

# Channel Islands National Marine Sanctuary

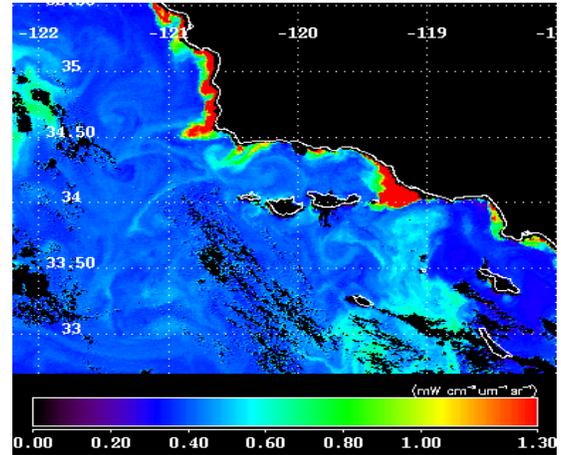
## Water Quality

### Management Issue

Critical to effective management of resources of the Channel Islands National Marine Sanctuary (CINMS or Sanctuary) is information of the status and trends of the water quality in and around the Sanctuary. To provide this information, an integrated water quality monitoring plan needs to be implemented.

### Description

Although some water quality monitoring has occurred in the Sanctuary, an integrated monitoring plan has not been implemented. Finalization of the water quality characterization assessment, continued support of the Southern California Coastal Water Research Project (SCCWRP) Southern California Bight comprehensive water and sediment quality monitoring studies, and installation of a flow-through water sampling system aboard R/V *Shearwater*, are part of the developing plan. However, to fully understand water quality in the sanctuary additional, coordinated sampling within the sanctuary is needed.



*Sediment plumes from mainland sources can reach the sanctuary. Image credit: <http://www.icess.ucsb.edu>*

### Questions and Information Needs

- 1) What are the status and trends of water quality in the Sanctuary?
- 2) What are the sources and levels of eutrophication and how are they changing?
- 3) What toxins, contaminants, pollutants, particulates are present?
- 4) Do Sanctuary waters pose human health risks?
- 5) How do vessel discharges affect water quality in the Sanctuary?
- 6) How persistent are legacy toxins (e.g., DDT) in the Sanctuary?
- 7) What are the levels and sources of these contaminants?
- 8) Are Harmful Algal Blooms occurring in the Sanctuary?

### Scientific Approach and Actions

- Working with water quality experts, establish sampling regime to measure contaminants
- Analyze data from R/V *Shearwater*'s SeaKeepers shipboard sensors
- Install in-situ water sampling equipment on moorings
- Conduct bacterial sampling
- Build field component to extend Bight monitoring program
- Coordinate with and use data from sentinel mussel watch program
- Investigate sources (such as concentrations of marine mammals) and effects (such as changes in algal communities) of eutrophication at the islands
- Assess status and trends of water quality indices

*Current as of 11/28/2012*

*For More Information -- <http://www.sanctuaries.noaa.gov/science/assessment>*

## Key Partners and Information Sources

UC Santa Barbara, Santa Barbara ChannelKeeper, SCCWRP, Dept. of Fisheries and Ocean Canada, NASA, University of Georgia, Channel Islands National Park, local and state water quality control boards

## Management Support Products

- Reports on water quality status and trends in and around the sanctuary
- Identification of potential mitigation actions

## Planned Use of Products and Actions

- Identify potential threats to water quality
- Inform stakeholder communities of findings
- Work with appropriate partners to develop mitigation policies or regulations

## Program References

### CINMS Management Plan

- Management Plan Action Plan WQ.1

### CINMS Condition Report

- Are specific or multiple stressors, including changing oceanographic and atmospheric conditions, affecting water quality?
- What is the eutrophic condition of sanctuary waters and how is it changing?
- Do sanctuary waters pose risks to human health?
- What are the levels of human activities that may influence water quality and how are they changing?

### ONMS Performance Measures

- Number of sites in which water quality, based on long-term monitoring data, is being maintained or improved



*Cargo Ship in the Channel Islands National Marine Sanctuary.  
Photo credit: CINMS*

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