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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 2009 for our project “Movement and population size of spiny lobsters in San Diego Bay” (Hovel and Neilson).

We continue to make progress on our project that examines lobster abundance and movement within and outside of San Diego Bay. Our lobster traps were deployed throughout the Bay in May '09, and we sampled our traps twice weekly until early September '09, capturing a total of 6430 lobsters and tagging 4670 of those lobsters. We have recaptured 340 of these tagged lobsters to date. The attached graphs indicate the location of our sampling stations and some preliminary data reflecting where lobsters are most abundant in San Diego Bay.

We also have initiated our acoustic tagging study in the Bay. Acoustic receivers were deployed throughout the Bay and in the adjacent kelp forest in June, and to date 80 lobsters have been fitted with acoustic transmitters. We downloaded data from our receivers in July and September, and the attached graphs provide some preliminary information about lobster movement patterns in and outside of the Bay. In future reports we will include syntheses of general lobster movement patterns, once we are able to acquire more data from acoustic receivers.

We look forward to continuing to work with the Port of San Diego on this project and on future projects in San Diego Bay.

Sincerely,

Dr. Kevin A. Hovel

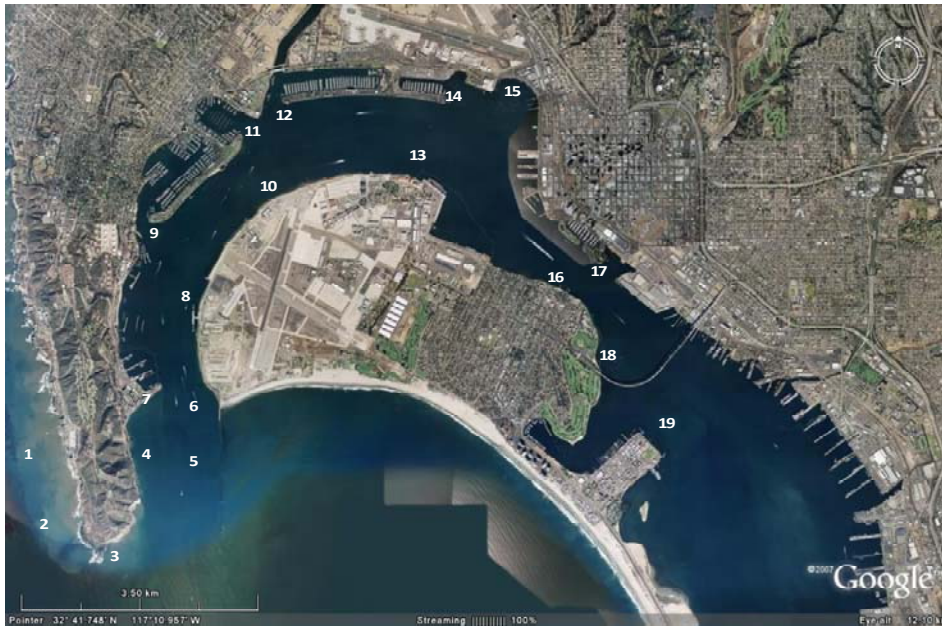


Figure 1. Locations of the 19 stations used at which lobster traps and acoustic receivers were deployed in San Diego Bay from April – October 2009. Stations 1, 2, 3, and 19 were used for acoustic receivers only. Station 12 was moved to the east, mid-way along Harbor Island, in late summer.

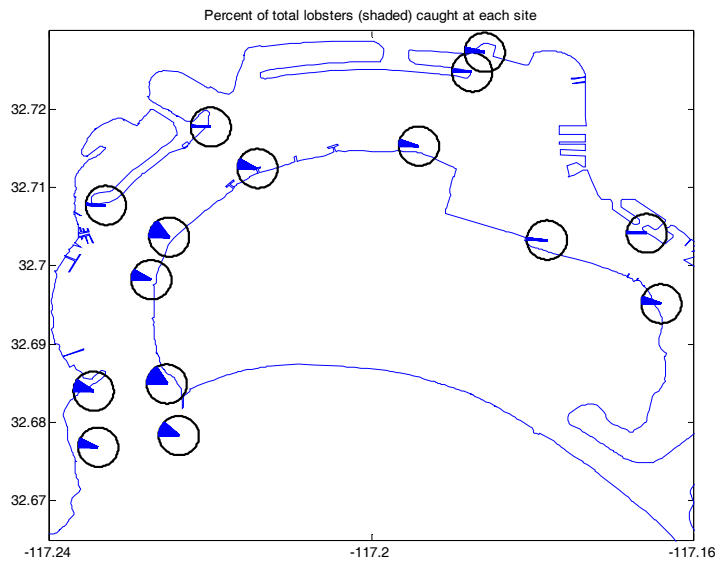


Figure 2. The percent of the total catch of lobsters that occurred at each of the 15 stations in San Diego Bay between April and October 2009. All stations had equal sampling effort. This indicates that more lobsters were captured near the bay mouth, particularly along Zuniga Jetty, than in the mid-bay.

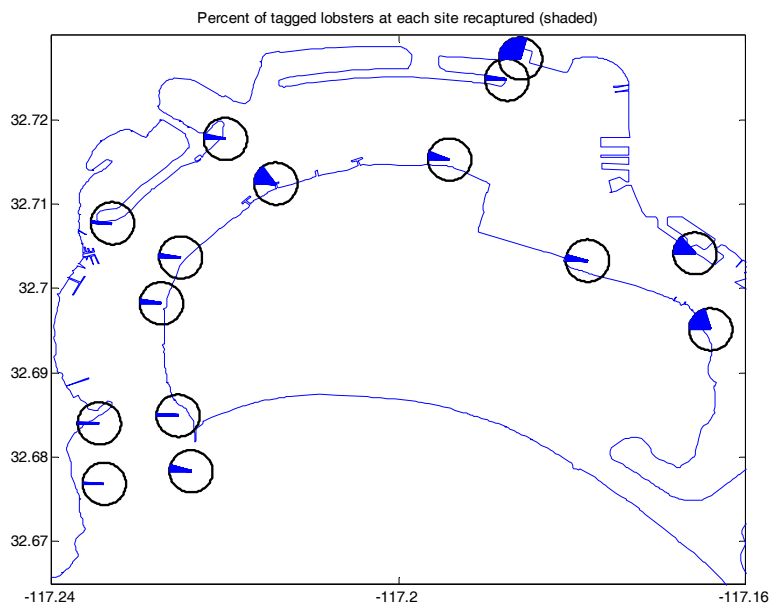


Figure 3. The percent of tagged lobsters that were recaptured at each of the 15 stations in San Diego Bay. Generally, a higher proportion of lobsters tagged at a particular station were recaptured at that station in the mid-bay than near the bay mouth, suggesting that lobsters are more residential at mid-bay sites than at bay mouth sites.

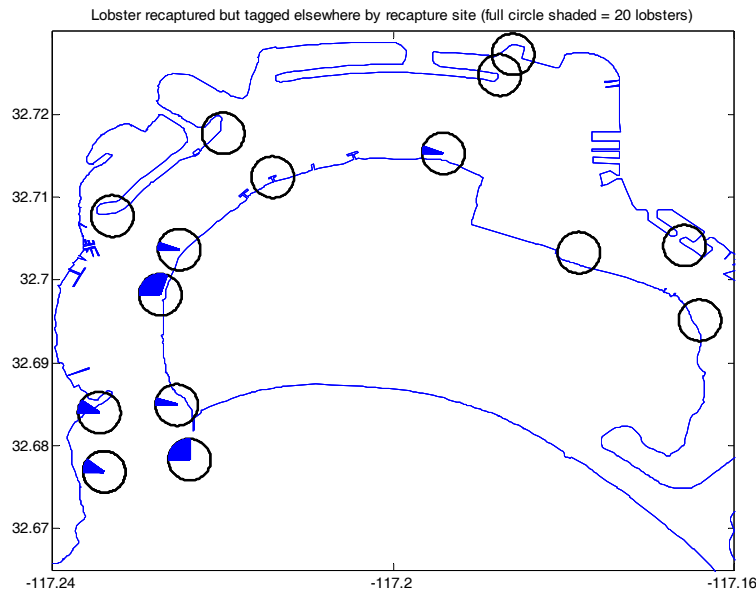


Figure 4. The number of tagged lobsters recaptured that originated from a different station than where they were recaptured. More lobsters appear to switch stations near the bay mouth than in the mid-bay area. This may be due to more corridors for movement near the bay mouth (seagrass and rocky habitat), to lobsters moving in and out of the bay, or to the fact that bay mouth stations generally were closer together than mid-bay stations.

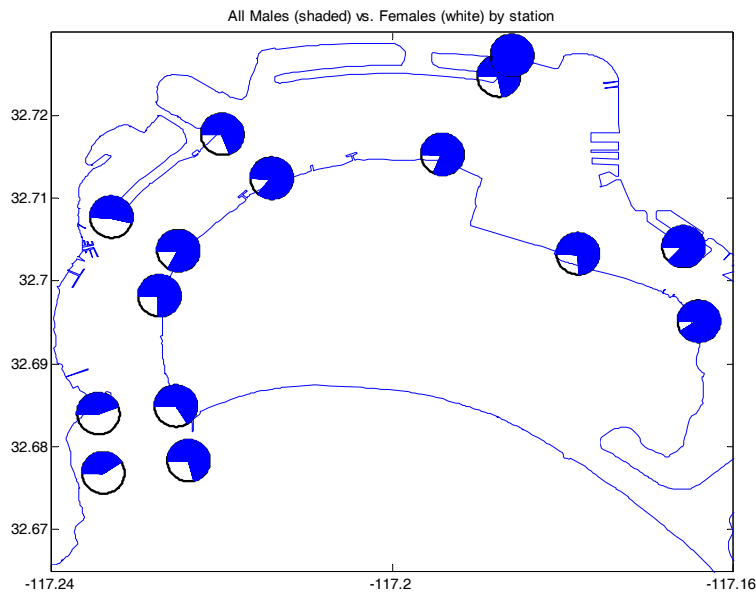


Figure 5. The proportion of the catch at each station composed of males (shaded) vs. females (white). Females made up a larger fraction of the catch at bay mouth stations than at mid-bay stations. This was particularly true beginning in August, when many females appeared to enter the bay after releasing larvae.

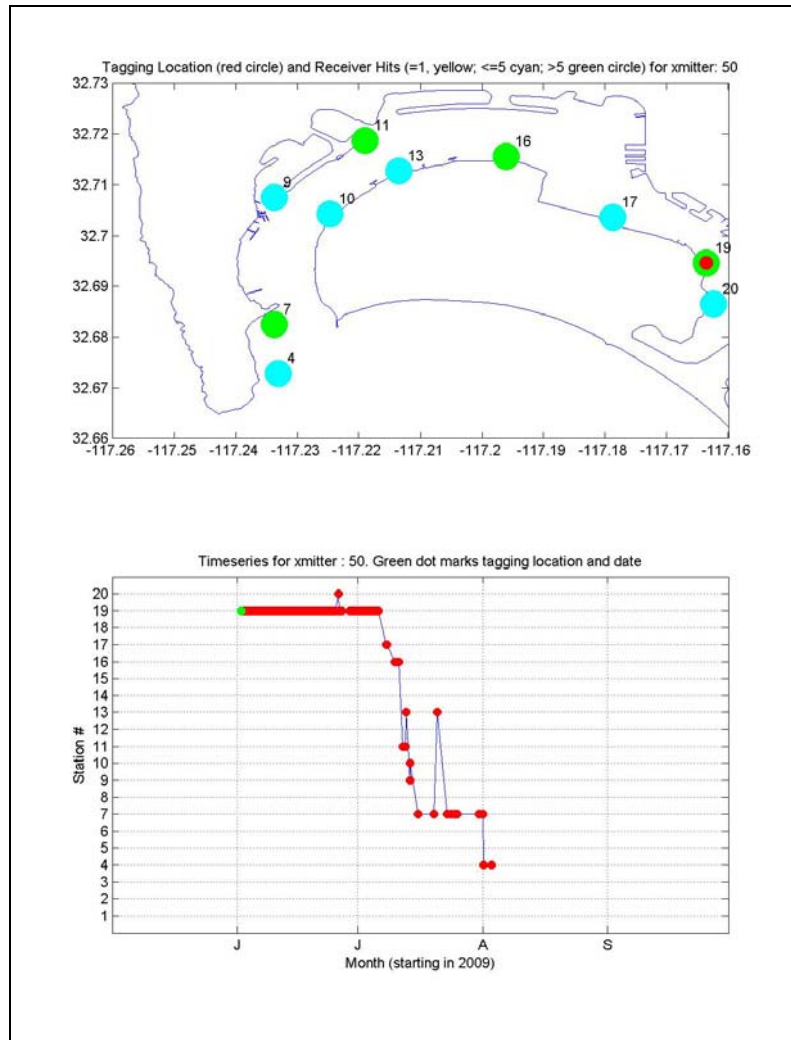


Figure 6. An example of data acquired for one acoustically tagged lobster in San Diego Bay. This lobster was fitted with an acoustic transmitter on June 1 at station 19, and was subsequently detected at a variety of stations throughout the bay. Stations coded in blue (stations 4, 9, 10, 13, 17, and 20) had less than 5 detections for this lobster, whereas remaining stations had more than 5 detections. Stations with fewer than 5 detections may have been recorded false positives from the transmitter. The plot at bottom indicates that this lobster generally moved from the mid-bay to the bay mouth.

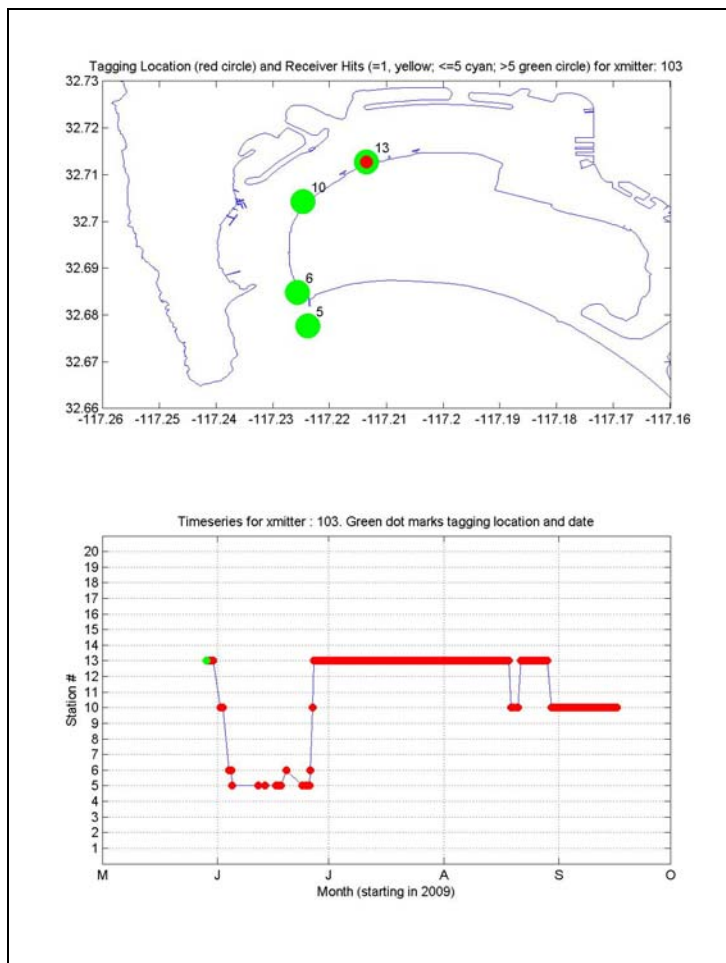


Figure 7. An example of data acquired for one acoustically tagged lobster in San Diego Bay. This lobster was fitted with an acoustic transmitter on May 28 at station 13, and was subsequently detected at stations 10, 6, and 5. The plot at bottom indicates that this lobster generally moved from the mid-bay to the bay mouth, and then went back to the mid-bay where it spent most of its time.