



LAB DIRECTOR

Dr. Patrick N. Halpin specializes in developing new approaches to spatial analysis for marine science, management and conservation applications. He holds a Ph.D. in Ecology and a MPA in International Environmental Management. He has been an active member of the Nicholas School faculty since 1995 and sits on numerous national and international advisory committees.

A DISTRIBUTED TEAM

Our lab members are distributed across the main Duke University campus in Durham and the marine lab in Beaufort, North Carolina. We also have a research staff in the Washington, DC area.



SUMMARY

The Marine Geospatial Ecology Lab collaborates across academic, governmental, non-profit, and industry sectors developing solutions for marine science, management and conservation problems.

Recent Funding:

- Alfred P. Sloan Foundation
- David & Lucille Packard Foundation
- Gordon and Betty Moore Foundation
- The SERDP Program
- National Science Foundation

For more information, please visit:

Marine Geospatial Ecology Lab
<http://margeo.nicholas.duke.edu>

Duke Center for Marine Conservation
<http://marineconservation.duke.edu>

Nicholas School
<http://www.nicholas.duke.edu>

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MARINE GEOSPATIAL ECOLOGY LAB AT DUKE UNIVERSITY



<http://margeo.nicholas.duke.edu>

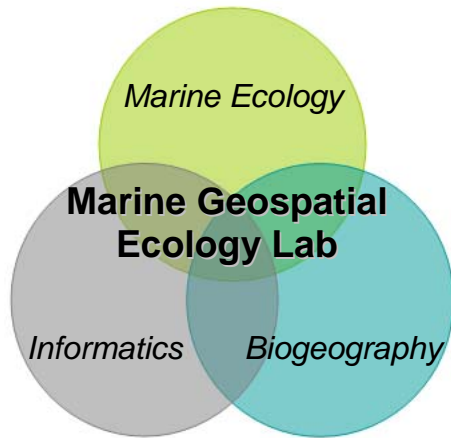


NICHOLAS SCHOOL OF THE
ENVIRONMENT AND EARTH SCIENCES
DUKE UNIVERSITY

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OVERVIEW

The Marine Geospatial Ecology Lab (MGEL) applies geospatial technologies to issues in marine ecology, resource management and ocean conservation.



The conservation and management of natural resources in the marine realm all occur in a spatial context.

We synthesize approaches from Spatial Ecology, Biogeography, and Geostatistics as well as geospatial technologies, including geographical information systems (GIS), global positioning systems (GPS) and remote sensing.

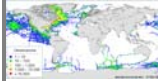


RESEARCH PROJECTS

Biogeographic Information Systems

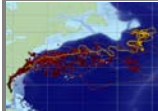


The **OBIS-SEAMAP** project is archiving geo-referenced data on marine mammals, seabirds and sea turtles globally.

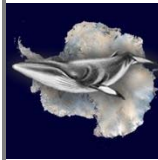


The **ESRI Marine Data Model** is facilitating the dynamic representation of marine features in time and space for GIS users.

Behavioral Ecology



Analysis of **Marine Animal Movement** is providing new insights into pelagic animal behavior and management.



The **Southern Ocean GLOBEC Program** is identifying the ecology and behavior of large whales in the Antarctic.



The **Tag-A-Giant** bluefin tuna tracking project for the Atlantic is a collaborative effort with Stanford.

Ecosystem-Based Management

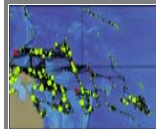


Project **GloBAL** is assessing fisheries bycatch globally.



The **Marine-EBM Tool Innovaton Fund** is enabling the development of marine ecosystem-based management tools.

Connectivity and Reserve Design



Coral Reef Connectivity is being quantified with hydrodynamic models and graph theory.

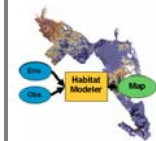


Marine Eco-Regional Plans with The Nature Conservancy are helping to identify conservation priorities.

Habitat Modeling



The **SERDP**-funded marine mammal habitat modeling project is forecasting whale habitat for the US Navy.



A **Marine Geospatial Ecology Toolbox** is providing habitat, benthic, and connectivity modeling tools within scientific workflows.