An aerial photograph of a coastline. In the foreground, a rugged, rocky cliffside with sparse vegetation descends towards the ocean. The ocean is a deep blue-green color, with white-capped waves breaking in a series of parallel lines parallel to the shore. To the right, a wide, sandy beach curves along the coast. The sky is a pale, overcast blue.

Significant Rip Current Event Associated With Low Wave Heights: An East Central Florida Case Study

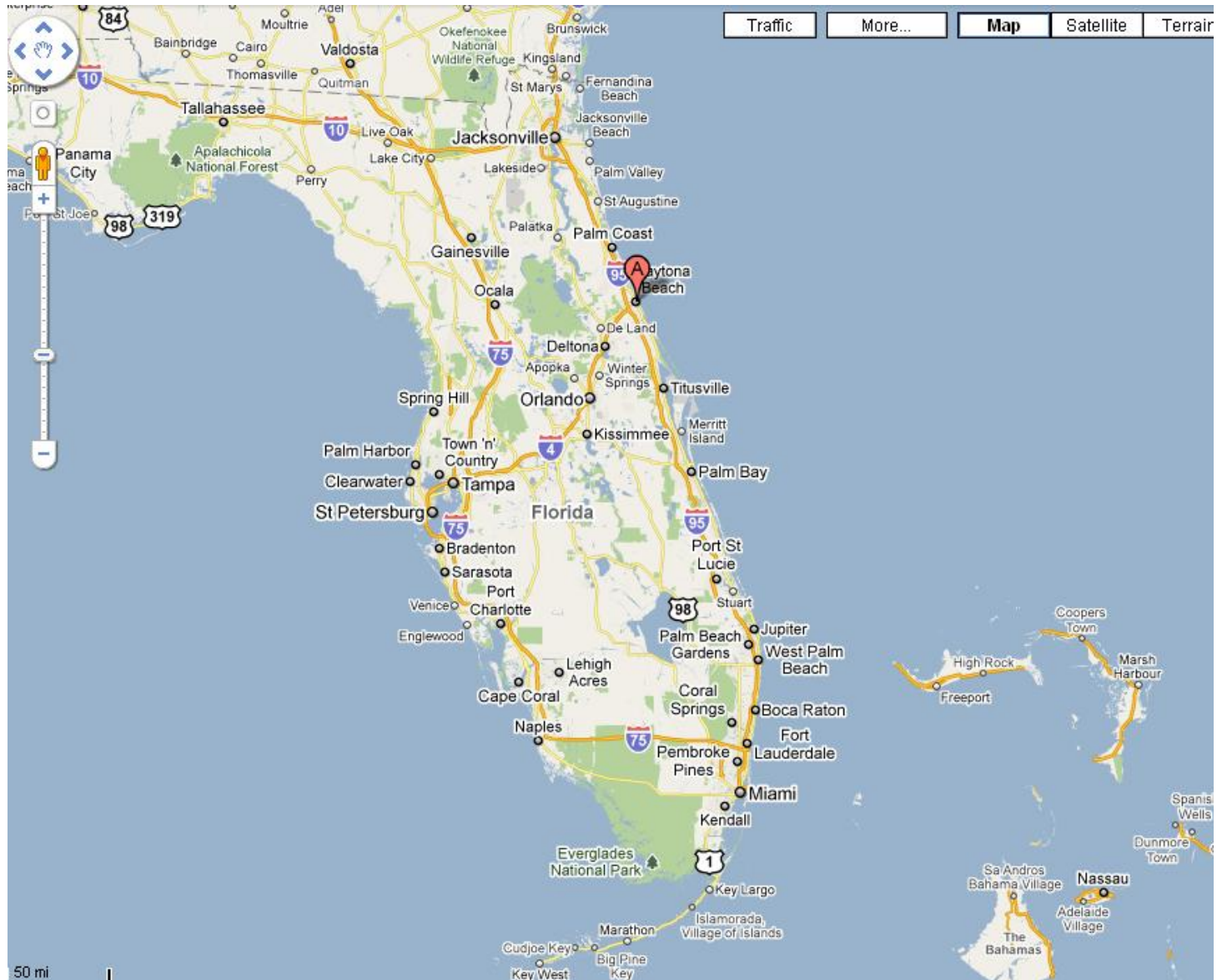
Randy Lascody

NOAA/National Weather Service, Melbourne, Florida

Photo taken by Cecilia Lascody at Tunquen, Chile

June 19-21, 2009

Volusia County, Florida



June 19-21, 2009

Volusia County, Florida

- High number of rescues from rip currents
- Wave heights offshore were 2 feet, wave periods 8-10 sec.
- Not exactly classic conditions for high rip current rescue event in east central Florida



Friday June 19, 2009

- Normally, low wave height/high rescue event cases in east central Florida have a longer wave period (>12 seconds).
- Therefore, this event was difficult to diagnose.
- I received a report that June 18th had a dozen rescues, so the rip current risk was increased during the morning.




Saturday June 20, 2009

- After the high amount of rescues on 6/19, we knew there would be a lot of rescues the next day.
- Hottest temperatures of the summer occurred.

The Heat Is On This Weekend

Saturday, June 20, 2009 9:56:15 PM

Tools: [E-mail](#) | [Print](#) | [Feedback](#) | [BOOKMARK](#) 


Reported by [Stephanie Coueignoux](#)

DAYTONA BEACH -- Heat advisories are in effect Saturday, with temperatures expected to reach dangerous levels in much of Central Florida.

Add in the humidity, and it will feel like over 100 degrees Saturday.


[Weather on the 1's](#) • [Be Prepared For A Scorcher](#)

Watch Out For Rip Currents



[Slideshow - 2 images](#)

Video

 [Rip Current Rescues](#)

Additional Information

► [Twitter: News 13 Weather Alerts @cfnews13_wx](#)

Saturday June 20, 2009

Lifeguards were busy again.



Sunday June 21, 2009

- The number of rescues decreased slightly but the three day total was impressive...

500 Swimmers Rescued From Rips

Lifeguards Say Rip Current Danger Especially High

POSTED: Friday, June 19, 2009

UPDATED: 7:22 am EDT June 22, 2009

DAYTONA BEACH, Fla. -- Lifeguards in Volusia County pulled about 500 swimmers from rip currents over the last three days, and beachgoers were warned that the dangerous conditions were expected to remain for awhile.



- No serious injuries, only two people were transported to hospitals for observation.

Post Event Analysis

A scenic view of a coastline. In the foreground, a rocky cliffside with sparse vegetation overlooks a sandy beach. The ocean is visible with waves breaking onto the shore. The sky is overcast.

- Jacksonville forecaster had advised that sand bar cuts from late May nor'easter might cause a rip current event.
- However, only a thorough analysis of the data revealed that the rip current threat was approaching moderate for this event.
- Hot temperatures led a lot of people to the beach.

Post Event Analysis

Nearshore Fundamentals

Produced by the COMET® Program

Home

Nearshore Terminology and Circulation

Nearshore Waves

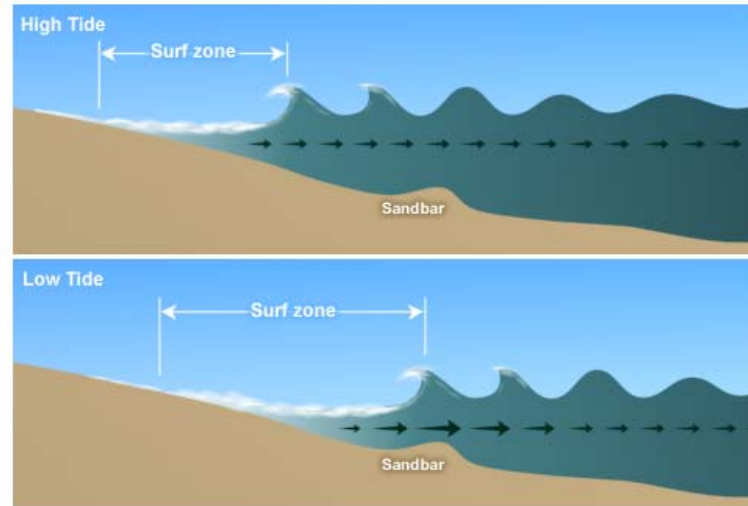
Rip Currents

Rip Current Forcing Mechanisms

Modulation of Tides

- Lower water levels during low tide produce a wider surf zone and, hence, larger water mass transport
- Depth over sandbar is less during low tide, making it more difficult for water transport over/through bar
- Data suggests that rip currents are more prevalent in the hours surrounding the time of low tide
- However, rip currents can occur during both tides

Tidal Modulation of Rip Currents



©The COMET Program

- Research has shown that rip current rescues/drownings increase within a few hours of low tide.
- These effects are more noticeable on gently sloping beaches, like Volusia county. Farther south, where there is a little more beach slope, there were ZERO problems with rip currents during the period of this event!

Post Event Analysis

- During my research in the mid 1990s, lifeguards insisted that the rip current threat was higher during full/new moon, so I factored that into our rip current worksheet.
- A New Moon occurred on Monday, June 22.
- The low tides during this event were 0.1 to 0.5 feet below MLLW.
- Additionally, the low tide occurred around midday when beach attendance was high.

Post Event Analysis

- The prior weekend had similar wave heights and there was even some long period background swell around 14 sec.
- Moon was in the last quarter so there was no astronomical tide effect (low tides 0.7 to 1.2 feet above MLLW).
- Only 3 rescues were reported at Volusia county beaches.

Summary

- **A low wave height/high rip current rescue event occurred June 19-21 in Volusia county Florida.**
- **The event was difficult to diagnose and the primary modulator of the event was determined to be astronomical tide effects due to the approaching New Moon.**

Rip Current Forecasting Melbourne, FL

Where We Are

- Local forecasting scheme has been adjusted about as much as it can.
 - we catch most big events.
 - too many false alarms.
- Communication with Beach Patrols has increased.
- Media dissemination of information has increased.

Still have about the same amount of rip current drownings!

Rip Current Forecasting at WFO MLB

Where We Need to Go

- So what do I think is going on?
 - Tourists and non-coastal residents remain most at risk.
 - Vast majority of victims – still adult males.
 - Older generation -- too much info syndrome.



Rip Current Forecasting at WFO MLB

Where We Need to Go

- Younger generation – key to rip current education
- Know ocean safety like my generation learned to wear seat belts
 - Go to schools and give talks
 - The ideal is to get info into textbooks
 - COMET module aimed at children?
 - YouTube video by Dr. Brander is a good example of using modern communication tools.
 - Facebook, Twitter?

Rip Current Forecasting at WFO MLB

Where We Need to Go

- **National Weather Service Forecast Offices will all have near shore wave models soon—therefore a real time, dynamic rip current forecasting model (48-72 hours?) needs to evolve.**

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