A Coastal Land Cover Classification System for Use With Geographic Information Systems

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To provide more frequent information on changes in coastal habitats, the National Oceanic and Atmospheric Administration (NOAA) within its Coastal Ocean Program, has initiated a cooperative State/Federal effort to monitor coastal wetlands, submerged vegetated habitat and adjacent upland cover and change in the coastal region of the U.S. every 2 to 5 years. Areas of significant change will be monitored annually. The program is called the NOAA Coastwatch Change Analysis Project (C-CAP). Remote sensing (from satellites and aircraft) and other techniques will be used to establish a coastal land cover data base, and monitor the changes, or update the data base. The first cycle will document status and change (retroactively). The data base, which will increase with each subsequent monitoring cycle, will be an invaluable resource for research; for the evaluation of local, state, and federal wetland management strategies; and for the construction of predictive models. To accomplish its mission, NOAA C-CAP will be working closely with the Environmental Monitoring and Assessment Program (EMAP), which was initiated in 1988 by the U.S. Environmental Protection Agency (EPA) to provide improved information on the current status and long-term trends in the condition of the nation's ecological resources.

A land cover classification system for coastal uplands, wetlands and photic submersed habitats has been developed for NOAA's C-CAP Project in support of management of fisheries habitats and living marine resources and to provide opportunities for federal, state, and regional cooperation and data sharing. The classification system is hierarchical, reflects ecological relationships, optimizes discrimination by satellite remote sensors, and is usable with Geographic Information Systems (GIS). It is compatible with other data bases, e.g., the National Wetland Inventory (NWI) and the USGS Land Use/Land Cover Classification System. The C-CAP classification system includes three major categories: uplands, wetlands, and water and submerged lands. While the latter two categories are the primary areas of interest for NOAA, uplands are also included because land use there may influence adjacent wetlands and water bodies. The C-CAP classification was designed for use with satellite imagery; it represents an adaptation of several earlier systems, including the Anderson Land Use and Land Cover Classification and the Cowardin Classification of Wetlands and Deepwater Habitats.