



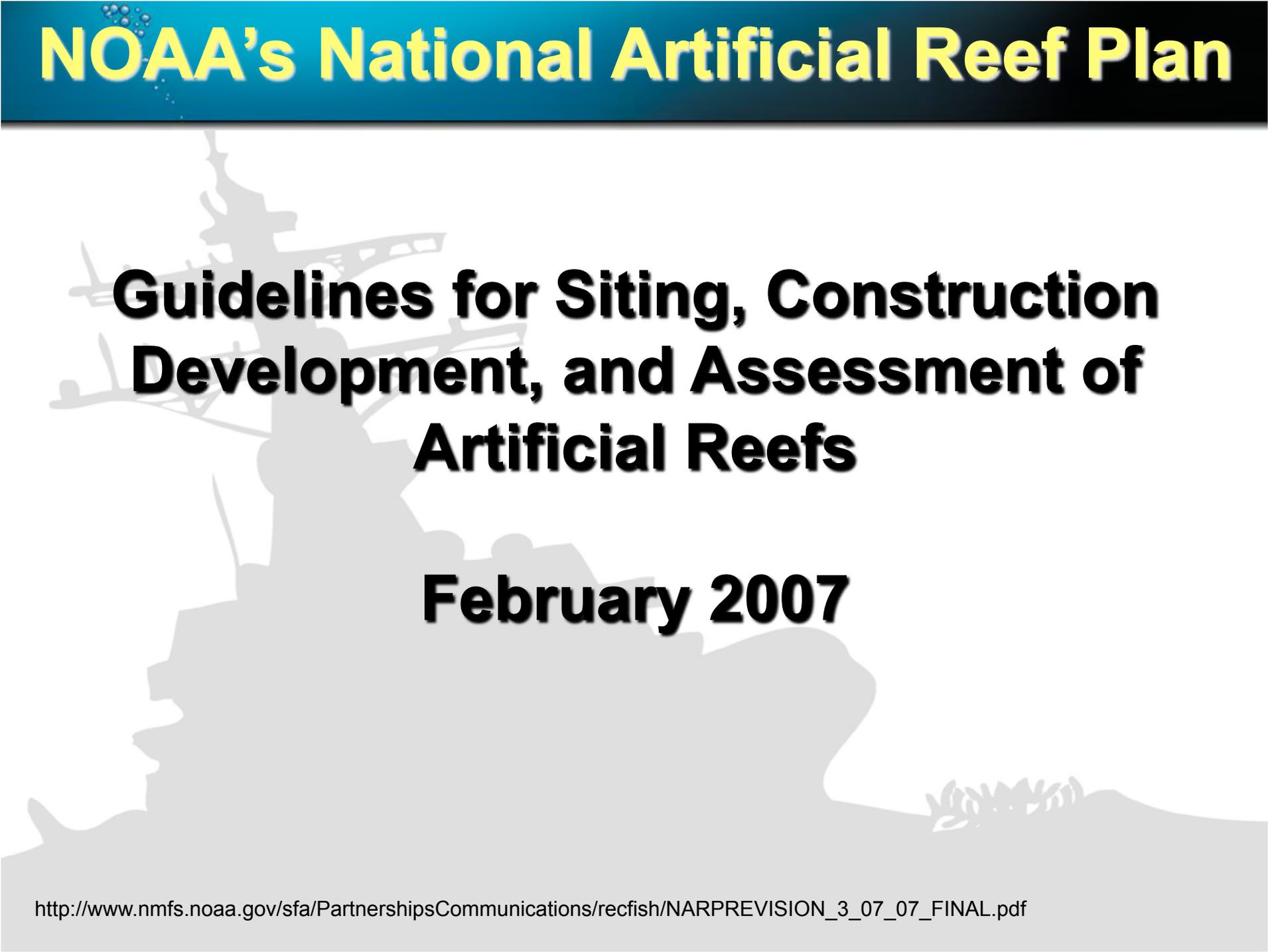
Artificial Reefs and the Monterey Bay National Marine Sanctuary

Creating a Win-Win-Win Solution FIRST DO NO HARM!!

Win - Enhance Ocean life

Win - MARAD/US Navy/NOAA and Taxpayers
economically and efficiently recycle ships and
other materials

Win - Local economies benefit



NOAA's National Artificial Reef Plan

Guidelines for Siting, Construction Development, and Assessment of Artificial Reefs

February 2007

NOAA's National Artificial Reef Plan

Materials Criteria

- Function
- Compatibility
- Stability
- Durability



NOAA's National Artificial Reef Plan

Suitable Materials

- Concrete Rubble
- Steel Hulled Vessels
- Oil/Gas Platforms
- Aircraft
- Subway & Street Cars
- Military Hardware
- Designed Units (i.e., Reef Balls)
- Stones & Sand Bags
- Miscellaneous (i.e., bridge spans)



History of Artificial Reefing



Intentional

Rocks stacked in ancient times by Persians & Romans for sea power, in 1600s by Japanese for aquaculture



Unintentional

Suspected 5000 year old sunken Japanese city (left) and wrecked Greek ship off Sicily (500 BC)

Artificial Reefing Today



↑ Surfing Reef



↑ Habitat Reef made of concrete blocks & pavers

↑ Oil Rig Platform Jacket

↓ USAFS Gen. Hoyt S. Vandenberg



↑ USS Oriskany



National Policy and MBNMS Regs

National Marine Sanctuary Act

15 CFR Ch. IX (1-1-09 Edition) 922.2 Mission, goals, and special policies

- Support, promote and coordinate scientific research on, and monitoring of, the resources of these marine areas, especially long-term monitoring and research of these area
- Facilitate to the extent compatible with the primary objective of resource protection, all public and private uses of the resources of these marine areas not prohibited pursuant to other authorities
- Maintain, restore, and enhance living resources by providing places for species that depend upon these marine areas to survive and propagate

15 CFR Ch. IX (1-1-09 Edition) 922.48 National Marine Sanctuary permits-application procedures and issuance criteria

- A person may conduct an activity prohibited by subparts F through O, if conducted in accordance with the scope, purpose, terms and conditions of a permit issued under this section and subparts F through O, as appropriate.

1992 Final MBNMS EIS and Management Plan

- Sec 2 E. Compatible Use of the Sanctuary
 - 3. Collaborate with public and private organizations in promoting compatible use of the Sanctuary

Project Permitting

Baseline Studies

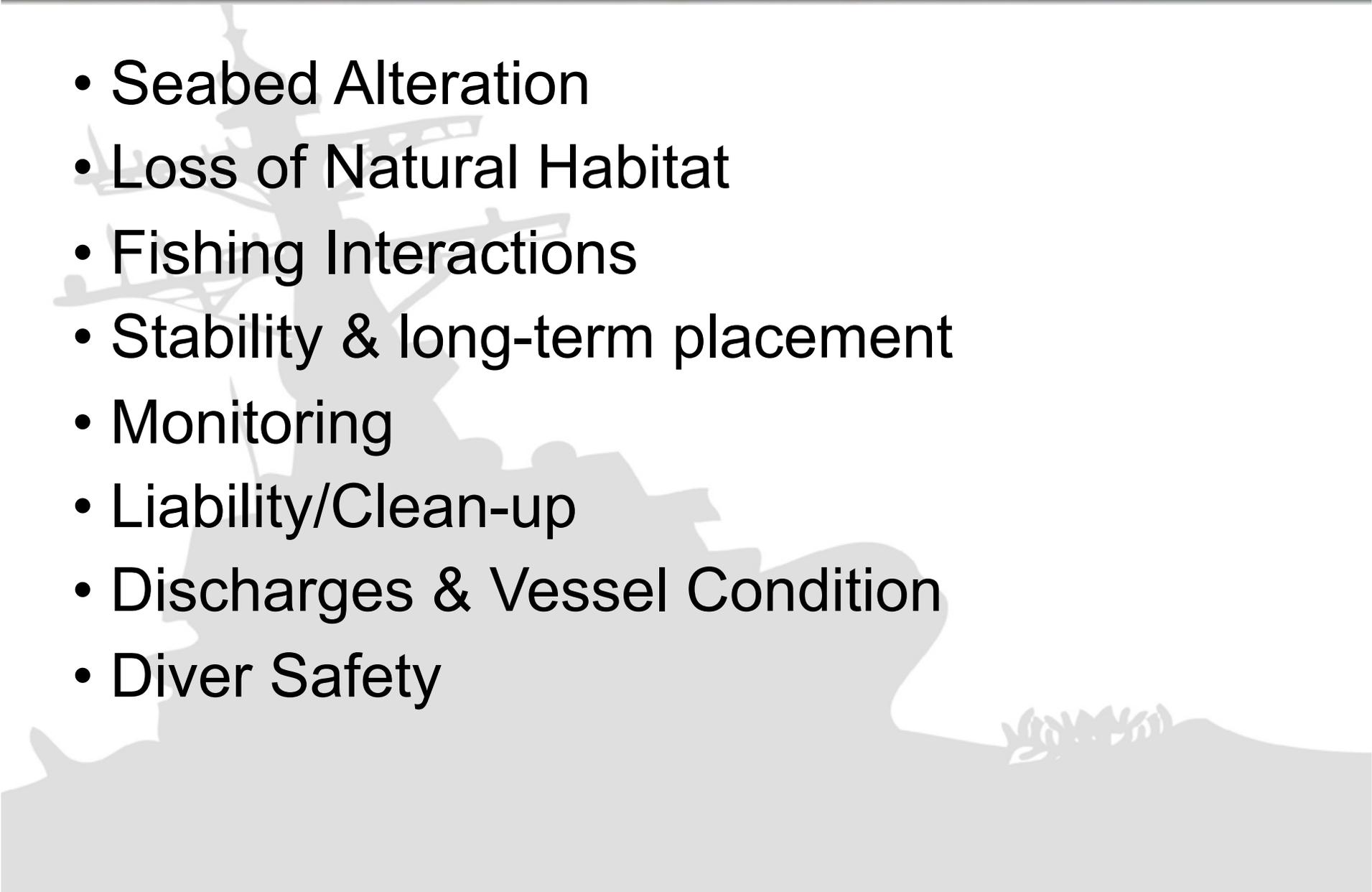
- MBNMS
- State Lands Commission Lease (if applicable)
- Army Corps of Engineers

Artificial Reef Projects

- All of the above +
- Full EIR and/or EIS as appropriate
- California Coastal Commission
- U.S. Coast Guard
- U.S. Environmental Protection Agency
- Cal-EPA
- Central Coast Regional Water Quality Control Board
- Sign-offs from
 - California Department of Fish and Game
 - NOAA Fisheries Management Service
 - U.S. Fish and Wildlife Service



MBNMS CONCERNS

- Seabed Alteration
 - Loss of Natural Habitat
 - Fishing Interactions
 - Stability & long-term placement
 - Monitoring
 - Liability/Clean-up
 - Discharges & Vessel Condition
 - Diver Safety
- 

DISCHARGES & VESSEL CONDITION

EPA's National Guidance: Best Management Practices for Preparing Vessels Intended to Create Artificial Reefs + Plastics (particularly man-made carpet fibers)

Materials of Concern

- Oil & Fuel
- Asbestos
- Polychlorinated Biphenyls (PCBs)
- Paint
- Solids/Debris/Floatables
- Other Materials of Environmental Concern

CSTR's commitment is: If not sure, remove it!

DIVER SAFETY (DIVERIZATION)

- Remove Doors
- Remove Bulkheads
- Remove all wiring & cable runs
- Cut numerous holes



Ecological Enhancement

- Habitat ↔ Fish Procreation
- Ocean Oasis
- Predator Protection



- Spring 2001 to Fall 2003 Procreation (*Yukon Study*)
 - 300% Increase in fish count
 - Over Twice as many species of fish found

Education Opportunities

- Web Cams
- Learning Centers
- K-12 Classrooms
- Trade Schools
- College/University Degrees

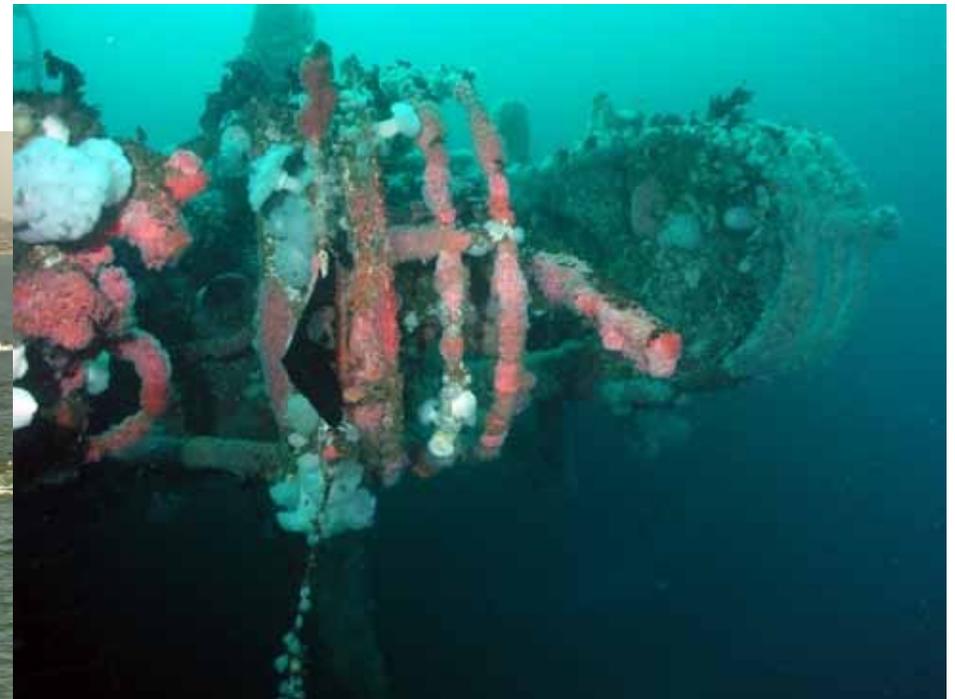


Compliments of Terry Murray

Current Conditions – Economics

Fiscal Impact of **ONE** ship in San Diego (*Yukon Study*)

- Cost \$1.5 Million to Reef
- San Diego Market impact \$4.5 Million/year
- 10,800 dives/year; 6,000 from out of town
- Brings \$\$ to California & local economy



Other Economics

British Columbia: 2004

- \$15Million in annual direct dive-related business activity including \$3-4Million in Nanaimo alone (*i.e. does not include meals/accommodations*)



Florida's 4 Southeastern Counties: 2006

- Artificial reef economic impact is approximately \$1.7Billion per year

**Put Monterey at the
forefront of this market**



Economic Beneficiaries

- **Travel Agencies**
- **Airlines**
- **Hotels**
- **Restaurants**
- **Car Rental Agencies**
- **Gas Stations**
- **Local Tourist Sites**
- **Dive Shops**
- **Dive Boats**
- **Fishing Boats:**
 - **Recreational**
 - **Commercial**



Compliments of Steve Holmstrom, NCOF 2008

Summary

Ecology

- Enhance Ocean Life
- Prevents 4,500 tons of carbon emissions for towing vessels to Texas

Government

- Cost effective military ship & other materials disposal
- Additional tax revenues

Private

- Cost effective ship & other materials disposal
- Tax deductible donations

Economy

- Self sustaining program enhancing tourism in diving/fishing



Artificial Reefs ...

Help MBNMS fulfill its mission – maintain, restore and enhance the ocean environment for its current and future stakeholders

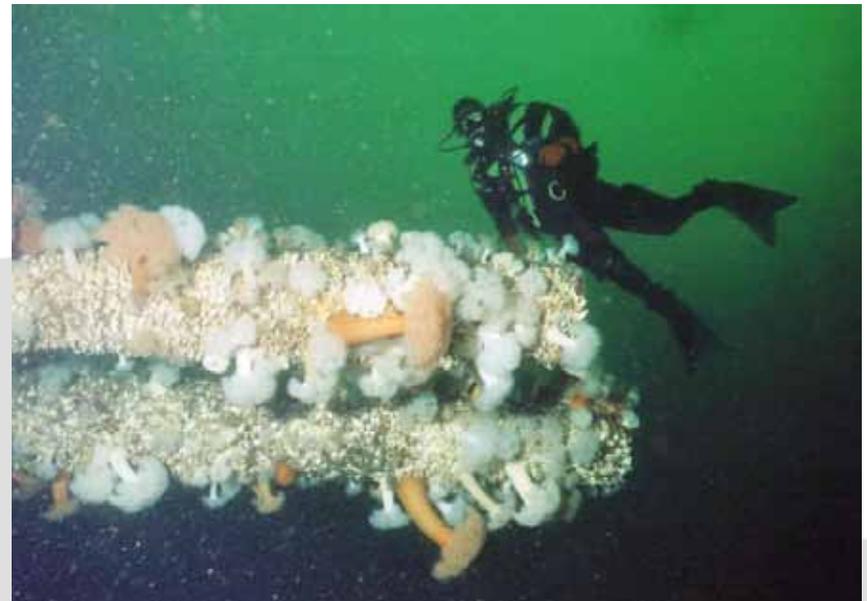
What We Need From You!

Provide Us With Your Questions and Concerns

Work With Us to Make Our Permit Application Acceptable

Help Us Find an Appropriate Location for a Vessel in Monterey Bay

Help Us Obtain a Ship Appropriate to Monterey Bay



Compliments Artificial Reef Society of British Columbia Canada

How to Reach Us

FOR MORE INFORMATION VISIT OUR
WEBSITE:

<http://www.CaliforniaShipstoReefs.org>

OR CONTACT:

EleanoreR@CaliforniaShipstoReefs.org

