



# Great Lakes BEACH, TRIBUTARY, & NEARSHORE WATER QUALITY

## Hydrologic and Hydrodynamic Data and Model Assimilation Project

Beach closures are commonly made based on day-old test results assumed to be representative of the current days' bacterial water quality conditions. This assumption is recognized as inadequate by research and regulatory communities alike. The need to improve forecasting and move beyond the current closure protocol is essential to protecting human health. To address this need, scientists from the Cooperative Institute for Limnology and Ecosystems Research (CILER) and NOAA's Great Lakes Environmental Research Laboratory (GLERL) are developing a model-based bacterial water quality forecasting system to use at targeted beaches throughout the Great Lakes. Funding is provided by the Great Lakes Restoration Initiative (GLRI). This system will improve the ability to forecast hazardous water quality conditions that present a risk to human health.

### Current Efforts/Progress

In order to calibrate and confirm the near-shore river plume model and the watershed-scale pollutant fate and transport model that the forecasting system will be based on, monitoring is currently being conducted in the area surrounding Lake St. Clair Metropark between the mouth of the Clinton River and the mouth of the Clinton River Spillway. At each location, conductivity and turbidity measurements are recorded, and water samples are collected for *E. coli* testing.

Once the model is operational at this Lake St. Clair beach, plans are in place to operationalize the forecasting system at other beaches on the Great Lakes. This project complements statistical, regression-based beach water quality models.



### Interactive Data-Sharing

**Great Lakes Beach, Tributary, and Near-shore Water Quality**  
Hydrologic and Hydrodynamic Data and Model Assimilation

1. Click on a to view water quality data for that sampling location.  
2. Click on a date in a row of data to display that date's river plume simulation.  
3. Use the menu found below the map and data tables to learn more about the project.

An interactive website has been developed as a forum to share project data collected. You can visit this site at:

<http://www.glerl.noaa.gov/res/Centers/HumanHealth/eColiMap/>

### Local and Regional Connections

We are thankful for the partnership and collaboration with individuals and organizations both locally and regionally.

- City of Mt. Clemens Utilities Department
- Clinton River Watershed Council
- Donna Kashian, Wayne State University
- Harrison Township, MI
- Lake St. Clair Metropark
- Macomb County Health Department
- Local property owners
- USGS Ohio Water Science Center
- USGS Michigan Bacteriological Research Laboratory (MI-Ba-RL)

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