

Beach Hazard Risk Communication and Education in Support of Rip Current Forecasting

Great Lakes Beach Association Conference
October 4-7, 2016
Marquette, Michigan

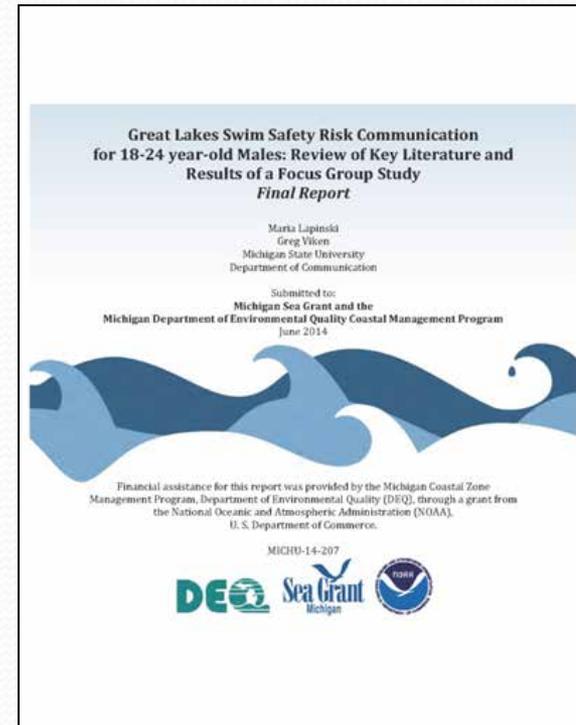
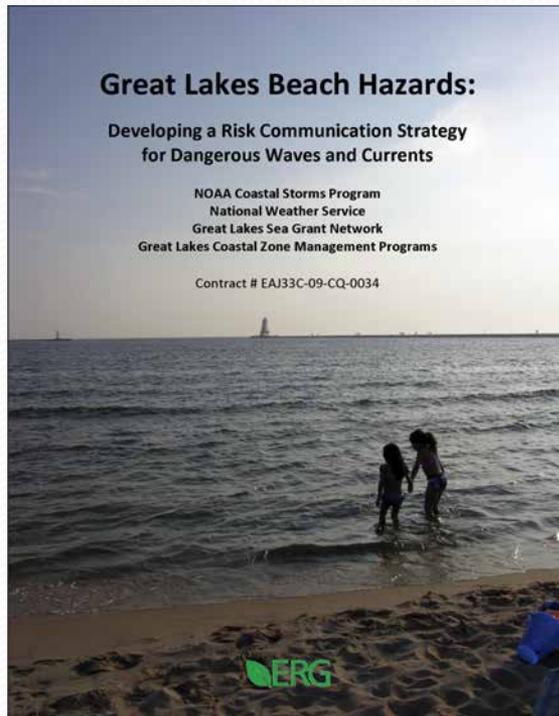
Todd Breiby, Dr. Chin Wu, Gene Clark, Jesse Schomberg and Tom Mlada



Dangerous Currents

- Persistent hazard: 2002-2012 282 rescues and 131 fatalities in the Great Lakes
- Public awareness of rip currents is low
- Public awareness of how to respond to rip currents is low
- Certain groups more susceptible
- Majority of Great Lakes beaches do not have lifeguards
- Inconsistent use of rescue and safety equipment
- Gaps in understanding about rip currents

Risk Communication: Great Lakes Beach Hazards



Targeted audience: youth, tourists and parents of small children

Development of an Observation, Forecasting, and Warning System for Rip Currents

Project Objective

Improve rip current beach hazard warning by developing an innovative and cost-effective means to characterize, identify and detect rip currents, communicate risks and educate public.

Project partners

UW-Madison, UW Sea Grant, MN Sea Grant, WI Coastal Management, NOAA Coastal Storms, NOAA National Ocean Service, GLERL, NOAA National Weather Service, City of Port Washington, City of Duluth and Milwaukee County.



Take Home Messages

- **Partnerships**
- **Identifying community needs**
- **Building local capacity and community resiliency**
- **Sustainability**
- **Improving public safety**
- **Increasing awareness**

Project Locations

Duluth, MN
Park Point Beach



Port Washington, WI
North Beach

Milwaukee, WI
McKinley Beach

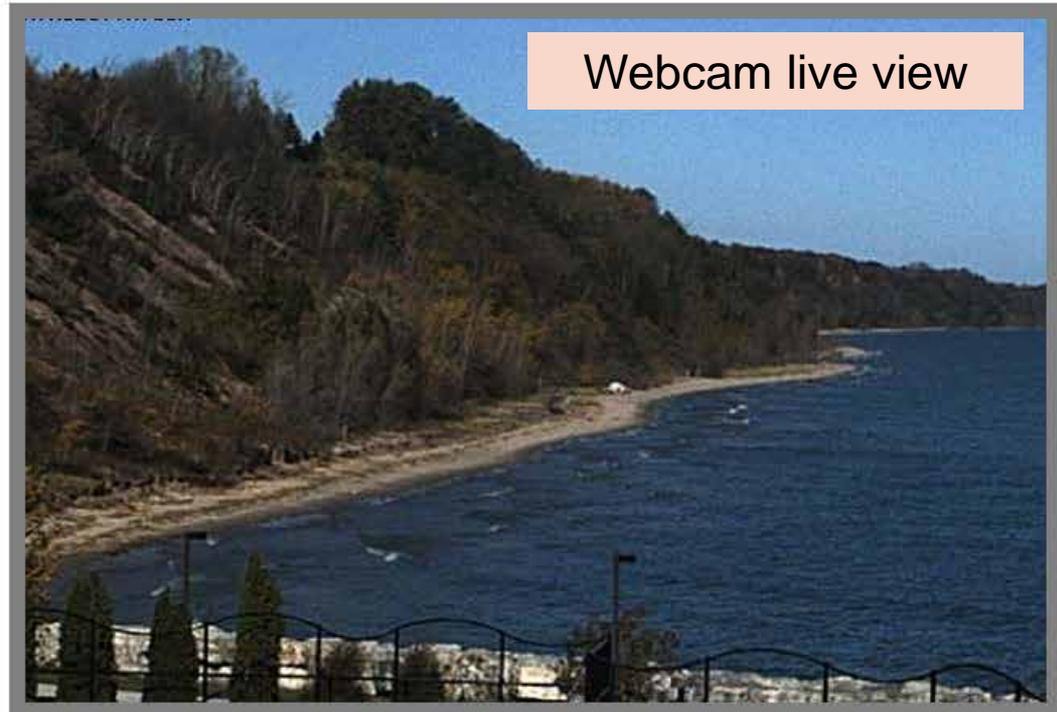
2015: Development of a Real-time Rip Risk Watch Tool for Port Washington Study Site

Current Condition

Real-Time Rip Current Watch at Port Washington, Wisconsin

Update at: 2015/10/22
2:16 PM

Wave Height	N/A
Wave Period	N/A
Wind Speed	5.8 mph
Wind Direction	S
Air Pressure	30.3 in Hg
Air Temp.	58.5 °F
Water Temp. (surface)	56.8 °F
Water Temp. (bottom)	N/A



Rip Current Risk Levels



Risk level & explanation

A LOW RISK implies that dangerous waves and currents are not expected. However, dangerous currents may exist at any time near breakwater. Always use caution and never swim alone.

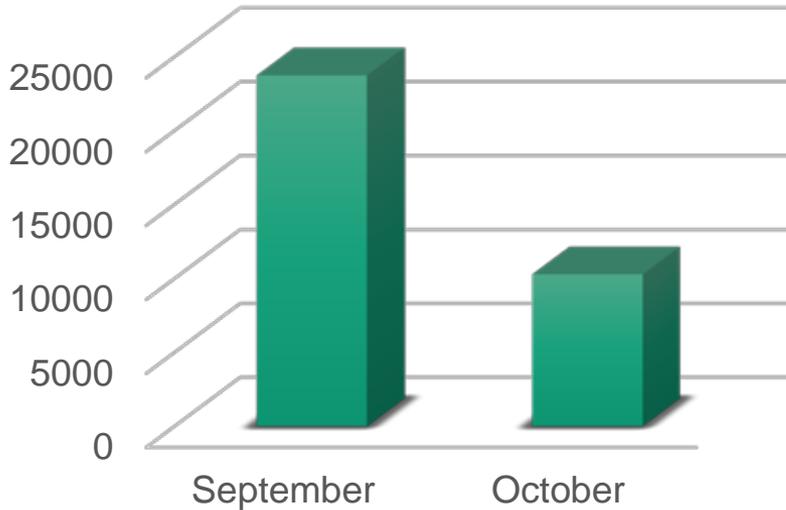


http://infosportwashington.cee.wisc.edu/pw_rip_watch_2.html

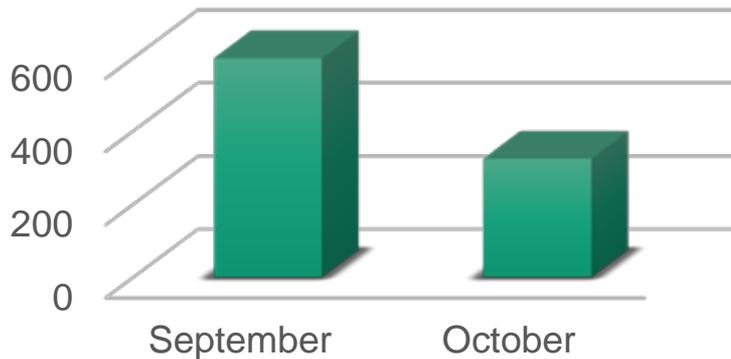
2015 Outreach Activities Summary

INFOS Web Traffic

Page Views



Number of Visitors



Public release
during summer 2015



For Immediate Release
September 15th, 2015

University of Wisconsin-Madison, City of Port Washington unveil groundbreaking real-time rip-current identification technology

PORT WASHINGTON, WI: The City of Port Washington, in partnership with the University of Wisconsin-Madison, the University of Wisconsin Sea Grant Institute, Wisconsin Coastal Management Program, and the NOAA Coastal Storms Program, has formally unveiled to the public a groundbreaking real-time rip-current identification technology. The development of the online



Port Washington installs rip tide monitor system

WISN Milwaukee - Sep 21, 2015

—Port Washington announces a new tool in fighting a hidden Lake Michigan danger. ... **Rip currents** are not typically seen, but can be deadly.



Lake Michigan death spurs action on rip current awareness

Milwaukee Journal Sentinel - Aug 25, 2014

A new warning sign stands at the **Port Washington** beach where a 15-year-old drowned two years ago in a **rip current**. A UW-Madison ...

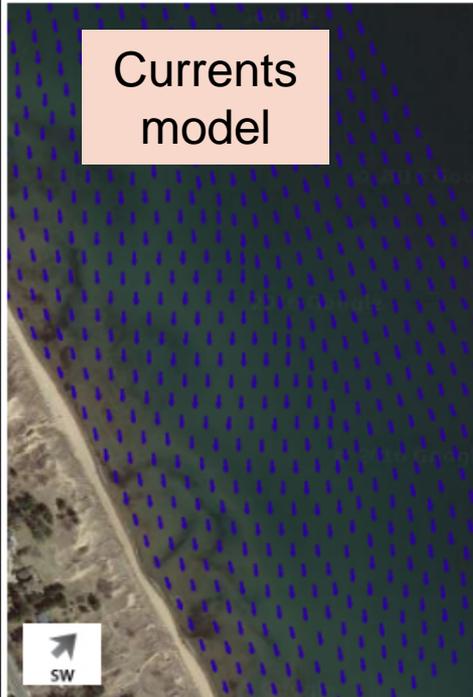
2016: Extending the Real-time Rip Risk Watch Tool for Duluth Study Site

Real-Time Rip Current Watch at Duluth, Minnesota

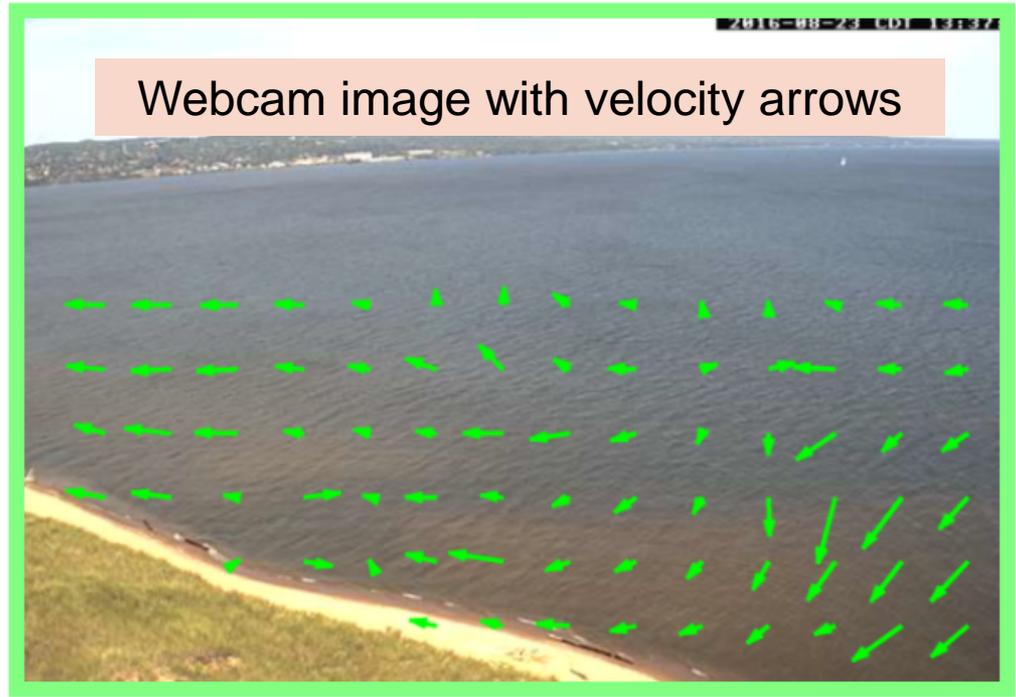
Current Condition

Update at: 2016/08/23 1:38 PM	Wave Height	0.4 ft	Wind Speed	8.1 mph	Air Pressure	29.8 in Hg	Water Temp. (surface)	69.1 °F
	Wave Period	1.7 sec	Wind Direction	SW	Air Temp.	83.3 °F	Water Temp. (bottom)	61.8 °F

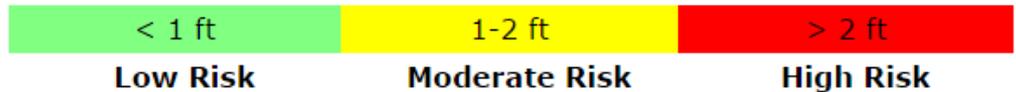
Currents model



Webcam image with velocity arrows



Rip Current Risk Levels



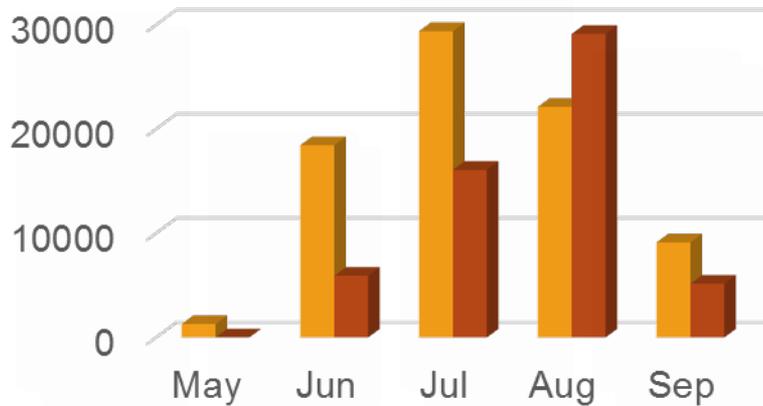
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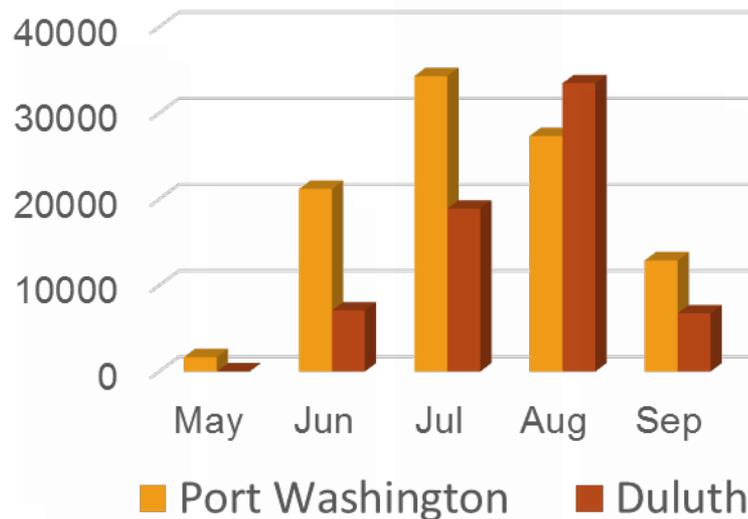
2016 Outreach Activities Summary

INFOS Web Traffic

Number of Visitors



Page Visits



Public releases



Underwater sensor may detect deadly rip currents

Duluth News Tribune - Jun 3, 2016

The wave sensor, underwater off the South Pier of the Duluth Ship ... There are incidents nearly every year in Duluth when rip currents are ...



High risk of Rip Currents on Park Point beaches

Northland's NewsCenter - Jun 22, 2016

Duluth, MN (NNCNOW.com) -- Due to the High Risk of Rip Currents Wednesday, the Duluth Fire Department is issuing a warning for ...



Red Flag warning issued for Park Point beaches

Northland's NewsCenter - Jul 27, 2016

Duluth, MN (NNCNOW.com) -- Due to a high risk of rip currents, a red flag warning has been issued for all Park Point beaches until 10 a.m. ...

Red Flag Warning Issued 07-27-16

FOX 21 Online - Jul 27, 2016

[View all](#)



Rip current webcam and wave gauge coming soon to Park Point ...

Northland's NewsCenter - Jun 1, 2016

Duluth, MN (NNCNOW.com) -- The University of Wisconsin Sea Grant is now halfway done with a two year project to make three beaches along ...

Information sharing

PARK point BEACH WEATHER AND BEACH CONDITIONS
Real time data for the Lake Superior Beaches of Park Point

CONDITIONS ABOUT MORE

water and wave conditions

Leveraging Opportunities

- Port Washington Water Safety Committee
- Twin Ports Rip Current Workgroup
- Ozaukee County Outreach
- NOAA Coastal Storms Program *Implementing Dangerous Currents Best Practices Project*
- Wisconsin Coastal Beaches Working Group
- Great Lakes Water Safety Consortium
- NOAA leadership site visits

Future Opportunities

- Kiosk (information and remote access to INFOS)
- Port Exploreum Lake Michigan Learning Lab
- Port Washington Water Safety Committee
 - Port Washington schools (classes, e-newsletters, etc.)
 - Public information meeting
- NOAA Coastal Resiliency

Integrated Nowcast (real-time) Observation and Forecast Operation System (INFOS)

- INFOS Port Washington

<http://infosportwashington.cee.wisc.edu/>

- INFOS Port Washington Rip Risk Watch Tool

http://infosportwashington.cee.wisc.edu/pw_rip_watch_2.html

- INFOS Duluth

<http://infosportwashington.cee.wisc.edu/Duluth.html>

Thank You

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