

# Rip Currents:

## Don't Fight. Swim Left or Right!

### What is a rip current?

A rip current is a channel of water flowing away from the shore at beaches. Most rip currents develop along the beach at breaks in the offshore sandbar, but they can also form near structures such as jetties and piers. Rip currents form when water, piled against the shore, begins to return to deeper water. Typically, onshore winds and waves push water over the offshore sandbar, allowing excess water to collect between the bar and the beach. Eventually, this excess water starts to return seaward through low spots in the sandbar, "ripping" an opening. Near the beach, rip currents are usually narrow, increasing in width as they extend farther offshore. Some rip currents last only a few minutes to a few hours, while others may last a few days. Weather or ocean conditions can cause rip currents to be stronger and more frequent on some days than on others.

### Telltale signs of rip currents

You can sometimes see the signs that show a rip current is present. A visible

channel of churning, choppy water; a narrow channel where there is a difference in water color; a line of seaward moving foam; an offshore area of murky water are all indicators of possible rip currents.

### Why are rip currents dangerous?

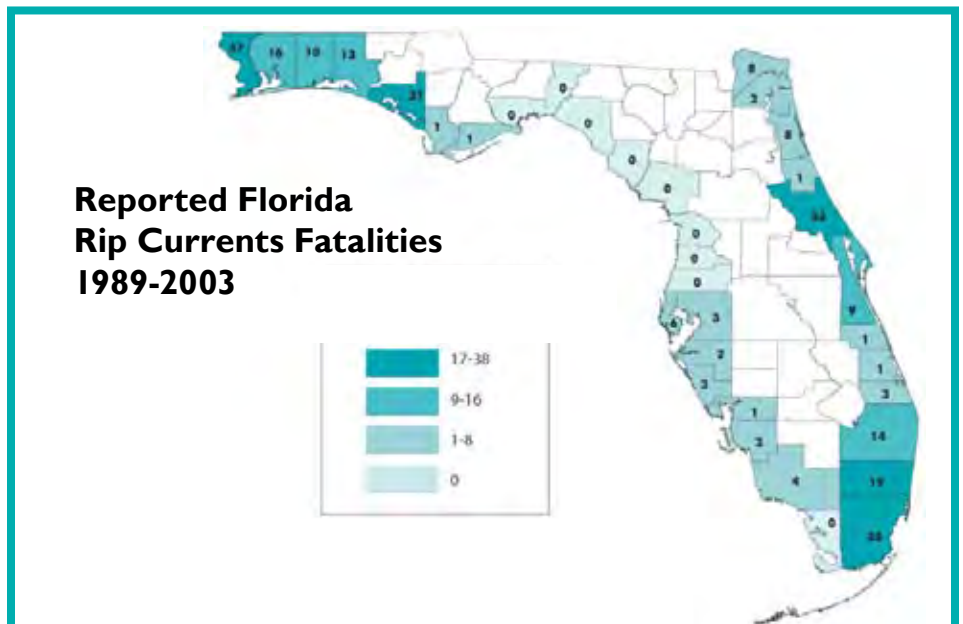
Rip currents are dangerous because they can pull unprepared swimmers away from shore and into deeper waters. Rip currents do NOT pull a swimmer under water, but do become dangerous when swimmers panic and struggle against the current while being pulled farther and farther away from the beach. Rip currents can move at speeds of up to 5 miles per hour, which is faster than an Olympic swimmer! At these speeds, the force of a rip current is too strong for even the best swimmers, and attempts to swim directly back toward shore against the current can be fatal, especially for the panicked or tired swimmer. In fact, rip currents claim more lives in Florida each year than hurricanes, tornadoes and lightning.



### What you need to know

When you take a trip to the beach, there are a few things that you can do to protect yourself from the dangers of rip currents. You should swim at beaches with lifeguards, if possible. When you arrive at the beach, ask the lifeguard about the current rip current danger. Also note any flag warning system that may be present.

If you find yourself caught in a rip current, DON'T panic and DON'T swim against



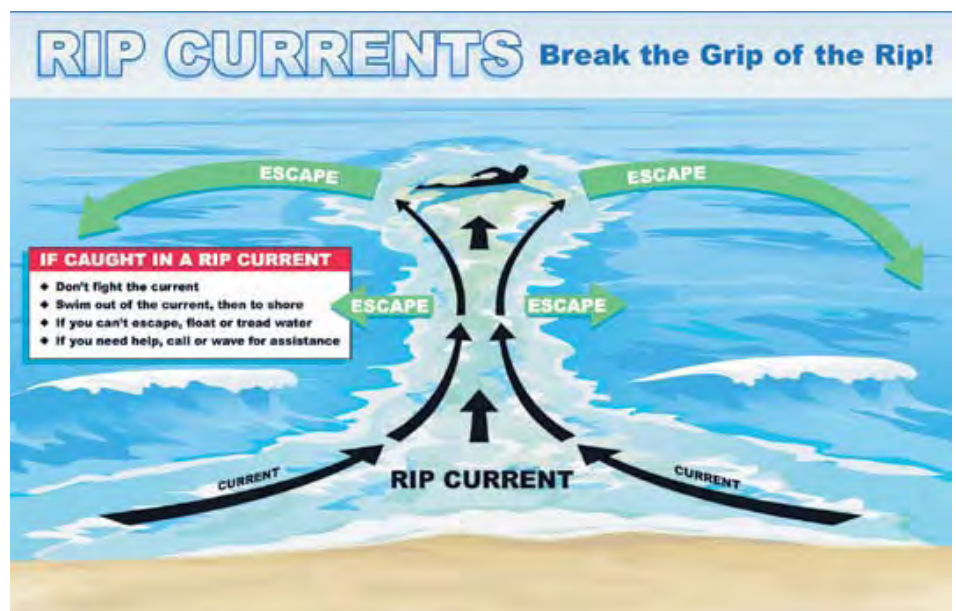


## National Rip Current Awareness Week June 6-12, 2010

the outgoing current. Doing either of these could cost you your life. Since most rip currents are relatively narrow, you should swim in a direction parallel to the shoreline to escape the outgoing current. More simply, if caught in a rip current and facing back toward the beach, swim either toward your left or right to escape the current. Just remembering the simple phrase “Don’t fight...Swim left or right” could save your life. Once free of the outgoing current, swim at an angle back to the beach.

**By Don Shepherd, National Weather Service, Mobile**

For more rip current information, visit [www.ripcurrents.noaa.gov](http://www.ripcurrents.noaa.gov)



### Learn how to swim!

- Do not overestimate your ability to swim in ocean waters and strong currents.
- If possible, always swim at beaches staffed by lifeguards or beach patrols, and heed their advice.
- If caught in a rip current, try to remain calm and signal for

help in the direction of the beach patrol.

- If caught in a rip current, do not try to swim directly back to shore! Instead, turn and face sideways to the shore and wade or swim until you are out of the rip current. Then move back toward shore at an angle away from the rush of water.

- An alternate method of escape from a rip current, for those who are good floaters and swimmers, is to let the rush of water take you offshore until it slows, then swim back to the beach at an angle away from the rip current.
- Do not get caught in a rip current while trying to save someone else. Throw the person a flotation device and get help from the beach patrol.

# Marine Hazards

## Small Boat Safety

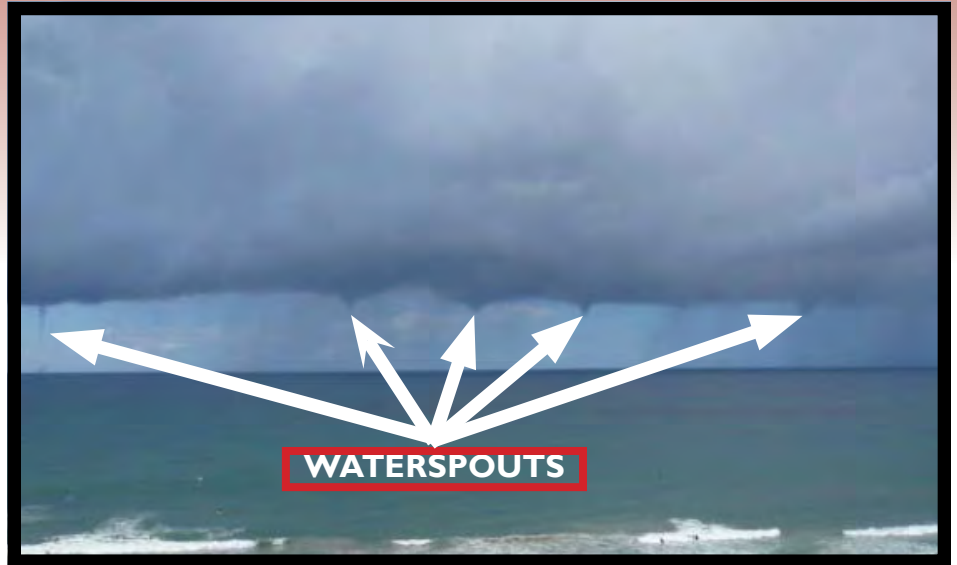
It is no surprise that Florida ranks as the top boating state with almost one million registered boats. The state's beautiful waterways, water-sport opportunities and great weather all add up to a lot of time spent on the water by residents and visitors alike. However, before venturing out on the water, it is imperative for boaters—particularly small boat operators—to check the weather. What may seem like a tranquil and beautiful start to the day's weather can quickly turn violent with hazards such as severe thunderstorms, strong winds, rough seas, lightning and waterspouts. Larger scale weather systems such as tropical cyclones, squall lines along cold fronts, gusty winds behind cold fronts and cool season low-pressure systems also present dangers to small boaters.

### Marine Hazards

*Thunderstorms, Lightning, and Waterspouts*

A mariner is never safe from thunderstorms. Brief wind gusts to gale force are possible, producing locally rough seas in a matter of moments. These conditions make maneuvering a small boat difficult, and in the worst case the rough seas can overturn small boats. In addition, torrential rains can reduce visibility to near zero, and hail is also possible. The most dangerous thunderstorm events are from eastward-moving squall lines during the winter, spring, or fall, and slow-moving thunderstorms in the summer associated with the sea breeze.

Cloud to water lightning is the most common hazard with marine thunderstorms and can occur far away from the parent thunderstorm. Florida has more lightning strikes than any other state and also often leads the nation in lightning-related fatalities and injuries. Many of these deaths and injuries occur on the water. If you hear thunder, you potentially can be struck by lightning.



Waterspouts are analogous to tornadoes over water. Waterspouts can easily overturn boats and create locally hazardous seas. In general, there are two types of waterspouts: fair weather and tornadic. Fair weather waterspouts are normally not associated with thunderstorms. They form along the dark bases of developing cumulus clouds and tend to develop from the surface up. Tornadic waterspouts are similar in structure to tornadoes over land. They are associated with super cellular thunderstorms ahead of squall lines during the cool season and sea breeze thunderstorms during the warm season. When waterspouts and thunderstorms approach, have an escape plan prepared. Never let thunderstorms cut off your route back to land. If a thunderstorm or waterspout threatens, it is best to seek safe harbor immediately. If you are unable to get back to the dock, be sure everyone aboard is wearing a life jacket, as gusty thunderstorm winds or waterspouts can quickly overturn small boats. If caught near a waterspout, your best course of evasive action is to move at a 90 degree angle from its apparent movement, then seek safe harbor, if possible. Since lightning presents a danger to boaters even well away from its parent

thunderstorm, boaters should seek safe shelter anytime thunder is heard. If unable to reach safe shelter, go below deck and stay away from masts or ungrounded metal objects.

Always have a NOAA Weather Radio or VHF marine radio on board and listen to them for warning information. The U.S. Coast Guard also re-broadcasts some of these warnings, advisories and statements across the marine radio emergency channel.

### Preparation and Awareness

Staying safe during a boating adventure requires knowing the expected weather. Before leaving home, be sure to check the current marine conditions and the day's forecast by going online to [weather.gov](http://weather.gov) or listening to NOAA Weather Radio. The National Weather Service issues Coastal Waters Forecasts that are updated four times daily and if conditions rapidly change. The Coastal Waters Forecast includes a five-day forecast of wind direction, wind speed, wave height and precipitation. This forecast should be one of your primary tools for planning a safe day on the water. Once on the wa-

ter, be vigilant that weather conditions can rapidly change, so periodically listen to NOAA Weather Radio on your VHF marine band radio. Additionally, turn on the alert feature of your NOAA Weather Radio or VHF marine radio, if equipped. This feature will sound an alarm on your radio anytime the National Weather Service issues a Special Marine Warning. These warnings are issued to provide advanced notice to mariners of short-duration (up to 2 hours) hazardous weather conditions including sustained marine thunderstorm winds or associated gusts of 34 knots or greater, hail 3/4 inch or more in diameter or waterspouts

You can also stay aware of short-term weather conditions and forecasts while on the water by using your internet capable cell phone or PDA. Simply point your HTTP-enabled device (PDA) to [mobile.srh.weather.gov](http://mobile.srh.weather.gov) or your WAP enabled device (internet capable cell phone) to [www.srh.noaa.gov/wml](http://www.srh.noaa.gov/wml). These sites will allow you to check the current marine conditions and updated forecasts and allow you to view the latest local radar and satellite images.

### Low Pressure and Frontal System Winds

Strong or developing fronts can cause tranquil or favorable coastal waters to become raging seas in a matter of hours prior to or after a strong frontal passage. Waves can quickly build in excess of 6 feet with the onset of 20-knot winds. Winds approaching or exceeding gale force can build seas to 12 feet or more

**RAIN OR SHINE,  
THE KEY TO SMOOTH SAILING  
IS BOATING SAFETY  
National Safe Boating Week  
March 22-28, 2010**

## Safety Actions

*A safe and enjoyable Florida boating experience is up to you. Always plan ahead and remember the follow safe boating practices:*

- ◆ Check forecasts well ahead of time.
- ◆ File a float plan at your marina.
- ◆ Have an escape plan in mind. Thunderstorms and weather related hazards form quickly. Never let these storms cut off your route back to land.
- ◆ If a thunderstorm threatens, be sure everyone aboard is wearing a life jacket as a small boat can be overturned quickly by gusty winds.
- ◆ If caught in a thunderstorm, go below deck if possible, and stay away from masts or ungrounded metal objects.
- ◆ Have a VHF Marine Band Radio on board.
- ◆ Listen to NOAA Weather Radio for warning information.
- ◆ Know the limitations of your boat. If small craft advisories or gale warnings are issued, you should postpone travel.
- ◆ Always apply sunscreen before leaving the dock.

in exposed coastal or offshore waters. Winds and seas can remain high for extended periods behind a strong front.

Tropical cyclones and cool season non-tropical, low-pressure systems pose an extreme threat to marine conditions. Tropical storms with winds between 34 and 63 knots typically result in seas building to 12 feet or more. A tropical storm becomes a hurricane when the winds reach 64 knots. Cool season or non-tropical low pressure systems can easily reach winds speeds of gale force (34-49 knots) or even storm force (50 knots or higher). During these times, boaters should remain off the water and secure their boats (if docked on the water) for potentially damaging winds and high water levels.

Frontal system winds or tropical and non-tropical low-pressure systems are usually predicted in advance. As such, be sure to check forecasts well ahead of time. Know the limitations of your boat, and if small craft advisories, gale warnings or tropical cyclone advisories are issued, postpone your boating plans and wait until conditions improve before resuming activities.

### Solar Radiation and Excessive Heat

Even in good weather, there are potential marine hazards that many people overlook. Strong solar radiation from exposure to the sun can cause sun burn and potentially long-term skin effects. During the warm season, the combination of hot temperatures, light winds and high humidity can combine to create a situation in which heat illnesses and even heat stroke are possible.

For protection against sun burn and excessive heat, always apply sunscreen with a Sun Protection Factor (SPF) of 15 or greater before leaving the dock and reapply while out on the water, drink plenty of water to stay hydrated and utilize on-board sun shades if available.

*By Nick Petro, National Weather Service, Tampa Bay Area*



# Thunderstorms



**T**hunderstorms occur frequently across Florida. In fact, the Florida peninsula has the greatest number of thunderstorms in the United States. Florida's tropical atmosphere and sea breezes provide the perfect recipe for the making of thunderstorms. Three ingredients are needed – moisture, an unstable atmosphere and lift. Thunderstorms are part of life in Florida. They are nature's way of providing badly needed rainfall. When they

become strong, a thunderstorm can have strong winds, hail, lightning, heavy rainfall and even tornadoes.

## Hail

Although hail forms in every thunderstorm, it only reaches the ground if atmospheric conditions are favorable. Hail typically has the best chance of falling to the ground in winter and springtime thunderstorms when the atmosphere is colder. Hail may take on many different sizes and shapes, such as a thin flat penny or a baseball.

Large hails can be dangerous. Penny-sized hail or larger can cause damage to objects, such as vehicles and buildings, by breaking windows and damaging roofs. Large hail can also down trees. Bodily injuries, or even death, can result in people are caught outdoors when large hail occurs.

## Strong winds

All thunderstorms can produce gusty winds. Severe thunderstorms produce even stronger winds, called downbursts, that can cause significant damage to

homes, trees, road signs, and vehicles. Downburst winds can cause damage similar to that of a strong tornado and cause loss of life or significant bodily injury from wind-blown debris and toppled structures.

## WATCH vs. WARNING

Although radar, satellite, and computer systems continue to improve, if you do not know what to do or where to go, warnings are not effective! Remember, severe weather can develop rapidly and advance warning time may only be a few minutes. Everyone needs the knowledge to react quickly and execute a plan of action when severe weather materializes.

**A WATCH** means that conditions are favorable for severe thunderstorm, tornado, or flash flood development. This is the time to be weather-aware. You should keep alert by listening to a radio, television, or weather radio for the latest weather information. Know where your children are. Be aware of where you will go and what you will do if a severe thunderstorm, tornado, or flash flood threatens.

**A WARNING** means a severe thunderstorm, tornado, or flash flood has been sighted or indicated by radar. People in the path of the storm should take immediate life-savings actions.



Sunday June 1, 2008  
Jacksonville, FL