Patrick N. Halpin
Associate Professor of Marine Geospatial Ecology
Nicholas School of the Environment
Duke University, Durham, NC 27708-0328

a. Professional Preparation
Undergraduate Institution: George Mason University
Major: International Studies
Degree & Year: B.A (Honors) 1986
Graduate Institution (1): George Mason University
Major: Masters of Public Administration in International Management
Degree & Year: M.P.A / IM 1989
Graduate Institution (2): University of Virginia
Major: Environmental Science
Degree & Year: Ph.D. 1995

b. Appointments
2010 – Current Associate Professor of Marine Geospatial Ecology, Nicholas School of the Environment, Duke University
2005 – 2010: Gabel Associate Professor of the Practice of Marine Geospatial Ecology and Director of the Geospatial Analysis Program, Nicholas School of the Environment, Duke University
1997 - 2004: Assistant Professor of the Practice of Landscape Ecology, Nicholas School of the Environment and Earth Sciences, Duke University
1995 -1997: Research Assistant Professor, Nicholas School of the Environment, Duke University
1990 -1995: Research Assistant, Department of Environmental Sciences, University of Virginia

c. Products: *Publications related to the proposal (5):*

Roberts, J.J., B.D. Best, L. Mannocci, E. Fujioka, ***P.N. Halpin***, D.L. Palka, L.P. Garrison, K.D. Mullin, T.V.N. Cole, W.A. McLellan, and G.G. Lockhart (*2016*). Habitat-based cetacean density models for the U.S. Atlantic and Gulf of Mexico. *Scientific Reports*. http://doi.org/10.1038.srep22615.

LaBrecque, E., C. Curtice, J. Harrison, S. Van Parjis, and ***P.N. Halpin***. *(2015)* Biologically Important Areas for Cetaceans with the US Exclusive Economic Zone – East Coast. *Aquatic Mammals (41)*1, 17-29. http://doi.org/10.1578/AM.41.1.2015.17

Fujioka, E., M. Soldevilla***, P.N. Halpin*** *(2014)* Integration of Passive Acoustic Monitoring Data into OBIS-SEAMAP, a Global Biogeographic Database, to Advance Spatially-explicit Ecological Assessments. *Ecological Informatics. 21 59-73.* http://dx.doi.org/10.1016/j.ecoinf.2013.12.004

Fujioka, E., C.Y. Kot, B.P. Wallace, B.D. Best, J. Moxley, J. Cleary, B. Donnelly, *P.N. Halpin* (2014) Data integration for conservation: Leveraging multiple data types to advance ecological assessments and habitat modeling for marine megavertebrates using OBIS–SEAMAP. *Ecological Informatics* 20 13-26. http://dx.doi.org/10.1016/j.ecoinf.2014.01.003

Halpin, P.N.; A.J. Read, B.D. Best, E. Fujioka, B. Donnelly, C. Kot, L.J. Hazen, D. Hyrenbach and L. Crowder. *(2009)* OBIS-SEAMAP2.0: Developing a research data commons for the ecological studies of marine mammals, seabirds and seaturtles. *Oceanography 22(2)104-115.*

Other representative publications (5):

Best, B.D., ***P.N. Halpin***, A.J. Read, E. Fujioka, C.P. Good, E.A. LaBrecque, R.S. Schick, J.J. Roberts, L.J. Hazen, S.S. Qian, D.L. Palka, L.P. Garrison, W.A. McLellan (*2012*) Online Cetacean Habitat Modeling System for the U.S. East Coast and Gulf of Mexico. *Endangered Species Research 18:1-15* http://dx.doi.org/10.3354/esr00430

Farrell, E.R., A.M. Boustany, ***P.N. Halpin*** and D. Hammond. (*2014*) The influence of biophysical ocean conditions on dolphinfish (*Coryphaena hippurus*) commercial and recreational catch in the U.S. Atlantic fishery. *Fisheries Research 151:177-190.* http://dx.doi.org/10.1016/j.fishres.2013.11.014

Roberts, J.; B. Best, D.C. Dunn, E.A. Treml, and ***P.N. Halpin*** *(2010)*. Marine Geospatial Ecology Tools: an integrated framework for ecological geoprocessing with ArcGIS, Python, R, MATLAB, and C++. *Environmental Modelling & Software 25 1197-1207 doi:10.1016/j.envsoft.2010.03.029.*

Dunn, D. and ***P.N. Halpin*** (2009a) Filling a marine spatial planning data gap: rugosity-based mesoscale modeling of hard-bottom habitat and marine biodiversity *Marine Ecology Progress Series*. *http://dx.doi.org/10.3354/meps07839*

Redfern, J.V., M.C. Ferguson, E.A. Becker, K.D. Hyrenbach, C. Good, J. Barlow, K. Kaschner, M.F. Baumgartner, K.A. Forney, L.T. Balance, P. Fauchald, ***P.N. Halpin***, T. Hamazaki, A.J. Pershing. S.S. Qian, A. Read, S.B. Reilly, L. Torres, and F. Werner. (2006). Techniques for cetacean-habitat modeling. *Marine Ecology Progress Series. 310:271-295.*

d. Synergistic Activities

Scholarly activities: My scholarly activities integrate themes from a variety of research topics: marine spatial ecology, simulation modeling, Geographic Information Systems analysis techniques; ecological applications of remote sensing; and terrestrial and marine protected area management analysis.

Innovations in Teaching and Training: I have developed a broad curriculum of graduate level and professional courses in environmental applications of GIS, satellite remote sensing and spatial analysis for environmental analysis (http://www.nicholas.duke.edu/geospatial). In addition to traditional courses, I teach advanced professional short courses on technical applications of geospatial analysis for international NGOs. I also serve on the advisory board for the Center for Instructional Technology at Duke University.

Technical Innovations: I am currently a Principal Investigator on the OBIS-SEAMAP project developing new internet based mapping technologies to deliver marine data and analysis techniques over the internet (http://seamap.env.duke.edu)..

Service and Integration: I currently serve on the International Steering Group of the Ocean Biogeographic Information System.

e. Collaborators & Other Affiliations

(i) Collaborators 2009 - 2014: Ausubel,J. Rockefellor Univ., Baker,D.J. Clinton Foundation, Baumgartner,M.F. WHOI, Best,B.D. UCSB, Bjorkland,R.,Boustany,A.M. Duke University, Burns,J.UCSB, Castillo,J. Univ. Simon Bolivar, Chao,Y. NASA,Clark,J.S. Duke Univ., Clark,M.R. NIWA, Cleary,J. Duke Univ., Costa,D.P. UCSC, Crowder,L.B. Stanford Univ., Curtice,C. Duke Univ.,Donnelly,B. Duke Univer., Dunn,D.C. Duke Univ., Fraser,W.R. Polar Oceans Research Group*, Friedlaender,A.S. Oregon State Univ., Fujioka,E. Duke Univ.,Garcia,S.G. FAO, Garrison,L.P. NOAA, Good,C.P.,Haughton,M., Hazen,E.L. NOAA, Hazen,L.J. Stanford Univ., Holmes,C., Hurst,T., Hyrenbach,K.D. Hawaii Pacific Univ., Johnston,D.W. Duke Univ., Kappes,M.A. UCSC, Kelez,S., Kot,C.A. Duke Univ., Kraus,S.D., LaBrecque,E.A. Duke Univ., Lewison,R.L. UCSD, Loarie,S.R. Stanford Univ., Mannix,H. Ocean Leadership, Mate,B.R. Oregon State Univ., McKnight,S.Duke Univ., McLellan,W.A. UNCW, Moore,J.E. NOAA, Moretti,D.J.NUWC, Nowacek,D.P. Duke Univ., Pabst,D.A. UNCW, Palka,D.L. NOAA, Poiner,I. AIMS, Possingham,H.P. Univ. Queensland, Qian,S.S. Duke Univ., Read,A.J. Duke Univ., Riginos,C. Univ. Queensland, Roberts,J.J. Duke Univ., Schick,R.S. St. Andrews Univ., Shaffer,S.A. SJSU, Sims, M. Duke Univ., Singh-Renton,S. FAO, Slay,C.S.,St. Laurent,L. WHOI, Stevick,P., Stewart,K. NOAA,Thompson,M. NOAA,Thorne,L.,Tremblay,Y. UCSC,Treml,E.A. Melbourne Univ., Urban,D.L. Duke Univ., Vanden Berghe,E., Ware,C. UNH, Weinrich,M.T., Wiley,D. NOAA, Williams,M.,Yarincik,K. Consortium for Ocean Leadership, Zhou,M. Univ. of Mass., Zhu,Y. Univ. of Mass., Zydelis,R DHI.*

(ii) Graduate and Postdoctoral Advisors: H.H. Shugart, University of Virginia

(iii) Thesis Advisor and Postgraduate-Scholar Sponsor: Eric Treml, Duke University (Ph.D. Thesis advisee / Post-doctoral advisee); Andre Boustany, Duke University (Post-doctoral advisee); Ari Friedlaender, Duke University (Post-doctoral advisee); Elliott Hazen, Duke University (Post-doctoral advisee); Robert Schick, Duke University (Ph.D. Thesis advisee / Post-doctoral advisee); Daniel Dunn, Duke University (Ph.D. Thesis advisee / Post-doctoral advisee).