

Merkel & Associates, Inc.

5434 Ruffin Road, San Diego, CA 92123

Tel: 858/560-5465 • Fax: 858/560-7779

e-mail: associates@merkelinc.com

October 30, 2009
M&A #07-046-03

Eileen Maher
San Diego Unified Port District
P.O. Box 120488
San Diego, CA 92112

Re: Fish Enhancement Structures, Chula Vista Tidelands Park Borrow Pit, San Diego Bay, California 3rd Quarterly Report

Dear Eileen:

This letter reports the biological observations made at the south bay artificial reef sites (Figure 1) on September 18, 2009. The reef structures were installed by Merkel & Associates, Inc. (M&A) on December 11, 2008 (M&A 2008). These observations constitute the third quarterly biological monitoring of the artificial reef site.

Biological Survey

The biological survey in south bay was performed on September 18 by M&A staff, Jimmy Reeves. Due to turbidity in the water, the visibility was not suitable to make species specific observations of vertebrates that may have been present. Suspended sediment plumes, from fleeing bass and flatfish, were observed; however, no fish could be identified down to the species level. There were signs of burrowing invertebrates in the surrounding mud bottom similar to the surrounding bay bottom. There were no signs of colonizing motile invertebrates (e.g. shed carapaces or body parts). The A-jacks were covered in a light sediment load and supported various species of sponge, native oysters (*Ostreola conchaphila*), and *Zoobotryon verticillatum*. *Gracilaria sp.* and *Rhodymenia sp.* grew on the structures, and green filamentous algae (*Enteromorpha sp.*) was observed growing on the bottom in between structures (refer to Photo Page 1).

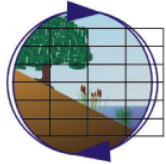
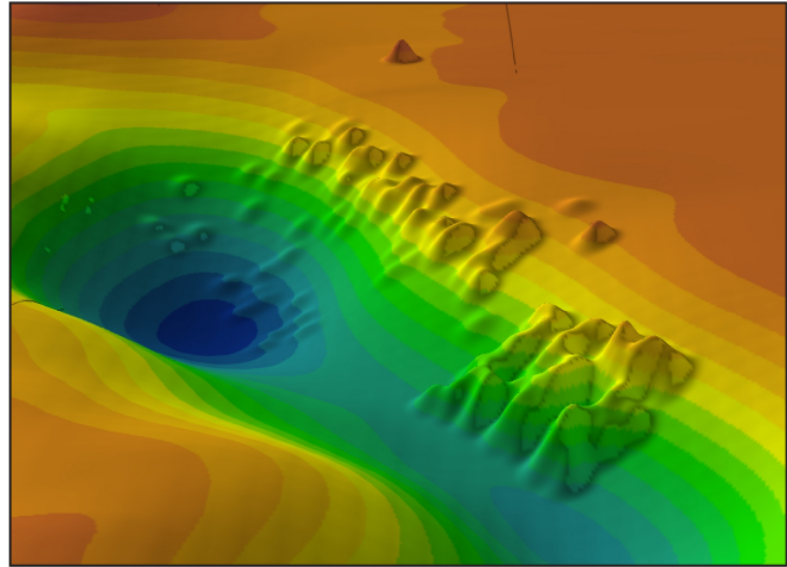
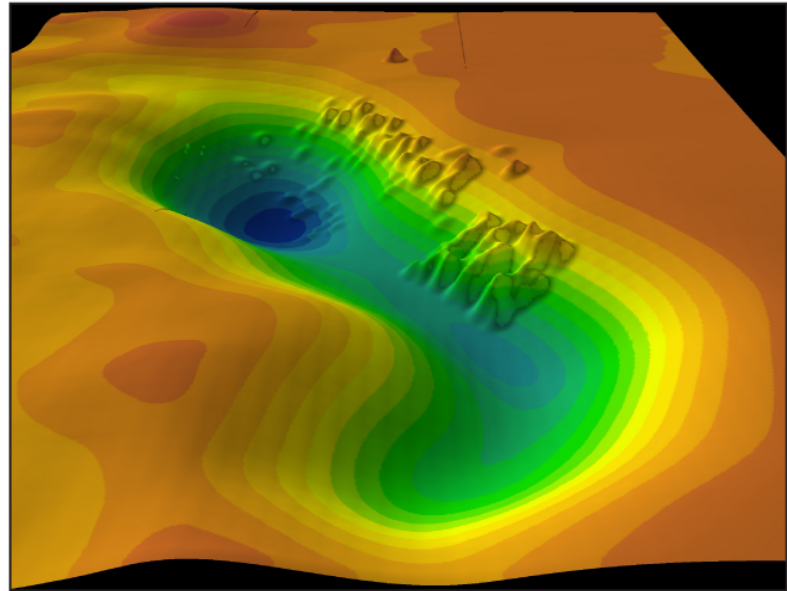
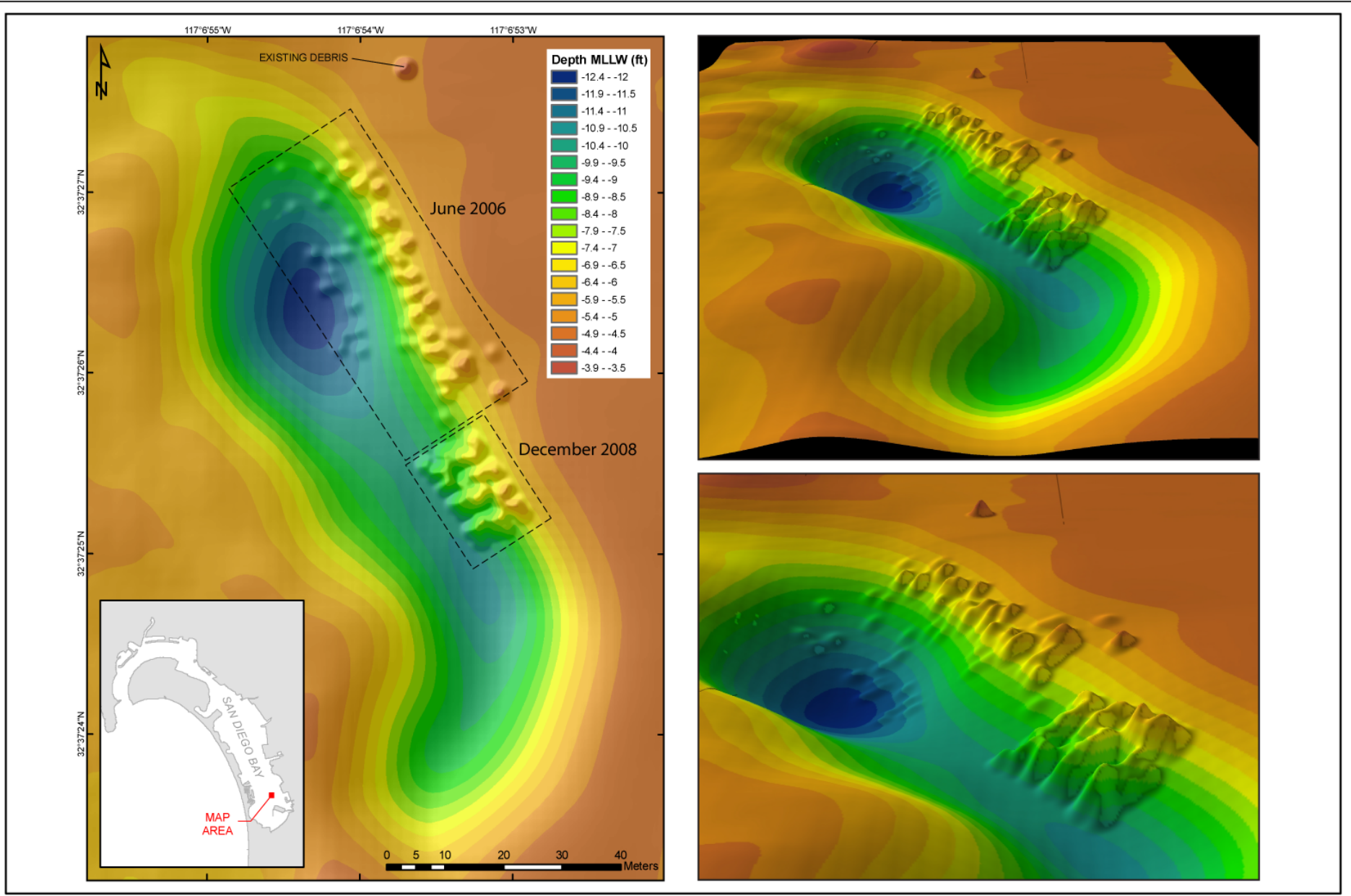
It has been a pleasure working on this project with the Port of San Diego. We look forward to the final monitoring event in December 2009. If you have any questions regarding this letter or the included materials, please contact me at (858) 560-5465.

Sincerely,

Robert Mooney, Ph.D.
Senior Biologist

References:

[M&A] Merkel & Associates, Inc. 2008a. Embarcadero Fishing Pier and Le Meridien Fish Enhancement Structures. Letter report regarding installation process. Prepared for the San Diego Unified Port District. May 15, 2008.



**Artificial Reef Placement Structures
South San Diego Bay, San Diego, California
June 2006 & December 2008**

Figure 1



Photo Page 1. Rhodymenia and sponge (top left), sponge (top right) Zoobotryon verticilatum (bottom left) Bottom Right: Green filamentous algae.