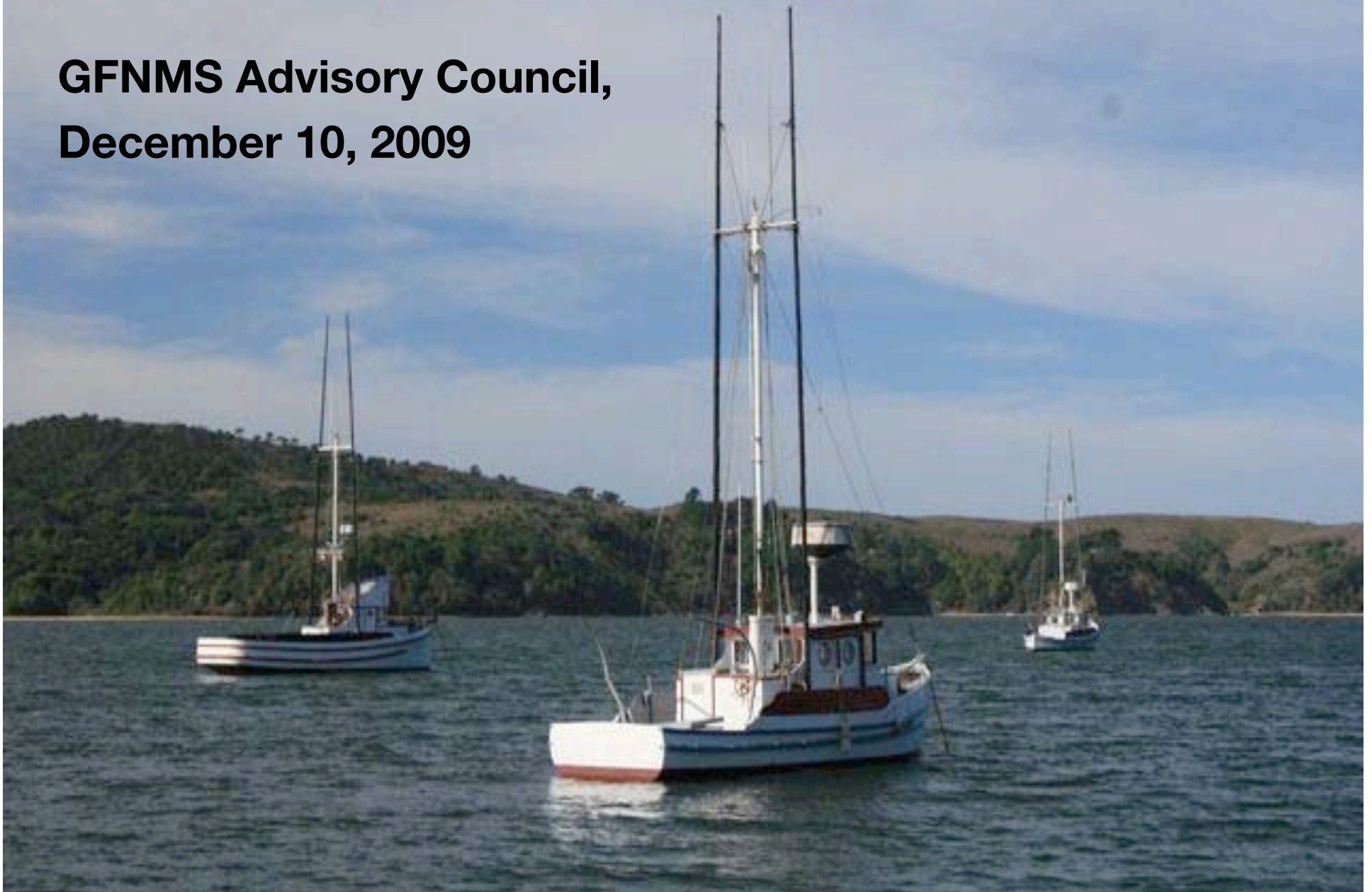


# **Tomales Bay Vessel Management Plan**

**GFNMS Advisory Council,  
December 10, 2009**



# Tomales Bay Vessel Management Plan

The first step in a comprehensive plan for Tomales Bay outlined in the GFNMS Management Plan (page 201). **(RP-12)**



# Vessel Management Goals and Objectives



- Protect public health and improve water quality
- Protect habitat and decrease threats to and disturbance of wildlife
- Ensure safe and enjoyable water-related recreation



# Vessel Management Issues for Working Group

- 1) Mooring Tackle Pilot Test and Selection
- 2) Seagrass Monitoring and Assessment
- 3) -Spacing of Moorings- and Total Number of Moorings
- 4) Mooring Fields
- 5) Mooring Criteria
- 6) Permit Program
- 7) Siting Environmental Services (Sewage and Oily Waste)
- 8) Education and Outreach Program
- 9) Identifying No-Anchor Zones



# Vessel Management Issues for Working Group

**To be Addressed by Advisory Council Today (12/10/09)**

- 1) Mooring Tackle Pilot Test and Selection
- 2) Seagrass Monitoring and Assessment
- 3) Spacing of Moorings and Total Number of Moorings
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# Mooring Permit Program

## Work Completed:

- Working group provided feedback on permitting scenarios.
- Sanctuary Staff met with State Lands commission to determine and communicate permitting process to Working Group.
- Working Group provided feedback on communicating and facilitating the permitting process to the boating community and made recommendations to the Advisory Council for review at today's meeting.

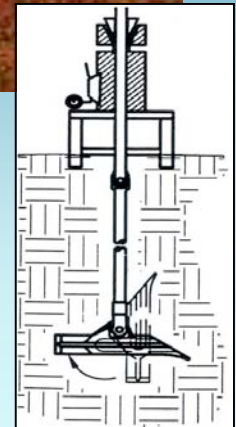
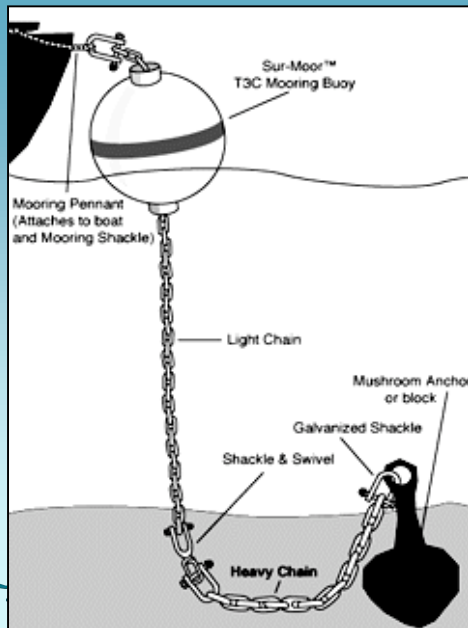
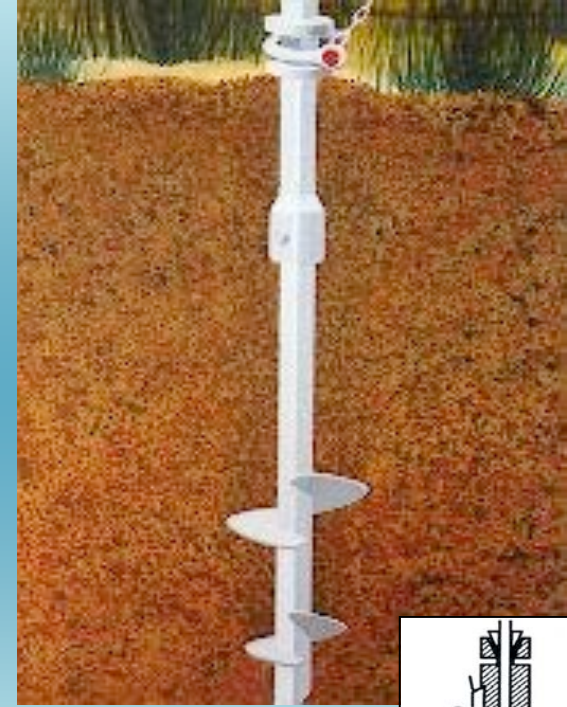
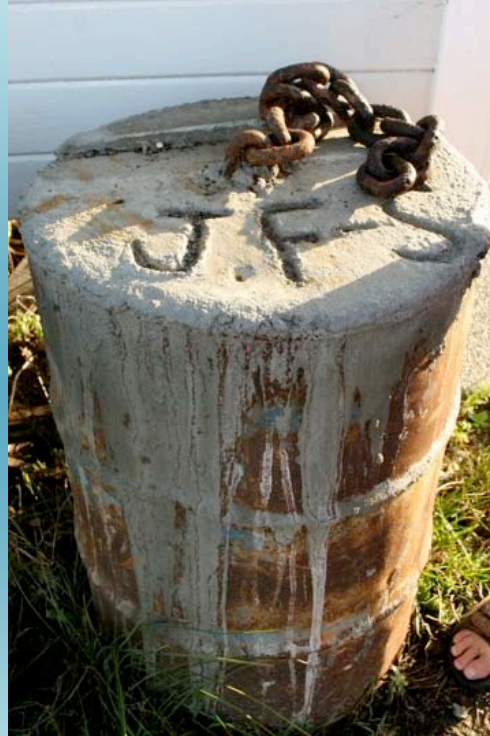
## Rationale:

- To ensure that the permit application process is straightforward and understandable for people to apply.



# Mooring Tackle and Pull Test

## Brief Overview of Mooring Tackle Issue:

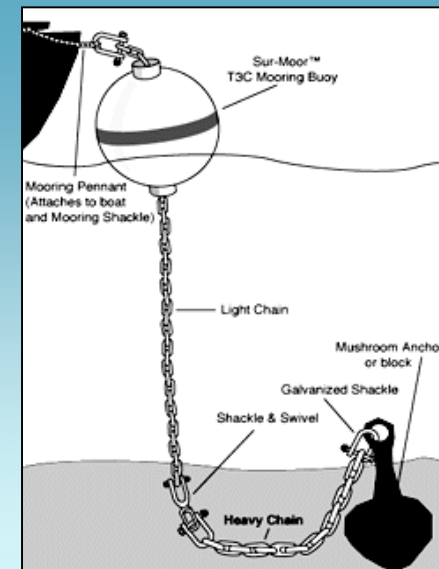


# Mooring Tackle and Pull Test

## Overview of Mooring Tackle:

### Mooring Rodes and Pennants:

- Rodes: Chain versus Elastomeric
- Chain scours seafloor--impacts eelgrass and benthic habitat
- Elastic rode prevents seafloor impacts
- Chain requires more maintenance
- Most mooring failures occur at pennant





# Mooring Tackle: How did we get here?

## May 2008

- Tomales Bay Project Coordinator conducts fact-finding and investigation on the different types of mooring tackle.

## June 2008

- Memo is prepared and distributed to the Working Group outlining the information gained regarding:
  - An overview of common mooring systems and their suitability for use in Tomales Bay;
  - Information about the conditions relevant to installing moorings in Tomales Bay; and
  - A proposal for tackle to be tested for use in Tomales Bay.
- A working group meeting discussion on mooring tackle is conducted with participation of identified experts on mooring technology: David Foster (American Underwater Contractors), John Haalas (NOAA), and Michael Rawlings (US Moorings). Kit Sykit (CalTrans) also joins discussion to provide information on local mooring installation.



# Mooring Tackle: How did we get here?

July 2008

- Working Group follow-up discussion and recommendation made to Advisory Council to conduct a pilot test for the effectiveness of mooring and chain / rode management systems under \$2,000 installed and their environmental impacts using scientific protocol (including new and existing mooring systems).
- Recommendation for testing made by Advisory Council to the Sanctuary:

Recommendation for the mooring tackle test was accepted, although the cost limit was removed as a criterion for the test, but not as a critical variable of the test. In other words, it was recommended that costs would be part of the study, not a determinant of the study. The SAC also believed that the eelgrass expert panel should be consulted on the content of the tackle test study.



# Mooring Tackle: How did we get here?

August 2008- January 2009

- Additional consultations are made with mooring tackle and seagrass experts and mooring field managers to determine the best methods for testing mooring tackle. Key findings:
  - A pull test is an effective and accepted way to test the different types of anchors
  - It was unnecessary to test rodes and pendants because the information on their load limits is known from lab testing
  - Not feasible to measure environmental impacts during pull test
- Based on these finding, a questionnaire was developed and sent to working group to determine the scope and scale of the test including the locations, anchors, test procedures, and the environmental conditions of the bay.



A scope of work is developed based on answers provided, which included methodologies for testing mooring tackle.

# Mooring Tackle: How did we get here?

## March 2009

- An open bidding contract is released. It included a scope of work for conducting the pull test, prescribed a methodology and gave a “worst-case” condition scenario for the bay. Three potential vendors were also provided.

## April 2009

- The contract was awarded by the NOAA West Coast contract office.
- Contractor takes info provided by Sanctuary based on questionnaire. Works with engineer consultant to determine the load estimates (the estimate was conservative and based on a worst case scenario).



# Mooring Tackle and Pull Test Process

- In June 2009, the contractor installed 3 Helix and 3 MANTA RAY mooring anchors in 3 locations in Tomales Bay.
- In August 2009 a pull test was conducted using *RV Mussel Point* (with strain gauge attached to line), of 3 Helix and 3 MANTA RAY mooring anchors, and 2 existing deadweight moorings in a total of three potential mooring zone locations.
- In October 2009 a larger more resistant Helix mooring anchor was installed by contractor, and an additional pull test was conducted using the *RV Mussel Point*.
- In October 2009 a report was issued by the contractor to the Working Group members.



# Mooring Tackle and Pull Test Process

- The Working Group has reviewed the report and discussed recommendations over two meetings in November and December.
- Working Group recommendations will be presented to Advisory Council for action today.



# Mooring Tackle and Pull Test: Results

- Manta Ray should not be considered for use in Tomales Bay due to sediment types
- Helix anchors were effective during the pull tests and can be used in Tomales Bay
- Learned the holding capabilities of two types of existing “standard” Tomales Bay deadweight moorings
- Helix anchors outperformed deadweight anchors during pull tests
- Initial installation costs: Helix Moorings: \$2,365 to \$2,670



# Mooring Tackle and Pull Test: Results

## **Considerations:**

- Sanctuary staff conducted extensive research on a wide variety of mooring systems throughout the United States and the world.
- Sanctuary staff have consulted with 30+ experts including:
  - Biologists and seagrass experts
  - Harbor Managers
  - Government agency representatives (Cal Boating, WA Depts. of Ecology and Fish and Wildlife, CalTrans, CDFG, etc.)
  - Boat insurance company representatives
  - Marine engineer
  - Mooring manufacturers
- GFNMS staff will continue to work in collaboration with the Tomales Bay Interagency Committee and other experts in reviewing mooring technology recommendations.





# Next Steps

## Interagency Committee

- CA State Lands Commission
- SF Water Quality Control Board
- National Park Service
- CA Dept. of Fish and Game
- CA Coastal Commission
- CA Boating and Waterways
- CA State Parks
- Marin County Sheriff's Department
- CA Dept. of Health Services
- NOAA (GFNMS Superintendent)

## Working Group

- Reviews and discusses options and makes recommendations to Sanctuary Advisory Council

## GFNMS Advisory Council

- Reviews and discusses recommendations from the Working Group and advises Superintendent

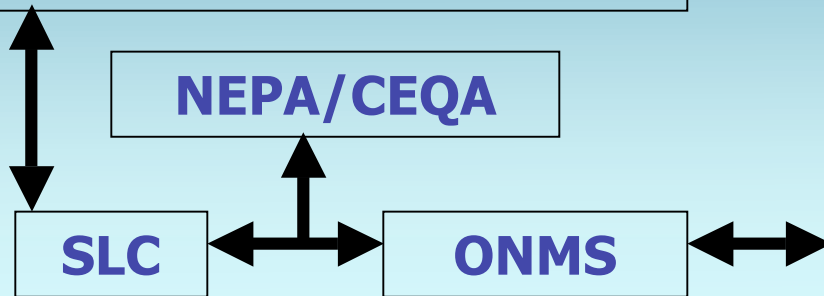
## GFNMS

- Reviews, and accepts or rejects recommendations. All rejections must be made in writing and include a rationale for rejection.

NEPA/CEQA

SLC

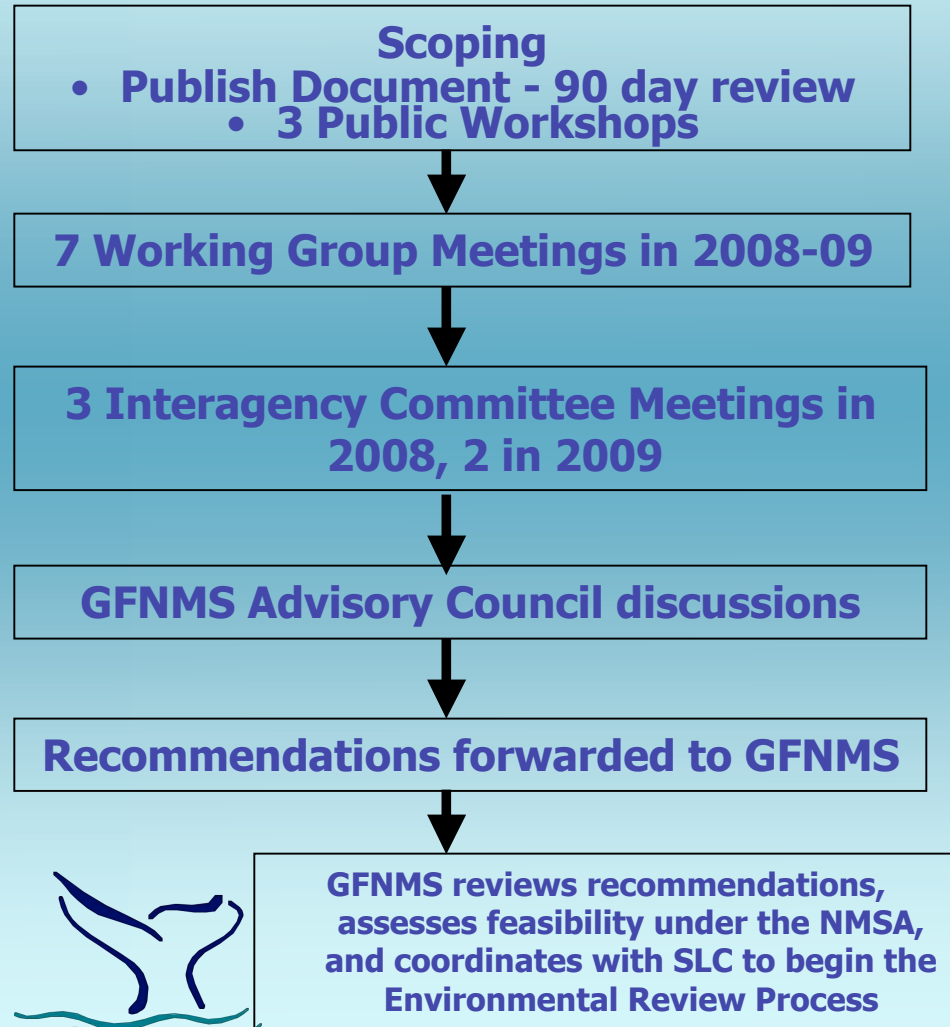
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# The Regulatory Process

## A Comparative View

### Sanctuary Process



### Required by Law



# GFNMS Next Steps:

- Review recommendations made by Advisory Council and report back at April 2010 meeting
- Develop criteria for acceptable mooring tackle
- Finalize criteria for protection of resources, in coordination with Interagency Committee
- Coordinate with permitting agencies on mooring permit program
- Develop implementation strategy for no-anchor seagrass protection zones.
- Develop plan for removal of derelict moorings
- Plan for the installation of sewage and oil services
- Develop education/outreach and monitoring/assessment Plan
- Complete environmental documentation (NEPA/CEQA)
- Finalize *Tomales Bay Vessel Management Plan*

