NOAA Technical Memorandum NMFS

AUGUST 2005

# RECENT EFFORTS TO MONITOR ANADROMOUS *ONCORHYNCHUS* SPECIES IN THE CALIFORNIA COASTAL REGION: A COMPILATION OF METADATA

Sarah Helmbrecht
David A. Boughton

NOAA-TM-NMFS-SWFSC-381

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southwest Fisheries Science Center

**NOAA Technical Memorandum NMFS**

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# RECENT EFFORTS TO MONITOR ANADROMOUS *ONCORHYNCHUS* SPECIES IN THE CALIFORNIA COASTAL REGION: A COMPILATION OF METADATA

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NOAA-TM-NMFS-SWFSC-381

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## 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.

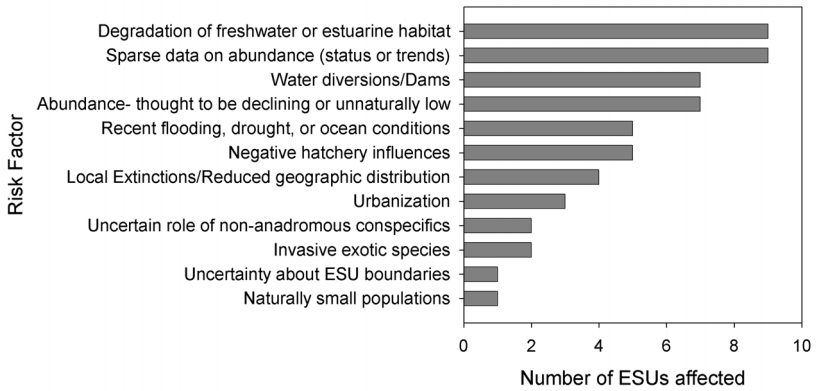



Figure 1. Prevalence of risk factors across Evolutionarily Significant Units (ESUs) inhabiting the coastal region of California, as noted by Federal biological review teams. Compiled from qualitative descriptions of risk in the text of West Coast BRT (2003).

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.

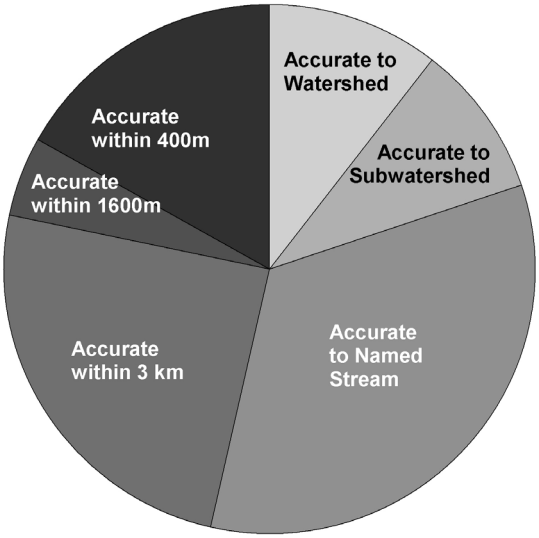



Figure 3. Precision achieved in georeferencing the various monitoring metadata collected. Approximately half of the records could be referenced at a precision greater than that of "named stream." Most of the highly precise georeferences were for point locations, particularly weirs and up/downstream traps.

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.

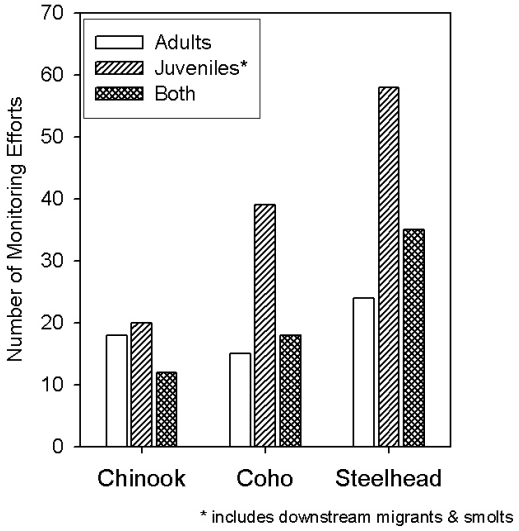



Figure 4. Distribution of monitoring effort among juvenile and adult populations in the freshwater stage of the life-cycle. Depicts only targetted observations.

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.

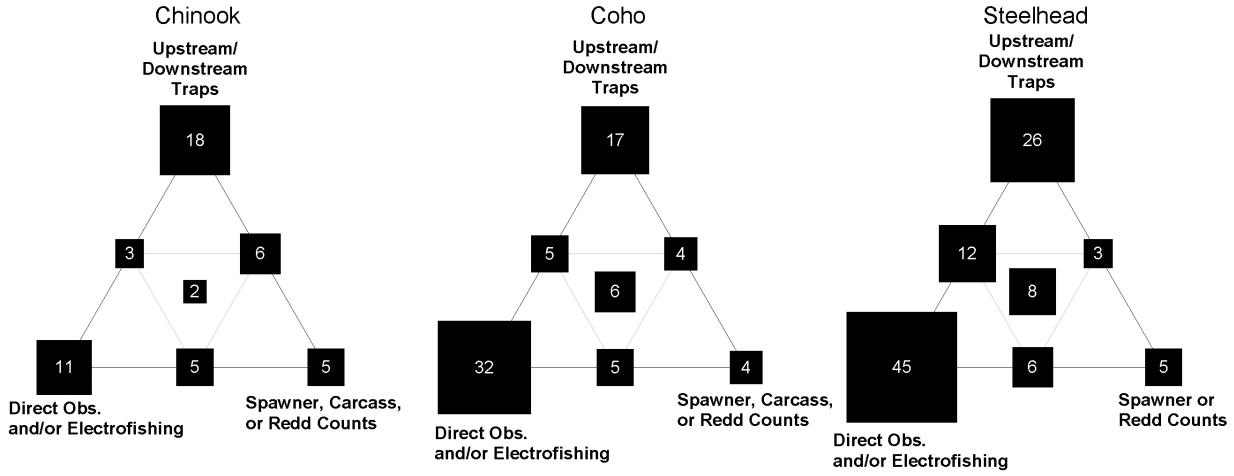



Figure 5. Distribution of monitoring effort among different field techniques. Numbers and sizes of squares indicate the number of unit efforts for each combination of field techniques. Vertices of the triangles refer to studies in which a single technique is used; internal nodes refer to studies where 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,

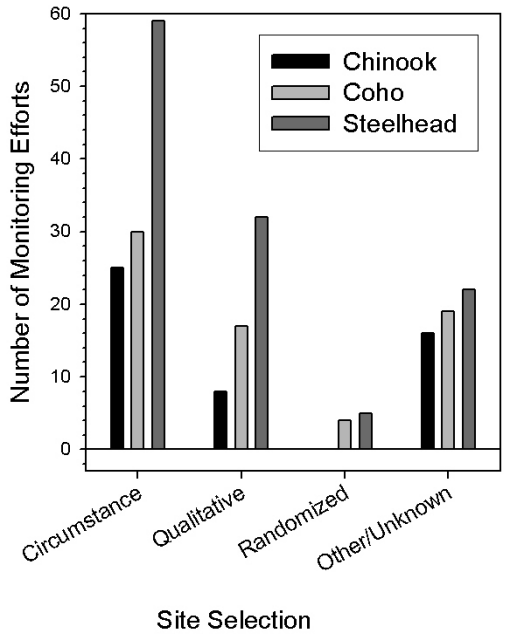



Figure 6. Frequency of different methods for site selection, as reported by correspondents. Numbers are for targetted efforts only.

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.

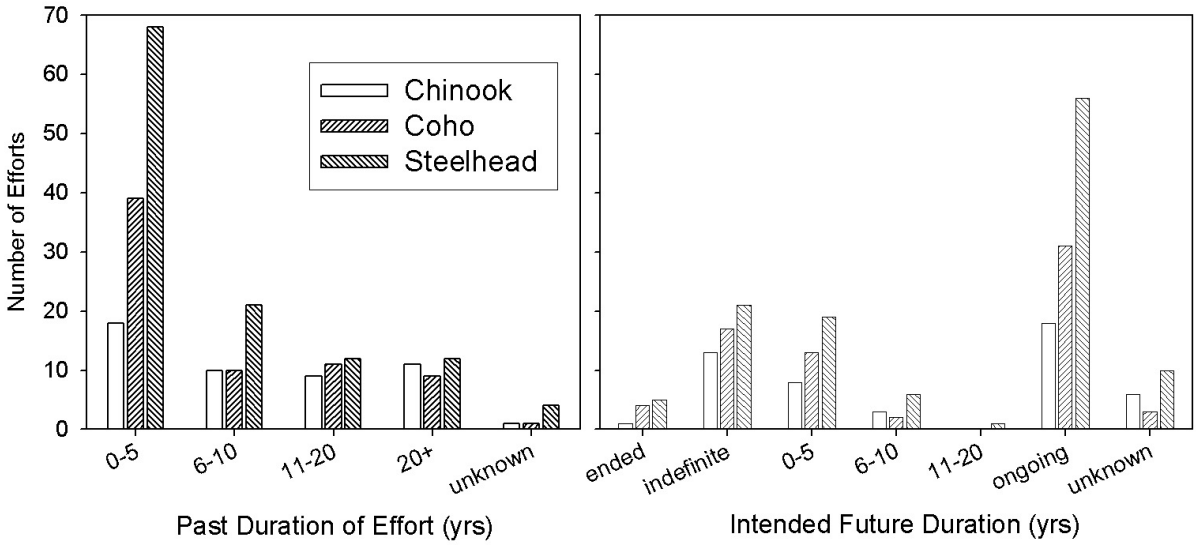



Figure 7. Past duration and intended future duration of monitoring efforts as of the year 2003. For the intended future duration, "ongoing" means that an intention to monitor as long as possible, whereas "indefinite" means that no decision has been made on a time horizon of the effort. "Ended" indicates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

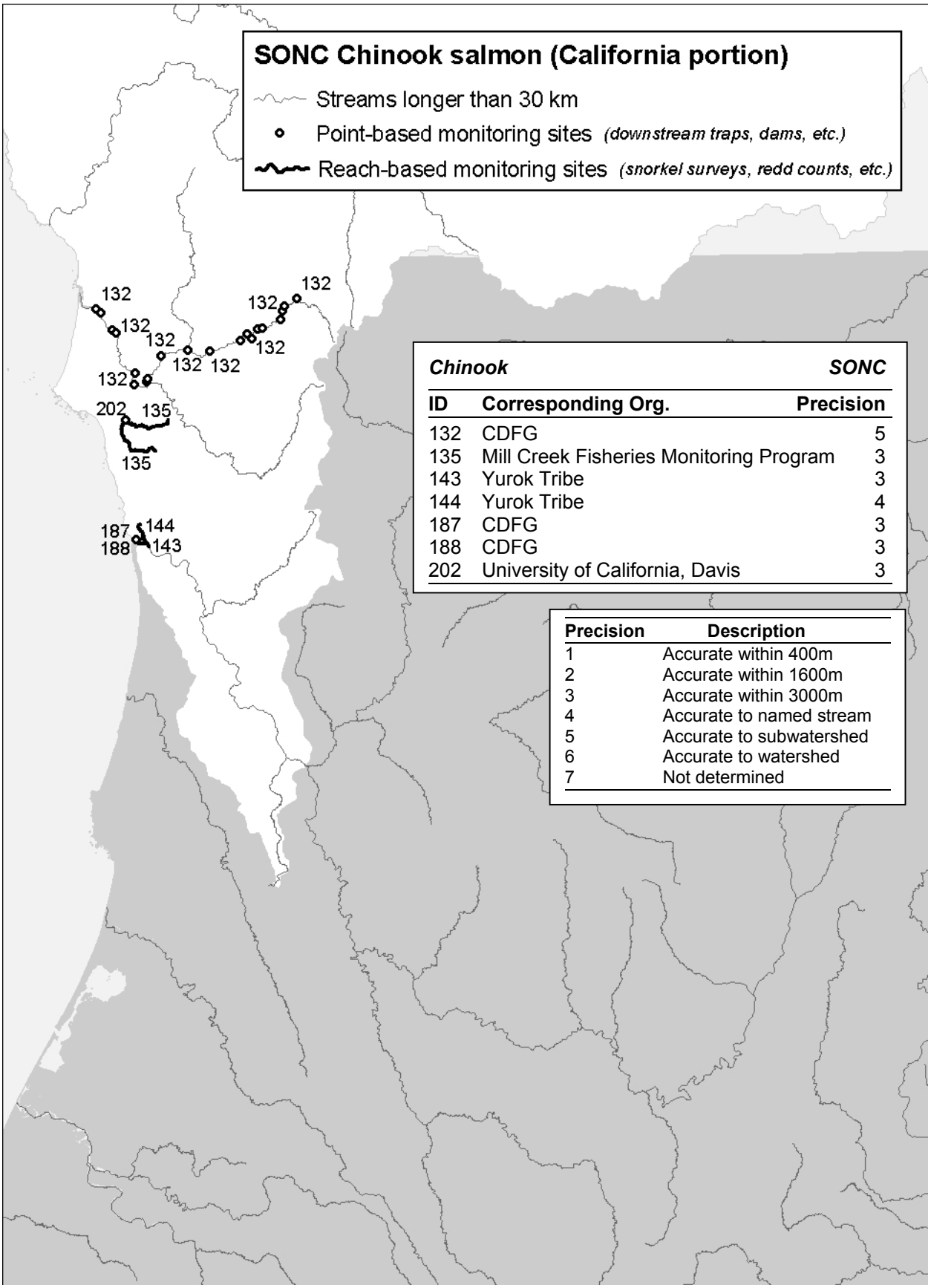
**Monitoring efforts for Chinook salmon, Southern Oregon/Northern California ESU**

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 |

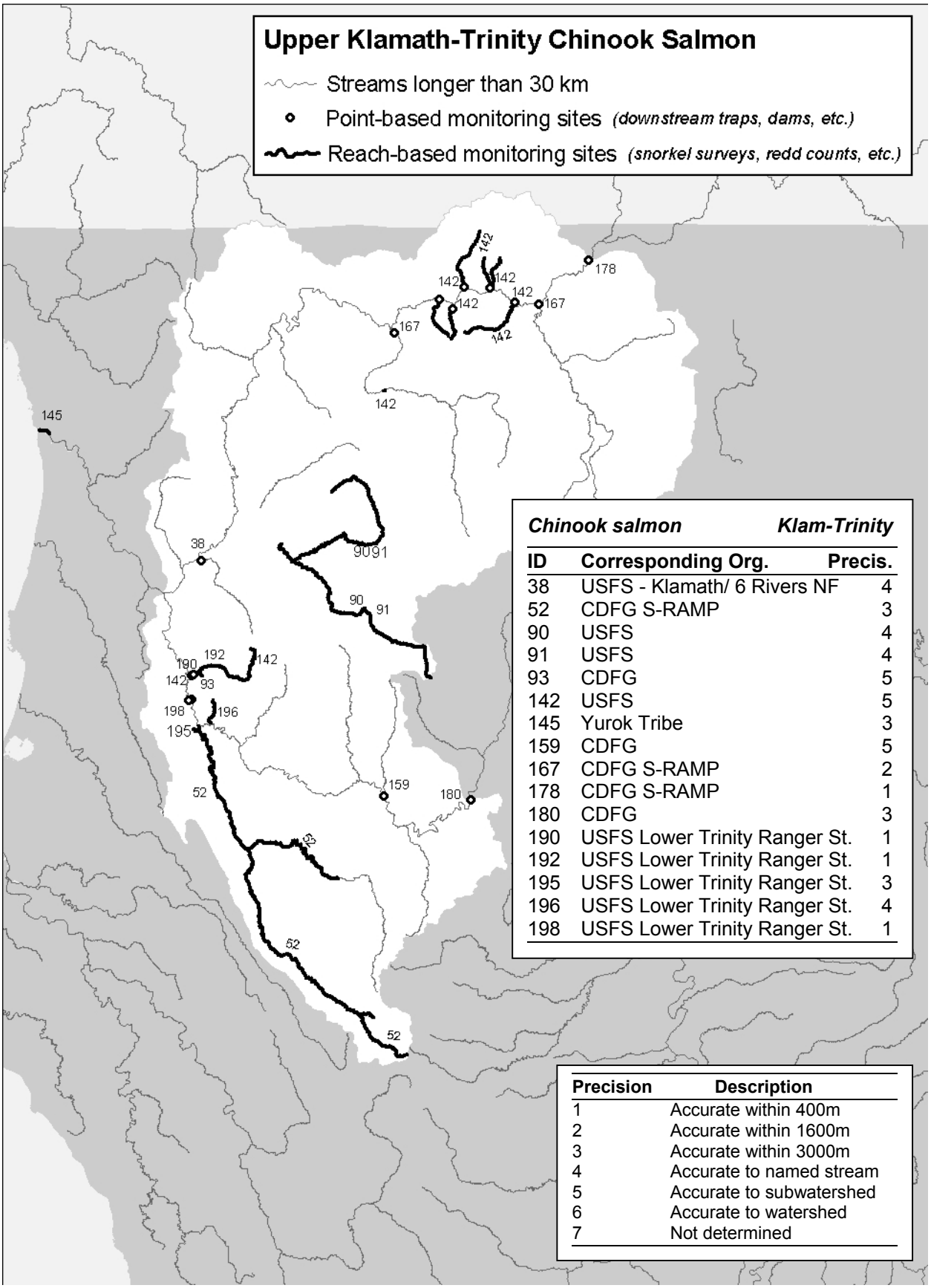
| Precision | Description |
|---|---|
| 1 | Accurate within 400m |
| 2 | Accurate within 1600m |
| 3 | Accurate within 3000m |
| 4 | Accurate to named stream |
| 5 | Accurate to subwatershed |
| 6 | Accurate to watershed |
| 7 | Not determined |

**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 |

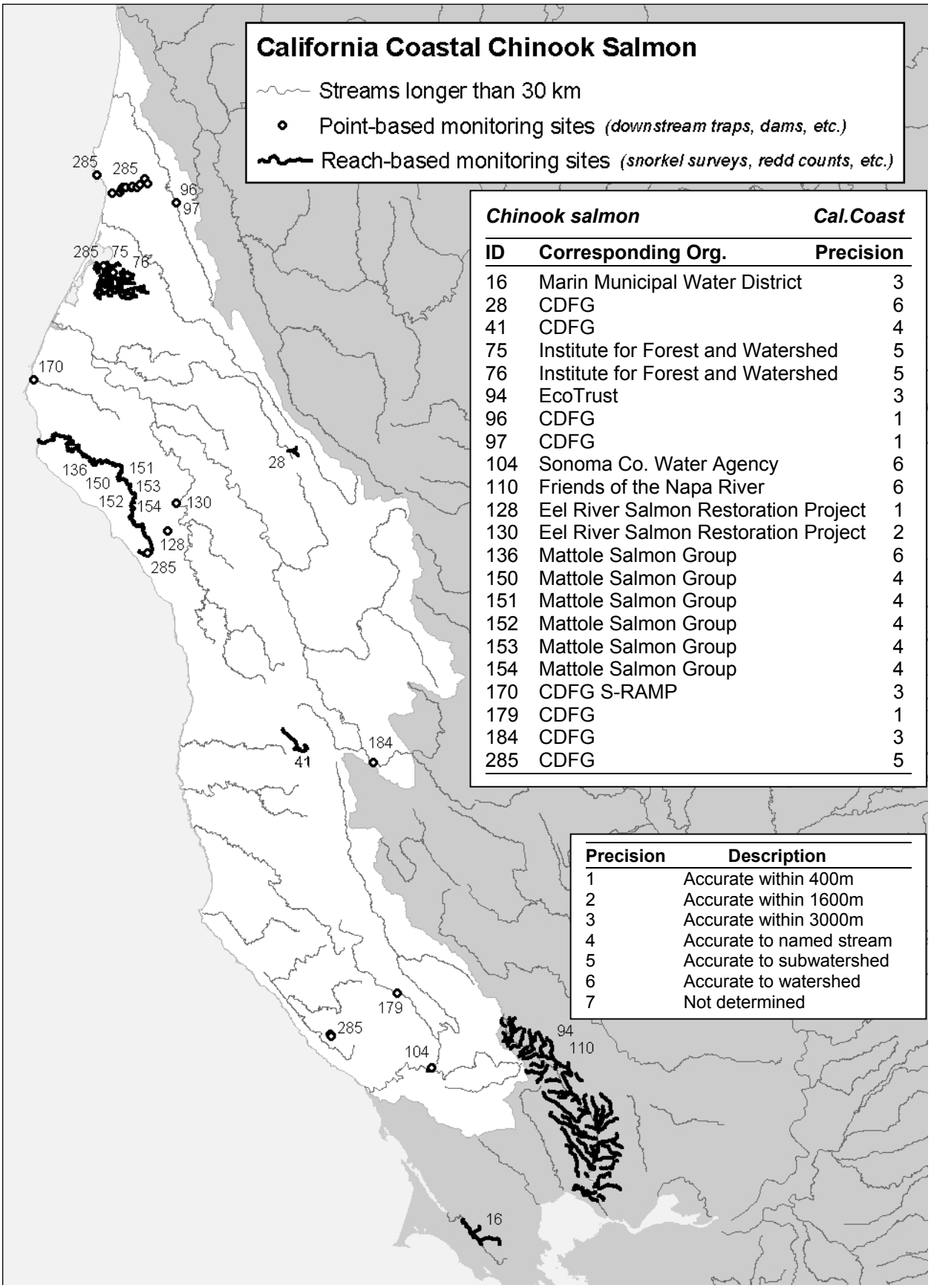
**Monitoring efforts for Chinook salmon, California Coastal ESU**

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

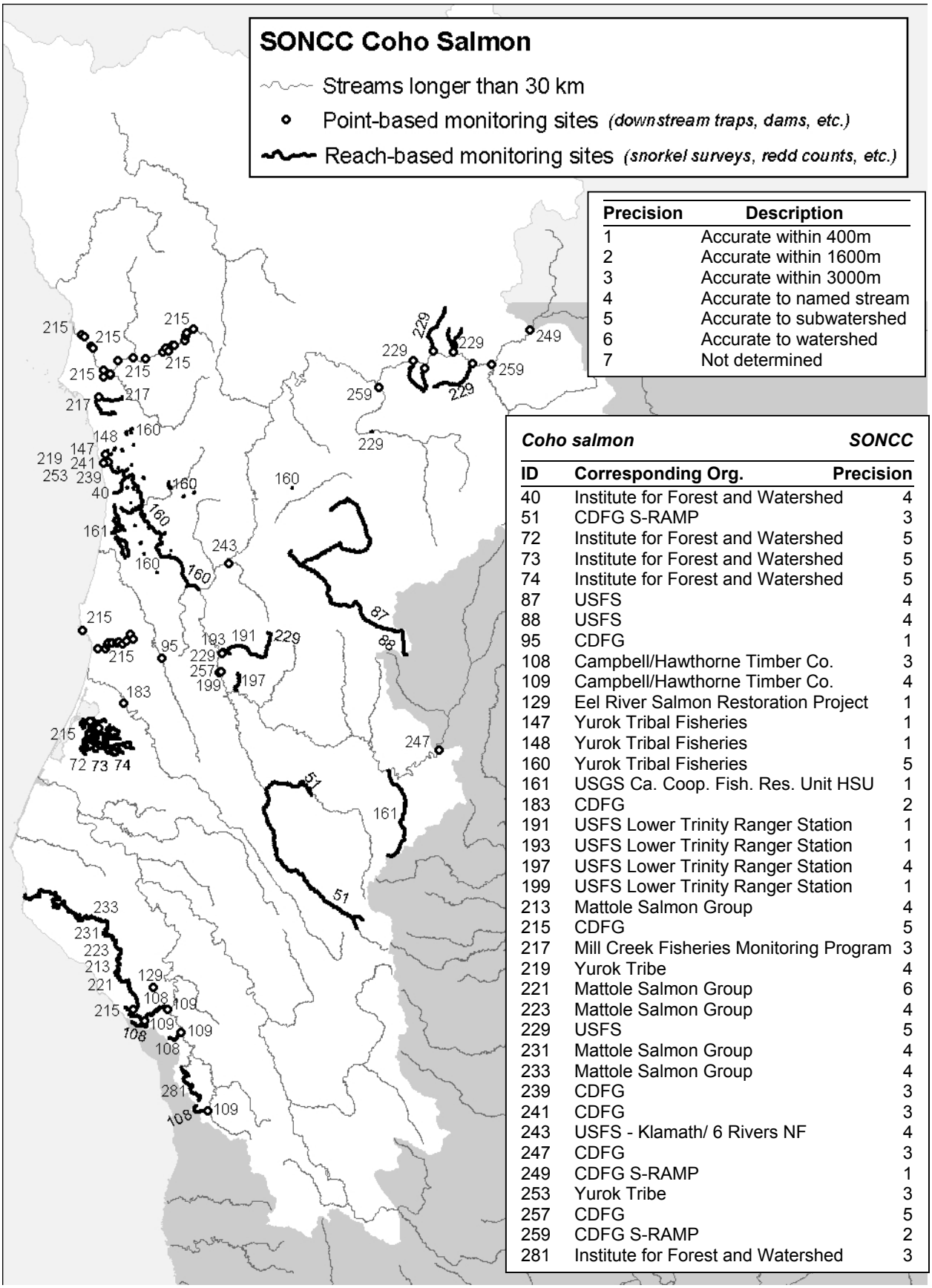
**Monitoring efforts for coho salmon, Southern Oregon/Northern California Coastal ESU**

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 |

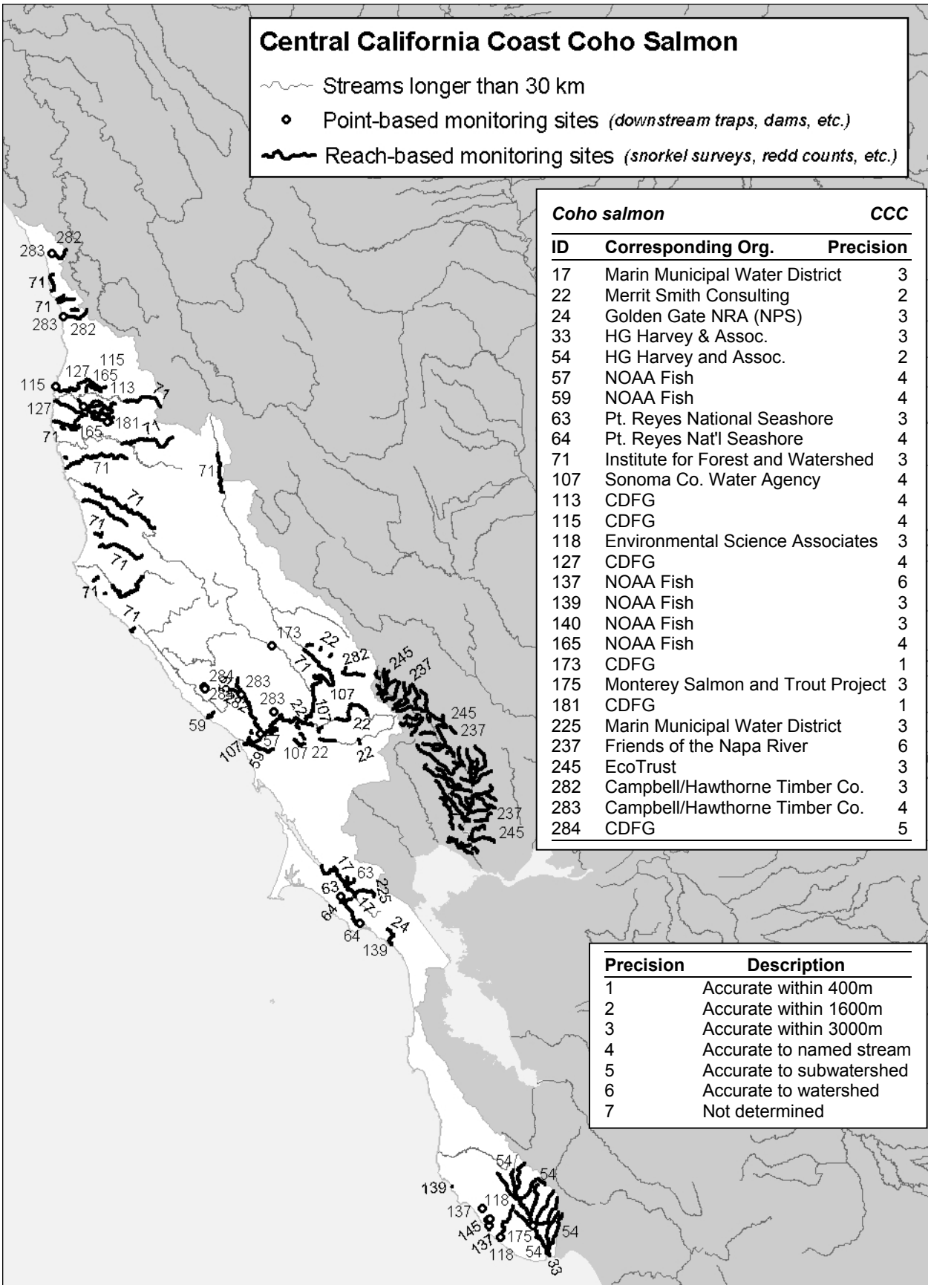
**Monitoring efforts for coho salmon, Central California Coast ESU**

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

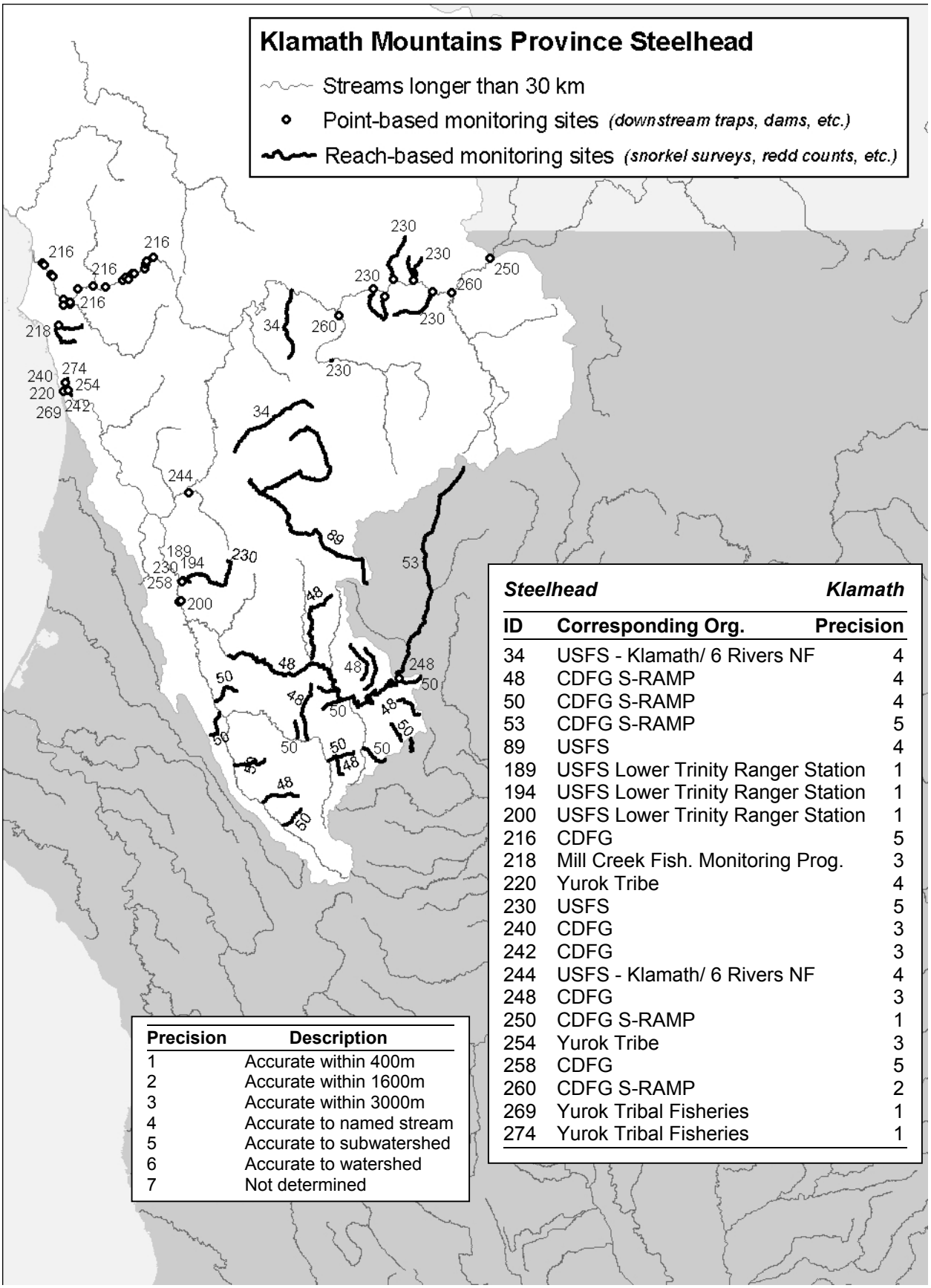
**Monitoring efforts for steelhead, Klamath Mountain Province ESU**

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 |

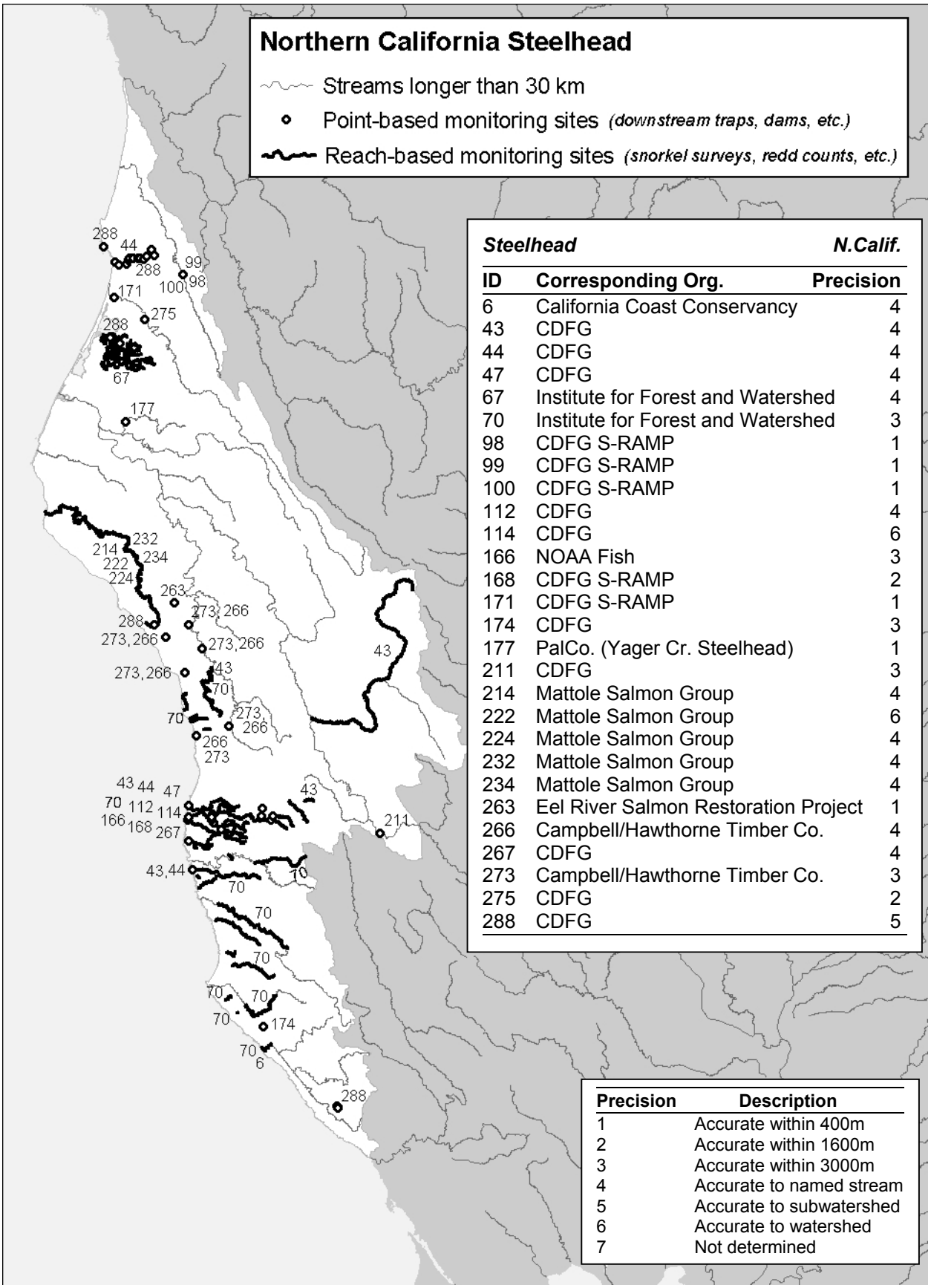
**Monitoring efforts for steelhead, Northern California ESU**

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 |

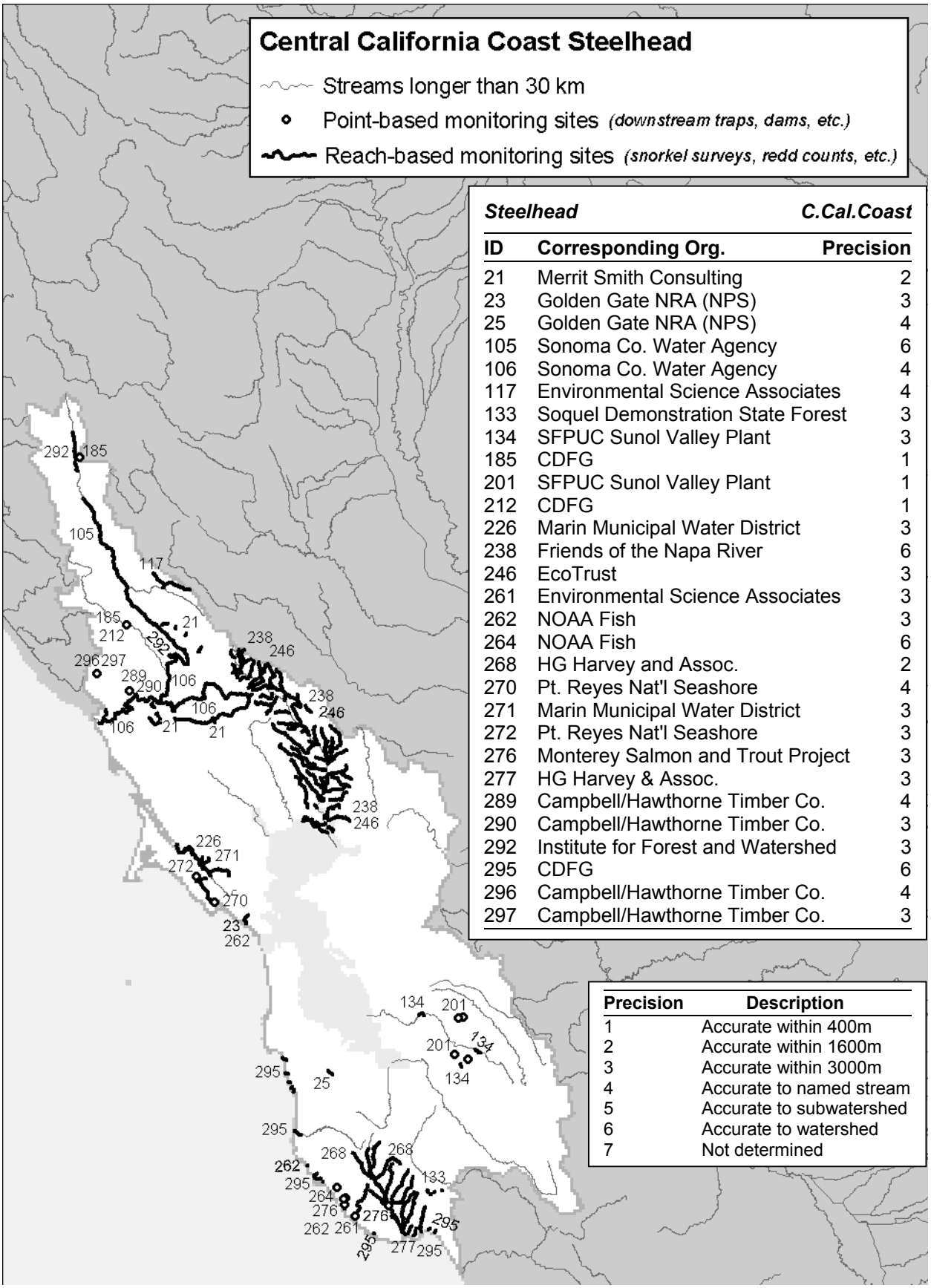
**Monitoring efforts for steelhead, Central California Coast ESU**

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 |

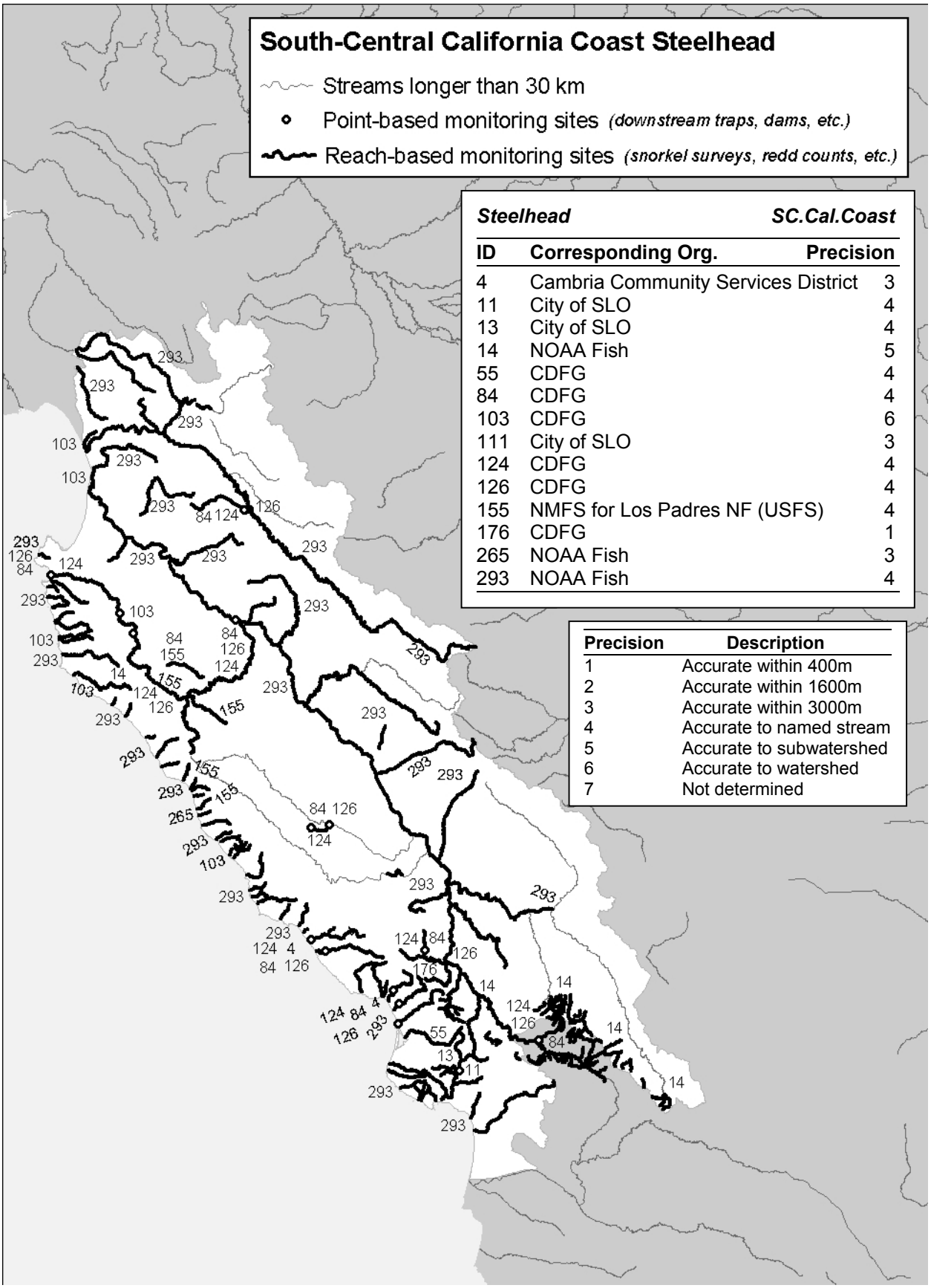
**Monitoring efforts for steelhead, South-Central California Coast ESU**

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 |

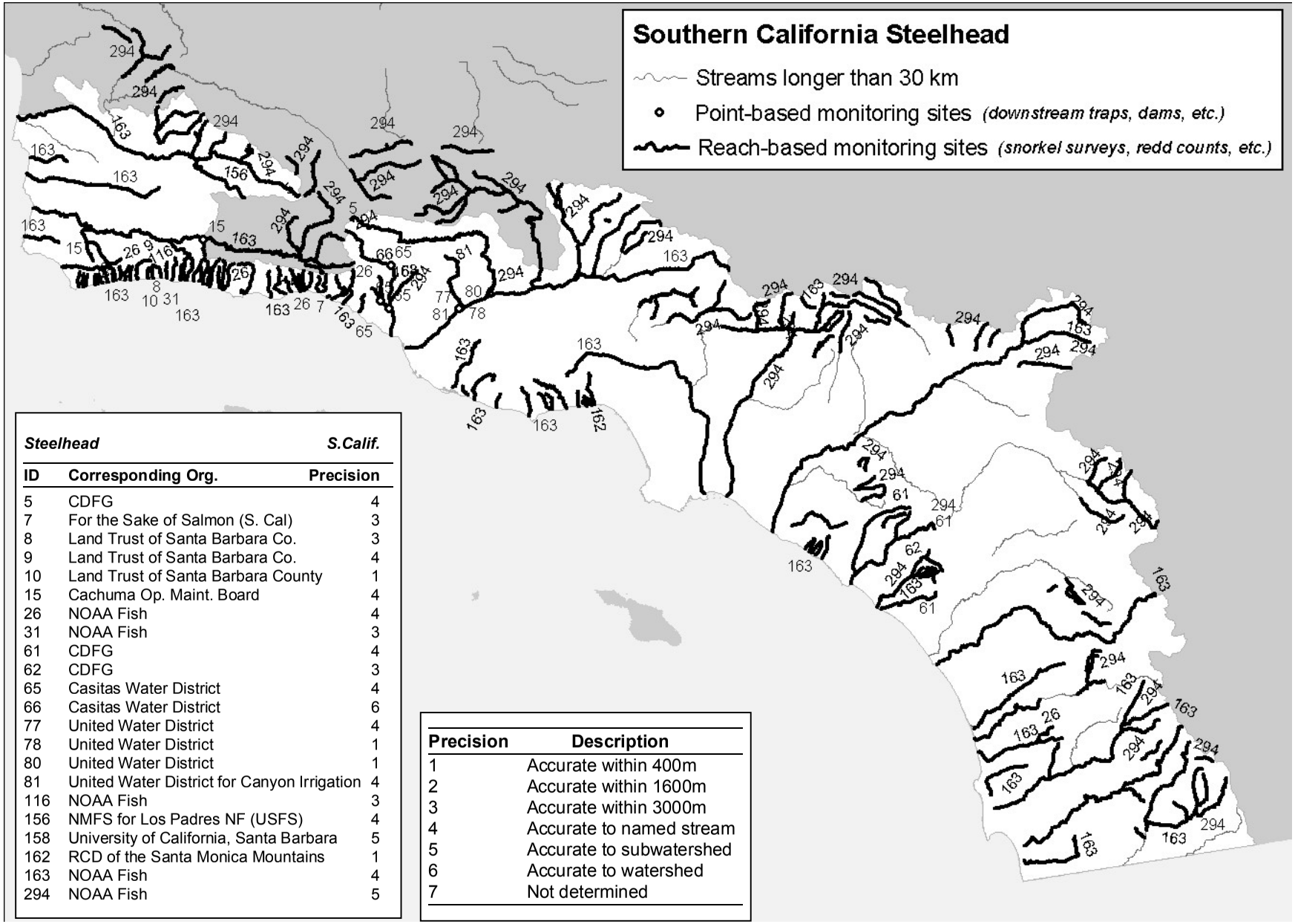
**Monitoring efforts for steelhead, Southern California ESU**

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)

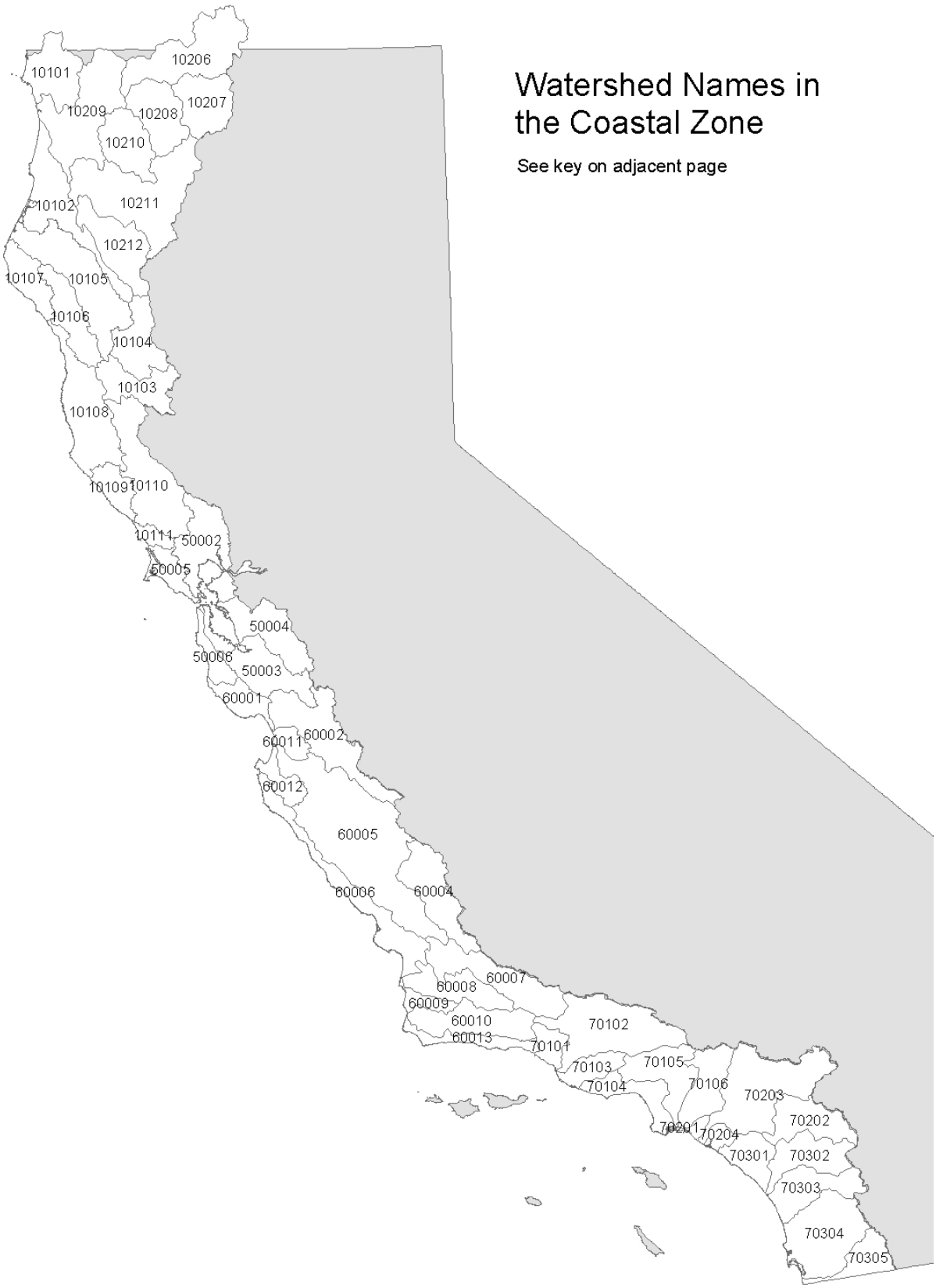
Sorted alphabetically by the name of the corresponding organization.

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
10102
10211
10212
10107
10105
10106
10104
10103
10108
10109
10110
10111
50002
50005
50004
50006
50003
60001
60011
60002
60012
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60009
60010
60013
70102
70101
70103
70105
70104
70106
70203
70202
70201
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

| | | | | | |
|---|---|---|---|---|---|
| **Positive impact?** | yes | **Juvenile** | **Season:** | **Outmigrants** | **Funding source:** |
| **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:** | |
| **Negative impact?** | no | **Start:** | May | **Support:** | Bureau of Reclamation 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

| | | | |
|---|---|---|---|
| **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<br>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 |

## Steelhead, Northern California ESU

**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 |

## Steelhead, Northern California ESU

**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 |

**Negative impact?** n/a **Data types:** indefinite yes population index **Start:** n/a Apr **Support:**

**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 |

## Steelhead, Central California Coast ESU

| | | | |
|---|---|---|---|
| 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 |

## Steelhead, South-Central California Coast ESU

| | | | |
|---|---|---|---|
| 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-Feburary | **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 |
| Roger Bloom | CDFG |
| David Boughton | National Oceanic and Atmospheric Administration (NOAA) Fisheries Division |
| Michael Bowen | California Coastal Conservancy |
| Jeff Brinkman | For the Sake of Salmon |
| 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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| Gary Flosi | CDFG |
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| Sean Gallagher | CDFG S-RAMP |
| Juan Garcia | CDFG |
| Patrick Garrison | CDFG S-RAMP |
| Stan Glowacki | NOAA Fisheries for Land Trust of Santa Barbara County |
| Alan Grass | CDFG |
| Allan Greenwood | San Diego Trout |
| Scott Gressey | HG Harvey and Associates |
| John Grunbaum | USFS Klamath/Six Rivers NF |
| Dave Hankin | Institute for Forest and Watershed Management (IFWM), HSU |

**Correspondents, cont'd**

| Name | Corresponding organization |
|---|---|
| Scott Harris | CDFG |
| Sean Hayes | NOAA Fisheries |
| Laird Henkel | HG Harvey and Associates |
| Mike Hill | CDFG |
| Monica Hiner | Yurok Tribal Fisheries |
| David Hines | NOAA Fisheries |
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| David Wright | Campbell/Hawthorn Timber Company |

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