

REDWOOD CREEK COVER STRUCTURE PROJECT

1996

FINAL REPORT

Contract # FG 5050 IF

**California Department of Fish and Game
Inland Fisheries Division
1995/1996 Fishery Restoration Grants Program**

performed by



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Date: The work was completed on 13 working days from June 26, through August 6, of 1996.

Hours: 195 person hours, and 35 hours heavy equipment hours were required to complete the project.

Costs: The total cost of the project was \$6,533.00.

Project Description: The project reach is located ten stream miles upstream of the Highway 299 bridge over Redwood Creek, in eastern Humboldt County, in Section 7, township 6 North, Range 4 East. The area is located on the Maple Creek 7-1/2 Minute Quadrangle Map.

North Coast Fisheries Restoration contracted to design and construct 4 LWD Cover Structures. Five Structures were completed. Live trees donated by the land owner, Mr. Massei, were felled into the stream channel, providing increased habitat complexity on a half mile reach of Redwood Creek.

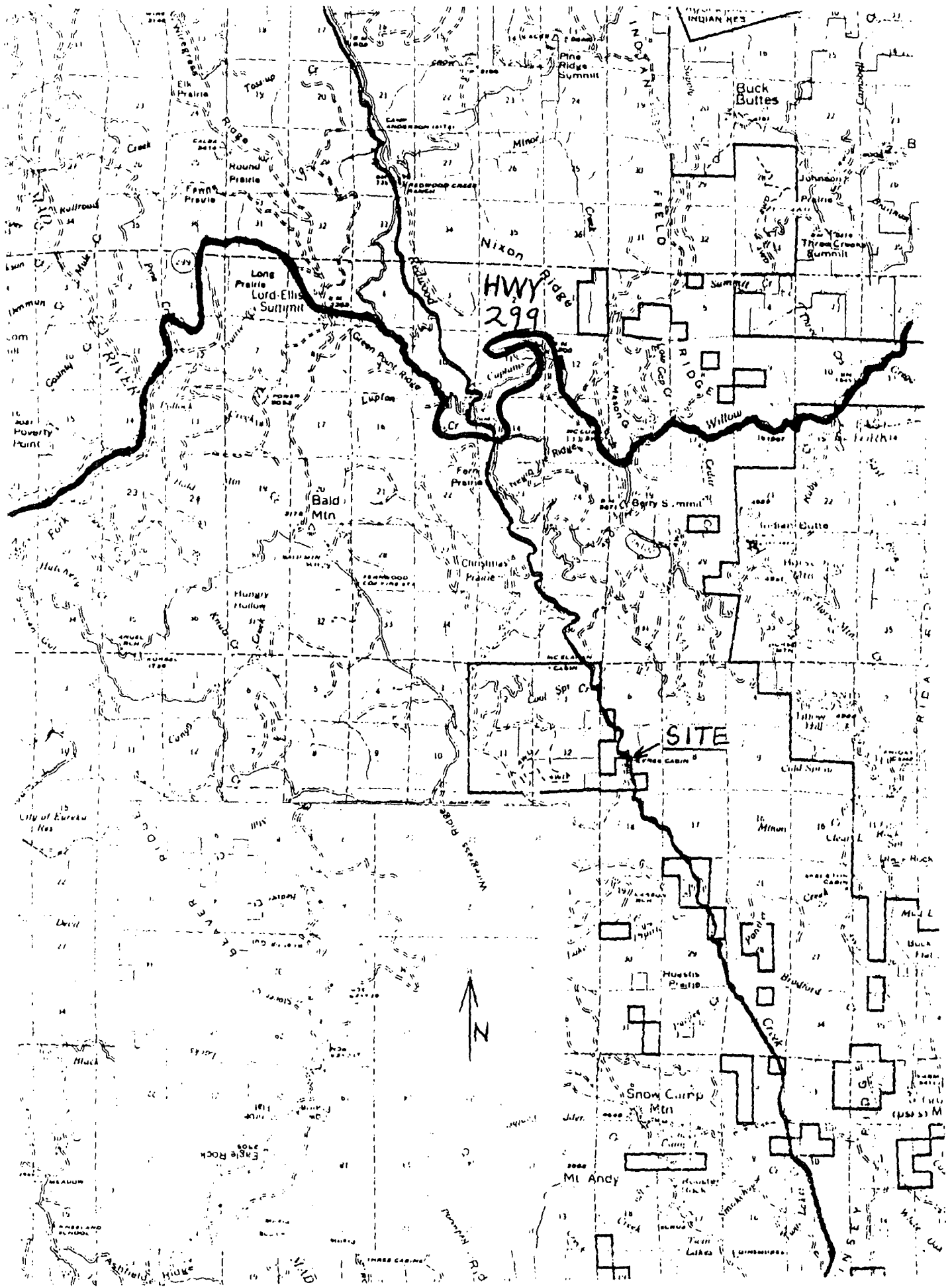
Two other cover structure projects have been completed upstream and downstream of this project. Most of the deepest pools and areas lacking habitat complexity have been improved on a two mile reach of upper Redwood creek on Mr. Massei's property.

Procedure: Trees felled from the slopes adjacent to the project site were used for cover crown type LWD structures. Seven trees from 26 inches to 42 inches in diameter, one hundred feet tall were used. Care was taken to only use trees from up slope, or from dense clumps, to prevent "daylighting" the creek.

Prior to final placement of the structures, pools were excavated with a backhoe at three of the five locations. All of the sites have existing large boulders or bedrock on the banks to which the structures are anchored to. At site #1 and site # 4 boulders were "podded" together with Hilti anchored cable to create large weighted masses. The structures were built to withstand floating, or any movement during 6000+ CFS flows.

With exception of Site # 4, all of the trees were left full length. The trees were moved in to various configurations angling down from the banks to form "digger logs". The tree tops plunge down into the pools and the trunks rest on boulders, bedrock, or are anchored to trees.

The rock to log anchors incorporated 3/4 inch cable attached to 1 inch threaded rebar secured through drilled holes in the logs. Two of the structures are anchored to stumps with 3/4 inch cable "leashes" and then to boulders or bedrock next to the wetted channel with Hilti anchored cable and threaded rebar anchors.



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