

## SBC LTER Lobster Abundance and Size

**Author(s):** Shannon Harrer, Clint Nelson

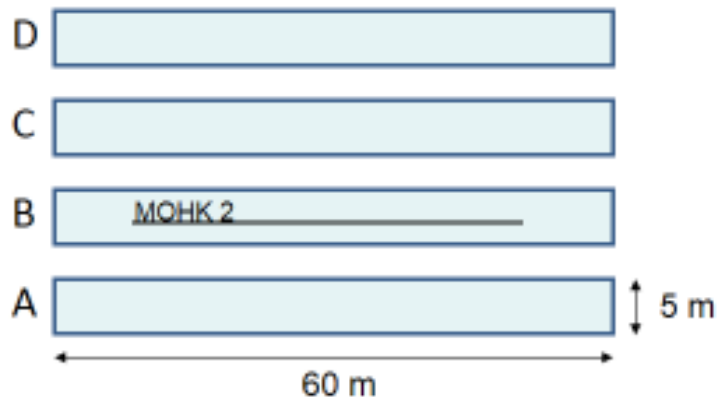
### **Overview and Background:**

Data on the abundance and size of the California spiny lobster, *Panulirus interruptus*, are collected annually in late summer at five sites (Arroyo Quemado, Carpinteria, Isla Vista, Mohawk and Naples) along the mainland coast of the Santa Barbara Channel. Two of these sites (Naples and Isla Vista) were designated as Marine Protected Areas (MPA) in January 2012. The abundances of algae, invertebrates and fish have been monitored at these sites since 2001 in replicate 40 m x 2 m permanent SBC LTER transects. Although lobster are counted in these transects, their density is not high enough to obtain reliable estimates of abundance. Therefore the additional surveys were initiated in 2012, which encompass a much larger sampling area and focus exclusively on lobster.

### **Methods:**

*Field Collection.* The number and sizes of spiny lobster are recorded at each of the five sites within four 60 m x 5 m lobster transects that are positioned around each of the permanent SBC LTER transects (Figure 1). The four lobster transects surrounding a SBC LTER transect are oriented parallel to one another and parallel to the SBC LTER transect. Lobster transects are separated by a distance of 5 m in the north-south direction and are labeled A, B, C, D from south to north.

Lobster transects are sampled by two divers during daylight hours using SCUBA. Each diver searches a 2.5 m area on opposite sides of a 60 m transect tape using a light to thoroughly search cracks, caves and other structures (e.g. boulders, vegetation) that may serve as lobster dens. All lobsters encountered within each lobster transect are recorded and their carapace length is visually estimated in mm. Sex, reproductive status, and degree to which the carapace was obstructed from sight is also noted when possible.



**Figure 1. Layout of four 60 m x 5 m lobster transects surrounding a sample SBC LTER transect, MOHK 2, which is a permanent 40 m x 2 m kelp forest community transect at Mohawk Reef. Shaded areas represent the 300 m<sup>2</sup> area of each lobster transect.**

*Laboratory Processing.*

None required.

*Data Processing.*

Data are processed according to established SBC LTER lab protocols, e.g., per Harrer and O'Brien 2008.

**References:**

Harrer S. and O'Brien, M. 2008. Processing and quality control of kelp forest community survey data. Proceedings of the Environmental Information Management Conference.  
doi:10.5060/D2S46PV7