

# Five Brooks Riparian Protection Fence Proposal

Submitted to the  
Marin County Resource Conservation District

December 10, 1997

By the  
National Park Service  
Coho Salmon and Steelhead Trout Restoration Project

and the

Point Reyes National Seashore  
Division of Range Management

In response to the California Department of Conservation RFP to  
"improve and sustain the health of California's watersheds"

## **BACKGROUND**

Olema Creek is the largest undammed tributary within the Lagunitas Creek watershed in western Marin County. This portion of coastal California supports federally listed as threatened coho salmon (*Onchorynchus kisutch*) and steelhead trout (*Onchorynchus mykiss*). Volunteer spawning surveys over the past two years have shown that the population of coho salmon returning to Olema Creek is on the order of 200 fish, or nearly 4% of the native coho salmon in the central California coast Evolutionarily Significant Unit (ESU).

The watershed is contained entirely within the boundaries of the Golden Gate National Recreation Area and Point Reyes National Seashore. The project area lies within the pastoral zone and is managed for livestock grazing operations. In June of 1997, the Coho Salmon and Steelhead Trout Restoration Project initiated operations. This is a five-year project focusing on habitat assessment, restoration, and monitoring of the threatened coho salmon and steelhead trout populations.

The project site is a 250-meter section of the Olema Creek main-stem and riparian area, where cattle have direct access to the stream. This is the last section of the Olema Creek main-stem without exclusionary fencing. This project will exclude this riparian area from grazing, and replace the water source to the adjacent pasture. Currently, the riparian corridor is heavily grazed, and benefits such as stream bank stability, vegetative cover, and lower ambient water temperatures are lacking. Direct access to this perennial stream is detrimental to water quality conditions throughout the year. Water quality conditions are most acute in the summer when flow is not significant enough to dilute the pollutant concentrations. The combination of warm water and excess nutrients can lead to increased algal production.

The impacts to juvenile salmon and steelhead in these areas can be significant. Degraded stream banks and high sediment loading over the years has left the stream in a degraded condition. Most pools in the project area are shallow and filled with sediment. The measure of embeddedness, the percent cover of silt in a pool tail area, ranged from 50 to 75% in this area.

Construction of a riparian exclusionary fence will provide a number of benefits. First, it will complete the last section of riparian exclusionary fencing on the main-stem of Olema Creek. Second, it will drastically reduce the stream bank degradation, nutrient and sediment loading, and bacteriologic contamination associated with direct stream access. This will have a significant benefit to the water quality and rearing habitat of the threatened species. Upon completion of the fence, a small riparian planting project will help "jump-start" the vegetative recovery.

## **PROPOSED LAND USE**

Agricultural operations are permitted through a Special Use Permit (SUP). This area is located in the pastoral zone, and will continue to be managed in this manner unless the land use designation is changed.

## **OBJECTIVE**

The fence will be built to achieve the following protection objectives and benefits:

1. Protect and enhance the aquatic habitat in this reach of Olema Creek.
2. Increase stream bank stability with natural vegetation.
3. Protect water quality through the elimination of direct access and the development of a vegetative strip to reduce the delivery of nonpoint source pollutants from upland sources.
4. Increased production vegetation and woody debris in the riparian corridor will provide habitat for a number of terrestrial and avian species.
5. The water will be replaced by installing a water trough in the pasture adjacent to the stream.

## **LOCATION**

The site lies just east of State Route 1, in an area referred to as Five Brooks. At this point, Olema Creek bends to the east, underneath the Highway 1, and then makes a long horseshoe turn back to the west, crossing under Highway 1 again. The project site is shown on the attached map.

## **PROJECT DESCRIPTION**

The work in this section consists of constructing 1,000 linear feet of 5-strand, high tensile barbed wire fence and installing a metal gate at the access way near the water tank. The fence will be tied into existing fences on either end of the line. Metal T-posts will be spaced at 15-foot intervals. Wooden posts will be spaced at every fifth post. Single H-braces will be installed at ends, both sides of gates, and at 350-foot intervals. Double H-braces will be installed at directional and major slope changes. Rise and dip posts will be installed as needed.

A list of products and execution is attached.

The fence line will be located on the east side of the creek. General guidelines recommend a 100-foot set back from the stream. Adjustments to this guideline are made on a site-specific basis depending upon topography and other factors. Where slopes are steep, a greater setback is recommended, while in flat areas the setback may not need to be as great. At this site, the proposed fence setback ranges between 50 and 125 feet.

Riparian access is often used as a source of water. Water will be replaced through the installation of a metal water trough. The trough will be supplied from the 5,000-gallon water storage tank at the nearby residence.

**PERMITS**

Installation of the riparian exclusion fence will require project review by the Point Reyes National Seashore. No other permits are required.

**SCHEDULING**

The fence will be contracted and constructed in the summer of 1998.

**BUDGET**

|  |                      |         |
|--|----------------------|---------|
| Riparian Exclusion fence                 | 900' @ \$5.00/lin ft | \$4,500 |
| Replacement water trough                 | 500 gallons          | \$ 700  |
| Plumbing @ \$1.95/ft (materials & labor) | 400 lin. ft          | \$ 780  |
| TOTAL                                    |                      | \$5,980 |

**PERMITTEE AGREEMENT**

The NPS range manager, Andrea Minor, has contacted the leasee, Earl Lupton. He has approved the project goals and objectives.