incorporating shape files into R plots.

Pilot habitat assessment of a mesohaline embayment of the Chesapeake Bay

David Bruce[1], Jay Lazar[1], Steve Giordano[1], and Ward Slacum[2]

[1]NOAA Chesapeake Bay Office, Annapolis, MD; [2]Versar, Inc.

Acoustic habitat mapping and fish census techniques were integrated in an attempt to quantify the ecological importance of oyster shell habitats in the Chesapeake Bay. 41 km^2 of seabed was mapped at the confluence of the Rhode, South, and West rivers in Maryland. A side scan sonar system provided two dimensional textural imagery and a single beam echosounder collected bathymetric and seabed classification data. Cover maps were derived from the integration of all three acoustic data sets and grab sample data. Benthic habitat classifications were Clay/Silt, Sand, Silt/Sand, Patchy 3-D Oyster Shell with Mud, 2-D Oyster Shell with Mud, and 2-D Oyster Shell with Sand. An otter trawl was used to collect organisms present within geographic information system derived habitat polygons. We used generalized linear models to assess the relationship between fish community metrics and a suite of habitat variables. Dependent variables were abundance of pooled fish species (number/m^2), the Shannon-Wiener diversity index, and abundance of the five most frequently observed fish taxa. Independent variables were benthic habitat type, season, a habitat type*season interaction, bottom salinity, bottom dissolved oxygen, bottom temperature, and trawl start depth. Benthic habitat type, followed by the habitat type*season interaction term, was the most significant factors contributing to variation in fish community metrics. One-way analyses identified significant variation in pooled abundance and species abundance relative to habitat type alone. Diversity did not vary significantly with habitat type. Contrary to expectations, abundance was generally greatest on Clay/Silt, Silt/Sand, and Oyster Shell with Mud bottoms; abundance was lowest on Sand bottoms.

On the road to extinction? Monitoring population trends of the endangered white abalone, *Haliotis sorenseni*

John Butler[1], Kevin Stierhoff[1], and Melissa Neuman[2]

[1]SWFSC, La Jolla, CA; [2]SWRO, Long Beach, CA

White abalone (*Haliotis sorenseni*) became the first marine invertebrate to be listed as endangered under the Endangered Species Act in 2001. Low densities and recruitment failure due to Allee effects were identified as being the major threats to the species' existence. Beginning in 2002, the Benthic Resources Group at the Southwest Fisheries Science Center has conducted fine-scale habitat mapping using multibeam sonar and visual transect surveys using a remotely-operated vehicle to monitor the status of white abalone populations at Tanner Bank, an offshore bank in southern California. Results of surveys conducted since the listing indicate continuing declines in total numbers and densities (39–63%, depending on depth) at Tanner Bank between 2002 and 2004. Between 2004 and 2008, white abalone populations appear to have remained relatively stable. Changes in the size distribution over this same time period indicate a population that is growing larger (and older) with no small individuals recruiting to the population. Only five 'pairs' of white abalone were sighted in the 2008 survey (compared to nine pairs and one group of five individuals in 2002, and two pairs in 2004), which suggests that the likelihood of reproductive success of this population remains very low. Continued monitoring is needed to determine whether rebuilding, however slight, may be occurring. More 'active' rebuilding measures (e.g. captive breeding and stock enhancement) may be necessary to reverse the present trend toward extinction.

Proceedings

11th National Stock Assessment Workshop

Characterization of Scientific Uncertainty in Assessments to Improve Determination of Acceptable Biological Catches (ABCs)

Joint Session of the National Stock and Habitat Assessment Workshops

Incorporating Habitat Information in Stock Assessments

1st National Habitat Assessment Workshop

Moving Towards a National Habitat Science Program

Hosted by the Southeast Fisheries Science Center, Southeast Regional Office, and Office of Science and Technology
St. Petersburg, FL
May 17–20, 2010

Edited by Kristan Blackhart

November 2010
NOAA Technical Memorandum NMFS-F/SPO-112

U.S. Department of Commerce
Gary Locke
Secretary of Commerce

National Oceanic and Atmospheric Administration
Jane Lubchenco, Ph.D.
Administrator of NOAA

National Marine Fisheries Service
Eric C. Schwaab
Assistant Administrator for Fisheries

Copies of this document may be obtained by contacting:

Office of Science and Technology, F/ST
National Marine Fisheries Service, NOAA
1315 East West Highway
Silver Spring, MD 20910

An online version is available at http://www.st.nmfs.noaa.gov/

This publication may be cited as:

Blackhart, K. (ed.) 2010. Proceedings. 11th National Stock Assessment Workshop: Characterization of scientific uncertainty in assessments to improve determination of acceptable biological catches (ABCs); Joint Session of the National Stock and Habitat Assessment Workshops: Incorporating habitat information in stock assessments; and 1st National Habitat Assessment Workshop: Moving towards a national habitat science program. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-F/SPO-112, 153 p.