



**US Army Corps
of Engineers®**
Engineer Research and
Development Center

Coastal Data Field Collection Program

Field Wave Gauging (FWG)

Problem Wave information is a primary design variable for coastal projects. Consequently Corps of Engineers coastal projects require accurate and long-term wave observations for the generation of extremes required in design. Since projects are short-term (one to five years) they are unable to support an adequate measurement program (>20 years). Operation and Maintenance (O&M) activities also require knowledge of existing wave conditions, but in near real-time for guidance on safety and contract monitoring. Directional wave measurements are critical to the verification of existing wave modeling technologies and to identify model deficiencies. Wave measurements are also required to provide boundary condition input to nearshore near-real-time hindcast/nowcast modeling efforts.

Research Approach The Field Wave Gauging (FWG) program has, since 1983, collected wave data sets along the nation's coastline. It currently co-supports 22 sites through the Coastal Data Information Program (CDIP) and 14 directional wave sensors in NOAA's National Data Buoy Center's deepwater buoys. The FWG's mission is to provide directional wave measurements along all US coastal waters of sufficient spatial and temporal coverage to establish wave climatology. This requires the implementation of standards for acquisition, analysis, QA/QC; and to automated access to wave records and data products. In addition, FWG is working closely with NOAA and the Integrated Ocean Observing System (IOOS) to develop a national wave measurement program which will better serve the needs of the Corps of Engineers and the nation as a whole.

Labs/others involved NOAA's National Data Buoy Center (NDBC); Coastal Data Information Program (CDIP), in partnership with the California Department of Boating and Waterways & U.C. San Diego, Scripps Institution of Oceanography); US Navy.

Final Products FWG acquires and disseminates real-time wave data and analyzed wave climate information online. CDIP's website is accessed by an average of 80,000 users per day including federal, local and state agencies along with emergency managers, lifeguards, coastal engineers, boaters, fishermen, harbormasters, divers and surfers.

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Additional information: <http://chl.erdc.usace.army.mil/CHL.aspx?p=s&a=Programs;13>
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