

SBC-LTER Kelp Protocol

General Notes

General site descriptions and GPS coordinates are detailed in files “SBC-LTER Arroyo Quemado Site Description.xls”, “SBC-LTER Carpinteria Site Description.xls”, “SBC-LTER Naples Site Description.xls” or “SBC-LTER Satellite Site Descriptions.xls” in the “Site Description” folder. The permanent transects at each of the three core sites and six satellite sites are sampled annually in the late-summer to monitor the kelp forest community. Each site has 2-8 permanent 40 meter (m) transects marked at the beginning by either subsurface buoys or tygon tubing. Each transect has six permanent markers (eyebolts or rebar stakes) placed at distances of 0, 8, 16, 24, 32, and 40 m along the transect. Hereafter, the permanent markers (bolts or rebar) will be referred to as bolts. Most transects run parallel to shore from west to east, generally at headings of 80° or 90°. Before sampling is begun, a surveyors transect tape is attached to the 0 m bolt, swum through the eyes of 8, 16, 24, 32, and 40 m bolts of the transect, pulled taut, and attached to the 40 m bolt. Sampling is then begun.

Kelp Sampling

The purpose of kelp monitoring is to track the abundance, size and survivorship of adult *Macrocystis pyrifera* plants on the permanent transects through time. Adult plants are defined as having greater than 4 fronds measured 1 m above the substrate. Plants with less than 4 fronds or are less than 1 meter tall are counted in the Swath sampling method. Kelp sampling is performed by an observer swimming the length of the 40 m transect twice, once each on the onshore and offshore sides of the transect tape. The total sampling area is 80 m² (Figure 1). As the observer swims, he/she holds a 1 m-long bar perpendicular to the transect tape and records data for all *M. pyrifera* encountered in the 1 m wide area on both sides of the transect tape. Kelp data is recorded in four subsections for each transect, 0-20 m Inshore, 21-40 m Inshore, 0-20 m Offshore and 21-40 m Offshore. For each plant encountered, the number of fronds measured 1 m above the holdfast and the largest dimension of the holdfast diameter is recorded.

Materials Needed:

Transect tape

Dive Slates

Appropriate datasheets on underwater paper

1M stick/bar

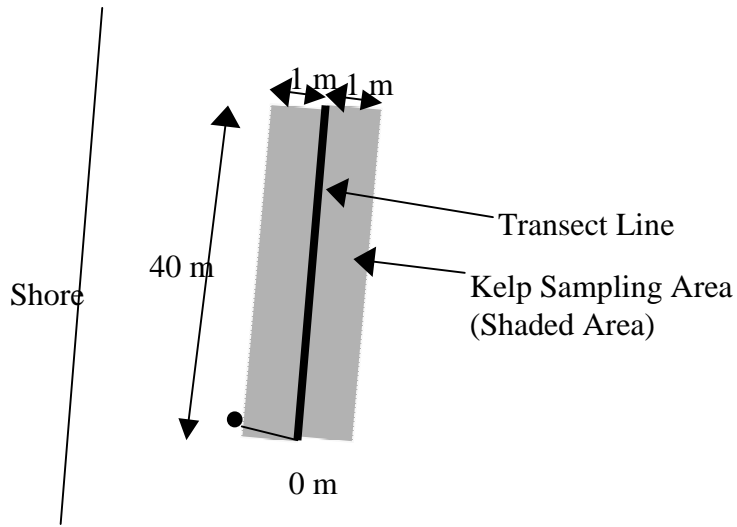


Figure 1. Diagram of kelp sampling area.