



US Army Corps  
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Engineer Research and  
Development Center

# Coastal Ocean Data System (CODS) Wave Information Study (WIS)

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- Description** The objective of the *Wave Information Studies* is to provide high-quality coastal wave hindcast model estimates, wave analyses products, and decision-support tools nationwide. Wave estimates are hindcast using high quality wind fields, ice fields where appropriate and the latest wave modeling technology. To satisfy the Corps requirement for risk-based designs, at least 20-30 years of continuous wave climatology data are required. Hindcast datasets provide hourly wave information for locations every few miles along the coast. The long-term hindcast wave data are accessible through a website for data downloads (<http://wis.usace.army.mil/>). Available gauge observations are used to evaluate the hindcast/model estimates, to quantify actual conditions, and to understand long-term wave climatologies.
- Issue** Knowledge of the climatology of the atmosphere and waves is required for planning, design, construction, and maintenance of USACE projects in the coastal zone. Such information is scarce due to the lack of point source measurements at locations over time periods long enough to be statistically significant. This lack of information is a critical problem for USACE operations, and project maintenance near the coast. To fill this need the WIS effort has been established to provide long-term (decades) of validated wave estimates along all US coasts including the Great Lakes.
- Users** The WIS long-term wave climate serves the public, federal, state and local governmental agencies as well as the USACE's District and Division Offices supplying valuable.
- Products** WIS has completed continuous hourly wave estimates (height, period and direction) for the period 1980 through 2013 in each of the five major regions: Atlantic, Gulf of Mexico, Pacific, Western Alaska and all Great Lakes. Every year WIS will append yearly estimates, and will add extreme storm events pre-1980 extending the storm climatology back to the early 1900's. Along with the *oneline* files available on the website, there are various products (time plots, wind/wave roses, duration plots, mean/max, percent occurrence tables, and extremal (Return-Period) tables and graphics.
- Benefits** Knowledge of long-term, continuous wave estimates along a coastal reach is vital for design, planning, and operations for the USACE and other governmental agencies and to the public. It is also important to understand the significance of seasonal, annual and decadal changes in the wave climate to potentially project these conditions into the future.
- Point of Contact** Robert E. Jensen, PhD, ATTN: CEERD-HFC-S, 3909 Halls Ferry Rd., Vicksburg, MS 39180-6199 / [Robert.E.Jensen@usace.army.mil](mailto:Robert.E.Jensen@usace.army.mil) / Voice: 601-634-2101. Additional information can be found at <http://wis.usace.army.mil/>, and from the ERDC Wiki Site (<https://technology.erdcdren.mil>) for up to date information regarding the WIS effort.