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Pool Tip #12: Undertow Myth

There is no such thing as undertow! Regardless of the fact that the country of Bali has an undertow god, and that frequent TV drowning scenes begin with a statement that the "undertow is really strong today" (the Thorn Birds sequence was the worst), there simply is no such thing. What is often thought of as undertow is usually a misunderstanding of wave motion, longshore currents or rip currents.

Ocean waves are wind generated, with the exception of tsunami which are a result of seismic activity such as earthquakes, and volcanic eruptions. Wave height is equal to 1/20 wave length. Waves exists as energy as the swell moves through the water. Water doesn't move in open oceans and lakes, although the opposite is true in rivers. Wave motion is circular, with the circles getting progressively smaller as you go deeper in the water. The pattern changes as the wave approaches shore. The ocean bottom crowds the energy upward, motion becomes oval rather than circular, and actually flats on the ocean bottom, moving forward and back. When water depth equals one half of the wave length, the bottom friction begins to slow the advancing wave. The back of the wave crowds the front of the wave and water piles up. The bottom of the wave is moving slower than the top of the wave, so the top begins to curl. When wave height reaches three quarters of the water depth, the wave breaks.

Instead of water piling up on the beach, it flows along the beach in long shore currents, picking up velocity and power, and is held against shore by wave action. Anyone who has ever gone to the beach, deposited their towels and paraphernalia on the sand, gone out to play in the surf, and within minutes found themselves drifting down the beach from their initial point of entry, is familiar with the effects of long shore currents. Regardless of how strong, they do not pull you down or out.

At some point of weakness, sandbar, physical obstruction, or man made barrier, long shore currents turn outward and form rips. Although rip currents often do pull swimmers out away from the beach, swimmers need not panic, they're not on their way to "Gilligan's Island" and they won't be pulled under. Just relax, don't try to swim directly against the current, you'll only exhaust yourself; and just "go with the flow" until the rip dissipates at its head (usually 100 to 200 feet off shore). Then swim out away from the current parallel and then diagonally back in to shore.