SBC LTER Methods
Measurement of continuous benthic water temperature
2013-06-16

Giant kelp forests and the organisms living within them are exposed to a variable environment where biotic and abiotic drivers may affect populations and biological processes on the scale of hours to decades. To examine temporal and spatial patterns of temperature in giant kelp forests, SBC has measured ambient water temperature at long term monitoring sites beginning in 2000.

Submersible temperature loggers (Tidbit, Onset Computer Corporation, Bourne MA) were used to measure bottom temperature at nine coastal reef and two island sites in the Santa Barbara Channel, CA. These temperature loggers measure temperature in water within a range of -20 to 30 degrees Celsius, and accuracy of ± 0.20C at 25 degrees Celsius.

Two temperature loggers were deployed at each site at a depth of approximately 7 meters (MLLW), and fastened to permanent rebar stakes on the seafloor with two cable ties. Each logger was programmed to record ambient temperature every 30 minutes. The programming of the two Loggers at a site was offset by 15 minutes so that the final record shows a temperature measurement every 15 minutes. Temperature loggers were retrieved and replaced bi-annually with a new logger, typically in the early summer (June-July) and in early winter (January-March).