Trinidad Bay in 2015

A Watershed Perspective

A snapshot of the Trinidad Bay and coastal watersheds with an overview of Trinidad Bay Coastal Watershed Plan progress to date.

In this report:

Trinidad Bay Watershed Council

Working together to improve our watersheds from the hills to the Trinidad Bay

The Trinidad Bay Watershed Council (TBWC) is supported in part through grants awarded by the CA Department of Conservation Watershed Program and the CA State Water Resources Control Board. The contents of this document do not necessarily reflect the views and policies of the State Water Resources Control Board.

A big thank you to Matt Beard for the TBWC Logo artwork and to Streamline Planning for photos.

2 What's so special about Trinidad Bay?

Trinidad Bay is located on the Northern California coast, 300 miles north of San Francisco. This natural, open-water bay is protected from waves and weather by Trinidad Head, the dominant feature of the Bay's coastline.

The Bay is an Area of Special Biological Significance

In 1974, the bull kelp forests (Nereocystis luetkeana) offshore of Trinidad Head were given protected status as the Trinidad Head Area of Special Biological Significance (ASBS), one of 34 such areas designated by the State of California. The State Water Resources Control Board (State Water Boards) describes Areas of Special Biological Significance as "basic building blocks for a sustainable, resilient coastal environment and economy".

The Bay is home to diverse and abundant marine life

This sheltered, open-ocean bay supports diverse marine life including harbor seals, sea lions, river otters, marine birds, fish, invertebrates such as crab and mussels, bull kelp and other algae, and tiny (but very important) marine organisms called plankton.

The Bay and surrounding coastal areas have a rich cultural heritage

The importance of Trinidad Bay to Trinidad area residents, businesses and visitors cannot be overstated. Since time immemorial, Trinidad Bay has been central to the quality of life and livelihoods of the Yurok people, Tsurai village residents and (more recently) settlers living in this marine-oriented community. The Trinidad coast's scenic beauty is a great inspiration to artists and writers, and the area supports a vibrant cultural and economic community life.

The Bay is an essential part of the local economy

Trinidad Bay supports recreational and commercial fishing as well as subsistence harvesting of fish, seaweed and shellfish. The Trinidad coastal areas provide an abundance of recreational opportunities such as surfing, kayaking and other boating activities, sightseeing, hiking, wildlife viewing, diving, and simply enjoying the beach.

Many hospitality businesses, suppliers and services are supported by visitors to the area. Trinidad residents are passionate about maintaining the scenic beauty, health and vitality of the Bay, their community, and their coastal watersheds.

The Bay is a Gateway to the California Coastal National Monument

Our rugged coastline makes Trinidad well suited as the northern gateway to the Bureau of Land Management's (BLM) California Coastal National Monument, covering more than 20,000 offshore rocks, islands, exposed reefs and pinnacles along the 1,100 miles of California's coast.

The Bay supports coastal and marine educational and research activities

The local elementary school, Humboldt State University, Telonicher Marine Laboratory, Central and Northern California Ocean Observing System (CenCOOS), and many others benefit from opportunities provided by Trinidad Bay for educational and marine research activities.

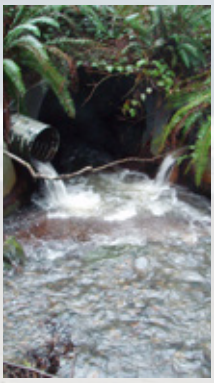
In 2005, following the State's "prohibition of polluted discharge" into the Trinidad Bay ASBS, dedicated community members were joined by local agencies and other Trinidad Bay stakeholders to analyze and address the issues affecting water quality in the region. These watershed partners formed a watershed planning group and worked together from 2006 – 2008 in a collaborative process to develop the Trinidad Westhaven Integrated Coastal Watershed Management Plan to guide future efforts.

Identifying problems and solutions

The Trinidad Westhaven Integrated Coastal Watershed Management Plan (Watershed Plan) identifies water quality problems, outlines practical, community oriented solutions to these problems, and provides information and resources to support efforts in the following areas:

- To improve local water quality and supplies in the Trinidad-Westhaven coastal watersheds
- To respond to regulatory requirements
- To improve human well-being and the ecological health of the region
- To reduce polluted runoff to our creeks, beaches and Trinidad Bay and coastal waters
- To protect the important kelp beds designated as the Trinidad Head Area of Special Biological Significance (ASBS)
- To provide a basis for seeking future grant funding for priority projects

The Watershed Plan is a working document that will be periodically updated in response to new information and shifting priorities. Local stakeholders and community members are committed to the stewardship of their watersheds and protecting the shared resources of the Trinidad Bay ASBS.



Management objectives for the Trinidad-Westhaven planning area were developed based on an analysis of existing environmental conditions, desired conditions, and regulatory requirements. Through detailed wastewater, stormwater, and sediment analyses, a number of key management issues were identified under the general headings of water quality, water supply, stormwater management, watershed management, groundwater management, and ecosystems and habitat.

Many of the priority actions and projects identified in the Watershed Plan have already been accomplished or are well under way.

4 Watershed accomplishments

The Trinidad Bay Watershed Partners have accomplished a number of projects to address the top issues of common concern: pollution from stormwater runoff, failing septic systems, and harmful levels of sediment entering watersheds and Bay. The watershed planning effort has leveraged more than $15 million in funding for priority projects.

Trinidad Rancheria Pier Replacement

The Trinidad Pier Reconstruction was completed in 2012. The project consisted of design, construction, and monitoring funded by state and federal agencies including the State Water Boards, the State Coastal Conservancy, and others. It was difficult to maintain the safety of the old pier and protect water quality due to excessive deterioration of the creosote-treated Douglas fir piles and the pressure treated wood decking. The reconstructed pier is constructed of polymer coated steel pilings, pre-cast concrete decking, and includes a stormwater filtration system to eliminate the leaching of pollutants into the ASBS.

City of Trinidad ASBS Stormwater Management Improvement Project

Construction has been completed on enhancements to the upper area of the City's existing stormwater system to capture, treat, and infiltrate stormwater runoff from most rainfall events. This project, funded by the State Water Boards, significantly reduces stormwater runoff volume and pollutant loading to the Trinidad Bay ASBS, protecting its water quality and the Bay's beneficial use. Post project monitoring will be completed in 2015 to demonstrate project effectiveness in reducing the quantity of pollutants discharged into the ASBS.

City of Trinidad Stormwater Program:

In order to effectively manage the stormwater runoff within the City and prevent the discharge of polluted stormwater into the Trinidad Bay ASBS, the City educates and assists residents, businesses and visitors, to prevent the discharge of pollutants into the watersheds and bay. The City works collaboratively with TBWC, other North Coast cities, counties, and the North Coast Stormwater Coalition to implement regional stormwater education and outreach programs.

City of Trinidad Septic System Replacement and Repair Project

This project, funded by the State Water Boards, addressed the threat of bacterial contamination in creeks and coastal waters from malfunctioning septic systems or onsite wastewater treatment systems (OWTS) by repairing or replacing 23 failing systems rated as high priority for water quality impacts.

City of Trinidad OWTS Operating Permit Program

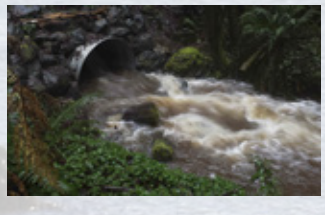
The OWTS Program requires all owners of OWTS in the City of Trinidad to have a valid operating permit and to regularly inspect and maintain their systems. The OWTS Ordinance was adopted in 2010.

Luffenholtz Creek Sediment Reduction Project

In this project, funded by the CA Department of Public Health, the City of Trinidad worked with Green Diamond Resource Company to reduce sediment production from several roads impacting Luffenholtz Creek and the City's Water Plant. Several road segments adjacent to the creek and wetlands were decommissioned after rerouting to newly constructed road segments in order to prevent sediment from being released into the creek. The project was developed by several founding members of the Trinidad Bay Watershed Council.

Water quality in Trinidad Bay and the condition of its watersheds have always been key points for the Watershed Council and the community. Early on, the Watershed Planning process identified some priority issues that the Council follows up with on a regular basis:

Stormwater



When rain falls on hard surfaces, the resulting runoff can become polluted with bacteria, sediment and other chemicals that are harmful to humans and marine organisms. Beginning in 2006, water quality monitoring has shown that discharges from the City's stormwater system, Trinidad Pier, and parking lots for the harbor and Marine Laboratory may be affecting water quality in the Bay. Since completion of the the City's stormwater system and the Trinidad Rancheria Pier Replacement Project, the volume of stormwater discharged into the Bay has decreased by as much as 35-40%.

Sediment

There are often high levels of suspended sediment in Trinidad BaySediment particles often become contaminated with pollutants, affecting not only water clarity but water quality as well, making conditions less favourable for fish and other aquatic organisms. Sediment can have detrimental effects when excessive quantities enter into the waterways from dirt roads, quarries, soil disturbing activities, or natural processes such as wave action eroding the bluffs. Treating human-caused sources of sediment is a priority, but a lack of historical data makes it difficult to determine the Bay's natural sediment levels. The Luffenholtz Creek Sediment Reduction Project eliminated many sources of sediment in the upper watersheds, but much sediment still enters creeks in the Trinidad watersheds from dirt and gravel roads and quarries in the area. Reducing road related sediment pollution remains a priority for the Trinidad Bay Watershed Council.

Toxicity Testing

Marine organisms can be very sensitive to pollutants during some stages of their life cycles. Toxicity testing analyzes whether a water sample is harmful to the germination or growth of a given organism such as kelp, mussels or sea urchins. Toxicity testing of Trinidad Bay water samples in 2014 showed no toxicity, an improvement from 2006 tests.

Harmful Algal Blooms (HABs)

Some types of plankton, known as "HABs," can be harmful to humans and other organisms when ingested. Public Health officials ensure commercial shellfish are safe, and provide warnings to the public against collecting and consuming mussels and other types of shellfish when levels of HABs are high. The levels of HABs vary seasonally and with other ocean and weather conditions. Samples from the Trinidad Bay are routinely analyzed and included in the monthly California Biotoxin Report.

Bacterial Contamination

Creeks, seeps, and the surf zone along the Trinidad coast periodically show high levels of bacteria that exceed water quality standards. Failing septic systems and pet waste are the primary controllable sources of these harmful bacteria. The County Department of Public Health carefully monitors several local beaches for bacteria and issues warnings when there is a danger to our health. The City and County have been working to promote proper maintenance of these systems and to decrease the number of failing septic systems. Stormwater Coalition partners provide educational materials to pet owners about eliminating pollution due to pet waste.

6 Drought, climate change, and other emerging issues

There are a number of issues confronting the Trinidad Bay Watersheds and community that were not directly addressed by the Trinidad Westhaven Integrated Coastal Watershed Management Plan. The Watershed Council works to identify and track emerging issues and encourages watershed partners to address these issues as appropriate. Several of these issues are briefly discussed here.

Drought

In 2015, California is facing its fourth year of drought, the worst in modern times. Even here on the rainy North Coast, our Trinidad Bay Watersheds are in "severe drought" status. This means that waterways, soil moisture, and groundwater levels are impacted by the lack of precipitation.

Drought conditions will continue and water supplies will remain vulnerable until the drought is broken by a sustained period of above-average rainfall. Many local people who get their water from private systems face water shortages in the dry season. Continued drought means less water for the plants and animals in the watersheds and less water for human use. The State of California has adopted mandatory water use restrictions for all Californians with the goal of a 25% overall reduction in consumption. Trinidad and Westhaven CSD have limited all customers to watering two days a week or less for ornamental landscapes or turf, and are promoting water conservation.

Climate Change and Sea-Level Rise

Trinidad's economy relies heavily on its coastal resources and the harbor, which supports both sport and commercial fisheries along with tourism. The Trinidad Harbor area contains critical facilities, including stormwater discharge and treatment, onsite wastewater treatment systems (all of Trinidad is on septic), coastal access, and public parking. This important, low-lying harbor area is vulnerable to sea-level rise. Climate change can have significant impacts on the species composition of our marine habitat – there is evidence of southern marine species gradually moving north into our area. Water supply is also a concern, as Trinidad obtains its water from a small, limited-supply coastal stream two miles south of the City that also supports wildlife such as coastal cutthroat trout. The City of Trinidad is in the process of updating the General Plan to address potential impacts of climate change and sea-level rise.

Other Emerging Issues

Recently, a mysterious condition called "Sea Star Wasting Disease" (SSWD) has decimated populations of starfish along the west coast. Researchers are studying this disease and its impacts on coastal ecology. Mussel populations, normally kept in balance by predation from starfish, have exploded. Recent studies have revealed that Trinidad Bay may also be an ocean acidification hotspot. The effect of ocean acidification on marine organism behaviour is the focus of a research project by HSU and NOAA Fisheries. The Watershed Council looks forward to learning more about Trinidad Bay's emerging issues.

Working together to improve our watersheds from the hills to the Trinidad Bay

As outlined in the Trinidad Bay Watershed Plan, improving our watersheds and finding our 'solution to water pollution' will depend on ongoing actions by a combination of individuals, the Trinidad-Westhaven community, government agencies, and the general public.

Key aspects include:

- Maintaining involvement and input from stakeholders, landowners, agencies and the public
- Periodic review and update of the Integrated Coastal Watershed Management Plan (Watershed Plan) and incorporation of it into the Trinidad General Plan
- Fostering partnerships and coordination with local stakeholders, state and federal agencies, and other local and regional water resource related efforts
- Securing funding and implementing priority projects to reduce pollutants and improve water quality in the Trinidad – Westhaven area

In this report, we have summarized the current status of Trinidad Bay and area watersheds to inform residents and visitors about the ongoing work being done to improve our watersheds and coastal areas. The Trinidad-Westhaven Watershed Plan, developed to guide future planning and decision-making in the region, will help us leverage community resources and promote synergy among government, science, the economy, and residents. This will be key to achieving our ultimate goal of vibrant, healthy watersheds, coastal waters, and communities.

Since its founding in 2008, the Trinidad Bay Watershed Council has been actively promoting implementation of the Watershed Plan, and we thank all our dedicated partners for their efforts.

To learn more about the Trinidad coastal area, visit the Trinidad Bay Watershed Council Website at:

www.trinidadwatersheds.org

Our Trinidad Bay partner websites and the local Trinidad Library are also excellent sources of information.

Trinidad Bay Watershed Council

~Working together to improve our watersheds from the hills to Trinidad Bay~

Web: www.trinidadwatersheds.org | **Email:** info@trinidadwatersheds.org | **Telephone:** (707) 499-6454

The Trinidad Bay Watershed Council is a community based organization dedicated to working together to improve and maintain the watersheds, coastal waters, and communities in the Trinidad and Westhaven area and to making decisions for the benefit of all community members.

TBWC works actively to support the priority actions outlined in the Trinidad-Westhaven Integrated Coastal Watershed Management Plan. TBWC meets quarterly to discuss watershed issues and plan our activities, which include educating the community about how to maintain our healthy Trinidad Bay watersheds and participating in projects and watershed efforts that restore and enhance the Trinidad watersheds and Bay.

Trinidad Bay Watershed Council goals:

- Participate in the development, implementation and evaluation of the Trinidad Bay Integrated Coastal Watershed Management Plan.
- Provide input and participate in the updates of the Humboldt County General Plan and the City of Trinidad General Plan.
- Foster partnerships and coordination with local community members, state and federal agencies, and other local and regional water resource related efforts
- Develop and support opportunities for economic and community development that improve well-being for residents, the community, local businesses and the coastal ecosystem
- Promote stewardship of the land, natural and cultural resources in the Trinidad Bay coastal area through education, outreach, and technical and financial assistance.
- Promote improvement and maintenance of public and private roads in the Trinidad Bay Watersheds through work with the County, the City of Trinidad, landowners, businesses and community members.

Trinidad Bay Coastal Watershed Partners

- City of Trinidad
- Cher-Ae Heights Indian Community of the Trinidad Rancheria
- Bureau of Land Management
- Humboldt State University & Telonicher Marine Lab
- County of Humboldt
- Westhaven Community Services District
- California Coastal Commission
- California State Parks
- Trinidad Coastal Land Trust
- GHD
- Redwood Community Action Agency
- Streamline Planning
- ADH Environmental
- Madrone Enterprises
- Green Diamond Resource Company
- North Coast Stormwater Coalition

Thank You!

Thank you also to our sponsors: