

# Tomales Bay Vessel Management Plan Interactive Map

LOCAL THE ORIGINATOR		ELEVATION		HEIGHT REFERRED TO (datum or soundings, MLLW)	
Mean	Low	Mean	Low	Mean	Low
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295	296	297	298	299	300

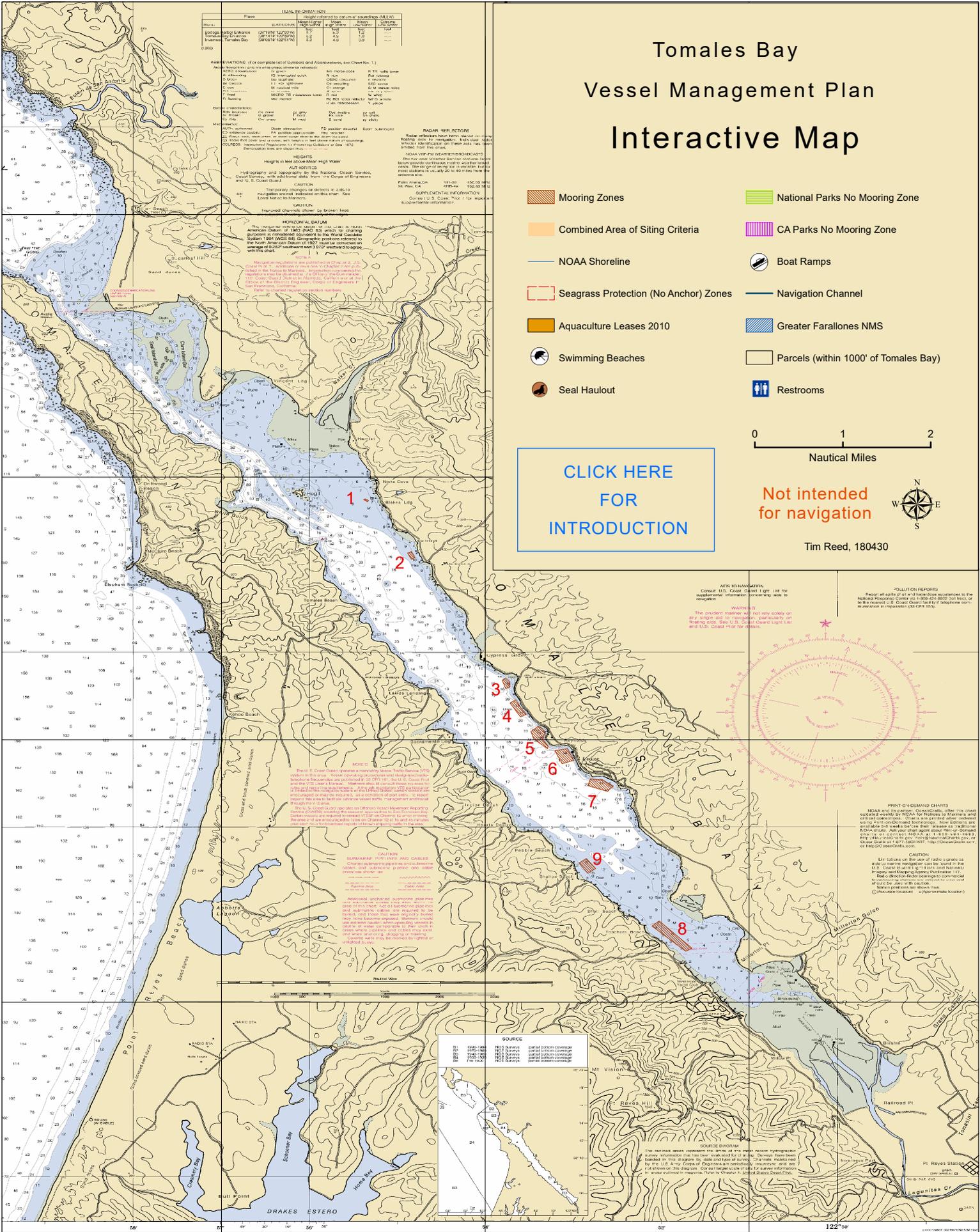
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- Restrooms

CLICK HERE  
FOR  
INTRODUCTION

0 1 2  
Nautical Miles

Not intended  
for navigation

Tim Reed, 180430



## **Tomales Bay Mooring Program Interactive Map**

This layered PDF map was developed by GFNMS staff to provide a geographic context and visual representation of the Tomales Bay Mooring Program criteria and other boating-related resources on the bay. The map enables the viewer to overlay several different map layers and to determine the geographic coordinates of specific locations without the use of specialized software. Explanations of each of the various map layers are provided below. GIS analysis and cartography was performed by Tim Reed of Reed Geographics for Greater Farallones National Marine Sanctuary.

### **General Instructions**

This map document (and these instructions) are designed to work with Adobe Reader Version XI for Windows. (Other versions may behave slightly differently. If you are using a Mac, make sure that the map document does not open in Preview, which is the default.) Most layers are best viewed at about 400-800% zoom, which is equivalent to a map scale of about 1:30,000 depending on the size of your monitor. While it is possible to zoom in up to 6400%, please be aware that the map accuracy does not increase as the zoom factor increases (a known limitation of this digital format).

### **Using Map Layers**

It often works best to first turn off all the layers and then turn on the ones you need. In order to access the list of map layers, move the cursor to the column just off the map document at top left (but still inside the reader window), then right-click one of the icons at the top of this column. Next, select 'Layers' from the drop-down menu and a new window will open up. Lastly, click on the + sign to the left of individual headings to show all of the layer names in that section. You can turn each layer on and off by clicking on the box to the left of each layer name.

### **Geographic Coordinates**

To determine the geographic coordinates of a specific location (or to locate a point with specific coordinates), pull down the 'Tools' menu at the top of the page and select 'Analysis'. Then select 'Geospatial Location Tool'. A window will pop up that shows the approximate coordinates of the crosshair. You can change the format of the coordinates to either decimal degrees or degrees-minutes-seconds by selecting edit/preferences/measuring(geo) and selecting the desired format in the Geographic Location dialog box.

## **Map Layer Descriptions**

### **Mooring Zones**

The Mooring Program requires that all private moorings on Tomales Bay be located within the nine mooring zones depicted on this interactive map, with the exception of littoral (waterfront) property owners and certain preexisting moorings, as detailed in the Tomales Bay Mooring Program Requirements, Policies and Criteria document. The current mooring zones were developed based on stakeholder input then refined based on public comment, recent data (e.g. seagrass bed surveys) and agency feedback. The zones meet all mooring siting criteria in the Mooring Program Policies and Criteria; are located entirely within public submerged lands under jurisdiction of the California State Lands Commission; and are large enough, in combined area, to safely accommodate a number of moored vessels up to the maximum allowed by the Tomales Bay Vessel Management Plan.

## NOAA Shoreline

The shoreline layer in the interactive map is a high-resolution shoreline extracted from NOAA Chart 18643.

## Combined Area of Siting Criteria

The area depicted on this map as “Combined Area of Siting Criteria” represents the cumulative mooring exclusion area based on all the Tomales Bay Mooring Program siting criteria established in the Mooring Program Requirements, Policies and Criteria document. The siting criteria were developed with extensive stakeholder input to achieve the three goals of the plan: 1) Protect public health and improve water quality; 2) Protect habitat and decrease threats to and disturbance of wildlife; and 3) Ensure safe and enjoyable water-related recreation. All moorings on Tomales Bay, with the exception of moorings located within state water bottom lease areas for aquaculture directly associated with aquaculture pursuant to a valid lease, permit, license or other authorization issued by the California Department of Fish and Wildlife, will be required to meet all eight criteria. To identify these areas on this map, polygon coverages were merged and internal boundaries were dissolved using ArcGIS 10.3 to create a single polygon representing Combined Mooring Exclusion Areas.

## Seagrass Protection (No Anchor) Zones

These zones are established as a regulation for Greater Farallones National Marine Sanctuary. There are a total of seven Seagrass Protection (zones, which comprise 22% of the surface area of Tomales Bay. The location and extent of the no-anchoring zones encompass the known seagrass coverage and are based upon seagrass data provided by California Department of Fish and Wildlife from 1992, 2000, 2001 and 2002. The no-anchoring seagrass protection zones include some areas where seagrass coverage is extensive and other areas where coverage is discontinuous and patchy. All zones extend shoreward to the Mean High Water Line. For regulatory language and coordinates, see 15 CFR Section 922.82(a)(16) and Appendix B to Subpart H of Part 922.

## Swimming Beaches

The Tomales Bay Mooring Program prohibits moorings are within 100 feet of swimming beaches. There are three designated swimming areas in Tomales Bay: Shell Beach, Hearts Desire Beach and Chicken Ranch Beach. Vessel moorings cannot be placed within 100 feet of these areas to eliminate the potential for sewage contamination of public swimming areas. The swimming beaches shown on this map were established using point locations provided by the National Park Service, with 100-foot buffer zones added.

## Seagrass Beds

The Tomales Bay Mooring Program prohibits private moorings within designated seagrass beds. To establish the areas designated as seagrass beds on this map, California Department of Fish and Wildlife survey data were used. Seagrass bed extents from a 1992 survey were merged with updates from 2000, 2001, 2002, 2013, 2015 and 2017 to represent the currently designated seagrass beds shown on this map.

## Aquaculture Leases

Moorings directly associated with aquaculture operations and located within state water bottom lease areas for aquaculture, pursuant to a valid lease, permit, license or other authorization, are regulated by the California Departments of Fish and Wildlife and Public Health and not subject to the requirements of the Tomales Bay Mooring Program. The locations and extents of active aquaculture lease areas (as of 2010) shown on this map were provided by the California Department of Fish and Wildlife.

### Seal Haulouts

Since vessels are known to cause disturbance to marine mammals and can negatively affect their resting, breeding and feeding habitats, the Tomales Bay Mooring Program prohibits vessels from mooring within 300 feet of these haul-out areas. This buffer zone is based on the recommended guidelines of the National Marine Fisheries Service. To establish the points shown on this map, National Park Service provided point locations of seal haulouts, and 300-foot radius buffer zones were added.

### National Parks No Mooring Zone

The Tomales Bay Mooring Program prohibits moorings on National Park Service owned tide and submerged lands that are outside of GFNMS jurisdiction. This includes areas off the western shore of the bay extending north from the Northern boundary of Tomales Bay State Park around the tip of Tomales Point to .25 miles offshore. The Point Reyes National Seashore (PRNS) no-mooring zone depicted on this map was clipped from the PRNS administrative boundary file to the area defined by the National Park Service. This area is also identified on other maps as “Area Outside GFNMS Jurisdiction”.

### CA Parks No Mooring Zone

Currently California State Parks policy does not allow moorings within 1000 feet offshore of State Parks property. To establish the area shown on this map, a 1000-foot buffer zone was added to lands owned by CSP where they are adjacent to the shoreline, as defined by California State Parks.

### Greater Farallones NMS

This layer represents the jurisdiction (in Tomales Bay) of Greater Farallones National Marine Sanctuary as defined in 15 CFR 922.

### Parcels

This layer is a subset of the Marin County Parcel Database and includes parcels within 1000 feet of the Tomales Bay shoreline.

### Restrooms

The location of public restrooms in the vicinity of Tomales Bay was provided by the National Park Service.

### Boat Ramps

The Tomales Bay Mooring Program prohibits private vessel moorings within 100-feet of boat launch ramps. To establish the locations shown on this map, the National Park Service provided point locations of boat launching ramps and 100-foot radius buffer zones were added to ensure safe access to the ramp.

### Navigation Channel

The Tomales Bay Mooring Program does not allow private vessel moorings within navigation channels of Tomales Bay. To establish the navigation channel layer shown on this map, the National Park Service provided the navigation channel digital line file—it was converted to a polygon (for inclusion in the combined areas polygon) by adding a 1-foot buffer zone.