

# SLO SEA

*San Luis Obispo Science and Ecosystem Alliance*

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## SLOSEA Management Action Memo

**TOPIC: Stopping Spread of Invasive Species on Ship Hulls**

**DATE: May 23, 2007**

### *Action Opportunity*

The Department of Fish and Game, California State Parks, The Morro Bay National Estuary Program, and the Morro Bay Harbor Department have an important opportunity to prevent further spread of invasive species on the hulls of recreational and commercial vessels. Immediate education outreach and management action is desirable given the drastic changes in species, especially molluscs observed to the Morro Bay Estuary and Harbor during the last several decades.

### *Situation*

A recent study of the fouling community (i.e., organisms growing on floating docs, pier pilings, rocky substrata, boat hulls) of Morro Bay has demonstrated significant changes over the last thirty years in the species living within the bay (Needles and Wendt, 2007). The researchers compared the current distribution and abundance of species to existing data from the last several decades.

The most conspicuous change is the replacement of native mussels with an invasive bryozoan, *Watersipora subtorquata*, which has caused a major shift in the invertebrate community composition of Morro Bay. Indeed, the invasive bryozoan now occupies over 84% of the available substrata and trophic cascades have certainly shifted as a result.

The drastic shift in the fouling community represents an altered state of the ecosystem. Although the full extent of the impact of the documented shift is not completely understood, it is clear that many species that were once abundant within the ecosystem are no longer present in significant abundance (mussels, some clam species, rock scallops, urchins, some anemone species, chitons and many other species as well).

### *SLOSEA Involvement*

Although the study of invasive species is not part of the formal research program of SLOSEA, the work is closely connected with our Habitat and Critical Spawning and Nursery Area Initiative. The management implications of the work also fit within the SLOSEA Linking Science and Management Initiative.

### *Potential Management Actions*

The spread and impact of invasive species is a critical issue that costs the United States billions of dollars of year in lost revenue and damage (e.g. 115 billion dollars) and mitigation practices (e.g. 21 billion) (Pimentel 2000). Federal legislation exists to control the spread of invasives via ballast water. Hull fouling is an often overlooked mechanism for spread of invasives, especially in small harbors and bays such as Morro Bay.

Current legislation is being crafted at both the state and federal levels to address the issue of hull fouling and spread of invasive species. To complement these efforts SLOSEA is recommending an active outreach and education effort to encourage boat owners to clean their hulls prior to traveling to ports away from Morro Bay and to likewise perform husbandry practices (i.e.; removal of attached plants and animals) prior to returning to Morro Bay if they have spent significant time at other ports.

### *Next Steps*

SLOSEA will provide the Harbor Department, the MBNEP, State Parks, CDFG, and other interested parties with information brochures that describe best management practices for hull cleaning and maintenance.

#### **SLOSEA Collaborative Partners**

Cal Poly Center for Coastal Marine Sciences ~ California Bureau of Land Management ~ California Coastal Commission ~  
California Coastal Conservancy ~ California Department of Fish & Game ~ California State Parks ~  
Central Coast Regional Water Quality Control Board ~ Coastal San Luis Resource Conservation District ~  
Los Osos Community Advisory Council ~ City of Morro Bay ~ Marine Interests Group of San Luis Obispo County ~  
Monterey Bay National Marine Sanctuary ~ Morro Bay National Estuary Program ~ NOAA Fisheries Service ~ Port San Luis Harbor District