

Rip Currents in Lake Superior

Jesse Schomberg
Minnesota Sea Grant

RIP CURRENTS
Break the Grip of the Rip!

Rip currents are powerful currents of water moving away from shore. They can sweep even the strongest swimmer out to sea.



IF CAUGHT IN A RIP CURRENT

- ◆ Don't fight the current
- ◆ Swim out of the current, then to shore
- ◆ If you can't escape, float or tread water
- ◆ If you need help, call or wave for assistance

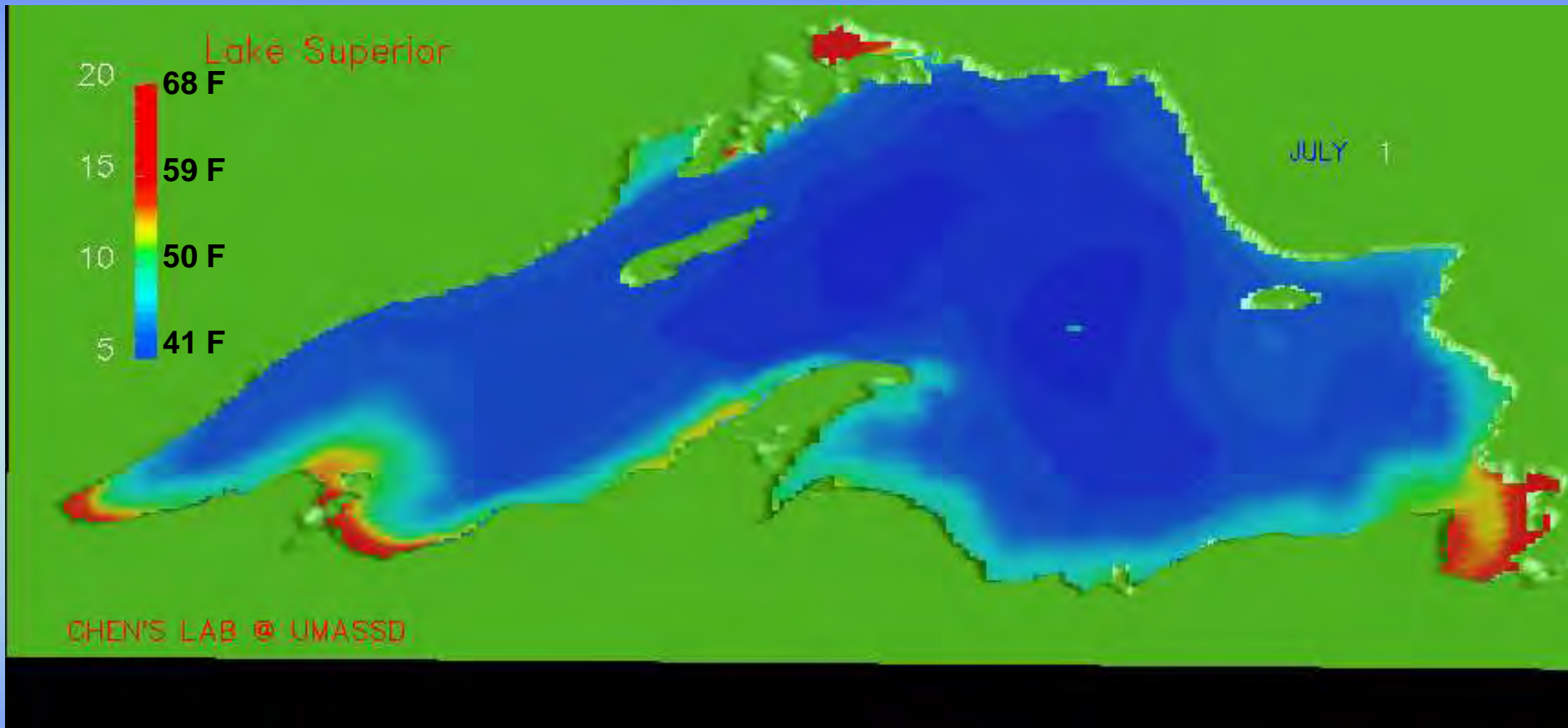
SAFETY

- ◆ Know how to swim
- ◆ Never swim alone
- ◆ If in doubt, don't go out

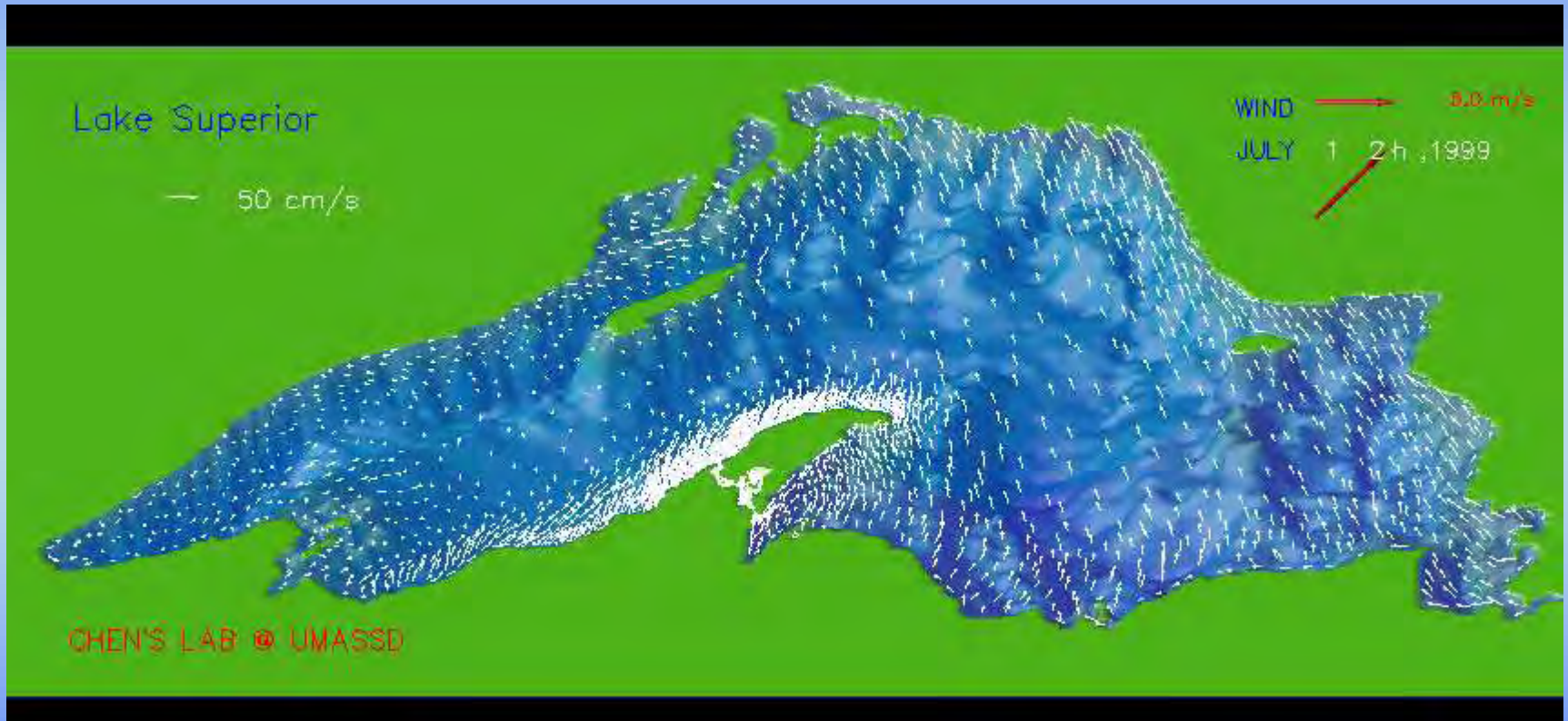
More information about rip currents can be found at the following web sites:
www.ripcurrents.noaa.gov
www.usfa.org



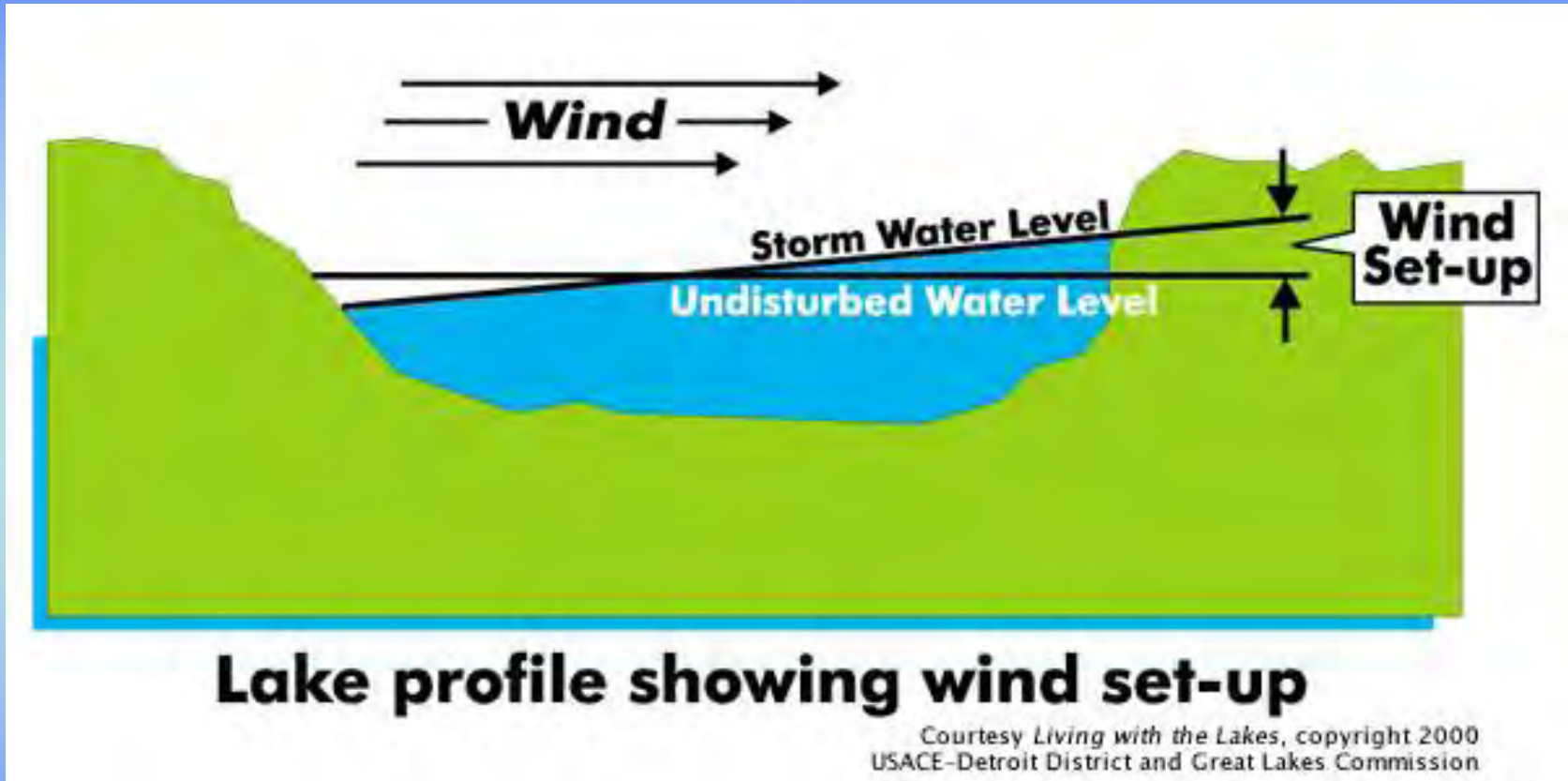
Water Temperatures



Currents in Lake Superior



Seiches



- About 8 hours to “slosh” from east to west in Lake Superior

Lake Superior

Beautiful...

The lake is moving and ever changing!

JUN 28 2004



A Recent Realization: Rip Currents

August 17th, 2003:

- A 21 year old Duluth Man drowned off Minnesota Point around 4 p.m. CDT
- A man on a boogie board rescued 6 others around 4 p.m. at the same place
- The Duluth Fire Dept rescued a teenage girl around 8 p.m. near LaFayette Square
- Reports of several others that were rescued

July 20th, 2004:

- Swimmer rescued from a Rip Current by firefighter near 1600 Minnesota Ave on Minnesota Point

August 4, 2004:

- Several swimmers rescued (one by a TV reporter out covering the rip currents)

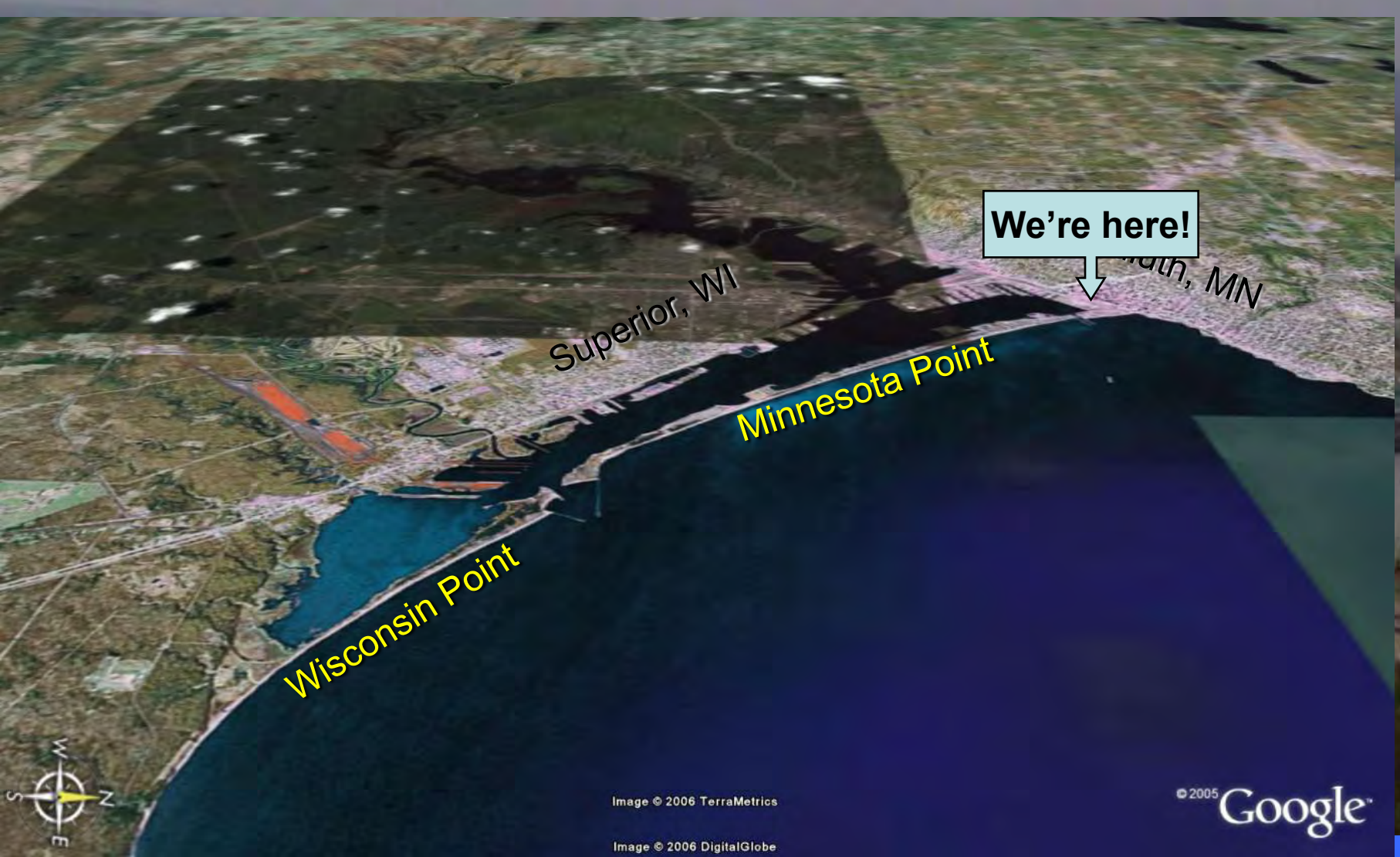
August 13th, 2007:

- The Duluth News Tribune reported that a boy was caught in a rip current after 1 p.m., but was able to make it ashore unassisted.
- Beaches closed by the City of Duluth for 4th time this summer, due to rip current danger.

Our Beaches: a single 10-mile long sandbar

Minnesota Point: over 1,000 residents, park and recreation areas, official city beach

Wisconsin Point: fairly remote and mostly undeveloped, no services

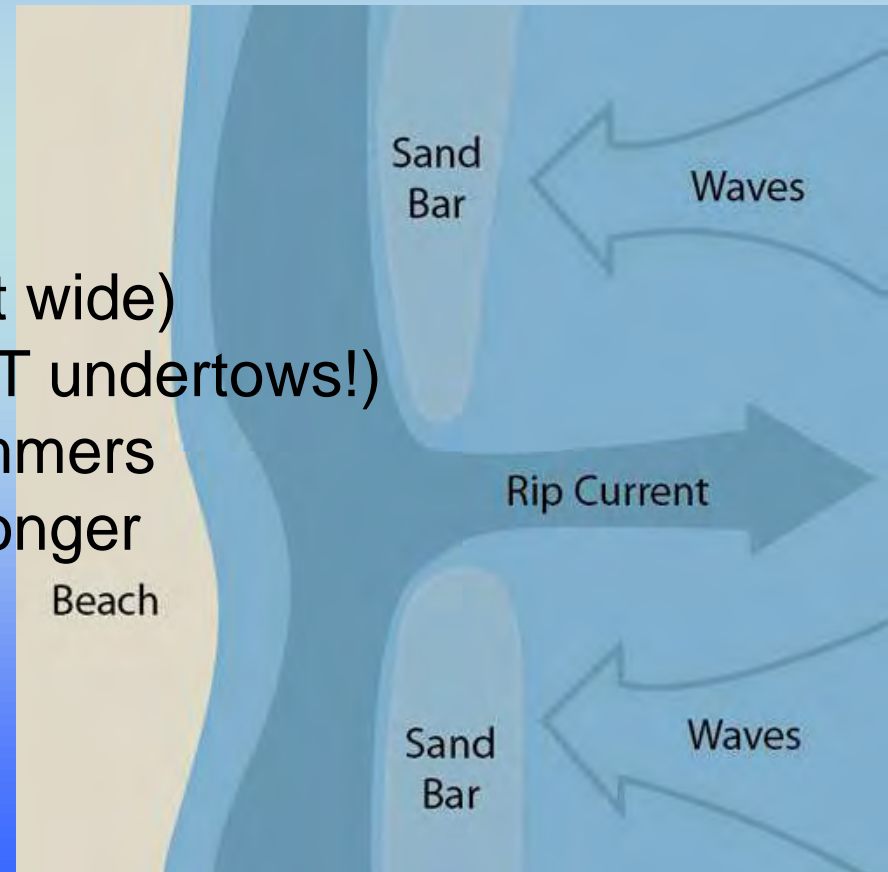


What is a Rip Current?

Rip currents are powerful, channeled currents of water flowing away from shore. They typically extend from the shoreline, through the surf zone, and past the line of breaking waves.

Rip Currents:

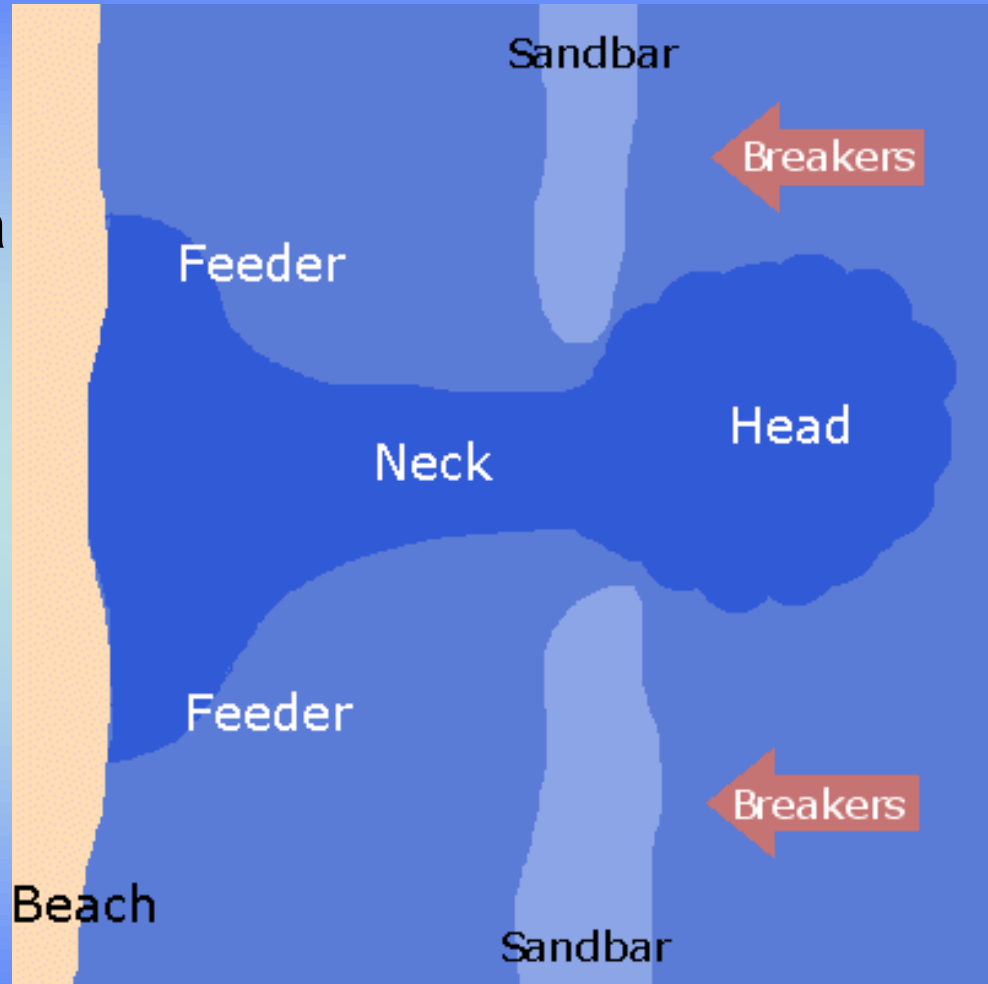
- Are typically narrow (20-100 feet wide)
- Are strong surface currents (NOT undertows!)
- Can be faster than olympic swimmers
- Can persist for hours, days, or longer



How do Rip Currents form?

- Waves pile water up near the shore
- This water “rips” through a sandbar to create an escape (or uses an existing channel)
- The piled up water then flows out into the lake

Rip Currents need:
Breaking Waves
A Path back to the lake



Most common on sandy beaches with regular wave patterns

Rip Currents





Courtesy of Lifeguard Captain Nick Steers, County of Los Angeles Fire Department

Rip Currents



Delaware Sea Grant



Visual Signs of a Rip Current:

- Foam or debris floating away from shore
- a break in the wave pattern
- A channel of churning, choppy water
- Soon after formation, you may see a channel of dirtier looking water, but after a while, this dirtiness may vanish



Escaping a Rip Current

- First instinct:



Escaping a Rip Current

- **First:**
 - Know how to swim, and swim with a friend!
- **Second:**
 - Don't get caught! Know the signs of a Rip Current, and LOOK for them!



Escaping a Rip Current

- **Third: If you get caught in a Rip Current:**
 - Don't fight the current; this will only exhaust you
 - Swim parallel to shore until you're out of the current, then angle back to shore
 - Or... float out in the current until the current dissipates, then swim at an angle back to shore



Rip Current Activities in MN

- Sea Grant:
 - News Releases
 - Radio PSA's to local stations*
 - Brochures*
 - Radio interviews*
 - Seiche newsletter articles
 - Local Rip Current web page
 - www.seagrants.umn.edu/rip
 - Survey of beach users

June 2004

Rip Currents Hit Home

by Marie Zhuikov

Lake Superior swimmers received a deadly lesson last August when a young man drowned in a rip current off of Park Point. "That was really a wake-up call for many people," said Jesse Schomberg, Minnesota Sea Grant coastal



Junior Lessard, national collegiate hockey star, almost lost his life in a Lake Superior rip current last summer.



Rip Current Activities in MN

- City of Duluth:
 - Training for lifeguards
 - Signs along park point*
 - Signs at beach access points*
 - Brochures at beach house*
 - Information at all public swimming pools
 - Procedure for closing beaches and notifying public when Rip Current conditions exist
 - In cooperation with NWS office in Duluth

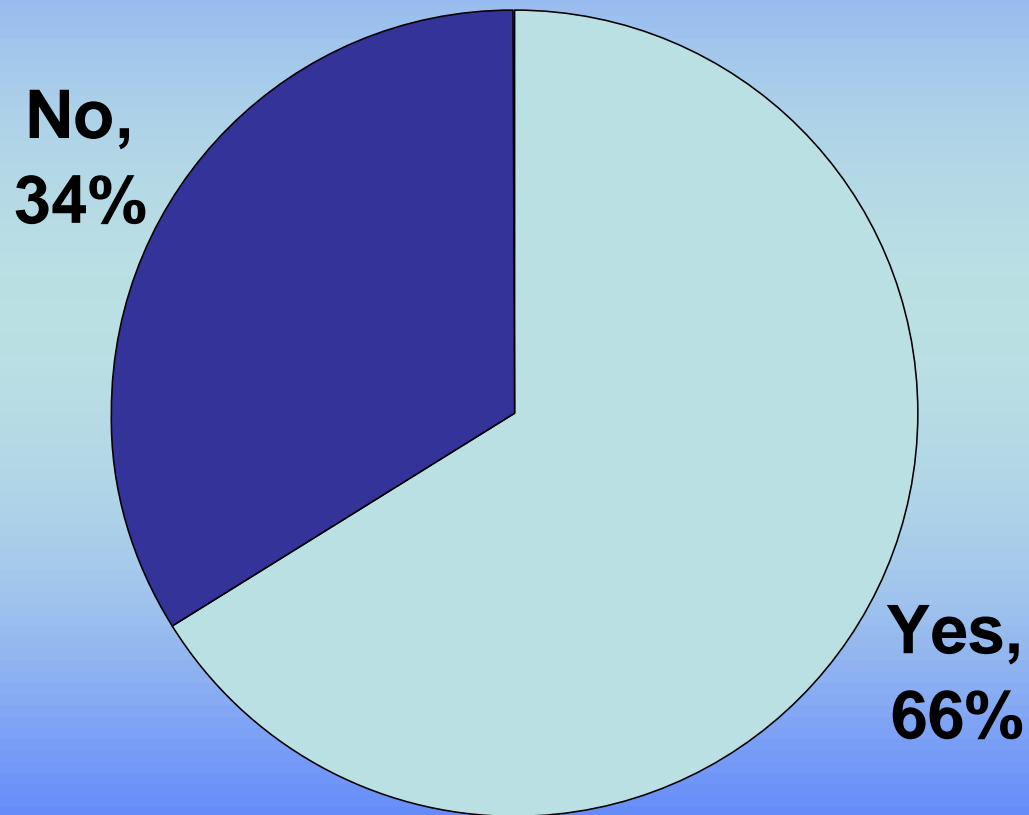


Summer 2006 Rip Current Activities

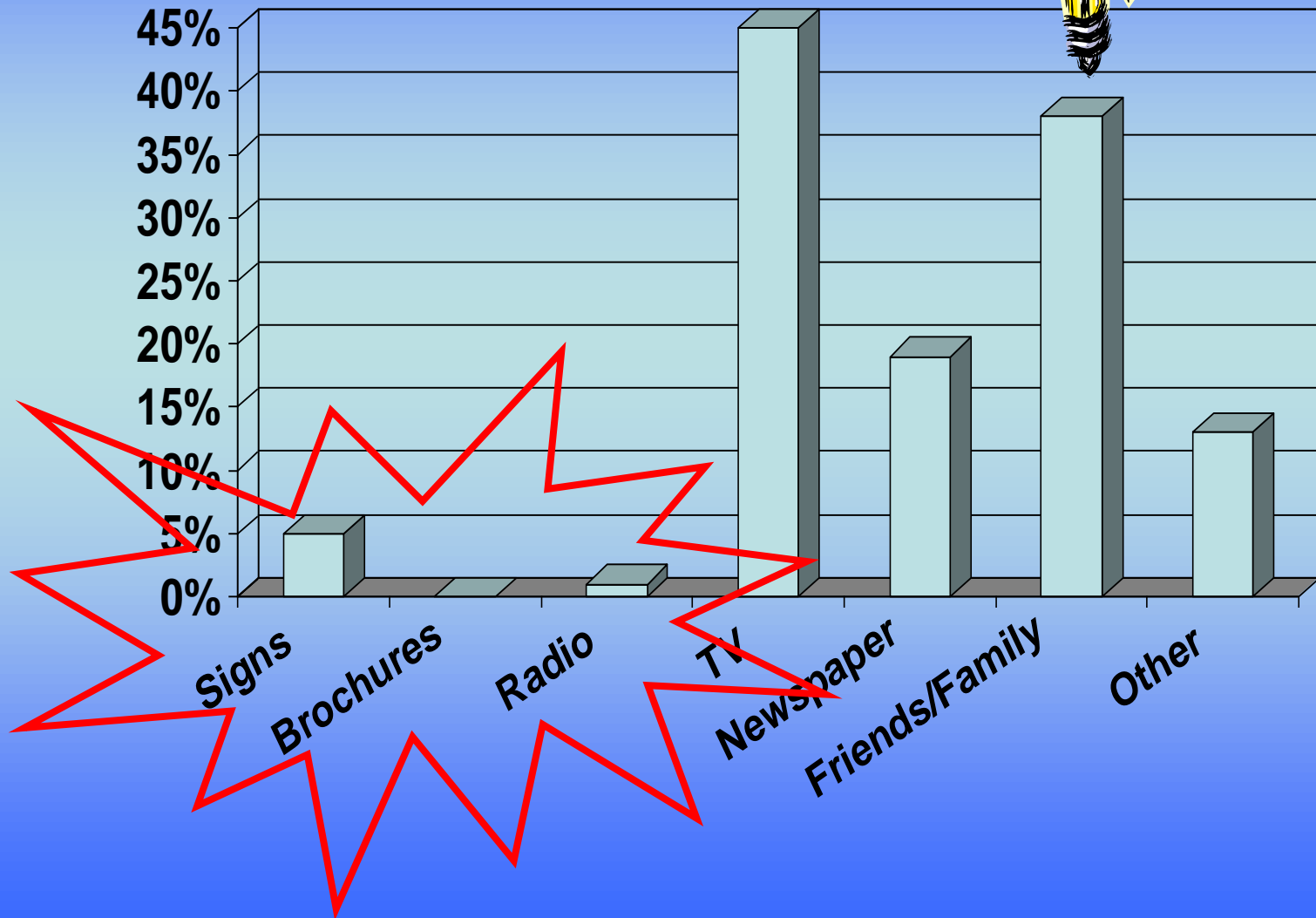
- Student intern
- Face-to-face survey of 200-300 beach users on Rip Current Awareness
 - Warm, sunny days
 - Windy, wavy days
- Hand out Brochures to beach users
- Beach Talks, other community events



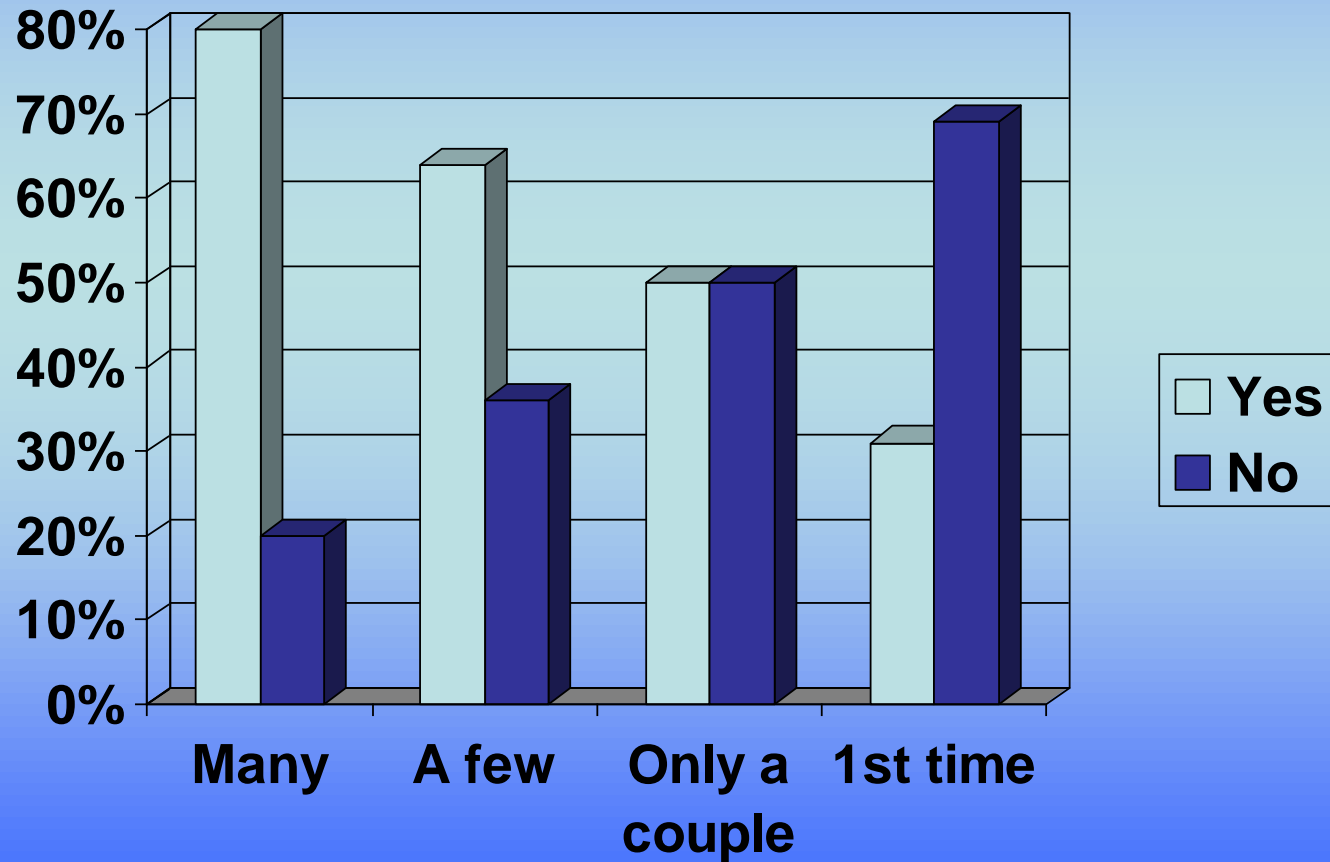
Have you heard about Rip Currents? (all beach users surveyed)



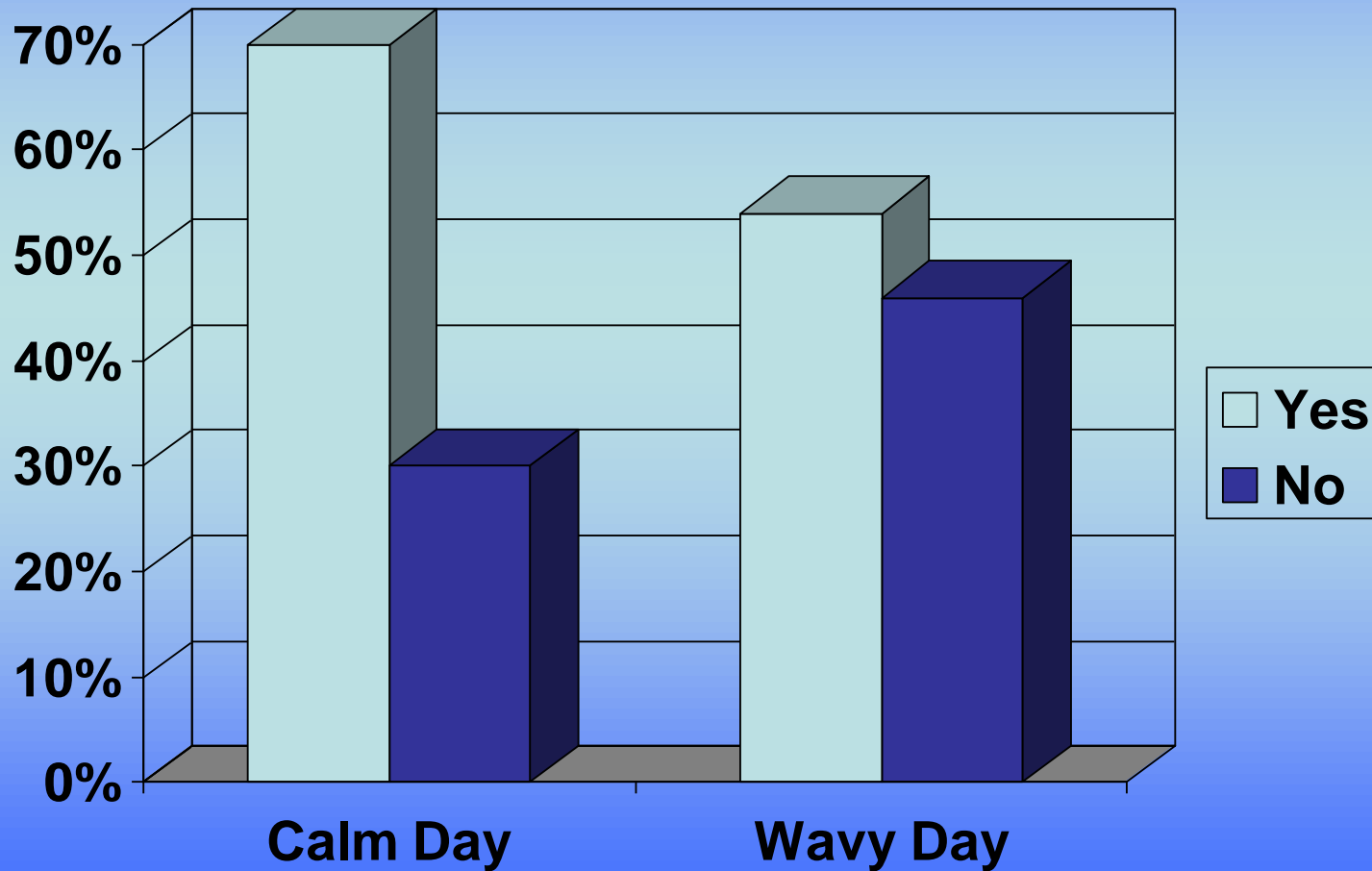
Where have you heard about Rip Currents?



% of beach users able to explain how to escape a Rip Current vs. frequency of visits to Minnesota Point

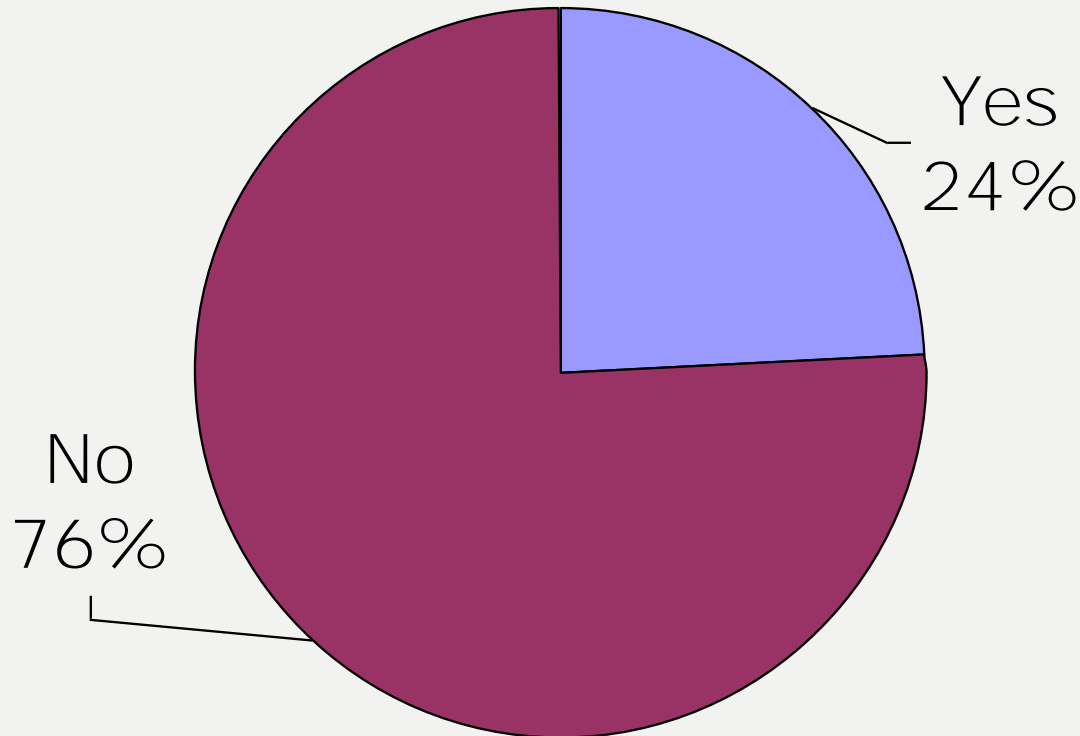


% of beach users able to explain how to escape a Rip Current



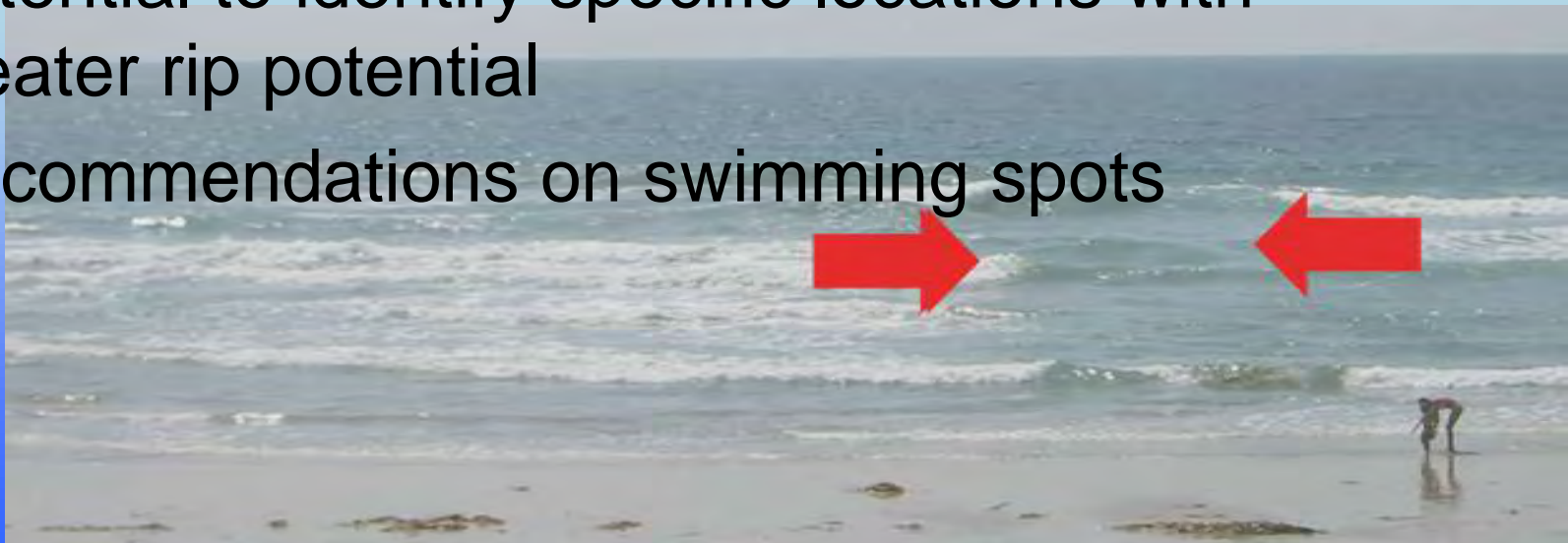
So what do we have to work on?

Percent of individuals that can identify visual signs of rip currents



Future efforts:

- Continue educational efforts
- Include Rip Current education in swimming lessons
- Document rip channels along beach
- Determine stability of rip channels
 - Potential to identify specific locations with greater rip potential
 - Recommendations on swimming spots





It's a beautiful lake, but **powerful**.

Rip Currents should not keep you away from the beach!

Just know:

- what to look for,
- and what to do if you get caught

...and now you know!

Jesse Schomberg
University of Minnesota Sea Grant Program
726-6182

Rip Current Survey

- Have you heard about Rip Currents on Lake Superior?
(y/n)
- If Yes, where have you heard about them from?
- Can you explain how to get out of a Rip Current?
 - Swim sideways/parallel to shore
 - Float/tread water until current slows, then swim at angle towards shore
- What are some of the tell-tale signs of a Rip Current in the water?
 - Any of following:
 - different/choppy wave pattern in a line away from shore
 - foam or debris flowing away from shore
 - dark band of dirty/muddy water
 - band of darker/deeper-looking water

Rip Current Survey

- Have you seen the signs along the beach that show how to get out of a Rip Current? (y/n/dk)
- How often have you visited the beach on Minnesota Point in the past 5 years?
 - Many times
 - A few times
 - Only a couple times
 - First time
- What year were you born?
- Where do you live? (by zip code/county?) Do you live in the Duluth Area? (y/n)
- Gender (m/f)

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2005

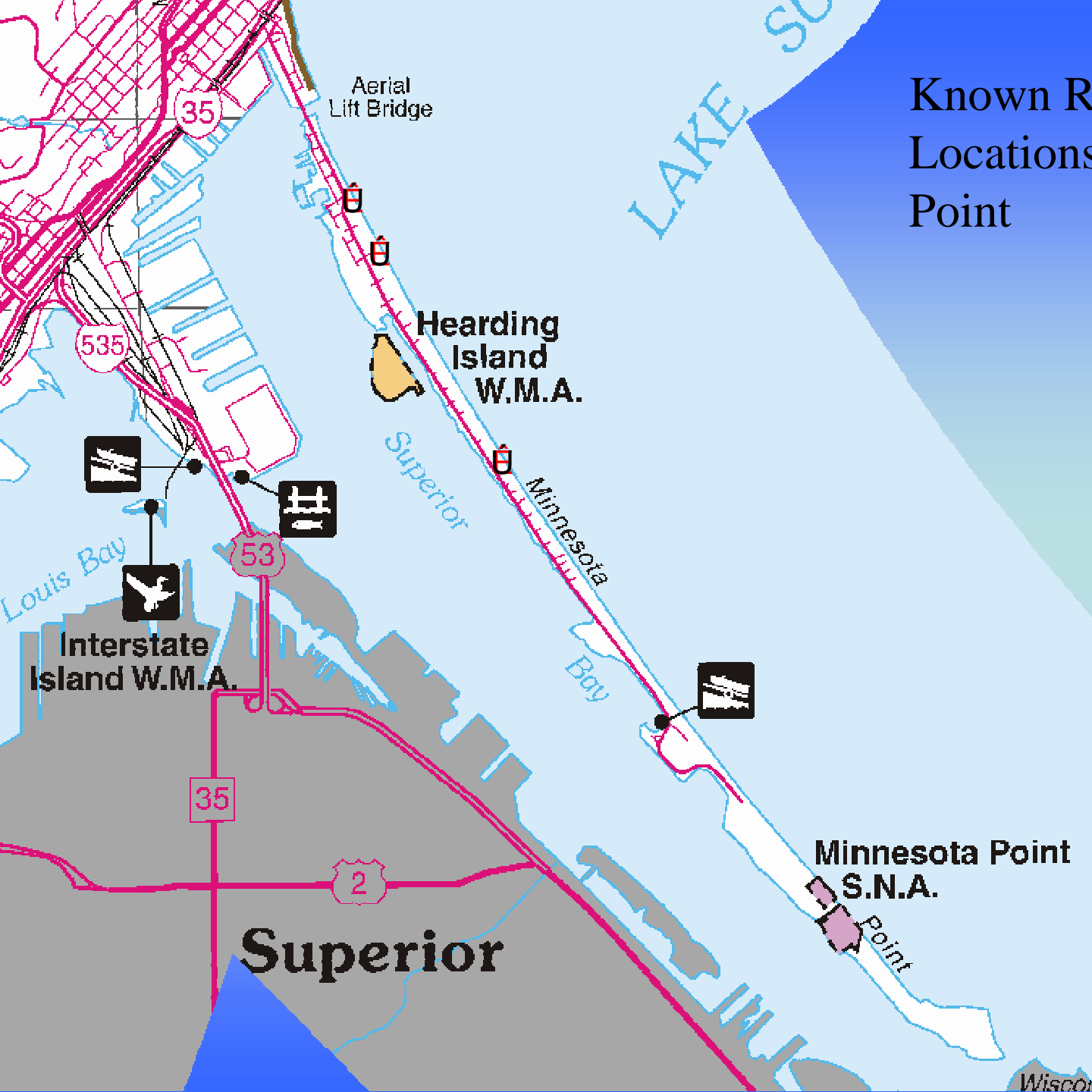
- **BOY MISSING OFF WISCONSIN POINT, SUPERIOR: SEARCH CONTINUES FOR 13-YEAR-OLD BOY, WHO IS PRESUMED DROWNED IN LAKE SUPERIOR.** Swimming at the Wisconsin Point breakwater, and jumping off it, has been a risky but popular activity for Superior teenagers for years. And a relatively uneventful one.. On Thursday, though, a 13-year-old boy who was swimming with two brothers and a girl in Lake Superior's choppy waves is missing and presumed drowned. **Duluth News-Tribune (MN)** - July 15, 2005

What's a Rip Current Like?

- Listening to the Lake Radio Program



Known Rip Current Locations on Minnesota Point



Lake Superior

Average Water Temperature:
40 deg F



Duluth Surface Temperature

Image Date: 6/4/2006

Image Time: 23:46 (EDT)

Michigan State University Remote Sensing & GIS Research and Outreach Services

92°20'0"W 92°10'0"W 92°0'0"W 91°50'0"W 91°40'0"W 91°30'0"W 91°20'0"W

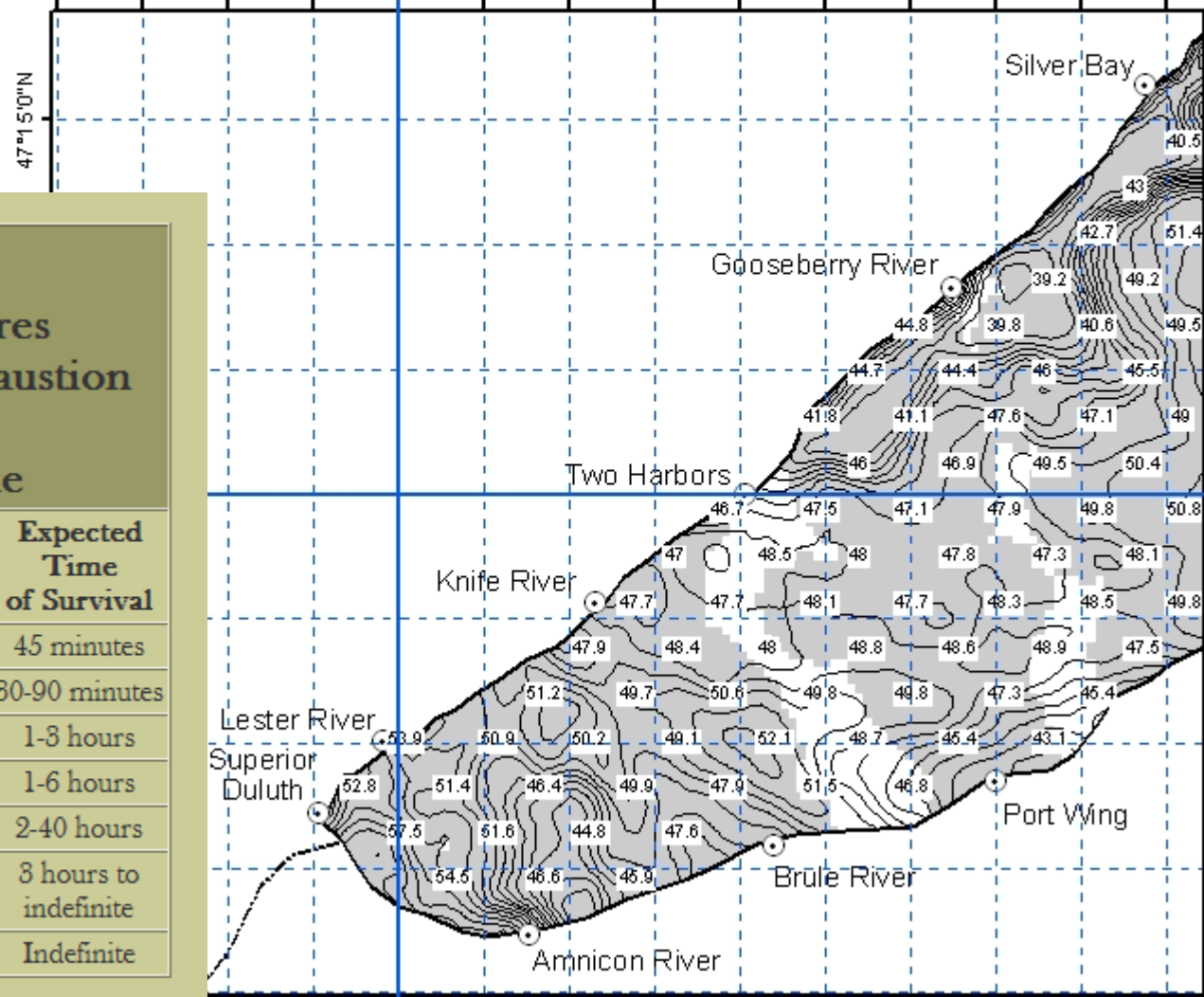


TABLE 1

**Cold Water Temperatures
Decrease Time Before Exhaustion
and
Decrease Survival Time**

Water Temperature (°F)	Expected Time Before Exhaustion or Unconsciousness	Expected Time of Survival
32.5	Under 15 minutes	45 minutes
32.5-40	15-30 minutes	30-90 minutes
40-50	30-60 minutes	1-3 hours
50-60	1-2 hours	1-6 hours
60-70	2-7 hours	2-40 hours
70-80	3-12 hours	3 hours to indefinite
Over 80	Indefinite	Indefinite