete, regular **Summaries:** yearly
Positive impact? no **Season:** **Funding source:** CDFG (assume)
Negative impact? no **Start:** Sept **Support:** ongoing (assume)
Impact controls? no **End:** Mar **Future intent (yr):** ongoing
Technical Goal:
Programmatic Goal: Hatchery-operated as compensation for spawning and rearing areas lost to the Trinity River Project.

Stream name	LLID	Watershed name	HUC
Trinity River	1237076411855	Trinity.	10211

CDFG ID# 93

Correspondent: Wade Sinnen

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	population abundance, demographic
Uncertainty:			statistical

Site selection: dictated by logistics/circumstance **Year began:** 1997 **Interval:** other
Geoprecision: accurate to subwatershed **Year ended:** ongoing **Duration:** 6–10 yr
Response to: **Years missed:** complete with gaps, regular **Summaries:** other
Positive impact? no **Season:** **Funding source:** Bureau of Reclamation
Negative impact? no **Start:** May **Support:** yr-to-yr

Chinook salmon, Upper Klamath-Trinity ESU

Impact controls? no **End:** Dec **Future intent (yr):** indefinite
Technical Goal:
Programmatic Goal: Multiple objectives, fall chinook salmon.

Stream name	LLID	Watershed name	HUC
Trinity River	1237076411855	Trinity.	10211

CDFG ID# 159

Correspondent: Wade Sinnen

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	population abundance, demographic
Uncertainty:			statistical

Site selection: dictated by logistics/circumstance **Year began:** 1997 **Interval:** other
Geoprecision: accurate to subwatershed **Year ended:** ongoing **Duration:** 6–10 yr
Response to: **Years missed:** complete with gaps, regular **Summaries:** other
Positive impact? no **Season:** **Funding source:** Bureau of Reclamation
Negative impact? no **Start:** May **Support:** yr-to-yr
Impact controls? no **End:** Dec **Future intent (yr):** indefinite
Technical Goal:
Programmatic Goal: Multiple objectives, spring Chinook salmon.

Stream name	LLID	Watershed name	HUC
Trinity River	1237076411855	Trinity.	10211

CDFG S-RAMP ID# 167

Correspondent: Bill Chesney

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, direct observation	downstream trap, direct observation	n/a
Data types:	presence/absence, population index, population abundance, demographic, genetic	presence/absence, population abundance, demographic, genetic	n/a
Uncertainty:			

Site selection: unknown **Year began:** 2000 **Interval:** daily
Geoprecision: precise **Year ended:** 2002 **Duration:** 0–5 yr
Response to: **Years missed:** complete, incremental **Summaries:** weekly

Chinook salmon, Upper Klamath-Trinity ESU

Negative impact?	no	**Start:**	Feb	**Support:**	unknown
Impact controls?	no	**End:**	Jul	**Future intent (yr):**	unknown

Technical Goal:

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Scott River	1230355417791	Scott.	10208

CDFG S-RAMP ID# 52

Correspondent: Patrick Garrison

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	direct observation
Data types:	n/a	n/a	presence/absence, population index, demographic
Uncertainty:			qualitative

Positive impact?	no	**Season:**		**Funding source:**	unknown
Site selection:	other - historic comparison	**Year began:**	2000	**Interval:**	yearly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete with gaps, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	CDFG
Negative impact?	no	**Start:**	Aug	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	ongoing

Technical Goal: Monitor size of spring Chinook salmon in SF Trinity Basin in comparison with historic data.

Programmatic Goal: Population index of holding spring-run Chinook salmon in SF Trinity Basin.

Stream name	LLID	Watershed name	HUC
East Fork South Fork Trinity River	1231253402458	South Fork Trinity.	10212
Hayfork Creek	1234499406139	South Fork Trinity.	10212
South Fork Trinity River	1236013408901	South Fork Trinity.	10212

CDFG S-RAMP ID# 178

Correspondent: Kimball Rushton

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	other	upstream trap, other
Data types:	n/a	demographic, genetic	population abundance, genetic
Uncertainty:		unknown	unknown

Site selection:	dictated by logistics/circumstance	**Year began:**	1966	**Interval:**	unknown
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	20+ yr

Chinook salmon, Upper Klamath-Trinity ESU

Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: Pac. Power & Light/hatchery/CDFG(assume)
Negative impact?	no	**Start:**	Feb	**Support:**	ongoing (assume)
Impact controls?	no	**End:**	Mar	**Future intent (yr):**	ongoing

Technical Goal: Determine relationship between hatchery-based and natural populations in the basin.

Programmatic Goal: In response to uncertainty as to Iron Gate Stock ESU status. Hatchery constructed by Pacific Power and Light Co. to 'compensate' for spawning and nursery areas blocked by the Iron Gate Project.

Stream name	LLID	Watershed name	HUC
Klamath River	1240807415471	Lower Klamath.	10209
Klamath River	1240807415471	Upper Klamath.	10206

USFS ID# 142

Correspondent: James Kilgore

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, direct observation, electrofishing	downstream trap	redd count, carcass count
Data types:	presence/absence, population index, population abundance, demographic, genetic	presence/absence, population index, population abundance, demographic, genetic	presence/absence, population index, population abundance, demographic, genetic
Uncertainty:	statistical	statistical	statistical

Site selection:	other	**Year began:**	2000	**Interval:**	other
Geoprecision:	accurate to subwatershed	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	agency base
Negative impact?	no	**Start:**		**Support:**	ongoing
Impact controls?	no	**End:**		**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Barkhouse Creek	1228482418204	Upper Klamath.	10206
Beaver Creek	1228157418694	Upper Klamath.	10206
Empire Creek	1227377418668	Upper Klamath.	10206
Horse Linto Creek	1236196410002	Trinity.	10211
Humbug Creek	1226643418342	Upper Klamath.	10206
Lumgrey Creek	1227378418673	Upper Klamath.	10206
McKinney Creek	1228905418428	Upper Klamath.	10206
Scott River	1230355417791	Scott.	10208

Chinook salmon, Upper Klamath-Trinity ESU

USFS ID# 90

Correspondent: Brenda Olsen

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	n/a	spawner count, redd count, carcass count, direct observation
Data types:	presence/absence	n/a	presence/absence, population index, population abundance
Uncertainty:			qualitative

Site selection:	other	**Year began:**	1980	**Interval:**	once
Geoprecision:	accurate to stream	**Year ended:**		**Duration:**	20+ yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	agency base
Negative impact?	no	**Start:**	Jul	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Jul	**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal: Management and population monitoring (largest remaining wild run in Klamath Basin).

North Fork Salmon River	1233222412571	Salmon.	10210
Salmon River	1234923413776	Salmon.	10210
South Fork Salmon River	1233222412570	Salmon.	10210

USFS ID# 91

Correspondent: Brenda Olsen

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	n/a	spawner count, redd count, carcass count, direct observation
Data types:	presence/absence	n/a	presence/absence, population index, population abundance
Uncertainty:			qualitative

Site selection:	other	**Year began:**	1992	**Interval:**	other
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	agency base
Negative impact?	no	**Start:**	Oct	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Nov	**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal: USFS management (redd locations); population estimate for harvest allocation (CDFG).

Chinook salmon, Upper Klamath-Trinity ESU

Stream name	LLID	Watershed name	HUC
North Fork Salmon River	1233222412571	Salmon.	10210
Salmon River	1234923413776	Salmon.	10210
South Fork Salmon River	1233222412570	Salmon.	10210

USFS - Klamath/ 6 Rivers NF ID# 35

Correspondent: John Grunbaum

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	n/a	direct observation
Data types:	population index, demographic	n/a	population index
Uncertainty:	unknown		

Site selection:	dictated by logistics/circumstance	**Year began:**	1990	**Interval:**	once
Geoprecision:	accurate to subwatershed	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	agency base
Negative impact?	no	**Start:**	Jul	**Support:**	currently
Impact controls?	no	**End:**	Aug	**Future intent (yr):**	0–5

Technical Goal: Distribution and relative abundance of Chinook salmon.

Programmatic Goal: Monitor populations of spring-run Chinook salmon.

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

USFS - Klamath/ 6 Rivers NF ID# 37

Correspondent: John Grunbaum

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	spawner count, redd count, direct observation
Data types:	n/a	n/a	population index
Uncertainty:			unknown

Site selection:	dictated by logistics/circumstance	**Year began:**	1990	**Interval:**	other
Geoprecision:	accurate to watershed	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	agency base
Negative impact?	no	**Start:**	Oct	**Support:**	ongoing
Impact controls?	no	**End:**	Nov	**Future intent (yr):**	ongoing

Technical Goal: Track abundance and distribution of fall Chinook salmon spawning.

Chinook salmon, Upper Klamath-Trinity ESU

Programmatic Goal: Contributes to database for determining commercial, tribal and sport limits. Also monitor to determine sensitivity to USFS projects.

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

USFS - Klamath/ 6 Rivers NF ID# 38

Correspondent: John Grunbaum

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap	downstream trap	n/a
Data types:	population index, demographic	population index, demographic	n/a
Uncertainty:	statistical	statistical	

Site selection:	other	**Year began:**	2002	**Interval:**	daily
Geoprecision:	accurate to stream	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	agency base
Negative impact?	no	**Start:**	Apr	**Support:**	unknown
Impact controls?	no	**End:**	Jul	**Future intent (yr):**	unknown

Technical Goal: Assessment of anadromous fish populations in Red Cap Creek, including migration timing, behavior and life history patterns.

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Red Cap Creek	1236043412589	Lower Klamath.	10209

USFS Lower Trinity Ranger Station ID# 190

Correspondent: Anita Andazola

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap	spawner count, redd count, carcass count
Data types:	n/a	presence/absence, population abundance	presence/absence, population abundance
Uncertainty:	basic quantitative	basic quantitative	qualitative

Site selection:	qualitative selection	**Year began:**	1991	**Interval:**	irregularly
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	various: CDFG/PCFFA/SRNF
Negative impact?	no	**Start:**	Oct	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Dec	**Future intent (yr):**	indefinite

Technical Goal: Estimate yearly abundance of Chinook salmon. Technical evaluation of the effectiveness of instream restoration efforts.

Chinook salmon, Upper Klamath-Trinity ESU

Programmatic Goal: Regulatory compliance per ESA; management evaluation on instream restoration work.

Stream name	LLID	Watershed name	HUC
Cedar Creek	1236032410062	Trinity.	10211
Horse Linto Creek	1236196410002	Trinity.	10211

USFS Lower Trinity Ranger Station ID# 192

Correspondent: Anita Andazola

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap	spawner count, redd count, carcass count
Data types:	n/a	population abundance	presence/absence, population index, population abundance
Uncertainty:		basic quantitative	qualitative

Site selection:	qualitative selection	**Year began:**	1991	**Interval:**	irregularly
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	various: CDFG/PCFFA/SRNF
Negative impact?	no	**Start:**	Mar	**Support:**	yr-to-yr
Impact controls?	yes	**End:**	Jul	**Future intent (yr):**	indefinite

Technical Goal: Estimate yearly abundance of Chinook salmon. Technical evaluation of the effectiveness of instream restoration efforts.

Programmatic Goal: Regulatory compliance per ESA; management evaluation on instream restoration work.

Stream name	LLID	Watershed name	HUC
Horse Linto Creek	1236196410002	Trinity.	10211

USFS Lower Trinity Ranger Station ID# 195

Correspondent: Anita Andazola

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	n/a	spawner count, redd count, carcass count
Data types:	presence/absence	n/a	presence/absence, population abundance
Uncertainty:	qualitative		qualitative

Site selection:	dictated by logistics/circumstance	**Year began:**	1982	**Interval:**	weekly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete with gaps, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	CDFG SRNF

Chinook salmon, Upper Klamath-Trinity ESU

Negative impact?	no	**Start:**	Sept	**Support:**	unknown
Impact controls?	no	**End:**	Dec	**Future intent (yr):**	indefinite

Technical Goal: Estimate yearly abundance of Chinook salmon. Technical evaluation of the effectiveness of instream restoration efforts.

Programmatic Goal: Regulatory compliance per ESA; management evaluation on instream restoration work.

Stream name	LLID	Watershed name	HUC
Old Campbell Creek	1236106408809	South Fork Trinity.	10212

USFS Lower Trinity Ranger Station ID# 196

Correspondent: Anita Andazola

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	redd count, carcass count
Data types:	n/a	n/a	presence/absence, population abundance
Uncertainty:			qualitative

Site selection:	unknown	**Year began:**	1996	**Interval:**	weekly
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	other
Positive impact?	no	**Season:**		**Funding source:**	unknown
Negative impact?	yes	**Start:**	Dec	**Support:**	unknown
Impact controls?	no	**End:**	Feb	**Future intent (yr):**	indefinite

Technical Goal: Estimate Chinook salmon population.

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Sharber Creek	1235638408959	Trinity.	10211

USFS Lower Trinity Ranger Station ID# 198

Correspondent: Anita Andazola

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap	spawner count, redd count, carcass count, direct observation
Data types:	n/a	presence/absence, population abundance	presence/absence, population abundance
Uncertainty:		basic quantitative	qualitative

Site selection:	qualitative selection	**Year began:**	1991	**Interval:**	irregularly
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	various:

Chinook salmon, Upper Klamath-Trinity ESU

Negative impact?	no	**Start:**	Mar	**Support:**	indefinite
Impact controls?	no	**End:**	Jul	**Future intent (yr):**	indefinite

Technical Goal: Estimate yearly abundance of Chinook salmon. Technical evaluation of the effectiveness of instream restoration efforts.

Programmatic Goal: Restore salmonid habitat and populations to self-sustaining level.

Stream name	LLID	Watershed name	HUC
Willow Creek	1236292409450	Trinity.	10211

Yurok Tribe ID# 145

Correspondent: Monica Hiner

	Juvenile	Outmigrants	Adults	
Field techniques:	n/a	other	n/a	
Data types:	n/a	presence/absence	n/a	CDFG/PCFFA/SRNF
Uncertainty:		statistical		

Site selection:	dictated by logistics/circumstance	**Year began:**	2001	**Interval:**	other
Geoprecision:	accurate	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	agency base
Negative impact?	no	**Start:**	May	**Support:**	2003
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	unknown

Technical Goal: Determine diet of juvenile Chinook salmon in the Klamath River Estuary and determine: 1) whether diet differs from available prey items; 2) whether diet differs between marked and unmarked fish; and 3) conduct bioenergetic modeling.

Programmatic Goal: Management question and evaluation. To assess whether hatchery impacts factors listed below.

Stream name	LLID	Watershed name	HUC
Klamath River	1240807415471	Lower Klamath.	10209
Klamath River	1240807415471	Upper Klamath.	10206

Chinook salmon, California Coastal ESU

CDFG ID# 28

Correspondent: Gary Flosi

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	spawner count, redd count, carcass count
Data types:	n/a	n/a	presence/absence
Uncertainty:			

Chinook salmon, California Coastal ESU

Site selection:	unknown	**Year began:**	1987	**Interval:**	irregularly
Geoprecision:	accurate to watershed	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	unknown	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	unknown
Negative impact?	no	**Start:**		**Support:**	unknown
Impact controls?	no	**End:**		**Future intent (yr):**	unknown

Technical Goal:

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1233961402742	Mad-Redwood.	10102
Unknown. Use LLID	1234188402768	Lower Eel.	10105
Unknown. Use LLID	1233961402742	Lower Eel.	10105

CDFG ID# 184

Correspondent: Alan Grass

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	population abundance, genetic
Uncertainty:		unknown	unknown

Site selection:	dictated by logistics/circumstance	**Year began:**	1933	**Interval:**	daily
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	unknown	**Summaries:**	yearly (assume)
Positive impact?	no	**Season:**		**Funding source:**	various: PG&E/CDFG (assume)
Negative impact?	no	**Start:**	Nov	**Support:**	assume (assume)
Impact controls?	no	**End:**	Apr	**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Eel River	1243106406425	Upper Eel.	10103

CDFG ID# 41

Correspondent: Scott Harris

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	carcass count
Data types:	n/a	n/a	presence/absence, demographic, genetic
Uncertainty:			none

Chinook salmon, California Coastal ESU

Site selection:	dictated by logistics/circumstance	**Year began:**	1986	**Interval:**	other
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	CDFG SFRA
Negative impact?	yes	**Start:**	Nov	**Support:**	ongoing (underfunded)
Impact controls?	no	**End:**	Feb	**Future intent (yr):**	ongoing

Technical Goal: Determine presence/absence, genetic samples, life history.

Programmatic Goal: Regulatory compliance.

Stream name	LLID	Watershed name	HUC
Mill Creek	1233528394319	Upper Eel.	10103
Willits Creek	1233682394164	Upper Eel.	10103

Chinook salmon, California Coastal ESU

CDFG ID# 96

Correspondent: Michael D. Sparkman

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap	n/a
Data types:	n/a	presence/absence, population abundance, demographic	n/a
Uncertainty:		statistical	

Site selection:	other	**Year began:**	2000	**Interval:**	daily
Geoprecision:	very precise	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/private
Negative impact?	no	**Start:**	Mar	**Support:**	2010+
Impact controls?	no	**End:**	Aug	**Future intent (yr):**	6–10

Technical Goal: Hypothesis, estimates.

Programmatic Goal: Evaluation.

Stream name	LLID	Watershed name	HUC
Redwood Creek	1240905412924	Mad-Redwood.	10102

CDFG ID# 97

Correspondent: Michael D. Sparkman

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap	n/a
Data types:	n/a	presence/absence, population index, demographic	n/a
Uncertainty:		statistical	

Site selection:	other	**Year began:**	2000	**Interval:**	daily
Geoprecision:	very precise	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/private
Negative impact?	no	**Start:**	Mar	**Support:**	2010+

Chinook salmon, California Coastal ESU

Impact controls?	no	**End:**	Aug	**Future intent (yr):**	6–10
Technical Goal:	Hypothesis, estimates.				
Programmatic Goal:	Evaluation.				

Stream name	LLID	Watershed name	HUC
Redwood Creek	1240905412924	Mad-Redwood.	10102

CDFG ID# 179

Correspondent: Brett Wilson

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap, other	upstream trap, spawner count, other
Data types:	n/a	population abundance, genetic	population abundance, genetic
Uncertainty:		unknown	unknown

Site selection:	dictated by logistics/circumstance	**Year began:**	1979	**Interval:**	unknown
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	unknown
Positive impact?	no	**Season:**		**Funding source:**	various: Cal Fed/EPA
Negative impact?	no	**Start:**	Aug	**Support:**	2006
Impact controls?	no	**End:**	Apr	**Future intent (yr):**	0–5
Technical Goal:	Genetic analysis is to identify individuals and determine spawning protocol.				
Programmatic Goal:	Compensation for spawning and nursery areas blocked by Warm Springs Dam, Lake Sonoma Project.				

Stream name	LLID	Watershed name	HUC
Dry Creek	1228562385862	Russian.	10110

CDFG S-RAMP ID# 169

Correspondent: Seth Ricker

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap	n/a
Data types:	n/a	population abundance, demographic, genetic	n/a
Uncertainty:		unknown	

Site selection:	unknown	**Year began:**	see note	**Interval:**	daily
Geoprecision:	accurate to stream	**Year ended:**	see notes	**Duration:**	unknown yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	CDFG (assume)
Negative impact?	no	**Start:**	Mar	**Support:**	unknown

Chinook salmon, California Coastal ESU

Impact controls?	no	**End:**	Jun	**Future intent (yr):**	unknown

Technical Goal:

Programmatic Goal: 1) Determine yield of coho salmon and Chinook salmon smolts and steelhead parrs and smolts from basin.
2) Determine timing of outmigration of salmonids. 3) Partition the basin yield of salmonids into that produced by tribs vs. mainstem areas. 4) Investigate assumptions associated with mark-recapture juvenile salmonids out-migrant models.

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

Eel River Salmon Restoration Project ID# 128

Correspondent: Harry Vaughn

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap	n/a
Data types:	n/a	population abundance	n/a
Uncertainty:		basic quantitative	

Site selection:	qualitative selection	**Year began:**	1999	**Interval:**	daily
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	CDFG SFRA
Negative impact?	no	**Start:**	Mar	**Support:**	2004
Impact controls?	no	**End:**	Jun	**Future intent (yr):**	6–10

Technical Goal: 1) Develop new trap models; 2) trend analysis; 3) implement protocol.

Programmatic Goal: Long term to monitor population trends.

Stream name	LLID	Watershed name	HUC
West Fork Sproul Creek	1238657400410	South Fork Eel.	10106

Eel River Salmon Restoration Project ID# 130

Correspondent: Harry Vaughn

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	population index
Uncertainty:			qualitative

Site selection:	dictated by logistics/circumstance	**Year began:**	1983	**Interval:**	other
Geoprecision:	precise	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete with gaps, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	CDFG SFRA
Negative impact?	no	**Start:**	Nov	**Support:**	yr-to-yr

Chinook salmon, California Coastal ESU

Impact controls?	no	**End:**	Feb	**Future intent (yr):**	0–5

Technical Goal: Collect eggs for planting.

Programmatic Goal: Fish populations have been depressed. Egg-collecting station used as a source to plant other restoration projects in the SF Eel River.

Stream name	LLID	Watershed name	HUC
Redwood Creek	1238353401218	South Fork Eel.	10106

Institute for Forest and Watershed Management/HSU ID# 75

Correspondent: Dana McCanne

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap	n/a
Data types:	n/a	population index, demographic	n/a
Uncertainty:		basic quantitative	

Site selection:	other	**Year began:**	2002	**Interval:**	daily
Geoprecision:	accurate to subwatershed	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: NOAA/CDFG/commercial-extraction
Negative impact?	no	**Start:**	Mar	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Jun	**Future intent (yr):**	ongoing

Technical Goal: Population estimates to determine trends over time.

Programmatic Goal: Determine trends in population and ESA status.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1241042407668	Mad-Redwood.	10102
Unknown. Use LLID	1239932407391	Mad-Redwood.	10102
Unknown. Use LLID	1240107407367	Mad-Redwood.	10102
Unknown. Use LLID	1240331407318	Mad-Redwood.	10102
Unknown. Use LLID	1240648407427	Mad-Redwood.	10102
Unknown. Use LLID	1240957408018	Mad-Redwood.	10102
Unknown. Use LLID	1241176407779	Mad-Redwood.	10102
Unknown. Use LLID	1240641407322	Mad-Redwood.	10102
Unknown. Use LLID	1241410407191	Mad-Redwood.	10102
Unknown. Use LLID	1241398408058	Mad-Redwood.	10102
Unknown. Use LLID	1241381408050	Mad-Redwood.	10102
Unknown. Use LLID	1241359408039	Mad-Redwood.	10102
Unknown. Use LLID	1241301407488	Mad-Redwood.	10102
Unknown. Use LLID	1241289407456	Mad-Redwood.	10102
Unknown. Use LLID	1241246407489	Mad-Redwood.	10102

Chinook salmon, California Coastal ESU

Unknown. Use LLID	1240974408015	Mad-Redwood.	10102
Unknown. Use LLID	1241191407532	Mad-Redwood.	10102
Unknown. Use LLID	1241029407863	Mad-Redwood.	10102
Unknown. Use LLID	1241067408013	Mad-Redwood.	10102
Unknown. Use LLID	1241067408012	Mad-Redwood.	10102
Unknown. Use LLID	1241052407257	Mad-Redwood.	10102
Unknown. Use LLID	1241433407186	Mad-Redwood.	10102
Unknown. Use LLID	1241246407233	Mad-Redwood.	10102
Cloney Gulch	1240482407577	Mad-Redwood.	10102
Eureka Slough	1241459408108	Mad-Redwood.	10102
Falls Gulch	1240384407635	Mad-Redwood.	10102
Freshwater Creek	1241165408023	Mad-Redwood.	10102
Graham Gulch	1240475407539	Mad-Redwood.	10102
Henderson Gulch	1241322407550	Mad-Redwood.	10102
Horse Gulch	1240492407761	Mad-Redwood.	10102
Little Freshwater Creek	1240624407569	Mad-Redwood.	10102
McCready Gulch	1240638407639	Mad-Redwood.	10102
Ryan Creek	1241135407887	Mad-Redwood.	10102
South Fork Freshwater Creek	1240467407317	Mad-Redwood.	10102

Institute for Forest and Watershed Management/HSU ID# 76

Correspondent: Dana McCanne

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap, direct observation
Data types:	n/a	n/a	population index, population abundance, demographic
Uncertainty:			basic quantitative

Site selection:	other	**Year began:**	2002	**Interval:**	daily
Geoprecision:	accurate to subwatershed	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: NOAA/CDFG/commercial-extraction
Negative impact?	no	**Start:**	Oct	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Mar	**Future intent (yr):**	ongoing

Technical Goal: Population estimates to determine trends over time.

Programmatic Goal: Determine trends in population and ESA status.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1241410407191	Mad-Redwood.	10102
Unknown. Use LLID	1241042407668	Mad-Redwood.	10102
Unknown. Use LLID	1241191407532	Mad-Redwood.	10102

Chinook salmon, California Coastal ESU

Unknown. Use LLID	1241067408012	Mad-Redwood.	10102
Unknown. Use LLID	1241067408013	Mad-Redwood.	10102
Unknown. Use LLID	1241433407186	Mad-Redwood.	10102
Unknown. Use LLID	1241176407779	Mad-Redwood.	10102
Unknown. Use LLID	1241246407233	Mad-Redwood.	10102
Unknown. Use LLID	1241246407489	Mad-Redwood.	10102
Unknown. Use LLID	1241029407863	Mad-Redwood.	10102
Unknown. Use LLID	1241398408058	Mad-Redwood.	10102
Unknown. Use LLID	1241381408050	Mad-Redwood.	10102
Unknown. Use LLID	1241359408039	Mad-Redwood.	10102
Unknown. Use LLID	1241301407488	Mad-Redwood.	10102
Unknown. Use LLID	1241289407456	Mad-Redwood.	10102
Unknown. Use LLID	1240974408015	Mad-Redwood.	10102
Unknown. Use LLID	1240648407427	Mad-Redwood.	10102
Unknown. Use LLID	1240641407322	Mad-Redwood.	10102
Unknown. Use LLID	1240107407367	Mad-Redwood.	10102
Unknown. Use LLID	1240331407318	Mad-Redwood.	10102
Unknown. Use LLID	1241052407257	Mad-Redwood.	10102
Unknown. Use LLID	1240957408018	Mad-Redwood.	10102
Unknown. Use LLID	1239932407391	Mad-Redwood.	10102
Cloney Gulch	1240482407577	Mad-Redwood.	10102
Eureka Slough	1241459408108	Mad-Redwood.	10102
Falls Gulch	1240384407635	Mad-Redwood.	10102
Freshwater Creek	1241165408023	Mad-Redwood.	10102
Graham Gulch	1240475407539	Mad-Redwood.	10102
Henderson Gulch	1241322407550	Mad-Redwood.	10102
Horse Gulch	1240492407761	Mad-Redwood.	10102
Little Freshwater Creek	1240624407569	Mad-Redwood.	10102
McCready Gulch	1240638407639	Mad-Redwood.	10102
Ryan Creek	1241135407887	Mad-Redwood.	10102
South Fork Freshwater Creek	1240467407317	Mad-Redwood.	10102

Marin Municipal Water District ID# 16

Correspondent: Eric Ettlinger (for Greg Andrews)

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	spawner count, redd count, direct observation
Data types:	n/a	n/a	presence/absence, population abundance, demographic, genetic
Uncertainty:			qualitative

Site selection:	dictated by logistics/circumstance	**Year began:**	'70's	**Interval:**	weekly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete with gaps, incremental	**Summaries:**	other

Chinook salmon, California Coastal ESU

Positive impact?	no	**Season:**	mid. Oct.- early Feb.	**Funding source:**	municipal
Negative impact?	yes	**Start:**	Oct	**Support:**	ongoing
Impact controls?	no	**End:**	Feb	**Future intent (yr):**	ongoing

Technical Goal: Monitor population trends.

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Devils Gulch	1227359380291	Tomales-Drake Bays.	50005
Lagunitas Creek	1228246380899	Tomales-Drake Bays.	50005
San Geronimo Creek	1227078380050	Tomales-Drake Bays.	50005
San Geronimo Creek	1227078380050	San Pablo Bay.	50002

Mattole Salmon Group ID# 136

Correspondent: Maureen Roche

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	spawner count, redd count, carcass count
Data types:	n/a	n/a	presence/absence, population index
Uncertainty:			qualitative

Site selection:	dictated by logistics/circumstance	**Year began:**	1981	**Interval:**	weekly
Geoprecision:	accurate to watershed	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/BLM
Negative impact?	yes	**Start:**	Dec	**Support:**	indefinite
Impact controls?	no	**End:**	Jan	**Future intent (yr):**	indefinite

Technical Goal: Test ecological hypotheses on limiting factors and effects of disturbance (especially temperature and sediment dynamics).

Programmatic Goal: Species status knowledge.

Stream name	LLID	Watershed name	HUC
Mattole River	1243528403022	Mattole.	10107

Mattole Salmon Group ID# 150

Correspondent: Maureen Roche

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	presence/absence, population abundance
Uncertainty:			qualitative

Chinook salmon, California Coastal ESU

Site selection:	dictated by logistics/circumstance	**Year began:**	1982	**Interval:**	daily
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various:
Negative impact?	yes	**Start:**	Nov	**Support:**	indefinite
Impact controls?	no	**End:**	Jan	**Future intent (yr):**	indefinite

Technical Goal: Test ecological hypotheses on limiting factors and effects of disturbance (especially temperature and sediment dynamics).

Programmatic Goal: Learn extent of rearing habitat, the limiting factor, based on flow, temp, SCD thresholds (coho salmon). Need for genetic rescue (Chinook salmon). Unique adaptation to 80 deg. F water, needs protection & education for poachers (steelhead).

Stream name	LLID	Watershed name	HUC
Mattole River	1243528403022	Mattole.	10107

Mattole Salmon Group ID# 151

Correspondent: Maureen Roche

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap	downstream trap	n/a
Data types:	population abundance	population abundance	n/a
Uncertainty:	statistical	statistical	

Site selection:	dictated by logistics/circumstance	**Year began:**	1985	**Interval:**	other
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/BLM
Negative impact?	yes	**Start:**	Apr	**Support:**	indefinite
Impact controls?	no	**End:**	Jun	**Future intent (yr):**	indefinite

Technical Goal: Test ecological hypotheses on limiting factors and effects of disturbance (especially temperature and sediment dynamics).

Programmatic Goal: Chinook salmon 2x greater than coho salmon; sensitive to limiting factor of quality nursery habitat and quantity of flow.

Stream name	LLID	Watershed name	HUC
Mattole River	1243528403022	Mattole.	10107

Chinook salmon, California Coastal ESU

Mattole Salmon Group ID# 152

Correspondent: Maureen Roche

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	direct observation	n/a
Data types:	presence/absence, population index, population abundance, demographic, genetic	presence/absence, population index, population abundance, demographic, genetic	n/a
Uncertainty:	statistical	statistical	

Site selection:	dictated by logistics/circumstance	**Year began:**	1996	**Interval:**	other
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/BLM
Negative impact?	yes	**Start:**	see notes	**Support:**	indefinite
Impact controls?	no	**End:**		**Future intent (yr):**	indefinite

Technical Goal: Test ecological hypotheses on limiting factors and effects of disturbance (especially temperature and sediment dynamics).

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Mattole River	1243528403022	Mattole.	10107

Mattole Salmon Group ID# 153

Correspondent: Maureen Roche

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	direct observation	n/a
Data types:	presence/absence, population index, population abundance, demographic, genetic	presence/absence, population index, population abundance, demographic, genetic	n/a
Uncertainty:	statistical	statistical	

Site selection:	dictated by logistics/circumstance	**Year began:**	1996	**Interval:**	yearly
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/BLM
Negative impact?	yes	**Start:**	Aug	**Support:**	indefinite
Impact controls?	no	**End:**	Aug	**Future intent (yr):**	indefinite

Technical Goal: Test ecological hypotheses on limiting factors and effects of disturbance (especially temperature and sediment dynamics).

Chinook salmon, California Coastal ESU

Programmatic Goal: Reveals turtles, crayfish, birds as well as annual overview of Mattole.

Stream name	LLID	Watershed name	HUC
Mattole River	1243528403022	Mattole.	10107

Mattole Salmon Group ID# 154

Correspondent: Maureen Roche

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	direct observation	n/a
Data types:	presence/absence, population index, population abundance, demographic, genetic	presence/absence, population index, population abundance, demographic, genetic	n/a
Uncertainty:	statistical	statistical	

Site selection:	dictated by logistics/circumstance	**Year began:**	1996	**Interval:**	yearly
Geoprecision:	accurate to stream	**Year ended:**	and 1999	**Duration:**	6–10 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/BLM
Negative impact?	yes	**Start:**	Aug	**Support:**	indefinite
Impact controls?	no	**End:**	Aug	**Future intent (yr):**	indefinite

Technical Goal: Test ecological hypotheses on limiting factors and effects of disturbance (especially temperature and sediment dynamics).

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Mattole River	1243528403022	Mattole.	10107

NOAA Fish ID# 138

Correspondent: Bruce MacFarlane

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	other	n/a
Data types:	n/a	demographic, genetic	n/a
Uncertainty:		statistical	

Site selection:	other	**Year began:**	1995	**Interval:**	biweekly
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	NOAA Fish
Negative impact?	yes	**Start:**	May	**Support:**	ongoing
Impact controls?	no	**End:**	Jun	**Future intent (yr):**	0–5

Technical Goal: Determine interannual variability of juvenile salmon growth, development, and feeding during migration through the estuary and the influences of natural and anthropogenic

Chinook salmon, California Coastal ESU

Programmatic Goal: To determine whether passage through the estuary is beneficial or detrimental to juvenile salmon, and what anthropogenic factors may be influencing juvenile status.

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

Sonoma Co. Water Agency ID# 104

Correspondent: Sean White

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap	upstream trap, spawner count, redd count
Data types:	n/a	population index, population abundance	population abundance, demographic
Uncertainty:		statistical	unknown

Site selection:	dictated by logistics/circumstance factors.	**Year began:**	1999	**Interval:**	daily
Geoprecision:	accurate to watershed	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	commercial: utility
Negative impact?	no	**Start:**	Aug	**Support:**	ongoing
Impact controls?	no	**End:**	Dec	**Future intent (yr):**	ongoing

Technical Goal: Obtain baseline data.

Programmatic Goal: Collecting baseline data for Section 7 consultation.

Stream name	LLID	Watershed name	HUC
Russian River	1231278384507	Russian.	10110
Russian River	1231278384507	Bodega Bay.	10111

Chinook salmon, no specific ESU

CDFG ID# 92

Correspondent: Melodie Palmer-Zwahlen

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	direct observation
Data types:	n/a	n/a	population abundance, demographic, genetic
Uncertainty:			statistical

Site selection:	dictated by logistics/circumstance	**Year began:**	1952	**Interval:**	other
Geoprecision:	accurate to watershed	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly

Chinook salmon, no specific ESU

Negative impact?	yes	**Start:**	Apr	**Support:**	ongoing
Impact controls?	yes	**End:**	Nov	**Future intent (yr):**	ongoing

Technical Goal: Estimate population structure and abundance; estimate catch per effort (CPUE).

Programmatic Goal: Regulatory compliance and managing populations and fisheries. Tribes, CDFG Region 1, CDF, USFWS form the Klamath River Tech advisory team.

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

Coho salmon, Southern Oregon/Northern California Coastal ESU

Campbell/Hawthorne Timber Co. ID# 108

Correspondent: David Wright

		Juvenile	Season:	Outmigrants	Funding source:
Positive impact?	yes				
Adults	CDFG SFRA				
Field techniques:	electrofishing		electrofishing	spawner count	
Data types:	population index, demographic, genetic		population index	presence/absence	
Uncertainty:	qualitative		qualitative	unknown	

Site selection:	unknown	**Year began:**	1993	**Interval:**	yearly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	commercial: extraction
Negative impact?	yes	**Start:**	Sept	**Support:**	ongoing
Impact controls?	no	**End:**	Nov	**Future intent (yr):**	ongoing

Technical Goal: Determine trends in salmonid densities - relative abundance on an annual basis over long period of time.

Programmatic Goal: Determine health of populations.

Stream name	LLID	Watershed name	HUC
Anderson Creek	1238982399465	South Fork Eel.	10106
Anderson Creek	1238982399465	Big-Navarro-Garcia.	10108
Dutch Charlie Creek	1236576396904	Big-Navarro-Garcia.	10108
Dutch Charlie Creek	1236576396904	South Fork Eel.	10106
Indian Creek	1238042399768	Mattole.	10107
Indian Creek	1238042399768	Big-Navarro-Garcia.	10108
Indian Creek	1238042399768	South Fork Eel.	10106
Wildcat Creek	1237594399127	Big-Navarro-Garcia.	10108
Wildcat Creek	1237594399127	South Fork Eel.	10106

Coho salmon, Southern Oregon/Northern California Coastal ESU

Campbell/Hawthorne Timber Co. ID# 109

Correspondent: David Wright

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	presence/absence
Uncertainty:			basic quantitative

Site selection:	unknown	**Year began:**	1993	**Interval:**	yearly
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	commercial: extraction
Negative impact?	yes	**Start:**	Dec	**Support:**	ongoing
Impact controls?	no	**End:**	Apr	**Future intent (yr):**	ongoing

Technical Goal: Determine trends in salmonid densities - relative abundance on an annual basis over long period of time.

Programmatic Goal: Determine health of populations.

Stream name	LLID	Watershed name	HUC
Anderson Creek	1238982399465	Big-Navarro-Garcia.	10108
Anderson Creek	1238982399465	South Fork Eel.	10106
Dutch Charlie Creek	1236576396904	Big-Navarro-Garcia.	10108
Dutch Charlie Creek	1236576396904	South Fork Eel.	10106
Indian Creek	1238042399768	South Fork Eel.	10106
Indian Creek	1238042399768	Mattole.	10107
Indian Creek	1238042399768	Big-Navarro-Garcia.	10108
Wildcat Creek	1237594399127	South Fork Eel.	10106
Wildcat Creek	1237594399127	Big-Navarro-Garcia.	10108

CDFG ID# 2

Correspondent: Doug Albin

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	n/a	n/a
Data types:	presence/absence	n/a	n/a
Uncertainty:	qualitative		

Site selection:	qualitative selection	**Year began:**	1999	**Interval:**	yearly
Geoprecision:	accurate to watershed	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	rotating, opportunistic	**Summaries:**	other
Positive impact?	no	**Season:**	July to October	**Funding source:**	state bond funds
Negative impact?	no	**Start:**	Jul	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	indefinite

Technical Goal:

Coho salmon, Southern Oregon/Northern California Coastal ESU

Programmatic Goal: Habitat restoration prescriptions & correlation of habitat conditions with species presence/absence.

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

CDFG ID# 183

Correspondent: Wilbur Cartwright

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	population abundance, genetic
Uncertainty:		unknown	unknown

Site selection:	dictated by logistics/circumstance	**Year began:**	1971	**Interval:**	daily
Geoprecision:	precise	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	unknown	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	CDFG/hatchery (assume)
Negative impact?	no	**Start:**	Nov	**Support:**	ongoing (assume)
Impact controls?	no	**End:**	Apr	**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal: Coho salmon production goal was 250,000 yearlings raised to 8-10 lbs. and for release March-May. Current production goal for steelhead: 250,000 yearlings raised to 4-8 lbs for release March-May. Also to obtain approx. 60,000 eggs from 30 unmarked (natural) female and 45 unmarked male steelhead.

Stream name	LLID	Watershed name	HUC
Mad River	1241266409562	Mad-Redwood.	10102

CDFG ID# 215

Correspondent: Larry Preston

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	other
Data types:	n/a	n/a	presence/absence
Uncertainty:			

Site selection:	qualitative selection	**Year began:**	2000	**Interval:**	daily
Geoprecision:	accurate to subwatershed	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	various:CDFG SFRA/FRGP
Negative impact?	no	**Start:**	May	**Support:**	2004
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	0–5

Coho salmon, Southern Oregon/Northern California Coastal ESU

Technical Goal:
Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1240367410284	Mad-Redwood.	10102
Unknown. Use LLID	1240116410305	Mad-Redwood.	10102
Unknown. Use LLID	1239829410348	Mad-Redwood.	10102
Unknown. Use LLID	1239677410532	Mad-Redwood.	10102
Unknown. Use LLID	1239543410395	Mad-Redwood.	10102
Unknown. Use LLID	1239677410533	Mad-Redwood.	10102
Bulwinkle Creek	1240899410106	Mad-Redwood.	10102
Eighteenmile Creek	1239208418458	Smith.	10101
Freeman Creek	1240539410224	Mad-Redwood.	10102
Freshwater Creek	1241165408023	Mad-Redwood.	10102
Griffin Creek	1237628419202	Smith.	10101
Hardscrabble Creek	1240250418387	Smith.	10101
Hutsinpillar Creek	1241317418786	Smith.	10101
Idlewild Creek	1237703418976	Smith.	10101
Kelly Creek	1238554418635	Smith. 10101	
Knopti Creek	1237366419316	Smith.	10101
Little Jones Creek	1238320418677	Smith.	10101
Little Mill Creek	1241231418733	Smith.	10101
Lower South Fork Little River	1240177410288	Mad-Redwood.	10102
Mattole River	1243528403022	Mattole.	10107
Mill Creek	1241479410616	Mad-Redwood.	10102
Mill Creek	1240825417920	Smith.	10101
Monkey Creek	1238189418830	Smith.	10101
Morrison Creek	1241566419048	Smith.	10101
Myrtle Creek	1240535418010	Smith.	10101
North Fork Smith River	1239681418479	Smith.	10101
Packsaddle Creek	1237664419111	Smith.	10101
Patrick Creek	1238422418744	Smith.	10101
Railroad Creek	1240490410281	Mad-Redwood.	10102
Rock Creek	1240805418093	Smith.	10101
Rowdy Creek	1241650419119	Smith.	10101
Siskiyou Fork	1238096418841	Smith.	10101
South Fork Little River	1240612410123	Mad-Redwood.	10102
South Fork Smith River	1240565417956	Smith.	10101
Upper South Fork Little River	1239946410269	Mad-Redwood.	10102

CDFG ID# 251

Correspondent: Larry Preston

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	n/a	other
Data types:	presence/absence	n/a	presence/absence
Uncertainty:	none		

Coho salmon, Southern Oregon/Northern California Coastal ESU

Site selection:	qualitative selection	**Year began:**	2000	**Interval:**	once
		Year ended:	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no			**Season:**	**Funding source:** various:CDFG
					SFRA/FRGP
Negative impact?	no	**Start:**	May	**Support:**	2004
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	0–5

Technical Goal:

Programmatic Goal: Respond to California ESA and develop recovery parameters.

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

CDFG ID# 247

Correspondent: Gary Ramsden

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	population index, genetic
Uncertainty:			statistical

Site selection:	dictated by logistics/circumstance	**Year began:**	1963	**Interval:**	daily
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	CDFG (assume)
Negative impact?	no	**Start:**	Sept	**Support:**	ongoing (assume)
Impact controls?	no	**End:**	Mar	**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal: Hatchery-operated as compensation for spawning and rearing areas lost to the Trinity River Project.

Stream name	LLID	Watershed name	HUC
Trinity River	1237076411855	Trinity.	10211

CDFG ID# 257

Correspondent: Wade Sinnen

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	population abundance, demographic
Uncertainty:			statistical

Site selection:	dictated by logistics/circumstance	**Year began:**	1997	**Interval:**	other

Coho salmon, Southern Oregon/Northern California Coastal ESU

		Year ended:	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete with gaps, regular	**Summaries:**	other
Positive impact?	no			**Season:**	**Funding source:** Bureau of Reclamation
Negative impact?	no	**Start:**	May	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Dec	**Future intent (yr):**	indefinite

Technical Goal:

Programmatic Goal: Multiple objectives.

Stream name	**LLID**	**Watershed name**	**HUC**
Geoprecision: Trinity River subwatershed	accurate to	1237076411855	Trinity. 10211

CDFG ID# 95

Correspondent: Michael D. Sparkman

	Juvenile	**Outmigrants**	**Adults**
Field techniques:	n/a	downstream trap	n/a
Data types:	n/a	presence/absence, population abundance, demographic	n/a
Uncertainty:		statistical	

Site selection:	other	**Year began:**	2000	**Interval:**	daily
Geoprecision:	very precise	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/private
Negative impact?	no	**Start:**	Mar	**Support:**	2010+
Impact controls?	no	**End:**	Aug	**Future intent (yr):**	6–10

Technical Goal: Hypothesis, estimates.

Programmatic Goal: Evaluation.

Stream name	**LLID**	**Watershed name**	**HUC**
Redwood Creek	1240905412924	Mad-Redwood.	10102

CDFG ID# 239

Correspondent: Michael Wallace

	Juvenile	**Outmigrants**	**Adults**
Field techniques:	downstream trap, direct observation, seining	downstream trap, direct observation, seining	n/a
Data types:	presence/absence, population index, demographic	presence/absence, population index, demographic	n/a
Uncertainty:	unknown	unknown	

Coho salmon, Southern Oregon/Northern California Coastal ESU

Site selection:	dictated by logistics/circumstance	**Year began:**	1997	**Interval:**	weekly
Geoprecision:	accurate	**Year ended:**	1999	**Duration:**	6–10 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	seasonally
Positive impact?	no	**Season:**		**Funding source:**	FRGP
Negative impact?	no	**Start:**	Mar	**Support:**	ongoing
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal: Determine critical mainstem river rearing areas for juvenile salmonids and emigration patterns on a basin-wide level.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1240749415436	Lower Klamath.	10209
Klamath River	1240807415471	Lower Klamath.	10209
Klamath River	1240807415471	Upper Klamath.	10206

CDFG ID# 241

Correspondent: Michael Wallace

	Juvenile	Outmigrants	Adults
Field techniques:	electrofishing, seining	electrofishing, seining	n/a
Data types:	population index, demographic	population index, demographic	n/a
Uncertainty:	unknown	unknown	

Site selection:	dictated by logistics/circumstance	**Year began:**	1993	**Interval:**	weekly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete with gaps, regular	**Summaries:**	seasonally
Positive impact?	no	**Season:**		**Funding source:**	CDFG SFRA
Negative impact?	no	**Start:**	Mar	**Support:**	ongoing
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	ongoing

Technical Goal: Determine critical mainstem rearing areas for juvenile salmonids and emigration patterns on a basin-wide level.

Programmatic Goal: Determine annual proportions of natural vs. hatchery juveniles emigrating from Klamath Basin. Monitor timing and patterns of juvenile salmonids leaving the Klamath Basin.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1240749415436	Lower Klamath.	10209
Klamath River	1240807415471	Lower Klamath.	10209
Klamath River	1240807415471	Upper Klamath.	10206

CDFG S-RAMP ID# 259

Correspondent: Bill Chesney

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, direct observation	downstream trap, direct observation	n/a

Coho salmon, Southern Oregon/Northern California Coastal ESU

	Juvenile	Outmigrants	Adults
Data types:	presence/absence, population index, population abundance, demographic, genetic	presence/absence, population abundance, demographic, genetic	n/a
Uncertainty:			

Site selection:	unknown	**Year began:**	2000	**Interval:**	daily
Geoprecision:	precise	**Year ended:**	2002	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	weekly
Positive impact?	no	**Season:**		**Funding source:**	unknown
Negative impact?	no	**Start:**	Feb	**Support:**	unknown
Impact controls?	no	**End:**	Jul	**Future intent (yr):**	unknown

Technical Goal:

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Scott River	1230355417791	Scott.	10208

CDFG S-RAMP ID# 51

Correspondent: Patrick Garrison

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	direct observation
Data types:	n/a	n/a	presence/absence, population index, demographic
Uncertainty:			qualitative

Site selection:	other - historic comparison	**Year began:**	2000	**Interval:**	yearly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	CDFG
Negative impact?	no	**Start:**	Aug	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	ongoing

Technical Goal: Comparison to historic data.

Programmatic Goal: Population index.

Stream name	LLID	Watershed name	HUC
East Fork South Fork Trinity River	1231253402458	South Fork Trinity.	10212
Hayfork Creek	1234499406139	South Fork Trinity.	10212
South Fork Trinity River	1236013408901	South Fork Trinity.	10212

Coho salmon, Southern Oregon/Northern California Coastal ESU

CDFG S-RAMP ID# 255

Correspondent: Seth Ricker

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap	downstream trap	n/a
Data types:	population abundance, demographic, genetic	population abundance, demographic, genetic	n/a
Uncertainty:	unknown	unknown	

Site selection:	unknown	**Year began:**	see note	**Interval:**	daily
Geoprecision:	accurate to stream	**Year ended:**	see notes	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	CDFG (assume)
Negative impact?	no	**Start:**	Mar	**Support:**	unknown
Impact controls?	no	**End:**	Jun	**Future intent (yr):**	unknown

Technical Goal:

Programmatic Goal: 1) Determine yield of coho and Chinook salmon smolts and steelhead parrs and smolts from basin.
2) Determine timing of outmigration of salmonids. 3) Partition the basin yield of salmonids into that produced by tribs vs. mainstem areas. 4) Investigate assumptions associated with mark-recapture juvenile salmonids out-migrant models.

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

CDFG S-RAMP ID# 249

Correspondent: Kimball Rushton

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	other	upstream trap, other
Data types:	n/a	demographic, genetic	population abundance, genetic
Uncertainty:		unknown	unknown

Site selection:	dictated by logistics/circumstance	**Year began:**	1966	**Interval:**	unknown
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: Pac. Power & Light/hatchery/CDFG (assume)
Negative impact?	no	**Start:**	Feb	**Support:**	ongoing (assume)
Impact controls?	no	**End:**	Mar	**Future intent (yr):**	ongoing

Technical Goal: Determine relationship between hatchery and natural populations in the basin.

Programmatic Goal: In response to NMFS ('97), uncertainty as to Iron Gate Stock ESU status. Hatchery constructed by Pacific Power and Light Co. to compensate for spawning and nursery areas blocked by the Iron Gate Project.

Coho salmon, Southern Oregon/Northern California Coastal ESU

Stream name	LLID	Watershed name	HUC
Klamath River	1240807415471	Upper Klamath.	10206
Klamath River	1240807415471	Lower Klamath.	10209

Eel River Salmon Restoration Project ID# 129

Correspondent: Harry Vaughn

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap	n/a
Data types:	n/a	population index, genetic	n/a
Uncertainty:		qualitative	

Site selection:	qualitative selection	**Year began:**	1999	**Interval:**	daily
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	CDFG SFRA
Negative impact?	no	**Start:**	Mar	**Support:**	2004
Impact controls?	no	**End:**	Jun	**Future intent (yr):**	6–10

Technical Goal: 1) Develop new trap models; 2) trend analysis; 3) implement protocol.

Programmatic Goal: Long term to monitor population trends.

Stream name	LLID	Watershed name	HUC
Sprout Creek	1238264400697	South Fork Eel.	10106
West Fork Sproul Creek	1238657400410	South Fork Eel.	10106

Institute for Forest and Watershed Management/HSU ID# 40

Correspondent: Dave Hankin

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	n/a	n/a
Data types:	presence/absence	n/a	n/a
Uncertainty:	statistical		

Site selection:	other	**Year began:**	2003	**Interval:**	irregular
Geoprecision:	accurate to stream	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	FRGP
Negative impact?	no	**Start:**	Jun	**Support:**	single sampling event
Impact controls?	no	**End:**	Aug	**Future intent (yr):**	ended

Technical Goal: Develop list of habitat unit sizes, locations and fish abundance in all units w/in these streams. For subsequent modeling work and statistical analysis relating to the presence/absence protocol.

Programmatic Goal:

Stream name	LLID	Watershed name	HUC

Coho salmon, Southern Oregon/Northern California Coastal ESU

Ah Pah Creek	1239496414121	Lower Klamath.	10209
Ah Pah Creek	1239496414121	Mad-Redwood.	10102
McGarvey Creek	1239996415102	Lower Klamath.	10209

Institute for Forest and Watershed Management/HSU ID# 72

Correspondent: Dana McCanne

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	n/a	n/a
Data types:	population abundance, genetic	n/a	n/a
Uncertainty:	statistical		

Site selection:	dictated by logistics/circumstance	**Year began:**	2002	**Interval:**	yearly
Geoprecision:	accurate to subwatershed	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: NOAA/CDFG/commercial-extraction
Negative impact?	no	**Start:**	Aug	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	ongoing

Technical Goal: Population estimates to determine trends over time.

Programmatic Goal: Determine trends in population and ESA status.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1240648407427	Mad-Redwood.	10102
Unknown. Use LLID	1241246407489	Mad-Redwood.	10102
Unknown. Use LLID	1241191407532	Mad-Redwood.	10102
Unknown. Use LLID	1241176407779	Mad-Redwood.	10102
Unknown. Use LLID	1241067408013	Mad-Redwood.	10102
Unknown. Use LLID	1241067408012	Mad-Redwood.	10102
Unknown. Use LLID	1241052407257	Mad-Redwood.	10102
Unknown. Use LLID	1241301407488	Mad-Redwood.	10102
Unknown. Use LLID	1241042407668	Mad-Redwood.	10102
Unknown. Use LLID	1241029407863	Mad-Redwood.	10102
Unknown. Use LLID	1241359408039	Mad-Redwood.	10102
Unknown. Use LLID	1240957408018	Mad-Redwood.	10102
Unknown. Use LLID	1241289407456	Mad-Redwood.	10102
Unknown. Use LLID	1240641407322	Mad-Redwood.	10102
Unknown. Use LLID	1240331407318	Mad-Redwood.	10102
Unknown. Use LLID	1240107407367	Mad-Redwood.	10102
Unknown. Use LLID	1239932407391	Mad-Redwood.	10102
Unknown. Use LLID	1240974408015	Mad-Redwood.	10102

Coho salmon, Southern Oregon/Northern California Coastal ESU

Unknown. Use LLID	1241398408058	Mad-Redwood.	10102
Unknown. Use LLID	1241410407191	Mad-Redwood.	10102
Unknown. Use LLID	1241433407186	Mad-Redwood.	10102
Unknown. Use LLID	1241246407233	Mad-Redwood.	10102
Unknown. Use LLID	1241381408050	Mad-Redwood.	10102
Cloney Gulch	1240482407577	Mad-Redwood.	10102
Eureka Slough	1241459408108	Mad-Redwood.	10102
Falls Gulch	1240384407635	Mad-Redwood.	10102
Freshwater Creek	1241165408023	Mad-Redwood.	10102
Graham Gulch	1240475407539	Mad-Redwood.	10102
Henderson Gulch	1241322407550	Mad-Redwood.	10102
Horse Gulch	1240492407761	Mad-Redwood.	10102
Little Freshwater Creek	1240624407569	Mad-Redwood.	10102
McCready Gulch	1240638407639	Mad-Redwood.	10102
Ryan Creek	1241135407887	Mad-Redwood.	10102
South Fork Freshwater Creek	1240467407317	Mad-Redwood.	10102

Institute for Forest and Watershed Management/HSU ID# 73

Correspondent: Dana McCanne

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	direct observation, electrofishing	n/a
Data types:	n/a	population abundance, genetic	n/a
Uncertainty:		statistical	

Site selection:	other	**Year began:**	2002	**Interval:**	daily
Geoprecision:	accurate to subwatershed	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: NOAA/CDFG/commercial-extraction
Negative impact?	no	**Start:**	Mar	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Jun	**Future intent (yr):**	ongoing

Technical Goal: Population estimates to determine trends over time.

Programmatic Goal: Determine trends in population and ESA status.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1241301407488	Mad-Redwood.	10102
Unknown. Use LLID	1241176407779	Mad-Redwood.	10102
Unknown. Use LLID	1241191407532	Mad-Redwood.	10102
Unknown. Use LLID	1241246407233	Mad-Redwood.	10102
Unknown. Use LLID	1241289407456	Mad-Redwood.	10102
Unknown. Use LLID	1241052407257	Mad-Redwood.	10102

Coho salmon, Southern Oregon/Northern California Coastal ESU

Unknown. Use LLID	1241359408039	Mad-Redwood.	10102
Unknown. Use LLID	1241398408058	Mad-Redwood.	10102
Unknown. Use LLID	1241410407191	Mad-Redwood.	10102
Unknown. Use LLID	1241381408050	Mad-Redwood.	10102
Unknown. Use LLID	1241246407489	Mad-Redwood.	10102
Unknown. Use LLID	1241067408012	Mad-Redwood.	10102
Unknown. Use LLID	1241042407668	Mad-Redwood.	10102
Unknown. Use LLID	1241029407863	Mad-Redwood.	10102
Unknown. Use LLID	1240974408015	Mad-Redwood.	10102
Unknown. Use LLID	1240957408018	Mad-Redwood.	10102
Unknown. Use LLID	1240648407427	Mad-Redwood.	10102
Unknown. Use LLID	1240641407322	Mad-Redwood.	10102
Unknown. Use LLID	1240331407318	Mad-Redwood.	10102
Unknown. Use LLID	1240107407367	Mad-Redwood.	10102
Unknown. Use LLID	1239932407391	Mad-Redwood.	10102
Unknown. Use LLID	1241433407186	Mad-Redwood.	10102
Unknown. Use LLID	1241067408013	Mad-Redwood.	10102
Cloney Gulch	1240482407577	Mad-Redwood.	10102
Eureka Slough	1241459408108	Mad-Redwood.	10102
Falls Gulch	1240384407635	Mad-Redwood.	10102
Freshwater Creek	1241165408023	Mad-Redwood.	10102
Graham Gulch	1240475407539	Mad-Redwood.	10102
Henderson Gulch	1241322407550	Mad-Redwood.	10102
Horse Gulch	1240492407761	Mad-Redwood.	10102
Little Freshwater Creek	1240624407569	Mad-Redwood.	10102
McCready Gulch	1240638407639	Mad-Redwood.	10102
Ryan Creek	1241135407887	Mad-Redwood.	10102
South Fork Freshwater Creek	1240467407317	Mad-Redwood.	10102

Institute for Forest and Watershed Management/HSU ID# 74

Correspondent: Dana McCanne

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	population abundance, demographic, genetic
Uncertainty:			basic quantitative

Site selection:	other	**Year began:**	2002	**Interval:**	daily
Geoprecision:	accurate to subwatershed	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: NOAA/CDFG/commercial-extraction
Negative impact?	no	**Start:**	Oct	**Support:**	yr-to-yr

Coho salmon, Southern Oregon/Northern California Coastal ESU

Impact controls? no **End:** Mar **Future intent (yr):** ongoing

Technical Goal: Population estimates to determine trends over time.

Programmatic Goal: Determine trends in population and ESA status.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1241029407863	Mad-Redwood.	10102
Unknown. Use LLID	1240648407427	Mad-Redwood.	10102
Unknown. Use LLID	1240331407318	Mad-Redwood.	10102
Unknown. Use LLID	1240107407367	Mad-Redwood.	10102
Unknown. Use LLID	1239932407391	Mad-Redwood.	10102
Unknown. Use LLID	1240957408018	Mad-Redwood.	10102
Unknown. Use LLID	1241246407233	Mad-Redwood.	10102
Unknown. Use LLID	1241433407186	Mad-Redwood.	10102
Unknown. Use LLID	1241410407191	Mad-Redwood.	10102
Unknown. Use LLID	1241398408058	Mad-Redwood.	10102
Unknown. Use LLID	1241381408050	Mad-Redwood.	10102
Unknown. Use LLID	1241359408039	Mad-Redwood.	10102
Unknown. Use LLID	1241301407488	Mad-Redwood.	10102
Unknown. Use LLID	1240974408015	Mad-Redwood.	10102
Unknown. Use LLID	1241246407489	Mad-Redwood.	10102
Unknown. Use LLID	1240641407322	Mad-Redwood.	10102
Unknown. Use LLID	1241191407532	Mad-Redwood.	10102
Unknown. Use LLID	1241176407779	Mad-Redwood.	10102
Unknown. Use LLID	1241067408013	Mad-Redwood.	10102
Unknown. Use LLID	1241067408012	Mad-Redwood.	10102
Unknown. Use LLID	1241052407257	Mad-Redwood.	10102
Unknown. Use LLID	1241042407668	Mad-Redwood.	10102
Unknown. Use LLID	1241289407456	Mad-Redwood.	10102
Cloney Gulch	1240482407577	Mad-Redwood.	10102
Eureka Slough	1241459408108	Mad-Redwood.	10102
Falls Gulch	1240384407635	Mad-Redwood.	10102
Freshwater Creek	1241165408023	Mad-Redwood.	10102
Graham Gulch	1240475407539	Mad-Redwood.	10102
Henderson Gulch	1241322407550	Mad-Redwood.	10102
Horse Gulch	1240492407761	Mad-Redwood.	10102
Little Freshwater Creek	1240624407569	Mad-Redwood.	10102
McCready Gulch	1240638407639	Mad-Redwood.	10102
Ryan Creek	1241135407887	Mad-Redwood.	10102
South Fork Freshwater Creek	1240467407317	Mad-Redwood.	10102

Institute for Forest and Watershed Management/HSU ID# 281

Correspondent: Dana McCanne

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	n/a	n/a
Data types:	population abundance	n/a	n/a

Coho salmon, Southern Oregon/Northern California Coastal ESU

Uncertainty: statistical

Site selection:	other	**Year began:**	1999	**Interval:**	yearly
Geoprecision:	accurate	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: NOAA/CDFG/Co
Negative impact?	no	**Start:**	Aug	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	ongoing

Technical Goal: Population estimates and trends over time.

Programmatic Goal: Establishing trends in population for determining ESA status.

Stream name	LLID	Watershed name	HUC
Hollow Tree Creek	1237265398578	South Fork Eel.	10106

Mattole Salmon Group ID# 213

Correspondent: Maureen Roche

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	direct observation	n/a
Data types:	presence/absence, population index, population abundance, demographic, genetic	presence/absence, population index, population abundance, demographic, genetic	n/a
Uncertainty:	statistical	statistical	

Site selection:	dictated by logistics/circumstance	**Year began:**	1996	**Interval:**	yearly
Geoprecision:	accurate to stream	**Year ended:**	and 1999	**Duration:**	6–10 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/BLM
Negative impact?	yes	**Start:**	Aug	**Support:**	indefinite
Impact controls?	no	**End:**	Aug	**Future intent (yr):**	indefinite

Technical Goal: Test ecological hypotheses on limiting factors and effects of disturbance (especially temperature and sediment dynamics).

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Mattole River	1243528403022	Mattole.	10107

Mattole Salmon Group ID# 221

Correspondent: Maureen Roche

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	spawner count, redd count, carcass count

Coho salmon, Southern Oregon/Northern California Coastal ESU

Data types:	n/a	n/a	presence/absence, population index
Uncertainty:			qualitative

Site selection:	dictated by logistics/circumstance	**Year began:**	1981	**Interval:**	weekly
Geoprecision:	accurate to watershed	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/BLM
Negative impact?	yes	**Start:**	Dec	**Support:**	indefinite
Impact controls?	no	**End:**	Jan	**Future intent (yr):**	indefinite

Technical Goal: Test ecological hypotheses on limiting factors and effects of disturbance (especially temperature and sediment dynamics).

Programmatic Goal: Species status knowledge. No coho salmon rearing since listing.

Stream name	LLID	Watershed name	HUC
Mattole River	1243528403022	Mattole.	10107

Mattole Salmon Group ID# 223

Correspondent: Maureen Roche

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	direct observation	n/a
Data types:	presence/absence, population index, population abundance, demographic, genetic	presence/absence, population index, population abundance, demographic, genetic	n/a
Uncertainty:	statistical	statistical	

Site selection:	dictated by logistics/circumstance	**Year began:**	1996	**Interval:**	other
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/BLM
Negative impact?	yes	**Start:**	see notes	**Support:**	indefinite
Impact controls?	no	**End:**		**Future intent (yr):**	indefinite

Technical Goal: Test ecological hypotheses on limiting factors and effects of disturbance (especially temperature and sediment dynamics).

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Mattole River	1243528403022	Mattole.	10107

Coho salmon, Southern Oregon/Northern California Coastal ESU

Mattole Salmon Group ID# 231

Correspondent: Maureen Roche

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	presence/absence, population abundance
Uncertainty:			qualitative

Site selection:	dictated by logistics/circumstance	**Year began:**	1982	**Interval:**	daily
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/BLM
Negative impact?	yes	**Start:**	Nov	**Support:**	indefinite
Impact controls?	no	**End:**	Jan	**Future intent (yr):**	indefinite

Technical Goal: Test ecological hypotheses on limiting factors and effects of disturbance (especially temperature and sediment dynamics).

Programmatic Goal: Learn extent of rearing habitat, the limiting factor, based on flow, temp, SCD thresholds (coho salmon). Need for genetic rescue (Chinook salmon). Unique adaptation to 80 deg. F water, needs protection & education for poachers (steelhead).

Stream name	LLID	Watershed name	HUC
Mattole River	1243528403022	Mattole.	10107

Mattole Salmon Group ID# 233

Correspondent: Maureen Roche

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap	downstream trap	n/a
Data types:	population abundance	population abundance	n/a
Uncertainty:	statistical	statistical	

Site selection:	dictated by logistics/circumstance	**Year began:**	1985	**Interval:**	other
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/BLM
Negative impact?	yes	**Start:**	Apr	**Support:**	indefinite
Impact controls?	no	**End:**	Jun	**Future intent (yr):**	indefinite

Technical Goal: Test ecological hypotheses on limiting factors and effects of disturbance (especially temperature and sediment dynamics).

Programmatic Goal: Know where riparian protection is lacking and educate 88% private ownership of water and stability values (coho salmon). Chinook salmon 2x greater than coho salmon; sensitive to limiting factor of quality nursery habitat and quantity of flow

Coho salmon, Southern Oregon/Northern California Coastal ESU

Stream name	LLID	Watershed name	HUC
Mattole River	1243528403022	Mattole.	10107

Mill Creek Fisheries Monitoring Program ID# 217

Correspondent: Zack Larson

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, minnowtrap	downstream trap	upstream trap, spawner count, redd count, carcass count
Data types:	population abundance, demographic	population index, demographic	presence/absence, population abundance, demographic, genetic
Uncertainty:	statistical	statistical	statistical

Site selection:	qualitative selection	**Year began:**	1994	**Interval:**	daily
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	CDFG SFRA
Negative impact?	yes	**Start:**	Feb	**Support:**	2005
Impact controls?	no	**End:**	Jul	**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal: Long-term population trend monitoring. Monitoring coho salmon in response to listing. Mill Creek is considered a typical tributary of the Smith - disturbed with some old growth. Treated as reference stream.

Stream name	LLID	Watershed name	HUC
East Fork Mill Creek	1240987417345	Smith.	10101
West Branch Mill Creek	1240987417344	Smith.	10101

USFS ID# 229

Correspondent: James Kilgore

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, direct observation, electrofishing	downstream trap	redd count, carcass count
Data types:	presence/absence, population index, population abundance, demographic, genetic	presence/absence, population index, population abundance, demographic, genetic	presence/absence, population index, population abundance, demographic, genetic
Uncertainty:	statistical	statistical	statistical

Site selection:	other	**Year began:**	1993	**Interval:**	other
Geoprecision:	accurate to subwatershed	**Year ended:**	ongoing	**Duration:**	6–10 yr

Coho salmon, Southern Oregon/Northern California Coastal ESU

Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	agency base
Negative impact?	no	**Start:**		**Support:**	ongoing
Impact controls?	no	**End:**		**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Barkhouse Creek	1228482418204	Upper Klamath.	10206
Beaver Creek	1228157418694	Upper Klamath.	10206
Empire Creek	1227377418668	Upper Klamath.	10206
Horse Linto Creek	1236196410002	Trinity.	10211
Humbug Creek	1226643418342	Upper Klamath.	10206
Lumgrey Creek	1227378418673	Upper Klamath.	10206
McKinney Creek	1228905418428	Upper Klamath.	10206
Scott River	1230355417791	Scott.	10208

USFS ID# 87

Correspondent: Brenda Olsen

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	n/a	n/a
Data types:	presence/absence	n/a	n/a
Uncertainty:			

Site selection:	random site selection	**Year began:**	1989	**Interval:**	other
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	rotating, regular	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	agency base
Negative impact?	no	**Start:**		**Support:**	indefinite
Impact controls?	no	**End:**		**Future intent (yr):**	indefinite

Technical Goal:

Programmatic Goal: Determine range/distribution.

Stream name	LLID	Watershed name	HUC
North Fork Salmon River	1233222412571	Salmon.	10210
Salmon River	1234923413776	Salmon.	10210
South Fork Salmon River	1233222412570	Salmon.	10210

USFS ID# 88

Correspondent: Brenda Olsen

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	n/a	spawner count, redd count
Data types:	presence/absence	n/a	presence/absence, population abundance
Uncertainty:			qualitative

Coho salmon, Southern Oregon/Northern California Coastal ESU

Site selection:	dictated by logistics/circumstance	**Year began:**	1980	**Interval:**	once
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	20+ yr
Positive impact?	no	**Season:**		**Funding source:**	agency base
Negative impact?	no	**Start:**	Jul	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Jul	**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal: Management and population monitoring (largest remaining wild spring run in Klamath Basin).

Stream name	LLID	Watershed name	HUC
North Fork Salmon River	1233222412571	Salmon.	10210
Salmon River	1234923413776	Salmon.	10210
South Fork Salmon River	1233222412570	Salmon.	10210

USFS - Klamath/ 6 Rivers NF ID# 36

Correspondent: John Grunbaum

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	n/a	direct observation
Data types:	population index, demographic	n/a	population index
Uncertainty:	none		unknown

Site selection:	dictated by logistics/circumstance	**Year began:**	2002	**Interval:**	once
Geoprecision:	accurate to subwatershed	**Year ended:**	2004	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	agency base
Negative impact?	no	**Start:**	Jul	**Support:**	currently
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	0–5

Technical Goal: Distribution and relative abundance of coho salmon.

Programmatic Goal: Determining impacts of projects in the NF and if/where they happen.

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

USFS - Klamath/ 6 Rivers NF ID# 243

Correspondent: John Grunbaum

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap	downstream trap	n/a
Data types:	population index, demographic	population index, demographic	n/a
Uncertainty:	statistical	statistical	

Coho salmon, Southern Oregon/Northern California Coastal ESU

Site selection:	other	**Year began:**	2002	**Interval:**	daily
Geoprecision:	accurate to stream	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	agency base
Negative impact?	no	**Start:**	Apr	**Support:**	unknown
Impact controls?	no	**End:**	Jul	**Future intent (yr):**	unknown

Technical Goal: Assess anadromous fish populations in Red Cap creek, including migration timing, behavior and life history patterns.

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Red Cap Creek	1236043412589	Lower Klamath.	10209

USFS Lower Trinity Ranger Station ID# 191

Correspondent: Anita Andazola

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap	spawner count, redd count, carcass count, direct observation
Data types:	n/a	population abundance	presence/absence, population abundance
Uncertainty:		basic quantitative	qualitative

Site selection:	dictated by logistics/circumstance	**Year began:**	1991	**Interval:**	other
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	various: CDFG/PCFFA/SRNF
Negative impact?	no	**Start:**	Oct	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Dec	**Future intent (yr):**	indefinite

Technical Goal: Estimate yearly abundance of coho salmon. Technical evaluation of the effectiveness of instream restoration efforts.

Programmatic Goal: Regulatory compliance per ESA; management evaluation on instream restoration work.

Stream name	LLID	Watershed name	HUC
Cedar Creek	1236032410062	Trinity.	10211
Horse Linto Creek	1236196410002	Trinity.	10211

USFS Lower Trinity Ranger Station ID# 193

Correspondent: Anita Andazola

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap	upstream trap, spawner count, redd count

Coho salmon, Southern Oregon/Northern California Coastal ESU

Data types:	n/a	presence/absence, population abundance	presence/absence, population index, population abundance
Uncertainty:		basic quantitative	qualitative

Site selection:	qualitative selection	**Year began:**	1991	**Interval:**	irregularly
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	various: CDFG/PCFFA/SRNF
Negative impact?	no	**Start:**	Mar	**Support:**	yr-to-yr

Technical Goal: Estimate yearly abundance of coho salmon. Technical evaluation of the effectiveness of instream restoration efforts.

Programmatic Goal: Regulatory compliance per ESA; management evaluation on instream restoration work.

Stream name	LLID	Watershed name	HUC
Horse Linto Creek	1236196410002	Trinity.	10211

USFS Lower Trinity Ranger Station ID# 197

Correspondent: Anita Andazola

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	spawner count, redd count, carcass count
Data types:	n/a	n/a	presence/absence, population abundance
Uncertainty:			qualitative

Site selection:	unknown	**Year began:**	1996	**Interval:**	weekly
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	unknown
Negative impact?	yes	**Start:**	Dec	**Support:**	unknown
Impact controls?	no	**End:**	Feb	**Future intent (yr):**	indefinite

Technical Goal: Estimate coho salmon population.

Programmatic Goal: Regulatory compliance per ESA, Sharber-Pekham Cr. is thought to have the highest densities of coho salmon on the SRNF.

Stream name	LLID	Watershed name	HUC
Sharber Creek	1235638408959	Trinity.	10211

USFS Lower Trinity Ranger Station ID# 199

Correspondent: Anita Andazola

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap	spawner count, redd count,

Coho salmon, Southern Oregon/Northern California Coastal ESU

Data types:	n/a		population abundance		presence/absence, population abundance
Uncertainty:			basic quantitative		qualitative carcass count
Site selection:	qualitative selection	**Year began:**	1991	**Interval:**	irregularly
Geoprecision:	very precise	**Year ended:**	2003	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	various: CDFG/PCFFA/SRNF
Negative impact?	no	**Start:**	Mar	**Support:**	indefinite

Technical Goal: Estimate yearly abundance of coho salmon. Technical evaluation of the effectiveness of instream restoration efforts.

Programmatic Goal: Restore salmonid habitat and populations to self-sustaining level.

Stream name	LLID	Watershed name	HUC
Willow Creek	1236292409450	Trinity.	10211

USGS Ca. Coop. Fisheries Research Unit HSU ID# 161

Correspondent: Walt Duffy

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing, other	downstream trap	spawner count, redd count, carcass count
Data types:	population abundance	population abundance	population index, population abundance, demographic
Uncertainty:	statistical		statistical

Site selection:	unknown	**Year began:**	varies	**Interval:**	other
Geoprecision:	very precise	**Year ended:**	varies	**Duration:**	unknown yr
Response to:		**Years missed:**	varies	**Summaries:**	seasonally
Positive impact?	no	**Season:**		**Funding source:**	NOAA Fish
Negative impact?	no	**Start:**	see notes	**Support:**	2004
Impact controls?	no	**End:**	see notes	**Future intent (yr):**	indefinite

Technical Goal:

Programmatic Goal: Demographic data for coho to use in models to see how they respond to different habitat conditions.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1240307413444	Mad-Redwood.	10102
Boyes Creek	1240211413652	Mad-Redwood.	10102
Browns Creek	1229895406681	Cottonwood Headwaters.	20113
Browns Creek	1229895406681	South Fork Trinity.	10212
Browns Creek	1229895406681	Trinity.	10211
Godwood Creek	1240222413652	Mad-Redwood.	10102

Coho salmon, Southern Oregon/Northern California Coastal ESU

Little Lost Man Creek	1240299413291	Mad-Redwood.	10102
Lost Man Creek	1240301413317	Mad-Redwood.	10102
May Creek	1240285413485	Mad-Redwood.	10102
Prairie Creek	1240487412999	Mad-Redwood.	10102

Yurok Tribal Fisheries ID# 147

Correspondent: Sarah Beesley

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, direct observation, electrofishing, minnowtrap, other	n/a	upstream trap, spawner count, redd count, carcass count, direct observation, electrofishing
Data types:	presence/absence, population index, demographic	n/a	presence/absence
Uncertainty:	qualitative		qualitative

Site selection:	qualitative selection	**Year began:**	2002	**Interval:**	other
Geoprecision:	very precise	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG SFRA/Cal.Coast.S .Monit.
Negative impact?	yes	**Start:**	Apr	**Support:**	2004
Impact controls?	no	**End:**	Nov	**Future intent (yr):**	0–5

Technical Goal: Baseline data on presence of coho salmon and steelhead populations and habitat conditions.

Programmatic Goal: Prioritize restoration in the Salt Creek Watershed.

Stream name	LLID	Watershed name	HUC
High Prairie Creek	1240705415679	Lower Klamath.	10209
Salt Creek	1240589415474	Lower Klamath.	10209

Yurok Tribal Fisheries ID# 148

Correspondent: Sarah Beesley

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	spawner count, redd count, carcass count, direct observation, electrofishing
Data types:	n/a	n/a	presence/absence
Uncertainty:			qualitative

Site selection:	qualitative selection	**Year began:**	2002	**Interval:**	weekly
Geoprecision:	very precise	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG SFRA/Cal.Coast.S

Coho salmon, Southern Oregon/Northern California Coastal ESU

Negative impact?	yes	**Start:**	Nov	**Support:**	2004
Impact controls?	no	**End:**	Mar	**Future intent (yr):**	0–5

Technical Goal: Baseline data on presence of coho salmon and steelhead populations and habitat conditions.

Programmatic Goal: Prioritize restoration in the Salt Creek Watershed.

Stream name	LLID	Watershed name	HUC
High Prairie Creek	1240705415679	Lower Klamath.	10209

Yurok Tribal Fisheries ID# 160

Correspondent: Hans Voight

	Juvenile	Outmigrants	Adults	
Field techniques:	direct observation, electrofishing	n/a	n/a	.Monit.
Data types:	population abundance	n/a	n/a	
Uncertainty:				

Site selection:	random site selection/dictated by logistics/circum	**Year began:**	2000	**Interval:**	daily
Geoprecision:	accurate to subwatershed	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: NOAA Fish/BIA
Negative impact?	no	**Start:**	Jul	**Support:**	indefinite
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	ongoing

Technical Goal: Estimate over-summering abundance (YOY).

Programmatic Goal: ESA - trend data collection for Tribal trust species.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1239800416395	Lower Klamath.	10209
Unknown. Use LLID	1239467413658	Lower Klamath.	10209
Unknown. Use LLID	1239349414229	Lower Klamath.	10209
Unknown. Use LLID	1240241415281	Lower Klamath.	10209
Ah Pah Creek	1239496414121	Lower Klamath.	10209
Ah Pah Creek	1239496414121	Mad-Redwood.	10102
Bear Creek	1239303414030	Lower Klamath.	10209
Cappell Creek	1238228412813	Lower Klamath.	10209
Crescent City Fork	1238210414754	Lower Klamath.	10209
East Fork Pecwan Creek	1238445413431	Lower Klamath.	10209
Halfmoon Creek	1233553414758	Salmon.	10210
Hunter Creek	1240623415453	Lower Klamath.	10209
Klamath River	1240807415471	Upper Klamath.	10206
Klamath River	1240807415471	Lower Klamath.	10209

Coho salmon, Southern Oregon/Northern California Coastal ESU

McGarvey Creek	1239996415102	Lower Klamath.	10209
Mettah Creek	1238707413081	Lower Klamath.	10209
Nickowitz Creek	1238192414576	Lower Klamath.	10209
North Fork Ah Pah Creek	1239413414209	Lower Klamath.	10209
Omogar Creek	1239626414879	Lower Klamath.	10209
Pecwan Creek	1238546413421	Lower Klamath.	10209
Pine Creek	1237509412000	Lower Klamath.	10209
Roach Creek	1238504412771	Lower Klamath.	10209
Tarup Creek	1239627415055	Lower Klamath.	10209
Tectah Creek	1239006413664	Lower Klamath.	10209
Turwar Creek	1240010415197	Lower Klamath.	10209
West Fork Blue Creek	1238933414502	Lower Klamath.	10209

Yurok Tribe ID# 219

Correspondent: Monica Hiner

	Juvenile	Outmigrants	Adults
Field techniques:	electrofishing	n/a	n/a
Data types:	presence/absence	n/a	n/a
Uncertainty:	basic quantitative		

Site selection:	dictated by logistics/circumstance	**Year began:**	2002	**Interval:**	other
Geoprecision:	accurate to stream	**Year ended:**	2002	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	none
Positive impact?	no	**Season:**		**Funding source:**	agency base
Negative impact?	no	**Start:**	May	**Support:**	single sampling event
Impact controls?	no	**End:**	May	**Future intent (yr):**	ended

Technical Goal: Assess fish presence/absence for proposed study: Sarah Beesley's study of salmonid habitat quality for restoration recommendations.

Programmatic Goal: Assessment of fish presence.

Stream name	LLID	Watershed name	HUC
High Prairie Creek	1240705415679	Lower Klamath.	10209
Salt Creek	1240589415474	Lower Klamath.	10209

Yurok Tribe ID# 253

Correspondent: Monica Hiner

	Juvenile	Outmigrants	Adults
Field techniques:	seining	seining	n/a
Data types:	presence/absence, population abundance	presence/absence, population abundance	n/a
Uncertainty:	basic quantitative	basic quantitative	

Site selection:	dictated by logistics/circumstance	**Year began:**	2002	**Interval:**	other

Coho salmon, Southern Oregon/Northern California Coastal ESU

		Year ended:	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	CDFG
Negative impact?	no	**Start:**	see notes	**Support:**	2003
Impact controls?	no	**End:**	see notes	**Future intent (yr):**	ongoing

Technical Goal: Beach seining in South Slough: Determine habitat suitability and use by juvenile salmonids. Purse seining: Determine relative abundance and emigration patterns for juvenile salmon; also compare size of juvenile salmon compared w/ CDFG beach seine efforts.

Programmatic Goal: Management evaluation.

Stream name	LLID	Watershed name	HUC
Geoprecision: Unknown. Use LLID		accurate	1240749415436
Lower Klamath. 10209			
Klamath River	1240807415471	Lower Klamath.	10209
Klamath River	1240807415471	Upper Klamath.	10206

Coho salmon, Central California Coast ESU

Campbell/Hawthorne Timber Co. ID# 282

Correspondent: David Wright

	Juvenile	Outmigrants	Adults
Field techniques:	electrofishing	electrofishing	spawner count
Data types:	population index, demographic, genetic	population index	presence/absence
Uncertainty:	qualitative	qualitative	unknown

Site selection:	unknown	**Year began:**	1993	**Interval:**	yearly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	commercial: extraction
Negative impact?	yes	**Start:**	Sept	**Support:**	ongoing
Impact controls?	no	**End:**	Nov	**Future intent (yr):**	ongoing

Technical Goal: Determine trends in salmonid densities: Relative abundance on an annual basis over a long period of time.

Programmatic Goal: Determine health of populations.

Stream name	LLID	Watershed name	HUC
Bearpen Creek	1231149385774	Gualala-Salmon.	10109
Bearpen Creek	1231149385774	Russian.	10110
DeHaven Creek	1237852396593	Big-Navarro-Garcia.	10108
Redwood Creek	1227447386410	Russian.	10110
South Fork Usal Creek	1238286398419	Big-Navarro-Garcia.	10108

Coho salmon, Central California Coast ESU

Campbell/Hawthorne Timber Co. ID# 283

Correspondent: David Wright

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	presence/absence
Uncertainty:			basic quantitative

Site selection:	unknown	**Year began:**	1993	**Interval:**	yearly
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	commercial: extraction
Negative impact?	yes	**Start:**	Dec	**Support:**	ongoing
Impact controls?	no	**End:**	Apr	**Future intent (yr):**	ongoing

Technical Goal: Determine trends in salmonid densities: Relative abundance on an annual basis over a long period of time.

Programmatic Goal: Determine health of populations.

Stream name	LLID	Watershed name	HUC
Bearpen Creek	1231149385774	Gualala-Salmon.	10109
Bearpen Creek	1231149385774	Russian.	10110
DeHaven Creek	1237852396593	Big-Navarro-Garcia.	10108
Redwood Creek	1229999385273	Russian.	10110
South Fork Usal Creek	1238286398419	Big-Navarro-Garcia.	10108

CDFG ID# 122

Correspondent: Doug Albin

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	n/a	n/a
Data types:	presence/absence	n/a	n/a
Uncertainty:	qualitative		

Site selection:	qualitative selection	**Year began:**	1999	**Interval:**	yearly
Geoprecision:	accurate to watershed	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	rotating, opportunistic	**Summaries:**	other
Positive impact?	no	**Season:**		**Funding source:**	state bond funds
Negative impact?	no	**Start:**	Jul	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	indefinite

Technical Goal:

Programmatic Goal: Habitat restoration prescriptions and correlation of habitat conditions with species presence/absence.

Stream name	LLID	Watershed name	HUC

Coho salmon, Central California Coast ESU

Not georeferenced 9999999999999

CDFG ID# 181

Correspondent: Alan Grass

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap	upstream trap
Data types:	n/a	population abundance	population abundance, genetic
Uncertainty:			

Site selection:	dictated by logistics/circumstance	**Year began:**	1962	**Interval:**	daily
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	unknown	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	CDFG (assume)
Negative impact?	no	**Start:**	All Yr	**Support:**	ongoing (assume)
Impact controls?	no	**End:**	All Yr	**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal: Develop a minimum sustained escapement to the SF Noyo of 1500 adult coho annually. Target smolt release is 75,000 between March-April each year.

Stream name	LLID	Watershed name	HUC
South Fork Noyo River	1237258394248	Big-Navarro-Garcia.	10108

CDFG ID# 173

Correspondent: Don Clausen Hatchery

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	population abundance, genetic
Uncertainty:			unknown

Site selection:	dictated by logistics/circumstance	**Year began:**	1981	**Interval:**	daily
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete with gaps, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	CDFG/hatchery (assume)
Negative impact?	no	**Start:**		**Support:**	ongoing (assume)
Impact controls?	no	**End:**		**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal: Captive broodstock program initiated in '01 after unsuccessful Noyo planting (through '96). Captive broodstock program has goal of releasing 50,000 fingerlings and 50,000 yearlings into Russian River streams.

Stream name	LLID	Watershed name	HUC

Coho salmon, Central California Coast ESU

Dry Creek	1228562385862	Russian.	10110

CDFG ID# 113

Correspondent: George Neillands

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	n/a	n/a
Data types:	population index, population abundance, demographic, genetic	n/a	n/a
Uncertainty:	statistical		

Site selection:	qualitative selection	**Year began:**	2002	**Interval:**	yearly
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	NOAA Fish
Negative impact?	yes	**Start:**	Aug	**Support:**	2003
Impact controls?	yes	**End:**	Oct	**Future intent (yr):**	ongoing

Technical Goal: Define sampling universe and provide sampling for target species. Provide regional sampling design to provide broad based population assessment of ESA-listed salmonids throughout N. Calif. ESUs.

Programmatic Goal: To provide long-term viable population assessment data; to monitor population trends w/in ESA-listed salmonid ESUs.

Stream name	LLID	Watershed name	HUC
Caspar Creek	1238158393618	Big-Navarro-Garcia.	10108
Hare Creek	1238121394173	Big-Navarro-Garcia.	10108
Noyo River	1238089394276	Big-Navarro-Garcia.	10108

CDFG ID# 115

Correspondent: George Neillands

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap, spawner count, redd count, carcass count, direct observation
Data types:	n/a	n/a	population index, population abundance, demographic, genetic
Uncertainty:			statistical

Site selection:	dictated by logistics/circumstance	**Year began:**	2000	**Interval:**	weekly
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	CDFG

Coho salmon, Central California Coast ESU

Negative impact?	yes	**Start:**	Dec	**Support:**	2004
Impact controls?	yes	**End:**	Apr	**Future intent (yr):**	0–5

Technical Goal: Estimate run composition and temporal distribution; collect genetic tissue samples

Programmatic Goal: SRAMP has provided population assessment across the KMP and NC ESUs for anadromous species.

Stream name	LLID	Watershed name	HUC
Pudding Creek	1238083394591	Big-Navarro-Garcia.	10108

CDFG ID# 235

Correspondent: Larry Preston

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	n/a	other
Data types:	presence/absence	n/a	presence/absence
Uncertainty:	none		

Site selection:	qualitative selection	**Year began:**	2000	**Interval:**	once
Geoprecision:	accurate to watershed	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	various:CDFG SFRA/FRGP
Negative impact?	no	**Start:**	May	**Support:**	2004
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	0–5

Technical Goal:

Programmatic Goal: Respond to California ESA and develop recovery parameters.

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

CDFG ID# 284

Correspondent: Larry Preston

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	other
Data types:	n/a	n/a	presence/absence
Uncertainty:			

Site selection:	qualitative selection	**Year began:**	2000	**Interval:**	daily
Geoprecision:	accurate to subwatershed	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	various:CDFG

Coho salmon, Central California Coast ESU

Negative impact?	no	**Start:**	May	**Support:**	2004
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	0–5
Technical Goal:					
Programmatic Goal:					

Stream name	LLID	Watershed name	HUC
Sproule Creek	1232496385937	Gualala-Salmon.	10109

CDFG ID# 127

Correspondent: Brad Valentine

	Juvenile	Outmigrants	Adults	
Field techniques:	electrofishing	n/a	n/a	
Data types:	population index	n/a	n/a	SFRA/FRGP
Uncertainty:	statistical			

Site selection:	qualitative selection	**Year began:**	1992	**Interval:**	yearly
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete with gaps, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	CDFG
Negative impact?	no	**Start:**	Oct	**Support:**	indefinite (underfunded)
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	indefinite
Technical Goal:	Long-term monitoring of steelhead and coho salmon populations.				
Programmatic Goal:	Directed at logging impacts.				

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1237544393463	Big-Navarro-Garcia.	10108
Little North Fork Noyo River	1236958394458	Big-Navarro-Garcia.	10108

Environmental Science Associates ID# 118

Correspondent: Mike Podlech

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap	direct observation	upstream trap
Data types:	population abundance, demographic	population abundance, demographic, genetic	population index
Uncertainty:	qualitative		basic quantitative

Site selection:	dictated by logistics/circumstance	**Year began:**	2003	**Interval:**	daily
Geoprecision:	accurate	**Year ended:**		**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	private grant
Negative impact?	yes	**Start:**	Mar	**Support:**	currently

Coho salmon, Central California Coast ESU

Impact controls?	no	**End:**	Jun	**Future intent (yr):**	0–5
Technical Goal:	Outlet monitoring of pond.				
Programmatic Goal:	Part of a NMFS enforcement action.				

Stream name	LLID	Watershed name	HUC
San Vicente Creek	1221929370093	San Lorenzo-Soquel.	60001

Golden Gate National Recreation Area (NPS) ID# 24

Correspondent: Darren Fong

	Juvenile	Outmigrants	Adults
Field techniques:	electrofishing, seining	n/a	spawner count, redd count
Data types:	presence/absence, population index, demographic, genetic	n/a	population index, demographic, genetic
Uncertainty:	statistical		none unfunded

Site selection:	dictated by logistics/circumstance - qualitative	**Year began:**	1994	**Interval:**	see notes
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	yes	**Season:**	see notes	**Funding source:**	agency base
Negative impact?	no	**Start:**		**Support:**	ongoing
Impact controls?	no	**End:**		**Future intent (yr):**	ongoing
Technical Goal:	Determine whether population fluctuations are a result of management actions and how.				
Programmatic Goal:	To determine natural variation in population dynamics.				

Stream name	LLID	Watershed name	HUC
Redwood Creek	1225776378596	Tomales-Drake Bays.	50005

HG Harvey & Assoc. ID# 33

Correspondent: Scott Gressey

	Juvenile	Outmigrants	Adults
Field techniques:	seining, other	seining, other	n/a
Data types:	presence/absence	presence/absence	n/a
Uncertainty:	none	none	

Site selection:	dictated by logistics/circumstance	**Year began:**	2002	**Interval:**	other
Geoprecision:	accurate	**Year ended:**	2002	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	agency base
Negative impact?	no	**Start:**	Oct	**Support:**	single sampling

Coho salmon, Central California Coast ESU

Impact controls?	no	**End:**	Nov	**Future intent (yr):**	ended

Technical Goal: Determine if sampling protocol could be developed which would effectively sample in the lagoon for salmonids.

Programmatic Goal: Feasibility analysis to see if juveniles/smolts would be affected by proposed breeding program.

Stream name	LLID	Watershed name	HUC
San Lorenzo River	1220302369911	San Lorenzo-Soquel.	60001

HG Harvey and Assoc. ID# 54

Correspondent: Laird Henkel

	Juvenile	Outmigrants	Adults	
Field techniques:	direct observation, electrofishing	direct observation, electrofishing	n/a	event
Data types:	population abundance, demographic	presence/absence, population abundance	n/a	
Uncertainty:	statistical	statistical		

Site selection:	random site selection	**Year began:**	1994	**Interval:**	yearly
Geoprecision:	precise	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete with gaps, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	municipal
Negative impact?	no	**Start:**	Aug	**Support:**	currently
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	ongoing

Technical Goal: Estimate density and abundance for watershed; compare historic sampling methods to newer randomized sampling.

Programmatic Goal: Develop baseline data for use in general watershed management.

Stream name	LLID	Watershed name	HUC
Bean Creek	1220605370516	San Lorenzo-Soquel.	60001
Bear Creek	1221209371277	San Lorenzo-Soquel.	60001
Boulder Creek	1221202371271	San Lorenzo-Soquel.	60001
Branciforte Creek	1220130369869	San Lorenzo-Soquel.	60001
Carbonera Creek	1220212369740	San Lorenzo-Soquel.	60001
Fall Creek	1220773370595	San Lorenzo-Soquel.	60001
Kings Creek	1221333371555	San Lorenzo-Soquel.	60001
Newell Creek	1220793370809	San Lorenzo-Soquel.	60001
San Lorenzo River	1220302369911	San Lorenzo-Soquel.	60001
Zayante Creek	1220673370481	San Lorenzo-Soquel.	60001

Coho salmon, Central California Coast ESU

Institute for Forest and Watershed Management/HSU ID# 71

Correspondent: Dana McCanne

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	n/a	n/a
Data types:	population abundance	n/a	n/a
Uncertainty:	statistical		

Site selection:	other	**Year began:**	1999	**Interval:**	yearly
Geoprecision:	accurate	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: NOAA/CDFG/commercial-extraction
Negative impact?	no	**Start:**	Aug	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	ongoing

Technical Goal: Population estimates to determine trends over time.

Programmatic Goal: Determine trends in population and ESA status.

Stream name	LLID	Watershed name	HUC
Albion River	1237668392254	Big-Navarro-Garcia.	10108
Alder Creek	1236958390045	Big-Navarro-Garcia.	10108
Big River	1237953393027	Big-Navarro-Garcia.	10108
Big River	1237953393027	Russian.	10110
Buckhorn Creek	1237829392593	Big-Navarro-Garcia.	10108
Cottaneva Creek	1238282397361	Big-Navarro-Garcia.	10108
Doyle Creek	1238175393604	Big-Navarro-Garcia.	10108
Garcia River	1237246389456	Big-Navarro-Garcia.	10108
Greenwood Creek	1237170391263	Big-Navarro-Garcia.	10108
Gualala River	1235323387688	Gualala-Salmon.	10109
Hardy Creek	1238071397108	Big-Navarro-Garcia.	10108
Howard Creek	1237904396779	Big-Navarro-Garcia.	10108
Juan Creek	1238031397029	Big-Navarro-Garcia.	10108
Mallo Pass Creek	1236885390342	Big-Navarro-Garcia.	10108
Mills Creek	1236935390556	Big-Navarro-Garcia.	10108
Moat Creek	1236742388813	Big-Navarro-Garcia.	10108
Navarro River	1237601391919	Big-Navarro-Garcia.	10108
Noyo River	1238089394276	Big-Navarro-Garcia.	10108
Point Arena Creek	1237092389142	Big-Navarro-Garcia.	10108
Russian River	1231278384507	Russian.	10110
Russian River	1231278384507	Bodega Bay.	10111
Schooner Gulch	1236545388666	Big-Navarro-Garcia.	10108

Coho salmon, Central California Coast ESU

Marin Municipal Water District ID# 17

Correspondent: Eric Ettlinger (for Greg Andrews)

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	n/a	n/a
Data types:	population index, demographic, genetic	n/a	n/a
Uncertainty:	basic quantitative		

Site selection:	qualitative selection	**Year began:**	'70's	**Interval:**	yearly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete with gaps, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**	mid. Oct.- early Feb.	**Funding source:**	municipal
Negative impact?	yes	**Start:**	Oct	**Support:**	ongoing
Impact controls?	no	**End:**	Feb	**Future intent (yr):**	ongoing

Technical Goal: Monitor population trends.

Programmatic Goal: Regulatory compliance, order from state expects demonstration of appreciable increase in coho salmon abundance.

Stream name	LLID	Watershed name	HUC
Devils Gulch	1227359380291	Tomales-Drake Bays.	50005
Lagunitas Creek	1228246380899	Tomales-Drake Bays.	50005
San Geronimo Creek	1227078380050	San Pablo Bay.	50002
San Geronimo Creek	1227078380050	Tomales-Drake Bays.	50005

Marin Municipal Water District ID# 225

Correspondent: Eric Ettlinger (for Greg Andrews)

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	spawner count, redd count, direct observation
Data types:	n/a	n/a	presence/absence, population abundance, demographic, genetic
Uncertainty:			qualitative

Site selection:	dictated by logistics/circumstance	**Year began:**	'70's	**Interval:**	weekly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete with gaps, incremental	**Summaries:**	other
Positive impact?	no	**Season:**	mid. Oct.- early Feb.	**Funding source:**	municipal
Negative impact?	yes	**Start:**	Oct	**Support:**	ongoing

Coho salmon, Central California Coast ESU

Impact controls?	no	**End:**	Feb	**Future intent (yr):**	ongoing

Technical Goal: Monitor population trends.

Programmatic Goal: Regulatory compliance: Order from state expects demonstration of appreciable increase in coho salmon abundance.

Stream name	LLID	Watershed name	HUC
Devils Gulch	1227359380291	Tomales-Drake Bays.	50005
Lagunitas Creek	1228246380899	Tomales-Drake Bays.	50005
San Geronimo Creek	1227078380050	San Pablo Bay.	50002
San Geronimo Creek	1227078380050	Tomales-Drake Bays.	50005

Mendocino Redwood Co. LLC ID# 102

Correspondent: David Ulrich

	Juvenile	Outmigrants	Adults
Field techniques:	electrofishing	n/a	n/a
Data types:	presence/absence	n/a	n/a
Uncertainty:			

Site selection:	dictated by logistics/circumstance	**Year began:**	2000	**Interval:**	other
Geoprecision:	accurate to watershed	**Year ended:**	2002	**Duration:**	0–5 yr
Response to:		**Years missed:**	rotating, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	commercial: extraction
Negative impact?	no	**Start:**	Jun	**Support:**	unknown
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	indefinite

Technical Goal: Determine distribution throughout company ownership; technical evaluation.

Programmatic Goal: Compliance and management evaluation.

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

Merrit Smith Consulting ID# 22

Correspondent: Michael Fawcett

	Juvenile	Outmigrants	Adults
Field techniques:	seining	n/a	n/a
Data types:	presence/absence, population index, demographic, genetic	n/a	n/a
Uncertainty:	basic quantitative		

Site selection:	qualitative selection	**Year began:**	1993	**Interval:**	other
Geoprecision:	precise	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	no	**Summaries:**	other
Positive impact?	no	**Season:**	June - October	**Funding source:**	agency base

Coho salmon, Central California Coast ESU

Negative impact?	no	**Start:**	Jun	**Support:**	indefinite
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	ongoing

Technical Goal: Long-term study. Changes compiled with human-induced impacts on steelhead and coho salmon populations on a yearly basis - reproductive success - can assess individual impacts from long-term data.

Programmatic Goal: Determine whether city wastewater practices are appropriate.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1228597387212	Russian.	10110
Gird Creek	1228406386740	Russian.	10110
Green Valley Creek	1229083385050	Russian.	10110
Maacama Creek	1227830386136	Russian.	10110
Mark West Creek	1228917384942	Russian.	10110
Matanzas Creek	1227111384374	Russian.	10110
Miller Creek	1228844387050	Russian.	10110
Santa Rosa Creek	1228333384513	Russian.	10110
Santa Rosa Creek	1228333384513	San Pablo Bay.	50002
Sausal Creek	1228081386501	Russian.	10110

Monterey Salmon and Trout Project ID# 175

Correspondent: Kingfisher Flat Hatchery

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	n/a
Data types:	n/a	n/a	n/a
Uncertainty:	unknown	unknown	unknown

Site selection:	dictated by logistics/circumstance	**Year began:**	1982	**Interval:**	daily
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: MBSTP, state/fed (assume)
Negative impact?	no	**Start:**		**Support:**	ongoing (assume)
Impact controls?	no	**End:**		**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal: Restoration of local steelhead and coho salmon populations.

Stream name	LLID	Watershed name	HUC
Big Creek	1222290370668	San Lorenzo-Soquel.	60001
San Lorenzo River	1220302369911	San Lorenzo-Soquel.	60001

NOAA Fish ID# 139

Correspondent: Ellen Freund

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, seining	direct observation, seining	n/a

Coho salmon, Central California Coast ESU

Data types:	presence/absence, demographic, genetic	presence/absence, demographic, genetic	n/a
Uncertainty:	unknown	unknown	

Site selection:	dictated by logistics/circumstance	**Year began:**	2003	**Interval:**	monthly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	NOAA Fish
Negative impact?	yes	**Start:**	All Yr	**Support:**	ongoing
Impact controls?	no	**End:**	All Yr	**Future intent (yr):**	0–5

Technical Goal: Monitor the utilization of small estuaries by coho salmon and steelhead by focusing on growth, residence times, feeding, metabolic rate and physiological status.

Programmatic Goal: To determine the importance of the small estuaries along the central coast for the maintenance and recovery of populations of coho salmon and steelhead. Monitor physiological factors and how those are affected by environmental variables and the interaction of these two species.

Stream name	LLID	Watershed name	HUC
Redwood Creek	1225776378596	Tomales-Drake Bays.	50005
Scott Creek	1222254370542	San Lorenzo-Soquel.	60001

NOAA Fish ID# 140

Correspondent: Ellen Freund

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, seining	direct observation, seining	n/a
Data types:	presence/absence, demographic, genetic	presence/absence, demographic, genetic	n/a
Uncertainty:	unknown	unknown	

Site selection:	dictated by logistics/circumstance	**Year began:**	2003	**Interval:**	monthly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	NOAA Fish
Negative impact?	yes	**Start:**	All Yr	**Support:**	ongoing
Impact controls?	no	**End:**	All Yr	**Future intent (yr):**	0–5

Technical Goal: Monitor the utilization of small estuaries by coho salmon and steelhead by focusing on growth, residence times, feeding, metabolic rate and physiological status.

Programmatic Goal: To determine the importance of the small estuaries along the central coast for the maintenance and recovery of populations of coho salmon and steelhead. Monitor physiological factors and how those are affected by environmental variables and the interaction of these two species.

Stream name	LLID	Watershed name	HUC
Willow Creek	1214608358935	Central Coastal.	60006

Coho salmon, Central California Coast ESU

NOAA Fish ID# 137

Correspondent: Sean A. Hayes

	Juvenile	Outmigrants	Adults
Field techniques:	seining	downstream trap, seining	upstream trap, spawner count
Data types:	presence/absence, demographic, genetic	presence/absence, population index, population abundance, demographic, genetic	presence/absence, population index, population abundance, demographic, genetic
Uncertainty:		statistical	

Site selection:	dictated by logistics/circumstance	**Year began:**	2002	**Interval:**	other
Geoprecision:	accurate to watershed	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	one-time
Positive impact?	yes	**Season:**		**Funding source:**	various: CDFG CCSRP/NOAA
Negative impact?	yes	**Start:**	All Yr	**Support:**	indefinite
Impact controls?	no	**End:**	All Yr	**Future intent (yr):**	0–5

Technical Goal:

Programmatic Goal: Management question addressing effects of artificial propagation on wild stocks.

Stream name	LLID	Watershed name	HUC
Big Creek	1222290370668	San Lorenzo-Soquel.	60001
Scott Creek	1222254370542	San Lorenzo-Soquel.	60001

NOAA Fish ID# 57

Correspondent: David Hines

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap	n/a	n/a
Data types:	presence/absence, population index	n/a	n/a
Uncertainty:	statistical		

Site selection:	dictated by logistics/circumstance	**Year began:**	2003	**Interval:**	daily
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	unfunded
Negative impact?	yes	**Start:**	Mar	**Support:**	unfunded (2007)
Impact controls?	no	**End:**	Jun	**Future intent (yr):**	0–5

Technical Goal: Coho Intervention Group may use data to determine survival rate.

Programmatic Goal: Regulatory compliance and management. Hypothesis: Austin Creek is graded and mouth dries up. By creating a better channel and connecting it to mouth we are

Coho salmon, Central California Coast ESU

Stream name	LLID	Watershed name	HUC
Austin Creek	1230489384652	Gualala-Salmon.	10109
Austin Creek	1230489384652	Russian.	10110

NOAA Fish ID# 59

Correspondent: David Hines

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	n/a	n/a
Data types:	presence/absence, population index, demographic	n/a	n/a
Uncertainty:	statistical		

Site selection:	dictated by logistics/circumstance	**Year began:**	2002	**Interval:**	yearly
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:	hoping to maintain flow.			**Years missed:**	**Summaries:**
yearly					
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	NOAA Fish
Negative impact?	yes	**Start:**	Aug	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	ongoing

Technical Goal: Determine presence/absence & use as monitoring tool for gravel mining. Collect baseline information for species recovery.

Programmatic Goal: Assess status of populations in Austin Cr. Watershed. Regulatory compliance.

Stream name	LLID	Watershed name	HUC
Austin Creek	1230489384652	Gualala-Salmon.	10109
Austin Creek	1230489384652	Russian.	10110
Fort Ross Creek	1232425385119	Gualala-Salmon.	10109
Willow Creek	1230960384392	Russian.	10110

NOAA Fish ID# 165

Correspondent: Thomas Williams

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	n/a	n/a
Data types:	population index	n/a	n/a
Uncertainty:	none		

Site selection:	unknown	**Year began:**	2000	**Interval:**	yearly
Geoprecision:	accurate to stream	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	NOAA Fish

Coho salmon, Central California Coast ESU

Negative impact?	no	**Start:**	Jul	**Support:**	indefinite
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	indefinite

Technical Goal:
Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1236383394088	Big-Navarro-Garcia.	10108
Unknown. Use LLID	1236418393851	Big-Navarro-Garcia.	10108
Unknown. Use LLID	1236581393690	Big-Navarro-Garcia.	10108
Unknown. Use LLID	1236097393972	Big-Navarro-Garcia.	10108
Unknown. Use LLID	1236213393805	Big-Navarro-Garcia.	10108
Bear Gulch	1236728393841	Big-Navarro-Garcia.	10108
Brandon Gulch	1236815394045	Big-Navarro-Garcia.	10108
North Fork South Fork Noyo River	1236845393910	Big-Navarro-Garcia.	10108
Parlin Creek	1236582393695	Big-Navarro-Garcia.	10108
South Fork Noyo River	1237258394248	Big-Navarro-Garcia.	10108

Pt. Reyes National Seashore ID# 63

Correspondent: Brannon Ketcham

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, electrofishing	downstream trap, electrofishing	carcass count, direct observation
Data types:	population index, demographic, genetic	population index, demographic, genetic	demographic, genetic
Uncertainty:	basic quantitative	statistical	statistical

Site selection:	other	**Year began:**	1998	**Interval:**	other
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	various: agency base (50%)/ other(50%)
Negative impact?	no	**Start:**	Mar	**Support:**	ongoing(agency base)
Impact controls?	no	**End:**	Jul	**Future intent (yr):**	ongoing

Technical Goal: Contribute to information at the ESU level.
Programmatic Goal: Document existing conditions for management decisions, what return of coho might mean for other watersheds.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1227548379964	Tomales-Drake Bays.	50005
Unknown. Use LLID	1227453380374	Tomales-Drake Bays.	50005

Coho salmon, Central California Coast ESU

Pt. Reyes Nat'l Seashore ID# 64

Correspondent: Brannon Ketcham

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, direct observation, electrofishing	n/a	n/a
Data types:	presence/absence, population index, population abundance, demographic, genetic	n/a	n/a
Uncertainty:	statistical		

Site selection:	qualitative selection	**Year began:**	1999	**Interval:**	yearly
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: agency base (50%)/ other(50%)
Negative impact?	no	**Start:**	Jun	**Support:**	ongoing(agency base)
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	ongoing

Technical Goal: Contribute to information at the ESU level.

Programmatic Goal: Document existing conditions for management decisions, what return of coho might mean for other watersheds.

Stream name	LLID	Watershed name	HUC
Pine Gulch Creek	1226871379219	Tomales-Drake Bays.	50005

Sonoma Co. Water Agency ID# 107

Correspondent: Sean White

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	n/a	n/a
Data types:	population abundance	n/a	n/a
Uncertainty:	statistical		

Site selection:	random site selection	**Year began:**	2000	**Interval:**	once
Geoprecision:	accurate to stream	**Year ended:**	2000	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	commercial: utility
Negative impact?	no	**Start:**	Aug	**Support:**	ongoing
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	ended

Technical Goal: Develop population indices for those tributaries listed for coho.

Programmatic Goal: In response to desire to develop management strategies by NMFS; baseline data for management decisions.

Stream name	LLID	Watershed name	HUC
Green Valley Creek	1229083385050	Russian.	10110

Coho salmon, Central California Coast ESU

Mark West Creek	1228917384942	Russian.	10110
Sheephouse Creek	1230938384489	Russian.	10110

Coho salmon, no specific ESU

CDFG ID# 29

Correspondent: Gary Flosi

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	n/a	n/a
Data types:	presence/absence	n/a	n/a
Uncertainty:	qualitative		

Site selection:	dictated by logistics/circumstance	**Year began:**		**Interval:**	unknown
Geoprecision:	none	**Year ended:**		**Duration:**	
Response to:		**Years missed:**	unknown	**Summaries:**	unknown
Positive impact?	no	**Season:**		**Funding source:**	unknown
Negative impact?	no	**Start:**		**Support:**	unknown
Impact controls?	no	**End:**		**Future intent (yr):**	unknown

Technical Goal: Technical evaluation.

Programmatic Goal: As a component of habitat surveys, direct observation and/or electrofishing used to determine fish species and distribution. Habitat surveys are used to make recommendations for restoration.

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

CDFG ID# 83

Correspondent: Jennifer Nelson

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing, seining	n/a	n/a
Data types:	presence/absence	n/a	n/a
Uncertainty:	none		

Site selection:	qualitative selection	**Year began:**	1995	**Interval:**	once
Geoprecision:	none	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	rotating, opportunistic	**Summaries:**	other
Positive impact?	no	**Season:**		**Funding source:**	CDFG SFRA
Negative impact?	no	**Start:**	Jun	**Support:**	3 yr
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	indefinite

Technical Goal: Acquire presence/absence data.

Coho salmon, no specific ESU

Programmatic Goal: Management question. Will be used in future for management decisions; baseline data for now.

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

Steelhead, Klamath Mountain Province ESU

CDFG ID# 216

Correspondent: Larry Preston

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	other
Data types:	n/a	n/a	presence/absence
Uncertainty:			

Site selection:	qualitative selection	**Year began:**	2000	**Interval:**	daily
Geoprecision:	accurate to subwatershed	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	various:CDFG SFRA/FRGP
Negative impact?	no	**Start:**	May	**Support:**	2004
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	0–5

Technical Goal:

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Eighteenmile Creek	1239208418458	Smith.	10101
Griffin Creek	1237628419202	Smith.	10101
Hardscrabble Creek	1240250418387	Smith.	10101
Hutsinpillar Creek	1241317418786	Smith.	10101
Idlewild Creek	1237703418976	Smith.	10101
Kelly Creek	1238554418635	Smith.	10101
Knopti Creek	1237366419316	Smith.	10101
Little Jones Creek	1238320418677	Smith.	10101
Little Mill Creek	1241231418733	Smith.	10101
Mill Creek	1240825417920	Smith.	10101
Monkey Creek	1238189418830	Smith.	10101
Morrison Creek	1241566419048	Smith.	10101
Myrtle Creek	1240535418010	Smith.	10101
North Fork Smith River	1239681418479	Smith.	10101
Packsaddle Creek	1237664419111	Smith.	10101
Patrick Creek	1238422418744	Smith.	10101
Rock Creek	1240805418093	Smith.	10101
Rowdy Creek	1241650419119	Smith.	10101
Siskiyou Fork	1238096418841	Smith.	10101

Steelhead, Klamath Mountain Province ESU

South Fork Smith River	1240565417956	Smith.	10101

CDFG ID# 236

Correspondent: Larry Preston

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	n/a	other
Data types:	presence/absence	n/a	presence/absence
Uncertainty:	none		

Site selection:	qualitative selection	**Year began:**	2000	**Interval:**	once
Geoprecision:	accurate to watershed	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	various:CDFG SFRA/FRGP
Negative impact?	no	**Start:**	May	**Support:**	2004
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	0–5

Technical Goal:

Programmatic Goal: Respond to California ESA and develop recovery parameters.

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

CDFG ID# 248

Correspondent: Gary Ramsden

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	population index, genetic
Uncertainty:			statistical

Site selection:	dictated by logistics/circumstance	**Year began:**	1963	**Interval:**	daily
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	CDFG (assume)
Negative impact?	no	**Start:**	Sept	**Support:**	ongoing (assume)
Impact controls?	no	**End:**	Mar	**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal: Hatchery operated as compensation for spawning and rearing areas lost to the Trinity River Project.

Stream name	LLID	Watershed name	HUC
Trinity River	1237076411855	Trinity.	10211

Steelhead, Klamath Mountain Province ESU

CDFG ID# 258

Correspondent: Wade Sinnen

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	population abundance, demographic
Uncertainty:			statistical

Site selection:	dictated by logistics/circumstance	**Year began:**	1997	**Interval:**	other
Geoprecision:	accurate to subwatershed	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete with gaps, regular	**Summaries:**	other
Positive impact?	no	**Season:**		**Funding source:**	Bureau of Reclamation
Negative impact?	no	**Start:**	May	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Dec	**Future intent (yr):**	indefinite

Technical Goal:

Programmatic Goal: Multiple objectives.

Stream name	LLID	Watershed name	HUC
Trinity River	1237076411855	Trinity.	10211

CDFG ID# 240

Correspondent: Michael Wallace

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, direct observation, seining	downstream trap, direct observation, seining	n/a
Data types:	presence/absence, population index, demographic	presence/absence, population index, demographic	n/a
Uncertainty:	unknown	unknown	

Site selection:	dictated by logistics/circumstance	**Year began:**	1997	**Interval:**	weekly
Geoprecision:	accurate	**Year ended:**	1999	**Duration:**	6–10 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	seasonally
Positive impact?	no	**Season:**		**Funding source:**	FRGP
Negative impact?	no	**Start:**	Mar	**Support:**	ongoing
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal: Determine critical mainstem river rearing areas for juvenile salmonids and emigration patterns on a basin-wide level.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1240749415436	Lower Klamath.	10209

Steelhead, Klamath Mountain Province ESU

Klamath River	1240807415471	Upper Klamath.	10206
Klamath River	1240807415471	Lower Klamath.	10209

CDFG ID# 242

Correspondent: Michael Wallace

	Juvenile	Outmigrants	Adults
Field techniques:	electrofishing, seining	electrofishing, seining	n/a
Data types:	population index, demographic	population index, demographic	n/a
Uncertainty:	unknown	unknown	

Site selection:	dictated by logistics/circumstance	**Year began:**	1993	**Interval:**	weekly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete with gaps, regular	**Summaries:**	seasonally
Positive impact?	no	**Season:**		**Funding source:**	CDFG SFRA
Negative impact?	no	**Start:**	Mar	**Support:**	ongoing
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	ongoing

Technical Goal: Determine critical mainstem rearing areas for juvenile salmonids and emigration patterns on a basin-wide level.

Programmatic Goal: Determine annual proportions of natural vs. hatchery juveniles emigrating from Klamath Basin. Monitor timing and patterns of juvenile salmonids leaving the Klamath Basin.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1240749415436	Lower Klamath.	10209
Klamath River	1240807415471	Upper Klamath.	10206
Klamath River	1240807415471	Lower Klamath.	10209

CDFG S-RAMP ID# 260

Correspondent: Bill Chesney

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, direct observation	downstream trap, direct observation	n/a
Data types:	presence/absence, population index, population abundance, demographic, genetic	presence/absence, population abundance, demographic, genetic	n/a
Uncertainty:			

Site selection:	unknown	**Year began:**	2000	**Interval:**	daily
Geoprecision:	precise	**Year ended:**	2002	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	weekly
Positive impact?	no	**Season:**		**Funding source:**	unknown
Negative impact?	no	**Start:**	Feb	**Support:**	unknown

Steelhead, Klamath Mountain Province ESU

Impact controls?	no	**End:**	Jul	**Future intent (yr):**	unknown
Technical Goal:					
Programmatic Goal:					

Stream name	LLID	Watershed name	HUC
Scott River	1230355417791	Scott.	10208

CDFG S-RAMP ID# 48

Correspondent: Patrick Garrison

	Juvenile	Outmigrants	Adults
Field techniques:	electrofishing	n/a	n/a
Data types:	presence/absence, population index, demographic	n/a	n/a
Uncertainty:	unknown		

Site selection:	random site selection	**Year began:**	2000	**Interval:**	yearly
Geoprecision:	accurate to stream	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete with gaps, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	CDFG
Negative impact?	no	**Start:**	Aug	**Support:**	currently
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	0–5

Technical Goal: Point estimates for juvenile steelhead throughout Trinity Basin. Possibly correlate population densities with temperature monitoring.

Programmatic Goal: Status and trends of juvenile steelhead populations in the Trinity Basin.

Stream name	LLID	Watershed name	HUC
Big Creek	1231422405511	South Fork Trinity.	10212
East Fork North Fork Trinity River	1231287407836	Trinity.	10211
East Weaver Creek	1229393407216	Trinity.	10211
Little Browns Creek	1229287406953	Trinity.	10211
Little Grass Valley Creek	1228028406620	Trinity.	10211
Potato Creek	1230422405031	South Fork Trinity.	10212
Rattlesnake Creek	1233118403698	South Fork Trinity.	10212
Soldier Creek	1230258406899	Trinity.	10211

CDFG S-RAMP ID# 50

Correspondent: Patrick Garrison

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	redd count, carcass count
Data types:	n/a	n/a	presence/absence, population index, demographic, genetic
Uncertainty:			qualitative

Steelhead, Klamath Mountain Province ESU

Site selection:	random site selection	**Year began:**	2000	**Interval:**	other
Geoprecision:	accurate to stream	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete with	**Summaries:**	monthly
Positive impact?	no	**Season:**		**Funding source:**	CDFG
Negative impact?	no	**Start:**	Mar	**Support:**	2005
Impact controls?	no	**End:**	May	**Future intent (yr):**	0–5

Technical Goal: Enumerate number of redds on randomly selected tributaries throughout the Trinity Basin.

Programmatic Goal: Status and trends of tributary spawner steelhead populations in the Trinity Basin. Comparisons to historic data for management implications.

Stream name	LLID	Watershed name	HUC
Deadwood Creek	1228018407182	Trinity.	10211
Dutch Creek	1230150406641	Trinity.	10211
Dutch Creek	1230150406641	South Fork Trinity.	10212
East Fork Browns Creek	1229353405285	Trinity.	10211
East Fork Hayfork Creek	1230675404886	South Fork Trinity.	10212
Eltapom Creek	1234931406618	South Fork Trinity.	10212
Pelletreau Creek	1234736406287	South Fork Trinity.	10212
Pelletreau Creek	1234736406287	Mad-Redwood.	10102
Plummer Creek	1234178404771	South Fork Trinity.	10212
Potato Creek	1230422405031	South Fork Trinity.	10212
Rattlesnake Creek	1227546405156	Cottonwood Headwaters.	20113
Rattlesnake Creek	1227546405156	Trinity.	10211
Smoky Creek	1232363403044	South Fork Trinity.	10212
South Fork Indian Creek	1228292405978	Trinity.	10211
Thompson Gulch	1231819405547	South Fork Trinity.	10212

CDFG S-RAMP ID# 53

Correspondent: Patrick Garrison

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	other	other
Data types:	n/a	presence/absence, demographic	presence/absence, population index, demographic, genetic
Uncertainty:		basic quantitative	statistical

Site selection:	dictated by logistics/circumstance	**Year began:**	1999	**Interval:**	other
Geoprecision:	accurate to subwatershed	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete with gaps, regular	**Summaries:**	weekly
Positive impact?	no	**Season:**		**Funding source:**	CDFG
Negative impact?	yes	**Start:**	Dec	**Support:**	currently
Impact controls?	no	**End:**	Mar	**Future intent (yr):**	0–5

Technical Goal: Quantification of angler effort and CPUE on upper Trinity River.

Steelhead, Klamath Mountain Province ESU

Programmatic Goal: Management of Trinity steelhead.

Stream name	LLID	Watershed name	HUC
Mission Creek	1196866344124	Santa Barbara Coastal.	60013
Trinity River	1237076411855	Trinity.	10211

CDFG S-RAMP ID# 250

Correspondent: Kimball Rushton

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	other	upstream trap, other
Data types:	n/a	demographic, genetic	population abundance, genetic
Uncertainty:		unknown	unknown

Site selection:	dictated by logistics/circumstance	**Year began:**	1966	**Interval:**	unknown
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	unfunded 20+ yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: Pac. Power & Light/hatchery/CDFG (assume)
Negative impact?	no	**Start:**	Feb	**Support:**	ongoing (assume)
Impact controls?	no	**End:**	Mar	**Future intent (yr):**	ongoing

Technical Goal: Determine relationship between hatchery and natural populations in the basin.

Programmatic Goal: In response to NMFS ('97), uncertainty as to Iron Gate Stock ESU status. Hatchery constructed by Pacific Power and Light Co. to compensate for spawning and nursery areas blocked by the Iron Gate Project.

Stream name	LLID	Watershed name	HUC
Klamath River	1240807415471	Lower Klamath.	10209
Klamath River	1240807415471	Upper Klamath.	10206

Mill Creek Fisheries Monitoring Program ID# 218

Correspondent: Zack Larson

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, minnowtrap	downstream trap	upstream trap, spawner count, redd count, carcass count
Data types:	population abundance, demographic	population index, demographic	presence/absence, population abundance, demographic, genetic
Uncertainty:	statistical	statistical	statistical

Site selection:	qualitative selection	**Year began:**	1994	**Interval:**	daily
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	6–10 yr

Steelhead, Klamath Mountain Province ESU

Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	CDFG SFRA
Negative impact?	yes	**Start:**	Feb	**Support:**	2005
Impact controls?	no	**End:**	Jul	**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal: Long-term population trend monitoring. Mill Creek is considered a typical tributary of the Smith - disturbed with some old growth. Treated as reference stream.

Stream name	LLID	Watershed name	HUC
East Fork Mill Creek	1240987417345	Smith.	10101
West Branch Mill Creek	1240987417344	Smith.	10101

NOAA Fish ID# 164

Correspondent: Christopher Donohoe

	Juvenile	Outmigrants	Adults
Field techniques:	electrofishing	n/a	n/a
Data types:	demographic, genetic	n/a	n/a
Uncertainty:	statistical		

Site selection:	dictated by logistics/circumstance	**Year began:**	2003	**Interval:**	once
Geoprecision:	very precise	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	N/A
Positive impact?	no	**Season:**		**Funding source:**	NOAA Fish
Negative impact?	no	**Start:**	Jun	**Support:**	one-time
Impact controls?	no	**End:**	Jun	**Future intent (yr):**	ended

Technical Goal: Estimate contribution of resident females to juvenile populations of O. Mykiss in anadromous reaches of the Klamath River, and examine genetic relationships among progeny of resident and anadromous forms. A secondary goal is to determine if the above co-vary with migratory distance or with proximity to resident populations above barriers.

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

USFS ID# 230

Correspondent: James Kilgore

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, direct observation, electrofishing	downstream trap	redd count, carcass count
Data types:	presence/absence, population index, population abundance, demographic, genetic	presence/absence, population index, population abundance, demographic, genetic	presence/absence, population index, population abundance, demographic, genetic

Steelhead, Klamath Mountain Province ESU

Uncertainty:	statistical		statistical		statistical
Site selection:	other	**Year began:**	1993	**Interval:**	other
		Year ended:	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	agency base
Negative impact?	no	**Start:**		**Support:**	ongoing
Impact controls?	no	**End:**		**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Barkhouse Creek	1228482418204	Upper Klamath.	10206
Beaver Creek	1228157418694	Upper Klamath.	10206
Empire Creek	1227377418668	Upper Klamath.	10206
Horse Linto Creek	1236196410002	Trinity.	10211
Humbug Creek	1226643418342	Upper Klamath.	10206
Lumgrey Creek	1227378418673	Upper Klamath.	10206
McKinney Creek	1228905418428	Upper Klamath.	10206
Scott River	1230355417791	Scott.	10208

USFS ID# 89

Correspondent: Brenda Olsen

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	n/a	spawner count, redd count
Data types:	presence/absence	n/a	presence/absence, population index
Uncertainty:			qualitative

Site selection:	dictated by logistics/circumstance	**Year began:**	spotty	**Interval:**	other
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	unknown yr
Response to:		**Years missed:**	intermittant	**Summaries:**	other
Positive impact?	no	**Season:**		**Funding source:**	private grant
Negative impact?	no	**Start:**	Mar	**Support:**	yr-to-yr
Impact controls?	no	**End:**	May	**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
North Fork Salmon River	1233222412571	Salmon.	10210
Salmon River	1234923413776	Salmon.	10210
South Fork Salmon River	1233222412570	Salmon.	10210

Steelhead, Klamath Mountain Province ESU

USFS - Klamath/ 6 Rivers NF ID# 34

Correspondent: John Grunbaum

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	direct observation
Data types:	n/a	n/a	population index, demographic
Uncertainty:			qualitative

Site selection:	qualitative selection	**Year began:**	1994	**Interval:**	once
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	agency base
Negative impact?	no	**Start:**	Jul	**Support:**	ongoing
Impact controls?	no	**End:**	Aug	**Future intent (yr):**	ongoing

Technical Goal: Monitor for trends named above.

Programmatic Goal: Information on trends in population, demographics and watershed health.

Stream name	LLID	Watershed name	HUC
Klamath River	1232058418417	Upper Klamath.	10206
Wooley Creek	1234210413770	Salmon.	10210

USFS - Klamath/ 6 Rivers NF ID# 244

Correspondent: John Grunbaum

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap	downstream trap	n/a
Data types:	population index, demographic	population index, demographic	n/a
Uncertainty:	statistical	statistical	

Site selection:	other	**Year began:**	2002	**Interval:**	daily
Geoprecision:	accurate to stream	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	agency base
Negative impact?	no	**Start:**	Apr	**Support:**	unknown
Impact controls?	no	**End:**	Jul	**Future intent (yr):**	unknown

Technical Goal: Assess anadromous fish populations in Red Cap creek, including migration timing, behavior and life history patterns.

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Red Cap Creek	1236043412589	Lower Klamath.	10209

Steelhead, Klamath Mountain Province ESU

USFS Lower Trinity Ranger Station ID# 189

Correspondent: Anita Andazola

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap	spawner count, redd count, carcass count, direct observation
Data types:	n/a	population abundance	presence/absence, population abundance
Uncertainty:		basic quantitative	qualitative

Site selection:	qualitative selection	**Year began:**	1991	**Interval:**	irregularly
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	various: CDFG/PCFFA/SRNF
Negative impact?	no	**Start:**	Oct	**Support:**	unknown
Impact controls?	no	**End:**	Dec	**Future intent (yr):**	indefinite

Technical Goal: Estimate yearly abundance of steelhead. Technical evaluation of the effectiveness of instream restoration efforts.

Programmatic Goal: Regulatory compliance per ESA; management evaluation on instream restoration work.

Stream name	LLID	Watershed name	HUC
Cedar Creek	1236032410062	Trinity.	10211
Horse Linto Creek	1236196410002	Trinity.	10211

USFS Lower Trinity Ranger Station ID# 194

Correspondent: Anita Andazola

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap	downstream trap	n/a
Data types:	presence/absence, population abundance	presence/absence, population abundance	n/a
Uncertainty:	basic quantitative	basic quantitative	

Site selection:	qualitative selection	**Year began:**	1991	**Interval:**	daily
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/PCFFA/SRNF
Negative impact?	no	**Start:**	Mar	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Jul	**Future intent (yr):**	indefinite

Technical Goal: Estimate yearly abundance of steelhead salmon. Technical evaluation of the effectiveness of instream restoration efforts.

Steelhead, Klamath Mountain Province ESU

Programmatic Goal: Regulatory compliance per ESA; management evaluation on instream restoration work.

Stream name	LLID	Watershed name	HUC
Horse Linto Creek	1236196410002	Trinity.	10211

USFS Lower Trinity Ranger Station ID# 200

Correspondent: Anita Andazola

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	spawner count, redd count, carcass count
Data types:	n/a	n/a	presence/absence, population abundance
Uncertainty:		basic quantitative	qualitative

Site selection:	qualitative selection	**Year began:**	1991	**Interval:**	irregularly
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	various: CDFG/PCFFA/SRNF
Negative impact?	no	**Start:**	Mar	**Support:**	indefinite
Impact controls?	no	**End:**	Jul	**Future intent (yr):**	indefinite

Technical Goal: Estimate yearly abundance of steelhead. Technical evaluation of the effectiveness of instream restoration efforts.

Programmatic Goal: Restore salmonid habitat and populations to self-sustaining level.

Stream name	LLID	Watershed name	HUC
Willow Creek	1236292409450	Trinity.	10211

Yurok Tribal Fisheries ID# 269

Correspondent: Sarah Beesley

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	spawner count, redd count, carcass count, direct observation, electrofishing
Data types:	n/a	n/a	presence/absence
Uncertainty:			qualitative

Site selection:	qualitative selection	**Year began:**	2002	**Interval:**	weekly
Geoprecision:	very precise	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG SFRA/Cal.Coast.S.Monit.
Negative impact?	yes	**Start:**	Nov	**Support:**	2004

Steelhead, Klamath Mountain Province ESU

Impact controls? no **End:** Mar **Future intent (yr):** 0–5

Technical Goal: Baseline data on presence of coho salmon and steelhead populations and on habitat conditions.

Programmatic Goal: Prioritize restoration in the Salt Creek Watershed.

Stream name	LLID	Watershed name	HUC
High Prairie Creek	1240705415679	Lower Klamath.	10209

Yurok Tribal Fisheries ID# 274

Correspondent: Sarah Beesley

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, direct observation, electrofishing, minnowtrap, other	n/a	upstream trap, spawner count, redd count, carcass count, direct observation, electrofishing
Data types:	presence/absence, population index, demographic	n/a	presence/absence
Uncertainty:	qualitative		qualitative

Site selection: qualitative selection **Year began:** 2002 **Interval:** other
Geoprecision: very precise **Year ended:** 2003 **Duration:** 0–5 yr
Response to: **Years missed:** snapshot **Summaries:** one-time
Positive impact? no **Season:** **Funding source:** various: CDFG SFRA/Cal.Coast.S.Monit.
Negative impact? yes **Start:** Apr **Support:** 2004
Impact controls? no **End:** Nov **Future intent (yr):** 0–5

Technical Goal: Baseline data on presence of coho salmon and steelhead populations and on habitat conditions.

Programmatic Goal: Prioritize restoration in the Salt Creek Watershed.

Stream name	LLID	Watershed name	HUC
High Prairie Creek	1240705415679	Lower Klamath.	10209
Salt Creek	1240589415474	Lower Klamath.	10209

Yurok Tribe ID# 220

Correspondent: Monica Hiner

	Juvenile	Outmigrants	Adults
Field techniques:	electrofishing	n/a	n/a
Data types:	presence/absence	n/a	n/a
Uncertainty:	basic quantitative		

Site selection: dictated by logistics/circumstance **Year began:** 2002 **Interval:** other
Geoprecision: accurate to stream **Year ended:** 2002 **Duration:** 0–5 yr

Steelhead, Klamath Mountain Province ESU

Response to:		**Years missed:**	snapshot	**Summaries:**	none
Positive impact?	no	**Season:**		**Funding source:**	agency base
Negative impact?	no	**Start:**	May	**Support:**	single sampling event
Impact controls?	no	**End:**	May	**Future intent (yr):**	ended

Technical Goal: Assess fish presence/absence for proposed study: Sarah Beesley's study of salmonid habitat quality for restoration recommendations.

Programmatic Goal: Assessment of fish presence.

Stream name	LLID	Watershed name	HUC
High Prairie Creek	1240705415679	Lower Klamath.	10209
Salt Creek	1240589415474	Lower Klamath.	10209

Yurok Tribe ID# 254

Correspondent: Monica Hiner

	Juvenile	Outmigrants	Adults
Field techniques:	seining	seining	n/a
Data types:	presence/absence, population abundance	presence/absence, population abundance	n/a
Uncertainty:	basic quantitative	basic quantitative	

Site selection:	dictated by logistics/circumstance	**Year began:**	2002	**Interval:**	other
Geoprecision:	accurate	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	CDFG
Negative impact?	no	**Start:**	see notes	**Support:**	2003
Impact controls?	no	**End:**	see notes	**Future intent (yr):**	ongoing

Technical Goal: Beach seining in South Slough: Determine habitat suitability and use by juvenile salmonids. Purse seining: Determine relative abundance and emigration patterns for juvenile salmon; also compare size of juvenile salmon compared w/ CDFG beach seine efforts.

Programmatic Goal: Management evaluation.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1240749415436	Lower Klamath.	10209
Klamath River	1240807415471	Lower Klamath.	10209
Klamath River	1240807415471	Upper Klamath.	10206

Steelhead, Northern California ESU

California Coast Conservancy ID# 6

Correspondent: Michael Bowen

	Juvenile	Outmigrants	Adults
Field techniques:	seining	seining	n/a

Steelhead, Northern California ESU

Data types:	population abundance, demographic, genetic	population abundance, demographic, genetic	n/a
Uncertainty:	statistical	statistical	

Site selection:	other	**Year began:**	2002	**Interval:**	other
Geoprecision:	accurate to stream	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	seasonally
Positive impact?	no	**Season:**	April-October	**Funding source:**	Cal Coastal Conservancy (Bond Act)
Negative impact?	yes	**Start:**	Apr	**Support:**	'02-'05
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	0–5

Technical Goal: Trying to quantify and qualify. Assess quality, carrying capacity of Gualala River Estuary and importance to juvenile salmonids and determine whether actions can be taken to improve habitat.

Programmatic Goal: Identify needed enhancement actions.

Stream name	LLID	Watershed name	HUC
Gualala River	1235323387688	Gualala-Salmon.	10109

Campbell/Hawthorne Timber Co. ID# 266

Correspondent: David Wright

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	presence/absence
Uncertainty:			basic quantitative

Site selection:	unknown	**Year began:**	1993	**Interval:**	yearly
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	commercial: extraction
Negative impact?	yes	**Start:**	Dec	**Support:**	ongoing
Impact controls?	no	**End:**	Apr	**Future intent (yr):**	ongoing

Technical Goal: Determine trends in salmonid densities: Relative abundance on an annual basis over long period of time.

Programmatic Goal: Determine health of populations.

Stream name	LLID	Watershed name	HUC
Anderson Creek	1238982399465	South Fork Eel.	10106
Anderson Creek	1238982399465	Big-Navarro-Garcia.	10108
DeHaven Creek	1237852396593	Big-Navarro-Garcia.	10108
Dutch Charlie Creek	1236576396904	South Fork Eel.	10106
Dutch Charlie Creek	1236576396904	Big-Navarro-Garcia.	10108
Indian Creek	1238042399768	Big-Navarro-Garcia.	10108
Indian Creek	1238042399768	Mattole.	10107

Steelhead, Northern California ESU

Indian Creek	1238042399768	South Fork Eel.	10106
South Fork Usal Creek	1238286398419	Big-Navarro-Garcia.	10108
Wildcat Creek	1237594399127	South Fork Eel.	10106
Wildcat Creek	1237594399127	Big-Navarro-Garcia.	10108

Campbell/Hawthorne Timber Co. ID# 273

Correspondent: David Wright

	Juvenile	Outmigrants	Adults
Field techniques:	electrofishing	electrofishing	spawner count
Data types:	population index, demographic, genetic	population index	presence/absence
Uncertainty:	qualitative	qualitative	unknown

Site selection:	unknown	**Year began:**	1993	**Interval:**	yearly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	commercial: extraction
Negative impact?	yes	**Start:**	Sept	**Support:**	ongoing
Impact controls?	no	**End:**	Nov	**Future intent (yr):**	ongoing

Technical Goal: Determine trends in salmonid densities: Relative abundance on an annual basis over a long period of time.

Programmatic Goal: Determine health of populations.

Stream name	LLID	Watershed name	HUC
Anderson Creek	1238982399465	Big-Navarro-Garcia.	10108
Anderson Creek	1238982399465	South Fork Eel.	10106
DeHaven Creek	1237852396593	Big-Navarro-Garcia.	10108
Dutch Charlie Creek	1236576396904	South Fork Eel.	10106
Dutch Charlie Creek	1236576396904	Big-Navarro-Garcia.	10108
Indian Creek	1238042399768	South Fork Eel.	10106
Indian Creek	1238042399768	Big-Navarro-Garcia.	10108
Indian Creek	1238042399768	Mattole.	10107
South Fork Usal Creek	1238286398419	Big-Navarro-Garcia.	10108
Wildcat Creek	1237594399127	Big-Navarro-Garcia.	10108
Wildcat Creek	1237594399127	South Fork Eel.	10106

CDFG ID# 3

Correspondent: Doug Albin

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	n/a	n/a
Data types:	presence/absence	n/a	n/a
Uncertainty:	qualitative		

Steelhead, Northern California ESU

Site selection:	qualitative selection	**Year began:**	1999	**Interval:**	yearly
Geoprecision:	accurate to watershed	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	rotating, opportunistic	**Summaries:**	other
Positive impact?	no	**Season:**	July to October	**Funding source:**	state bond funds
Negative impact?	no	**Start:**	Jul	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	indefinite

Technical Goal: Compare habitat features between systems.

Programmatic Goal: Habitat restoration prescriptions & correlation of habitat conditions with species presence/absence.

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

CDFG ID# 275

Correspondent: Wilbur Cartwright

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	population abundance, genetic
Uncertainty:		unknown	unknown

Site selection:	dictated by logistics/circumstance	**Year began:**	1971	**Interval:**	daily
Geoprecision:	precise	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	unknown	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	CDFG/hatchery (assume)
Negative impact?	no	**Start:**	Nov	**Support:**	ongoing (assume)
Impact controls?	no	**End:**	Apr	**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal: Coho salmon production goal was 250,000 yearlings raised to 8-10 lbs. and released March-May. Current production goal for steelhead: 250,000 yearlings raised to 4-8 lbs for release March-May. Obtain approx. 60,000 eggs from 30 unmarked (natural) female and 45 unmarked male steelhead.

Stream name	LLID	Watershed name	HUC
Mad River	1241266409562	Mad-Redwood.	10102

CDFG ID# 211

Correspondent: Alan Grass

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	population abundance, genetic
Uncertainty:		unknown	unknown

Steelhead, Northern California ESU

Site selection:	dictated by logistics/circumstance	**Year began:**	1933	**Interval:**	daily
Geoprecision:	accurate				
Response to:		**Years missed:**	unknown	**Summaries:**	yearly (assume)
Positive impact?	no	**Season:**		**Funding source:**	various: PG&E/CDFG (assume)
Negative impact?	no	**Start:**	Nov	**Support:**	ongoing (assume)
Impact controls?	no	**End:**	Apr	**Future intent (yr):**	ongoing
Technical Goal:					
Programmatic Goal:					

Stream name	LLID	Watershed name	HUC
Eel River	1243106406425	Upper Eel.	10103

CDFG ID# 43

Correspondent: Scott Harris

	Juvenile	Outmigrants	Adults
Field techniques:	electrofishing	n/a	n/a
Data types:	presence/absence, population abundance, demographic, genetic	n/a	n/a
Uncertainty:	statistical		

Site selection:	dictated by logistics/circumstance	**Year began:**	1986	**Interval:**	once
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	CDFG SFRA
Negative impact?	no	**Start:**	Sept	**Support:**	2008+
Impact controls?	yes	**End:**	Oct	**Future intent (yr):**	ongoing
Technical Goal:					
Programmatic Goal:	Long-term population and habitat monitoring.				

Stream name	LLID	Watershed name	HUC
Caspar Creek	1238158393618	Big-Navarro-Garcia.	10108
Hollow Tree Creek	1237265398578	South Fork Eel.	10106
Little River	1237905392734	Big-Navarro-Garcia.	10108
Middle Fork Eel River	1233520397139	Lower Eel.	10105
Middle Fork Eel River	1233520397139	Middle Fork Eel.	10104
Middle Fork Eel River	1233520397139	Upper Eel.	10103
Ryan Creek	1233768394765	Upper Eel.	10103
Willits Creek	1233682394164	Upper Eel.	10103
Willits Creek	1233682394164	Big-Navarro-Garcia.	10108

Steelhead, Northern California ESU

CDFG ID# 44

Correspondent: Scott Harris

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap	n/a
Data types:	n/a	presence/absence, population abundance, demographic	n/a
Uncertainty:		statistical	

Site selection:	qualitative selection	**Year began:**	1986	**Interval:**	daily
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	CDFG SFRA
Negative impact?	no	**Start:**	Mar	**Support:**	2008+
Impact controls?	yes	**End:**	Jun	**Future intent (yr):**	ongoing

Technical Goal: Relate population estimates to overwintering mortality. Part of a limiting-factor analysis to see fluctuations of populations between watersheds.

Programmatic Goal: Long term population and habitat monitoring.

Stream name	LLID	Watershed name	HUC
Caspar Creek	1238158393618	Big-Navarro-Garcia.	10108
Hare Creek	1238121394173	Big-Navarro-Garcia.	10108
Little River	1241106410276	Mad-Redwood.	10102
Little River	1237905392734	Big-Navarro-Garcia.	10108
South Fork Noyo River	1237258394248	Big-Navarro-Garcia.	10108

CDFG ID# 47

Correspondent: Scott Harris

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	redd count, carcass count
Data types:	n/a	n/a	presence/absence, population abundance, demographic, genetic
Uncertainty:			qualitative

Site selection:	dictated by logistics/circumstance	**Year began:**	1986	**Interval:**	weekly
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	CDFG SFRA
Negative impact?	no	**Start:**	Oct	**Support:**	2008+
Impact controls?	yes	**End:**	Apr	**Future intent (yr):**	ongoing

Technical Goal: Straying study, population estimates.

Programmatic Goal: Long-term population and habitat monitoring.

Steelhead, Northern California ESU

Stream name	LLID	Watershed name	HUC
Bear Gulch	1236728393841	Big-Navarro-Garcia.	10108
Brandon Gulch	1236815394045	Big-Navarro-Garcia.	10108
Caspar Creek	1238158393618	Big-Navarro-Garcia.	10108
Little River	1237905392734	Big-Navarro-Garcia.	10108
North Fork South Fork Noyo River	1236845393910	Big-Navarro-Garcia.	10108
Noyo River	1238089394276	Big-Navarro-Garcia.	10108
Parlin Creek	1236582393695	Big-Navarro-Garcia.	10108
Peterson Gulch	1236446393073	Big-Navarro-Garcia.	10108

CDFG ID# 174

Correspondent: NF Gualala River Hatchery

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	n/a
Data types:	n/a	n/a	n/a
Uncertainty:	unknown		

Site selection:	unknown	**Year began:**	1981	**Interval:**	daily (assume)
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete with gaps, regular	**Summaries:**	yearly (assume)
Positive impact?	no	**Season:**		**Funding source:**	CDFG/hatchery (assume)
Negative impact?	no	**Start:**		**Support:**	unknown
Impact controls?	no	**End:**		**Future intent (yr):**	unknown

Technical Goal:

Programmatic Goal: Restoration of Gualala River steelhead.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1235320388210	Gualala-Salmon.	10109

CDFG ID# 112

Correspondent: George Neillands

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	n/a	n/a
Data types:	population index, population abundance, demographic, genetic	n/a	n/a
Uncertainty:	statistical		

Site selection:	qualitative selection	**Year began:**	2002	**Interval:**	yearly
Geoprecision:	accurate to stream	**Year ended:**	2002	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	NOAA Fish

Steelhead, Northern California ESU

Negative impact?	yes	**Start:**	Aug	**Support:**	2003
Impact controls?	yes	**End:**	Oct	**Future intent (yr):**	ongoing

Technical Goal: Define sampling universe and provide sampling for target species. Provide regional sampling design to provide broad based population assessment of ESA-listed salmonids throughout N. Calif. ESUs.

Programmatic Goal: To provide long-term viable population assessment data; to monitor population trends w/in ESA-listed salmonid ESUs.

Stream name	LLID	Watershed name	HUC
Caspar Creek	1238158393618	Big-Navarro-Garcia.	10108
Hare Creek	1238121394173	Big-Navarro-Garcia.	10108
Noyo River	1238089394276	Big-Navarro-Garcia.	10108
Olds Creek	1235025394204	Big-Navarro-Garcia.	10108

CDFG ID# 114

Correspondent: George Neillands

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap, spawner count, redd count, carcass count, direct observation, other
Data types:	n/a	n/a	population index, population abundance, demographic, genetic
Uncertainty:			statistical

Site selection:	other	**Year began:**	2000	**Interval:**	other
Geoprecision:	accurate to watershed	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	monthly
Positive impact?	yes	**Season:**		**Funding source:**	various: CDFG/NOAA
Negative impact?	yes	**Start:**	Jan	**Support:**	currently
Impact controls?	yes	**End:**	Apr	**Future intent (yr):**	0–5

Technical Goal: 1) Estimate adult steelhead abundance in Noyo Basin; 2) Measure the inter-annual variability in ratio of redd counts to adult spawners (steelhead); 3) Estimate run composition and temporal distribution; 4) Collect genetic tissue samples

Programmatic Goal: MOA w/ NMFS to provide population assessment for steelhead. SRAMP has provided population assessment across the KMP and NC ESUs for anadromous species.

Stream name	LLID	Watershed name	HUC
Noyo River	1238089394276	Big-Navarro-Garcia.	10108
Pudding Creek	1238083394591	Big-Navarro-Garcia.	10108

Steelhead, Northern California ESU

CDFG ID# 252

Correspondent: Larry Preston

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	n/a	other
Data types:	presence/absence	n/a	presence/absence
Uncertainty:	none		

Site selection:	qualitative selection	**Year began:**	2000	**Interval:**	once
Geoprecision:	accurate to watershed	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	various:CDFG SFRA/FRGP
Negative impact?	no	**Start:**	May	**Support:**	2004
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	0–5

Technical Goal:

Programmatic Goal: Respond to California ESA and develop recovery parameters.

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

CDFG ID# 288

Correspondent: Larry Preston

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	other
Data types:	n/a	n/a	presence/absence
Uncertainty:			

Site selection:	qualitative selection	**Year began:**	2000	**Interval:**	daily
Geoprecision:	accurate to subwatershed	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	various:CDFG SFRA/FRGP
Negative impact?	no	**Start:**	May	**Support:**	2004
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	0–5

Technical Goal:

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1240367410284	Mad-Redwood.	10102
Unknown. Use LLID	1239543410395	Mad-Redwood.	10102
Unknown. Use LLID	1239677410532	Mad-Redwood.	10102
Unknown. Use LLID	1239677410533	Mad-Redwood.	10102
Unknown. Use LLID	1239829410348	Mad-Redwood.	10102

Steelhead, Northern California ESU

Unknown. Use LLID	1240116410305	Mad-Redwood.	10102
Bulwinkle Creek	1240899410106	Mad-Redwood.	10102
Freeman Creek	1240539410224	Mad-Redwood.	10102
Freshwater Creek	1241165408023	Mad-Redwood.	10102
Lower South Fork Little River	1240177410288	Mad-Redwood.	10102
Mattole River	1243528403022	Mattole.	10107
Mill Creek	1241479410616	Mad-Redwood.	10102
Railroad Creek	1240490410281	Mad-Redwood.	10102
South Fork Little River	1240612410123	Mad-Redwood.	10102
Sproule Creek	1232496385937	Gualala-Salmon.	10109
Upper South Fork Little River	1239946410269	Mad-Redwood.	10102

CDFG ID# 267

Correspondent: Brad Valentine

	Juvenile	Outmigrants	Adults
Field techniques:	electrofishing	n/a	n/a
Data types:	population index	n/a	n/a
Uncertainty:	statistical		

Site selection:	qualitative selection	**Year began:**	1992	**Interval:**	yearly
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete with gaps, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	CDFG
Negative impact?	no	**Start:**	Oct	**Support:**	indefinite (underfunded)
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	indefinite

Technical Goal: Long-term monitoring of steelhead and coho salmon populations.

Programmatic Goal: Directed at logging impacts.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1237544393463	Big-Navarro-Garcia.	10108
Little North Fork Noyo River	1236958394458	Big-Navarro-Garcia.	10108

CDFG S-RAMP ID# 168

Correspondent: Sean Gallagher

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, electrofishing	downstream trap	n/a
Data types:	population abundance, demographic	population abundance, demographic	n/a
Uncertainty:	statistical	statistical	

Site selection:	qualitative selection	**Year began:**	2000	**Interval:**	unknown
Geoprecision:	precise	**Year ended:**	2002	**Duration:**	0–5 yr

Steelhead, Northern California ESU

Response to:		**Years missed:**	snapshot	**Summaries:**	unknown
Positive impact?	no	**Season:**		**Funding source:**	unknown
Negative impact?	no	**Start:**	Mar	**Support:**	unknown
Impact controls?	no	**End:**	Jul	**Future intent (yr):**	unknown

Technical Goal:

Programmatic Goal: Quantitatively estimate juvenile and YOY salmonid population: abundance, size at age, survival, migration timing, and distribution. Evaluate usefulness and efficiency of trapping and electro fishing as long-term monitoring tools.

Stream name	LLID	Watershed name	HUC
North Fork South Fork Noyo River	1236845393910	Big-Navarro-Garcia.	10108
Noyo River	1238089394276	Big-Navarro-Garcia.	10108
Olds Creek	1235025394204	Big-Navarro-Garcia.	10108
South Fork Noyo River	1237258394248	Big-Navarro-Garcia.	10108

CDFG S-RAMP ID# 256

Correspondent: Seth Ricker

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap	downstream trap	n/a
Data types:	population abundance, demographic, genetic	population abundance, demographic, genetic	n/a
Uncertainty:	unknown	unknown	

Site selection:	unknown	**Year began:**	see note	**Interval:**	daily
Geoprecision:	accurate to stream	**Year ended:**	see notes	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	CDFG (assume)
Negative impact?	no	**Start:**	Mar	**Support:**	unknown
Impact controls?	no	**End:**	Jun	**Future intent (yr):**	unknown

Technical Goal:

Programmatic Goal: Determine yield of coho and Chinook salmon smolts and steelhead parrs and smolts from basin.
2) Determine timing of outmigration of salmonids. 3) Partition the basin yield of salmonids into that produced by tributaries vs. mainstem areas. 4) Investigate assumptions associated with mark-recapture juvenile salmonids out-migrant models.

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

CDFG S-RAMP ID# 98

Correspondent: Michael D. Sparkman

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap	n/a	n/a
Data types:	presence/absence, population index, demographic	n/a	n/a

Steelhead, Northern California ESU

Uncertainty: qualitative

Site selection:	other	**Year began:**	2000	**Interval:**	daily
Geoprecision:	very precise	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete,	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/private
Negative impact?	no	**Start:**	Mar	**Support:**	2010+
Impact controls?	no	**End:**	Aug	**Future intent (yr):**	6–10

Technical Goal: Technical evaluation and hypothesis.

Programmatic Goal: Evaluation.

Stream name	LLID	Watershed name	HUC
Redwood Creek	1240905412924	Mad-Redwood.	10102

CDFG S-RAMP ID# 99

Correspondent: Michael D. Sparkman

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap	n/a
Data types:	n/a	presence/absence, population abundance, demographic	n/a
Uncertainty:		statistical	

Site selection:	other	**Year began:**	2000	**Interval:**	daily
Geoprecision:	very precise	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/private
Negative impact?	no	**Start:**	Mar	**Support:**	2010+
Impact controls?	no	**End:**	Aug	**Future intent (yr):**	6–10

Technical Goal: Hypothesis, estimates.

Programmatic Goal: Evaluation.

Stream name	LLID	Watershed name	HUC
Redwood Creek	1240905412924	Mad-Redwood.	10102

CDFG S-RAMP ID# 100

Correspondent: Michael D. Sparkman

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap	n/a
Data types:	n/a	presence/absence, population abundance, demographic	n/a

Steelhead, Northern California ESU

Uncertainty: statistical

Site selection:	dictated by logistics/circumstance /qualitative	**Year began:**	2000	**Interval:**	daily
Geoprecision:	very precise	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete,	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/private
Negative impact?	no	**Start:**	Mar	**Support:**	2010+
Impact controls?	no	**End:**	Aug	**Future intent (yr):**	6–10

Technical Goal: Hypothesis, estimates.

Programmatic Goal: Evaluation.

Stream name	LLID	Watershed name	HUC
Redwood Creek	1240905412924	Mad-Redwood.	10102

CDFG S-RAMP ID# 171

Correspondent: Michael D. Sparkman

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap	n/a
Data types:	n/a	population abundance, demographic	n/a

Uncertainty: statistical

Site selection:	unknown	**Year began:**	2000	**Interval:**	daily
Geoprecision:	very precise	**Year ended:**	2002	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	weekly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/Private
Negative impact?	no	**Start:**	Mar	**Support:**	2010+
Impact controls?	no	**End:**	Jul	**Future intent (yr):**	6–10

Technical Goal: Compare wild and hatchery steelhead out-migration timing.

Programmatic Goal: Describe age one plus and older juvenile steelhead downstream migration in the Mad River and determine out-migrant pop. Sizes for wild 1+ steelhead and 2+ steelhead. Primary long-term goal is to determine status and trends of out-migrating 1+ and 2+ steelhead in the Mad River.

Stream name	LLID	Watershed name	HUC
Mad River	1241266409562	Mad-Redwood.	10102

Eel River Salmon Restoration Project ID# 263

Correspondent: Harry Vaughn

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap	n/a

Steelhead, Northern California ESU

Data types:	n/a		population index, genetic	n/a	
Uncertainty:			qualitative		
Site selection:	qualitative selection	**Year began:**	1999	**Interval:**	daily
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	CDFG SFRA
Negative impact?	no	**Start:**	Mar	**Support:**	2004
Impact controls?	no	**End:**	Jun	**Future intent (yr):**	6–10

Technical Goal: Develop new trap models; trend analysis; implement protocol.

Programmatic Goal: Monitor long-term population trends.

Stream name	LLID	Watershed name	HUC
Sprout Creek	1238264400697	South Fork Eel.	10106
West Fork Sproul Creek	1238657400410	South Fork Eel.	10106

Institute for Forest and Watershed Management/HSU ID# 67

Correspondent: Dana McCanne

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	downstream trap	upstream trap
Data types:	population abundance, demographic, genetic	population index, demographic	population abundance, demographic, genetic
Uncertainty:	statistical		

Site selection:	dictated by logistics/circumstance	**Year began:**	2002	**Interval:**	yearly
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	decreasing	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: NOAA/CDFG/commercial-extraction
Negative impact?	no	**Start:**	Aug	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	ongoing

Technical Goal: Population estimates to determine trends over time.

Programmatic Goal: Population status evaluation due to ESA listing.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1241410407191	Mad-Redwood.	10102
Unknown. Use LLID	1241433407186	Mad-Redwood.	10102
Unknown. Use LLID	1241067408013	Mad-Redwood.	10102
Unknown. Use LLID	1241029407863	Mad-Redwood.	10102
Unknown. Use LLID	1239932407391	Mad-Redwood.	10102
Unknown. Use LLID	1240107407367	Mad-Redwood.	10102
Unknown. Use LLID	1240331407318	Mad-Redwood.	10102

Steelhead, Northern California ESU

Unknown. Use LLID	1240641407322	Mad-Redwood.	10102
Unknown. Use LLID	1240648407427	Mad-Redwood.	10102
Unknown. Use LLID	1240974408015	Mad-Redwood.	10102
Unknown. Use LLID	1241042407668	Mad-Redwood.	10102
Unknown. Use LLID	1241067408012	Mad-Redwood.	10102
Unknown. Use LLID	1241398408058	Mad-Redwood.	10102
Unknown. Use LLID	1241176407779	Mad-Redwood.	10102
Unknown. Use LLID	1241191407532	Mad-Redwood.	10102
Unknown. Use LLID	1241246407233	Mad-Redwood.	10102
Unknown. Use LLID	1241246407489	Mad-Redwood.	10102
Unknown. Use LLID	1241289407456	Mad-Redwood.	10102
Unknown. Use LLID	1241301407488	Mad-Redwood.	10102
Unknown. Use LLID	1241359408039	Mad-Redwood.	10102
Unknown. Use LLID	1241381408050	Mad-Redwood.	10102
Unknown. Use LLID	1241052407257	Mad-Redwood.	10102
Unknown. Use LLID	1240957408018	Mad-Redwood.	10102
Cloney Gulch	1240482407577	Mad-Redwood.	10102
Eureka Slough	1241459408108	Mad-Redwood.	10102
Falls Gulch	1240384407635	Mad-Redwood.	10102
Freshwater Creek	1241165408023	Mad-Redwood.	10102
Graham Gulch	1240475407539	Mad-Redwood.	10102
Henderson Gulch	1241322407550	Mad-Redwood.	10102
Horse Gulch	1240492407761	Mad-Redwood.	10102
Little Freshwater Creek	1240624407569	Mad-Redwood.	10102
McCready Gulch	1240638407639	Mad-Redwood.	10102
Ryan Creek	1241135407887	Mad-Redwood.	10102
South Fork Freshwater Creek	1240467407317	Mad-Redwood.	10102

Institute for Forest and Watershed Management/HSU ID# 70

Correspondent: Dana McCanne

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	n/a	n/a
Data types:	population abundance	n/a	n/a
Uncertainty:	statistical		

Site selection:	other	**Year began:**	1999	**Interval:**	yearly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: NOAA/CDFG/commercial-extraction
Negative impact?	no	**Start:**	Aug	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	ongoing

Technical Goal: Population estimates to determine trends over time.

Steelhead, Northern California ESU

Programmatic Goal: Determine trends in population and ESA status.

Stream name	LLID	Watershed name	HUC
Albion River	1237668392254	Big-Navarro-Garcia.	10108
Alder Creek	1236958390045	Big-Navarro-Garcia.	10108
Big River	1237953393027	Big-Navarro-Garcia.	10108
Big River	1237953393027	Russian.	10110
Buckhorn Creek	1237829392593	Big-Navarro-Garcia.	10108
Cottaneva Creek	1238282397361	Big-Navarro-Garcia.	10108
Doyle Creek	1238175393604	Big-Navarro-Garcia.	10108
Garcia River	1237246389456	Big-Navarro-Garcia.	10108
Greenwood Creek	1237170391263	Big-Navarro-Garcia.	10108
Gualala River	1235323387688	Gualala-Salmon.	10109
Hardy Creek	1238071397108	Big-Navarro-Garcia.	10108
Hollow Tree Creek	1237265398578	South Fork Eel.	10106
Howard Creek	1237904396779	Big-Navarro-Garcia.	10108
Juan Creek	1238031397029	Big-Navarro-Garcia.	10108
Mallo Pass Creek	1236885390342	Big-Navarro-Garcia.	10108
Mills Creek	1236935390556	Big-Navarro-Garcia.	10108
Moat Creek	1236742388813	Big-Navarro-Garcia.	10108
Navarro River	1237601391919	Big-Navarro-Garcia.	10108
Noyo River	1238089394276	Big-Navarro-Garcia.	10108
Point Arena Creek	1237092389142	Big-Navarro-Garcia.	10108
Schooner Gulch	1236545388666	Big-Navarro-Garcia.	10108

Mattole Salmon Group ID# 214

Correspondent: Maureen Roche

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	direct observation	n/a
Data types:	presence/absence, population index, population abundance, demographic, genetic	presence/absence, population index, population abundance, demographic, genetic	n/a
Uncertainty:	statistical	statistical	

Site selection:	dictated by logistics/circumstance	**Year began:**	1996	**Interval:**	yearly
Geoprecision:	accurate to stream	**Year ended:**	and 1999	**Duration:**	6–10 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/BLM
Negative impact?	yes	**Start:**	Aug	**Support:**	indefinite
Impact controls?	no	**End:**	Aug	**Future intent (yr):**	indefinite

Technical Goal: Test ecological hypotheses on limiting factors and effects of disturbance (especially temperature and sediment dynamics).

Programmatic Goal:

Steelhead, Northern California ESU

Stream name	LLID	Watershed name	HUC
Mattole River	1243528403022	Mattole.	10107

Mattole Salmon Group ID# 222

Correspondent: Maureen Roche

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	spawner count, redd count, carcass count
Data types:	n/a	n/a	presence/absence, population index
Uncertainty:			qualitative

Site selection:	dictated by logistics/circumstance	**Year began:**	1981	**Interval:**	weekly
Geoprecision:	accurate to watershed	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/BLM
Negative impact?	yes	**Start:**	Dec	**Support:**	indefinite
Impact controls?	no	**End:**	Jan	**Future intent (yr):**	indefinite

Technical Goal: Test ecological hypotheses on limiting factors and effects of disturbance (especially temperature and sediment dynamics).

Programmatic Goal: Species status knowledge.

Stream name	LLID	Watershed name	HUC
Mattole River	1243528403022	Mattole.	10107

Mattole Salmon Group ID# 224

Correspondent: Maureen Roche

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	direct observation	n/a
Data types:	presence/absence, population index, population abundance, demographic, genetic	presence/absence, population index, population abundance, demographic, genetic	n/a
Uncertainty:	statistical	statistical	

Site selection:	dictated by logistics/circumstance	**Year began:**	1996	**Interval:**	other
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/BLM
Negative impact?	yes	**Start:**	see notes	**Support:**	indefinite
Impact controls?	no	**End:**		**Future intent (yr):**	indefinite

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Technical Goal: Test ecological hypotheses on limiting factors and effects of disturbance (especially temperature and sediment dynamics).

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Mattole River	1243528403022	Mattole.	10107

Mattole Salmon Group ID# 232

Correspondent: Maureen Roche

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	presence/absence, population abundance
Uncertainty:			qualitative

Site selection:	dictated by logistics/circumstance	**Year began:**	1982	**Interval:**	daily
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/BLM
Negative impact?	yes	**Start:**	Nov	**Support:**	indefinite
Impact controls?	no	**End:**	Jan	**Future intent (yr):**	indefinite

Technical Goal: Test ecological hypotheses on limiting factors and effects of disturbance (especially temperature and sediment dynamics).

Programmatic Goal: Unique adaptation to 80 deg. F water, needs protection & education for poachers.

Stream name	LLID	Watershed name	HUC
Mattole River	1243528403022	Mattole.	10107

Mattole Salmon Group ID# 234

Correspondent: Maureen Roche

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap	downstream trap	n/a
Data types:	population abundance	population abundance	n/a
Uncertainty:	statistical	statistical	

Site selection:	dictated by logistics/circumstance	**Year began:**	1985	**Interval:**	other
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/BLM

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Impact controls? no **End:** Jun **Future intent (yr):** indefinite
Technical Goal: Test ecological hypotheses on limiting factors and effects of disturbance (especially temperature and sediment dynamics).
Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Mattole River	1243528403022	Mattole.	10107

NOAA Fish ID# 166

Correspondent: Thomas Williams

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	n/a	n/a
Data types:	population index		

Negative impact? n/a **Start:** n/a Apr **Support:** indefinite
Uncertainty: none

Site selection: unknown **Year began:** 2000 **Interval:** yearly
Geoprecision: accurate **Year ended:** 2003 **Duration:** 0–5 yr
Response to: **Years missed:** complete, regular **Summaries:** yearly
Positive impact? no **Season:** **Funding source:** NOAA Fish
Negative impact? no **Start:** Jul **Support:** indefinite
Impact controls? no **End:** Sept **Future intent (yr):** indefinite
Technical Goal:
Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1236097393972	Big-Navarro-Garcia.	10108
Unknown. Use LLID	1236213393805	Big-Navarro-Garcia.	10108
Unknown. Use LLID	1236383394088	Big-Navarro-Garcia.	10108
Unknown. Use LLID	1236418393851	Big-Navarro-Garcia.	10108
Unknown. Use LLID	1236581393690	Big-Navarro-Garcia.	10108
Bear Gulch	1236728393841	Big-Navarro-Garcia.	10108
Brandon Gulch	1236815394045	Big-Navarro-Garcia.	10108
North Fork South Fork Noyo River	1236845393910	Big-Navarro-Garcia.	10108
Parlin Creek	1236582393695	Big-Navarro-Garcia.	10108
South Fork Noyo River	1237258394248	Big-Navarro-Garcia.	10108

PalCo. (Yager Cr. Steelhead) ID# 177

Correspondent: Yager Creek Hatchery

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	n/a
Data types:	n/a	n/a	n/a

Steelhead, Northern California ESU

Uncertainty: unknown unknown

Site selection:	unknown	**Year began:**	1976	**Interval:**	daily
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	unknown	**Summaries:**	unknown
Positive impact?	no	**Season:**		**Funding source:**	PalCo/hatchery
Negative impact?	no	**Start:**		**Support:**	ongoing (assume)
Impact controls?	no	**End:**		**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal: Restoration of Van Duzen River steelhead.

Stream name	LLID	Watershed name	HUC
Cooper Mill Creek	1240565405594	Lower Eel.	10105
Cooper Mill Creek	1240565405594	Mad-Redwood.	10102

Steelhead, Central California Coast ESU

Campbell/Hawthorne Timber Co. ID# 289

Correspondent: David Wright

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	presence/absence
Uncertainty:			basic quantitative

Site selection:	unknown	**Year began:**	1993	**Interval:**	yearly
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	commercial: extraction
Negative impact?	yes	**Start:**	Dec	**Support:**	ongoing
Impact controls?	no	**End:**	Apr	**Future intent (yr):**	ongoing

Technical Goal: Determine trends in salmonid densities: Relative abundance on an annual basis over a long period of time.

Programmatic Goal: Determine health of populations.

Stream name	LLID	Watershed name	HUC
Redwood Creek	1229999385273	Russian.	10110

Campbell/Hawthorne Timber Co. ID# 290

Correspondent: David Wright

	Juvenile	Outmigrants	Adults
Field techniques:	electrofishing	electrofishing	spawner count
Data types:	population index, demographic, genetic	population index	presence/absence

Steelhead, Central California Coast ESU

Uncertainty:	qualitative	qualitative	unknown

Site selection:	unknown	**Year began:**	1993	**Interval:**	yearly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	commercial: extraction
Negative impact?	yes	**Start:**	Sept	**Support:**	ongoing
Impact controls?	no	**End:**	Nov	**Future intent (yr):**	ongoing

Technical Goal: Determine trends in salmonid densities: Relative abundance on an annual basis over a long period of time.

Programmatic Goal: Determine health of populations.

Stream name	LLID	Watershed name	HUC
Redwood Creek	1229999385273	Russian.	10110

Campbell/Hawthorne Timber Co. ID# 296

Correspondent: David Wright

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	presence/absence
Uncertainty:			basic quantitative

Site selection:	unknown	**Year began:**	1993	**Interval:**	yearly
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	commercial: extraction
Negative impact?	yes	**Start:**	Dec	**Support:**	ongoing
Impact controls?	no	**End:**	Apr	**Future intent (yr):**	ongoing

Technical Goal: Determine trends in salmonid densities: Relative abundance on an annual basis over a long period of time.

Programmatic Goal: Determine health of populations.

Stream name	LLID	Watershed name	HUC
Bearpen Creek	1231149385774	Gualala-Salmon.	10109
Bearpen Creek	1231149385774	Russian.	10110

Campbell/Hawthorne Timber Co. ID# 297

Correspondent: David Wright

	Juvenile	Outmigrants	Adults
Field techniques:	electrofishing	electrofishing	spawner count
Data types:	population index, demographic, genetic	population index	presence/absence

Steelhead, Central California Coast ESU

Uncertainty:	qualitative	qualitative	unknown		
Site selection:	unknown	**Year began:**	1993	**Interval:**	yearly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	commercial: extraction
Negative impact?	yes	**Start:**	Sept	**Support:**	ongoing
Impact controls?	no	**End:**	Nov	**Future intent (yr):**	ongoing

Technical Goal: Determine trends in salmonid densities: Relative abundance on an annual basis over a long period of time.

Programmatic Goal: Determine health of populations.

Stream name	LLID	Watershed name	HUC
Bearpen Creek	1231149385774	Russian.	10110
Bearpen Creek	1231149385774	Gualala-Salmon.	10109

CDFG ID# 123

Correspondent: Doug Albin

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	n/a	n/a
Data types:	presence/absence	n/a	n/a
Uncertainty:	qualitative		

Site selection:	qualitative selection	**Year began:**	1999	**Interval:**	yearly
Geoprecision:	accurate to watershed	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	rotating, opportunistic	**Summaries:**	other
Positive impact?	no	**Season:**		**Funding source:**	state bond funds
Negative impact?	no	**Start:**	Jul	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	indefinite

Technical Goal: Compare habitat features between systems.

Programmatic Goal: Habitat restoration prescriptions and correlation of habitat conditions with species presence/absence.

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

CDFG ID# 185

Correspondent: Juan Garcia

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	population abundance

Steelhead, Central California Coast ESU

Uncertainty: unknown

Site selection:	unknown	**Year began:**	1982	**Interval:**	daily
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	unknown	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: Army corps/CDFG (assume)
Negative impact?	no	**Start:**	Nov	**Support:**	ongoing (assume)
Impact controls?	no	**End:**	Apr	**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal: Facility built as compensation for spawning and nursery areas blocked by the Coyote Valley Dam/Lake Mendocino Project.

Stream name	LLID	Watershed name	HUC
Dry Creek	1228562385862	Russian.	10110
East Fork Russian River	1231985391901	Russian.	10110

CDFG ID# 295

Correspondent: Kevan Urquhart

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap, other
Data types:	n/a	n/a	presence/absence, population index, population abundance, demographic

Uncertainty:

Site selection:	qualitative selection	**Year began:**	1997	**Interval:**	other
Geoprecision:	accurate to watershed	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete with gaps, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	CDFG SFRA
Negative impact?	no	**Start:**	Dec	**Support:**	indefinite
Impact controls?	no	**End:**	Feb	**Future intent (yr):**	ongoing

Technical Goal: Monitor fishing and predict catch-and-release impacts on populations.

Programmatic Goal: Regulatory compliance. Provide fishing effort data for fish management; evaluate plans required under ESA; data for viable salmonid population models.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1224178373875	San Francisco Coastal South.	50006
Unknown. Use LLID	1224391374295	San Francisco Coastal South.	50006
Aptos Creek	1219055369691	San Lorenzo-Soquel.	60001
Arana Gulch	1220017369677	San Lorenzo-Soquel.	60001
Borregas Creek	1219271369774	San Lorenzo-Soquel.	60001

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Leon, Arroyo	1224483374759	San Francisco Coastal South.	50006
Lobitos Creek	1224082373762	San Francisco Coastal South.	50006
Pescadero Creek	1224062372640	San Francisco Coastal South.	50006
Purisima Creek	1224254374043	San Francisco Coastal South.	50006
Rodeo Creek Gulch	1219802369611	San Lorenzo-Soquel.	60001
San Lorenzo River	1220302369911	San Lorenzo-Soquel.	60001
Soquel Creek	1219515369720	San Lorenzo-Soquel.	60001

CDFG ID# 212

Correspondent: Brett Wilson

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap, other	upstream trap, spawner count, other
Data types:	n/a	population abundance, genetic	population abundance, genetic
Uncertainty:		unknown	unknown

Site selection:	dictated by logistics/circumstance	**Year began:**	1979	**Interval:**	unknown
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	unknown
Positive impact?	no	**Season:**		**Funding source:**	various: Cal Fed/EPA
Negative impact?	no	**Start:**	Aug	**Support:**	2006
Impact controls?	no	**End:**	Apr	**Future intent (yr):**	0–5

Technical Goal: Genetic analysis is to identify individuals and determine spawning protocol.

Programmatic Goal: Compensation for spawning and nursery areas blocked by Warm Springs Dam, Lake Sonoma Project.

Stream name	LLID	Watershed name	HUC
Dry Creek	1228562385862	Russian.	10110

Environmental Science Associates ID# 117

Correspondent: Mike Podlech

	Juvenile	Outmigrants	Adults
Field techniques:	electrofishing	n/a	n/a
Data types:	population abundance	n/a	n/a
Uncertainty:	statistical		

Site selection:	dictated by logistics/circumstance	**Year began:**	1984	**Interval:**	yearly

Steelhead, Central California Coast ESU

		Year ended:	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	commercial
Negative impact?	yes	**Start:**	Aug	**Support:**	ongoing
Impact controls?	no	**End:**	Aug	**Future intent (yr):**	ongoing

Technical Goal: Monitor fluctuations in abundance and whether related to known disturbances.

Programmatic Goal: Regulatory compliance to detect any negative impacts from geothermal plants.

Stream name	**LLID**	**Watershed name**	**HUC**
Alder Creek	1228668388345	Russian.	10110
Geoprecision: Squaw Creek	accurate to stream	1228763388244	Russian. 10110

Environmental Science Associates ID# 261

Correspondent: Mike Podlech

	Juvenile	**Outmigrants**	**Adults**
Field techniques:	downstream trap	direct observation	upstream trap
Data types:	population abundance, demographic	population abundance, demographic, genetic	population index
Uncertainty:	qualitative		basic quantitative

Site selection:	dictated by logistics/circumstance	**Year began:**	2003	**Interval:**	daily
Geoprecision:	accurate	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	private grant
Negative impact?	yes	**Start:**	Mar	**Support:**	currently
Impact controls?	no	**End:**	Jun	**Future intent (yr):**	0–5

Technical Goal: Outlet monitoring of pond.

Programmatic Goal: Part of a NMFS enforcement action.

Stream name	**LLID**	**Watershed name**	**HUC**
San Vicente Creek	1221929370093	San Lorenzo-Soquel.	60001

Golden Gate National Recreation Area (NPS) ID# 23

Correspondent: Darren Fong

	Juvenile	**Outmigrants**	**Adults**
Field techniques:	electrofishing, seining	n/a	spawner count, redd count
Data types:	presence/absence, population index, demographic, genetic	n/a	population index, demographic
Uncertainty:	statistical		none

Site selection:	dictated by logistics/circumstance - qualitative	**Year began:**	1994	**Interval:**	see notes

Steelhead, Central California Coast ESU

		Year ended:	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	yes	**Season:**	see notes	**Funding source:**	agency base
Negative impact?	no	**Start:**		**Support:**	ongoing
Impact controls?	no	**End:**		**Future intent (yr):**	ongoing

Technical Goal: Determine whether population fluctuations are a result of management actions and how.

Programmatic Goal: To determine natural variation in population dynamics.

Stream name	LLID	Watershed name	HUC
Redwood Creek	1225776378596	Tomales-Drake Bays.	50005

Golden Gate National Recreation Area (NPS) ID# 25

Geoprecision: accurate

Correspondent: Darren Fong

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	redd count
Data types:	n/a	n/a	population index
Uncertainty:			none

Site selection:	dictated by logistics/circumstance	**Year began:**	1999	**Interval:**	other
Geoprecision:	accurate to stream	**Year ended:**	2001	**Duration:**	0–5 yr
Response to:		**Years missed:**	no	**Summaries:**	none
Positive impact?	no	**Season:**	March - April	**Funding source:**	agency base
Negative impact?	no	**Start:**	Mar	**Support:**	ongoing
Impact controls?	no	**End:**	Apr	**Future intent (yr):**	ongoing

Technical Goal: Establish natural variation in papers.

Programmatic Goal: To determine natural variation in population dynamics.

Stream name	LLID	Watershed name	HUC
West Union Creek	1222657374252	Coyote.	50003

HG Harvey & Assoc. ID# 277

Correspondent: Scott Gressey

	Juvenile	Outmigrants	Adults
Field techniques:	seining, other	seining, other	n/a
Data types:	presence/absence	presence/absence	n/a
Uncertainty:	none	none	

Site selection:	dictated by logistics/circumstance	**Year began:**	2002	**Interval:**	other
Geoprecision:	accurate	**Year ended:**	2002	**Duration:**	0–5 yr
Response to:		**Years missed:**	decreasing	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	agency base

Steelhead, Central California Coast ESU

Negative impact?	no	**Start:**	Oct	**Support:**	single sampling event
Impact controls?	no	**End:**	Nov	**Future intent (yr):**	ended

Technical Goal: Determine if sampling protocol could be developed which would effectively sample the lagoon for salmonids.

Programmatic Goal: Feasibility analysis to see if juveniles/smolts would be affected by proposed breeding program.

Stream name	LLID	Watershed name	HUC
San Lorenzo River	1220302369911	San Lorenzo-Soquel.	60001

HG Harvey and Assoc. ID# 268

Correspondent: Laird Henkel

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	direct observation, electrofishing	n/a
Data types:	population abundance, demographic	presence/absence, population abundance	n/a
Uncertainty:	statistical	statistical	

Site selection:	random site selection	**Year began:**	1994	**Interval:**	yearly
Geoprecision:	precise	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	complete with gaps, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	municipal
Negative impact?	no	**Start:**	Aug	**Support:**	currently
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	ongoing

Technical Goal: Estimate density and abundance for watershed; compare historic sampling methods to newer randomized sampling.

Programmatic Goal: Develop baseline data for use in general watershed management.

Stream name	LLID	Watershed name	HUC
Bean Creek	1220605370516	San Lorenzo-Soquel.	60001
Bear Creek	1221209371277	San Lorenzo-Soquel.	60001
Boulder Creek	1221202371271	San Lorenzo-Soquel.	60001
Branciforte Creek	1220130369869	San Lorenzo-Soquel.	60001
Carbonera Creek	1220212369740	San Lorenzo-Soquel.	60001
Fall Creek	1220773370595	San Lorenzo-Soquel.	60001
Kings Creek	1221333371555	San Lorenzo-Soquel.	60001
Newell Creek	1220793370809	San Lorenzo-Soquel.	60001
San Lorenzo River	1220302369911	San Lorenzo-Soquel.	60001
Zayante Creek	1220673370481	San Lorenzo-Soquel.	60001

Steelhead, Central California Coast ESU

Institute for Forest and Watershed Management/HSU ID# 292

Correspondent: Dana McCanne

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	n/a	n/a
Data types:	population abundance	n/a	n/a
Uncertainty:	statistical		

Site selection:	other	**Year began:**	1999	**Interval:**	yearly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: NOAA/CDFG/commercial-extraction
Negative impact?	no	**Start:**	Aug	**Support:**	yr-to-yr
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	ongoing

Technical Goal: Estimate population abundance and trends over time.

Programmatic Goal: Establishing trends in populations for ESA status.

Stream name	LLID	Watershed name	HUC
Russian River	1231278384507	Russian.	10110
Russian River	1231278384507	Bodega Bay.	10111

Marin Municipal Water District ID# 226

Correspondent: Eric Ettlinger (for Greg Andrews)

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	spawner count, redd count, direct observation
Data types:	n/a	n/a	presence/absence, population abundance, demographic, genetic
Uncertainty:			qualitative

Site selection:	dictated by logistics/circumstance	**Year began:**	'70's	**Interval:**	weekly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete with gaps, incremental	**Summaries:**	other
Positive impact?	no	**Season:**	mid. Oct.- early Feb.	**Funding source:**	municipal
Negative impact?	yes	**Start:**	Oct	**Support:**	ongoing
Impact controls?	no	**End:**	Feb	**Future intent (yr):**	ongoing

Technical Goal: Monitor population trends.

Programmatic Goal: Regulatory compliance: Order from state expects demonstration of appreciable

Steelhead, Central California Coast ESU

Stream name	LLID	Watershed name	HUC
Devils Gulch	1227359380291	Tomales-Drake Bays.	50005
Lagunitas Creek	1228246380899	Tomales-Drake Bays.	50005
San Geronimo Creek	1227078380050	San Pablo Bay.	50002
San Geronimo Creek	1227078380050	Tomales-Drake Bays.	50005

Marin Municipal Water District ID# 271

Correspondent: Eric Ettlinger (for Greg Andrews)

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	n/a	n/a
Data types:	population index, demographic, genetic	n/a	n/a
Uncertainty:	basic quantitative		

Site selection:	qualitative selection	**Year began:**	'70's	**Interval:**	yearly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete with gaps, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	municipal
Negative impact?	yes	**Start:**	Oct	**Support:**	ongoing
Impact controls?	no	**End:**	Feb	**Future intent (yr):**	ongoing

Technical Goal: Monitor population trends.

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Devils Gulch	1227359380291	Tomales-Drake Bays.	50005
Lagunitas Creek	1228246380899	Tomales-Drake Bays.	50005
San Geronimo Creek	1227078380050	Tomales-Drake Bays.	50005
San Geronimo Creek	1227078380050	San Pablo Bay.	50002

Merrit Smith Consulting ID# 21

Correspondent: Michael Fawcett

	Juvenile	Outmigrants	Adults
Field techniques:	seining	n/a	n/a
Data types:	presence/absence, population index, demographic, genetic	n/a	n/a
Uncertainty:	basic quantitative		

Site selection:	qualitative selection	**Year began:**	1993	**Interval:**	other
Geoprecision:	precise	**Year ended:**	ongoing	**Duration:**	6–10 yr

Steelhead, Central California Coast ESU

Response to:		**Years missed:**	complete, incremental	**Summaries:**	seasonally
Positive impact?	no	**Season:**	June - October	**Funding source:**	agency base
Negative impact?	no	**Start:**	Jun	**Support:**	indefinite
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	ongoing

Technical Goal: Long-term study. Changes compiled with human-induced impacts on steelhead and coho salmon populations on a yearly basis - reproductive success - can assess individual impacts from long-term data.

Programmatic Goal: Determine whether city wastewater practices are appropriate.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1228597387212	Russian.	10110
Gird Creek	1228406386740	Russian.	10110
Green Valley Creek	1229083385050	Russian.	10110
Maacama Creek	1227830386136	Russian.	10110
Mark West Creek	1228917384942	Russian.	10110
Matanzas Creek	1227111384374	Russian.	10110
Miller Creek	1228844387050	Russian.	10110
Santa Rosa Creek	1228333384513	Russian.	10110
Santa Rosa Creek	1228333384513	San Pablo Bay.	50002
Sausal Creek	1228081386501	Russian.	10110

Monterey Salmon and Trout Project ID# 276

Correspondent: Kingfisher Flat Hatchery

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	n/a
Data types:	n/a	n/a	n/a
Uncertainty:	unknown	unknown	unknown

Site selection:	dictated by logistics/circumstance	**Year began:**	1982	**Interval:**	daily
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: MBSTP, state/Fed (assume)
Negative impact?	no	**Start:**		**Support:**	ongoing (assume)
Impact controls?	no	**End:**		**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal: Restoration of local steelhead and coho salmon populations.

Stream name	LLID	Watershed name	HUC
Big Creek	1222290370668	San Lorenzo-Soquel.	60001
San Lorenzo River	1220302369911	San Lorenzo-Soquel.	60001

Steelhead, Central California Coast ESU

NOAA Fish ID# 262

Correspondent: Ellen Freund

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, seining	direct observation, seining	n/a
Data types:	presence/absence, demographic, genetic	presence/absence, demographic, genetic	n/a
Uncertainty:	unknown	unknown	

Site selection:	dictated by logistics/circumstance	**Year began:**	2003	**Interval:**	monthly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	NOAA Fish
Negative impact?	yes	**Start:**	All Yr	**Support:**	ongoing
Impact controls?	no	**End:**	All Yr	**Future intent (yr):**	0–5

Technical Goal: Study will monitor the utilization of small estuaries by coho salmon and steelhead by focusing on growth, residence times, feeding, metabolic rate and physiological status.

Programmatic Goal: Determine the importance of the small estuaries along the central coast for the maintenance and recovery of populations of coho salmon and steelhead. Monitor physiological factors and how those are affected by environmental variables and the interaction of these two species.

Stream name	LLID	Watershed name	HUC
Redwood Creek	1225776378596	Tomales-Drake Bays.	50005
Scott Creek	1222254370542	San Lorenzo-Soquel.	60001

NOAA Fish ID# 264

Correspondent: Sean A. Hayes

	Juvenile	Outmigrants	Adults
Field techniques:	seining	downstream trap, seining	upstream trap, spawner count
Data types:	presence/absence, demographic, genetic	presence/absence, population index, population abundance, demographic, genetic	presence/absence, population index, population abundance, demographic, genetic
Uncertainty:		statistical	

Site selection:	dictated by logistics/circumstance	**Year began:**	2002	**Interval:**	other
Geoprecision:	accurate to watershed	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	one-time
Positive impact?	yes	**Season:**		**Funding source:**	various: CDFG CCSRP/NOAA
Negative impact?	yes	**Start:**	All Yr	**Support:**	indefinite
Impact controls?	no	**End:**	All Yr	**Future intent (yr):**	0–5

Steelhead, Central California Coast ESU

Technical Goal:

Programmatic Goal: Management question addressing effects of artificial propagation on wild stocks.

Stream name	LLID	Watershed name	HUC
Big Creek	1222290370668	San Lorenzo-Soquel.	60001
Scott Creek	1222254370542	San Lorenzo-Soquel.	60001

Pt. Reyes Nat'l Seashore ID# 270

Correspondent: Brannon Ketcham

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, direct observation, electrofishing	n/a	n/a
Data types:	presence/absence, population index, population abundance, demographic, genetic	n/a	n/a
Uncertainty:	statistical		

Site selection:	qualitative selection	**Year began:**	1999	**Interval:**	yearly
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: agency base (50%)/other(50%)
Negative impact?	no	**Start:**	Jun	**Support:**	ongoing(agency base)
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	ongoing

Technical Goal: Contribute information at the ESU level.

Programmatic Goal: Document existing conditions for management decisions - what return of steelhead might mean for other watersheds.

Stream name	LLID	Watershed name	HUC
Pine Gulch Creek	1226871379219	Tomales-Drake Bays.	50005

Pt. Reyes Nat'l Seashore ID# 272

Correspondent: Brannon Ketcham

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, electrofishing	downstream trap, electrofishing	carcass count, direct observation
Data types:	population index, demographic, genetic	population index, demographic, genetic	demographic, genetic
Uncertainty:	basic quantitative	statistical	statistical

Site selection:	other	**Year began:**	1998	**Interval:**	other
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	0–5 yr

Steelhead, Central California Coast ESU

Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	various: agency base (50%)/other(50%)
Negative impact?	no	**Start:**	Mar	**Support:**	ongoing(agency base)
Impact controls?	no	**End:**	Jul	**Future intent (yr):**	ongoing

Technical Goal: Contribute information at the ESU level.

Programmatic Goal: Document existing conditions for management decisions - what return of steelhead might mean for other watersheds.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1227453380374	Tomales-Drake Bays.	50005
Unknown. Use LLID	1227548379964	Tomales-Drake Bays.	50005

SFPUC Sunol Valley Water Treatment Plant ID# 134

Correspondent: Brian Sak

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	direct observation, electrofishing	spawner count, redd count, direct observation, electrofishing
Data types:	presence/absence	presence/absence	presence/absence
Uncertainty:	basic quantitative	basic quantitative	unknown

Site selection:	dictated by logistics/circumstance	**Year began:**	1998	**Interval:**	yearly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	commercial: utility (assume)
Negative impact?	yes	**Start:**	Mar	**Support:**	2014
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	11–20

Technical Goal:

Programmatic Goal: Create viable habitat for steelhead runs and for other native species.

Stream name	LLID	Watershed name	HUC
Alameda Creek	1221411375942	San Francisco Bay.	50004
Calaveras Creek	1218200374775	San Francisco Bay.	50004

SFPUC Sunol Valley Water Treatment Plant ID# 201

Correspondent: Brian Sak

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap, direct observation	upstream trap
Data types:	n/a	demographic	population abundance

Steelhead, Central California Coast ESU

Uncertainty:			unknown		unknown
Site selection:	qualitative selection	**Year began:**	2001	**Interval:**	daily
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	commercial: utility (assume)
Negative impact?	no	**Start:**	Jan	**Support:**	ongoing (assume)
Impact controls?	no	**End:**	Jun	**Future intent (yr):**	indefinite

Technical Goal: 1) Study populations of landlocked rainbow trout in response to genetic analysis revealing relationship of trout in San A. and Calaveras Creeks to each other and to

Programmatic Goal: Assess current state of potential steelhead habitat and determine work needed to restore viable habitat and steelhead runs.

Stream name	LLID	Watershed name	HUC
Hondo, Arroyo	1218209375031	San Francisco Bay.	50004
San Antonio Creek	1218197375871	San Francisco Bay.	50004
San Antonio Creek	1218719375756	San Francisco Bay.	50004

Sonoma Co. Water Agency ID# 105

Correspondent: Sean White

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	n/a	n/a
Data types:	presence/absence, population abundance, demographic	n/a	n/a
Uncertainty:	statistical		

Site selection:	dictated by logistics/circumstance	**Year began:**	2002	**Interval:**	once
Geoprecision:	accurate to watershed	**Year ended:**	2002	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	commercial: utility
Negative impact?	no	**Start:**	Aug	**Support:**	ongoing
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	ongoing

Technical Goal: Develop estimates of abundance (for comparison with other tributaries and parts of watershed).

Programmatic Goal: Collect information on steelhead population abundances and distribution in Russian River upper habitat.

Stream name	LLID	Watershed name	HUC
Russian River	1231278384507	Russian.	10110

Steelhead, Central California Coast ESU

Russian River	1231278384507	Bodega Bay.	10111

Sonoma Co. Water Agency ID# 106

Correspondent: Sean White

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	n/a	n/a
Data types:	presence/absence, population abundance, demographic	n/a	n/a
Uncertainty:	basic quantitative		

Site selection:	random site selection	**Year began:**	1999	**Interval:**	other
Geoprecision:	accurate to stream	**Year ended:**	2002	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, incremental	**Summaries:**	other
Positive impact?	no	**Season:**		**Funding source:**	commercial: utility
Negative impact?	no	**Start:**	Aug	**Support:**	ongoing
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	6–10

Technical Goal: Develop population indices for those tributaries listed for steelhead.

Programmatic Goal: Develop baseline data on steelhead population abundances and distribution in Russian River tributaries.

Stream name	LLID	Watershed name	HUC
Green Valley Creek	1229083385050	Russian.	10110
Mark West Creek	1228917384942	Russian.	10110
Santa Rosa Creek	1228333384513	Russian.	10110
Santa Rosa Creek	1228333384513	San Pablo Bay.	50002
Sheephouse Creek	1230938384489	Russian.	10110

Soquel Demonstration State Forest ID# 133

Correspondent: Thomas Sutfin

	Juvenile	Outmigrants	Adults
Field techniques:	electrofishing, seining	n/a	n/a
Data types:	population abundance	n/a	n/a
Uncertainty:	statistical		

Site selection:	dictated by logistics/circumstance	**Year began:**	1993	**Interval:**	weekly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete with gaps, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	commercial: extraction (via CDF FRIF)
Negative impact?	no	**Start:**	Sept	**Support:**	indefinite

Steelhead, Central California Coast ESU

Impact controls? no **End:** Oct **Future intent (yr):** ongoing
Technical Goal:
Programmatic Goal: Watershed assessment w/ idea of establishing a baseline. Goal to document long-term population trends. Monitoring is tied to habitat enhancement efforts.

Stream name	LLID	Watershed name	HUC
Amaya Creek	1219246370750	San Lorenzo-Soquel.	60001
Soquel Creek	1219515369720	San Lorenzo-Soquel.	60001

Steelhead, South-Central California Coast ESU

Cambria Community Services District ID# 4

Correspondent: Don Alley

	Juvenile	Outmigrants	Adults
Field techniques:	electrofishing	n/a	n/a
Data types:	presence/absence, population abundance, demographic	n/a	n/a
Uncertainty:	statistical		

Site selection: dictated by logistics/circumstance **Year began:** 1994 **Interval:** yearly
Geoprecision: accurate **Year ended:** ongoing **Duration:** 6–10 yr
Response to: **Years missed:** complete, incremental **Summaries:** yearly
Positive impact? no **Season:** mid-September - mid-October **Funding source:** municipal

Negative impact? yes **Start:** Sept **Support:** yr-to-yr
Impact controls? yes **End:** Oct **Future intent (yr):** ongoing
Technical Goal: Population estimates; monitoring trends in juvenile populations and assessing limiting factors such as habitat quality. Look at relationships among environmental factors.

Programmatic Goal: Evaluation of management strategy; not legally required. Evaluating of water diversion.

Stream name	LLID	Watershed name	HUC
San Simeon Creek	1211265355949	Central Coastal.	60006
Santa Rosa Creek	1211105355685	Central Coastal.	60006
Steiner Creek	1210727356091	Central Coastal.	60006

CDFG ID# 176

Correspondent: Whale Rock Hatchery

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	n/a

Steelhead, South-Central California Coast ESU

Data types:	n/a	n/a	n/a
Uncertainty:	unknown		unknown

Site selection:	qualitative selection		**Year began:**	1992	**Interval:** daily
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	CDFG/hatchery (assume)
Negative impact?	no	**Start:**		**Support:**	unknown
Impact controls?	no	**End:**		**Future intent (yr):**	unknown

Technical Goal:

Programmatic Goal: Increased angling success in Whale Rock Reservoir

Stream name	LLID	Watershed name	HUC
Old Creek	1208858354345	Salinas.	60005
Old Creek	1208858354345	Central Coastal.	60006

CDFG ID# 55

Correspondent: Mike Hill

	Juvenile	Outmigrants	Adults
Field techniques:	other	n/a	other
Data types:	presence/absence	n/a	presence/absence
Uncertainty:			

Site selection:	qualitative selection	**Year began:**	2003	**Interval:**	once
Geoprecision:	accurate to stream	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	agency base
Negative impact?	yes	**Start:**	Jul	**Support:**	2005+
Impact controls?	no	**End:**	Jul	**Future intent (yr):**	indefinite

Technical Goal:

Programmatic Goal: Management, to keep pike minnow out of system.

Stream name	LLID	Watershed name	HUC
Chorro Creek	1208378353414	Central Coastal.	60006
Chorro Creek	1208378353414	Salinas.	60005

CDFG ID# 84

Correspondent: Jennifer Nelson

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, electrofishing, seining	seining	n/a
Data types:	presence/absence, population abundance, demographic	presence/absence, population index	n/a

Steelhead, South-Central California Coast ESU

Uncertainty: none unknown

Site selection: dictated by logistics/circumstance **Year began:** varies **Interval:** irregularly
Geoprecision: accurate to stream **Year ended:** ongoing **Duration:** unknown yr

Positive impact? yes **Season:** **Funding source:** CDFG SFRA
Negative impact? yes **Start:** All Yr **Support:**
Impact controls? no **End:** All Yr **Future intent (yr):** indefinite

Technical Goal: Population estimates (but questions on the validity of the protocol).

Programmatic Goal: Answer questions about fish migrations. Some regulatory compliance: Gather information on violation impacts.

Stream name	LLID	Watershed name	HUC
Carmel River	1219274365362	Central Coastal.	60006
Carmel River	1219274365362	Carmel.	60012
Deer Creek	1210579358920	Salinas.	60005
Morro Creek	1208633353763	Central Coastal.	60006
Pescadero Creek	1212861366939	Pajaro.	60002
Pescadero Creek	1212861366939	Alisal-Elkhorn Sloughs.	60011
San Simeon Creek	1211265355949	Central Coastal.	60006
Santa Rosa Creek	1211105355685	Central Coastal.	60006
Toro Creek	1204242353226	Salinas.	60005
Toro Creek	1208730354127	Central Coastal.	60006
Willow Creek	1207739355506	Salinas.	60005

CDFG ID# 124

Correspondent: Jennifer Nelson

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, electrofishing, seining	seining	n/a
Data types:	presence/absence, population abundance, demographic	presence/absence, population index	n/a
Uncertainty:	none	unknown	

Site selection: dictated by logistics/circumstance **Year began:** varies **Interval:** irregularly
Geoprecision: accurate to stream **Year ended:** ongoing **Duration:** unknown yr
Response to: **Years missed:** rotating, opportunistic **Summaries:** unknown

Positive impact? yes **Season:** **Funding source:** CDFG SFRA
Negative impact? yes **Start:** All Yr **Support:**
Impact controls? no **End:** All Yr **Future intent (yr):** indefinite

Technical Goal: Occasional population estimates (but questions about the validity of the protocol).

Programmatic Goal: Answer questions about fish migrations. Some regulatory compliance: Gather

Steelhead, South-Central California Coast ESU

Stream name	LLID	Watershed name	HUC
Carmel River	1219274365362	Central Coastal.	60006
Carmel River	1219274365362	Carmel.	60012
Deer Creek	1210579358920	Salinas.	60005
Morro Creek	1208633353763	Central Coastal.	60006
Pescadero Creek	1212861366939	Pajaro.	60002
Pescadero Creek	1212861366939	Alisal-Elkhorn Sloughs.	60011
San Simeon Creek	1211265355949	Central Coastal.	60006
Santa Rosa Creek	1211105355685	Central Coastal.	60006
Toro Creek	1208730354127	Central Coastal.	60006
Toro Creek	1204242353226	Salinas.	60005
Willow Creek	1207739355506	Salinas.	60005

CDFG ID# 126

Correspondent: Jennifer Nelson

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, electrofishing, seining	seining	n/a
Data types:	presence/absence, population abundance, demographic	presence/absence, information on violation impacts	n/a population index
Uncertainty:	none		

Site selection:	dictated by logistics/circumstance	**Year began:**	varies	**Interval:**	irregularly
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	unknown yr
Response to:		**Years missed:**	rotating, opportunistic	**Summaries:**	unknown
Positive impact?	yes	**Season:**		**Funding source:**	unnkown
Negative impact?	yes	**Start:**	All Yr	**Support:**	unknown
Impact controls?	no	**End:**	All Yr	**Future intent (yr):**	indefinite

Technical Goal: Occasional population estimates (but questions about the validity of the protocol).

Programmatic Goal: Answer questions about fish migrations. Some regulatory compliance: Gather information on violation impacts

Stream name	LLID	Watershed name	HUC
Carmel River	1219274365362	Carmel.	60012
Carmel River	1219274365362	Central Coastal.	60006
Deer Creek	1210579358920	Salinas.	60005
Morro Creek	1208633353763	Central Coastal.	60006
Pescadero Creek	1212861366939	Alisal-Elkhorn Sloughs.	60011
Pescadero Creek	1212861366939	Pajaro.	60002
San Simeon Creek	1211265355949	Central Coastal.	60006
Santa Rosa Creek	1211105355685	Central Coastal.	60006
Toro Creek	1204242353226	Salinas.	60005
Toro Creek	1208730354127	Central Coastal.	60006

Steelhead, South-Central California Coast ESU

Willow Creek	1207739355506	Salinas.	60005

CDFG ID# 103

Correspondent: Kevan Urquhart

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap, other
Data types:	n/a	n/a	presence/absence, population index, population abundance, demographic
Uncertainty:			

Site selection:	qualitative selection	**Year began:**	1997	**Interval:**	other
Geoprecision:	accurate to watershed	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete with gaps, incremental	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	CDFG SFRA
Negative impact?	no	**Start:**	Dec	**Support:**	indefinite
Impact controls?	no	**End:**	Feb	**Future intent (yr):**	ongoing

Technical Goal: Monitor fishing-use and predict catch-and-release fishing impacts on populations.

Programmatic Goal: Regulatory compliance. To provide fishing effort data for fish management and evaluate plans required under ESA and for viable salmonid population models.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1213442358258	Central Coastal.	60006
Unknown. Use LLID	1213439358263	Central Coastal.	60006
Unknown. Use LLID	1213427358300	Central Coastal.	60006
Unknown. Use LLID	1213394358377	Central Coastal.	60006
Big Sur River	1218590362810	Central Coastal.	60006
Carmel River	1219274365362	Carmel.	60012
Carmel River	1219274365362	Central Coastal.	60006
Little Sur River	1218923363350	Central Coastal.	60006
Salmon Creek	1213623358087	Central Coastal.	60006
Watsonville Slough	1218080368535	San Lorenzo-Soquel.	60001
Watsonville Slough	1218080368535	Pajaro.	60002

City of SLO ID# 11

Correspondent: Michael Clarke

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	direct observation, electrofishing	n/a
Data types:	presence/absence, population abundance, demographic	presence/absence, population abundance, demographic	n/a
Uncertainty:	basic quantitative	basic quantitative	

Steelhead, South-Central California Coast ESU

Site selection:	dictated by logistics/circumstance	**Year began:**	2003	**Interval:**	daily
Geoprecision:	accurate to stream	**Year ended:**	2005 or longer	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**	Sept.-Oct.	**Funding source:**	various: NMFS/Land Conservancy via CDFG
Negative impact?	yes	**Start:**	Sept	**Support:**	2006
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	ongoing

Technical Goal: Discover proportion of steelhead population in watershed residing in 5 mile stretch from ocean.

Programmatic Goal: NMFS to determine whether project will put steelhead in jeopardy of extinction in watershed.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1207126351874	Central Coastal.	60006
Unknown. Use LLID	1206277352911	Central Coastal.	60006
Davenport Creek	1206887352221	Central Coastal.	60006
Froom Creek	1206816352416	Central Coastal.	60006
Prefumo Creek	1206800352442	Central Coastal.	60006
San Luis Obispo Creek	1207293351822	Central Coastal.	60006
Stenner Creek	1206684352764	Central Coastal.	60006

City of SLO ID# 13

Correspondent: Michael Clarke

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap	downstream trap	n/a
Data types:	presence/absence, demographic	presence/absence, demographic	n/a
Uncertainty:	basic quantitative	basic quantitative	

Site selection:	dictated by logistics/circumstance	**Year began:**	1999	**Interval:**	daily
Geoprecision:	accurate to stream	**Year ended:**	2002	**Duration:**	0–5 yr
Response to:		**Years missed:**	no	**Summaries:**	seasonally
Positive impact?	yes	**Season:**	March-December	**Funding source:**	municipal
Negative impact?	yes	**Start:**	Mar	**Support:**	2003
Impact controls?	no	**End:**	Dec	**Future intent (yr):**	0–5

Technical Goal: Determine peak times of outmigration.

Programmatic Goal: Regulatory compliance: to determine magnitude of impact project.

Stream name	LLID	Watershed name	HUC
San Luis Obispo Creek	1207293351822	Central Coastal.	60006

Steelhead, South-Central California Coast ESU

City of SLO ID# 111

Correspondent: Michael Clarke

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	direct observation, electrofishing	n/a
Data types:	presence/absence, population abundance, demographic	presence/absence, population abundance, demographic	n/a
Uncertainty:	statistical	statistical	

Site selection:	random site selection	**Year began:**	1999	**Interval:**	monthly
Geoprecision:	accurate	**Year ended:**	2002	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	seasonally
Positive impact?	no	**Season:**		**Funding source:**	municipal
Negative impact?	yes	**Start:**	Jun	**Support:**	2003
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	0–5

Technical Goal: Same as for San Luis Obispo trap data.

Programmatic Goal: Same as San Luis Obispo trap data.

Stream name	LLID	Watershed name	HUC
San Luis Obispo Creek	1207293351822	Central Coastal.	60006

NMFS for Los Padres NF (USFS) ID# 155

Correspondent: Christina Dueber

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	n/a	n/a
Data types:	population abundance	n/a	n/a
Uncertainty:	unknown		

Site selection:	dictated by logistics/circumstance	**Year began:**	1999	**Interval:**	yearly
Geoprecision:	accurate to stream	**Year ended:**	2000	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	unknown
Negative impact?	yes	**Start:**	Jun	**Support:**	unknown
Impact controls?	yes	**End:**	Nov	**Future intent (yr):**	unknown

Technical Goal: Monitor habitat use by trout in areas impacted by recreation, roads, or fire; for instance, compared to non-impacted stream reaches.

Programmatic Goal: Management.

Stream name	LLID	Watershed name	HUC
Carmel River	1219274365362	Carmel.	60012
Carmel River	1219274365362	Central Coastal.	60006
Mill Creek	1214911359824	Central Coastal.	60006
Piney Creek	1214489362731	Carmel.	60012
Piney Creek	1214489362731	Salinas.	60005

Steelhead, South-Central California Coast ESU

Prewitt Creek	1214758359353	Central Coastal.	60006
Santa Lucia Creek	1214961362225	Salinas.	60005
Tassajara Creek	1215011362194	Salinas.	60005
Tassajara Creek	1215011362194	Carmel.	60012
Willow Creek	1214608358935	Central Coastal.	60006

NOAA Fish ID# 293

Correspondent: David Boughton

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	n/a	direct observation
Data types:	presence/absence	n/a	presence/absence
Uncertainty:	statistical		statistical

Site selection:	qualitative selection	**Year began:**	2002	**Interval:**	once
Geoprecision:	accurate to stream	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	NOAA Fish
Negative impact?	no	**Start:**	May	**Support:**	completed
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	ended

Technical Goal: Estimate current presence/absence of steelhead in each historical steelhead basin of southern California.

Programmatic Goal: Reduce uncertainty about the status of both a Federally threatened and an endangered ESU of steelhead.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1207456351781	Central Coastal.	60006
Unknown. Use LLID	1217384362058	Central Coastal.	60006
Unknown. Use LLID	1207944351982	Central Coastal.	60006
Unknown. Use LLID	1208002351833	Central Coastal.	60006
Unknown. Use LLID	1219378365063	Central Coastal.	60006
Unknown. Use LLID	1209030354477	Central Coastal.	60006
Unknown. Use LLID	1208985360802	Salinas.	60005
Alder Creek	1214155358575	Central Coastal.	60006
Atascadero Creek	1206606355054	Salinas.	60005
Big Creek	1215995360697	Central Coastal.	60006
Big Creek	1215995360697	Salinas.	60005
Big Sandy Creek	1207261357921	Salinas.	60005
Big Sur River	1218590362810	Central Coastal.	60006
Bixby Creek	1219021363714	Central Coastal.	60006
Carmel River	1219274365362	Carmel.	60012
Carmel River	1219274365362	Central Coastal.	60006
Cayucos Creek	1209069354491	Central Coastal.	60006
Chalone Creek	1212083363474	Salinas.	60005
Chinos, Arroyo De Los	1213157357250	Central Coastal.	60006
Chorro Creek	1208378353414	Central Coastal.	60006
Chorro Creek	1208378353414	Salinas.	60005

Steelhead, South-Central California Coast ESU

Chualar Creek	1215262365706	Salinas.	60005
Coon Creek	1208941352591	Central Coastal.	60006
Corralitos Creek	1217416369351	San Lorenzo-Soquel.	60001
Corralitos Creek	1217416369351	Pajaro.	60002
De La Laguna, Arroyo	1213070357098	Central Coastal.	60006
Diablo Canyon	1208565352121	Central Coastal.	60006
Doud Creek	1219140364220	Central Coastal.	60006
El Toro Creek	1216869366292	Salinas.	60005
Elkhorn Slough	1217884368066	Alisal-Elkhorn Sloughs.	60011
Estrella River	1206914357417	Estrella.	60004
Estrella River	1206914357417	Salinas.	60005
Gabilan Creek	1216398366866	Alisal-Elkhorn Sloughs.	60011
Garrapata Creek	1219151364177	Central Coastal.	60006
Grande Creek, Arroyo	1206299351011	Central Coastal.	60006
Grande Creek, Arroyo	1206299351011	Cuyama.	60007
Graves Creek	1207035355318	Salinas.	60005
Huerhuero Creek	1206858356759	Salinas.	60005
Islay Creek	1208874352753	Central Coastal.	60006
Kirk Creek	1214952359872	Central Coastal.	60006
Lime Creek	1216320361200	Central Coastal.	60006
Limekiln Creek	1215185360084	Central Coastal.	60006
Little Pico Creek	1211635356333	Central Coastal.	60006
Little Sur River	1218923363350	Central Coastal.	60006
Llagas Creek	1215064369638	Pajaro.	60002
Llagas Creek	1215064369638	Coyote.	50003
Malpaso Creek	1219373364814	Central Coastal.	60006
Mill Creek	1214911359824	Central Coastal.	60006
Morro Creek	1208633353763	Central Coastal.	60006
Nacimiento River	1207561358322	Salinas.	60005
Oak Knoll Creek	1212187356511	Central Coastal.	60006
Old Creek	1208858354345	Central Coastal.	60006
Old Creek	1208858354345	Salinas.	60005
Oso, Arroyo Del	1212901356909	Central Coastal.	60006
Pajaro River	1218074368519	Pajaro.	60002
Pajaro River	1218074368519	San Lorenzo-Soquel.	60001
Pancho Rico Creek	1209118360151	Salinas.	60005
Pancho Rico Creek	1209118360151	Upper Los Gatos-Avenal.	30011
Partington Creek	1216964361751	Central Coastal.	60006
Paso Robles Creek	1207047355326	Salinas.	60005
Pecho Creek	1207917351789	Central Coastal.	60006
Pico Creek	1211486356154	Central Coastal.	60006
Pismo Creek	1206398351336	Central Coastal.	60006
Plaskett Creek	1214714359199	Central Coastal.	60006
Prewitt Creek	1214758359353	Central Coastal.	60006
Rocky Creek	1219017363798	Central Coastal.	60006
Rocky Creek	1219017363798	Carmel.	60012
Salinas River	1218034367494	Cuyama.	60007

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Salinas River	1218034367494	Carmel.	60012
Salinas River	1218034367494	Salinas.	60005
Salmon Creek	1213623358087	Central Coastal.	60006
San Benito River	1215614368963	Upper Los Gatos-Avenal.	30011
San Benito River	1215614368963	Pajaro.	60002
San Carpoforo Creek	1213237357646	Central Coastal.	60006
San Jose Creek	1219243365259	Central Coastal.	60006
San Lorenzo Creek	1211235361908	Salinas.	60005
San Luis Obispo Creek	1207293351822	Central Coastal.	60006
San Marcos Creek	1206926357232	Salinas.	60005
San Simeon Creek	1211265355949	Central Coastal.	60006
Santa Margarita Creek	1206051354447	Central Coastal.	60006
Santa Margarita Creek	1206051354447	Salinas.	60005
Santa Rosa Creek	1211105355685	Central Coastal.	60006
Seal Rock Creek	1219630365886	Carmel.	60012
Soberanes Creek	1219243364564	Central Coastal.	60006
Soda Spring Creek	1213756358170	Central Coastal.	60006
Stonewall Creek	1213081364046	Salinas.	60005
Toro Creek	1208730354127	Central Coastal.	60006
Uvas Creek	1215883370011	Coyote.	50003
Uvas Creek	1215883370011	Pajaro.	60002
Vicente Creek	1215845360442	Central Coastal.	60006
Villa Creek	1209694354601	Central Coastal.	60006
Villa Creek	1214082358495	Central Coastal.	60006
Wild Cattle Creek	1214849359671	Central Coastal.	60006
Willow Creek	1214608358935	Central Coastal.	60006

NOAA Fish ID# 14

Correspondent: Christina Dueber

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	direct observation	direct observation
Data types:	presence/absence	presence/absence	presence/absence
Uncertainty:	unknown		

Site selection:	qualitative selection	**Year began:**	2001	**Interval:**	irregularly
Geoprecision:	accurate to subwatershed	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	no	**Summaries:**	other
Positive impact?	yes	**Season:**	ongoing	**Funding source:**	Nat'l Fire Plan
Negative impact?	yes	**Start:**	All Yr	**Support:**	unknown
Impact controls?	no	**End:**	All Yr	**Future intent (yr):**	unknown

Technical Goal: Monitoring related to effects of Forest Service actions.

Programmatic Goal: Regulatory compliance.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1206958354404	Salinas.	60005

Steelhead, South-Central California Coast ESU

Unknown. Use LLID	1206801354142	Salinas.	60005
Unknown. Use LLID	1200344351795	Estrella.	60004
Unknown. Use LLID	1203871353460	Salinas.	60005
Unknown. Use LLID	1203373353126	Salinas.	60005
Unknown. Use LLID	1201376352714	Estrella.	60004
Unknown. Use LLID	1204124353919	Salinas.	60005
Unknown. Use LLID	1204124353919	Estrella.	60004
Unknown. Use LLID	1204081352893	Salinas.	60005
Unknown. Use LLID	1204039353006	Salinas.	60005
Unknown. Use LLID	1200288351710	Estrella.	60004
Unknown. Use LLID	1207079354154	Salinas.	60005
Unknown. Use LLID	1203888352948	Salinas.	60005
Unknown. Use LLID	1204625354164	Salinas.	60005
Unknown. Use LLID	1202719352545	Salinas.	60005
Unknown. Use LLID	1203043353373	Salinas.	60005
Unknown. Use LLID	1202997352758	Salinas.	60005
Unknown. Use LLID	1202887352611	Salinas.	60005
Unknown. Use LLID	1202887352611	Estrella.	60004
Unknown. Use LLID	1202875352564	Salinas.	60005
Unknown. Use LLID	1202837352624	Salinas.	60005
Unknown. Use LLID	1202752352755	Salinas.	60005
Unknown. Use LLID	1201173353048	Estrella.	60004
Unknown. Use LLID	1202752352755	Estrella.	60004
Unknown. Use LLID	1201326353206	Estrella.	60004
Unknown. Use LLID	1202523353191	Salinas.	60005
Unknown. Use LLID	1202523353191	Estrella.	60004
Unknown. Use LLID	1203455354156	Estrella.	60004
Unknown. Use LLID	1205371353493	Salinas.	60005
Unknown. Use LLID	1202425352371	Salinas.	60005
Unknown. Use LLID	1201758352877	Estrella.	60004
Unknown. Use LLID	1206958354404	Central Coastal.	60006
Unknown. Use LLID	1203255352852	Salinas.	60005
Unknown. Use LLID	1203513353119	Estrella.	60004
Unknown. Use LLID	1207079354154	Central Coastal.	60006
Unknown. Use LLID	1203533352875	Salinas.	60005
Unknown. Use LLID	1203561353433	Salinas.	60005
Unknown. Use LLID	1203541354373	Estrella.	60004
Unknown. Use LLID	1207079354167	Salinas.	60005
Unknown. Use LLID	1203820352924	Salinas.	60005
Unknown. Use LLID	1203513353119	Salinas.	60005
Unknown. Use LLID	1203408354450	Estrella.	60004
Unknown. Use LLID	1203493354124	Estrella.	60004
Unknown. Use LLID	1203846354440	Estrella.	60004
Unknown. Use LLID	1203871353460	Estrella.	60004
Unknown. Use LLID	1203510354392	Estrella.	60004
Unknown. Use LLID	1203449352881	Salinas.	60005
Atascadero Creek	1206606355054	Salinas.	60005

Steelhead, South-Central California Coast ESU

Beartrap Creek	1201399353345	Estrella.	60004
Burrito Creek	1205318353371	Salinas.	60005
Camatta Creek	1202975354654	Estrella.	60004
Fernandez Creek	1203328354578	Estrella.	60004
Hale Creek	1206972354239	Salinas.	60005
Little Sur River	1218923363350	Central Coastal.	60006
Mariana Creek	1202753353573	Estrella.	60004
McGinnis Creek	1202803353810	Estrella.	60004
Middle Branch Huerhuero Creek	1205220355149	Estrella.	60004
Middle Branch Huerhuero Creek	1205220355149	Salinas.	60005
Navajo Creek	1201995354996	Estrella.	60004
Pozo Creek	1203894352953	Salinas.	60005
Pozo Creek	1203894352953	Estrella.	60004
Rinconada Creek	1205327353615	Salinas.	60005
Rogers Creek	1200894352755	Estrella.	60004
Salinas River	1218034367494	Cuyama.	60007
Salinas River	1218034367494	Salinas.	60005
Salinas River	1218034367494	Carmel.	60012
Salsipuedes Creek	1204653353225	Salinas.	60005
San Juan Creek	1203696356587	Estrella.	60004
San Luis Obispo Creek	1207293351822	Central Coastal.	60006
Santa Margarita Creek	1206051354447	Central Coastal.	60006
Santa Margarita Creek	1206051354447	Salinas.	60005
Shell Creek	1203257354863	Estrella.	60004
Tassajera Creek	1206402353790	Salinas.	60005
Trout Creek	1206067354414	Salinas.	60005
Trujillo Creek	1203482353124	Salinas.	60005
Yaro Creek	1203977353430	Salinas.	60005
Yaro Creek	1203977353430	Estrella.	60004

NOAA Fish ID# 265

Correspondent: Ellen Freund

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, seining	direct observation, seining	n/a
Data types:	presence/absence, demographic, genetic	presence/absence, demographic, genetic	n/a
Uncertainty:	unknown	unknown	

Site selection:	dictated by logistics/circumstance	**Year began:**	2003	**Interval:**	monthly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	NOAA Fish
Negative impact?	yes	**Start:**	All Yr	**Support:**	ongoing
Impact controls?	no	**End:**	All Yr	**Future intent (yr):**	0–5

Steelhead, South-Central California Coast ESU

Technical Goal: Study will monitor the utilization of small estuaries by coho salmon and steelhead by focusing on growth, residence times, feeding, metabolic rate and physiological status.

Programmatic Goal: Determine the importance of the small estuaries along the central coast for the maintenance and recovery of populations of coho salmon and steelhead. Monitor physiological factors and how those are affected by environmental variables and the interaction of these two species.

Stream name	LLID	Watershed name	HUC
Willow Creek	1214608358935	Central Coastal.	60006

Steelhead, Southern California ESU

Cachuma Operation and Maintenance Board ID# 15

Correspondent: Scott Engblom

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, direct observation	downstream trap	upstream trap, redd count, direct observation
Data types:	presence/absence, population abundance, genetic	presence/absence, population abundance, genetic	presence/absence, population abundance, demographic, genetic
Uncertainty:	unknown	unknown	unknown

Site selection:	unknown	**Year began:**	1994	**Interval:**	unknown
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	6–10 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**	throughout the year	**Funding source:**	municipal
Negative impact?	no	**Start:**	All Yr	**Support:**	ongoing
Impact controls?	no	**End:**	All Yr	**Future intent (yr):**	ongoing

Technical Goal: Increase overall steelhead population through implementation of the lower Santa Ynez River fish management plan.

Programmatic Goal: Biological Opinion, US Bureau of Reclamation, Operation and Maintenance of the Cachuma Project on the Santa Ynez River in Santa Barbara County.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1199819345781	Santa Ynez.	60010
El Jaro Creek	1204070345841	Santa Ynez.	60010
Quiota Creek	1201089345814	Santa Ynez.	60010
Salsipuedes Creek	1204115346315	Santa Ynez.	60010
Santa Ynez River	1205840346873	Ventura.	70101
Santa Ynez River	1205840346873	Santa Ynez.	60010

Casitas Water District ID# 65

Correspondent: Leo Lentsch

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap	downstream trap	direct observation

Steelhead, Southern California ESU

Data types:	population abundance, demographic	population abundance, demographic	population abundance, demographic, genetic
Uncertainty:	statistical	statistical	statistical

Site selection:	dictated by logistics/circumstance	**Year began:**	2002	**Interval:**	irregularly
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	municipal
Negative impact?	no	**Start:**	Jan	**Support:**	ongoing
Impact controls?	no	**End:**	Jun	**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal: To provide fish passage at the Robles Diversion Dam.

Stream name	LLID	Watershed name	HUC
Coyote Creek	1193093343546	Ventura.	70101
Matilija Creek	1192992344853	Santa Ynez.	60010
Matilija Creek	1192992344853	Ventura.	70101
Santa Ana Creek	1193412343780	Ventura.	70101

Casitas Water District ID# 66

Correspondent: Leo Lentsch

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	direct observation
Data types:	n/a	n/a	population index
Uncertainty:			qualitative

Site selection:	dictated by logistics/circumstance	**Year began:**	2003	**Interval:**	weekly
Geoprecision:	accurate to watershed	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	seasonally
Positive impact?	yes	**Season:**		**Funding source:**	municipal
Negative impact?	yes	**Start:**	Mar	**Support:**	ongoing
Impact controls?	no	**End:**	Jun	**Future intent (yr):**	ongoing

Technical Goal: Reconnaissance snorkel surveys & habitat assessment regarding migration requirements.

Programmatic Goal: Ensure fish passage and suitable habitat on Ventura River.

Stream name	LLID	Watershed name	HUC
Ventura River	1193067342740	Ventura.	70101

CDFG ID# 5

Correspondent: Roger Bloom

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	direct observation	n/a

Steelhead, Southern California ESU

Data types:	presence/absence, demographic	presence/absence, demographic	n/a
Uncertainty:		none	

Site selection:	qualitative selection	**Year began:**	2000	**Interval:**	other
Geoprecision:	accurate to stream	**Year ended:**	2001	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**	year-round	**Funding source:**	FRGP
Negative impact?	no	**Start:**	All Yr	**Support:**	2001
Impact controls?	no	**End:**	All Yr	**Future intent (yr):**	ongoing

Technical Goal:

Programmatic Goal: Assess existing residential population of wild trout in watershed.

Stream name	LLID	Watershed name	HUC
Sespe Creek	1189562343773	Santa Ynez.	60010
Sespe Creek	1189562343773	Santa Clara.	70102
Sisquoc River	1203067349043	Santa Maria.	60008

CDFG ID# 61

Correspondent: Tim Hovey

	Juvenile	Outmigrants	Adults
Field techniques:	electrofishing	n/a	direct observation, electrofishing, seining
Data types:	presence/absence, demographic, genetic	n/a	presence/absence, population abundance, demographic, genetic
Uncertainty:	qualitative		basic quantitative

Site selection:	dictated by logistics/circumstance	**Year began:**	1999	**Interval:**	weekly
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	various: Cal Coastal Conservancy (Bond Act)/CDFG
Negative impact?	yes	**Start:**	Jun	**Support:**	indefinite
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	ongoing

Technical Goal: Determine best quality techniques - protocol efficiency and quality evaluation.

Programmatic Goal: Because appearance of trout is so infrequent, purpose is to monitor their fluctuations due to rainfall. Are they successful in years of enough rainfall? Long-term success.

Stream name	LLID	Watershed name	HUC
San Juan Creek	1176833334621	San Jacinto.	70202
San Juan Creek	1176833334621	Aliso-San Onofre.	70301
San Mateo Creek	1175924333851	Aliso-San Onofre.	70301

Steelhead, Southern California ESU

San Onofre Creek	1175777333803	Aliso-San Onofre.	70301
San Onofre Creek	1175777333803	Santa Margarita.	70302
Trabuco, Arroyo	1176650334897	Aliso-San Onofre.	70301

CDFG ID# 62

Correspondent: Tim Hovey

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	n/a	n/a
Data types:	presence/absence	n/a	n/a
Uncertainty:	qualitative		

Site selection:	dictated by logistics/circumstance	**Year began:**	2003	**Interval:**	once
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	various: Cal Coastal Conservancy (Bond Act)/CDFG+
Negative impact?	yes	**Start:**	Aug	**Support:**	2005
Impact controls?	no	**End:**	Aug	**Future intent (yr):**	ongoing

Technical Goal: Assess habitat. Develop plan for removal of non-native species.

Programmatic Goal: Restore and optimize the steelhead run on San Mateo Creek. Work w/ landowners upstream to remove non-native species from pond.

Stream name	LLID	Watershed name	HUC
San Mateo Canyon	1174650334739	Aliso-San Onofre.	70301

For the Sake of Salmon (S. Cal) ID# 7

Correspondent: Jeff Brinkman

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	direct observation	direct observation
Data types:	presence/absence, population index, demographic	presence/absence, population index, demographic	presence/absence, population index
Uncertainty:	none	none	none

Site selection:	qualitative selection	**Year began:**	2003	**Interval:**	other
Geoprecision:	accurate	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**	Carp.-Spring:March and Sept., Montecito-summer	**Funding source:**	FRGP

Steelhead, Southern California ESU

Impact controls?	no	**End:**	Sept	**Future intent (yr):**	0–5

Technical Goal: Assess steelhead habitat conditions and population distribution, abundance (baseline).

Programmatic Goal: Watershed planning for restoration.

Stream name	LLID	Watershed name	HUC
Carpinteria Creek	1195195343904	Santa Barbara Coastal.	60013
Gobernador Creek	1194851344012	Santa Barbara Coastal.	60013
Montecito Creek	1196334344167	Santa Barbara Coastal.	60013

Land Trust of Santa Barbara Co. ID# 8

Correspondent: Carolyn Chandler

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	direct observation	direct observation
Data types:	presence/absence	presence/absence	presence/absence
Uncertainty:	none	none	none

Site selection:	dictated by logistics/circumstance	**Year began:**	2001	**Interval:**	irregularly
Negative impact?	no			**Start:**	**Year began:**
Mar	2001	**Support:**	**Interval:**	2003	irregularly
Geoprecision:	accurate	**Year ended:**	2001	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**	January-Februar y	**Funding source:**	commercial: extraction
Negative impact?	yes	**Start:**	Jan	**Support:**	indefinite
Impact controls?	no	**End:**	Jun	**Future intent (yr):**	indefinite

Technical Goal: Determine presence/absence prior to removing the abandoned pipeline.

Programmatic Goal: Regulatory compliance: required mitigation. Stream is representative of ~20 other streams for county with culvert issues, etc. Can be a model for more steelhead restoration.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1201405344734	Santa Barbara Coastal.	60013

Land Trust of Santa Barbara Co. ID# 9

Correspondent: Carolyn Chandler

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	n/a
Data types:	n/a	n/a	n/a
Uncertainty:			

Site selection:	dictated by logistics/circumstance	**Year began:**	pending	**Interval:**	unknown
Geoprecision:	accurate to stream	**Year ended:**		**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	unknown
Positive impact?	yes	**Season:**		**Funding source:**	Cal Coastal

Steelhead, Southern California ESU

Negative impact? yes **Start:** **Support:** indefinite
Impact controls? no **End:** **Future intent (yr):** ongoing
Technical Goal: Determine abundance, density and life history of steelhead in Arroyo Hondo and monitor response to watershed restoration.
Programmatic Goal: Restore Arroyo Hondo watershed and monitor response to restoration. Obtain baseline data. Long-term monitoring.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1201405344734	Santa Barbara Coastal.	60013

Land Trust of Santa Barbara County ID# 10

Correspondent: Stan Glowacki for Carolyn Chandler

	Juvenile	Outmigrants	Adults	Conservancy (Bond Act)
Field techniques:	n/a	n/a	n/a	
Data types:	n/a	n/a	n/a	
Uncertainty:				

Site selection: dictated by logistics/circumstance **Year began:** **Interval:** irregular
Geoprecision: very precise **Year ended:** **Duration:**
Response to: **Years missed:** snapshot **Summaries:** yearly (assume)
Positive impact? no **Season:** winter and spring; june (see notes) **Funding source:** unknown
Negative impact? no **Start:** **Support:** unknown
Impact controls? no **End:** **Future intent (yr):** unknown
Technical Goal:
Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1201405344734	Santa Barbara Coastal.	60013

NMFS for Los Padres NF (USFS) ID# 156

Correspondent: Christina Dueber

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	n/a	n/a
Data types:	population abundance	n/a	n/a
Uncertainty:	unknown		

Site selection: dictated by logistics/circumstance **Year began:** 1999 **Interval:** yearly
Geoprecision: accurate to stream **Year ended:** 2000 **Duration:** 0–5 yr

Steelhead, Southern California ESU

Response to:		**Years missed:**	snapshot	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	unknown
Negative impact?	yes	**Start:**	Jun	**Support:**	unknown
Impact controls?	yes	**End:**	Nov	**Future intent (yr):**	unknown

Technical Goal: Monitor habitat use by trout in areas impacted by recreation, roads, or fire; for instance, compared to non-impacted stream reaches.

Programmatic Goal: Management.

Stream name	LLID	Watershed name	HUC
Manzana Creek	1199940348275	Santa Maria.	60008

NOAA Fish ID# 163

Correspondent: David Boughton

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	n/a	direct observation
Data types:	presence/absence	n/a	presence/absence
Uncertainty:	statistical		statistical

Site selection:	qualitative selection	**Year began:**	2002	**Interval:**	once
Geoprecision:	accurate to stream	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	snapshot	**Summaries:**	one-time
Positive impact?	no	**Season:**		**Funding source:**	NOAA Fish
Negative impact?	no	**Start:**	May	**Support:**	completed
Impact controls?	no	**End:**	Oct	**Future intent (yr):**	ended

Technical Goal: Estimate current presence or absence of steelhead in each historical steelhead basin of southern California.

Programmatic Goal: Reduce uncertainty about the status of both a Federally threatened and an endangered ESU of steelhead.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1199716344450	Santa Barbara Coastal.	60013
Unknown. Use LLID	1202517344678	Santa Barbara Coastal.	60013
Unknown. Use LLID	1202710344685	Santa Barbara Coastal.	60013
Unknown. Use LLID	1202888344702	Santa Barbara Coastal.	60013
Unknown. Use LLID	1201405344734	Santa Barbara Coastal.	60013
Unknown. Use LLID	1203702344573	Santa Barbara Coastal.	60013
Unknown. Use LLID	1185963340412	Santa Monica Bay.	70104
Unknown. Use LLID	1201180344700	Santa Barbara Coastal.	60013
Unknown. Use LLID	1201862344698	Santa Barbara Coastal.	60013
Unknown. Use LLID	1199876344498	Santa Barbara Coastal.	60013
Unknown. Use LLID	1200014344579	Santa Barbara Coastal.	60013
Unknown. Use LLID	1200442344625	Santa Ynez.	60010
Unknown. Use LLID	1200442344625	Santa Barbara Coastal.	60013
Unknown. Use LLID	1200519344618	Santa Barbara Coastal.	60013
Unknown. Use LLID	1203532344587	Santa Barbara Coastal.	60013
Unknown. Use LLID	1204261344501	Santa Barbara Coastal.	60013
Unknown. Use LLID	1178273335637	Aliso-San Onofre.	70301

Steelhead, Southern California ESU

Unknown. Use LLID	1199133344288	Santa Ynez.	60010
Unknown. Use LLID	1178395335738	Newport Bay.	70204
Unknown. Use LLID	1199133344288	Santa Barbara Coastal.	60013
Unknown. Use LLID	1199282344350	Santa Barbara Coastal.	60013
Unknown. Use LLID	1198456344211	Santa Barbara Coastal.	60013
Unknown. Use LLID	1198286344180	Santa Barbara Coastal.	60013
Unknown. Use LLID	1198450344211	Santa Barbara Coastal.	60013
Unknown. Use LLID	1186356340363	Santa Monica Bay.	70104
Unknown. Use LLID	1187414340325	Santa Monica Bay.	70104
Unknown. Use LLID	1198426344202	Santa Barbara Coastal.	60013
Unknown. Use LLID	1198361344172	Santa Barbara Coastal.	60013
Unknown. Use LLID	1178273335637	Newport Bay.	70204
Unknown. Use LLID	1186077340367	Santa Monica Bay.	70104
Agua, Ca?ada del	1203136344649	Santa Barbara Coastal.	60013
Angeles River, Los	1181930337572	Los Angeles.	70105
Angeles River, Los	1181930337572	Santa Monica Bay.	70104
Barranca Honda	1203819344563	Santa Barbara Coastal.	60013
Big Sycamore Canyon	1190141340704	Santa Monica Bay.	70104
Bulito, Arroyo El	1203323344624	Santa Barbara Coastal.	60013
Burro, Arroyo	1197420344023	Santa Barbara Coastal.	60013
Calleguas Creek	1190917341093	Calleguas.	70103
Capitan, Caqada Del	1200215344577	Santa Barbara Coastal.	60013
Capitan, Caqada Del	1200215344577	Santa Ynez.	60010
Carpinteria Creek	1195195343904	Santa Barbara Coastal.	60013
Cojo, Ca?ada Del	1204155344530	Santa Barbara Coastal.	60013
Corral Canyon	1187330340329	Santa Monica Bay.	70104
Dos Pueblos Canyon	1199636344407	Santa Barbara Coastal.	60013
Dos Pueblos Canyon	1199636344407	Santa Ynez.	60010
Emerald Canyon	1178053335548	Aliso-San Onofre.	70301
Escondido Creek	1172814330160	San Luis Rey-Escondido.	70303
Escondido Creek	1172814330160	San Diego.	70304
Franklin Creek	1195308343988	Santa Barbara Coastal.	60013
Gaviota, Caqada de la	1202260344703	Santa Ynez.	60010
Gaviota, Caqada de la	1202260344703	Santa Barbara Coastal.	60013
Honda Creek, Canada	1206364346085	Santa Ynez.	60010
Honda Creek, Canada	1206364346085	Santa Barbara Coastal.	60013
Hot Springs Creek	1196494344430	Santa Barbara Coastal.	60013
Jalama Creek	1205015345116	Santa Barbara Coastal.	60013
Jolla Canyon, La	1190354340842	Santa Monica Bay.	70104
Jolla Canyon, La	1190354340842	Calleguas.	70103
Laguna Canyon	1177844335419	Aliso-San Onofre.	70301
Malibu Creek	1186787340322	Santa Monica Bay.	70104
Mission Creek	1196866344124	Santa Barbara Coastal.	60013
Molino, Ca¦ada Del	1201678344697	Santa Barbara Coastal.	60013
Montecito Creek	1196334344167	Santa Barbara Coastal.	60013
Moro Canyon	1178205335609	Aliso-San Onofre.	70301
Oak Creek	1196256344192	Santa Barbara Coastal.	60013

Steelhead, Southern California ESU

Otay River	1171148325995	San Diego.	70304
Paredon, Arroyo	1195551344146	Santa Barbara Coastal.	60013
Paredon, Arroyo	1195551344146	Santa Ynez.	60010
Poway Creek	1172605329344	San Diego.	70304
Rattlesnake Canyon	1166799326464	Cottonwood-Tijuana.	70305
Refugio, Caqada Del	1200686344625	Santa Barbara Coastal.	60013
Refugio, Caqada Del	1200686344625	Santa Ynez.	60010
Rincon Creek	1194759343733	Santa Barbara Coastal.	60013
Romero Creek	1196198344186	Santa Barbara Coastal.	60013
Rose Canyon	1172209328015	San Diego.	70304
San Antonio Creek	1206205347980	Santa Ynez.	60010
San Antonio Creek	1206205347980	San Antonio.	60009
San Diego Creek	1178835336465	Newport Bay.	70204
San Diego River	1172127327609	San Diego.	70304
San Dieguito River	1172700329752	San Diego.	70304
San Gabriel River	1181137337445	San Gabriel.	70106
San Luis Rey River	1173904332042	San Luis Rey-Escondido.	70303
San Mateo Creek	1175924333851	Aliso-San Onofre.	70301
San Onofre Creek	1175777333803	Santa Margarita.	70302
San Onofre Creek	1175777333803	Aliso-San Onofre.	70301
San Ysidro Creek	1196244344191	Santa Barbara Coastal.	60013
Santa Ana River	1179560336321	Santa Ana.	70203
Santa Anita, Ca¦ada De	1203057344667	Santa Barbara Coastal.	60013
Santa Clara River	1192559342348	Santa Clara.	70102
Santa Maria River	1206494349710	Central Coastal.	60006
Santa Maria River	1206494349710	Santa Maria.	60008
Santa Monica Creek	1195365343961	Santa Barbara Coastal.	60013
Santa Ynez River	1205840346873	Santa Ynez.	60010
Santa Ynez River	1205840346873	Ventura.	70101
Sauces Creek, Los	1194216343483	Ventura.	70101
Sauces Creek, Los	1194216343483	Santa Barbara Coastal.	60013
Sequit, Arroyo	1189329340445	Santa Monica Bay.	70104
Shuman Canyon	1206087348452	San Antonio.	60009
Sweetwater River	1171131326429	Salton Sea.	100200
Sweetwater River	1171131326429	San Diego.	70304
Sycamore Canyon	1170153328379	San Diego.	70304
Sycamore Creek	1196658344165	Santa Barbara Coastal.	60013
Tajiguas Creek	1201004344638	Santa Barbara Coastal.	60013
Tajiguas Creek	1201004344638	Santa Ynez.	60010
Tecolote Canyon	1199164344308	Santa Barbara Coastal.	60013
Tecolote Canyon	1199164344308	Santa Ynez.	60010
Topanga Canyon	1185821340397	Los Angeles.	70105
Topanga Canyon	1185821340397	Santa Monica Bay.	70104
Toro Canyon Creek	1195657344151	Santa Barbara Coastal.	60013
Tuna Canyon	1185884340464	Santa Monica Bay.	70104
Ventura River	1193067342740	Ventura.	70101
Wood Canyon	1204426344511	Santa Barbara Coastal.	60013

Steelhead, Southern California ESU

Zuma Canyon	1188206340139	Santa Monica Bay.	70104

NOAA Fish ID# 294

Correspondent: Christina Dueber

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	direct observation	direct observation
Data types:	presence/absence	presence/absence	presence/absence
Uncertainty:	unknown		

Site selection:	qualitative selection	**Year began:**	2001	**Interval:**	irregularly
Geoprecision:	accurate to subwatershed	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	no	**Summaries:**	other
Positive impact?	yes	**Season:**	ongoing	**Funding source:**	Nat'l Fire Plan
Negative impact?	yes	**Start:**	All Yr	**Support:**	unknown
Impact controls?	no	**End:**	All Yr	**Future intent (yr):**	unknown

Technical Goal: Monitoring related to effects of Forest Service actions.

Programmatic Goal: Regulatory compliance.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1177529341811	San Gabriel.	70106
Unknown. Use LLID	1174362334750	Aliso-San Onofre.	70301
Unknown. Use LLID	1174628342661	Mojave.	90208
Unknown. Use LLID	1179703342422	San Gabriel.	70106
Unknown. Use LLID	1199436348409	Cuyama.	60007
Unknown. Use LLID	1175784338947	Santa Ana.	70203
Unknown. Use LLID	1185112345975	Santa Clara.	70102
Unknown. Use LLID	1175973338368	Santa Ana.	70203
Unknown. Use LLID	1174253334712	Aliso-San Onofre.	70301
Unknown. Use LLID	1176399337477	Santa Ana.	70203
Unknown. Use LLID	1174628342661	Santa Ana.	70203
Unknown. Use LLID	1184587344924	Santa Clara.	70102
Unknown. Use LLID	1200197348348	Santa Maria.	60008
Unknown. Use LLID	1201385349193	Santa Maria.	60008
Unknown. Use LLID	1201942350297	Cuyama.	60007
Unknown. Use LLID	1177009343434	San Gabriel.	70106
Unknown. Use LLID	1179703342422	Antelope-Fremont Valleys.	90206
Unknown. Use LLID	1176279337083	Santa Ana.	70203
Unknown. Use LLID	1199436348409	Santa Maria.	60008
Unknown. Use LLID	1198396348147	Santa Maria.	60008
Unknown. Use LLID	1198054348374	Santa Maria.	60008
Unknown. Use LLID	1196124345089	Santa Ynez.	60010
Unknown. Use LLID	1194113347464	Cuyama.	60007
Unknown. Use LLID	1193100348366	Cuyama.	60007
Unknown. Use LLID	1190101346932	Santa Clara.	70102
Unknown. Use LLID	1169441334209	Santa Margarita.	70302

Steelhead, Southern California ESU

Unknown. Use LLID	1200197348348	Cuyama.	60007
Unknown. Use LLID	1164840328744	Cottonwood-Tijuana.	70305
Unknown. Use LLID	1177683342295	San Gabriel.	70106
Unknown. Use LLID	1199846348879	Santa Maria.	60008
Unknown. Use LLID	1173802334803	Aliso-San Onofre.	70301
Unknown. Use LLID	1173895334796	Aliso-San Onofre.	70301
Unknown. Use LLID	1168884334153	Santa Margarita.	70302
Unknown. Use LLID	1173800334803	Aliso-San Onofre.	70301
Agua Caliente Canyon	1195788345085	Santa Ynez.	60010
Alamo Creek	1203143350088	Cuyama.	60007
Alamo Creek	1203143350088	Salinas.	60005
Amargosa Creek	1190779347345	Middle Kern-Upper Tehachapi-Grapevine.	30003
Amargosa Creek	1190779347345	Santa Clara.	70102
Bautista Creek	1169078337650	San Jacinto.	70202
Bear Creek	1170142341606	Santa Ana.	70203
Bear Creek	1178833342406	Antelope-Fremont Valleys.	90206
Bear Creek	1178833342406	San Gabriel.	70106
Bell Canyon	1175533335341	Aliso-San Onofre.	70301
Big Tujunga Creek	1183621342664	Los Angeles.	70105
Boulder Creek	1167381329743	San Diego.	70304
Bouquet Canyon	1185326344236	Santa Clara.	70102
Branch Creek	1201806351448	Cuyama.	60007
Buck Creek	1188239346650	Santa Clara.	70102
Cajon Wash	1173562341418	Mojave.	90208
Cajon Wash	1173562341418	Santa Ana.	70203
Carney Canyon	1168496331515	San Diego.	70304
Castaic Creek	1186292344192	Santa Clara.	70102
Cattle Canyon	1177280342346	San Gabriel.	70106
Cedar Creek	1167400329875	San Diego.	70304
Cedar Creek	1167400329875	Salton Sea.	100200
City Creek	1172875340695	Santa Ana.	70203
Cold Spring Canyon	1174412334787	Aliso-San Onofre.	70301
Cottonwood Creek	1167645325672	Cottonwood-Tijuana.	70305
Cuddy Creek	1189084348211	Middle Kern-Upper Tehachapi-Grapevine.	30003
Cuyama River	1203067349042	Cuyama.	60007
Dry Creek	1188705347014	Santa Clara.	70102
East Fork City Creek	1171819341773	Mojave.	90208
East Fork City Creek	1171819341773	Santa Ana.	70203
Elizabeth Lake Canyon	1186121345248	Santa Clara.	70102
Fish Fork	1177315343057	San Gabriel.	70106
Fish Fork	1177315343057	Santa Ana.	70203
Fredalba Creek	1171350341560	Santa Ana.	70203
Fredalba Creek	1171350341560	Mojave.	90208
Hemet Valley	1166864336660	San Jacinto.	70202
Hemet Valley	1166864336660	Salton Sea.	100200
Herkey Creek	1166864336659	Salton Sea.	100200

Steelhead, Southern California ESU

Herkey Creek	1166864336659	San Jacinto.	70202
Hot Spring Canyon	1175150335879	Aliso-San Onofre.	70301
Indian Creek	1196321345342	Santa Ynez.	60010
King Creek	1167184328982	San Diego.	70304
Kitchen Creek	1164884327323	Cottonwood-Tijuana.	70305
Little Tujunga Creek	1183742342664	Los Angeles.	70105
Lockwood Creek	1189980346990	Cuyama.	60007
Lockwood Creek	1189980346990	Santa Clara.	70102
Long Canyon	1169070334463	Santa Margarita.	70302
Matilija Creek	1192992344853	Santa Ynez.	60010
Matilija Creek	1192992344853	Ventura.	70101
Middle Fork Lytle Creek	1174987342402	Santa Ana.	70203
Mill Creek	1171191340910	Salton Sea.	100200
Mill Creek	1181425343092	Santa Clara.	70102
Mill Creek	1181425343092	Los Angeles.	70105
Mill Creek	1171191340910	Santa Ana.	70203
Mission Creek	1196866344124	Santa Barbara Coastal.	60013
Mono Creek	1196322345199	Santa Ynez.	60010
Mono Creek	1196322345199	Cuyama.	60007
Morena Creek	1165274326932	Cottonwood-Tijuana.	70305
Mutau Creek	1190198346817	Santa Clara.	70102
North Fork La Brea Creek	1201306348805	Santa Maria.	60008
North Fork Lytle Creek	1174987342403	Santa Ana.	70203
North Fork San Gabriel River	1178681342415	San Gabriel.	70106
North Fork San Jacinto River	1168100337311	San Jacinto.	70202
Pacoima Wash	1184173342274	Santa Clara.	70102
Pacoima Wash	1184173342274	Los Angeles.	70105
Pine Valley Creek	1166718326921	San Diego.	70304
Pine Valley Creek	1166718326921	Cottonwood-Tijuana.	70305
Piru Creek	1187827343997	Santa Clara.	70102
Posta Creek, La	1164985327154	Cottonwood-Tijuana.	70305
Quatal Canyon	1194683348118	Cuyama.	60007
Salt Creek	1186693346378	Santa Clara.	70102
San Antonio Creek	1193065343796	Ventura.	70101
San Antonio Creek Channel	1177297340136	Santa Ana.	70203
San Diego River	1172127327609	San Diego.	70304
San Dimas Wash	1179188340995	San Gabriel.	70106
San Francisquito Canyon	1185744344268	Santa Clara.	70102
San Gabriel River	1181137337445	San Gabriel.	70106
San Juan Creek	1176833334621	Aliso-San Onofre.	70301
San Juan Creek	1176833334621	San Jacinto.	70202
San Luis Rey River	1173904332042	San Luis Rey-Escondido.	70303
San Mateo Canyon	1174650334739	Aliso-San Onofre.	70301
San Mateo Creek	1175924333851	Aliso-San Onofre.	70301
Santa Ana River	1179560336321	Santa Ana.	70203
Santa Barbara Canyon	1195183348838	Cuyama.	60007
Santa Ynez River	1205840346873	Ventura.	70101

Steelhead, Southern California ESU

Santa Ynez River	1205840346873	Santa Ynez.	60010
Santa Ysabel Creek	1170241330833	San Diego.	70304
Sespe Creek	1189562343773	Santa Ynez.	60010
Sespe Creek	1189534343801	Santa Clara.	70102
Sespe Creek	1189562343773	Santa Clara.	70102
Seymour Creek	1190406347334	Middle Kern-Upper Tehachapi-Grapevine.	30003
Seymour Creek	1190406347334	Santa Clara.	70102
Silverado Creek	1176788337655	Santa Ana.	70203
South Fork Iron Fork	1177611343030	San Gabriel.	70106
South Fork La Brea Creek	1201306348804	Santa Maria.	60008
South Fork La Brea Creek	1201306348804	Cuyama.	60007
South Fork San Jacinto River	1168100337312	San Jacinto.	70202
Stony Creek	1203495352014	Cuyama.	60007
Strawberry Creek	1167701337081	San Jacinto.	70202
Sulphur Spring Canyon	1196664348277	Cuyama.	60007
Sweetwater River	1171131326429	Salton Sea.	100200
Sweetwater River	1171131326429	San Diego.	70304
Taylor Creek	1167490327936	San Diego.	70304
Taylor Creek	1167490327936	Cottonwood-Tijuana.	70305
Temescal Creek	1168519331203	San Diego.	70304
Tenaja Canyon	1174115335312	Aliso-San Onofre.	70301
Trabuco, Arroyo	1176650334897	Aliso-San Onofre.	70301
Ventura River	1193067342740	Ventura.	70101
Waterman Canyon	1172663341670	Mojave.	90208
Waterman Canyon	1172663341670	Santa Ana.	70203
West Fork Fox Creek	1181943343239	Los Angeles.	70105
West Fork San Gabriel River	1178425342326	Los Angeles.	70105
West Fork San Gabriel River	1178425342326	San Gabriel.	70106
West Fork San Luis River	1167597332977	San Luis Rey-Escondido.	70303

NOAA Fish ID# 26

Correspondent: Stan Glowacki

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	n/a	direct observation
Data types:	presence/absence	n/a	presence/absence
Uncertainty:	unknown		

Site selection:	dictated by logistics/circumstance	**Year began:**	2002	**Interval:**	other
Geoprecision:	accurate to stream	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	none
Positive impact?	no	**Season:**	spring and summer	**Funding source:**	NOAA Fish
Negative impact?	yes	**Start:**	Mar	**Support:**	ongoing
Impact controls?	no	**End:**	Aug	**Future intent (yr):**	ongoing

Steelhead, Southern California ESU

Technical Goal: Detect presence/absence.

Programmatic Goal: Site visits for Section 7 or in response to enforcement needs.

Stream name	LLID	Watershed name	HUC
Carpinteria Creek	1195195343904	Santa Barbara Coastal.	60013
Cold Springs Creek	1196532344595	Santa Barbara Coastal.	60013
Gaviota, Caqada de la	1202260344703	Santa Barbara Coastal.	60013
Gaviota, Caqada de la	1202260344703	Santa Ynez.	60010
Montecito Creek	1196334344167	Santa Barbara Coastal.	60013
Rattlesnake Creek	1170488329507	San Diego.	70304
Romero Creek	1196198344186	Santa Barbara Coastal.	60013
San Jose Creek	1198291344215	Santa Ynez.	60010
San Jose Creek	1198291344215	Santa Barbara Coastal.	60013
San Ysidro Creek	1196244344191	Santa Barbara Coastal.	60013

NOAA Fish ID# 31

Correspondent: Stan Glowacki

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	direct observation	direct observation
Data types:	presence/absence, population index	presence/absence, population abundance	presence/absence, population index
Uncertainty:	basic quantitative	basic quantitative	

Site selection:	dictated by logistics/circumstance	**Year began:**	2002	**Interval:**	monthly
Geoprecision:	accurate	**Year ended:**	ongoing	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	none
Positive impact?	no	**Season:**		**Funding source:**	NOAA Fish
Negative impact?	no	**Start:**	Mar	**Support:**	ongoing
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	indefinite

Technical Goal: Approximate densities of fish in system. Produce population estimates via snorkel surveys. Statistical monitoring will begin in 2004.

Programmatic Goal: Obtain information about small coastal streams in Santa Barbara Co. This stream is used as a baseline to help with restoration efforts throughout the county. Informs culvert repair at foot of system.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1201405344734	Santa Barbara Coastal.	60013

NOAA Fish ID# 116

Correspondent: Stan Glowacki

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	direct observation	direct observation
Data types:	presence/absence, population index	presence/absence, population abundance	presence/absence

Steelhead, Southern California ESU

Uncertainty:	basic quantitative	basic quantitative	basic quantitative

Site selection:	dictated by logistics/circumstance	**Year began:**	2002	**Interval:**	monthly
Geoprecision:	accurate	**Year ended:**	2003	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	none
Positive impact?	no	**Season:**		**Funding source:**	NOAA Fish
Negative impact?	no	**Start:**	Mar	**Support:**	ongoing
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	indefinite

Technical Goal: Estimate approximate densities of fish in the system. Produce population estimate via snorkel surveys. Statistical monitoring starts in 2004. Fix culvert at foot of the system.

Programmatic Goal: Gain as much information as possible regarding small coastal streams in Santa Barbara County. Baseline to help w/ restoration efforts throughout county.

Stream name	LLID	Watershed name	HUC
Unknown. Use LLID	1201405344734	Santa Barbara Coastal.	60013

RCD of the Santa Monica Mountains ID# 162

Correspondent: Rosi Dagit

	Juvenile	Outmigrants	Adults
Field techniques:	downstream trap, direct observation	downstream trap, direct observation	spawner count
Data types:	presence/absence	presence/absence	presence/absence
Uncertainty:	qualitative	qualitative	basic quantitative

Site selection:	other - known presence	**Year began:**	2001	**Interval:**	monthly
Geoprecision:	very precise	**Year ended:**	2004	**Duration:**	0–5 yr
Response to:		**Years missed:**	complete, regular	**Summaries:**	other
Positive impact?	no	**Season:**		**Funding source:**	various: CDFG/PSMFC
Negative impact?	no	**Start:**	All Yr	**Support:**	2004 (2006)
Impact controls?	no	**End:**	All Yr	**Future intent (yr):**	ongoing

Technical Goal: Document population trends over time under different natural conditions, related to precipitation, storm events and migration opportunities.

Programmatic Goal: Document population trends, density of steelhead per reach, habitat preferences, and identify potential restoration opportunities

Stream name	LLID	Watershed name	HUC
Topanga Canyon	1185821340397	Santa Monica Bay.	70104
Topanga Canyon	1185821340397	Los Angeles.	70105

Steelhead, Southern California ESU

San Diego Trout ID# 32

Correspondent: Allan Greenwood/Mike Pottorf

	Juvenile	Outmigrants	Adults
Field techniques:	electrofishing	direct observation	n/a
Data types:	presence/absence, population abundance, demographic, genetic	population abundance, demographic, genetic	n/a
Uncertainty:	basic quantitative	basic quantitative	

Site selection:	qualitative selection	**Year began:**	late'60s	**Interval:**	once
Geoprecision:	accurate to stream	**Year ended:**	ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	rotating, opportunistic	**Summaries:**	none
Positive impact?	no	**Season:**		**Funding source:**	Cal Coastal Conservancy (Bond Act)
Negative impact?	yes	**Start:**	Mar	**Support:**	ongoing
Impact controls?	no	**End:**	Jun	**Future intent (yr):**	ongoing

Technical Goal: Assess habitat and trout populations.

Programmatic Goal: Restore streams for potential steelhead runs.

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

United Water District ID# 77

Correspondent: Murray McEackron

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation	n/a	n/a
Data types:	presence/absence, population index, demographic	n/a	n/a
Uncertainty:	none		

Site selection:	dictated by logistics/circumstance	**Year began:**	2002	**Interval:**	irregularly
Geoprecision:	accurate to stream	**Year ended:**		**Duration:**	0–5 yr
Response to:		**Years missed:**	intermittant	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	municipal
Negative impact?	yes	**Start:**	May	**Support:**	ongoing
Impact controls?	no	**End:**	Sept	**Future intent (yr):**	ongoing

Technical Goal: Determine run-timing of steelhead and environmental factors influencing run-timing.

Programmatic Goal: Regulatory compliance. Find out when steelhead are running in order to provide the most water.

Stream name	LLID	Watershed name	HUC
Santa Clara River	1192559342348	Santa Clara.	70102

Steelhead, Southern California ESU

United Water District ID# 78

Correspondent: Murray McEackron

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap	n/a
Data types:	n/a	population index, demographic	n/a
Uncertainty:		none	

Site selection:	dictated by logistics/circumstance	**Year began:**	1990	**Interval:**	daily
Geoprecision:	very precise	**Year ended:**	ongoing	**Duration:**	11–20 yr
Response to:		**Years missed:**	intermittant	**Summaries:**	yearly
Positive impact?	no	**Season:**		**Funding source:**	municipal
Negative impact?	yes	**Start:**	Mar	**Support:**	ongoing
Impact controls?	no	**End:**	Jun	**Future intent (yr):**	ongoing

Technical Goal: Determine run-timing of steelhead and environmental factors influencing run-timing.

Programmatic Goal: Regulatory compliance. Find out when steelhead are running in order to provide the most water.

Stream name	LLID	Watershed name	HUC
Santa Clara River	1192559342348	Santa Clara.	70102

United Water District ID# 80

Correspondent: Murray McEackron

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	upstream trap
Data types:	n/a	n/a	presence/absence
Uncertainty:			none

Site selection:	dictated by logistics/circumstance	**Year began:**	1991	**Interval:**	daily
Geoprecision:	very precise	**Year ended:**		**Duration:**	11–20 yr
Response to:		**Years missed:**	intermittant	**Summaries:**	yearly
Positive impact?	yes	**Season:**		**Funding source:**	municipal
Negative impact?	yes	**Start:**	Jan	**Support:**	ongoing
Impact controls?	no	**End:**	May	**Future intent (yr):**	ongoing

Technical Goal: Determine run-timing of steelhead and environmental factors influencing run-timing.

Programmatic Goal: Regulatory compliance. Find out when steelhead are running in order to provide the most water.

Stream name	LLID	Watershed name	HUC
Santa Clara River	1192559342348	Santa Clara.	70102

Steelhead, Southern California ESU

United Water District for Canyon Irrigation ID# 81

Correspondent: Murray McEackron

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	downstream trap	upstream trap
Data types:	n/a	presence/absence	presence/absence
Uncertainty:		none	none

Site selection:	dictated by logistics/circumstance	**Year began:**	'30's/01	**Interval:**	daily
Geoprecision:	accurate to stream	**Year ended:**	'69/ongoing	**Duration:**	20+ yr
Response to:		**Years missed:**	intermittant	**Summaries:**	none
Positive impact?	no	**Season:**		**Funding source:**	commercial: utility
Negative impact?	yes	**Start:**	All Yr	**Support:**	ongoing
Impact controls?	no	**End:**	All Yr	**Future intent (yr):**	ongoing

Technical Goal: Determine run-timing of steelhead and environmental factors influencing run-timing.

Programmatic Goal: Regulatory compliance. Find out when steelhead are running in order to provide the most water.

Stream name	LLID	Watershed name	HUC
Santa Paula Creek	1190499343488	Santa Clara.	70102

University of California, Santa Barbara ID# 158

Correspondent: Elise Kelley

	Juvenile	Outmigrants	Adults
Field techniques:	n/a	n/a	n/a
Data types:	n/a	n/a	n/a
Uncertainty:			

Site selection:	dictated by logistics/circumstance	**Year began:**		**Interval:**	undetermined
Geoprecision:	accurate to subwatershed	**Year ended:**		**Duration:**	0–5 yr
Response to:		**Years missed:**	not yet begun	**Summaries:**	none
Positive impact?	no	**Season:**		**Funding source:**	unknown
Negative impact?	no	**Start:**		**Support:**	unknown
Impact controls?	no	**End:**		**Future intent (yr):**	unknown

Technical Goal:

Programmatic Goal:

Stream name	LLID	Watershed name	HUC
Ventura River	1193067342740	Ventura.	70101

Steelhead, No specific ESU

Steelhead, no specific ESU

CDFG ID# 30

Correspondent: Gary Flosi

	Juvenile	Outmigrants	Adults
Field techniques:	direct observation, electrofishing	n/a	n/a
Data types:	presence/absence	n/a	n/a
Uncertainty:	qualitative		

Site selection:	dictated by logistics/circumstance	**Year began:**		**Interval:**	unknown
Geoprecision:	none	**Year ended:**		**Duration:**	
Response to:		**Years missed:**	unknown	**Summaries:**	unknown
Positive impact?	no	**Season:**		**Funding source:**	unknown
Negative impact?	no	**Start:**		**Support:**	unknown
Impact controls?	no	**End:**		**Future intent (yr):**	unknown

Technical Goal: Technical evaluation.

Programmatic Goal: As a component of habitat surveys, direct observation and/or electrofishing is completed to determine fish species and distribution. Habitat surveys are used to make recommendations for restoration.

Stream name	LLID	Watershed name	HUC
Not georeferenced	9999999999999		

Acknowledgements

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Finally, we wish to thank the list of correspondents on the following pages for making available information on their organization's monitoring activities.

Sources of Information

Correspondents (Contributors of metadata)

Name	Corresponding organization
Doug Albin	California Department of Fish and Game (CDFG)
Don Alley	Cambria Community Services District
Anita Andazola	United States Forest Service (USFS) Lower Trinity Ranger Station
Sarah Beesley	Yurok Tribal Fisheries
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Michael Bowen	California Coastal Conservancy
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Wilbur Cartwright	CDFG
Carolyn Chandler	Land Trust of Santa Barbara County
Bill Chesney	CDFG Salmon Restoration and Monitoring Project (S-RAMP)
Michael Clarke	City of San Luis Obispo
Rosi Dagit	Resource Conservation District, Santa Monica Mountains
Charlie Dewberry	Friends of the Napa River
Christopher Donohoe	NOAA Fisheries
Christina Dueber	NOAA Fisheries for Los Padres National Forest
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Scott Engblom	Cachuma Operations and Maintenance Board
Eric Ettlinger	Marin Municipal Water District
Michael Fawcett	Merrit Smith Consulting
Gary Flosi	CDFG
Darren Fong	National Park Service (NPS) Golden Gate National Recreation Area
Ellen Freund	NOAA Fisheries
Sean Gallagher	CDFG S-RAMP
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Patrick Garrison	CDFG S-RAMP
Stan Glowacki	NOAA Fisheries for Land Trust of Santa Barbara County
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Dave Hankin	Institute for Forest and Watershed Management (IFWM), HSU

Correspondents, cont'd

Name	Corresponding organization
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Tim Hovey	CDFG
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Brannon Ketcham	Point Reyes National Seashore
William Kier	William Kier and Associates
Jame Kilgore	USFS
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Kimball Rushton	CDFG S-RAMP
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Wade Sinen	CDFG
Michael Sparkman	CDFG S-RAMP
Charles Steinback	Ecotrust
Thomas Sutfin	Soquel Demonstration State Forest
David Ulrich	Mendocino Redwood Company
Kevan Urquhart	CDFG
Brad Valentine	CDFG

Correspondents, cont'd

Name	Corresponding organization
Harry Vaughn	Eel River Salmon Restoration Project
Hans Voight	Yurok Tribal Fisheries
Jim Waldvogel	University of California, Davis
Michael Wallace	CDFG
Sean White	Sonoma County Water Agency
Thomas Williams	NOAA Fisheries
Brett Wilson	CDFG
David Wright	Campbell/Hawthorn Timber Company

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