

ABSTRACT

ESTIMATION OF ABUNDANCE OF BLUE WHALE CALLS OFF CENTRAL CALIFORNIA USING A SEAFLOOR- MOUNTED HYDROPHONE

Blue whale vocalizations were monitored off central California during 1998-2000, using the Naval Postgraduate School's Ocean Acoustic Observatory, a former U.S. Navy SOSUS array. Long-term, continuous recordings from a single hydrophone were collected and used in this study. The abundance of blue whale "A" and "B" calls were estimated using a matched filter detector, of which 100,700 "A" calls and 176,585 "B" calls were found on 12,877 hours of recordings at a selected probability of false detection of 0.3%. The abundance of blue whale calls during 1998 was greater than subsequent years, with the greatest concentration between mid-August and late-October. Unexpected increases in abundance of "A" and "B" calls were observed from mid-December to mid-January in 1999. Historically, blue whales were sighted in Monterey Bay from approximately late July to October. These acoustic data indicated blue whales were abundant off central California during winter.

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