





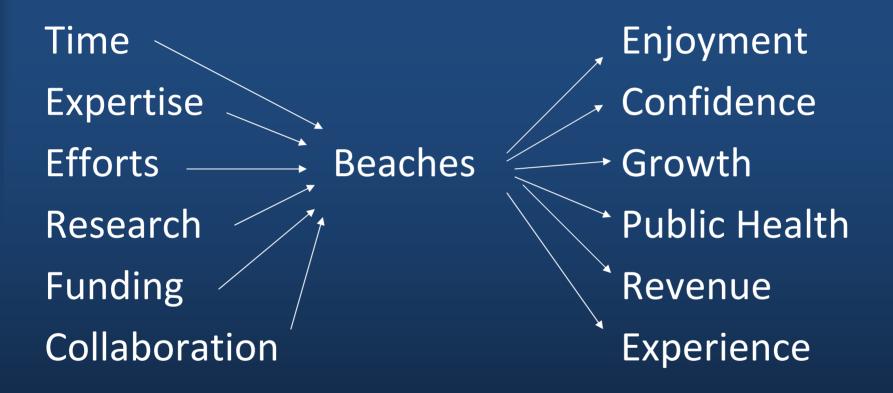


Sleeping Bear Dunes, MI



Grand Haven State Park, MI

### Investing in Beaches = Investing in Community





## 19 Public Beaches in Ottawa County

Crockery Lake - Grose Park	Conklin	Ottawa
Georgetown Lake - Georgetown Community Park	end of 8th Avenue	Ottawa
<u>Lake Macatawa - Dunton Park</u>		Ottawa
<u>Lake Macatawa - Fallen Leaf Park</u>		Ottawa
<u>Lake Macatawa - Holland State Park</u>	Holland	Ottawa
Lake Michigan - Grand Haven City Beach	Grand Haven	Ottawa
<u>Lake Michigan - Grand Haven State Park</u>	Grand Haven	Ottawa
<u>Lake Michigan - Holland State Park</u>	Holland	Ottawa
<u>Lake Michigan - Kirk Park</u>	At end of Filmore and Lakeshore Dr.	Ottawa
<u>Lake Michigan - Kouw Park</u>		Ottawa
<u>Lake Michigan - Mountain Beach</u>	Mountain Beach	Ottawa
<u>Lake Michigan - North Beach Park</u>	Ferrysburg	Ottawa
<u>Lake Michigan - P.J. Hoffmaster State Park- Shoreline</u> <u>Beach</u>	PJ Hoffmaster State Park shoreline beach south of County line	Ottawa
Lake Michigan - Rosy Mound Recreation Area		Ottawa
<u>Lake Michigan - Tunnel Park</u>	Holland	Ottawa
<u>Lake Michigan - Windsnest Park</u>		Ottawa
Maplewood Lake - Maplewood Lake Park	Jenison	Ottawa
Pottawattomie Bayou - Pottawattomie Park	Grand Haven	Ottawa
Spring Lake - Lakeside Beach	end of Lake Avenue	Ottawa

## Lake Michigan-Grand Haven State Park

E. coli Monitoring Data					
09/09/2011 8:45 AM	Daily Mean	86			
09/08/2011 10:28 AM	Daily Mean	77			
09/07/2011 11:28 AM	Daily Mean	69			
09/06/2011 11:23 AM	Daily Mean	99			
09/01/2011 9:37 AM	Daily Mean	47			
08/31/2011 12:50 PM	Daily Mean	32			
08/30/2011 10:05 AM	Daily Mean	32			
08/29/2011 11:48 AM	Daily Mean	39			
08/25/2011 10:11 AM	Daily Mean	61			
08/24/2011 11:28 AM	Daily Mean	64			
08/23/2011 9:33 AM	Daily Mean	428 *			
08/22/2011 10:08 AM	Daily Mean	32			
08/18/2011 11:52 AM	Daily Mean	50			
08/17/2011 9:12 AM	Daily Mean	101			
08/16/2011 10:33 AM	Daily Mean	41			
08/15/2011 12:10 PM	Daily Mean	>186			
08/11/2011 10:00 AM	Daily Mean	29			
08/10/2011 10:45 AM	Daily Mean	107			
08/09/2011 12:01 PM	Daily Mean	101			
08/08/2011 10:05 AM	Daily Mean	221			
08/04/2011 12:15 PM	Daily Mean	1644 *			
08/03/2011 8:00 AM	Daily Mean	137			
08/02/2011 12:01 PM	Daily Mean	58			
08/01/2011 10:00 AM	Daily Mean	25			
07/28/2011 10:20 AM	Daily Mean	306 *			
07/27/2011 10:00 AM	Daily Mean	27			
07/26/2011 12:20 PM	Daily Mean	17			
07/25/2011 10:30 AM	Daily Mean	2			
07/21/2011 12:15 PM	Daily Mean	1321 *			

#### Beach Sanitary Survey Data

	<u>9/9/2011 8:45 AM</u>	Vijay Kannappan
	9/8/2011 10:28 AM	Vijay Kannappan
	9/7/2011 9:07 AM	Vijay Kannappan
	9/6/2011 11:23 AM	Vijay Kannappan
	9/1/2011 9:37 AM	Vijay Kannappan
	8/31/2011 12:50 PM	Vijay Kannappan
	8/30/2011 10:05 AM	Vijay Kannappan
	8/29/2011 11:48 AM	Vijay Kannappan
	8/25/2011 10:11 AM	vijay kannappan
	8/24/2011 11:28 AM	vijay kannappan
	8/23/2011 1:33 AM	Vijay Kannappan
	8/22/2011 10:08 AM	Vijay Kannappan
	8/17/2011 9:12 AM	vijay Kannappan
	8/16/2011 10:33 AM	Vijay Kannappan
	8/15/2011 12:10 PM	Vijay Kannappan
	8/11/2011 10:00 AM	Vijay Kannappan
	8/10/2011 10:27 AM	Vijay Kannapan
	8/9/2011 12:01 PM	Vijay Kannappan
	8/8/2011 10:05 AM	Vijay Kannappan
	8/4/2011 12:05 PM	Vijay Kannappan
	6/3/2011 8:00 AM	Vijay Kannappan
	8/2/2011 12:01 PM	Vijay Kannappan
	8/1/2011 10:00 AM	Vijay Kannappan
	7/28/2011 10:20 AM	Vijay Kannappan
	7/27/2011 10:00 AM	Vijay Kannappan
	7/26/2011 12:20 PM	Vijay Kannappan
	7/25/2011 10:30 AM	Vijay Kannappan
(	7/21/2011 1 ::15 PM	Vijay Kannappan

#### Lake Michigan - Grand Haven State Park

Example of Sanitary Survey Form

Monitoring Point: 7046

Survey Performed On: 8/23/2011 at 9:33 AM

72° F

S

14 mph

occurred ago

4 ft [estimated]

Stong Winds, Rip Current

**Beach Conditions** 

Weather Cond.: Partly Sunny

Wave Intensity: Rough

Temperature:

Wind Speed:

Rain Intensity:

Wave Height:

Longshore Speed: Direction:

Comments:

Direction:

Last Rain:

Surveyor(s): Vijay Kannappan

Surveyor Affiliation: Ottawa County Health Department

Water Conditions

71° F Water Temp.: Change in Water Color?

Water Odor: None **Turbidity:** Slightly Turbid

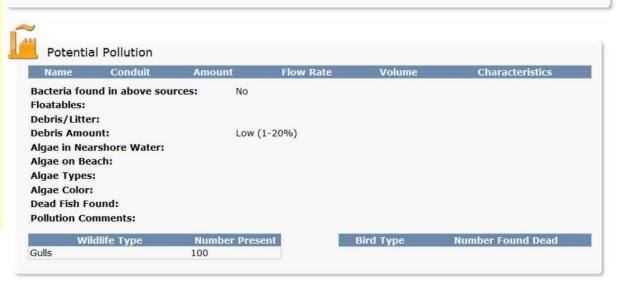
NTU:

Comments:

Some things to consider

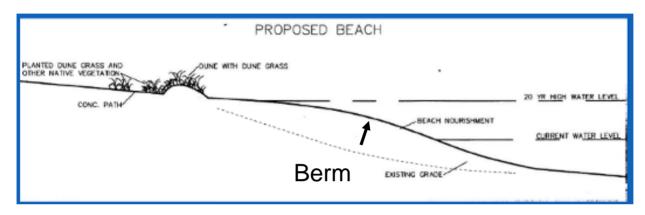
- High winds
- Wind direction
- Rain
- •Gulls

Advisory (red flag) Bather Load 0 People in the water: **Bather Activity** Number Of People 52 People out of the water: **Total People:** 52 **Bather Comments:** 



## Ideas

Improve beach topography (better slope at berm)



Groom beach daily to reduce *E. coli* concentration at berm crest

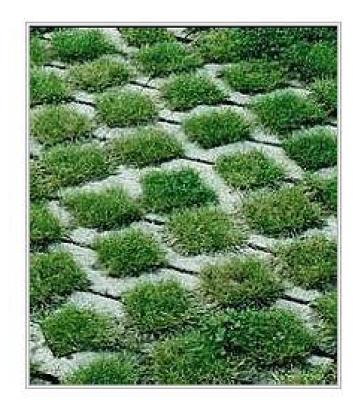


## **Filtration**

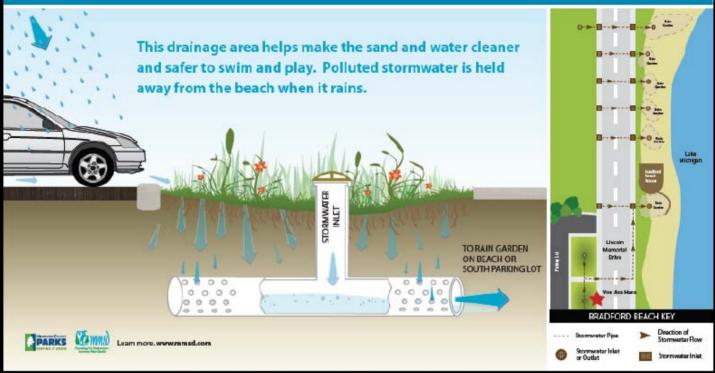
- Land Buffer Strips
- Porous Pavers
- Sand Filters





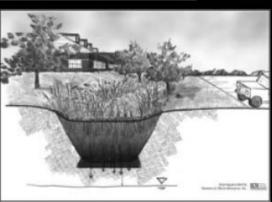


#### THIS DRAINAGE AREA HELPS PROTECT LAKE MICHIGAN







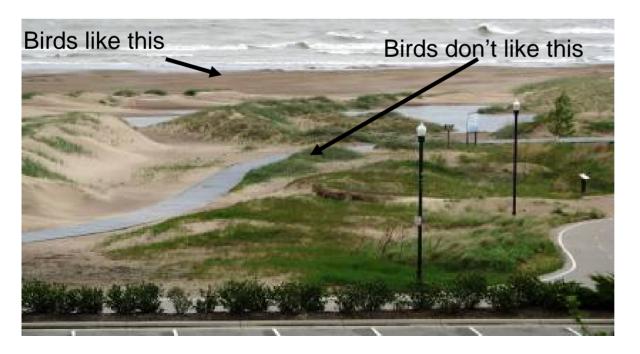


Graphics Courtesy of Rice Creek Watershed District

## Runoff

- Bio-Retention Cell
- Wetlands
- Green Roofs
- Dune Grass and Dune Swales









#### Home About Services Photos FAQ Contact



Round up with kayaks and canoes.



Collected in enclosed area.

#### Goose Busters



Goose control with Border Collies



2 birds per cage.



4488 W. 64th St., Fremont, MI 49412 phone: (🚟 🗸 (231) 519-1753 🔇





Welcome!

The **Great Lakes Beach Association** (GLBA) is a collaboration of more than 600 local and state beach managers, working together to improve recreational beach water quality through an informal information-sharing forum. The GLBA seeks to:

- · improve the immediacy and availability of data to beach managers;
- increase the knowledge and use by beach managers of sanitary survey tools, rapid testing and predictive modeling methods; and
- enhance collaboration among the beach management community (national, state, local) to make beach monitoring programs more effective and cost-efficient.

News and Events

GLBA has a new website!

Check out our new web offerings.

Great Lakes Beach Conference 2011

Sept. 26-28 - Michigan City, IN (in conjunction with SOLM Conference)



http://www.great-lakes.net/glba/

© 2011 Great Lakes Beach Association

Website Contact: Christine Manninen, manninen@glc.org; GLBA Contact: David Rockwell, GLBA President, dcrockwe@umich.edu.



BEACHNET Discussion Great Lakes Beach Conference Additional Info

GLBA Conference

Events

Headlines

The Great Lakes Beach Association holds an annual business meeting, which typically includes an open beach conference highlighting the activities of state and provincial beach monitoring programs, U.S. EPA's BEACH Act projects and funding opportunities, and related public outreach and research initiatives.

#### Current conference

About

2011 - September 26-28, 2011 - Michigan City, Indiana

#### Past conferences

2010 - October 19 - 21 in Preque Isle, Pennsylvania

2009 - September 29 - Oct. 1 in Milwaukee, Wisconsin

2008 - September 15-17 in Porter, Indiana

2007 - October 1-3 in Grand Traverse, Mich.

2006 - October 11-13 in Niagara Falls, N.Y.

2005 - November 2-3, 2005 in Green Bay, Wisconsin

2004 - November 30 - December 1, 2004 in Parma, Ohio

2003 - October 21-22, Muskegon, MI

#### Conference Links

#### SOLM full agenda

Posted September 29, 2011

#### Session schedule

Posted September 29, 2011

## Great Lakes Beach Association beachnet@great-lakes.net



#### Your link to 970 beach buddies!

We transfer our expertise and experience in successful collaborations on beachnet and at the annual meetings.

## Next GLBA conference October 16-18, 2012

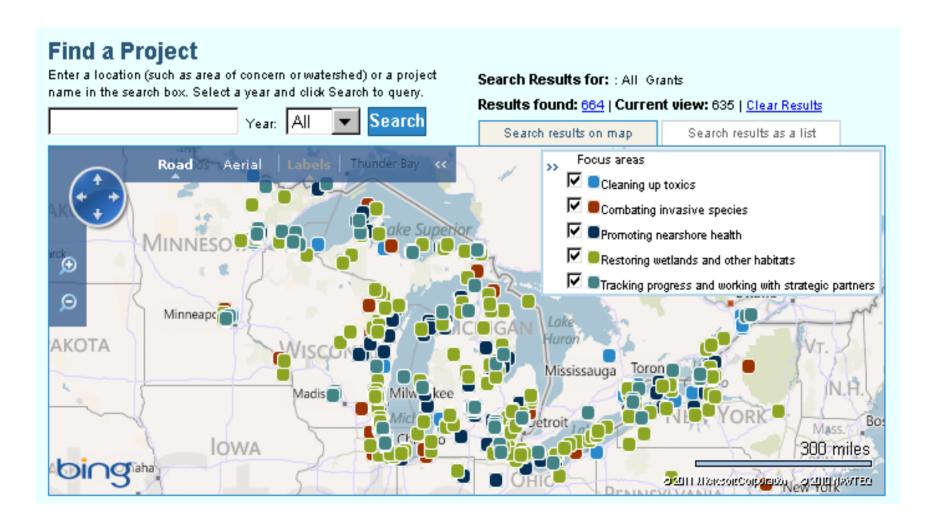


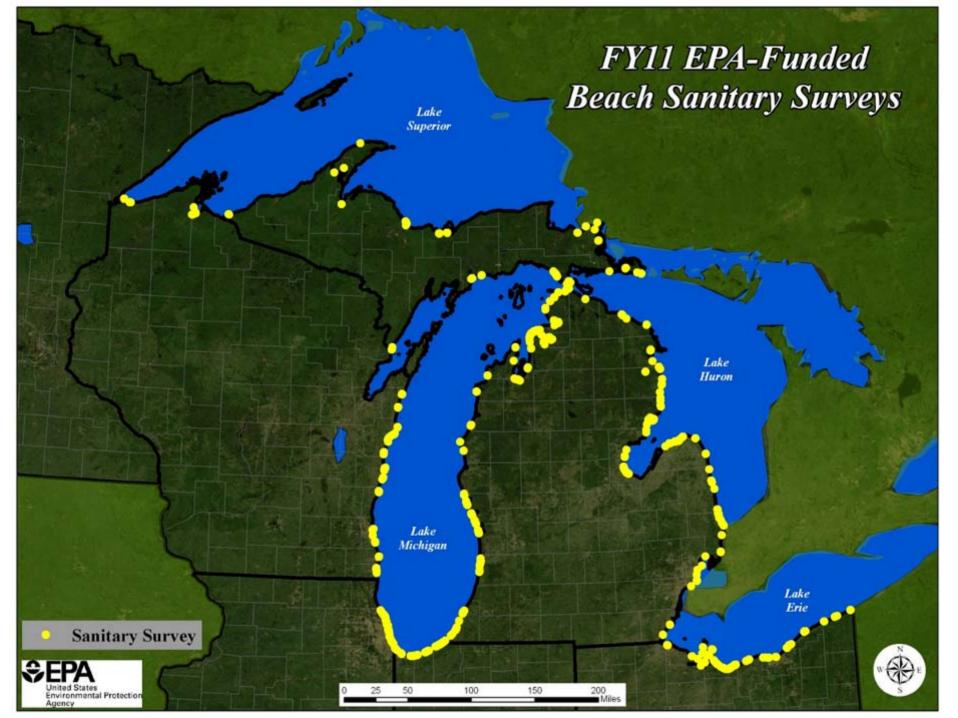
Michigan Point Resort Mackinaw Island



"We're committed to creating a new standard of care that will leave the Great Lakes better for the next generation."

- Lisa P. Jackson, Chair of GLRI Task Force





### **Federal Collaboration on Beach Health in the Great Lakes**



Remediation, Decision Support, & Environmental Research

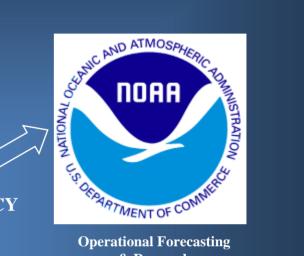


**COORDINATION TEAM** 

**Beach Water Quality Forecasting** Coordinator



**Monitoring & Modeling** Research



& Research

## Collaboration in Michigan

#### 27 Partners

Health Departments, The Watershed Center, and Michigan State University

#### 8 Extended Partners

City of Racine, Hope College, Saginaw Valley State University, Lake Superior State University, Superior Watershed Partnership, Cooperative Institute for Limnology and Ecosystems Research at University of Michigan, US Geological Survey, and National Oceanic and Atmospheric Administration.

Photos, videos, and data courtesy of our partners.





## Michigan Great Lakes Beaches

175 beaches included in GLRI projects

At least 11 labs implementing IMS-ATP At least 3 labs implementing qPCR for beaches

5 beaches Developing Models

1 beach Remediation Project (Bryant Park)





## **Identifying Contamination Sources**

7 beaches investigated with Sanitary Surveys and QPCR molecular source tracking (GH City Beach, GH SP, Rosy Mound RA)

3 Counties inspected 214 sites with Canine Scent Tracking

2,806 Sanitary Surveys reported to BeachGuard





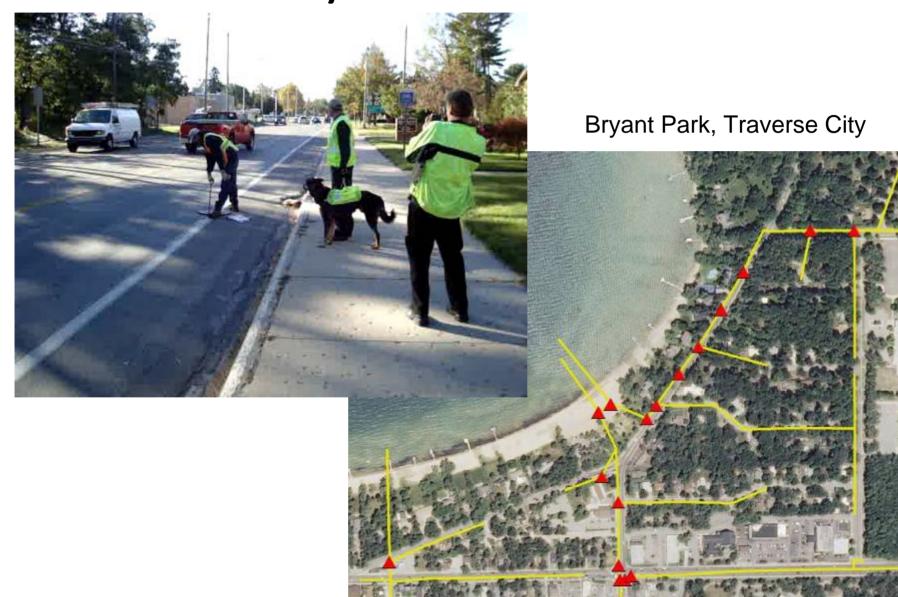
## Canine Source Tracking

- Ottawa County 2011
  - 54 locations/ 18 hrs.
  - Located 2 discharges adjacent to beach
- Chippewa County 2011
  - State Park and beaches
  - > 70 locations in 14 hrs.
  - Confirmed CCHD focus area



- Traverse City
  - -2011
    - 90 locations/24 hrs
    - Discharge from medical facility
  - -2010
    - 108 locations/36 hrs
    - Focus areas for sources to East Bay & Bryant Park
- City of Lansing 2010
  - Discharge from Medical Facility
  - Illicit sanitary connection from residence

## Scott Reynolds and Sable



## Sanitary Survey Findings



Huron County samples collected on 07/26/11.

## **Best Management Practices**

### Deter geese and birds from beach area

- Allow grassy areas near beach to grow
- Keep lids on trash cans
- Discourage visitors from feeding birds





"How can information about recreational beach water quality and associated human health risk be communicated to the public, and what should the message be?"

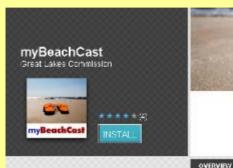








## http://glin.net/beachcast/download/





### myBeachCast

Users who viewed this also viewed



Marine Weather by Bluefli ELUSTIN ENGINEERING \*\*\*\*\*(511)



My-Cast Weather Classic process and process and \*\*\*\*\*(1,243)



14FirstAlert Weather TriSts Baycon MEDIA, Inc.



My-Cast Weather
DIOTAL CYCLONE, INC.
\*\*\*\*(520)

Users who installed this also installed



Qualità dell'aria in Ticino erec del servizi comministrat \*\*\*\*\*(12)



smart Cabrioindex

DAIMLER AT SHART TO DAIMLER

#### Description

Find beaches in Great Lakes states and receive advisory and weather information. The myBeachCast mobile application provides real-time information on beach advisories and observes, weather, and water conditions for states around the Great Lakes. The applications users to discover local beaches based on location, save favorite beaches, and view corresponding weather conditions and five-day weather forecasts. The application being designed for the Android platform but a mobile-friendly enhanced website (http://peachcast.glin.nat) will offer complementary information for other mobile platforms. (continuous 2017)

The Ascoraid application was developed with funding from the US Endournessed Protection (ADE)

Visit Developer's Website 3

#### App Screenshots

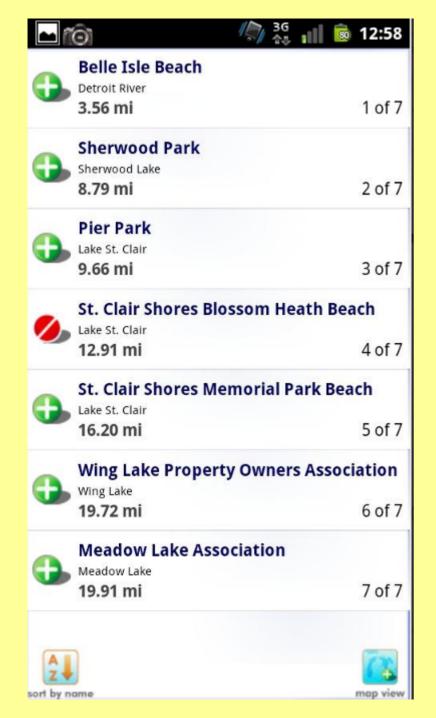




+1 1 > Tweet RATINGS \*\*\*\* Aurort 25, 2011 CURRENT VERSION: REQUIRES ANDROID d and up CATEGORY Meather INSTALLS 100 - 400 135 E 2086 PRICE CUNTER! HATTHO Loss Maturey

















#### Clifton Beach





#### **Advisory Information**

Status:



Advisory type: Contamination Advisory

Reason: High bacteria levels

Last updated: 2011-08-02 16:38:31.393

#### **Location Information**

External link: Click here

Waterbody: Lake Erie

Address:

Lat/Long: 41.491,-81.834

#### **Nearest Weather Station**

KCLE (4.97505 miles)

Temperature: **76.0 F (24.4 C)** 

Weather: Fog/Mist

Visibility: 6.00 miles

Humidity: 88%







#### Clifton Beach







#### This Afternoon

W wind 12 to 14 kt becoming NW. A chance of showers. Waves 1 ft or less.



#### Tonight

NW wind 12 to 14 kt becoming NNE after midnight. A chance of showers, mainly before 8pm. Wayes 1 ft or less.



#### Thursday

NNE wind 11 to 13 kt. A slight chance of showers before 10am. Waves 1 ft or less.



#### **Thursday Night**

NNE wind 10 to 13 kt becoming ENE 6 to 9 kt after midnight. Partly cloudy. Waves 1 ft or less.



#### Friday

E wind 6 to 8 kt becoming NNE in the afternoon. A slight chance of showers and thunderstorms after

## **Ottawa County**



## Ottawa County Beach Watch

Ottawa County is proud of its beautiful and clean beaches! The Ottawa County Health Department monitors conditions and tests E. coli levels of beach water from 16 public beaches throughout the summer. The Health Department does not issue warnings based on the tests, however sampling information and results are available online at miOttawa.org/beachwatch.

Natural bodies of water contain microorganisms despite how clean or clear they may look. Always take steps to prevent recreational water illnesses:

- · Do not swallow lake water
- · Wash your hands with soap and water before eating
- · Take children on bathroom breaks
- · Be sure young children wear clean swim-diapers
- · Do not swim when you are sick
- Do not swim in water that smells foul or looks polluted
- · Avoid swimming immediately after heavy rainfall
- · Do not feed seagulls
- Shower when you return home



miOttawa.org/beachwatch facebook.com/miOttawabeachwatch twitter.com/miOttawabeach

View feet results now with your amart prione's QR code reader. If you do not have a QR code reader you can download one free from your smart phone's app store.

## Reducing Litter on Beaches

Examples in Marquette and Traverse City



## **GREAT LAKES ECHO**

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a.

#### **Beach Conflict**

AUG 10 2011

GREAT LAKES ECHO

ONE COMMENT



With more than 10,000 miles of shoreline, the Great Lakes have the most freshwater access in the world — at least, in theory. There are growing conflicts over who can do what where roads meet the water.



AUG. 3:

#### Are beaches public where roads end?

A western Michigan court case embodies the abiding conflict between private property owners and the public over rights to Great Lakes shorelines at road ends.



AUG. 10:

#### Public docks spark conflicts where roads end at Great Lakes waters

Public docks create murky water for townships trying to calm public-private tensions at road ends.



AUG. 17

#### Abandoning access: Townships hand over legal rights to roadends

Lately, legal experts worry about townships indiscriminately abandoning access and about loopholes that make it easier for public beaches at the end of roads to end up in private hands.

#### **Special Reports**







#### Recent Comments

"UP color is late in many areas this year, probably due to the..."

Fall Photo Friday: M-115's roadside en route to Frankfort, Mich.

"Doesn't Alice Rossignol usually write all the avian articles?"

Population of endangered Great Lakes bird remains stable

"Please send me a copy of this article. Nelda B. Ikenberry Thank you!"

Avian Botulism puzzles Great Lakes scientists

"There is plenty of money locked up in Washington to close..."

Carp fight: Stymied in the courts, states widen the scope of the battle

## **GREAT LAKES ECHO**

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Q,

#### Septic Setbacks

JUN 21 2011

GREAT LAKES ECHO

NO COMMENTS



III maintained, leaky and overflowing septic tanks are polluting drinking water sources, rivers and lakes and causing serious health concerns in Great Lakes communities.



AUG. 16

#### Leaky pipes: Researchers find sewage in most Milwaukee stormwater discharges

A recent study found almost 90 percent of storm water outfalls tested in Milwaukee contained human sewage



JULY 7:

#### Michigan on-site wastewater systems lack state oversight

When it comes to regulating septic systems, Michigan is a loner. It lacks statewide regulations to oversee the permitting and operations.



JUNE 28:

#### Local governments search for funds to fix failing septic systems

Leaking septic tanks continue to threaten human and environmental health despite increased regulations, legislation and enforcement.



JUNE 21

#### Failing septic systems an increasing health concern

While most home sellers look for realtors, some may also have to stop at their local health department.

#### Special Reports







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"There is plenty of money locked up in Washington to close..."

Carp fight: Stymied in the courts, states widen the scope of the battle

"The primary cause in this chain of events certainly seems to be climate change. Rising..."

Avian Botulism puzzles Great Lakes scientists

## Trends in Monitoring Data

- More Sanitary Surveys reported
  - Reduced number of "Unknown Sources"
  - Increased number of "rain related" sources

- Duration of Advisory or Closure
  - Shorter duration usually rain related
  - Longer duration mostly Unknown Source

## Contamination Sources Associated with Advisories and Closures

Sources	2009	2010	2011
Unknown	73%	69%	54%↓
Rain Related	16%	24%	38% <b>†</b>
Wildlife	8%	1%	2%
Agriculture	2%	1%	1%

Routine Sanitary Surveys effectively identify sources of contamination that cause beach closures and advisories.

# Contamination Source listed according to Number of Days with Closure or Advisory in 2011

Sources	1 to 2 days	3 to 10 days	14 <sup>+</sup> days
Unknown	49%	55%	100%
Rain related	43%	35%	0%
Other	8%	10%	0%



It might be easier to work alone...

## **Growing Partnerships**

County Health Departments Watershed Groups **Townships & Cities Drain Commissioners** Legislators **Universities & Colleges** EPA, USGS, NOAA

## Second Round of Great Lakes Restoration Initiative Beach Projects

- Central Michigan University
  - Implementing Gull Exclusion at Public Beaches
- Watershed Center
  - East Bay Park Remediation
  - Suttons Bay Stormwater Remediation
- Huron Clinton Metropark Authority
  - Reducing the Impact of Stormwater on Metro Beach



## Third Round of Great Lakes Restoration Initiative Beach Projects?

#### Can we have more

- Remediation Projects?
  - Low Impact Design
  - Rain Gardens
  - Buffer Strips
- Source Tracking?
- Additional Monitoring at new sites?
- Test accuracy of Rapid Methods?



## Invitation

- February 22-24, 2012 Marquette, Annual Training Conference, UPEHA
- March 28-30, 2012, Kalamazoo, Annual Education Conference, MEHA
- October 16-19, 2012, Mackinaw Island, Annual Meeting, Great Lakes Beach Association
- Spring, 2013, National Beaches Conference