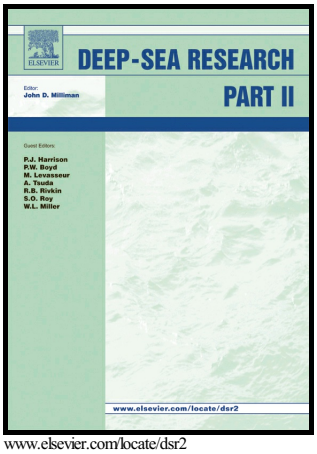

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Observation and prediction of flotsam trajectories in the California Current system based on surface drift of Rafos Floats

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ABSTRACT

Surface drift of eighty-nine undrogued RAFOS floats in the California Current System (CCS) has been studied to describe patterns of flotsam drift, its seasonal variability and predictability limitations. The floats were launched in the California Undercurrent during 1992–2010 and were tracked by the ARGOS system when they surfaced at the end of their subsurface missions. The duration of surface trajectories varied from as short as 11 to as long as 280 days. The surface drift of these floats was typically equatorward in the California Current. However, some floats moved poleward into the Subpolar Gyre, and others drifted westward into the North Equatorial Current.

Usually, observations of surface currents use drifters which are coupled to the surface layer by drogues located at 15 m depth. While drogued observations are useful for studies of circulation of the upper layer of the ocean, a more typical operational problem involves trying to find flotsam that has fallen off the deck of a ship or to predict the path of an abandoned vessel. To better understand the behavior of these surface drifting objects, observations of the surface drifts of RAFOS floats in the California Current system were used to compare the floats' motions to wind-induced drift and to evaluate the drift prediction by three ocean models: Ocean