

## PRELIMINARY BIOLOGICAL CONSTRAINTS ANALYSIS

---

**Site:** Valencia Creek Fish Ladder  
**Creek or Water body:** Valencia Creek  
**Watershed:** Aptos Creek  
**Date of site visits:** 12/14/2005, 2/1/2005

### Project Description:

The Valencia Creek Fish Ladder project consists of the demolition and replacement of a failed ladder and existing culvert baffle system under Soquel Drive, upstream of Highway 1 to improve fish passage to over three miles of Valencia Creek. The project requires dewatering of two box culverts above the confluence with Aptos Creek and the intervening 200 feet of active channel. See Photos 1 & 2.



Photo 1.



Photo 2.

Proposed equipment access into and through the riparian zone will utilize an existing, private road down from an abutting residence. Photo 3. Access to the fish ladder site requires that equipment enter the stream downstream of the site and pass upstream through a CALTRANS culvert to the fish ladder. Improvements to the existing baffle system in the CALTRANS culvert are also planned in this project. Both access and functional requirements require these improvements to the CALTRANS culvert. Photo 4.

Because the project involves the demolition and removal of the existing baffle systems and low-flow sill cutoff walls within the CALTRANS culvert downstream, and within the Soquel Drive culvert above the ladder, the project requires a complete stream diversion/bypass system. The proposed system consists of 2 coffer dams constructed upstream and downstream with approximately 600' of 18" HDPE pipe, clean gravel bags, visquine and possibly small submersible pumps to maintain clear bypass flows.

Staging and concrete cleanout will be done on existing roadway surfaces or adjacent upland out of the alder riparian zone. The equipment that may be used includes a small excavator, drill rig, loader, and/or backhoe. Throughout the construction period, the stream will be diverted and in-stream activities will be limited to the dewatered reach. Upstream work, above the culvert baffles and low

flow sill will be limited only to temporary placement of the coffer dam and diversion pipe. Significant disturbance to upstream channel bed and banks is not anticipated.



**Photo 3.**



**Photo 4.**

The equipment will work in the dewatered streambed for demolition of failed concrete structures, material transport, pier drilling and footing excavation. Concrete will be poured within the culverts to form the new baffles and low flow sills. Ladder foundations and step pool walls will be reinforced concrete and new removable flashboards will be 2" x 12" redwood planks.

Once the work is complete and the new baffles and ladder are sufficiently cured, the HDPE pipe will be removed and the stream will be allowed to run through the system. Concrete accelerants and surface sealants will be required to minimize the diversion period and limit potential concrete leachate contamination. All disturbed areas on the access route and impacted streambank will get seeded and revegetated with locally appropriate native species at the end of the project.

The work to be done will be timed to coincide with the seasonal low flows in Valencia Creek, specifically July 1 through October 15. Revegetation may extend into winter, depending on site and weather conditions.

### **Habitat Assessment**

Valencia Creek is a perennial stream within the Aptos Creek watershed in Santa Cruz County. The Valencia Creek Fish Ladder (Culvert #3) at Soquel Drive is the largest passage barrier in the watershed and limits salmonid access to more than 2.75 miles of Valencia Creek downstream of the Valencia Road PM 3.2 project site. The primary wildlife habitats in the vicinity of the project area are big leaf maple (*Acer macrophyllum*), red alder (*Alnus rubra*) riparian and second-growth redwood (*Sequoia sempervirens*) forest. The under-story is dominated by cape ivy (*Senecio mikainoides*), english ivy (*Hedera helix*), and periwinkle (*Vinca minor*) although some California blackberry (*Rubrus californica*) and stinging nettle (*Urtica dioica*) is present. Nearby surrounding lands are mostly developed and the riparian corridor is disrupted by major roadways, culverts and a steel trestle rail bridge, although a few scattered single-family residences are also present. Topography in the area is hilly.

At the project location, the creek's substrate is generally dominated by silt and sand. The subject channel is deeply incised into resistant siltstone bedrock, and there is a moderate amount of submerged woody material in the reach between the affected culverts. The baffle structures in the existing box culverts are prone to debris snagging and tend to fill with sand bedload, therefore rendering them ineffective. Flows are forced from the baffle-side onto the flat box culvert bottoms. These extremely shallow and fast flows (0.5" – 1.0" deep) may result in salmonid velocity barriers at both culvert locations. Photos 5 & 6.



Photo 5.



Photo 6.

A review of the CNDDDB and other records reveals the presence at least four special-status vertebrates known within 5 miles of the project site including the federally-threatened California red-legged frog (*Rana draytonii*). Although a breeding site for the endangered Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*) was discovered in 2004 near Aptos High School approximately 1.25 miles southeast of the site, it is situated near the edge of the subspecies' range and no habitat is present at the project site. Potential habitat is present for two species of special concern, the foothill yellow-legged frog (*Rana boylei*) and Pacific pond turtle (*Actinemys marmorata*). FIGURE 1.

Valencia Creek and the Aptos Creek watershed is known to support both steelhead and resident rainbow trout (*Oncorhynchus mykiss*) and may support a coho salmon (*Oncorhynchus kisutch*) fishery. Steelhead/rainbow trout have been planted periodically in Aptos Creek since 1913 when records indicate a planting of 33,000 fish which were split between Aptos Creek and Kings Creek in the upper San Lorenzo River watershed (Report of the Fish and Game Commission #23, 1912-1914). California Division of Fish and Game steelhead planting records specific to Aptos Creek exist from 1928 (7000 fish), 1929 (34,000 fish), 1930 (3,000 fish), 1932 (14,000 fish), 1933 (20,000 fish), 1934 (30,000 fish), 1935 (34,896 fish), 1936 (34,500 fish), 1937 (29,000 fish), 1938 (25,000 fish), and 1939 (60,000 fish). After 1940, stream-specific state hatchery records are not locally available.

The Aptos Creek watershed is believed to have historically supported Coho salmon. *Coho runs were last reported from Aptos Creek in 1973. Non-native coho were stocked in Aptos Creek, along with other coastal streams, by the Department of Fish and Game during the 1960's including a large plant in 1963 of 10,000 Alsea stock fish reared at Darrah Springs hatchery in Shasta County (Evans 1963) [From Hagar, 2003].* In March 2003 the Aptos Creek mainstem received a planting of over 5,700 coho smolts from the Monterey Bay Salmon and Trout Project. Habitat loss due to heavy sand loads into the lower watershed and passage issues at the existing culvert crossings may be the critical limiting factors to coho recovery in the Aptos/Valencia Creek watershed. FIGURE 2

**Kittleson Environmental Consulting**

3284 Malibu Drive, Santa Cruz 95062  
(831) 251-0215 phone / (831) 479-0138 fax  
[garykit@pacbell.net](mailto:garykit@pacbell.net)

**Biosearch Associates**

PO Box 1220 Santa Cruz, CA 95061

One additional species of special concern that is rarely reported in the CNDDDB, the San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), may also inhabit the project area. Preliminary reconnaissance of the access route and site not reveal any woodrat nests in the proposed impact area.

When construction actually begins, it may be necessary to remove portions of willows and/or big leaf maple trees that may provide potential habitat for nesting birds along the existing, un-maintained residential access road and proposed access route down the bank. The areas of potential upland disturbance are dominated by Cape ivy, bull thistle (*Cirsium vulgare*) and garden nasturtium (*Tropaeolum majus*), along with California blackberry, coltsfoot (*Petasites frigidus*), horsetail (*Equisetum sp.*), periwinkle, mugwort (*Artemisia douglasiana*), forget-me-not (*Myosotis latifolia*), and hellebore (*Epipactis helleborine*),

As proposed, no redwood, douglas fir, maple or oak trees greater than 4"-6" are to be removed. All native birds are protected during the nesting season by the Federal Migratory Bird Treaty Act. Preconstruction surveys for nesting birds within the project impact area are suggested. Additional preventative measures, such as hanging reflective mylar ribbons in the project area alders, may deter nesting activity prior to vegetation clearing and project construction.

### **Wildlife Management Recommendations**

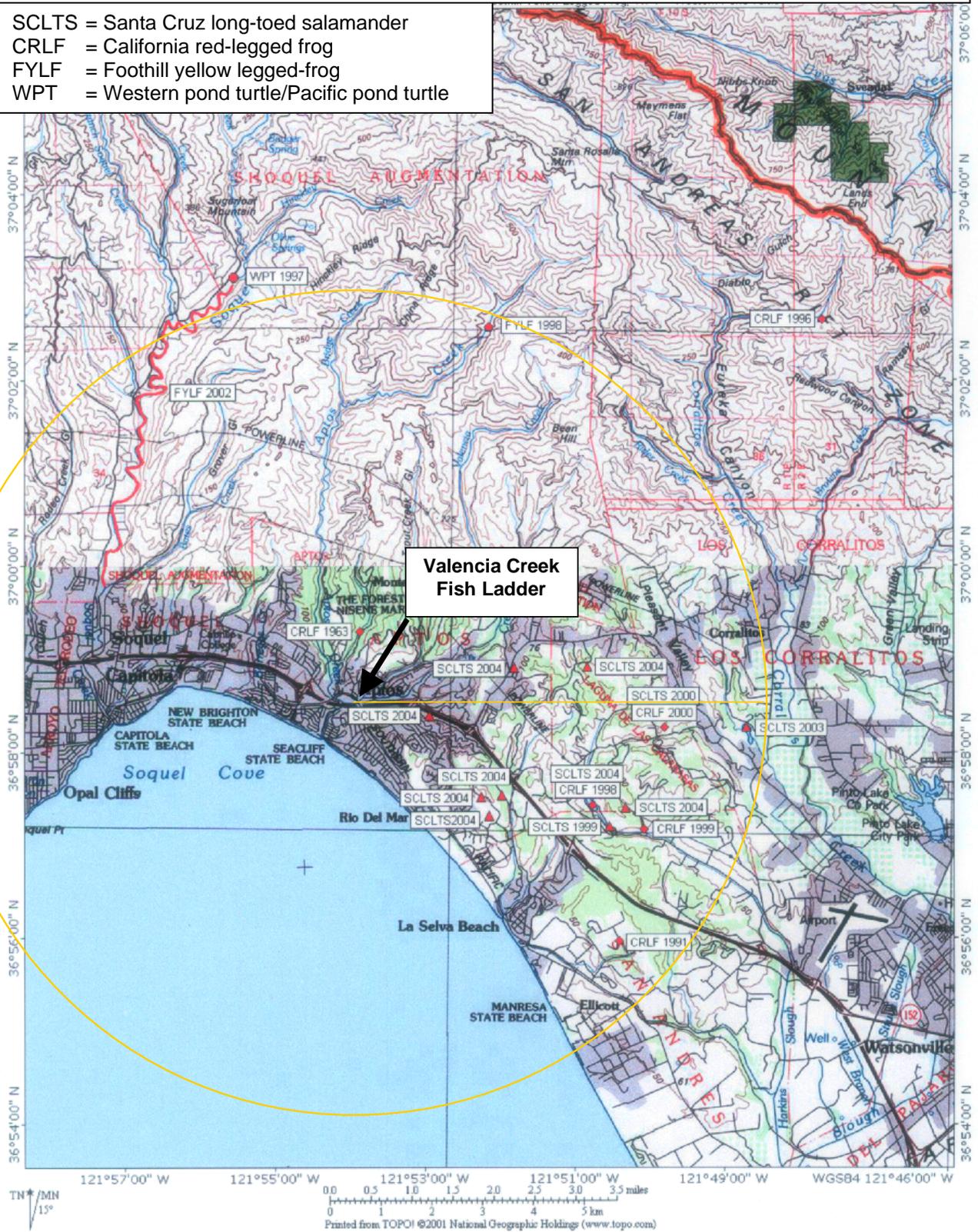
The 2005 USFWS RLF Protocol Guidance recommends a total of **up to** eight (8) surveys to determine the presence of CRF at or near a project site. Two (2) day surveys and four (4) night surveys are recommended during the breeding season; one (1) day and one (1) night survey is recommended during the non-breeding season. (Appendix A) Each survey must take place at least seven (7) days apart. At least one survey must be conducted prior to August 15th. The survey period must be over a minimum period of 6 weeks (*i.e.*, the time between the first and last survey must be at least 6 weeks). Throughout the species' range, the non-breeding season is defined as between July 1 and September 30. The search should be performed at least ¼ mile up and downstream of the project site. Daytime visual searches may also be used to detect western pond turtles. A quick visual ground survey throughout the work area shall be performed for San Francisco woodrat nests during daytime RLF survey(s). If woodrat nests are present at the time of construction, they shall either be avoided or individuals shall be live-trapped and released nearby outside the work area.

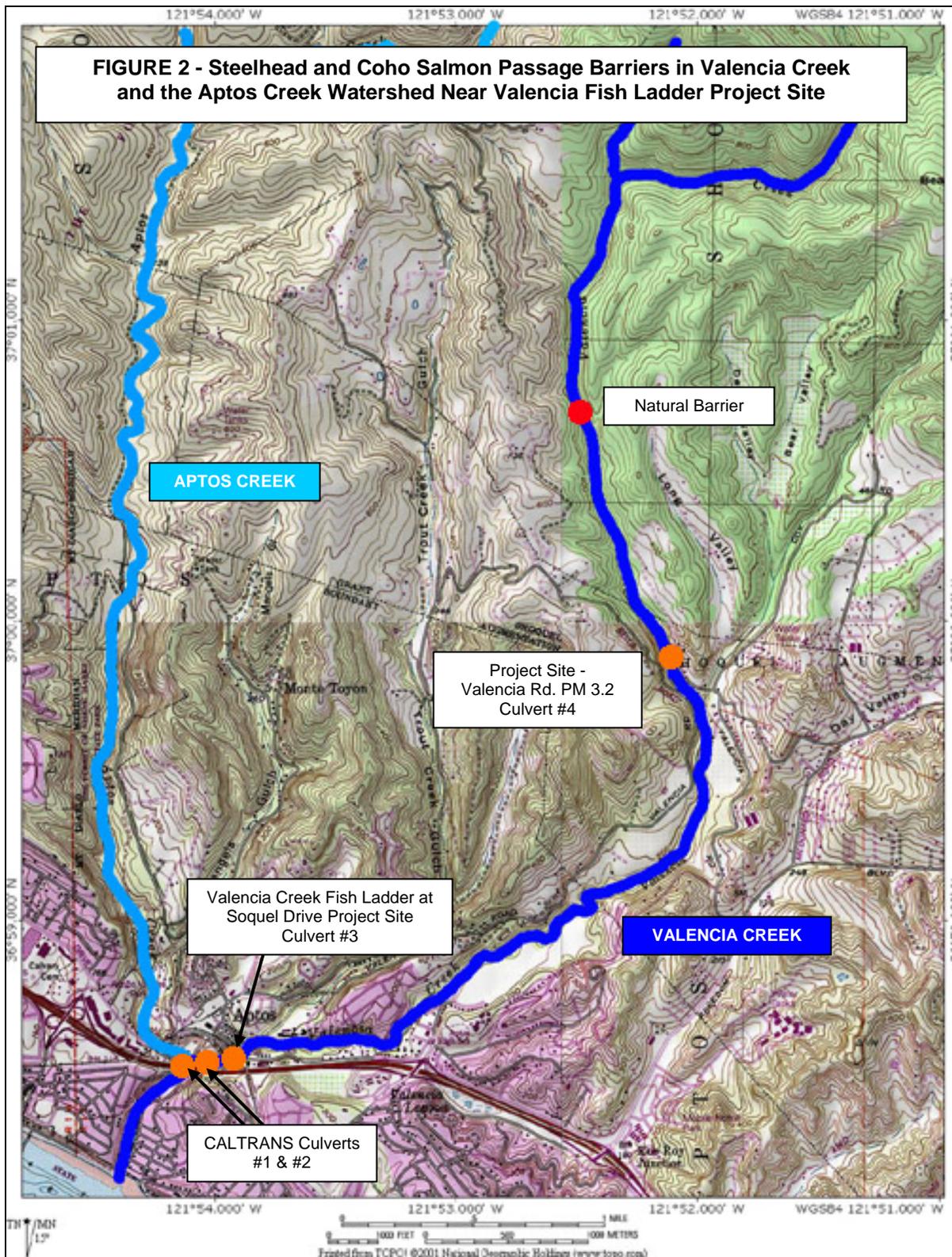
Prior to the start of the construction, a worker education seminar shall be delivered, that will address all the special-status species that may be present. Biological monitoring is recommended during hand-vegetation removal at the start of construction (see Appendix A), although daily monitoring may only be necessary if red-legged frogs, yellow-legged frogs, Pacific pond turtles or other special-status species are found to inhabit the work area.

Prior to dewatering activities, all fish should be removed from the project area and relocated upstream to appropriate habitats by a qualified fisheries biologist. Based on channel conditions and the abundance of submerged wood, capture and relocation by backpack electroshocker is suggested. Consultation with NOAA Fisheries and CDFG is required. Ideally work should not commence until mid-July or early August, to avoid affecting native birds during the nesting season.

**FIGURE 1 - Special-Status Wildlife Observations Within 5 Miles of Valencia Fish Ladder**

SCLTS = Santa Cruz long-toed salamander  
 CRLF = California red-legged frog  
 FYLF = Foothill yellow legged-frog  
 WPT = Western pond turtle/Pacific pond turtle





**FIGURE 2 - Steelhead and Coho Salmon Passage Barriers in Valencia Creek and the Aptos Creek Watershed Near Valencia Fish Ladder Project Site**

## Protected Species of Concern:

---

### California red-legged frog (CRLF)

- Presence of red-legged frog - The proposed project site is within the range of the California red-legged frog (red-legged frog) and potential foraging and sheltering habitat is present onsite (Jennings and Hayes 1994, Stebbins 2003).
- Valencia Creek does not provide breeding habitat for red-legged frog at the project site, primarily due to high flows during the species' breeding season. However, if an off-channel breeding pond is present in the area red-legged frogs may use the project site as "summer habitat." Red-legged frogs will cross a variety of habitats during the winter months to facilitate movements from non-breeding refugia to breeding sites (Bulger 2003). Juvenile red-legged frogs could occur on the site during dispersal movements away from breeding ponds in the late summer.
- If red-legged frogs occupy Valencia Creek, they are expected to make use of the surrounding upland habitats to forage. Based on recent radio-telemetry data, it appears that virtually all upland areas in proximity to occupied red-legged frog habitat could be used seasonally by red-legged frogs.
- Nearest documented population - Although there are no records within one mile of the project site, there are several records within five miles. The nearest breeding location for the red-legged frog is the Millsap Pond, which is situated approximately 3.5 miles to the east (Biosearch 2002). There is a historic record from 1963 of a red-legged frog that was photographed in a fish pond at 735 Cathedral Drive near Mangels Gulch, less than 1.5 miles north-northwest of the project site.
- Potential project impacts – possible take of individuals dispersing from other areas, over-summering in-stream and/or in moist vegetation during construction activities.
- Regulatory agency consultation - State Fish and Game Department, US Fish and Wildlife Service
- Suggested preconstruction survey protocol – one (1) day and one (1) night survey is recommended during the non-breeding season, the period from July 1 to September 30. It is suggested that these surveys be conducted 2-4 weeks prior to construction.
- Avoidance or protection measures – prior to construction, hand removal of vegetation and monitoring of vegetation removal by biologist(s); worker education seminar.
- Suggested construction-period monitoring frequency – daily monitor visit prior to work each day to check for rlfs.

## Steelhead

- Presence of steelhead – Steelhead are likely present, but in small numbers, in the construction site and throughout the reach to be dewatered. During preliminary surveys in February, 2005, two smolt-sized salmonids were observed on the culvert plunge pool. Shallow sandy bed conditions minimized fish cover and pool depths in the affected reach.
- In 1981, prior to the massive disturbance of winter 1982, smolt densities in Valencia Creek downstream of Valencia Road were 17 fish per 100 feet of stream, based on sampling by Dr. Jerry Smith for Harvey and Stanley, Inc (1984). The 1982 surveys did not include sampling in the lowermost reach of Valencia Creek.
- Hagar Environmental Sciences conducted visual surveys in summer 2002 for the Aptos Watershed Plan process and observed densities of 0.63 Y-O-Y per 100 feet of stream and 0.10 older trout per 100 feet of stream in the middle reaches of Valencia Creek. Hagar found no salmonids in Valencia Creek downstream of the proposed project site.
- Nearest steelhead population – Valencia Creek, Aptos Creek
- Potential project impacts – Potential take of steelhead or rainbow trout at the site. Work in the stream during the smolting period may obstruct passage of steelhead smolts from March through July 1. Potential take of other native fish fauna. Potential sedimentation of the stream channel and increased turbidity to create water quality problems downstream for fishes. Preventing revegetation of project site to cumulatively increase water temperature. Toxic petro-chemical spills or cement entering the flowing water could be lethal to fish downstream.
- Regulatory agency consultation - State Fish and Game Department, National Marine Fisheries Service
- A pre-construction survey is unnecessary. Salmonids have been observed in at the project site in the past. There is no advantage to sampling the site prior to construction. It would be just as easy to sample as part of a relocation operation immediately before construction.
- Mitigation measures would include removal and relocation of all fish from the site, using electrofishing and block nets. After fish removal, construct coffer dams up and downstream of the site and run flow through culvert to avoid the project area. Dams should be made of washed gravel with visquine or sandbags that will be removed at the end. Water diversion should be done in one day during the daylight hours. Smolting steelhead migrate at night only. Use silt fencing to prevent sediment from entering the flowing channel. No heavy equipment should be run in the flowing channel. No equipment should be left in the dry channel over night. Keep equipment in good working order. Vegetable oil based hydraulic fluid is preferred. Properly revegetate the bank or the top of bank with appropriate riparian trees. Use erosion control measures, including mulching all bare soil.
- Construction period from July 1 to October 15 at the latest. After the fish relocation, a fish monitor should be present during dam and culvert placement and removal. Any missed fish during the removal process can be removed during the dewatering phase. It is suggested that salmonids be relocated upstream to suitable habitats with sufficient depth and cover.

- Fish removal, potential impacts, mitigation measures and monitoring would be the same for resident rainbow trout as for steelhead.

## Coho Salmon

- Presence of Coho salmon – Coho may be present in the construction site, but are not expected due to two limiting factors: (1) high levels of sedimentation and limited pool depth in downstream habitats; and (2) periodic, seasonal low flows.
- Nearest Coho salmon population – Scotts Creek, Waddell Creek, Bean Creek/San Lorenzo River (2005, D.W. Alley, pers. comm.)
- Coho smolts from Scotts Creek's 2002 brood were planted in Aptos Creek by the Monterey Bay Salmon and Trout Project in late March and the first week of April 2003. Due to the project's best Coho production ever and high numbers of natural production being found in Scotts and Gazos Creeks, the hatchery Coho smolts were divided up into groups by the joint NMFS & CDFG Recovery teams to begin reintroduction into the two best candidate local streams that year, Pescadero Creek in San Mateo County and Aptos Creek in Santa Cruz County. The total 2002 Brood year Coho production of 31,379 fish were planted as follows:
  - Scotts Creek           6,664
  - Waddell Creek       6,120
  - Aptos Creek           7,140
  - Pescadero Creek   11,475

(Source Monterey Bay Salmon and Trout Project 2003 Newsletter)

- No coho have been observed during snorkel surveys of Aptos Creek, or during lagoon seining in 2005 sampling efforts (K. Schroeder and N. Beck, 2005, pers. comm)
- Potential project impacts – Low likelihood of potential take of coho salmon at the site due to downstream barriers. If present in upper Valencia Creek, work in the stream during the smolting period may obstruct passage of coho smolts from March through July 1. Potential sedimentation of the stream channel and increased turbidity to create water quality problems downstream for fishes. Preventing revegetation of project site to cumulatively increase water temperature. Toxic petro-chemical spills or cement entering the flowing water could be lethal to fish downstream.
- Regulatory agency consultation - State Fish and Game Department, National Marine Fisheries Service
- A pre-construction survey is unnecessary. Salmonids have been observed in at the project site in the past. There is no advantage to sampling the site an extended period prior to construction. Sampling and identification of fish fauna will be conducted as part of any relocation operation immediately before construction.
- Mitigation measures would include removal and relocation of all fish from the site, using electrofishing and block nets. After fish removal, construct coffer dams up and downstream of the site and run flow through culvert to avoid the project area. Dams should be made of washed gravel with visquine or sandbags that will be removed at the end. Water diversion

should be done in one day during the daylight hours. Use silt fencing and straw wattles to prevent sediment from entering the flowing channel. No heavy equipment in the flowing channel. No equipment should be left in the dewatered channel over night. Keep equipment in good working order. Vegetable oil based hydraulic fluid is preferred. Properly revegetate the bank or the top of bank with appropriate riparian trees. Use erosion control measures, including mulching all bare soil.

- Construction period from July 1 to October 15 at the latest. After the fish relocation, a fish monitor should be present during dam and culvert placement and removal. Any missed fish during the removal process can be removed during the dewatering phase by dipnet and transported upstream by bucket.
- Fish removal, potential impacts, mitigation measures and monitoring would be the same for coho salmon as for resident rainbow trout or steelhead.

### **Western pond turtle (WPT)**

- Presence of pond turtles - Potential habitat for western pond turtles is present in Valencia Creek. However, the nearby uplands lack the open, grassy areas that are necessary for nesting. Pacific pond turtles can be difficult to detect in riparian systems without focused surveys that usually involve trapping and/or snorkeling.
- Nearest pond turtle population – No records exist within 5 miles. The only record near 5 miles is from Soquel Creek at Mill Pond, which is located approximately 5.2 miles to the northwest. The lack of records may be due to a low survey effort using appropriate methods.
- Regulatory agency consultation - State Fish and Game Department.
- If found during the CRLF surveys, turtles may need to be captured and relocated to the nearest appropriate habitat.

### **Foothill Yellow Legged Frog (FYF)**

- Presence of foothill yellow legged frog - Potential habitat for foothill yellow-legged frogs is present in Valencia Creek. Although portions of the drainage may be too shady to support the species, other areas including the project site may be appropriate. The species inhabits much of the length of Soquel Creek nearly five miles to the west, foothill yellow-legged frogs were observed in 1998 in Aptos Creek about 4.9 miles north.
- The lack of records may be due to a low survey effort during the optimal periods to detect the species.
- Regulatory agency consultation - State Fish and Game Department
- If present, monitors should capture and move to nearest appropriate habitat outside work area. Daily monitoring recommended, if present.

## Raptor nesting

- A variety of raptors including sharp-shinned and Cooper's hawks, both species of special concern, may nest in the adjacent mixed conifer-hardwood forest.
- Low likelihood of raptor nesting within project impact area due to small stature of alders to be removed.
- Pre-construction breeding surveys (2 visits) may be necessary. If found, construction may have to be delayed until after the breeding season, unless an adequate setback can be applied.

## Citations

---

- Biosearch Wildlife Surveys. 2001. Santa Cruz long-toed salamander study, Millsap Pond, Santa Cruz County. Prepared for: P. Cerruti and the U. S. Fish and Wildlife Service (Ventura). Dated 20 June.
- Bulger, J. B., N. J. Scott Jr., and R. B. Seymour. 2003. Terrestrial Activity and Conservation of Adult California Red-legged Frogs *Rana aurora draytonii* in Coastal Forests and Grasslands. *Biological Conservation* 110: 85-95.
- Hagar Environmental Science. 2003. Aptos Creek Watershed Fisheries Habitat Assessment Technical Memorandum. Prepared for Coastal Watershed Council.
- Harvey & Stanley Associates, Inc. 1984. Fish Habitat Assessments for Santa Cruz County Streams. Prepared for Santa Cruz County Planning Department, Alviso, California.
- Jennings, M. R. and M. P. Hayes. 1994. Amphibian and reptile species of special concern in California. California Department of Fish and Game Contract # 8023. Inland Fisheries Division, Rancho Cordova, California.
- Santa Cruz County. February 2004. Steelhead and Coho Salmon Distribution Map.
- Stebbins, R. C. 2003. A Field Guide to Western Reptiles and Amphibians, Third Edition, Revised. Houghton Mifflin Co., Boston, MA.
- Thomas, John H. 1961. Flora of the Santa Cruz Mountains of California, Stanford University

## Personal Communication

- Beck, Nicole. 2005. Personal communication. California Coastal Conservancy/NMFS CLEAP Lagoon Study Project Manager.
- Schroeder, Kristen. 2005. Personal communication. Santa Cruz County Fisheries Resource Planner.

**Appendix A. California Red-legged Frog**  
Monitoring and Translocation Plan,  
Valencia Creek Culvert Retrofit Project Site

**Pre-construction Survey.** Prior to initiation of any ground disturbance associated with the project, a pre-construction survey will be performed onsite. If the construction start date is delayed, it may be necessary to repeat the survey. At a minimum, methods will consist of two daytime or one daytime and one nighttime survey of the project site and adjacent aquatic habitat along Valencia Creek.

The 2005 USFWS RLF Protocol Guidance recommends a total of **up to** eight (8) surveys to determine the presence of CRF at or near a project site. Two (2) day surveys and four (4) night surveys are recommended during the breeding season; one (1) day and one (1) night survey is recommended during the non-breeding season. Each survey must take place at least seven (7) days apart. At least one survey must be conducted prior to August 15th. The survey period must be over a minimum period of 6 weeks (*i.e.*, the time between the first and last survey must be at least 6 weeks). Throughout the species' range, the non-breeding season is defined as between July 1 and September 30.

*If CRF are identified at any time during the course of surveys, no additional surveys will be conducted in the area, unless the surveying effort is part of a Service-approved project to determine actual numbers of frogs at the site.*

A ½ mile transect will be examined by following Valencia Creek ¼ mile (1320 feet) upstream and ¼ mile downstream of the project site. The stream channel will be surveyed by walking in-stream or along the banks and searching for frogs visually and with binoculars. At night, a hand-held headlamp will be used to search for eye-shine and the shape of frogs. During pre-construction surveys, potential relocation sites will be identified (see below). All amphibians observed will be recorded or reported as "unidentified" if positive identification is not possible. If red-legged frogs are observed, they will be photographed, if possible, and their locations mapped relative to the construction site. No red-legged frogs will be handled or captured at this time. A letter report will be submitted to the County and USFWS two weeks prior to the start of construction along with a request to USFWS for guidance. If red-legged frogs are observed, the letter-report will include a map of their location.

**Worker Education Program.** Prior to the start of construction, a worker education program will be presented at the project site by a qualified biologist. Onsite construction managers must attend and are responsible for passing on the information to workers. If the onsite manager changes during the construction project, then another seminar must be delivered. At every seminar, written material will be distributed. It will be the onsite manager's responsibility to ensure that all construction personnel and subcontractors receive a copy of the education program. All personnel must sign and date their program, keep a copy onsite and submit a signed form to document the training they received. The education program will include a description of the red-legged frog and its habitat, the general provisions of the Endangered Species Act, the necessity of adhering to the Act to avoid penalty, measures implemented to avoid affecting red-legged frog specific to the project and the work boundaries of the project. A photograph of the red-legged frog will also be provided.

**Vegetation Removal.** The project will commence by having a qualified biologist monitor the removal of any vegetation necessary to perform the construction project. At the same time, the limits of work area will be identified in the field. To reduce disturbance to adjacent habitat, high visibility orange

fencing and steel t-posts (or similar material) will be used to define the perimeter of all work and staging areas.

Immediately prior to beginning vegetation removal, a qualified biologist will survey the work area for red-legged frogs. Vegetation will then be removed using hand-tools (chain saws okay) to a height of approximately 6 inches with the biologist present. Work may be stopped so the biologist can conduct additional visual surveys, before vegetation is removed to near ground level such that there is no cover within the work area for red-legged frogs. If red-legged frogs are observed in the work area, they shall be moved to the nearest appropriate pool habitat upstream (see below).

**Construction Monitoring.** If no red-legged frogs are observed during the pre-construction survey and vegetation removal procedure, daily visits to survey for red-legged frogs by a biological monitor will not be performed. A biological monitor may still need to visit the site periodically to ensure that all other conditions of the Programmatic Endangered Species Act Consultation are followed. If, during the course of the construction project, red-legged frogs are identified or reported nearby the site, daily surveys may be necessary.

As defined in the Programmatic Endangered Species Act Consultation (USFWS 1999), a qualified biologist is an individual approved by the USFWS to capture and translocate red-legged frogs, whereas a biological monitor is an individual that has been trained to identify red-legged frogs but is not permitted to handle them. A biological monitor may therefore conduct surveys for red-legged frogs during the construction project but must contact a qualified biologist if it is necessary to move red-legged frogs. In addition to surveying for red-legged frogs, biological monitors perform several other duties intended to minimize disturbance to the work area, riparian corridor and adjacent habitat (USFWS 1999). Since it may be necessary to contact a qualified biologist immediately, communication between the monitor and biologist is essential.

If red-legged frogs are observed during the pre-construction survey, a biological monitor will survey the site daily prior to the start of construction. Since red-legged frog movements typically occur at night (Rathbun and Schneider 2001), it is unlikely that a red-legged frog would move into an active construction site during the day. Unless approved by the monitor, construction shall not begin until one hour after dawn, to provide enough time to search the entire construction site including lay-down and equipment storage areas. A buffer of between 100 and 300 feet upstream and downstream will also be surveyed each day. The biological monitor has the authority to delay or stop construction if a red-legged frog is in harm's way. After surveying the site, the biological monitor shall meet with the onsite construction manager to discuss any observations.

**Translocation.** If a red-legged frog is found in the work area, efforts will be made to avoid it. The biological monitor shall meet with the construction manager to discuss the day's activities to determine if the frog is in harm's way. It may be necessary to observe the red-legged frog throughout the day. If it is necessary to translocate the individual, a qualified biologist will capture the animal and move it to nearby suitable pool habitat upstream in Valencia Creek. Rathbun and Schneider (2001) report that during wet, winter months translocated red-legged frogs typically exhibit homing ability and return to their capture site within a few days. Therefore, efforts will be made to move the frog as short a distance as possible, ideally within approximately 300 feet. The length (snout-urostyle) of the animal will be recorded. Subsequent monitoring will be performed with the assumption that translocated individuals may return. The translocation site and stream corridor between the translocation site and construction site will be included as part of the daily construction monitoring survey. The translocation

site will be mapped relative to the work area. The USFWS and the County will be informed that a frog was found and moved.