

## Rip current misunderstandings

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In their article, “An examination of rip current fatalities in the United States” (Published online: 23 September 2009), Gensini and Ashley described having developed a relative level of risk posed by rip currents in various parts of the United States of America, based primarily on media reports of deaths attributed to rip currents. They posited that areas with higher numbers of media reported deaths are, by definition, areas with stronger and more hazardous rip currents. Unfortunately, they overlooked the considerable and quantifiable variable of successful intervention (rescue) from rip currents. A review of this variable suggests a substantially different conclusion from that reached by the authors.

Rip currents are a natural hazard, which can be mitigated by a variety of factors, one of which is timely rescue of the imperiled person, whether by professional lifeguards or by others. The nonprofit United States Lifesaving Association annually collects data from lifesaving agencies that provide lifeguard protection at surf beaches, where rip currents occur. These statistics are freely available on the USLA website at [www.usla.org](http://www.usla.org) in the Statistics section.

The authors identified 230 media reports of deaths from rip currents in Florida and 56 deaths from rip currents in California during the period of 1994–2007, using the locations and numbers of these reported deaths to draw various conclusions. This is approximately a 4:1 ratio. They state, “It is hypothesized that California does not see as many rip current fatalities as Florida, because Northern Hemisphere high pressure systems off the West Coast creating ideal beach visiting conditions, would direct synoptic-scale winds offshore, which are unfavorable for the development rip currents.”

Had the authors reviewed rescue statistics, they would have learned that the actual hazard presented by rip currents in California appears to be some 10 times that of Florida. In 2008 alone, for example, while there were 5,964 rescues from drowning reported at surf beaches in Florida, there were 58,631, reported in California. Since the USLA has determined, based on reported causes, that approximately 80% of rescues at surf beaches

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are attributable to rip currents, it can be surmised that there were approximately 4,771 rescues from rip currents in Florida in 2008 and 46,905 in California.

If one uses an extremely conservative assumption that only 5% of these incidents, absent timely rescue, would have resulted in death, there would have been 239 deaths from rip currents in Florida and 2,345 in California in that single year (which was a fairly typical year). This dwarfs the number of rip current related deaths identified from media reports by the authors and suggests relative hazard levels that are opposite that which they suggested, to a significant multiple (approximate ratio 1:10). Clearly, rescues by lifeguards have a major effect in mitigating this hazard, to the degree that successful rescue is far more common than death, and a better indicator of the hazard level presented.

The authors used their mortality data to compare the circumstances surrounding rip current deaths against certain weather conditions in the areas and at the times of these deaths, and concluded that predictive models primarily involving local weather conditions were validated by this data. For the reasons noted, these conclusions bear a reevaluation. In my personal observation as a professional surf lifeguard, local weather conditions on the California coastline have little impact on rip current development, since wave trains arriving at this coastline come from hundreds, if not thousands, of miles away. Predictive models for rip currents must be adaptive to a wide variety of causations and cannot rely solely on the models promoted by the authors.