



Ripcur: Smartphone App for Rip Current Reporting

Jon K. Miller, Ph.D.

Research Assistant Professor – Stevens
Coastal Processes Specialist - NJ Sea Grant

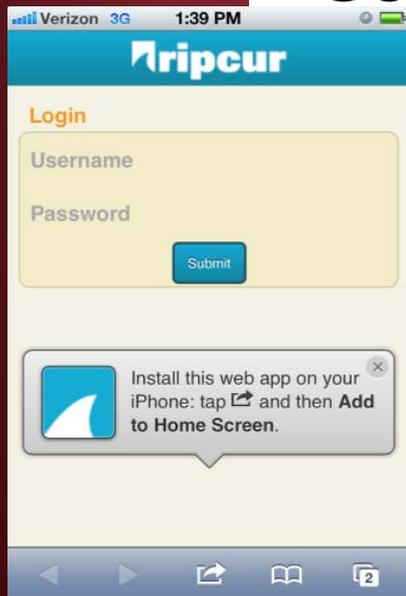
Team Members

- Chris Seeley, Dani Maginnis, Ralph Mattiaccio, Will Abeel, Ken Bodzak
- Mark Hamilton, Erin Hopson
- NWS – Walt Drag
- Prof. David Klappholz

What is RipCur?

- A multiplatform, mobile optimized web-based tool for reporting, serving, and storing information about rip currents.

Go to <https://www.stevens.edu/ripcurrent>



Why RipCur?



- Communication
 - July 5th, 2003 – 100's rescues
 - June 20th, 2 deaths NWS level – moderate (?)
- Notify NWS, USCG, OEM
- No rescue, no rip

But how does it do it?

- Location is based on smartphone's GPS
- Lifeguard enters basic info
- On the back end:
 - Buoys & tide gauges are queried for additional info
 - Reports are generated
 - Observations are served in real time to all participating guards and researchers

User Types

- Research Administrator
- Researcher
- Lifeguard Administrator
- Lifeguard

User Types

- Research Administrator
- Researcher
- Lifeguard Administrator
- Lifeguard

Rip Current Tracker - Mozilla Firefox

File Edit View History Bookmarks Tools Help

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ripcur

Welcome [JonKMiller](#), [Logout](#)

Actions

List Reports

Report Map

Search Reports

List Users

Add User

Recent Reports (last 24 hours)

Id	Datetime ↑	Organization	Near Structure	Description	Wave Height	Avg Wave Period	Actions
143	2012-07-25 11:13:39	South Seaside Park BP	False	North side of 24th Ave.	2 feet	3.8 seconds	View Delete
142	2012-07-25 00:12:48	Long Branch, NJ	True	Test	1 feet	4.8 seconds	View Delete

Page 1 of 1, showing 2 records out of 2 total, starting on record 1, ending on 2

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start Rip Current T... Rip App Prese... RipApp.ppt [C... Search Desktop 3:20 PM



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Actions

List Reports

Report Map

Search Reports

List Users

Add User

Add User

Username*

Email*

Organization*

Disabled

Group*

Research Administrator

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Actions

List Reports

Report Map

Search Reports

List Users

Add User

Users

Id	Username	Organization	Email	Disabled	Group	Actions
1	researchadmin1	Stevens Institute of Technology	ripcurrentgroup@gmail.com	No	Research Administrator	View Edit Reset Password
2	lifeguard1	Long Branch, NJ	cseeley@stevens.edu	No	Lifeguard	View Edit Reset Password
3	lifeguardadmin1	Long Branch, NJ	ripcurrentgroup@gmail.com	No	Lifeguard Administrator	View Edit Reset Password
4	researcher1	Stevens Institute of Technology	ripcurrentgroup@gmail.com	No	Researcher	View Edit Reset Password
8	Alvin	Long Branch, NJ	ripcurrentgroup@gmail.com	Yes	Lifeguard	View Edit Reset Password
9	Simon	Long Branch, NJ	ripcurrentgroup@gmail.com	Yes	Lifeguard	View Edit Reset Password
10	Theodore	Long Branch, NJ	ripcurrentgroup@gmail.com	Yes	Lifeguard	View Edit Reset Password
11	David	Long Branch, NJ	ripcurrentgroup@gmail.com	Yes	Lifeguard	View Edit Reset Password
12	cseeley	Stevens Institute of Technology	cseeley@stevens.edu	No	Research Administrator	View Edit Reset Password

User Types

- Research Administrator
- **Researcher**
- Lifeguard Administrator
- Lifeguard



Actions

- List Reports
- Report Map
- Search Reports

Recent Reports (last 24 hours)

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Rip Current Tracker - Mozilla Firefox

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Rip Current Tracker

https://www.stevens.edu/ripcurrent/reports/search

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Actions

- List Reports
- Report Map
- Search Reports

Search Reports

[help?](#)

AND =

AND =

AND =

12 Results

[Map View](#) [List View](#)



Map Satellite

start Rip Current T... Rip App Prese... RipApp.ppt [C... Search Desktop 3:18 PM

User Types

- Research Administrator
- Researcher
- Lifeguard Administrator
- Lifeguard

Rip Current Tracker - Mozilla Firefox

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Welcome [lifeguardadmin1](#), [Logout](#)

Actions

List Reports

Report Map

Search Reports

List Users

Add Lifeguard

Recent Reports (last 24 hours)

Id	Datetime ↑	Organization	Near Structure	Description	Wave Height	Avg Wave Period	Actions
143	2012-07-25 11:13:39	South Seaside Park BP	False	North side of 24th Ave.	2 feet	3.8 seconds	View
142	2012-07-25 00:12:48	Long Branch, NJ	True	Test	1 feet	4.8 seconds	View Delete

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start Rip Current T... Rip App Prese... RipApp.ppt [C... Search Desktop 3:26 PM



Welcome [lifeguardadmin1](#), [Logout](#)

Actions

- List Reports
- Report Map
- Search Reports
- List Users
- Add Lifeguard

Users

Id	Username	Organization	Email	Disabled	Group	Actions
2	lifeguard1	Long Branch, NJ	cseeley@stevens.edu	No	Lifeguard	View Edit Reset Password
3	lifeguardadmin1	Long Branch, NJ	ripcurrentgroup@gmail.com	No	Lifeguard Administrator	View Edit Reset Password
8	Alvin	Long Branch, NJ	ripcurrentgroup@gmail.com	Yes	Lifeguard	View Edit Reset Password
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10	Theodore	Long Branch, NJ	ripcurrentgroup@gmail.com	Yes	Lifeguard	View Edit Reset Password
11	David	Long Branch, NJ	ripcurrentgroup@gmail.com	Yes	Lifeguard	View Edit Reset Password
56	ErinH	Long Branch, NJ	erinehopson@gmail.com	Yes	Lifeguard	View Edit Reset Password

Page 1 of 1, showing 7 records out of 7 total, starting on record 1, ending on 7

< previous next >



Welcome [lifeguardadmin1](#)

Actions

- List Reports
- Report Map
- Search Reports
- List Users
- Add Lifeguard

Add Lifeguard

Username*

Email*

Disabled

Submit

User Types

- Research Administrator
- Researcher
- Lifeguard Administrator
- Lifeguard

[Link1](#)
[Link 2](#)



Cancel

Report

Add Report

Weak

Near Structure

 NO

Description

Submit

Back

Report 76

Reported By	lifeguard1
Reported At	2012-06-05 09:23:19
Strength	Moderate
Near Structure	True
Description	Test dl
Latitude	40.7448
Longitude	-74.0274
Wave Height	1 feet
Dom Wave Period	4 seconds
Avg Wave Period	5.5 seconds
Wave Direction	101°
Wind Speed	13 knots
Wind Gust	15 knots
Wind Direction	20°

49 Results

[Map View](#) [List View](#)



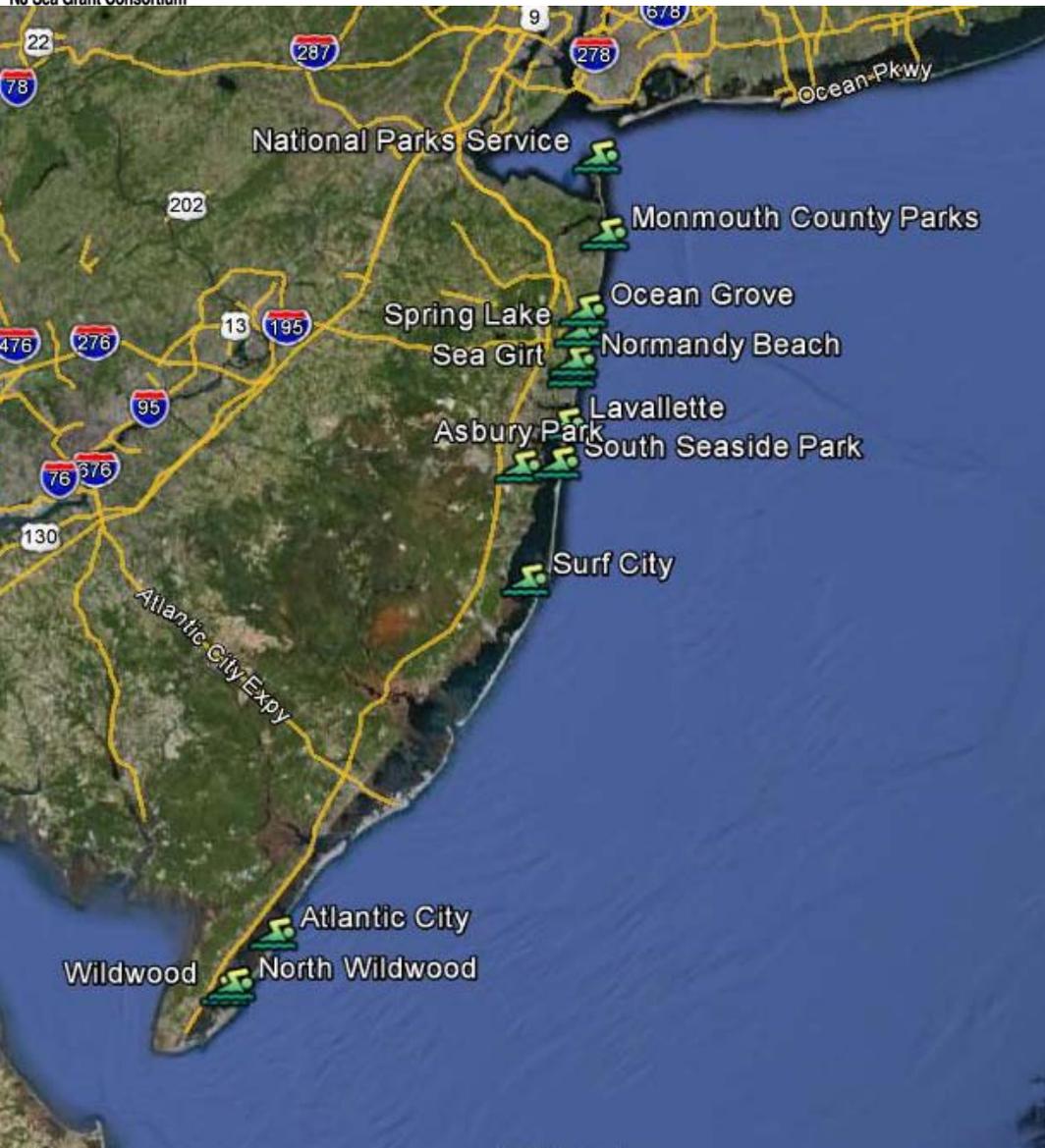
Map data ©2012 Google - [Terms of Use](#)

Silver Spring, MD – July 26, 2012

Outreach efforts

- Current
 - Email
 - Media
 - Users Manual
 - Personal Visits
- Potential
 - You Tube ??
 - USLA ??

Users in NJ



Our Goals:

- Year 1
 - 3 NJ communities
- Year 2
 - 10 NJ communities
 - 2 Out of State
- Year 3:
 - 20 NJ Communities
 - 10 Out of State

Current Research Users

- National Weather Service – Mt Holly
- Monmouth County Health
- US Coast Guard – Sector DE Bay
- Stevens



Potential Research Users

- National Weather Service
- US Coast Guard
- Police/OEMs
- United States Lifesaving Association (USLA)
- Academic Institutions



Future Work

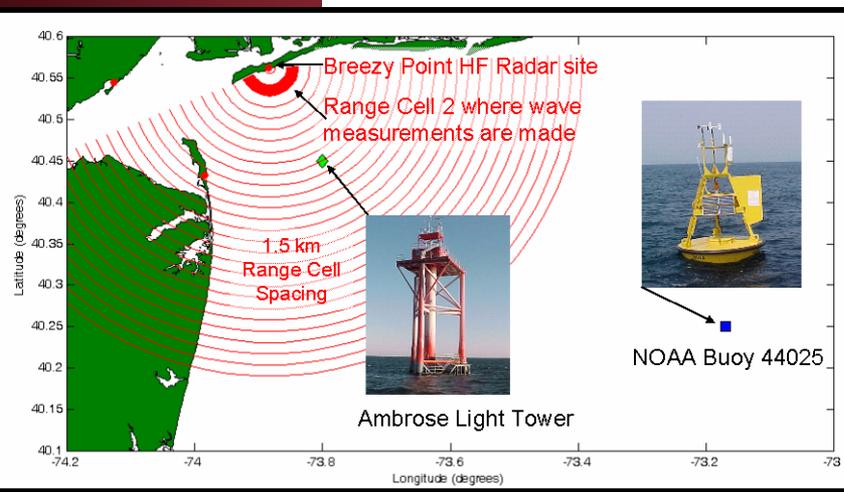
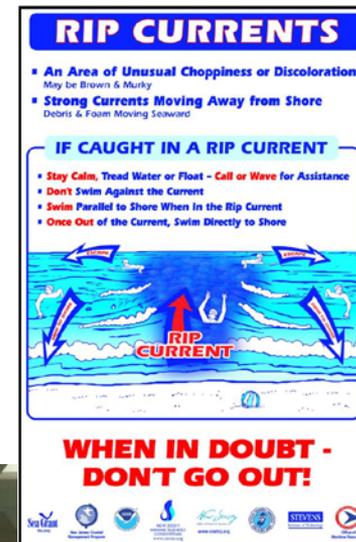
- Better training
- Incentivize reporting (Verizon?)
- Stakeholder driven improvements:
 - Search tool
 - GPS corrections
 - Add desktop input
 - Turn off a rip, or modify intensity
 - Input historical data

Future Work

- Bulk reporting to the public
 - 3 zones
 - above average...that's it
 - # rips?

Other NJSBG Rip Projects

- Press conferences/Media releases
- Signage & brochures
- Rip jeopardy
- Research
- Girl Scouts



Rip App Quick Response Tags

- All of the Monmouth Beaches
- 11/15 Of the Ocean County Beaches
- All of the Atlantic County Beaches
- 4/9 Of Cape May County Beaches are done or are in process as of 6/29



What is a Rip Current

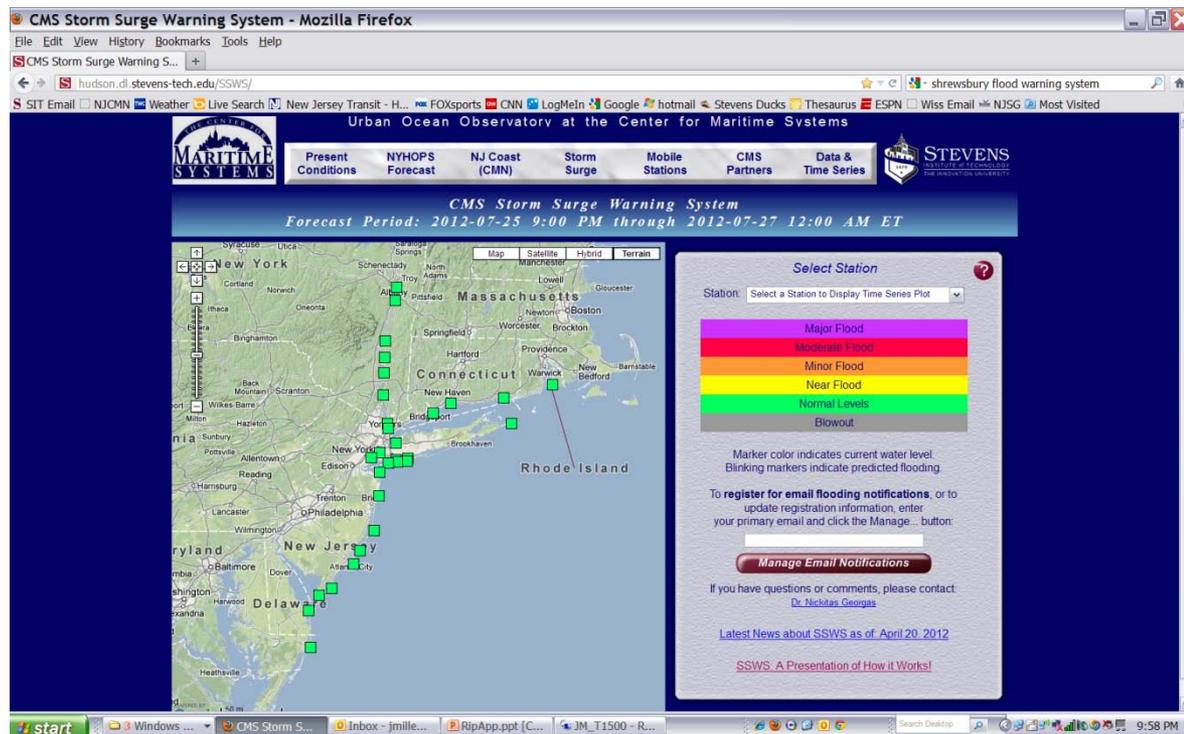


[Link 1](#)

[Link 2](#)

Other Stevens Hazards Products

- SSWS
- Shrewsbury Flood Warning System
- NYHOPS



CMS Storm Surge Warning System - Mozilla Firefox

File Edit View History Bookmarks Tools Help

CMS Storm Surge Warning S...

hudson.dl.stevens-tech.edu/SSWS/

shrewsbury flood warning system

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Urban Ocean Observatory at the Center for Maritime Systems

MARITIME SYSTEMS

Present Conditions NYHOPS Forecast NJ Coast (CMN) Storm Surge Mobile Stations CMS Partners Data & Time Series

STEVENS
INSTITUTE of TECHNOLOGY
THE INNOVATION UNIVERSITY

CMS Storm Surge Warning System

Forecast Period: 2012-07-25 9:00 PM through 2012-07-27 12:00 AM ET

Map Satellite Hybrid Terrain

Select Station

Station: Select a Station to Display Time Series Plot

Major Flood
Moderate Flood
Minor Flood
Near Flood
Normal Levels
Blowout

Marker color indicates current water level
Blinking markers indicate predicted flooding

To register for email flooding notifications, or to update registration information, enter your primary email and click the Manage... button:

Manage Email Notifications

If you have questions or comments, please contact:
[Dr. Nicholas Georgas](#)

[Latest News about SSWS as of April 20, 2012](#)

[SSWS: A Presentation of How it Works!](#)

start Windows CMS Storm S... Inbox - jml... RipApp.ppt [C... JM_T1500 - R... 9:58 PM

Questions?



NOAA Library Brown Bag Seminar,
Silver Spring, MD – July 26, 2012