

Subtle Weather Change Leading to Hundreds of Rip Current Rescues at Daytona Beach, Florida on Memorial Day Weekend 2014

In the days leading up to the 2014 Memorial Day Weekend, Atlantic seas had begun to calm down and light westerly winds were forecast into Saturday. This combination was making it look like rip currents would not be a problem for the Holiday Weekend. However, the Melbourne National Weather Service began to talk about a slight increase in easterly winds for the Sunday/Monday period in the Area Forecast Discussion on Thursday (Fig. 1.). This wind forecast was due to high pressure building to the Carolina coast behind a dissipating back door frontal boundary (Fig. 2). The combination of a midday low tide, winds stirring up more wave action and favorable astronomical tides (due to an approaching new moon) looked like the necessary ingredients for an increase in rip current activity along the beaches.

Conditions evolved similar to what this forecast had indicated. After rather benign conditions at the beaches on Friday and Saturday, a slight increase in east winds to near 10 mph on Sunday caused rip currents to begin having a stronger seaward pull. Onshore winds picked up a little more on Memorial Day, 10-15 mph, causing a further increase in rip current rescues by beach safety personnel.

Offshore seas increased to about 2 feet on 5/25 and 3 feet on 5/26. Interestingly though, there was little indication of any long period swell, which usually is necessary for large rip current rescue events in east central Florida.

	5/24	5/25	5/26
Volusia County	10	60	130
Brevard County	0	4 (4 hospital transports)	4 (2 hospital transports)

***Table 1.** Approximate number of rip current rescues for Volusia County (Daytona Beach) and Brevard County (Cocoa Beach) on the 2014 Memorial Day Weekend. Note that rescues often involve several people, hence the 130 rescues on 5/26 likely represented more than 200 people.*

This case shows that there can be great benefit to emergency management personnel, particularly ocean rescue, in following National Weather Service products in advance of busy holiday weekends. The main problem with this concept is that a consistent product is necessary. While the Area Forecast Discussion was used in this case, the preferable product should be the Surf Zone Forecast, which is the official National Weather Service product for showing the rip current threat. Currently, there is no ability to talk about the longer ranges in this product. It is therefore advisable to redesign the Surf Zone Product so that expected conditions at the beaches can be forecast at least a few days in advance, especially for upcoming holiday weekends.

AREA FORECAST DISCUSSION
NATIONAL WEATHER SERVICE MELBOURNE FL
950 AM EDT THU MAY 22 2014

.DISCUSSION...

...MODERATE RISK OF RIP CURRENTS TODAY...
...INCREASING HEAT WITH LITTLE CHANCE FOR RAIN THROUGH SATURDAY...

TODAY/TONIGHT...SURFACE HIGH PRESSURE RIDGE ACROSS SOUTHERN SECTIONS WILL CONTINUE TO SAG SLOWLY SOUTH AS BROAD FRONTAL TROUGH GRADUALLY PUSHES EAST SOUTHEAST ACROSS THE EASTERN SEABOARD. MORNING SOUNDINGS SHOW QUITE DRY AIR IN THE LOW LEVELS WITH SUBSIDENCE INVERSION ABOVE THAT. MORNING ROCKET LAUNCH FROM CAPE CANAVERAL DID NOT HAVE MUCH OF A PLUME BECAUSE OF THIS DRY AIR. SO WE WILL HAVE A MOSTLY SUNNY DAY.

THE SURFACE RIDGE POSITION PRODUCING WESTERLY LOW LEVEL FLOW WILL DELAY THE SEA BREEZE. AFTER BELOW NORMAL EARLY MORNING TEMPS... READINGS WILL REBOUND TO NORMAL OR WARMER...GENERALLY LOWER 90S INLAND AND UPPER 80S ALONG THE COAST. THE NORTH COAST SHOULD REACH AROUND 90 WHILE SPACE COAST BEACHES AND TREASURE COAST WILL BE HELD IN THE MID 80S AS THE SEA BREEZE KICKS IN EARLIER THERE.

RIP CURRENT: WEST WINDS WILL PRODUCE RATHER GLASSY LOOKING CONDITIONS NEAR THE BEACHES TODAY...BUT THERE IS A LINGERING EAST SWELL OF 2 FEET/11 SECONDS...SO A MODERATE RISK IS WARRANTED AGAIN.

THROUGH THE HOLIDAY WEEKEND...THE OFFSHORE WIND FLOW WILL CONTINUE TO PRODUCE RATHER GLASSY NEAR SHORE CONDITIONS WHILE THE EAST SWELL DIMINISHES FRI-SAT. THIS SHOULD LOWER THE RIP CURRENT RISK. HOWEVER...AN ONSHORE WIND FLOW IS FORECAST SUN-MON ALONG WITH A FRESH SWELL NEAR 2 FEET AND 8-10 SECONDS PERIODS. WITH LOW TIDES OCCURRING AROUND MIDDAY AND THE APPROACH OF A NEW MOON...THE RIP CURRENT RISK IS EXPECTED TO RETURN TO MODERATE.

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.AVIATION...VFR.

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.MARINE...

TODAY-TONIGHT...LOW LEVEL RIDGE AXIS GRADUALLY SINKING SOUTHWARD WILL PROVIDE A WESTERLY WIND COMPONENT. THIS WILL PRODUCE GOOD BOATING CONDITIONS NEAR SHORE. SOUTHWEST/WEST WIND SPEEDS 10-15 KNOTS OFFSHORE EXPECTED TONIGHT WHICH WOULD CAUSE A BUMPY RIDE FOR SMALL BOATS RETURNING TO SHORE.

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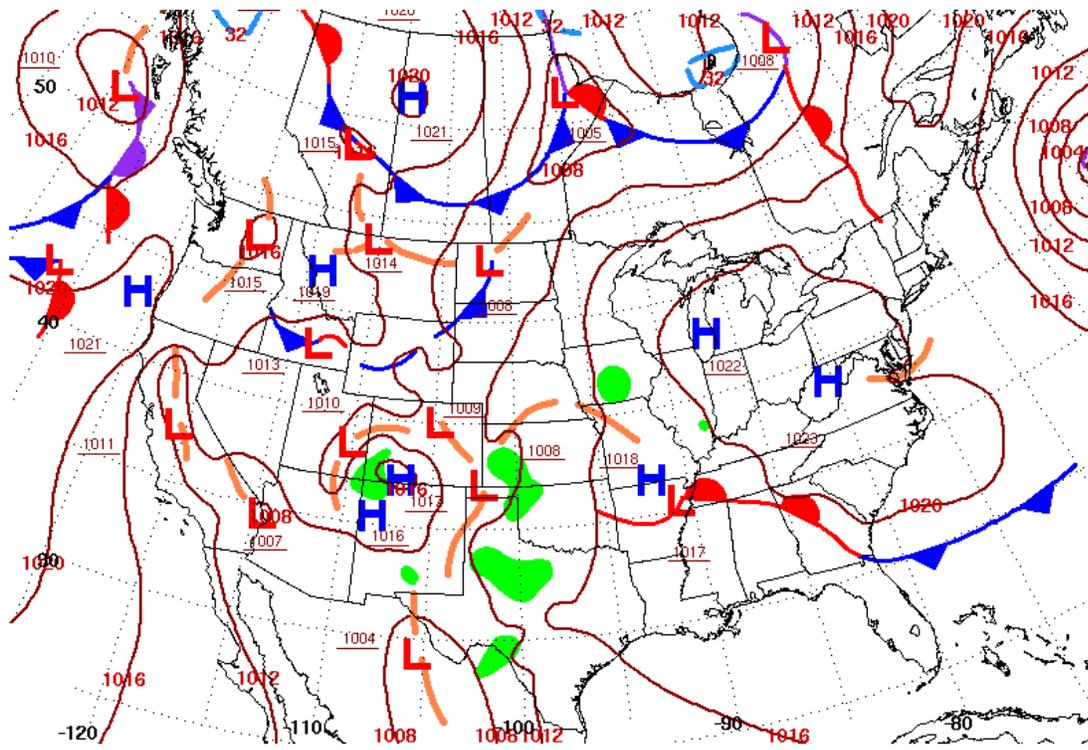
.MLB WATCHES/WARNINGS/ADVISORIES...
FL...NONE.
AM...NONE.

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FORECASTS...LASCODY
IMPACT WX...VOLKMER

Fig. 1. Area Forecast Discussion 5/22/14 highlighting the rip current outlook through the Memorial Day Weekend.



Surface Weather Map at 7:00 A.M. E.S.T.

Fig. 2. 5/25/2014 surface map showing high pressure building to the Carolina coast behind weak “back door” frontal boundary.