

Identification and monitoring of dynamic habitat in the changing ocean

David G. Foley

SWFSC, Environmental Research Division, Pacific Grove, CA; Joint Institute for Marine and Atmospheric Research, University of Hawaii, Honolulu, HI

There is an increasing emphasis on the employment of ecosystem-based management towards the stewardship of living marine resources. This inherently includes a requirement for the accessibility of timely descriptions of the aspects of marine environment that are relevant to a given ecosystem. In the past decade there has been a proliferation of publicly available oceanographic data sets derived from a variety of platforms and sensors. National, provincial, and municipal researchers and managers who are not necessarily expert in the production and distribution of oceanographic satellite data often face a bewildering, and seemingly contradictory, array of options when choosing data for use in their applications. We offer examples of applications, including several client-side tools designed to extract environmental data within the spatial-temporal locus of a given animal track, and to then import this data directly into the working environment with which a given research or managerial team is comfortable. Additionally, we present sample applications employed along the North American Pacific coast in the support of management of both fisheries and protected species. These examples utilize highly-derived products that fully integrate data provided by electronic tags placed on Chinook salmon (*Oncorhynchus tshawytscha*) and more traditional cetacean surveys with environmental data derived from remotely sensed and in situ data, and model output using the various dissemination systems discussed. Such integrated data suites will allow for improvement of the identification and monitoring of essential habitat over a broad range of spatial and temporal scales.

Mapping hard bottom reef fisheries habitat off northwest Florida—needs, methods, and status

Chris Gardner¹, Doug DeVries¹, and David Naar²

¹SEFSC, Panama City, FL; ²University of South Florida

The west Florida shelf (WFS) supports some of the most valuable reef fish fisheries in the U.S. Gulf of Mexico. However, very little of its area has been mapped with enough resolution to accurately locate and quantify the hard/live bottom habitat these fisheries are so strongly tied to. Such maps are essential for designing an efficient fishery-independent survey of reef fishes, enabling prestratification by habitat, and thereby minimizing variance and optimizing survey resources. Accurate habitat maps will also be critical for ecosystem-based fisheries management and marine spatial planning. In support of a recently expanded fishery-independent reef fish survey, the SEFSC began mapping cross-shelf transects on the northern WFS using multibeam and side scan sonar. Two transects ~1.5–2.5 x 30 nautical miles (n.mi.) were mapped with a 300kHz multibeam sonar and seven single swath cross-shelf transects ~20–30 n.mi. x 150 m were mapped using a 600 kHz side scan sonar. An inexpensive live video drop camera and occasionally an remotely-operated vehicle were used for visual ground truthing. Although the multibeam provided bathymetry and backscatter data at very high resolution, the side scan hardware and software was much more user friendly and provided data on which hard/live bottom habitat could, after a very short learning curve, be easily identified. Given the scale of most interest for fisheries-related needs, the 600 kHz side scan sonar may be the most cost-effective tool for our purposes.

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

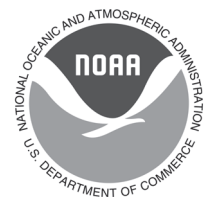
Moving Towards a National Habitat Science Program

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/>

The mention of trade names or commercial firms does not imply endorsement by the National Marine Fisheries Service, NOAA.

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.