

Supporting the Designated Beach Policy Update with Improved Dangerous Current Messaging

Beach Safety Risk Communication Strategies

Final Project Report

Michigan Coastal Zone Management Program, Project Number: 14-RIP-003
 Regents of the University of Michigan

Stay Safe

Attention: Flag Warning System

There are dangerous currents at this beach,
and fatalities have occurred.



Red = Stop.
Stay on the beach
and out of the water.



Yellow = Caution.
Watch for dangerous
currents and high waves.



Green = Go.
But stay aware of
changing conditions.

- A red flag means that there is a high risk of drowning.
- Swimmers: Stay away from piers and other structures.
- Even an Olympic swimmer couldn't win a race with a dangerous current.
- Absence of flags does not assure safe waters.

www.dangerouscurrents.org






Dangerous Current awareness is part of a state and regional effort led by Michigan Sea Grant in collaboration with the NOAA National Weather Service, the Michigan Department of Environmental Quality (MDEQ), the Michigan Department of Natural Resources and others. Sign design supported in part by the Michigan Coastal Management Program, Office of the Great Lakes, MDEQ, under the National Coastal Zone Management Program, through a grant from NOAA, U.S. Department of Commerce.

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GRAHAM
SUSTAINABILITY INSTITUTE
UNIVERSITY OF MICHIGAN



Disclaimer: The statements, findings, conclusions, and recommendations in this report are those of the authors, the University of Michigan or Michigan State University, and do not necessarily reflect the views of the Michigan Department of Environmental Quality and the National Oceanic and Atmospheric Administration.

Purpose

The purpose of this project was to leverage previous project efforts (13-RIP-001) focusing on water safety, dangerous currents, waves and other hazards. The Michigan Coastal Zone Management Program provided the leadership and financial support, through the Section 309 Strategy, for a comprehensive and multi-phased effort to help reduce the loss of life along Michigan's coastal beach areas.

Partners

Project partners include the University of Michigan (Michigan Sea Grant and the Graham Sustainability Institute), Michigan State University (MSU Extension and the Department of Communications), the Michigan Technological University (Great Lakes Research Center), the National Oceanic and Atmospheric Administration, National Weather Service and Coastal Storms Program, the State of Michigan (Department of Natural Resources, and CMP), the National Parks System, local government, water safety groups and others.

Financial assistance for this project was provided, in part, by the Michigan Coastal Zone Management Program (CMZP), Office of the Great Lakes (OGL), Department of Environmental Quality (DEQ), under the National Coastal Zone Management Program, through a grant from the NOAA, U.S. Department of Commerce.

Collaborative Effort

The high level of collaboration among three universities, key stakeholders, state and federal government and others is notable. Our team recognizes the critical role of park staff, local police and fire departments, county sheriffs, the US Coast Guard, community-based water safety groups, and volunteers. The motivation and dedication to improve public safety along Michigan's coastal beaches is significant.

This project focused on continuing collaborative work with the Michigan Department of Natural Resources to improve the Department of Natural Resources (DNR) Designated Beach Policy (2004). The Beach Policy guides multiple components of designated swim areas at inland lakes, as well as Great Lakes beaches, including the placement of swim buoys, implementation of emergency plans, standards for warning systems (e.g., color flag signal system, beach signs, etc.), and emergency rescue equipment.

Project efforts focused primarily on Great Lakes beaches, including leveraging and translating recent scientific results about the morphology of nearshore areas, as well as risk communication strategies targeted for specific audiences. Specific activities focused on guiding water safety messaging for Great lakes beach visitors to be incorporated into the Beach Policy and Guidance documents.

The project team accomplished specific tasks and considered key priorities identified by the State of Michigan, as identified below.

Project Tasks:

1. Guiding the implementation of a beach hazard communication strategy informed by social scientists and outreach specialists;
2. Participating in a technical steering committee, led by the State of Michigan (DNR/OGL-CMP);
3. Contributing information to ensure that DNR parks and recreation division (PRD) staff have full access to materials produced through this and previous, related project efforts;
4. Conducting on-site training workshops targeted for DNR-PRD staff in collaboration with DNR;
5. Distilling materials developed for training workshops and develop electronic training resources, including PDF documents, PPT documents, webpages and websites, photographs, diagrams and templates; and
6. Continuing to host a centralized water safety website, dangerouscurrents.org, linking to summaries about research and outreach efforts supported by CMP and adding new content, as appropriate.

Considerations:

In accomplishing the tasks listed above, the project team was asked to participate in the Project Steering Committee, and to consider the following:

1. Refine and standardize the flag signal system used at Great Lakes State Park Beaches.
2. Guide the placement of designated swim areas (buoys) at Great Lakes State Park Beaches based on coastal processes, geology, and the existence of structures.
3. Provide recommendations (e.g., signage, geographic IDs, etc.) for the management (with respect to beach safety) of non-designated stretches of beach within the DNR coastal state parks.
4. Provide a toolkit and protocol for DNR beach managers to follow on a daily basis to consistently and appropriately determine beach safety risks anticipated and the corresponding flag color to fly, based on specific criteria.
5. Provide for and implement education and outreach efforts (e.g., sign/kiosk templates, water watcher program, naturalist educational program materials) at DNR coastal state parks.
6. Improve content and consistency of information incorporated in individual DNR State Park Emergency Response Plans.
7. Improve form/content of emergency rescue stations, including guidelines on how to properly use equipment and a protocol for annual training on equipment use.

1. Guiding A Beach Hazard Communication Strategy

The project team leveraged data and information from a variety of sources to help guide a communications strategy focusing on water safety. First, we leveraged the 2013 fiscal year project (13-RIP-001) efforts focusing on increasing knowledge about dangerous currents among Department of Natural Resources staff through training workshops; improved public outreach messaging; results from social and behavioral research on park users and other target audiences, and technology transfer from nearshore research conducted by Michigan Technological University (MTU).

Social scientists have raised a number of issues recently regarding risky behavior and swimming. In fact, a number of survey participants reported swimming under the most dangerous conditions. Lapinski and Viken focused their efforts on groups of 18-24 year-old males. “Groups regularly raised the use of alcohol use while pier jumping...The use of alcohol and intentional risk-taking cannot be ignored in any effort to communicate risks to this group.”

A concerted effort was made to increase information about the danger of swimming near or jumping off piers. This was based on observations of specific DNR park staff, as well data from the National Weather Service.

- A number of participants specifically indicated that decisions to swim or jump off piers were made collaboratively, with their friends, swimming as a group or entering water together.

Consulting Activities - Developing a Communications Strategy:

- Used distilled recommendations from social and natural science research conducted 2013-2014 to inform the development of communications materials.
- Coordinated collected and distilled feedback on existing templates for beach signs, both diagrams and messages. Coordinated efforts to produce final drafts and post high-resolution templates on the dangerouscurrents.org website.
- Interacted with Water Safety Officer and Park Interpretation staff throughout 2014-2015. Consulted about the integration of water safety content in DNR communications resources (e.g., website, and publications), training sessions and the potential for leveraging many free resources (e.g., diagrams, video, etc.).
- Provided suggestions to DNR on how to leverage messages and materials produced through this project, as well as through the NOAA Coastal Storms regional Water Safety Project. Promoting the use of the following:
 - Dangerous Currents Website and the resources published online, such as K-12 curriculum, water safety tip card templates, etc.
 - PPT Training tool for first responders.
- Focused additional efforts on the development of an improved color flag warning system. Comments from participants in the Lapinski - Viken study were targeted on the response to test messages and graphics. The responses to this study were a key part of the development of a new Beach sign and the revision of other signs.

“Each participant group spontaneously mentioned warning flags at the beaches as a source of risk information. For some participants, posted flags served as a key source of real time information about water safety. It served as their way of understanding whether or not dangerous currents were likely to be present and the primary visual cue for whether or not to enter the water.”

“Signs and flags were raised as valuable sources of information about swimming risks. It is clear from our data that there are many times that our target audience would not use the information from signs to make their decision about whether to swim/jump off structures or not. It is very clear that there is information about swimming risk that will never be communicated through signs but that sometimes signs can serve as a prompt for communication.

—LaPinski and Viken (*Great Lakes Swim Safety Risk Communication for 18-24 year-old Males*, 2014, Michigan State University, 13-RIP-001)

In response to this information, the communications team focused on honing the messages to emphasize desirable actions to promote in clear and concise manner (e.g., short bulleted list) and provide engaging color diagrams to support the messages. All communications materials focused on how to reduce risk. Also, it's important to note the multi-media approach to communications that includes beach signs, shorter and more targeted publications, social media, websites, videos, animation series and apps.

- Additional, potential message to consider and develop: Swim Sober and Stay Alive. It is important to consider peer pressure and other motivations that may motivate a young male to engage in risky behavior.

“It may be the case that recommending that parents of kids who live near bodies of water make explicit statements to their children about not drinking and swimming is an appropriate intervention strategy. There might be lessons to draw from communication between parents and kids on substance use and risk behavior have been considered extensively (sexual activity and HIV prevention for one). [Research] suggests early communication with boys about swimming safety is important.”

Draft Publications:

- **Beach Log and Inspection Sheet**
Draft developed to assist in equipment monitoring.
- **Using Emergency Equipment Sign or Sheet**
Draft developed to assist in communicating proper use of equipment and suggested guidelines for rescue (land-based first).

2. Participating in a Technical Steering Committee

Our project team actively participated in Steering Committee meetings, led by DNR. The focus of the meetings was on re-writing the DNR Designated Beach Policy and on outreach and education efforts. The policy guides multiple components of designated swim areas at both inland lake areas, as well as Great Lakes beaches.

Regarding changes to the Beach Policy, the project team responded to the following needs:

- Assessing relevant laws or case studies.
 - Consulted with the National Sea Grant Law Center (January 2014 and February 2015). Initially engaged the Law Center regarding rescue station liability. The Law Center Director reviewed the draft policy document: PUBLIC HEALTH CODE (EXCERPT) Act 368 of 1978, 333.12542 and the NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION (EXCERPT) Act 451 of 1994, 324.80198b and provided comments. Comments, (see below) were forwarded to both DNR and Senator Hansen's Office by project lead, Elizabeth LaPorte. (Sen. Hansen's office requested that the Law Center be engaged to review the draft policy changes.)

Comments from the National Sea Grant Law Center (NSG-LC) and responses to these comments from Nicole Colberg (DNR-NC):

NSG-LC:

First, the proposed language would eliminate the mandatory duty to provide safety equipment to a discretionary one. This makes sense to me, as governmental entities are generally entitled to immunity in the exercise of discretionary functions. However, these changes could have an impact on whether safety equipment is provided and maintained at public beaches. Although the new language would provide an incentive to provide equipment (immunity), a governmental entity would no longer need to do so and may decide not to. It's possible that in some cases less safety equipment might be provided. I don't know if this is a concern given the local context and interest in beach safety in Michigan, but it's worth discussing. There may be ways to draft the bill to retain the mandatory duty and still provide immunity when governmental entities act.

DNR-NC:

Even with the current statutory language of 333.12542 (which remains unchanged since its enactment in 1978) that mandates that owners or operators of a public bathing beach shall provide safety and rescue equipment, many waterfront areas are not operated as public bathing beaches and therefore, there is no requirement to provide equipment. Whether an area is a designated beach or not, does nothing to deter individuals from accessing and using the water, regardless of whether there is safety equipment available or not.

NSG-LC:

Another issue to be aware of is by mandating equipment without dedicated funding to the community to provide the equipment, it appears that this would be perceived as an unfunded mandate, which the Headlee Amendment specifically prohibits. By making the action permissive in nature, but granting incentives to local units of government it is the thought that this would encourage more and more participation in making safety and rescue equipment available at water bodies in Michigan.

NSG-LC:

The proposed changes authorize DNR to promulgate rules to establish what the standards are for provision of safety equipment - "reasonable maintenance, inspection, and replacement schedule"? Because immunity will rest on compliance with this schedule, these rules will be very important. The DNR does not have to adopt any rules, but if rules aren't adopted, it will be unclear what the standards are and future litigation might focus on that.

DNR-NC: This point is an excellent one and was one of very specific reasons subsection 2 was added to the language providing for rule-making authority. We don't want local governments to find themselves in a position where they have an issue with liability, so by allowing the Department to promulgate rules to

establish a minimum standard (and we would encourage communities to go above this minimum), it provides the coverage needed to those providing the equipment. Also, the rule promulgating process can begin as soon as the bill passes (so we know exactly what we're working with) and will be with stakeholder input, much like this bill drafting process has been, and also includes an opportunity for the public to provide comments as well. Making it, in my opinion, a more legally sound minimum standard.

8-28-14 Meeting Notes:

- **Provided overview of Current Water Safety Projects:** Beach Safety Kit Pilot Project, CMP (13-RIP-001) project, the regional Coastal Storms Project. Presented copies of water safety and water watcher cards --- discussed potential for wide distribution at all coastal parks, as well as MI Dept. of Trans. Welcome Centers.
- **Presented new beach signs focusing on the following hazards:** Outlet Currents and Structural Currents.
- Presented revisions to the Flag Warning System Sign and distilled comments from DNR staff for additional revisions.
- **Discussed the need for educational tools** (e.g., interpretative displays and flat screen monitors in public areas with video, animation, color diagrams and key water safety messages, as appropriate).
- **Discussed frequency in equipment inspections** and the need to develop a standard for all parks. **Proposed Best Practice:** Check all water safety and emergency rescue equipment (e.g., life rings), buoys, flags and other equipment daily.
- Discussed the importance of noting beginning and end dates for equipment inspection

3. Contributing Information and Resources for DNR parks

The project manager facilitated exploring research on liability issues (see above). Information from working groups and partners (e.g., NWS) was conveyed to the group and the project manager facilitated input from a variety of sources to help ensure that multiple views were presented. All products are readily available to DNR and the public, through the Dangerous Currents website, www.dangerouscurrents.org.

4. Conducting On-site Training Workshops

Two workshops were conducted at Ludington State Park (June 10, 2014) and Holland State Park (June 11, 2014), hosted by Michigan Sea Grant, in partnership with DNR Parks and Recreation Division. Presenters and participants included representatives from DNR, the US Forest Service, the US Coast Guard, County Sheriffs, U-M public outreach, Michigan Sea Grant, and others. Approximately 30 total participants for Ludington event and 15 participants for the Holland event.

5. Distilling Materials Developed for Training Workshops

Materials from researchers, forecasters and other experts were distilled into an electronic training resource, an electronic Training Presentation, Dangerous Currents In the Great Lakes, MICHU-15-406.

- Presentations, photographs, diagrams and other project materials are posted online and available for DNR and public use through the Dangerous Currents website, www.dangerouscurrents.org.

6. Continuing to Host A Centralized Water Safety Website

The dangerouscurrents.org website has expanded significantly since 2003 and now includes:

- Curriculum about dangerous currents, targeted for K-12 educators and students,
- Descriptions and diagrams of the various types of currents identified by the National Weather Service,
- Tips to be safe at the beach (additional updates will be completed to this section in 2015-2016, through the Coastal Storms Project efforts)
- Dangerous Currents Incident Database, a summary of rescues and fatalities from 2002 – 2014.

Through this project, the following material was added to the Dangerous Currents website:

1. **Revised diagrams:** rip currents, channel currents, longshore currents, outlet current and structural current.
2. **Sign templates developed and/or updated:**
 - a. 14-733 Structural Current Beach Sign
 - b. 14-734 Escape Dangerous Current Beach Sign
 - c. 15-405 Stay Safe Flag Warning Beach Sign
 - d. 14-732 River Outlet Current Beach Sign
3. **Facilitated revisions of Incident Database:** Added 2014 data. See file name: dcd_incident.xlsx

Communications and Outreach Work to be Completed by the end of 2015:

- Update content on Dangerous Currents website to be consistent with language on signs and with messages from the Coastal Storms Project (e.g., Water Safety Tips).
- **Revise Research Webpage:** <http://www.miseagrant.umich.edu/dc/outreach/>.
 - Add project reports and presentations and update information:
 - Provide three short summaries with bullet points to link to additional information about: 1) **MTUs research work** (short summary of field work, and results); 2) **NWS forecasting work** (short summary of forecasting and data collection efforts); and 3) **Outreach work** (short summary of curriculum development, training, and risk communication efforts).
- **Possible Article:** Consider finalizing and publishing the draft article: Environmental Issues and Dangerous Currents. MI Public Radio was interested in environmental issues. LaPorte to follow up with Meadows, Kinnunen and Dodson.

Conclusion

Our team includes a number of people that are dedicated to improving public safety along Michigan's coastal beaches and beaches throughout the Great Lakes region.

Sustaining this effort in Michigan and in the region will require continuing collaborative work with the MDNR, NWS, first responders and water safety groups. In addition, coastal community leaders are critical to enlist support from local businesses, educators and others to convey key messages, improve understanding and recognize that coordinated public outreach and maintaining emergency rescue and water safety equipment can help reduce the loss of life.

Appendices



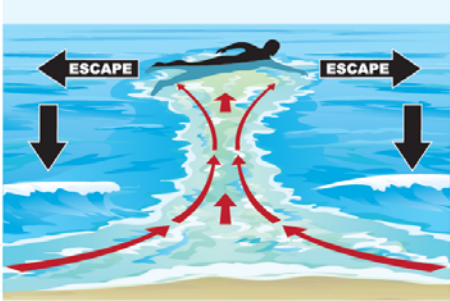





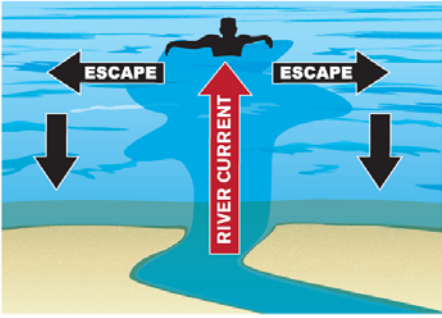

A. Recommendations Report and Training Presentation

1. **Recommendations Report:** “Water Safety Recommendations, Supporting the Designated Beach Policy Update with Improved Dangerous Current Messaging,” MICHU-15-707
2. **Training Presentation:** “Dangerous Currents in the Great Lakes,” MICHU-15-406 (PDF and PPT provided separately)

B. Diagrams

<p>RIP CURRENTS</p>	<p>STRUCTURAL CURRENTS</p>	<p>LONGSHORE CURRENTS</p>
<p>1. Rip Currents</p>	<p>2. Structural Currents</p>	<p>3. Longshore Currents</p>
<p>OUTLET CURRENTS</p>	<p>CHANNEL CURRENTS</p>	<p>LONGSHORE CURRENTS</p>
<p>4. River Outlet Currents</p>	<p>5. Channel Currents</p>	<p>6. Longshore Currents</p>
<p>GREAT LAKES WAVES WAVE HEIGHT AND PERIOD</p>		
<p>7. Breaking Waves</p>		

C. Beach Sign Templates

<p style="text-align: center;">Stay Alive Avoid Piers and Breakwalls</p>  <p style="text-align: center;">Danger Area - No Swimming Zone</p> <ul style="list-style-type: none"> ■ Swim in designated area, away from this structure. ■ If trapped, call for help. ■ Call for someone to throw life ring or anything that floats. ■ Get to ladder. <p style="text-align: center;"> www.dangerouscurrents.org  </p> <p style="text-align: center;">Structural Currents</p>	<p style="text-align: center;">Dangerous Currents Avoid Dangerous Areas:</p> <ul style="list-style-type: none"> ■ Stay in designated swim areas. ■ Avoid swimming near piers and breakwalls. Many fatalities have occurred.  <p style="text-align: center;">If trapped in a dangerous current:</p> <ul style="list-style-type: none"> ■ Swim to the side, out of the current, and then to shore. ■ If in danger, call for someone to throw a life ring or anything that floats. <p style="text-align: center;"> www.dangerouscurrents.org  </p> <p style="text-align: center;">Dangerous Currents</p>
<p style="text-align: center;">Stay Safe Attention: Flag Warning System</p> <p style="text-align: center;">There are dangerous currents at this beach, and fatalities have occurred.</p> <div style="display: flex; flex-direction: column; align-items: center;"> <div style="display: flex; align-items: center; margin-bottom: 10px;">  <div style="margin-left: 10px;"> <p>Red = Stop. Stay on the beach and out of the water.</p> </div> </div> <div style="display: flex; align-items: center; margin-bottom: 10px;">  <div style="margin-left: 10px;"> <p>Yellow = Caution. Watch for dangerous currents and high waves.</p> </div> </div> <div style="display: flex; align-items: center;">  <div style="margin-left: 10px;"> <p>Green = Go. But stay aware of changing conditions.</p> </div> </div> </div> <ul style="list-style-type: none"> ■ A red flag means that there is a high risk of drowning. ■ Swimmers: Stay away from piers and other structures. ■ Even an Olympic swimmer couldn't win a race with a dangerous current. ■ Absence of flags does not assure safe waters. <p style="text-align: center;"> www.dangerouscurrents.org  </p> <p style="text-align: center;">Stay Safe Flag Warning</p>	<p style="text-align: center;">Dangerous Current Beware of Strong River Outlet Current</p>  <p style="text-align: center;">Caution, fatalities have occurred</p> <p style="text-align: center;">If trapped in a dangerous current:</p> <ul style="list-style-type: none"> ■ Swim to the side, out of the current, and then to shore. ■ If in danger, call for someone to throw a life ring or anything that floats. <p style="text-align: center;"> www.dangerouscurrents.org  </p> <p style="text-align: center;">River Outlet Currents</p>

D. Outreach

Summary document of media highlights from May-August 2014

E. Beach Safety and Emergency Rescue Equipment

1. Tracking the Locations of Equipment, Warning Systems and Related Components

The Michigan Department of Environmental Quality, Office of the Great Lakes, Coastal Management Program (MDEQ-CMP) GIS specialists developed a draft map with the coordinates of all equipment, based on data from the 2014 Beach Safety Kit Pilot project, as well as the current Implementing Dangerous Currents Best Practices. The NOAA Coastal Storms Program is supporting both projects.

Recommendation - MDEQ-CMP Follow-up: Continue working with project partners, Sea Grant Extension Educator, based in northwest Michigan to pinpoint locations with equipment, from Mackinac City to Muskegon; and the National Weather Service, Northern Indiana Office (working closely with Berrien County). Also, if possible, produce a Great Lakes regional GIS map to indicate locations of all new equipment purchased and installed in 2015 and 2016.

2. Specifying Water Safety and Emergency Rescue Equipment

Many of the members of this MDEQ-CMP project team are also leading a regional water safety project, Implementing Dangerous Currents Best Practices. This is the second phase of two projects focused on identifying the specific equipment necessary, target locations for the placement of equipment and the development of a network of cooperative and collaborative individuals, groups and government agencies willing to install and maintain equipment. In phase one, 10 DNR parks along the eastern shore of Lake Michigan were chosen.

Water safety and emergency rescue efforts along beach areas in the Great Lakes region. It is important to keep in mind that some equipment will be used primarily by first responders (fire, park staff, beach patrol); however, other equipment will be used by both first responders and the general public.

Products were chosen based on a number of criteria: (1) Previously used by first responders, (2) specific features of products (e.g., buoyancy ratings, grab handles designed for in-water rescue, and flotation devices designed to keep a swimmer's head above the water - when conscious or unconscious); and (3) recommendations by respected sources (e.g., first responders).

These products and features were specified based on safety ratings, rescue features, recommendations by the US Coast Guard and US Life Saving Association, and

recommendations by a regional group, including first responders in Michigan, Illinois, Indiana, and Wisconsin.

Members of the project group spent considerable time selecting equipment that met rigid specifications of the organizations and group mentioned above

Manufacturers Specified:

- Kent, Nearshore Type II Boyant Life Jacket for youth (50-90 lbs)
- Stearns, Crew Mate Type I Offshore Life Vest, 22 lbs. buoyancy rating (will hold 2, possibly 3 adults, depending on weight.)
- Fox 40, Safety whistle, model: Classic, high-decibel, 3-chamber, plastic, pealess, 115 dB
- Feld Fire, RQ3 Ultimate No Knot Throw Bag, with second chance floating ball, and 3/8 in. high-quality max grip rope
- Carlson, Rescue Board (high density foam), 4 ft. long with grab handles
- Cal-June, Type IV Throw Ring Buoy, 35 lb. buoyancy, 24 in. diameter, orange with reflective tape, and grab handles
- Kiefer 48" Super Mesh Rescue ExoTube 48 in. long x 6 in. wide x 3in. thick (not rated for buoyancy but recommended by first responders – both USLA and fire departments)

F. Key Points From Lapinski and Viken

The literature shows two key things: males are generally more likely to take risks than females (Byrnes, Miller, & Schafer, 1999) and young men and women perceive risk differently.

Young men are more likely to overestimate their abilities and underestimate risks when compared to other populations. Moran (2006) found that males aged 15-19 tended to overestimate their swimming ability while also reporting lower perceptions of drowning risk associated with different water safety situations relative to other populations.

Sex differences are a key part of understanding swimming risk issues (Howland et al., 1996; Woodward, Beaumont, Russell, Wooler, & Macleod, 2013).

Several things are notable about these findings. First, these findings do not indicate young men think they are invulnerable to risks associated with swimming, just less vulnerable when their estimates are compared to other populations. It is also important to note young people aren't necessarily any worse at decision-making than adults regarding risks; they just take into account different factors (Reyna & Farley, 2006).

The target population for this study tends to be higher on sensation seeking than other populations.

“...more time in the water means more opportunity to have bad things happen. Importantly, taking risks can result in positive emotional, social, and personal outcomes. As such, risk taking is not categorically bad but may have positive consequences that promote additional risk-taking (Lapinski et al., 2012).”

Culturally, in communities who have access to lakes and other waterways, bodies of water serve as gathering places making swimming-related decisions inherently social.

Information about what others think about my behavior most often (and perhaps most effectively) comes directly from other peoples expressions of approval or disapproval (e.g., my father beams at me when I jump off a pier. Or my grandmother admonishes me for swimming alone.)

- In the questionnaire data, 65% of participants indicated that they do swim alone on occasion.
- Many participants reported making the decision to swim (or not) prior to going to the beach (for example, deciding with friends to go to jump of pier) and going for that purpose specifically.
- Many participants talked about their parents, most often their mothers, as a primary source of information about swimming-related risks in general, and about rip currents in particular.
- Several groups discussed boater safety and lifesaving courses as a key source of risk information (including about how to interpret flags); high school geography classes and YMCA camps were also mentioned. Participants also discussed events, such as college orientation (FG #5) or beach challenge (FG#7) as opportunities that helped them understand swimming risks.
- Participants reported getting information about currents generally from a variety of mediated sources including entertainment television and the Internet; much of which was unplanned exposure rather than information seeking or scanning. Those who sought out information typically did so around weather conditions for particular sports (surfing, boating, or kiteboarding).

G. Key Contacts In Michigan

Department of Natural Resources

- **Mike Evanoff**, EVANOFFM@michigan.gov
- **Joyce Rhodes**, RhodesJ1@michigan.gov
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Michigan Department of Community Health

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-

Michigan Sea Grant

- Upper Peninsula: Ron Kinnunen
 - Northwest: Mark Breederland
 - See: www.miseagrant.umich.edu
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Graham Sustainability institute

- Elizabeth LaPorte
 - See: www.graham.umich.edu
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Genesee County Parks

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Injury Prevention Coordinator
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Hurley Medical Center
One Hurley Plaza
Flint, MI 48503
-

Berrien County

- **Bridgeman, MI**
 - Contacts:
 - Tim Kading, Asst. City Manager, Phone: 269-465-5407
 - Parks Department Director: Brian Bailey, bbailey@berriencounty.org
City Hall
Attn: Tim Kading
9765 Maple Street
Bridgeman, MI 49106
- Supervisor Berrien County Sheriff Marine Patrol: Lt. Martin Kurtz, (269) 926-2638
919 Port Street, St. Joseph, MI 49085

- Emergency Manager: Gayle Bassett, gbassett@berriencounty.org, (269) 983-7141 x4915, 2100 E. Empire Ave. Benton Harbor, MI 49022
- Weko Beach Park Campground: 269-465-3406

- **Chikaming Township:** Police Chief, Jim Storment, ctfd@csinet.net, [\(269\) 469-3245](tel:(269)469-3245)

- **State Parks in Berrien County**
 Warren Dunes State Park Manager: Michael Terrell, [\(269\) 426-4013](tel:(269)426-4013)
 - Unit Supervisor: Andrew Montgomery, MontgomeryA1@michigan.gov, (269) 426-4013

 - **Other beach locations:**
 - Casco Township – no contact
 - Lions Park Beach – no contact

 - **New Buffalo, MI – New Buffalo Beach and Boat Ramp**
 - Contact: Bryan Van Artsen, Parks Superintendent
 - parksdept@cityofnewbuffalo.org, [\(269\) 469-7917](tel:(269)469-7917)
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 - **Berrien County Lincoln Charter Township**
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 2139 W. John Beers Rd.
 Stevensville, MI 49127

 - **Berrien County - Village of Stevensville (Lincoln Twp.)**
 - Town Manager: Bret Witowski, manager@villageofstevensville.us, [\(269\) 429-1802](tel:(269)429-1802)
 5768 Saint Joseph Avenue, Stevensville, MI 49127

Charlevoix County – not included for this project

- Covered by separate NW Water Safety Group
-

Emmet County:

- Wilderness State Park
 - Petoskey State Park
-

Grand Traverse County – not included for this project

- Covered by NW Water Safety Group
-

Leelanau County:

Contact: Mark Breederland – Michigan Sea Grant

- Van’s Beach and adjacent areas – supplement existing equipment and provide new
 - Friends of Point Betsie Lighthouse (231) 352-7666, 3701 Point Betsie Road, Frankfort, MI 49635
-

Marquette County & Mackinaw County

Contact: Ron Kinnunen

Mason County

- Ludington State Park
-

Muskegon County

9,000 Water Watcher Cards

2,000 Water Safety Rack Cards

Ship to:

Safe Kids/Mercy Health,

Attn: Holly Alway

1500 E. Sherman Blvd.

Muskegon MI 49444

Oceana County

- Mears State Park -- No publications for 2015.
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