

**INFORMATIONAL**

**CALENDAR ITEM**

**C48**

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08/20/10

W 25306

J. Trout

**SECOND-YEAR REPORT UPDATE ON THE BIOLOGICAL, PHYSICAL,  
AND BEACH MONITORING FOR THE BOLSA CHICA LOWLANDS  
RESTORATION PROJECT NEAR HUNTINGTON BEACH**

**BOLSA CHICA REPORT  
YEAR 2, OCTOBER 2007 THROUGH SEPTEMBER 2008**

The wetlands of the Bolsa Chica Lowlands Restoration Project (Project) have been intensively monitored since the newly constructed ocean inlet opened the wetlands to tidal influence for the first time in over a century in 2006. Interests in both the Project's success and permit requirements warrant an extensive evaluation of the Project and how it is meeting objectives at this time. Data from the second year of monitoring was released earlier this year and is summarized below.

As background, the State Lands Commission (Commission) and its staff have been actively involved with the Bolsa Chica wetlands starting with the first boundary settlement discussions in 1970 and title settlement in 1973. In 1996, the Commission and seven other state and federal agencies (the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service (FWS), the U.S. Environmental Protection Agency, the National Marine Fisheries Service, the California Resources Agency, California Coastal Conservancy, and the California Department of Fish and Game) signed an interagency agreement to buy, plan, design, construct and maintain the Bolsa Chica wetlands to mitigate adverse impacts of fill at the ports of Long Beach and Los Angeles.

The ports contributed over \$102 million for the purchase and restoration. Additional funding came from Proposition 40 and 50 grant funds as well as from the Coastal Conservancy and FWS. Funding of the project from all sources is more than \$151 million to date. These funds were placed in the Kapiloff Land Bank Fund for the

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purpose of completing and maintaining the Project. The Project has been directed by a steering committee of representatives from each of the agencies listed above.

The Commission acquired approximately 923 acres of restorable wetlands for the Project, and the FWS managed the construction of Project features. A large tidal basin was excavated to allow a full tidal regime for fisheries habitat. In addition, several smaller areas were connected to the full tidal basin with large water control structures to provide habitat areas for fish and bird species that would benefit from a muted tidal regime and seasonal ponding. As part of the construction, the new ocean inlet necessitated a new highway bridge for Pacific Coast Highway and an oil services bridge to allow continued access to existing oil wells. The Bolsa Chica lowlands continue to produce oil and gas as they have for decades. At the time oil is no longer produced in paying quantities, the second phase of the Project is expected to expand the full tidal basin into a larger area.

Commission contractor Merkel & Associates has completed the report on the second-year of Project operation. The dates covered by the report, October 1, 2007 through September 30, 2008, are prescribed by permit conditions of the California Coastal Commission and Army Corps of Engineers. This report is a thorough review of the conditions existing after two years of operation. It reveals no significant problems with the Project. An electronic copy of the full report has been provided to each Commissioner.

The Project at this point appears to be moving toward fully achieving the goals established for the Project at its inception. Monitoring of Project performance consists of three major fields: Biological Monitoring, Physical Monitoring and Beach Monitoring. These were further broken down into subfields, and the findings regarding each are outlined below.

Water Quality – All parameters remain well within acceptable ranges for developing high value fish, invertebrate and vegetative communities and are indicative of a well-flushed tidal marine environment.

Vegetative Habitat – It is still too soon in the wetlands operation to determine how well the habitat and vegetation communities will develop after planting with relocated material. Early results appear promising. Successful establishment should accelerate in future years based on experience at other restoration sites.

Fish Community – Over the monitoring period a total of 7,762 fish were captured, evaluated and released, and represented 42 species. Surface fish (topsmelt, California killifish, grunion) available as a food source to birds were plentiful. Juveniles of many important marine fishes were represented signifying the area is successful as a nursery for these species.

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Benthic Community – The benthic community was evaluated for the first time in year two. A significant variability was found as expected. This has provided food resources for birds, fishes and other invertebrates.

Avian Community – A total of 51,137 birds of 114 species were counted during the monitoring period. During the December count, migrating and wintering birds totaled 10,412. Targeted species of concern—Beldings savannah sparrows, western snowy plover and California least tern—occupied most of the area available to them. Beldings savannah sparrows utilized the pickleweed areas where they exist on the site. Snowy plover and least terns, while numerous, have yet to adapt fully to the new areas created for them. Studies are ongoing as how to encourage use of the unused sites.

Inlet Flood Shoal – As expected, the inlet flood shoal accumulated about 204,000 cubic meters in the second and third years. The first maintenance dredging event successfully removed this shoal. The next maintenance dredging cycle is planned for the Fall of 2010. Plans and specifications are expected to be ready for bid this month. As before, sandy material will be deposited on the beach down coast from the inlet jetties. Dredging may occur until March 2011.

Tidal Monitoring – Recorded tidal elevations were very close to the predicted conditions on opening the inlet. In general, the Project has met the goal of a full tidal range in the Full Tidal Area. At the present time, accretion and erosion within the tidal inlet has together resulted in tidal lag and muting of the tidal elevations. Efforts are underway to increase the flow through the inlet channel to reduce shoaling's negative impacts. As indicated above, maintenance dredging will occur again this Fall and Winter.

Beach Monitoring – One concern for the Project is that the inlet jetties could cause erosion of the down coast sandy beach. This beach and an offshore ebb bar were pre-filled with sand during the restoration construction to help avoid this erosion. Beach width measurements were taken monthly over the report period. Some net decrease in beach width occurred down coast from the inlet jetties. However, during this Fall's maintenance dredging work, excavated material will again be placed on the beach down coast from the jetties.

Ongoing Management – Pursuant to the Commission's previous approvals staff has overseen continued operation and maintenance of the Project with participation from the multi-agency steering committee described earlier and the assistance of the on-site manager, the Department of Fish and Game, which manages the Project as part of the Bolsa Chica Ecological Reserve. The monitoring report summarized above contains numerous recommendations that will be implemented as appropriate and as funding allows to adaptively manage the Project to continue functioning to meet established goals. At present, there is approximately \$11.7 million unencumbered and available for operation and maintenance held in the Kapiloff Land Bank Fund. Depending primarily

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on the frequency of needed maintenance dredging, this amount is expected to last about six years. An additional \$2.4 million is being held for restoration of the Future Full Tidal Area. The steering committee agency representatives continue to look for additional sources of funding to ensure continued operation of the Project. Operation and maintenance activities that have been completed or are in process include:

- Automation of the muted tidal basin water control structure gates with motors and remote control electronics (completed)
- Rebuilt the main Project access road (80 Road) to a higher elevation and an all-weather surface (completed)
- Dust abatement at various locations using environmentally friendly material and several species of native plants (ongoing)
- Repaired erosion damage to the Rabbit Island overlook and adjacent Orange County Flood Control channel (completed)
- Working with the on-site manager, Department of Fish and Game staff, under contract to the Commission (ongoing)
- Cooperate with oil and gas lessee Area Energy LLC in remediation of oil related contamination found on the site. Non-oil contamination has been partially cleaned up and Commission staff are continuing to pursue the cleanup of non-oil related contaminants with the former surface owner (the responsible party, whose parent company is now in bankruptcy) (ongoing)
- Conduct maintenance dredging as necessary to maintain the functioning of the ocean inlet (one cycle completed; ongoing)
- Established a publicly accessible website at [www.bolsachicarestoration.org](http://www.bolsachicarestoration.org) (completed)

Attachment: Exhibit A, location map

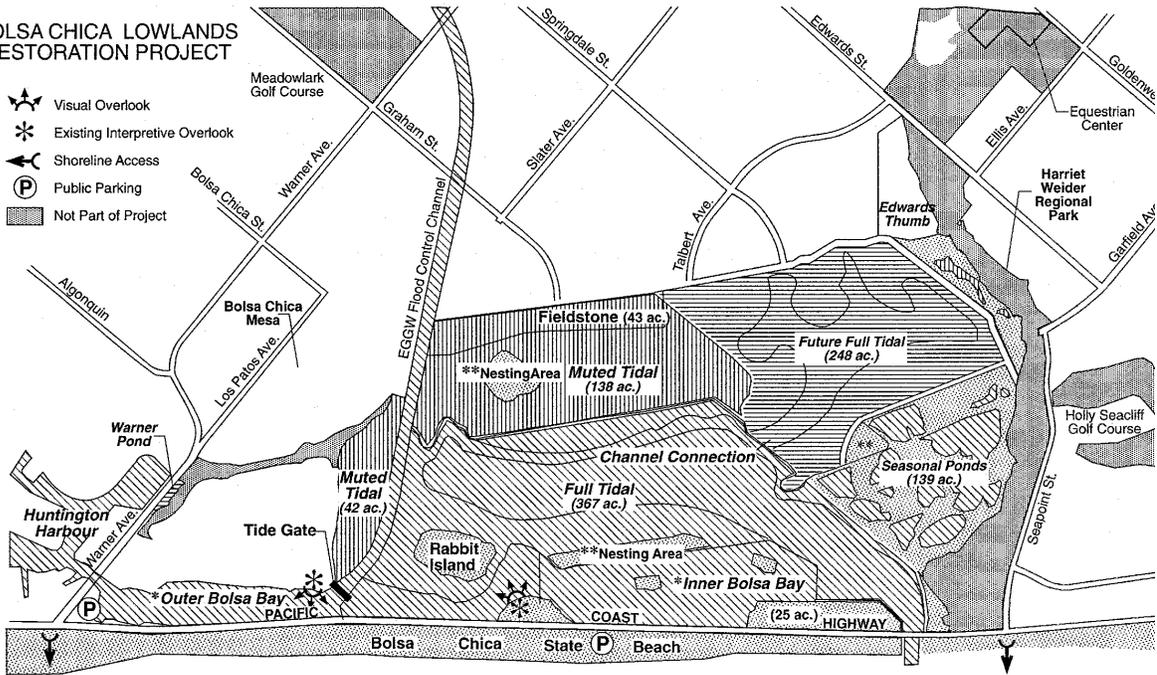
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NO SCALE

**SITE**

**BOLSA CHICA LOWLANDS RESTORATION PROJECT**

- ★ Visual Overlook
- \* Existing Interpretive Overlook
- ← Shoreline Access
- P Public Parking
- Not Part of Project



PACIFIC OCEAN

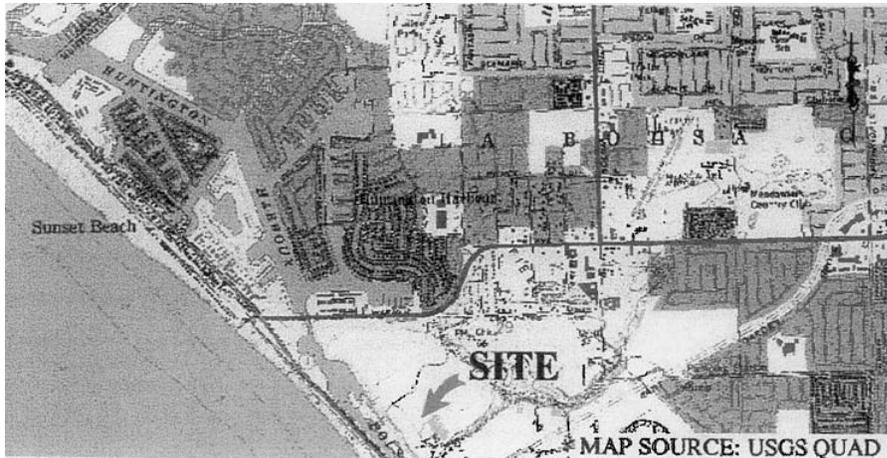
\*Inner and Outer Bolsa Bay ( 210 ac.)  
 \*\*Nesting Areas (20 ac.)

Bolsa Chica Wetlands Steering Committee

**BOLSA CHICA LOWLANDS RESTORATION PROJECT**

NO SCALE

**LOCATION**



**Exhibit A  
 W 25306**

**BOLSA CHICA  
 ORANGE COUNTY**



This exhibit is solely for purposes of generally defining the lease premises, is based on unverified information provided by the Lessee or other parties, and is not intended to be, nor shall it be construed as a waiver or limitation of any State interest in the subject or any other property.