

SBC LTER Protocols: Surveys of Bird, Human and Dog Use and Stranded Kelp Plants on Sandy Beaches

To describe the distribution, abundance and seasonal occurrence of birds on selected SBC beaches we conduct monthly daytime surveys during low tides. A standard 1 kilometer alongshore transect has been established at each of the study beaches.

Surveys of the 1 kilometer transects are conducted monthly at each of the study beaches. Surveys are conducted at 2-4 sites/day each month and are generally completed within 3-4 days for all months. Surveys are generally conducted on weekdays. Bird surveys are conducted in conjunction with surveys of macrophyte wrack, and are scheduled so that the condition of the tide is constrained but not the time of day. All surveys are conducted on 0.75 m (2.5 ft) or lower tides and can span the two hours preceding or following the low tide.

During each month, all shorebirds, gulls and other birds, including seabirds and terrestrial birds, are identified and counted on the selected 1 km segments at each study beach. Counts are conducted by a single observer who walks the 1 km transect, recording all birds on a standard data sheet. Birds are identified and counted using binoculars. Care is taken to avoid disturbing or double counting birds. As they are counted, all birds are assigned to intertidal zones (upper intertidal, mid-intertidal, below WTO, swash zone) and their behavior (feeding mode, roosting) is noted on a standard data form. Human and dog use and zones of occurrence are quantified along the transect during each bird survey. The number of freshly stranded *Macrocystis* plants and holdfasts (1-2 weeks old) present in the intertidal zone are quantified along each standard 1 km transect.