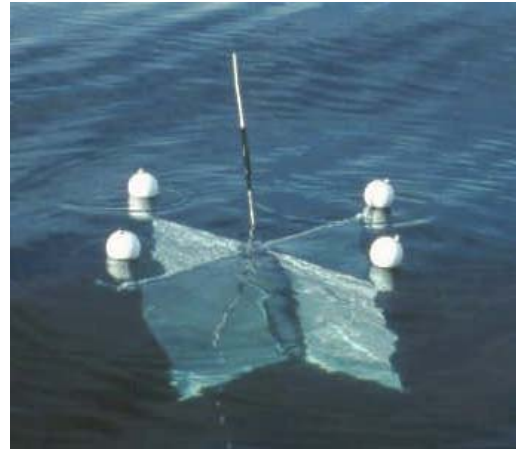


## The “Forbidden Zone” of Southwest Florida

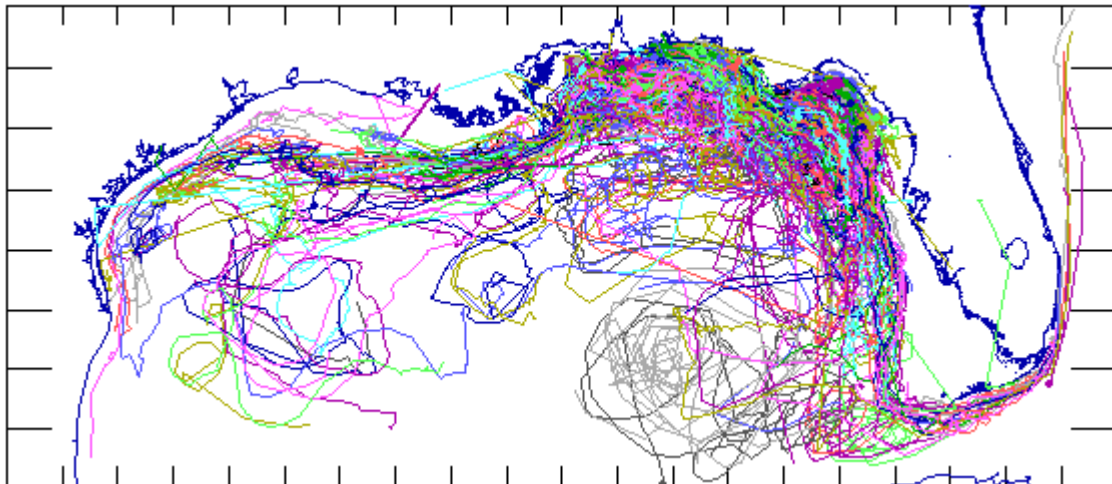
Concerns in Southwest Florida regarding the demise of the Deepwater Horizon drilling platform and subsequent oil spill focus on the potential southward transport of oil via the Loop Current from the northern Gulf of Mexico. The Loop Current enters the Gulf between Cuba and the Yucatan, and then flows northward before making a loop and heading back south, exiting through the Florida Straits. This warm-water, tropical current can be detected by comparing minute differences in sea surface temperatures. Sometimes the northern portion of the Loop sheds a clockwise-rotating eddy that drifts westward through the Gulf.

The potential impact to our area, as compared to the Florida Keys or the east coast of South Florida, may hinge partly on the presence of a “forbidden zone” first identified by a team of researchers from the University of South Florida, Scripps Oceanographic Institute, Florida State University, and the Minerals Management Service (Yang et al. 1999). This project placed over 300 passive drifters at various locations in the northern Gulf, from the Mississippi-Alabama border eastward to off Cedar Key, Florida, and tracked their changes in location via satellite.



Drifter type used (Sturges et al. 2001)

During the year-long study (1996–1997), drifters were tracked throughout the Gulf and along the Florida Current, but a region emerged where “no drifter ventures” (Sturges et al. 2001). This so-called “forbidden zone,” in shallow waters off the coast of Southwest Florida and Florida Bay, suggests that currents, wind, bathymetry, or all three conspired to keep the drifters well offshore.



Tracks of drifters deployed in the northern Gulf of Mexico. Notice the absence of drifters in Southwest Florida waters, the so-called “forbidden zone.” (Sturges et al. 2001)

What remains to be seen is whether the presence of a “forbidden zone” off our coast will spare Southwest Florida from some of the heaviest damage that potentially faces the southern portion

of the state should some of the oil move southward. The results of this study demonstrate just how complex circulation patterns in the Gulf of Mexico can be, and are consistent with some computer models that simulate circulation in the Gulf. Nonetheless, it is important to keep in mind that scientific studies and computer models have a degree of uncertainty associated with them that must be taken into consideration when they are used to make predictions about future events. Just as it would be unwise not to be prepared for a hurricane located off our coast even when computer models tell us we are in no danger, it would also be unwise to take the complexities of ocean circulation for granted in this case, for the potential consequences are simply too large to be ignored.

### **References**

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