WETLAND LOSS AND HABITAT DISTRIBUTION IN THE GAUTIER SOUTH QUADRANGLE, A GIS APPLICATION.

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As part of an ongoing cooperative study with the U. S. Geological Survey, the Office of Geology is investigating historical wetlands change and habitat conversion along the Mississippi coast. The Gautier South Quadrangle is an example of the methods and results obtained thus far. U. S. Fish and Wildlife Service digital habitat data for the years 1958 and 1978 were obtained for land below the 15-foot contour (the ccoastal zone) for all USGS coastal quadrangles. Color Infrared Imagery from 1991/1992 was interpreted and digitized for a current data set. The over 200 Cowardin habitats used in the USFWS classification were simplified into eight categories for ease of interpretation. The eight categories (water, marsh. forest, beach, agriculture, developed, dredge spoil, and non coastal) are compatible with both the Cowardin and Louisiana Geological Survey classification systems. Digital data were compared and analyzed in ARC/Info for GIS display. By comparing habitat polygons for the three data years, it was found that 6.4% of the marsh wetlands in the Gautier South Quadrangle had converted to water, and the total number of acres of marsh tied decreased by 13.6%. The majority of changing marsh habitat was converted to forest. Between 1958 and 1992, more agriculture habitat changed to marsh than vice versa, and urban development of forest habitat was twice as common as urban development or agricultural land.