Abstract View

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Temporal and Spatial Characteristics of Summer Upwelling along Florida's Atlantic Shelf

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ABSTRACT

Temperature data from shelf waters along Florida's Atlantic coast are used to characterize upwelling during the summer of 1980. Bottom temperatures, recorded at seven stations across the shelf and during 14 weekly cruises between early July and mid-September, show a continual cross-shelf movement of the isotherms, but only one primary upwelling event, during the first three weeks of August. Upwelling ends with an exceptionally rapid warming over a one-week period. The largest net temperature increase of about 10°C occurs at mid- and near-bottom depths over the middle shelf. Temperature-recorder data from four stations spaced along the 10 m isobath suggest that upwelling events arrive on the inner shelf along relatively restricted sections of coastline and persist between one and three weeks. Surface-drogue data reveal an increase in current speed coinciding with lowest bottom temperatures. This lends support to the likelihood that the Florida Current is the primary case of upwelling in Florida Atlantic shelf waters.