2. TRINIDAD-WESTHAVEN WATERSHED REGIONAL DESCRIPTION

The purpose of Chapter 2 is to describe the general characteristics and existing environmental conditions found in the planning area. A detailed watershed assessment is available as a separate document.

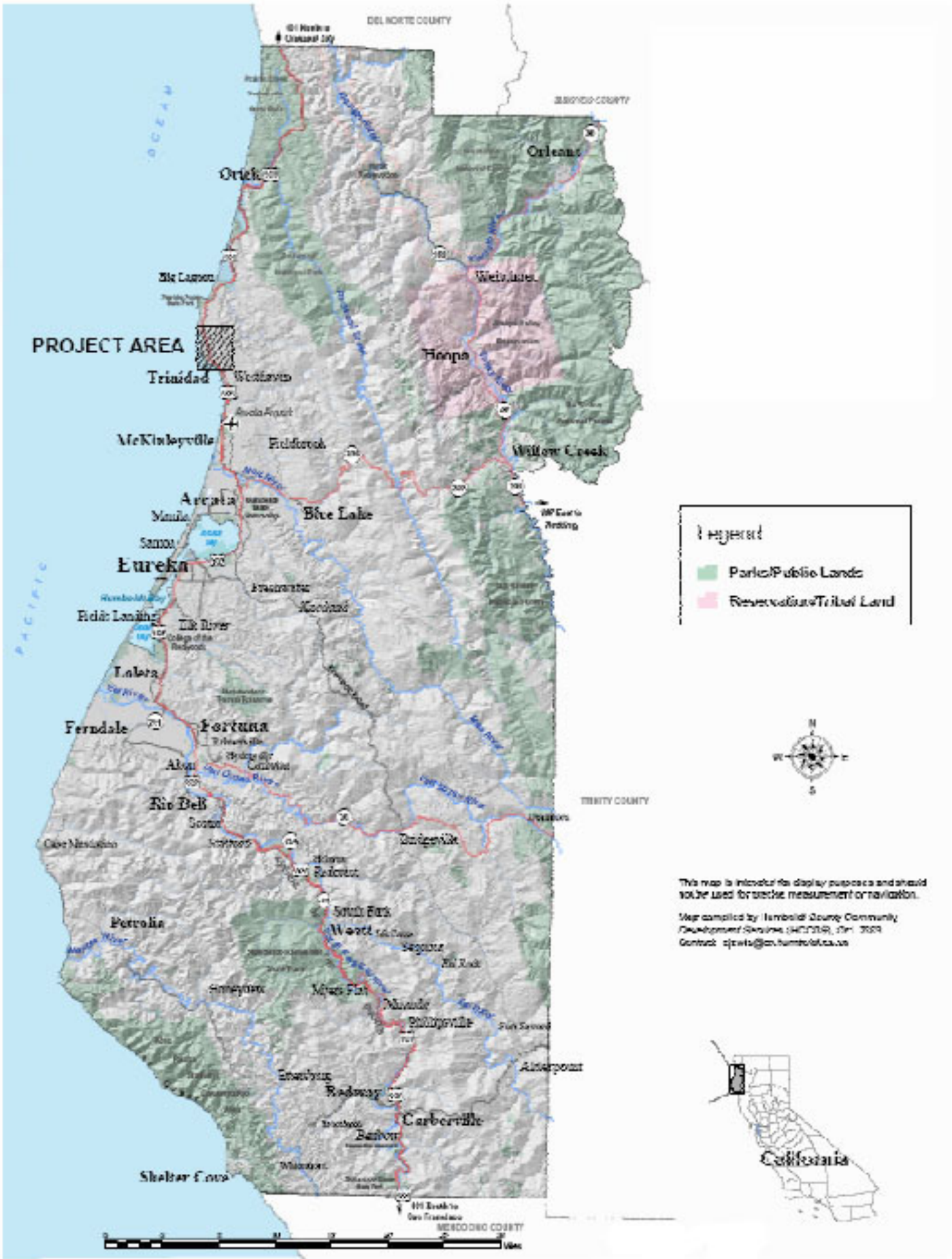
2-1 Suitability for Integrated Coastal Watershed Management

The Trinidad-Westhaven region is located approximately 18 miles north of Humboldt Bay in Humboldt County, California (Figure 1). The planning area encompasses Trinidad Bay and its major tributary watersheds. This planning area was selected because it contains the tributary watersheds that have the potential for greatest impact on water quality in the Trinidad Head Area of Special Biological Significance (ASBS).

The coastline in this region is one of the most beautiful in California, known for its rugged, dramatic appearance and abundance of offshore rocks providing habitat for seabirds and marine mammals. All rocks located within 12 nautical miles of the coastline are protected as part of the California Coastal National Monument (CCNM). Trinidad has been designated by the Bureau of Land Management as a gateway community for the CCNM, recognizing the outstanding scenic values of the area. The State Water Resources Control Board has designated Trinidad Head as an ASBS, and the multi-agency Statewide Critical Coastal Areas Committee has designated Trinidad Head as a Pilot Critical Coastal Area (CCA). The State's CCA program promotes a collaborative approach to implementing nonpoint source management measures to improve water quality in critical coastal watersheds. Trinidad State Beach and Luffenholtz Beach, both located in the planning area, have recently been listed as impaired under Section 303(d) of the federal Clean Water Act (North Coast Regional Water Quality Control Board 2007). Both state and federal regulatory mandates thus point to water quality and resource management as important considerations for the region. Wildlife habitat values are also an important factor as the region is home to an array of terrestrial, aquatic and marine species. Protected wildlife species found in the area include steelhead, Chinook salmon, northern spotted owl, Steller sea lion, marbled murrelet, and others.

Watershed management is also important for human communities in the Trinidad-Westhaven area. Over 1,000 local residents obtain domestic water from Luffenholtz Creek or from springs and groundwater aquifers, resources that are vulnerable to pollution from sedimentation and septic systems. Luffenholtz Creek has been designated by the County of Humboldt as a critical water supply, highlighting the necessity of protecting water quality in this stream. Surface waters also provide recreational values at local beaches, many of which are served by networks of walking and bicycle trails. These beaches attract many tourists to the Trinidad area during the summer months. Water quality and natural resource protection are essential to preserving the region's recreational, economic, cultural and aesthetic values.

Fig. 1: Project Vicinity Map



Past and present human activities within the region have affected water quality and habitats in Trinidad Bay and its tributaries, resulting in a need for comprehensive watershed management. These activities include residential development, forestry, mining, recreation, road construction, and septic and waste disposal. Nonpoint source pollution is evidenced by high occurrences of bacteria, nutrients and sediment in local surface waters. On-site wastewater treatment systems (OWTS) are a probable source of bacterial pollution, resulting in a need for wastewater management measures. Nutrient pollution is a possible result of OWTS as well as the use of fertilizers, detergents and other substances that may enter surface waters. Adverse impacts on water quality also occur as a result of excess sediment being delivered to local streams. Sedimentation results primarily from road construction, residential development and logging practices. Stormwater runoff occurs as a result of impervious surfaces such as roads and roofs, and transports nutrients and other pollutants from land use activities into nearby water bodies.

Concerns about these three overlapping components of nonpoint source pollution—wastewater, stormwater and sediment—make the Trinidad-Westhaven region ideal for integrated watershed management planning. Other traits that make the area well suited for integrated planning include stakeholder interest in the ASBS, recreation and public access, water supply protection, and ecosystem restoration. This ICWM project marks the beginning of a new era in that it will be the first time that communities in the Trinidad-Westhaven region have come together to solve their collective water management problems in an effective and collaborative manner. Up to the present time, attempts to solve these problems as individual entities have had only limited success and have left these communities with vulnerable water supplies. The ICWMP considers not only the need to protect municipal water supplies for Trinidad and Westhaven, but also the needs of small water systems on local creeks that are influenced by sediment and OWTS pollution. Dealing with plateau-wide pollution problems and solutions will benefit all disadvantaged residents on the plateau. A collaborative effort is required to address water issues in the area because political boundaries do not adequately represent the planning areas that need to be addressed, and many of the issues that will be addressed by the ICWMP are watershed-wide.

2-2 Boundaries

The general planning area for the ICWMP includes nine watersheds, from the southern boundary of the Two Creeks watershed to the northern boundary of the Mill Creek watershed (Figure 2). This planning area was selected because it contains the tributary watersheds that have the greatest potential impact on water quality in Trinidad Bay and offshore of Trinidad Head, where the kelp beds are located. Luffenholtz Creek is the longest stream and occupies the largest watershed in the planning area. Two Creeks is located about one half-mile south of Luffenholtz Creek and includes about half of the community of Westhaven. Although the southernmost watersheds do not discharge directly into the Trinidad ASBS, many residents of these watersheds are affected by water quality issues throughout the planning area.

The watersheds comprising the planning area are listed and briefly characterized below:

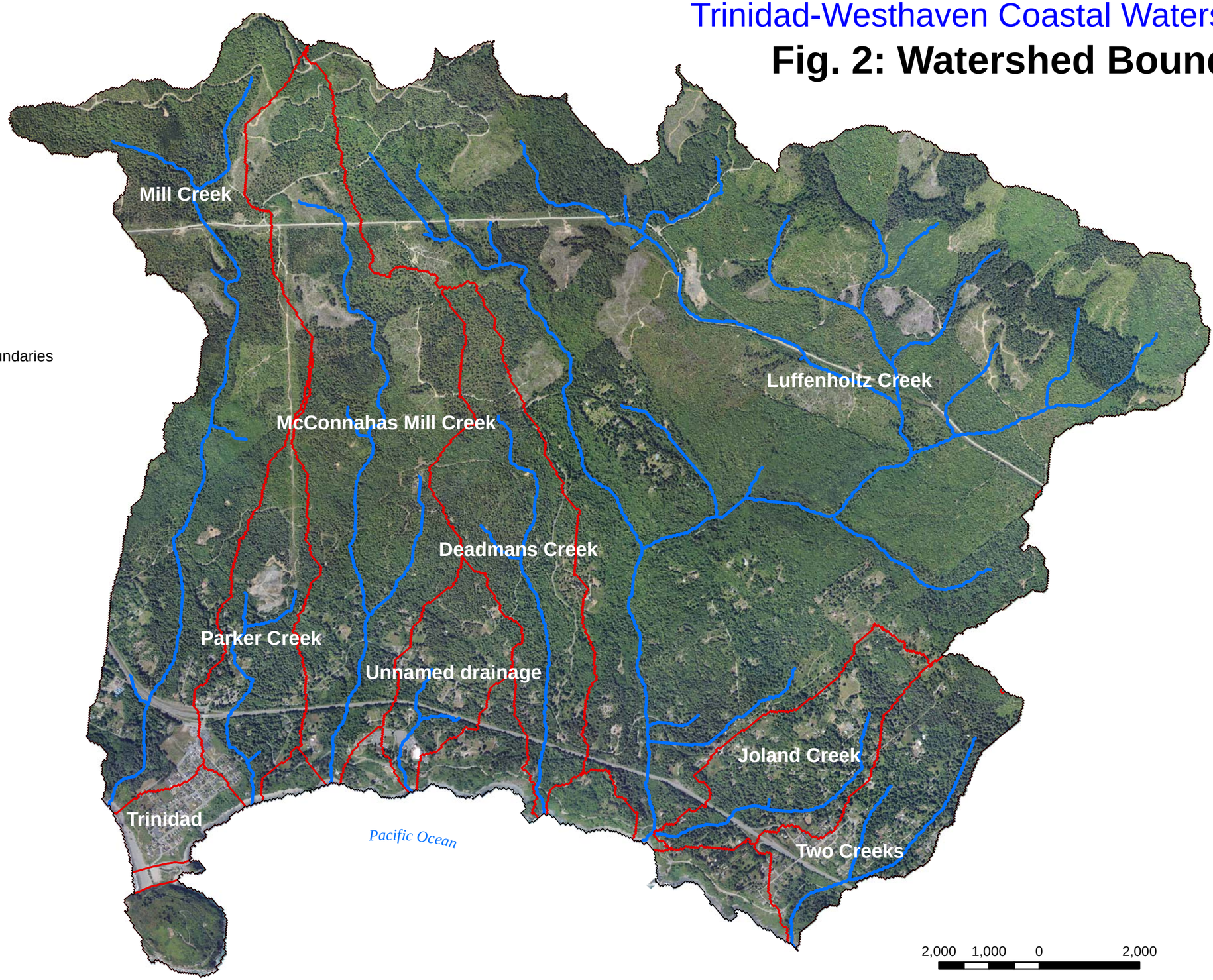
- **Mill Creek** – encompasses about 856 acres of residential and timber land; drains into the Pacific Ocean on the north side of Trinidad Head

- **City of Trinidad** – encompasses about 144 acres of residential, commercial and open-space land; drains into Trinidad Bay
- **Parker Creek** – encompasses about 235 acres of residential and timber land; drains into Trinidad Bay
- **McConnahas Mill Creek** – encompasses about 745 acres of residential and timber land; drains to the Pacific Ocean south of Trinidad Bay
- **Unnamed drainage** – encompasses about 150 acres of residential land; drains to the Pacific Ocean south of Trinidad Bay
- **Deadman's Creek** – encompasses about 353 acres of residential and timber land; drains to the Pacific Ocean south of Trinidad Bay
- **Luffenholtz Creek** – encompasses about 3,163 acres of residential and timber land, including about half of the Westhaven community; drains into the Pacific Ocean at Luffenholtz Beach, south of Trinidad Bay
- **Joland Creek** – encompasses about 234 acres of residential land in Westhaven; drains into Luffenholtz Creek near Luffenholtz Beach, but has been treated as a separate watershed for analysis purposes
- **Two Creek*** – encompasses about 267 acres of residential land in Westhaven; drains into the Pacific Ocean south of Luffenholtz Beach (*included only in wastewater and road assessments)

The study area covers approximately 6,358 acres (9.9 square miles). The City of Trinidad, the communities of Westhaven and Moonstone, and the Trinidad Rancheria are the main urban areas in the region. Major jurisdictional boundaries, including the Coastal Zone boundary, are shown in Figure 3. Throughout this document the word *watershed* is frequently used to describe the planning area as a whole, but it is also used to refer to each of the subwatersheds listed above.

Trinidad-Westhaven Coastal Watershed Project

Fig. 2: Watershed Boundaries



Legend

- Watershed Boundaries
- Streams

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February 2008 (aerial photo: 2006)

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Tel: (707) 822-5785
Fax: (707) 822-5786

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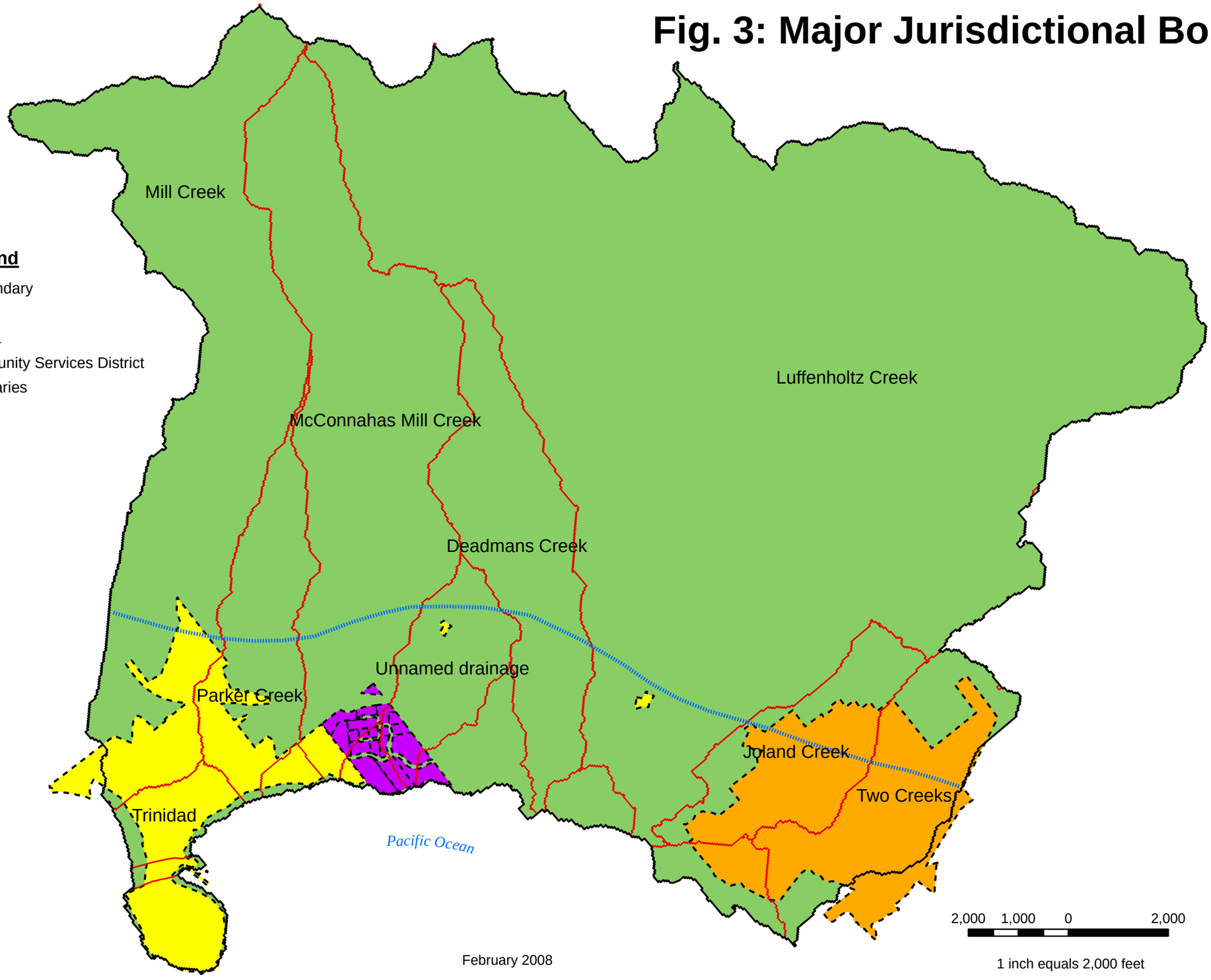
Fig. 3: Major Jurisdictional Boundaries



Legend

- Coastal Zone Boundary
- City of Trinidad
- Trinidad Rancheria
- Westhaven Community Services District
- Watershed Boundaries
- Study Area

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2-3 Critical Coastal Areas and ASBS

The kelp beds of Trinidad Head represent a State-identified Critical Coastal Area (CCA) and Area of Special Biological Significance (ASBS). The CCA program, part of the State's Nonpoint Source Plan, is a non-regulatory planning tool to coordinate the efforts of multiple agencies and stakeholders, to ensure that effective management measures are implemented to protect or restore coastal water quality in CCAs. The ASBS designation is intended to afford special protection to marine life through prohibition of waste discharges within ASBS areas. In January 2005, ASBS areas were redesignated as a subset of State Water Quality Protection Areas (SWQPA), which require special protection. Section 36700(f) of the Public Resources Code defines a SWQPA as "a nonterrestrial marine or estuarine area designated to protect marine species or biological communities from an undesirable alteration of natural water quality, including but not limited to, areas of special biological significance."

Trinidad Bay is located immediately to the east of Trinidad Head. Rock outcroppings help to shield the bay from strong winds and waves, providing a safe harbor for recreational and commercial fishing vessels. Crab and salmon fishing are especially popular and provide an economic base for the City of Trinidad. Offshore rocks provide haul-out areas for harbor seals and sea lions and roosting areas for marine birds. Steep coastal bluffs, hiking trails, beaches and a pier provide sightseeing and recreational values.

In 1974, the State Water Resources Control Board (SWRCB) designated approximately 2.5 square miles of ocean to the west and east of Trinidad Head as an ASBS (Figure 4). Water quality is of special concern in this area due to the presence of dense beds of bull kelp and other wildlife habitat. The 2005 California Ocean Plan places limits on bacteria, nutrients, and other pollutants that may occur within ocean waters, including all kelp beds. About 0.5 square miles of the ASBS are encompassed by Trinidad Bay, which is primarily influenced by runoff and discharge from the Parker Creek and City of Trinidad watersheds. The westerly portion of the ASBS is primarily affected by Mill Creek. No major water diversions occur on these creeks, although small dams and pumps provide domestic water supplies to residents outside municipal service areas.

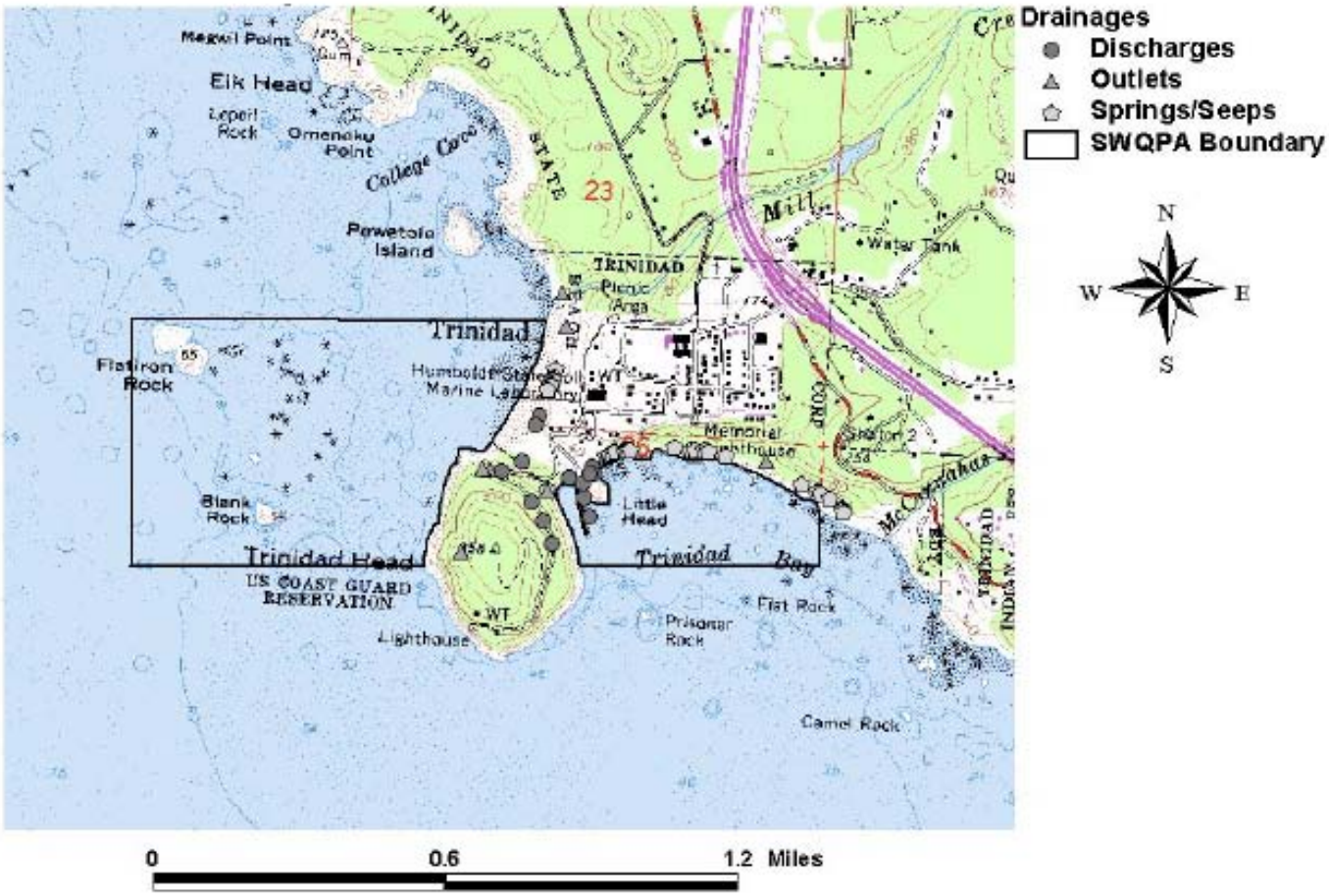

Fig. 4: Location of Trinidad Head Area of Special Biological Significance (State Water Quality Protection Area, or SWQPA)

2-4 Land Use and Land Ownership

Overview

Timber production is the dominant land use in the watershed, accounting for 55 percent of the planning area. The majority of timberlands are found in the Luffenholtz Creek, Mill Creek, and McConnahas Mill Creek watersheds. Rural residential uses account for the next highest proportion of land area in the watershed (20 percent). It is worth noting that many parcels classified as "rural residential" are under one acre in size and can still result in significant impacts to the watershed, as discussed below. About 15 percent of land in the planning area is vacant but zoned for residential or commercial uses. It is unknown to what extent these vacant parcels may be currently developed. Land uses that account for less than five percent of the planning area include public facilities, tribal lands, urban and suburban residential, and commercial (City of Trinidad GIS 2007; Humboldt County GIS 2005). See Figures 5 and 6.

Most of the watershed is privately owned, with scattered parcels under State or federal ownership. Green Diamond Resource Company is the largest landowner in the planning area with several hundred acres of timber holdings in upland areas. The largest federal land holding consists of approximately 53 acres owned by the Trinidad Rancheria, located south of the City of Trinidad. These lands include a large casino as well as some residential areas. Trinidad occupies just over 300 acres in the northwestern part of the watershed. The Westhaven Community Services District encompasses nearly 400 acres and is located at the southern edge of the watershed (City of Trinidad GIS 2007; Humboldt County GIS 2005). Refer to Figure 2 for land ownership.

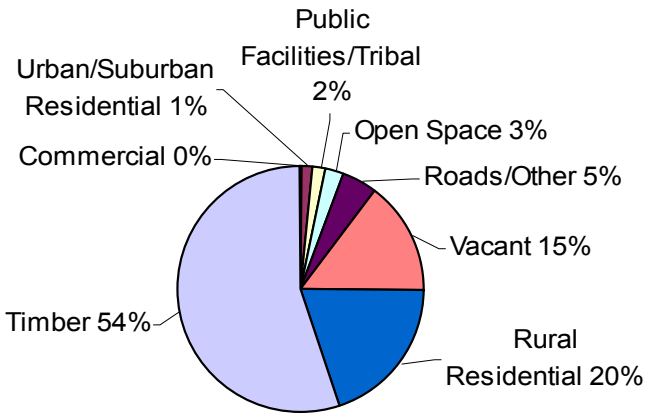

Figure 6. Watershed land use by category (Source: City of Trinidad GIS; Humboldt County GIS)

Historically, the planning area was occupied by the Yurok Tribe. The first European settlement was established at Trinidad in 1850. In its early days the port of Trinidad Bay was used for importing gold mining supplies and exporting lumber and shingles; later it was used as a whaling station. Some gold mining took place along the coast during the Gold Rush, but little gold was discovered and miners soon turned their attention further inland. Fishing and logging operations

were established in the Trinidad area in the late 1800s and they remain viable industries today, although lumber mills no longer operate in the area (Sloan and Rocha 2007).

Cultural Resources

The Tsurai Study Area (TSA), located on a hillside near the southeastern edge of Trinidad (Figure 7), is home to an ancient village site of the Yurok Tribe. This village, known as Tsurai, is unique not only because it is one of the largest Yurok villages and is on the coast, but also due to its location on a cove on a protected bay. Moreover, the language spoken at Tsurai is the most divergent dialect from what Yuroks of other villages spoke. Tsurai and the surrounding landscape are places of great significance to Yurok culture as evident in oral histories, ceremonial activities, and subsistence practices that continue to this day (Sloan and Rocha 2007).

Past archaeological studies have revealed that the village was a permanent settlement, containing multiple levels of human occupation through time. Cultural resources identified within the TSA include a cemetery, traditional trails, sacred trees, house pits, a sweathouse, a Brush Dance area, and a dense archaeological deposit associated with occupation of the village and use of the surrounding coastal and marine resources. Unfortunately, looting of the Tsurai village occurred throughout its history until the 1970s. In 1978, the Tsurai Ancestral Society was formed to protect and maintain the village and burial grounds. In the same year, the California Coastal Conservancy was established. The Conservancy purchased the lands encompassing the Tsurai Study Area and retains a conservation easement, although the TSA was transferred to the City of Trinidad in 1989. The village site is designated a California State Historical Landmark and is included on the California Register of Historic Places. Historical and archaeological resources associated with the village site are not necessarily confined to the TSA boundaries (Sloan and Rocha 2007). Erosion of coastal bluffs on and near the village site is a major concern of the Tribe and the Tsurai Ancestral Society, and may be exacerbated by excessive wastewater leaching and stormwater runoff.

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Fig. 5: Land Use

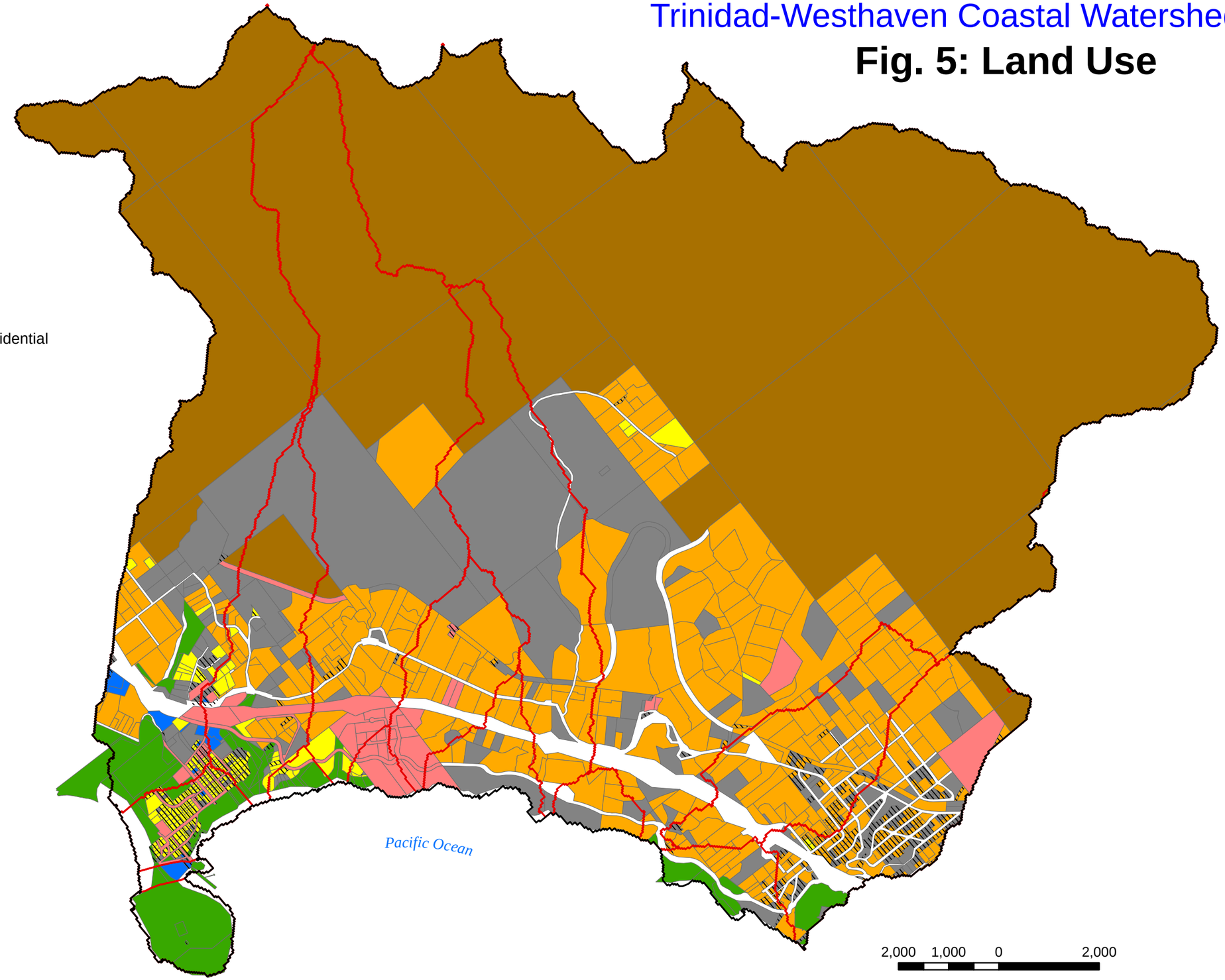
Legend

LAND USE CATEGORIES

- Commercial
- Open Space
- Public/Tribal
- Urban/Suburban Residential
- Rural Residential
- Timber
- Vacant

LOT SIZE

- < 20,000 sq. ft.
- > 20,000 sq. ft.



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Arcata, CA 95521
Tel: (707) 822-5785
Fax: (707) 822-5786

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Fig. 7: Location of Tsurai Study Area

Legend

Tsurai Study Area

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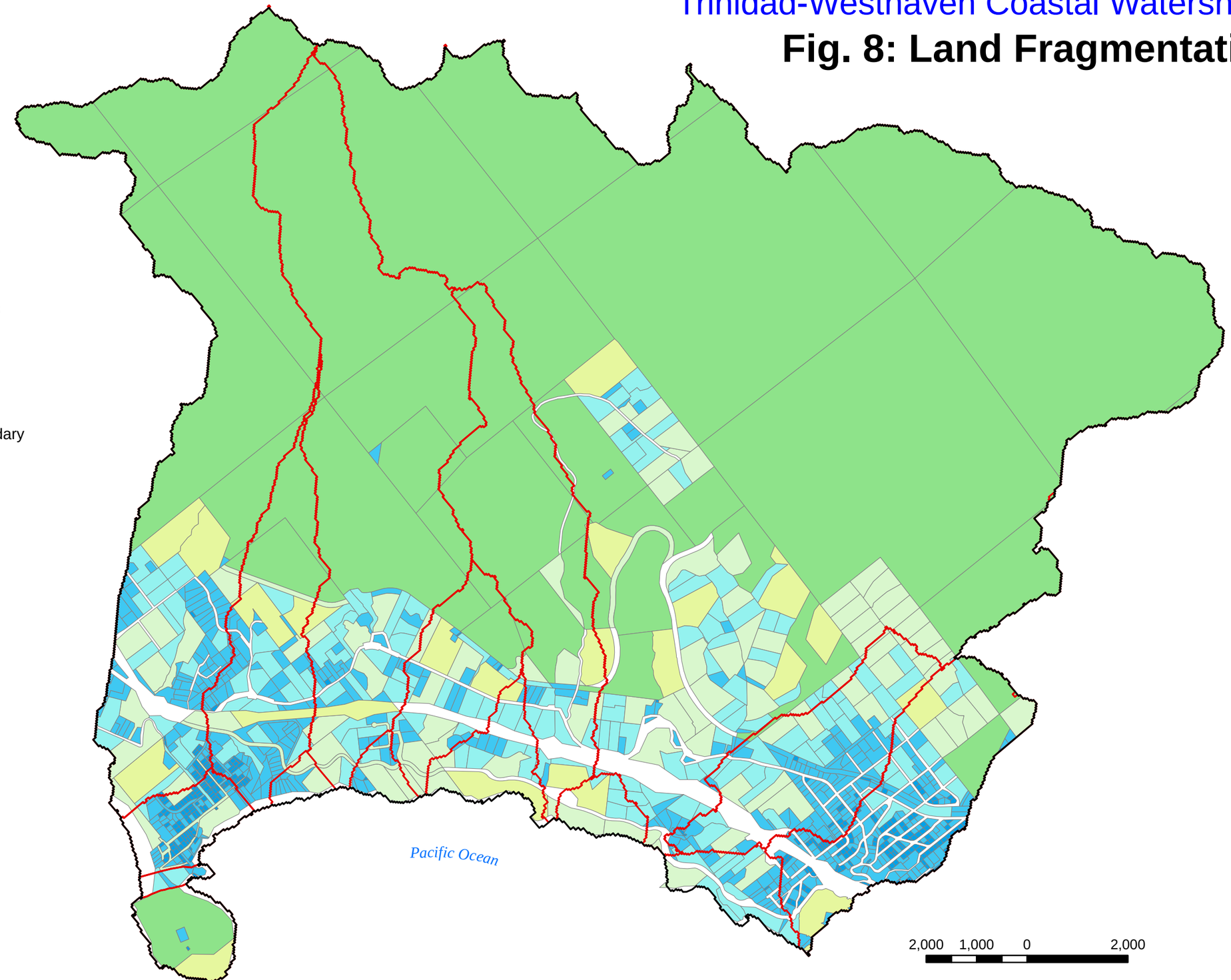
Fig. 8: Land Fragmentation

Legend

LOT SIZE

- < 1/4 acre
- 1/4 acre - 2 acres
- 2 - 5 acres
- 5 - 10 acres
- 10 - 20 acres
- > 20 acres
- Study Area Boundary



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