

Shallow Water Habitat Mapping in the Chesapeake Bay

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Jay Lazar intends to present the paper.

The Chesapeake Bay and its tributaries comprise a biologically diverse ecosystem sustaining more than 3,600 species of plants and animals. For centuries these communities have supported major fisheries and a rich aquatic heritage. Increasing pressures from harvest, pollution and population growth have dictated a change in how the resource is managed. The NOAA Chesapeake Bay Office (NCBO) is coordinating with multiple line offices a NOAA Integrated Ecosystem Monitoring and Assessment program to support Chesapeake Bay restoration and ecosystem-based approaches to management. Aided by the Center for Coastal Monitoring and Assessments (CCMA) Biogeography Team, the NCBO Field Program is focused on characterizing habitats in representative tributaries targeted to aid the biogeographic assessment process. One of several key components for this assessment is the development of the best possible habitat map for linking available fish datasets. Current methods for assessing benthic habitat in shallow water range from pole soundings to analyzing multibeam bathymetry and backscatter imagery. Traditional lower limits for high resolution “shallow water” mapping extend to the 5-7m depth range excluding over half of the Chesapeake Bay and more importantly much of the most ecologically productive habitat. Equipped with side scan sonar, a single beam echosounder, acoustic bottom classification hardware and a sub-bottom profiler, the NCBO Field Program has combined multiple layers of processed acoustic data and software tools for evaluating benthic habitats that reach into 1-2m depths. These data layers are compiled into a GIS to model representative tributary systems providing managers access to tools and information to evaluate management alternatives. Here we compare and discuss the efficacy of our methods for characterizing habitat and engage our regional NOAA partners to coordinate “very shallow water” habitat characterization and mapping tools and techniques.