

Sea Grant is one of over 40 active providers of information offered through NOAA's CoastWatch program, which was extended to include Lake Ontario and the other Great Lakes in 1990.

Photo by Pat Peterson



A few years ago, New York Sea Grant (NYSG) fisheries specialist Dave MacNeill turned his stakeholders on to a new approach to recreational fishing. He suggested that they plan their expeditions according to seasonal water temperature changes. "Fish have distinct temperature preferences," MacNeill explains. "In the spring, when the thermal structure of the lake is reconfiguring itself from its setup during the winter season, they are attracted to a migrating thermal feature. This feature, called the thermal bar, is literally a vertical wall of 37-degree water that serves as a corral, keeping fish such as rainbow trout and steelhead on the warmer, shoreline side of the bar."

So how, you may ask, can anglers and recreational boaters pattern their coastal practices after such technologically-dependant observations? By using information offered through CoastWatch, a National Oceanic Atmospheric Administration (NOAA) program comprised of eight regional nodes that supports environmental science and decision making by obtaining, developing and delivering environmental data and products for near real-time monitoring of U.S. coastal waters.

Initially formed by NOAA as a means of better anticipating and monitoring coastal environmental events such as North Carolina's late 1987 offshore red tide bloom, CoastWatch, which can be accessed on the World Wide Web at sgiot2.www.noaa.gov/COASTWATCH, has expanded to other U.S. coastal regions, including the Great Lakes.

CoastWatch's Great Lakes regional node, which was founded at NOAA's Great Lakes Environmental Research Laboratory (GLERL) in Ann Arbor, Michigan in 1990, receives a daily suite of over two dozen satellite images from the Command and Data Acquisition Station on Wallops Island, Virginia. This collection of images, which includes updates on lake surface temperatures and cloud cover, is then made available to local users via the Internet, at coastwatch.glerl.noaa.gov, or over dial-in telephone lines. According to George A. Leshkevich, a NOAA/GLERL physical scientist and manager of the Great Lakes CoastWatch program, "This data is being used in a variety of ways, including monitoring such things as algal blooms, plumes, ice cover, wave height, currents and water intake temperatures at fish hatcheries."

The first Great Lakes CoastWatch user site was established nine years ago at the Center for Great Lakes Studies at the University of Wisconsin at Milwaukee. Since then, regional application has grown to include over 40 active providers from federal, state and local government agencies as well as academic institutions and the public sector.



Above: George Leshkevich, NOAA's Great Lakes CoastWatch Manager

Below: NYSG Great Lakes fisheries specialist Dave MacNeill points out the features of the newly redesigned website for the Great Lakes CoastWatch node, located in Ann Arbor, Michigan

Photos by Barbara A. Branca



Watch

In 1994, Michigan Sea Grant (MSG) formed a cooperative project with NOAA's GLERL to test and evaluate the feasibility of digitally processing the surface temperature imagery available through the regional CoastWatch program into contour maps, a form that would prove to be useful and accessible to the fishing community.

Employing a process that includes using a Geographic Informational System (see *side bar*), a newly hired MSG computer programmer began posting Lake Michigan surface water temperature and cloud mask maps daily on the program's web site, <www.coastwatch.msu.edu>. Two years later, these efforts were expanded to encompass the other Great Lakes.

Through publishing a series of articles in his quarterly newsletter, *New York's Great Lakes Angler*, and by presenting the idea to sportfishing organizations, MacNeill says, "I was able to describe the Lake Michigan CoastWatch project to my stakeholders, educate them on its benefits and question them as to their level of their interest in developing

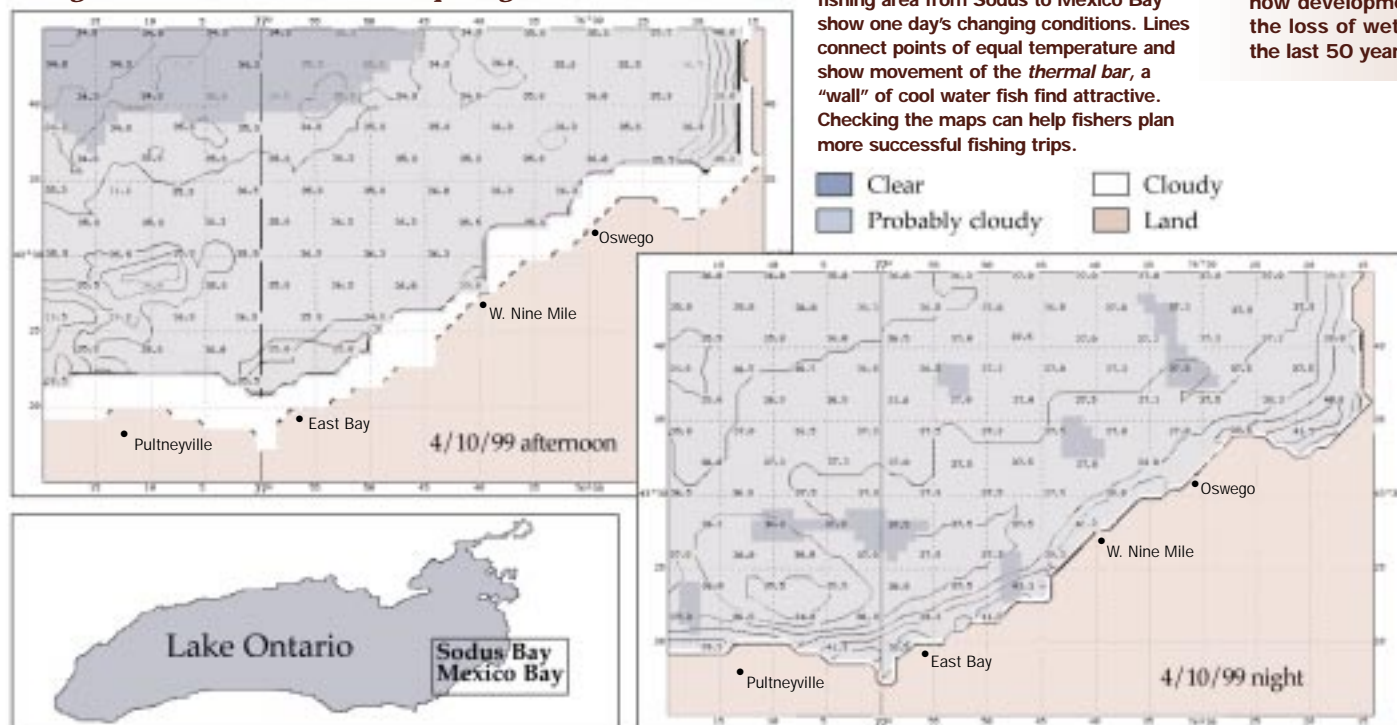
such a thermal mapping system for Lake Ontario." Supplementary to being the main financial supporter for the undertaking, NYSG provided input on the design of the regional port maps for the lake, which were based according to the relative sport-fishing importance of its various locales.

MacNeill is also an advocate for the Great Lakes Forecasting System data— real-time surface water temperatures, water levels, integrated water currents and forecasts of vertical water temperature profiles on a whole-lake scale— available for Lake Ontario online at <superior.eng.ohio-state.edu>.

While both Leshkevich and MSG's Coast-Watch Extension Associate Mike Klepinger say efforts are being made to improve the on-line presentation of data, MacNeill is certain that his stakeholders are already using the information. "Based on the number of letters, phone calls and hits on the web sites, clearly this project has improved angler efficiency and allowed many to better target species of recreational interest."

—Paul C. Focazio

Using Sea Grant's CoastWatch maps to get a "line" on fish.



Don't Guess—Use GIS

A geographic information system (GIS) is a computer-based tool for mapping and analysis that transforms statistics into an interactive visualization of an area's population, land use, vegetation or geological changes. GIS displays many layers of information more efficiently than paper maps, helping a wide range of users explain the past and plan the future.

NYSG coastal processes specialist Jay Tanski has developed GIS tools specific to Long Island's geography and population. With a rise in sea level being predicted, officials need to know how serious the threat may be to coastal communities. Tanski has prepared GIS maps to show the extent of coastal flooding due to sea level rise and coastal storm surges under different prediction scenarios. Three such maps were featured in *Newsday's* "Long Island, Our Future" series.

Supported by NYSG and the Hudson River National Estuarine Research Reserve, Fellow Daisy Tang developed a GIS land use database for the Sparkhill Creek watershed of the Hudson Valley. According to NYSG specialist Nordica Holochuck, Tang used hundreds of digitized aerial photographs to document how development caused the loss of wetlands over the last 50 years.