

BENJAMIN D. BEST, PHD

Environmental Data Scientist

Currently working on automation and visualization of environmental data and scientific workflows. Seeking to continue promulgating these technical skills for solving pressing environmental problems.

EDUCATION

- 2016
- **Ph.D. in Marine Science and Conservation**
Nicholas School of the Environment, Duke📍 Durham, NC

Dissertation: [Data to Decision in a Dynamic Ocean: Robust Species Distribution Models and Spatial Decision Frameworks](#)
- 2007
- **M.S. in Environmental Sciences**
Nicholas School of the Environment, Duke📍 Durham, NC

Thesis: Geospatial Modeling of Habitat and Connectivity
- 1998
- **B.A. in Geography, B.S. in Aquatic Biology**
University of California Santa Barbara (UCSB)📍 Santa Barbara, CA

PROFESSIONAL EXPERIENCE

- 2016
|
present
- **Environmental Data Scientist & Founder**
EcoQuants, LLC📍 Santa Barbara, CA
- 202
|
2022
- **Lecturer (part-time)**
Masters in Environmental Data Science, University of California📍 Santa Barbara, CA
- 2014 –
2016
- **Lecturer (part-time)**
Bren School of Env. Sci. & Mgmt., UCSB📍 Santa Barbara, CA
- 2014 –
2016
- **Senior Analyst, Ocean Health Index**
National Center for Ecological Analysis & Synthesis, UCSB📍 Santa Barbara, CA
- 2002 –
2008
- **Research Associate, Marine Geospatial Ecology Lab**
Nicholas School of the Environment, Duke📍 Durham, NC
- 2000 –
2002
- **Computer & Network Technologist**
Bren School of Env. Sci. & Mgmt., UCSB📍 Santa Barbara, CA
- 1998 –
1999
- **Database Developer & IT Consultant**
European Human Rights Foundation📍 Brussels, Belgium
- 1997 –
1998
- **Lab and Scuba Diving Research Assistant**
Marine Biogeography Lab of Dr. Steven Gaines, UCSB📍 Santa Barbara, CA



CONTACT INFO

- ✉ ben@ecoquants.com
- 🌐 github.com/bbest
- ☎ +1 805-705-9770

SKILLS

Instructor, trained with Software and Data Carpentry, developing webinars, 2-day workshops and semester courses in environmental data science.

Spatial ecologist expert in commercial ArcGIS and open-source R and Python techniques for environmental problem solving.

Full stack developer from system administration, cloud computing, relational database design and front-end web development.

Experienced in statistical analysis, species distribution modeling, ecological indicator development and machine learning.

Last updated: 2024-04-21



TEACHING EXPERIENCE

- 2022 • **Machine Learning in Environmental Science**
Masters in Environmental Data Science, University of California
📍 Santa Barbara, CA
- 2021 • **Team Science, Collaborative Analysis and Project Management**
Masters in Environmental Data Science, University of California
📍 Santa Barbara, CA
- 2020 • **Geographic Information Systems (GIS)**
Cal State Channel Islands 📍 Camarillo, CA
- 2019 • **GIS**
Environmental Studies, UCSB 📍 Santa Barbara, CA
- 2016 • **GIS**
Bren School of Env. Sci. & Mgmt., UCSB 📍 Santa Barbara, CA
- 2016 • **Environmental Informatics**
Bren School of Env. Sci. & Mgmt., UCSB 📍 Santa Barbara, CA
- 2015 • **Landscape Ecology**
Bren School of Env. Sci. & Mgmt., UCSB 📍 Santa Barbara, CA
- 2014, 2015 • **Advanced Topics in GIS**
Bren School of Env. Sci. & Mgmt., UCSB 📍 Santa Barbara, CA
- 2012 • **Marine GIS**
Nicholas School of the Env., Duke 📍 Durham, NC



AWARDS

- 2017 • **NOPP Excellence in Partnering Award**
Project: [Marine Biodiversity Observation Network](#) (EcoQuants)
📍 Santa Barbara, CA
- 2012 • **Special Achievement in GIS**
Software: [Marine Geospatial Ecology Tools](#) (Duke). Award presented by Jack Dangermond at Esri International User Conference.
📍 Durham, NC
- 2008 • **Strategic Environmental Research and Development Program Project of the Year in Sustainable Infrastructure**
Project: [Mapping Cetacean Habitat](#) (Duke) 📍 Durham, NC
- 1998 • **Audrey Lynn Copeland Memorial Award for Excellence in Ecology Evolution and Marine Biology**
Nominated by Dr. Steven Gaines (UCSB) 📍 Santa Barbara, CA
- 1997 • **President's Undergraduate Research Fellowship**
Proposed evaluating genetic distance of continental versus island samples to test rafting on kelp holdfasts by brooding sea cucumbers (UCSB)
📍 Santa Barbara, CA

1996

● **Howard Hughes Medical Internship**

Worked with Dr. Peter Collins manipulating hormonal levels of fish in lab and slicing the brains to evaluate efficacy for mariculture purposes (UCSB)

📍 Santa Barbara, CA



PUBLICATIONS

(2024). SanctSound: Building Data Systems for Sound Decisions. In A. N. Popper, J. Sisneros, A. D. Hawkins, & F. Thomsen (Eds.),

2024

● **39. SanctSound: Building Data Systems for Sound Decisions**

in The Effects of Noise on Aquatic Life: Principles and Practical Considerations

Hatch, L., J Barkowski, S Baumann-Pickering, CW Bell, **BD Best**, J Brown, A DeAngelis, J Joseph, E Kim, D Kitchen, A Kok, A Kügler, A Kumar, M Lammers, T Margolina, M McKenna, K Merkens, LP Reeves, TJ Rowell, ... E Zang

2022

● **38. Novel Marine Energy Environmental Compliance Reporting Application Summarizes Disparate Content by Tags and Location**

Offshore Technology Conference

Barr ZW, **BD Best**, WJ Peplinski, C Jones, G Chang, JD Roberts, S Kramer

2021

● **37. Webenizing Condition Reports: Communicating Data-Driven Ecosystem Indicators in a Visually Engaging and Interactive Online Platform**

National Marine Sanctuaries Conservation Series

Spector P, **BD Best**, J Ranganathan, T Murray, JA Brown, C Caldow, G Canonico, A DeVogelaere

2021

● **36. Reef-Fish Abundance, Biomass, and Biodiversity Inside and Outside No-Take Marine Zones in the Florida Keys National Marine Sanctuary: 1999–2018**

Oceanography

Medina M, C Estes, **BD Best**, C Stallings, E Montes, L McEachron, F Muller-Karger

2021

● **35. tbeptools: An R package for synthesizing estuarine data for environmental research**

Journal of Open Source Software

Beck MW, MN Schrandt, MR Wessel, ET Sherwood, GE Raulerson, AA Budihal, **BD Best**

- 2021 ● **34. Improving the IEA approach using principles of open data science**
Coastal Management
 Bastille K, S Hardison, L DeWitt, J Brown, J Samhouri, S Gaichas, S Lucey, K Kearney, **BD Best**, S Cross, S Large, E Spooner
- 2020 ● **33. Data-driven approach for highlighting priority areas for protection in marine areas beyond national jurisdiction**
Marine Policy
Best BD, ME Visalli*, RB Cabral, W Cheung, N Clark, C Garilao, K Kaschner, ..., DJ McCauley
 * shared first authorship
- 2019 ● **32. Submarine Cable Analysis for U.S. Marine Renewable Energy Development**
 Golden, CO: National Renewable Energy Laboratory. NREL/TP-5000-71125.
Best BD, L Kilcher
- 2019 ● **31. Global Observational Needs and Resources for Marine Biodiversity**
Frontiers in Marine Science
 Canonico G, PL Buttigieg, E Montes, CA Stepien, D Wright, ..., **BD Best**, ... BJ Murton
- 2019 ● **30. Minimizing wildlife impacts for offshore wind energy development: Winning tradeoffs for birds in space and cetaceans in time**
PLoS ONE
Best BD, PN Halpin
- 2018 ● **29. A Global Database of Intentionally Deployed Wrecks to Serve as Artificial Reefs**
Data in Brief
 Ilieva I, L Jouvet, L Seidelin, **BD Best**, S Aldabet, R da Silva, D Amor A Ovando
- 2018 ● **28. Advancing Marine Biological Observations linking the Essential Ocean Variables (EOVs) and Essential Biodiversity Variables (EBVs) Frameworks**
Frontiers in Marine Science
 Muller-Karger FE, P Miloslavich, NJ Bax, S Simmons, MJ Costello, IS Pinto, G Canonico, W Turner, M Gill, E Montes, **BD Best**, J Pearlman, P Halpin, ..., G Geller
- 2018 ● **27. Satellite sensor requirements for monitoring essential biodiversity variables of coastal ecosystems**
Ecological Applications
 Muller-Karger FE, E Hestir, C Ade, K Turpie, D Roberts, D Siegel, R Miller, ..., F Davis, **BD Best**, ...

- 2017 ● **26. Our path to better science in less time using open data science tools**
Nature Ecology & Evolution
Lowndes JS, **BD Best**, C Scarborough, JC Afflerbach, MR Frazier, CC O'Hara, N Jiang, BS Halpern
- 2016 ● **25. Habitat-based cetacean density models for the U.S. Atlantic and Gulf of Mexico**
Scientific Reports
Roberts JJ, **BD Best**, L Mannocci, E Fujioka, PN Halpin, DL Palka, LP Garrison, KD Mullin, TVN Cole, CB Khan, WA McLellan, DA Pabst, GG Lockhart
- 2015 ● **24. Best practices for assessing ocean health in multiple contexts using tailorable frameworks**
PeerJ
Lowndes, JSS, EJ Pacheco, **BD Best**, C Scarborough, C Longo, SK Katona, BS Halpern
- 2015 ● **23. Updated marine mammal distribution and abundance estimates in coastal British Columbia**
Journal of Cetacean Research and Management
Best BD, CH Fox, R Williams, PN Halpin, PC Paquet
- 2015 ● **22. Patterns and Emerging Trends in Global Ocean Health**
PLoS ONE
Halpern BS, CL Longo, JSS Lowndes, **BD Best**, M Frazie, SK Katona, ... ER Selig
- 2014 ● **21. Assessing the health of the U.S. west coast with a regional-scale application of the Ocean Health Index**
PLoS ONE
Halpern BS, CL Longo, C Scarborough, D Hardy, **BD Best**, S Doney, S Katona, K McLeod, A Rosenberg, J Samhour
- 2014 ● **20. Data Integration for Conservation: Leveraging Multiple Data Types to Advance Ecological**
journal
Fujioka E, CY Kot, BP Wallace, **BD Best**, J Moxley, J Cleary, B Donnelly, PN Halpin
- 2014 ● **19. A Regional-Scale Ocean Health Index for Brazil**
PLoS ONE
Elfes CT, CL Longo, BS Halpern, D Hardy, C Scarborough, **BD Best**, T Pinheiro, G Dutra
- 2013 ● **18. Habitat-specific larval dispersal and marine connectivity: Implications for reserve design**
Ecosphere
Anadón JD, M del Mar Mancha-Cisneros, **BD Best**, LR Gerber

- 2013 ● **17. Assessing global marine biodiversity status within a coupled socio-ecological perspective**
PLoS One
Selig ER, CL Longo, BS Halpern, **BD Best**, D Hardy, CT Elfes, C Scarborough, KM Kleisner, SK Katona
- 2012 ● **16. An index to assess the health and benefits of the global ocean**
Nature
Halpern BS, C Longo, D Hardy, KL McLeod, JF Samhouri, SK Katona, K Kleisner, SE Lester, J O'Leary, M Ranelletti, AA Rosenberg, C Scarborough, ER Selig, **BD Best**, DR Brumbaugh, FS Chapin III, LB Crowder, KL Daly, SC Doney, C Elfes, MJ Fogarty, SD Gaines, K Jacobsen, LB Karrer, HM Leslie, E Neeley, D Pauly, S Polasky, B Ris, K St. Martin, GS Stone, UR Sumaila, D Zeller
- 2012 ● **15. Online Cetacean Habitat Modeling System for the U.S. East Coast and Gulf of Mexico**
Endangered Species Research
Best BD, PN Halpin, AJ Read, E Fujioka, CP Good, EA LaBrecque, RS Schick, JJ Roberts, LJ Hazen, SS Qian, DL Palka, LP Garrison, WA McLellan
- 2011 ● **14. Community structure in pelagic marine mammals at large spatial scales**
Marine Ecology Progress Series
Schick RS, PN Halpin, AJ Read, DL Urban, **BD Best**, CP Good, JJ Roberts, EA LaBrecque, DL Palka, H Whitehead, WA McClellan, DA Pabst, C Dunn
- 2011 ● **13. Dynamic habitat models: a new perspective in analyzing fisheries bycatch**
Ecology Letters
Zydels R, RL Lewison, SA Shaffer, JE Moore, AM Boustany, JJ Roberts, M Sims, DC Dunn, **BD Best**, Y Tremblay, MA Kappes, PN Halpin, DP Costa, LB Crowder
- 2010 ● **12. Are all seeds equal? Spatially explicit comparisons of seed fall and sapling recruitment in a tropical forest**
Ecology Letters
Swamy V, J Terborgh, KG Dexter, **BD Best**, P Alvarez, F Cornejo
- 2010 ● **11. Spatio-temporal gap analysis of OBIS-SEAMAP project data: Assessment and way forward**
PLoS ONE
Kot CY, E Fujioka, LJ Hazen LJ, **BD Best**, AJ Read, PN Halpin
- 2010 ● **10. Marine Geospatial Ecology Tools: an integrated framework for ecological geoprocessing with ArcGIS, Python, R, MATLAB, and C++**
Ecosystem Modeling & Software
Roberts JJ, **BD Best**, DC Dunn, EA Trembl, PN Halpin

- 2010 ● **9. Program Design: Developing a Comprehensive Data Strategy**
Chapter 11 in *Integrating and Applying Science: A handbook for effective coastal ecosystem assessment*. IAN press.
Lookingbill T, MT Trice, S Carter, G Sanders G, **BD Best**, BJ Longstaff, JM Hawkey
- 2010 ● **8. Near bottom current direction inferred from comatulid crinoid feeding postures on the Terre Adélie and George V shelf, East Antarctica**
Deep Sea Research Part II: Topical Studies in Oceanography
Eléaume M, RJ Beaman, HJ Griffiths, **BD Best**, MK Riddle, V Wadley, SR Rintoul, LG Hemery, N Améziane
- 2009 ● **7. Predictive Marine Mammal Modeling for Queen Charlotte Basin, British Columbia**
Technical Report for Raincoast Conservation Foundation. 120 p.
Best BD, PN Halpin
- 2009 ● **6. Striking the right balance in right whale conservation**
Canadian Journal of Fisheries and Aquatic Sciences
Schick RS, PN Halpin, AJ Read, CK Slay, SD Kraus, BR Mate, MF Baumgartner, JJ Roberts, **BD Best**, CP Good, SR Loarie, JS Clark
- 2009 ● **5. OBIS-SEAMAP: The world data center for marine mammal, sea bird and sea turtle distributions**
Oceanography
Halpin PN, AJ Read, E Fujioka, **BD Best**, B Donnelly, LJ Hazen, C Kot, K Urian, E LaBrecque, C Good, LB Crowder, KD Hyrenbach
- 2008 ● **4. Understanding movement data and movement processes: current and emerging directions**
Ecology Letters
Schick RS, SR Loarie, F Colchero, **BD Best**, A Boustany, DA Conde, PN Halpin, LN Joppa, CM McClellan, JS Clark
- 2007 ● **3. Geospatial web services within a scientific workflow: Predicting marine mammal habitats in a dynamic environment**
Ecological Informatics
Best BD, PN Halpin, E Fujioka, AJ Read, SS Qian, LJ Hazen, RS Schick
- 2007 ● **2. Marine Animal Data Applications**
Chapter 4 in *ArcMarine: GIS for a Blue Planet*
Halpin PN, E Fujioka, MS Coyne, **BD Best**

2006

● **1. OBIS-SEAMAP: developing a biogeographic research data commons for the ecological studies of marine mammals, seabirds, and sea turtles**

Marine Ecology Progress Series

Halpin PN, AJ Read, BD Best, KD Hyrenbach KD, E Fujioka, MS Coyne, LB Crowder, SA Freeman, C Spoerri