

US EPA ARCHIVE DOCUMENT



Coastal Estuary Instrument Maintenance and Recovery, Willapa Bay, WA

What: The EPA Region 10 Dive Unit assisted the Washington State Department of Ecology in maintenance of estuary monitoring stations. This work is part of overall implementation of the Clean Water Act, for which the State of Washington is delegated.

Why: The Washington State Department of Ecology has conducted long-term monitoring of marine water quality since 1973 to support a variety of scientific and regulatory activities. The core of the monitoring program consists of monthly floatplane sampling at approximately 40 stations throughout Puget Sound, Willapa Bay, and Grays Harbor. In 1997, an initiative began to further characterize physical forcing mechanisms and spatial and temporal variation in order to understand impacts on water column function in coastal estuaries, using Willapa Bay as a case study. One product included the installation of 4 surface-floating moorings in selected sites in Willapa Bay to address the need for a higher frequency time series of hydrographic data (temperature, salinity, and chlorophyll). An assessment of the physical environment is also essential for understanding the variation of chemical parameters and biological communities in this vital estuarine environment.

When: Dives were conducted in May/July 2007, March/May 2008, and August/November, 2010, November 2011, January 2012, June 2013, and November 2014 (decommissioning of sampling equipment due to State budget cuts).

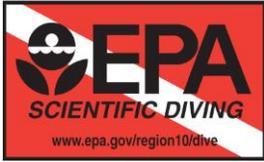
How: Divers were deployed using [tethered SCUBA](#) off the Ecology vessel *Skookum*. Chain binders were used to secure the Tokeland instrument "I-beam" rail to its navigation aid piling. The Oysterville station was removed so that the US Coast Guard could perform routine maintenance on this navigation aid (see photos). The data collection instrument was also deployed and retrieved/checked at the Bay Center site. As of 2013, State budgets have reduced the available monitoring stations to Bay Center only.

Results: Data stations were successfully maintained with data successfully collected on this vital estuary. Unfortunately, due to state budget cuts, estuary monitoring will be eliminated in the near future.

More Details: [More information on Ecology's estuary monitoring program](#) [EXIT Disclaimer](#)

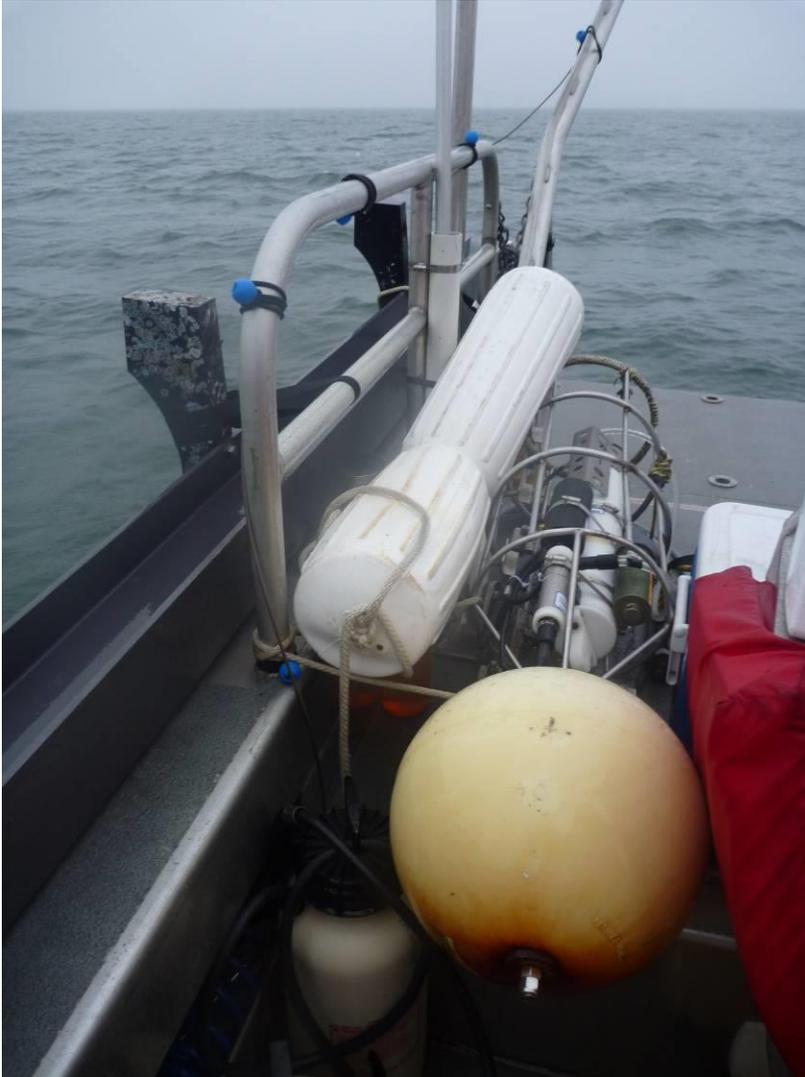
Where: Willapa Bay, Washington

Contact: Rob Pedersen, Pedersen.rob@epa.gov



Photos:

Data package about to be installed on I-beam track:





Bay Center navigational aid showing PVC pipe with CTD:



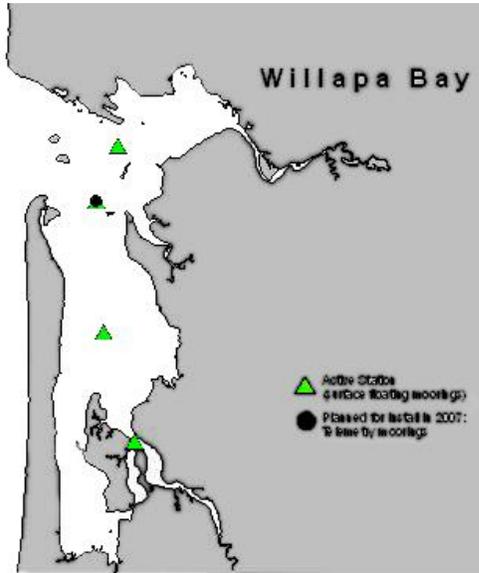


Photo of chain binder used to secure I-beam to pilings:





Location of Willapa Bay data collection stations:



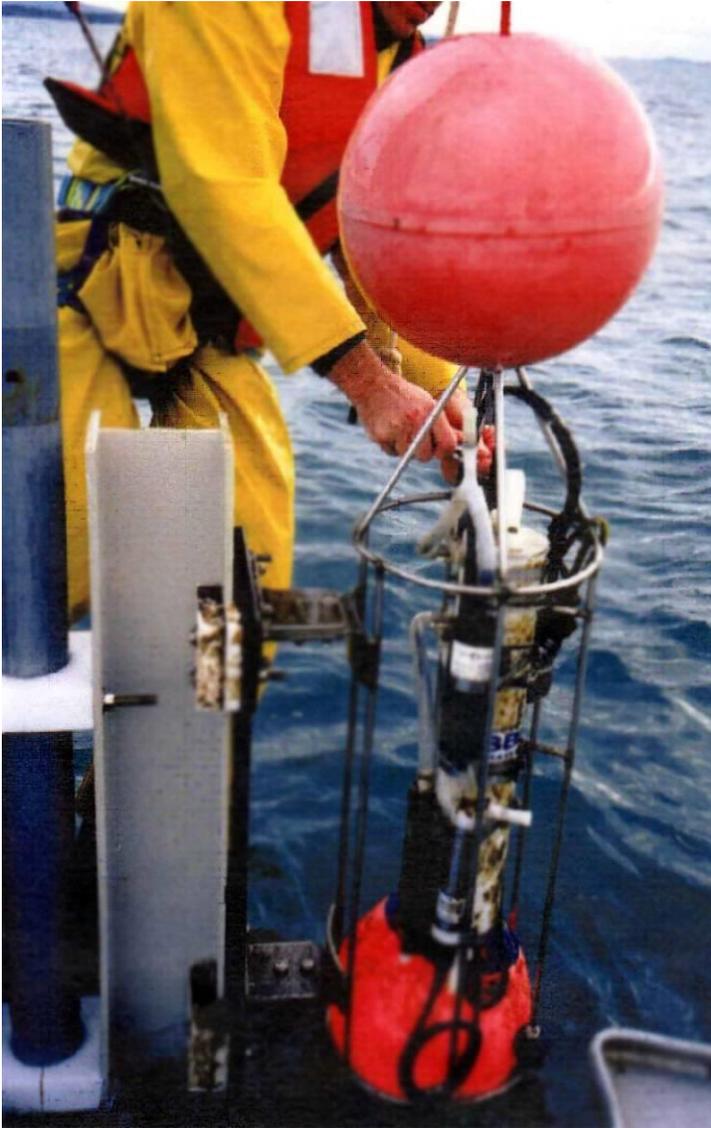


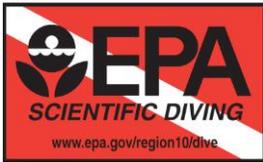
Ecology staff conducting surface installation of an I-beam rail:





Instrument package on rail:

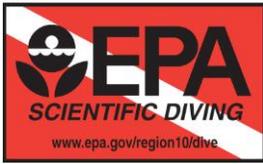




View from the water



Diver Rob Pedersen returns to the dive platform



The EPA dive crew November 2014: Rob Rau, Rob Pedersen (donning his full face mask), and Kristin Leefers.