

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 27 OCT 2014		2. REPORT TYPE		3. DATES COVERED 00-00-2014 to 00-00-2014	
4. TITLE AND SUBTITLE WaveNet				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army Engineer Research and Development Center,CIRP - The Coastal Inlets Research Program,3909 Halls Ferry Road,Vicksburg,MS,39180				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 2	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			



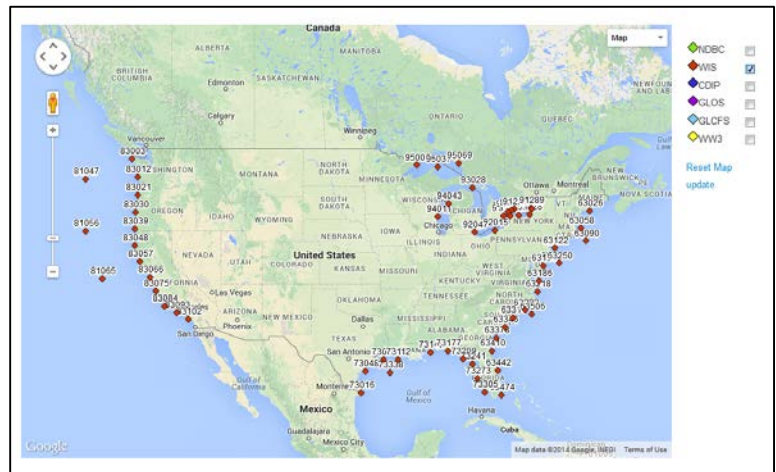
US Army Corps
of Engineers®
Engineer Research and
Development Center

Coastal Inlets Research Program

WaveNet

Description

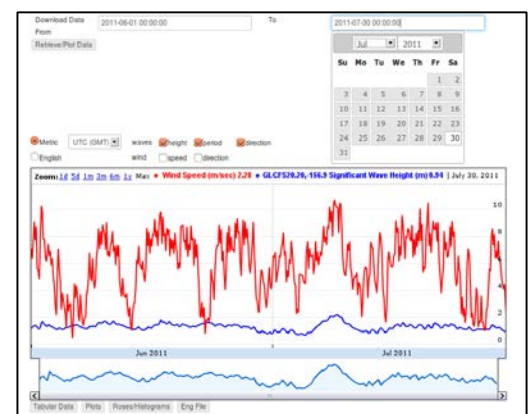
WaveNet is a web-based, Graphical-User-Interface (GUI) data management tool developed for the Corps' coastal modeling and planning missions that accesses, processes, and analyzes meteorological-oceanographic (metocean) data (winds, waves, tides, water levels). It accesses wave and wind data from different data sources and provides a combination of analysis and graphical tools to minimize the complexity and uncertainty of data processing in USACE project applications. Users can extract, download, analyze, and prepare input files for numerical wave models and tabular and graphical information for project planning and reporting for further analysis. The built-in analyses in WaveNet allow users to check the availability, as well as the quality and consistency of data and types of processing methods applicable. The home page of the WaveNet map in the image shows six data sources WaveNet uses to provide data to users. These are the National data Buoy Center (NDBC), Wave Information Studies (WIS), Coastal Data Information Program (CDIP), Great Lakes Observing System (GLOS), Great Lakes Coastal Forecasting System (GLCFS), and WaveWatch 3 (WW3) databases.



WaveNet home page

Issue Addressed

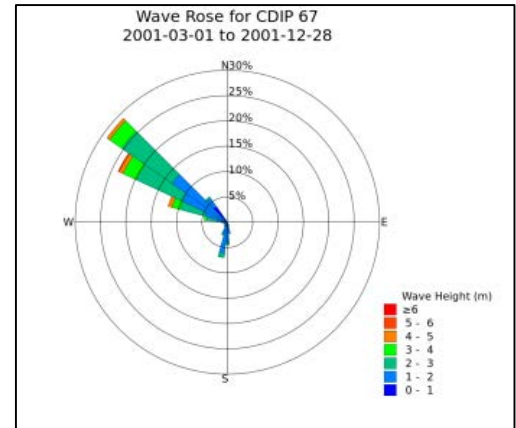
WaveNet addresses a basic need of USACE engineers and planners in planning, design and operation of coastal navigation and flooding projects. It acquires large sets of oceanographic data and employs techniques to minimize the complexity and uncertainty of data processing. WaveNet is a decision-support tool that provides wave and wind data required for coastal, ocean, and marine engineering applications, facilitates conversion of data used in input files by numerical wave models, and generates tabular and graphical information for project planning and design documents.



Time series of wave height and wind data

Products

The WaveNet is a web-based GUI designed to provide users with a GIS mapping tool to query and select metocean data sources according to the desired geographic region. It uses the Google Map interface to display data from different sources, and employs a combination of Fortran, Python and Matlab codes to process and analyze data for USACE applications.

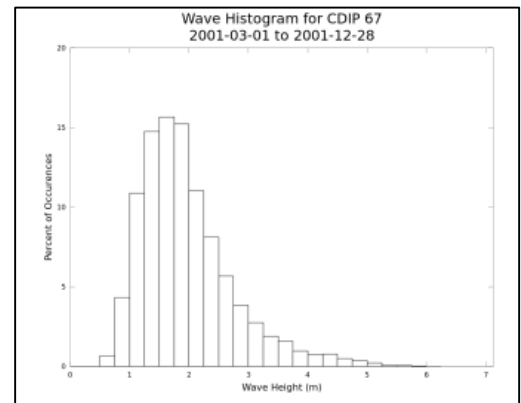


Application of Products

Recent project applications for WaveNet include: Ambrose Entrance Channel, NY; Braddock Bay, NY; Tangier Island, VA; Sand Island, WI; Kikiaola and Hilo harbors, HI; Dana Point Harbor, CA; Tillamook Bay, OR; Grays Harbor, WA; Cape Canaveral, FL.

Projected Benefits

WaveNet employs a Google Map interface to query, select, and display data for a given geographic region from the different sources available. Users can select project-specific date range to query the availability of data; plot, analyze, and extract data; post-process to produce tabular data and plots in a desired format, and generate input files for in-house numerical modeling studies. WaveNet helps USACE users to obtain statistically consistent wave parameters such as significant wave height, peak period, and direction and generates wave and wind roses and histograms of directional wave data required to define the wave climate for Corps projects.



Documentation

Five published technical notes describe various features of WaveNet GUI, its operation, characteristics of different data sources, and analysis capabilities available in WaveNet. Technical notes are available from the CIRP website.

Points of Contact

Dr. Zeki Demirbilek, Demirbilek.Zeki@usace.army.mil, and Dr. Lihwa Lin, Lin.Lihwa@usace.army.mil

CIRP Website

- Please see the CIRP website to download documentation: <http://www.erdc.usace.army.mil/Missions/WaterResources/CIRP/Publications.aspx>
- View archived webinars: <http://www.erdc.usace.army.mil/Missions/WaterResources/CIRP/TechTransfer.aspx>
- Review guidance documented on the CIRP wiki: http://cirpwiki.info/wiki/Main_Page