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October 10, 2010

Eileen Maher
Assistant Environmental Director
Environmental Services Department
San Diego Unified Port District
PO Box 120488
San Diego, CA 92112-0488

Dear Ms. Maher,

This letter serves as our progress report for the third quarter of 2010 for our project “Movement and population size of spiny lobsters in San Diego Bay” (Hovel and Neilson).

Our project is designed to estimate the size of the lobster population in San Diego Bay, as well as to determine whether lobsters move substantially among locations in the bay and between the bay and the neighboring kelp forest. We trap lobsters and tag them using conventional, individually-marked tags as part of our effort to estimate population size, and we use acoustic receivers designed to detect transmitters affixed to lobsters moving throughout San Diego Bay and within adjacent kelp forest habitat to monitor lobster movement.

As we conclude the third quarter of this year, we have completed the trapping component of our work and we presently are using those data in two mark-recapture models to produce estimates of population size. We recently conducted trapping on a small number of days to determine if we could recapture lobsters tagged in 2009, but we had little success. This likely is attributable to relatively high rates of turnover at sites within the bay. We have been working with our acoustic tracking data to examine overall patterns of movement and these data will aid our estimates of population size by providing information on movement among sites (which addresses a critical assumption in population estimation involving the movement rate of individuals among discrete stations). We are preparing these data for summary in our final report due at the end of this calendar year (i.e. at project completion).

In August we conducted dive surveys at several locations in the bay to determine lobster densities within seagrass and rocky habitats. We selected several locations based on our experience in finding lobsters there (e.g., Zuniga Jetty, Fish Structures, and Marriot Hotel) and several locations with healthy seagrass habitat with which we were less familiar (Figure 1). Overall, lobster density varied greatly among locations, which corresponds to our trapping results suggesting high variability in abundance among sites within the bay. Notably, seagrass habitat with substantial rocky structure nearby housed high numbers of lobsters, and seagrass habitat without rocky structure nearby tended to have fewer lobsters (Figure 2). We revisited a site that in the past has had some of the highest lobster densities in the bay (Marriot Hotel, across the bay from the Embarcadero) and found that this site continues to house a great many lobsters in the subtidal rocky revetment adjacent to the seagrass habitat (Figure 3). We also surveyed the reef jacks that were placed at the base of this revetment and found lobsters in nearly all of the structures. Densities within the structures were comparable to densities within seagrass habitat.

As we begin the last quarter of the project, we will be concluding the study by producing final estimates of lobster population size and final views of patterns of movement in the bay, and we will include these within a final report that covers the goals, techniques used in the study, results, and implications. We also look forward to giving a presentation of our results to the Port District.

Sincerely,

A handwritten signature in black ink, appearing to read "Kevin A. Hovel", with a long horizontal flourish extending to the right.

Dr. Kevin A. Hovel
Associate Professor of Biology
San Diego State University

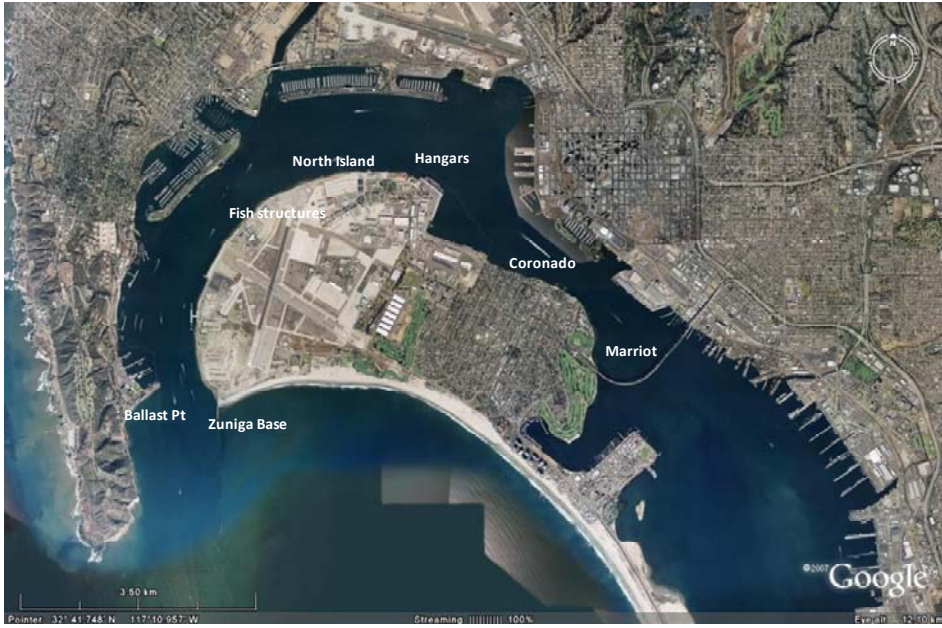


Figure 1. Locations of dive surveys conducted in August of 2010.

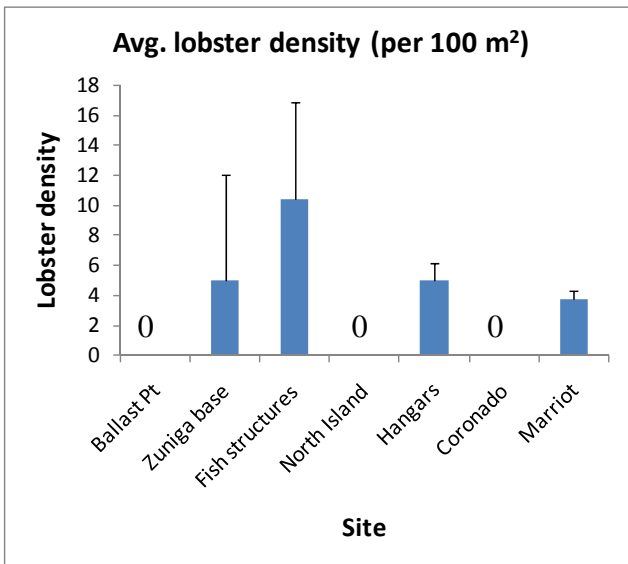


Figure 2. Mean density of lobsters (number of lobsters per 100 square meters) in seagrass habitat at the seven surveyed sites. “0” indicates that we found no lobsters in seagrass habitat at the site.

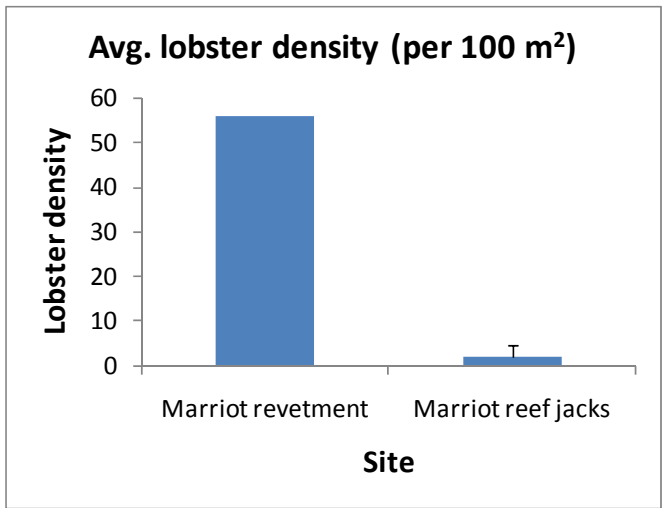


Figure 3. Average lobster density (number of lobsters per 100 square meters) in the subtidal rocky revetment adjacent to the seagrass bed at the Marriot Hotel site, and in the reef jacks placed at the base of the revetment.