morro bay
volunteer monitoring

Morro Bay Volunteer Monitoring Program

Bay Monitoring Update

Spring 2005

Background

The Morro Bay Volunteer Monitoring Program (VMP) monitors dissolved oxygen (DO) in the bay on a monthly basis. The 'Dawn Patrol' teams have been monitoring DO levels on the bay in the pre-dawn hours since 1997. Volunteers paddle out to collect data on DO, temperature and salinity at seven different sites distributed throughout the bay. All readings are taken at the water surface.

What are the levels of concern for dissolved oxygen in the bay?

The Central Coast Regional Water Quality Control Board (CCRWQCB) Basin Plan has a protective DO level of 7 mg/L for Morro Bay waters with two designated beneficial uses: as cold waters supporting aquatic habitats for vegetation, fish, wildlife and invertebrates, and as waters to support reproduction and early development of fish.

A Special Thanks!

A special thank you goes out to this dedicated group of volunteers who recently pointed out that we really should re-name this effort 'Pre-Dawn Patrol.' Our team consists of:

Brina Carey
Marc Couacaud
Bob Croyle
Jim DaRoss
Mandy Davis
Erin Feinblatt

Monitoring Sites

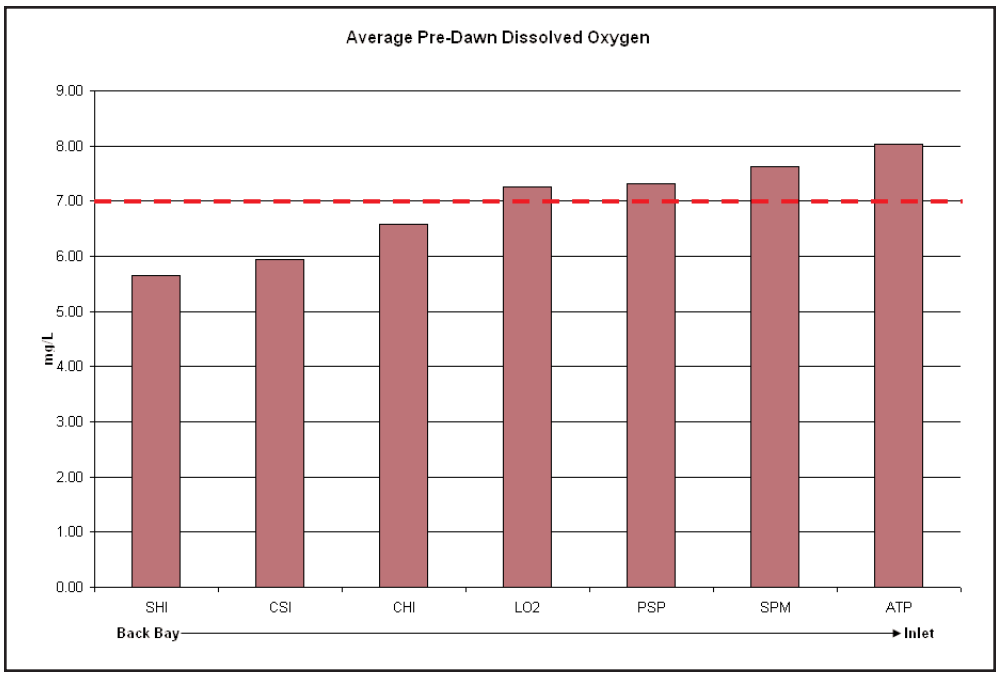
The Dawn Patrol sites (indicated by triangles on the map) were selected to represent areas in the back bay which are expected to be more 'stagnant' and areas near the channel which likely experience better mixing.

The monitoring sites are as follows: Sharks Inlet (SHI), Cuesta Inlet (CSI), channel north of Cuesta Inlet (CH1), Pasadena Point (PSP), where Los Osos Creek empties into the bay (LO2), State Park Marina (SPM) and Tidelands Park (ATP).

Morro Bay Volunteer Monitoring Program
Morro Bay Nutrient and Dawn Patrol Monitoring Sites

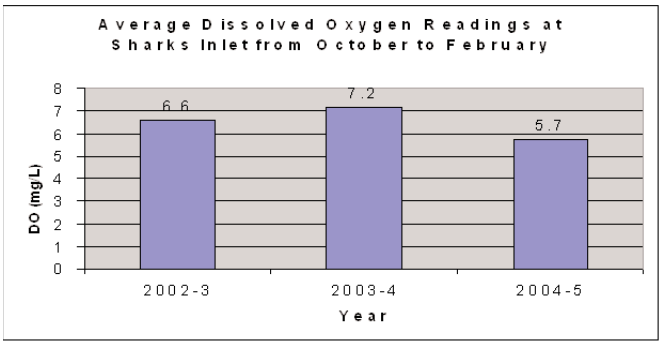
Bay Dissolved Oxygen Monitoring Results

The following chart shows the average pre-dawn DO value for each of the seven sites. The sites toward the left of the chart are the sites toward the back of the bay. As you move to the right on the chart, those sites are the ones closer to the front of the bay. We see a trend of increasing DO values as the sites move from the back bay toward the bay inlet. This follows the prediction that water in the channels toward the front of the bay would be well-mixed and colder, resulting in higher DO levels. The waters toward the back bay are believed to be more stagnant, resulting in higher temperatures and lower DO levels.



The dashed line depicts the 7 mg/L regulatory standard for protection of aquatic life and bay waters as fishing spawning habitat. Based on data collected by the Dawn Patrol team over the past eight years, the RWQCB may be proposing to add Morro Bay to the state's 303(d) list as being impaired for dissolved oxygen, which means that the low DO levels are impairing the beneficial uses by impacting aquatic and fish habitat. If the bay is added to the 303(d) list, then a Total Maximum Daily Load (TMDL) will be developed for the bay to identify the sources of the problem and assign proportional responsibility for controlling the problem.

Seasonal trends are apparent throughout the data collection. In the winter, DO values at all sites are generally above the 7 mg/L level of concern. In the summer time, DO levels in the back bay drop below 7 mg/L while sites toward the inlet (in the well-mixed channel) tend to remain above 7 mg/L.



Data collected this past winter indicate that the back bay DO levels were unusually low. The chart shows an average of the DO readings at Sharks Inlet from October through February for the past three years. One possible cause for the lower DO levels this past winter was unseasonably warm temperatures in the days preceding the monitoring.