

Why Rip Currents Form

As waves travel from deep to shallow water, they will break near the shoreline. When waves break strongly in some locations and weakly in others, this can cause circulation cells which are seen as rip currents: narrow, fast-moving belts of water traveling offshore.

Why Rip Currents are Dangerous

Rip currents are the leading surf hazard for all beachgoers. They are particularly dangerous for weak or non-swimmers. Rip current speeds are typically 1-2 feet per second. However, speeds as high as 8 feet per second have been measured--this is faster than an Olympic swimmer can sprint! Thus, rip currents can sweep even the strongest swimmer out to sea.

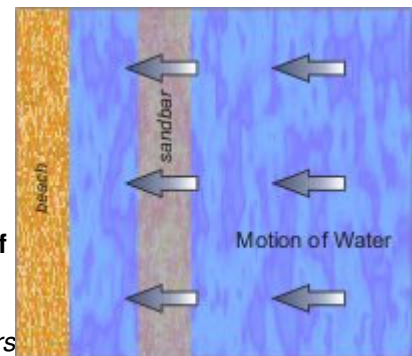
Over 100 drownings due to rip currents occur every year in the United States. More than 80% of water rescues on surf beaches are due to rip currents.

Rip currents can occur at any surf beach with breaking waves, including the Great Lakes.

When Rip Currents Form

Rip currents can be found on many surf beaches every day. Under most tide and sea conditions the speeds are relatively slow. However, under certain wave, tide, and beach profile conditions the speeds can quickly increase to become dangerous to anyone entering the surf. The strength and speed of a rip current will likely increase as wave height and wave period increase. **They are most likely to be dangerous during high surf conditions as the wave height and wave period increase.**

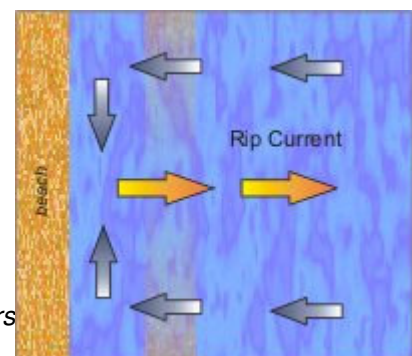
Diagram courtesy of the NWS Southern Region Headquarters



Where Rip Currents Form

Rip currents most typically form at low spots or breaks in sandbars, and also near structures such as groins, jetties and piers. Rip currents can be very narrow or extend in widths to hundreds of yards. The seaward pull of rip currents varies: sometimes the rip current ends just beyond the line of breaking waves, but sometimes rip currents continue to push hundreds of yards offshore.

Diagram courtesy of the NWS Southern Region Headquarters



How to Identify Rip Currents

Look for any of these clues:

- a channel of churning, choppy water
- an area having a notable difference in water color
- a line of foam, seaweed, or debris moving steadily seaward
- a break in the incoming wave pattern

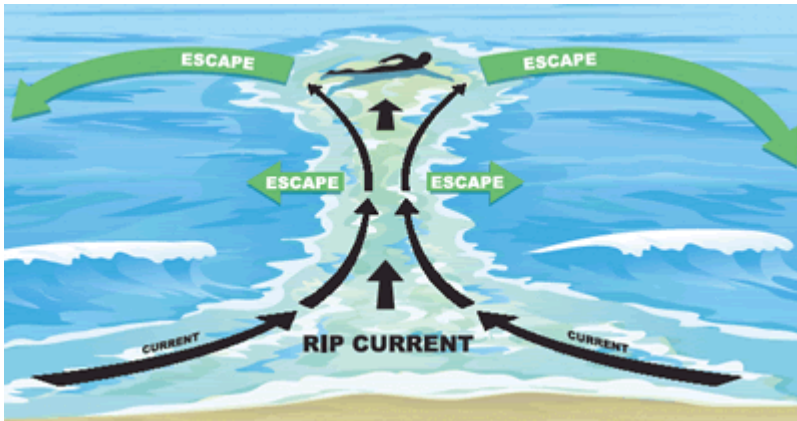


None, one, or more of the above clues may indicate the presence of rip currents. Rip currents are often not

readily or easily identifiable to the average beachgoer. For your safety, be aware of this major surf zone hazard. Polarized sunglasses make it easier to see the rip current clues provided above.

Photo courtesy of the U.S. Army Corps of Engineers Field Research Facility at Duck, NC.

How to Avoid and Survive Rip Currents



Learn how to swim!

- Never swim alone.
 - Be cautious at all times, especially when swimming at unguarded beaches. If in doubt, don't go out!
 - Whenever possible, swim at a lifeguard protected beach.
 - Obey all instructions and orders from lifeguards.
 - If caught in a rip current, remain calm to conserve energy and think clearly.
 - Don't fight the current. Swim out of the current in a direction following the shoreline. When out of the current, swim towards shore.
 - If you are unable to swim out of the rip current, float or calmly tread water. When out of the current, swim towards shore.
 - If you are still unable to reach shore, draw attention to yourself: face the shore, wave your arms, and yell for help.
 - If you see someone in trouble, get help from a lifeguard. If a lifeguard is not available, have someone call 9-1-1. Throw the rip current victim something that floats and yell instructions on how to escape.
- Remember, many people drown while trying to save someone else from a rip current.**

Rip Current Myth

A rip current is a horizontal current. Rip currents do not pull people under the water—they pull people away from shore. Drowning deaths occur when people pulled offshore are unable to keep themselves afloat and swim to shore. This may be due to any combination of fear, panic, exhaustion, or lack of swimming skills.

In some regions rip currents are referred to by other, incorrect terms such as rip tides and undertow. We encourage exclusive use of the correct term – rip currents. Use of other terms may confuse people and negatively impact public education efforts.