Abstract

Ordnance Reef (HI-06) served as a disposal site for discarded military munitions (DMM) after World War II. Since then, a number of incidents of munitions retrieval and washing ashore raised safety concerns about the presence and integrity of munitions and their impact on human and ecological health. Identification, research and monitoring of sea munitions disposal areas were authorized by H.R. 5122, and those specifically in Hawai'i by H.R. 4778 and S. 2295.

The current study was undertaken as part of a remedial investigation requested by State and Federal agencies to address concerns remaining after several prior assessments of DMM in this area and to fill gaps in existing knowledge regarding potential threats posed by the DMM.

The study demonstrates that there is no widespread contamination in the Ordnance Reef (HI-06) area. The predominantly marine carbonate sediments found in the Ordnance Reef (HI-06) area generally display typical concentrations of contaminants of potential concern (COPC), although it is clear that the DMM do release certain trace elements into the environment at Ordnance Reef (HI-06) and contribute to increased sedimentary concentrations of these constituents. Other sources of contaminants to the study area were identified and include inputs from the wastewater treatment plan outfall and non-point source (NPS) pollution delivered from runoff through storm water along the coast of the study area. The analysis of sediments and biological samples (octopus, fish, crab and seaweed) recovered from the same locations shows that the enrichments in trace elements observed in sediments at selected sites do not translate into an increase of the concentration of those elements in the biological samples.