

## **Watershed Analysis for Mendocino Redwood Company's Ownership in the Gualala River Watershed**

### **INTRODUCTION**

This report presents the results of a watershed analysis performed by Mendocino Redwood Company (MRC) on their ownership in the Gualala River watershed. The MRC ownership in the Gualala River watershed is considered the Gualala watershed analysis unit (WAU). This section presents an overview of the watershed evaluation and process followed by MRC. More specific information is found in the individual modules of this report.

### **Mendocino Redwood Company's Approach to Watershed Analysis**

MRC is conducting watershed analysis on watersheds within its ownership in Northern California. The criteria for a watershed to be selected for analysis are: 1) impaired waterbodies pursuant to the Clean Water Act Section 303(d), and 2) key fish populations and 3) forestry operation-related concerns.

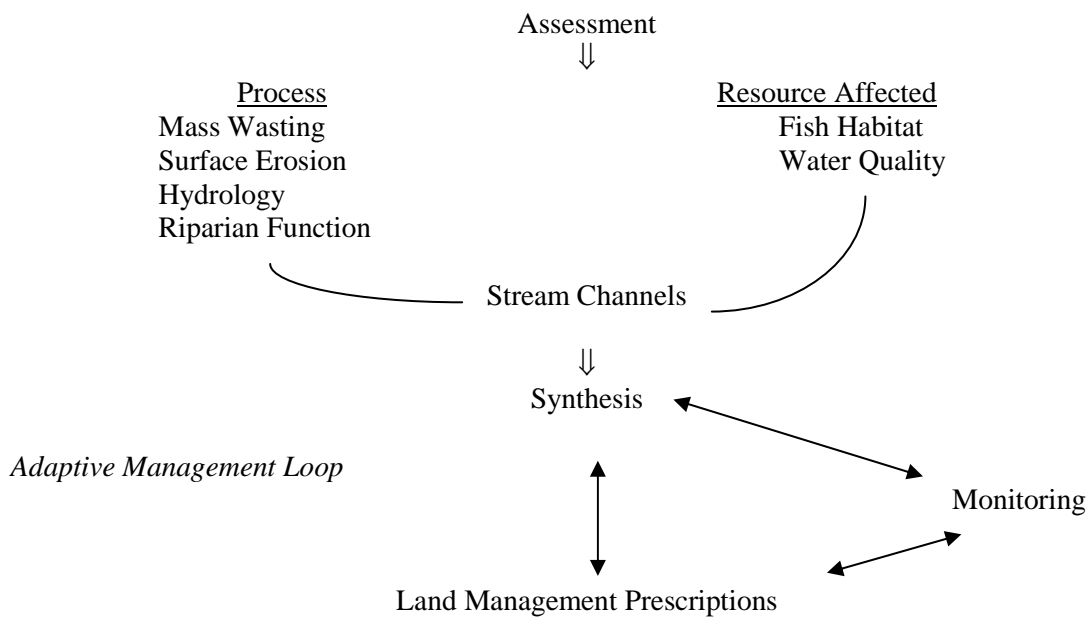
The Gualala River is on the 303(d) list as sediment impaired and a total maximum daily load (TMDL) will be developed for sediment reduction in the river. The Gualala River and its tributaries support populations of coho salmon and steelhead trout, two fisheries of concern in northern California. For this reason MRC conducted a watershed analysis to assist in their efforts to reduce non-point source pollution, evaluate current and past land management practices and establish a baseline for monitoring of watershed conditions over time. The watershed analysis will also be used to identify needs for site-specific management planning in the watershed to reduce impacts to aquatic resources and potentially to improve fish and stream habitat conditions.

The watershed analysis of the Gualala River WAU was conducted following modified guidelines from the Standard Methodology for Conducting Watershed Analysis (Version 4.0, Washington Forest Practices Board). Some variations of the methods in this manual were performed when it was determined that the methodology better served the purpose of this assessment. The watershed analysis process is not a regulatory requirement in the state of California. However, MRC is using this process to address cumulative effects from forest practices and provide baseline information of watershed conditions for aquatic habitat and water quality for their ownership.

MRC's approach to the Gualala River watershed analysis was to perform resource assessments of mass wasting, surface and point source erosion (roads/skid trails), hydrology, fish habitat, riparian function and stream channel condition. Mass wasting, riparian function and surface and point source erosion modules address watershed hillslope hazards. The physical processes associated with the hillslope hazards are described in the module reports. The vulnerability of aquatic resources is addressed by the fish habitat and stream channel condition modules. The results of

the resource assessments are synthesized and reported in a causal mechanism report (Figure 1). A causal mechanism report is produced for hillslope hazards that has affected or has the potential to adversely affect aquatic resources and need site-specific protections. A prescription is developed to address the issues and processes identified in each causal mechanism report. Prescriptions are only identified where land management actions will deviate from MRC management policies. Finally, monitoring is suggested to determine the efficacy of the prescriptions to protect sensitive aquatic resources. The monitoring will provide the feedback for MRC's adaptive management approach to resource conservation.

Figure 1. Watershed Analysis Overview



## Assessment Overview

This watershed analysis was produced from a combination of field observations performed during the summer of 2000, aerial photograph interpretation, and use of existing analysis on the Gualala WAU.

Existing data or analysis used in this watershed analysis included: Louisiana-Pacific's (L-P) Coastal Mendocino Sustained Yield Plan, old Fish and Game Reports on large woody debris removal and monitoring data collected by L-P. These information sources are cited in each module as they are used.

Aerial photograph interpretation was performed using available aerial photographs for the recent time period. The delineation of time periods for analysis was based on the available aerial photographs. The aerial photographs used are described below.

<u>Aerial Photo Year</u>	<u>Scale</u>	<u>Photo Source</u>
1961	1:62500	Sonoma County
1971	1:24000	Sonoma County
1978	1:15840	Mendocino Redwood Co.
1980	1:24000	Sonoma County
1980	1:12000	Mendocino Redwood Co.
1987	1:12000	Mendocino Redwood Co.
1990	1:41760	Sonoma County
1996	1:12000	Mendocino Redwood Co.
2000	1:13000	Mendocino Redwood Co.

The synthesis of the field observations, aerial photo interpretation and existing analysis on the WAU constitutes the resource assessment modules in this report.

## Gualala River Watershed Analysis Unit Overview

### *Physical Characteristics*

The Gualala River WAU is located in the California Coast Range and drains into the Pacific Ocean in western Sonoma County, California. The outlet of the Gualala River is the boundary line between Mendocino and Sonoma Counties.

The Gualala River watershed encompasses approximately 42,126 acres. The MRC ownership is within 6 different planning watersheds in the Gualala watershed as delineated by the California Water Agency. MRC owns approximately 19 percent of the land in the Gualala River watershed (see Base Map, Gualala River Watershed Map and Table 1). The basin's elevations range from sea level to 2,250 feet. Rainfall is seasonal in this region, with most of the rain (approximately 52-68 inches/year, Table 1) occurring between October and May.

**Table 1.** Selected Physical Characteristics of Planning Watersheds for the Gualala River Watershed Analysis Unit.

<b>Planning Watershed</b>	<b>Planning Watershed Area (ac)</b>	<b>MRC Owned Area (ac)</b>	<b>MRC Owned Percent</b>	<b>Mean Annual Precipitation</b>
Robinson Creek	8,787	549	6%	60
Doty Creek	4,627	396	9%	52
Tobacco Creek	8,058	2,335	29%	64
Haupt Creek	6,042	614	10%	59
Flat Ridge Creek	7,034	883	13%	68
Annapolis	7,578	3,154	42%	55
<b><i>Gualala River WAU Total</i></b>	-	<b><i>7,931</i></b>	-	-

### ***Fisheries***

The anadromous fish species inhabiting the Gualala River WAU are steelhead trout (*Oncorhynchus mykiss*) coho salmon (*O. kisutch*) and the Pacific lamprey (*Lampetra tridentata*). Other non-salmonid species include sculpin (*Cottus* spp.), three-spine stickleback (*Gasterosteus aculeatus*), California roach (*Lavina symmetricus*), and the Sacramento sucker (*Castomus occidentalis*).

### **Literature Cited**

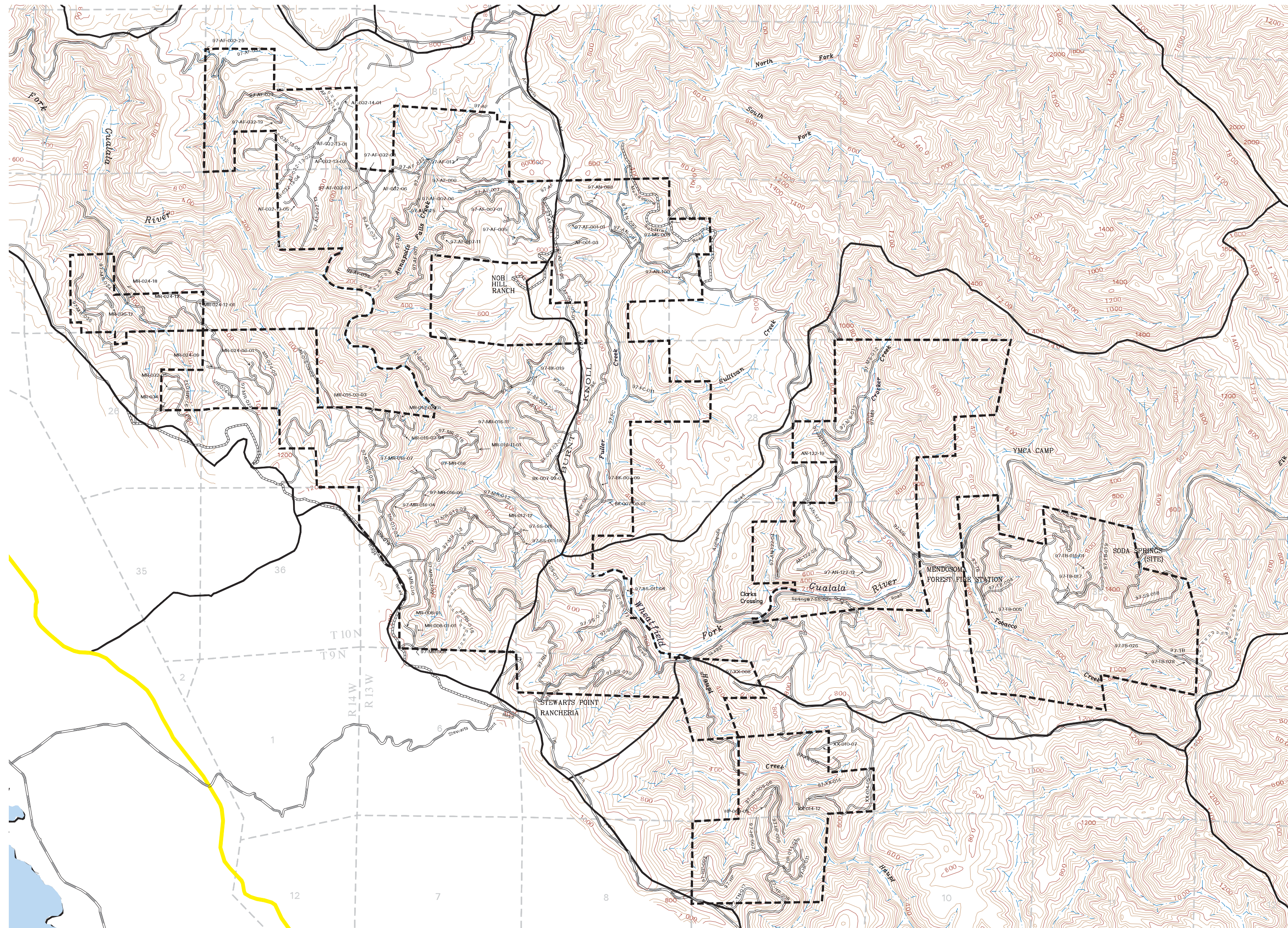
Louisiana-Pacific Corporation. 1997. Sustained Yield Plan for Coastal Mendocino.

Washington Forest Practice Board. 1995. Standard methodology for conducting watershed analysis. Version 3.0. WA-DNR Seattle, WA.



# Gualala River Watershed Analysis Unit

## Base Map



- MRC Ownership
  - Planning Watershed Boundary
  - Gualala River Watershed Boundary
- Transportation**
- Paved Road
  - Rocked Road
  - Native Road
  - Jeep Trail
- Flow Class**
- Class I
  - Class II
  - Class III
- Topography**
- Index Contour (200' interval)
  - Regular Contour (40' interval)

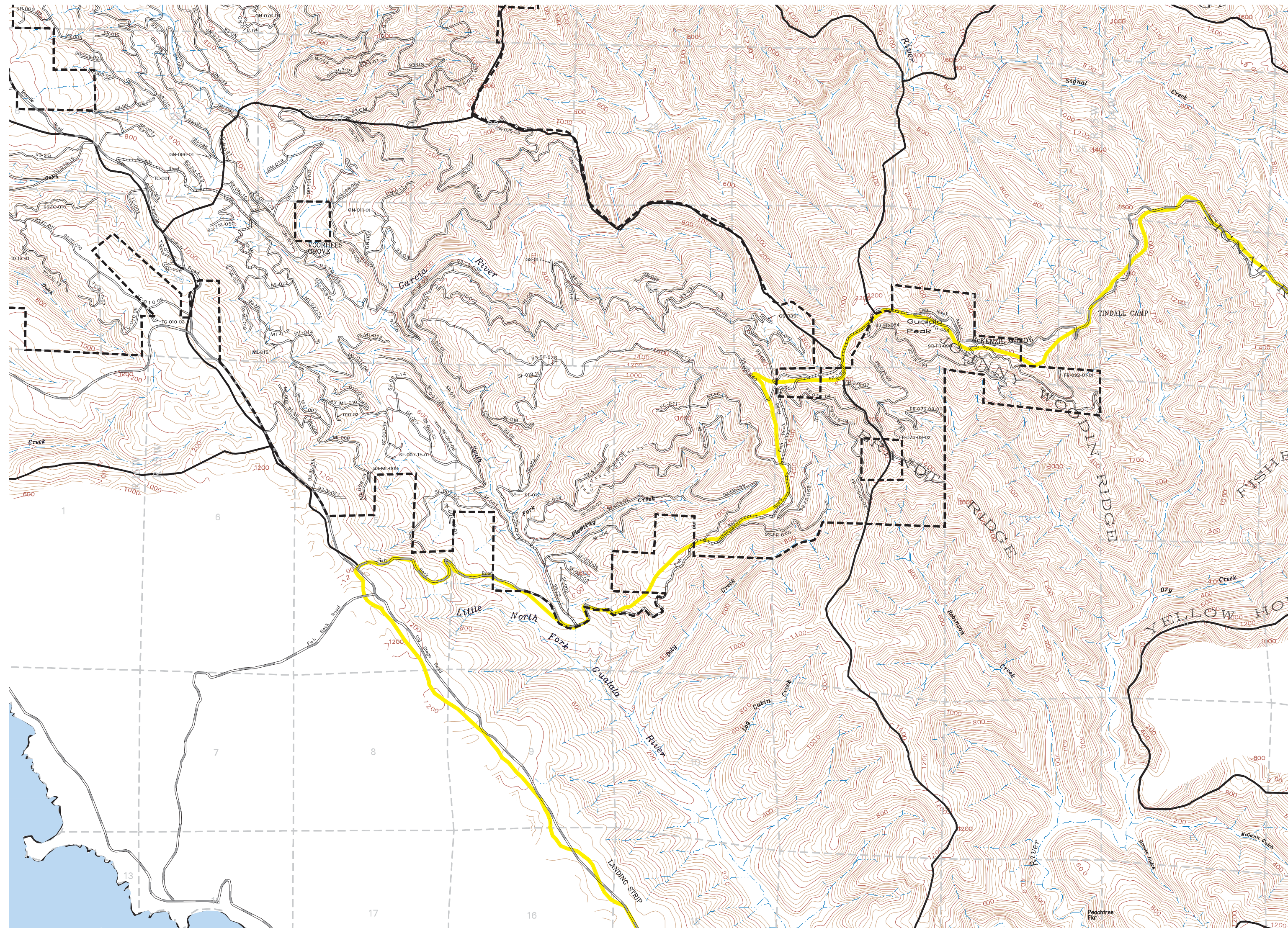
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# Gualala River Watershed Analysis Unit

## Base Map



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Sheet 2

