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Weather Buoy to Aid Forecasters in West Michigan

Ann Arbor, Mich. – Weather forecasters at the National Oceanic and Atmospheric Administration (NOAA) National Weather Service office in Grand Rapids have a difficult job. Every day they issue forecasts and warnings for the nearly 150 miles of Lake Michigan shoreline from Manistee to St. Joseph. This stretch of Michigan's West Coast is used by millions of people who annually swim, fish, and boat on this section of Lake Michigan.

Until recently weather forecasters relied on computer models and land observations to tell them what the conditions are like out on the water. However, this year forecasters have a new tool to improve the accuracy of forecasts and warnings and get up to the minute observations made on the water. This new tool is a real-time weather buoy equipped with a slew of state-of-the-art sensors and technology. Funding for the buoy was made possible by a grant from the NOAA Coastal Storms Program, which is a nationwide effort to make coastal communities safer by reducing the impact of coastal storms. In West Michigan the grant will be used to improve the prediction of nearshore weather forecasts specifically for boaters and swimmers. The focus on improving forecasts also compliments the efforts of the National Weather Service to increase the visibility of weather alerts for swimmers through the issuance of Beach Hazard Statements. These alerts will be issued to warn swimmers of dangerous currents, winds, waves, and other swimming hazards.

The Great Lakes Observing System (GLOS), the organization managing the grant locally, selected LimnoTech, an environmental engineering firm located in Ann Arbor to deploy, retrieve, and maintain the buoy seasonally through 2015. The weather buoy was

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deployed last week approximately three miles from shore in eighty feet of water. Currently the buoy is stationed closer to Holland, but will be relocated halfway between Holland and Grand Haven later this month with assistance from NOAA's Great Lakes Environmental Research Lab in Muskegon.

Every ten minutes the buoy will report the average wind speed, direction, gust, air temperature, relative humidity, air pressure, wave height and period, and water temperature. Additional sensors on the buoy will measure and report rainfall and hail intensity as well as reporting wind gusts

Bob Dukesherer, Senior Forecaster with the National Weather Service in Grand Rapids, states "Real-time data from a buoy in the nearshore zone is invaluable for checking the validity of our marine forecasts and providing lead time on hazardous weather events for both boaters and swimmers alike. The partnership between NOAA, GLOS and LimnoTech will provide valuable data to the residents and vacationers of West Michigan for the next several summers and hopefully beyond."

The new buoy will not only support forecasts and warnings but LimnoTech has worked with others in the community and added additional sensors. Additional support from local fishing groups including the Grand Haven Steelheaders, Grand Haven Charter Boat Association, and Saugatuck Area Charter Boat Association will fund the addition of a string of 20 temperature sensors attached to the buoy. The water temperature data will be used by area fishermen to better pinpoint fish, which tend to follow specific temperature zones. Average lake currents will also be measured by the buoy from the surface to the bottom, which will assist Great Lakes scientists in understanding links between wind and strong lake currents.

Observations from the buoy can be obtained from several sources for free. All of the parameters measured by the buoy are available on the Upper Great Lakes Observing System (UGLOS) website at http://bit.ly/45029buoy. Data from the buoy is also available on the GLOS data portal website at http://data.glos.us/portal and through the NOAA National Data Buoy Center at http://ndbc.noaa.gov. The latest wind and wave conditions can also be obtained by sending a text message to (734) 418-7299 with 45029 in the message body. The text message service is free to use, but depending on your carrier and plan you may be charged to send and receive text messages.

LimnoTech is one of the country's leading water sciences and environmental engineering consulting firms. Founded in 1975, the company is headquartered in Ann Arbor, Michigan with clients across North America. LimnoTech is a dedicated leader in advancing the application of environmental technologies and in environmental monitoring, modeling, restoration, and remediation. Please visit our website www.limno.com for more information.