

Interannual variability of wind-induced onshore transport over the northern West Florida Shelf

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Numerical modeling studies are being used to understand the physical processes that may result in the onshore transport of reef fish larvae spawned along the shelf edge during the spring. An onshore transport mechanism must exist in order for the relatively immotile fish larvae to reach the inshore seagrass beds that serve as nursery habitat; however, few if any larvae have been successfully captured and identified by field sampling methods during their transport. Modeling studies suggest that onshore transport near the ocean bottom under upwelling favorable winds can be strong enough to carry larvae to the inshore waters within the necessary time frame. There is significant interannual variability in this particular onshore transport mechanism, which may contribute to the variability seen in recruitment success. The roughly ten-year record of SeaWinds scatterometer-derived winds in the region is analyzed to describe the interannual variability of the upwelling-favorable winds that drives this bottom onshore transport. The temporal variability of the scatterometer-derived winds are also compared to in situ observations and reanalysis products used for forcing the ocean model.