Daniel A. Ovando

School of Aquatic & Fishery Sciences – University of Washington
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RESEARCH INTERESTS

- Fisheries stock assessment
- Marine Conservation
- Fisheries management
- Policy Evaluation
- Predictive Modeling
- Bayesian Inference
- Machine Learning

EDUCATION

Ph.D. Environmental Science and Management (2018)
Bren School of Environmental Science & Management – University of California, Santa Barbara
    Dissertation: Of Fish and Fishermen: Using Human Behavior to Improve Marine Resource Management
    Advisors: Dr. Christopher Costello and Dr. Steven Gaines

Master of Environmental Science and Management (2010)
Coastal Marine Resources Management Specialization
Bren School of Environmental Science & Management – University of California, Santa Barbara
    Thesis: Economic Viability and Sustainable Management of a Red Abalone Fishing Cooperative

Bachelor of Science in Ecosystem Science and Policy, Biology (2007)
University of Miami, Coral Gables, Florida
    Majors: Ecosystem Science & Policy, Biology

PUBLICATIONS

Ovando, D., Liu, O., Molina, R., Szuwalski, C., 2021. Models of marine protected areas must explicitly address spatial dynamics. PNAS 118. https://doi.org/10.1073/pnas.2025958118

Ovando, D., Libecap, G.D., Millage, K.D., Thomas, L., 2020. Coasean Approaches to Address Overfishing: Bigeye Tuna Conservation in the Western and Central Pacific Ocean. Marine Resource Economics 000–000. https://doi.org/10.1086/711853

Ovando, D., Caselle, J.E., Costello, C., Deschenes, O., Gaines, S.D., Hilborn, R., Liu, O., In Press. Assessing the Population-level Conservation Effects of Marine Protected Areas. Conservation Biology. https://doi.org/10.6084/m9.figshare.12715409.v1

Ovando, D., Hilborn, R., Monnahan, C., Rudd, M., Rishi Sharma, Thorson, J., Rousseau, Y., Yimin Ye, In Review. Global Assessments of Fishery Status need Better Data more than Better Models. Fish and Fisheries. https://doi.org/10.6084/M9.FIGSHARE.13070627.V2

Ovando, D., Curry Cunningham, Kuriyama, P., Hilborn, R., Boatright, C., In Review. Identifying Frontiers in Ecological Forecasting with Modern Computational Tools. https://doi.org/10.6084/m9.figshare.12991466.v6

Ovando, D., Dougherty, D., Wilson, J.R., 2016. Market and design solutions to the short-term economic impacts of marine reserves. Fish and Fisheries 17, 939–954. https://doi.org/10.1111/faf.12153

Ovando, D., Deacon, R.T., Lester, S.E., Costello, C., Van Leuvan, T., McIlwain, K., Strauss, K.C., Arbuckle, M., Fujita, R., Gelcich, S., Uchida, H., 2013. Conservation incentives and collective choices in cooperative fisheries. Marine Policy 37, 132–140. https://doi.org/10.1016/j.marpol.2012.03.012

Ovando, D., Poon, S., Costello, C., 2017. Opportunities and precautions for integrating cooperation and individual transferable quotas with territorial use rights in fisheries. Bulletin of Marine Science 93, 101–115. https://doi.org/10.5343/bms.2016.1081

Hilborn, R., **Ovando, D.**, 2014. Reflections on the success of traditional fisheries management. ICES J. Mar. Sci. 71, 1040–1046. https://doi.org/10.1093/icesjms/fsu034

Anderson, S.C., Cooper, A.B., Jensen, O.P., Minto, C., Thorson, J.T., Walsh, J.C., Afflerbach, J., Dickey-Collas, M., Kleisner, K.M., Longo, C., Osio, G.C., **Ovando, D.**, Mosqueira, I., Rosenberg, A.A., Selig, E.R., 2017. Improving estimates of population status and trend with superensemble models. Fish and Fisheries 18, 732–741. https://doi.org/10.1111/faf.12200

Burgess, M.G., McDermott, G.R., Owashi, B., Reeves, L.E.P., Clavelle, T., **Ovando, D.**, Wallace, B.P., Lewison, R.L., Gaines, S.D., Costello, C., 2018. Protecting marine mammals, turtles, and birds by rebuilding global fisheries. Science 359, 1255–1258. https://doi.org/10.1126/science.aao4248

Costello, C., **Ovando, D.**, 2019. Status, Institutions, and Prospects for Global Capture Fisheries. Annual Review of Environment and Resources 44, 177–200. https://doi.org/10.1146/annurev-environ-101718-033310

Costello, C., **Ovando, D.**, Clavelle, T., Strauss, C.K., Hilborn, R., Melnychuk, M.C., Branch, T.A., Gaines, S.D., Szuwalski, C.S., Cabral, R.B., Rader, D.N., Leland, A., 2016. Global fishery prospects under contrasting management regimes. PNAS 113, 5125–5129. https://doi.org/10.1073/pnas.1520420113

Costello, C., **Ovando, D.**, Hilborn, R., Gaines, S.D., Deschenes, O., Lester, S.E., 2012. Status and Solutions for the World's Unassessed Fisheries. Science 338, 517–520. https://doi.org/10.1126/science.1223389

Dowling, N., Wilson, J., Rudd, M., Babcock, E., Caillaux, M., Cope, J., Dougherty, D., Fujita, R., Gedamke, T., Gleason, M., Guttierez, M., Hordyk, A., Maina, G., Mous, P., **Ovando, D.**, Parma, A., Prince, J., Revenga, C., Rude, J., Szuwalski, C., Valencia, S., Victor, S., 2016. FishPath: A Decision Support System for Assessing and Managing Data- and Capacity- Limited Fisheries, in: Quinn II, T., Armstrong, J., Baker, M., Heifetz, J., Witherell, D. (Eds.), Assessing and Managing Data-Limited Fish Stocks. Alaska Sea Grant, University of Alaska Fairbansk.

Fogarty, M.J., Rosenberg, A.A., Cooper, A.B., Dickey-Collas, M., Fulton, E.A., Gutiérrez, N.L., Hyde, K.J.W., Kleisner, K.M., Kristiansen, T., Longo, C., Minte-Vera, C.V., Minto, C., Mosqueira, I., Osio, G.C., **Ovando, D.**, Selig, E.R., Thorson, J.T., Ye, Y., 2016. Fishery production potential of large marine ecosystems: A prototype analysis. Environmental Development, SI:Ecosystem-based LME Mgt 17, Supplement 1, 211–219. https://doi.org/10.1016/j.envdev.2016.02.001

Hammerschlag, N., **Ovando, D.**, Serafy, J.E., 2010. Seasonal diet and feeding habits of juvenile fishes foraging along a subtropical marine ecotone. Aquatic Biology 9, 279–290.

Gaines, S.D., Costello, C., Owashi, B., Mangin, T., Bone, J., Molinos, J.G., Burden, M., Dennis, H., Halpern, B.S., Kappel, C.V., Kleisner, K.M., **Ovando, D.**, 2018. Improved fisheries management could offset many negative effects of climate change. Science Advances 4, eaao1378. https://doi.org/10.1126/sciadv.aao1378

Rahimi, S., Gaines, S.D., Gelcich, S., Deacon, R., **Ovando, D.**, 2016. Factors driving the implementation of fishery reforms. Marine Policy 71, 222–228. https://doi.org/10.1016/j.marpol.2016.06.005

Rosenberg, A.A., Kleisner, K.M., Afflerbach, J., Anderson, S.C., Dickey-Collas, M., Cooper, A.B., Fogarty, M.J., Fulton, E.A., Gutiérrez, N.L., Hyde, K.J.W., Jardim, E., Jensen, O.P., Kristiansen, T., Longo, C., Minte-Vera, C.V., Minto, C., Mosqueira, I., Osio, G.C., **Ovando, D**., Selig, E.R., Thorson, J.T., Walsh, J.C., Ye, Y., 2018. Applying a New Ensemble Approach to Estimating Stock Status of Marine Fisheries around the World. Conservation Letters 11, e12363. https://doi.org/10.1111/conl.12363

Szuwalski, C.S., Castrejon, M., **Ovando, D.**, Chasco, B., 2016. An integrated stock assessment for red spiny lobster (Panulirus penicillatus) from the Galapagos Marine Reserve. Fisheries Research 177, 82–94. https://doi.org/10.1016/j.fishres.2016.01.002

Tallis, H.M., Hawthorne, P.L., Polasky, S., Reid, J., Beck, M.W., Brauman, K., Bielicki, J.M., Binder, S., Burgess, M.G., Cassidy, E., Clark, A., Fargione, J., Game, E.T., Gerber, J., Isbell, F., Kiesecker, J., McDonald, R., Metian, M., Molnar, J.L., Mueller, N.D., O'Connell, C., **Ovando, D**., Troell, M., Boucher, T.M., McPeek, B., 2018. An attainable global vision for conservation and human well-being. Frontiers in Ecology and the Environment 0. https://doi.org/10.1002/fee.1965

DATA SCIENCE SKILLS

- Expert R user and instructor (emphasis on machine learning tools, open and reproducible science, Bayesian inference, and simulation modeling)
- Highly skilled in C++, Stan, Template Model Builder (TMB), Git
- Proficient with MATLAB, Stata, Python, ADMB, SQL, JAGS, big data interfaces such as Google BigQuery

SELECTED TEACHING AND OUTREACH

Lead Instructor and Organizer – FSH 507 Super-Advanced R
School of Aquatic and Fishery Sciences – University of Washington Fall 2019

Introduction to Machine Learning with R
FSH 507 Super Advanced R – University of Washington 2020

Making Science Reproducible
NOAA Survey-Centric R Group – University of Washington 2020

Introduction to Data-Limited Fisheries Assessment
Indonesian Minister of Maritime Affairs and Fisheries – Bogor, Indonesia 2020

Fitting Bayesian Models using `Stan` and `R`
eco-data-science Learning Session / Personal blog – UC Santa Barbara October 2019

A Practical Introduction to `purr`
eco-data-science Learning Session – UC Santa Barbara May 2018

Teaching Assistant – Applied Econometrics
UC Santa Barbara 2014-2017

Introduction to Catch-Per-Unit-Effort Standardization
IMARPE – LIMA Peru November 2017

Introduction to Length-Based Data Limited Assessments
IMARPE – LIMA Peru November 2016

PROFESSIONAL EXPERIENCE

Postdoctoral Researcher, University of Washington, Seattle   **(2018-Present)**
Research Scientist and Engineer
- Produce novel research and publications in the field of fisheries management and assessment
- Lead development of novel statistical tool for estimating the status of fishery resources
- Develop research exploring the potential for machine learning applications in ecological forecasting
- Conduct theoretical and empirical studies on the effects of Marine Protected Areas

Fisheries & Data Science Consultant (2010-Present)

- Development of interactive web applications for data exploration (UN FAO)
- Lead international training workshops in fisheries science and scientific computing (TNC)
- Running and communicating data-limited stock assessments (TNC)
- Assessing economic consequences of fisheries reform strategies (Catch Invest)

Sustainable Fisheries Group, University of California, Santa Barbara   **(2009-2018)**
Project Researcher and Manager
- Produce novel research and publications in the field of fisheries management and assessment
- Support and lead individual projects and broader research goals of the Sustainable Fisheries Group
- Create tools for application and advancement of data-poor stock assessment models
- Construct and apply bio-economic models and marine spatial planning tools to inform decision making in applied projects around the world
- Manage collaborations and research in field projects around the world
- Mentor and advise students interested in fisheries

NOAA Southeast Fisheries Science Center, Miami, FL **(2007-2008)**
Technician
- Researched connectivity of larval fish populations in the Caribbean
- Developed digital photomicrography techniques
- Conducted fieldwork operations in the South Florida region

South Florida Student Shark Program, Rosenstiel School of Marine and Atmospheric Science, University of Miami **(2007-2008)**
Program Coordinator and Lab Manager
- Developed and communicated scientific research on shark conservation
- Led fieldwork operations studying South Florida shark populations
- Managed budgets and oversaw interns

SKILLS & CERTIFICATIONS

Language Skills: Native Spanish speaker (fluent in spoken Spanish and proficient in written Spanish)
Certifications: AAUS Scientific Diver, NAUI Rescue Diver, Department of the Interior MOCC Boat Crew Chief
Activities and Interests: Music; Surfing; Snow; Data Science; The Great Outdoors; Rugby

FUNDING & AWARDS

Saltonstall-Kennedy Grant: *Increasing U.S. Seafood Production through Effective Conservation of Bycatch Species.* 2021 ($81,900)

Western Pacific Regional Fishery Management Council: *Effort displacement and performance of Hawaii longline fisheries due to a time-varying area closure inside Hawaii's Exclusive Economic Zone.* 2020 ($21,500)

The Pew Charitable Trusts. *Research Needs for Blue-Water Marine Protected Areas.* 2020 ($22,915)

Packard Foundation. *Research Needs for Blue-Water Marine Protected Areas.* 2020 ($22,915**)**

Waitt Foundation. *The Roll of MPAs in Blue-Water Bycatch Reduction.* 2020 ($49,583)

Bristol Bay Regional Seafood Development Association. *Applications of Machine Learning for Salmon Forecasting.* 2019-2020 ($59,300)

Food and Agricultural Organization of the United Nations: *Development and testing of a new methodology of stock status classification for the use of global assessment.* 2018-2020 ($90,000)

National Marine Fisheries Service Population and Ecosystem Dynamics Fellowship: *A Bayesian Framework for Utilizing Fishery Independent Marine Protected Area Monitoring Data in Stock Assessments.* 2016-2018 ($75,000)

Daniel and Dianne Vapnek Fisheries Management Fellowship. 2014 ($15,000),

Conservation International: *Marine Spatial Planning and Lobster Fishery Reform for the Galapagos.* 2013-2015 ($200k).

Doris Duke Conservation Fellow. 2009-2010 ($20,000)

PRESENTATIONS

International Marine Conservation Congress 6
Kiel, Germany (Remote, August 2020)
Presentation: The Population Effects of Marine Protected Areas

Hatfield Marine Science Center Research Seminar
Remote (July 2020)
Presentation: The Regional Effects of Marine Protected Areas

Food and Agriculture Organization of the United Nations
Rome, Italy (February 2019)
Presentation: Updated Methods for the Assessment of Global Fisheries

SAFS Departmental Seminar
School of Aquatic and Fishery Sciences, University of Washington (April 2019)
Presentation: The Regional Effects of Marine Protected Areas

California MPA Technology Workshop
Scripps Institution of Oceanography (May 2018)
Presentation: Models and Data for MPAs and Fisheries

IIFET
Aberdeen, Scotland (2016)
Presentation: A Bargain for Tuna – Coasean Solutions to Bigeye Bycatch

ICES ASC Meeting
Riga, Latvia (2016)
Presentation: The Future of Fisheries under Climate Change

Bloomberg Philanthropies Coral Convening
New York, NY (August 2016)
Presentation: The Role of Sustainable Fisheries in Coral Conservation

American Fisheries Society Annual Meeting
Portland, OR (August 2015)
Presentation: Solutions to the Short-Term Economic Impacts of Marine Reserves

30th Lowell Wakefield Fisheries Symposium: Tools and Strategies for Assessment and Management of Data-Limited Fish Stocks
Anchorage, Alaska USA (May 2015)
Presentation: *The Potential of Collaborative Research in Data-Limited Fisheries*

3rd International Marine Protected Areas Congress
Marseille, France (Oct 2013)
Presentation: *Timeline to Fishery Benefits from Marine-Protected Areas*

26th International Congress for Conservation Biology
Baltimore, MD (July 2013)
Presentation: *Measuring Benefits to Food Security and Conservation from Reforming Data-Poor Fisheries*

FAO/Conservation International Fisheries Working Group
Washington, D.C. (June 2012)
Presentation: *Status and Solutions for the World's Unassessed Fisheries*

North American Association of Fisheries Economists Conference
Honolulu, Hawaii (May 2011)
Presentation: *Why Bother? Case Studies in the Cooperative Fisheries Management*

ACADEMIC INVOLVEMENT

Students Explore Aquatic Sciences Volunteer
School of Aquatic and Fisheries Science, University of Washington (2019-2021)

Graduate Research Fellowship Program Mentor
School of Aquatic and Fisheries Science, University of Washington (2018-2020)

Co-Advisor for Bren School Master's Thesis Project
Title: *A Greater Gray: A Larval Connectivity Assessment of Gray's Reef National Marine Sanctuary* (2016-2017)

External Advisor for Bren School Master's Thesis Project
Title: *Biological and Social Tradeoffs of Implementing Fair Trade USA in Small-Scale Fisheries: A Case Study of Costa Rican Snapper* (2015-2016)

External Advisor and Proposal Coordinator for Bren School Master's Thesis Project
Title: *Mapping the value of marine conservation: A spatial economic analysis of tourism and fisheries revenues in the Galápagos Marine Reserve.* 2014-2016

External Advisor and Proposal Coordinator for Bren School Master's Thesis Project
Title: *Analysis and Feasibility of Innovative Management Strategies in the Galápagos Lobster Fishery.* 2012-2013

Elected Representative- Bren Master's Group Project Selection Committee
2009

Co-organizer, Doris Duke Fellows Public Speaking and Communications Workshop
 2010

EDITORIAL RESPONSIBILITIES

Reviewer
Nature, Nature Communications, Science Advances, PNAS, Fish and Fisheries, Marine Ecological Progress Series, PLOS ONE, Ecological Economics, Canadian Journal of Fisheries and Aquatic Science, Fisheries Research, Conservation Letters, Natural Resource Modeling, Environmental Modeling and Software, Annals of the New York Academy of Sciences, Ecology and Society, World Development, ICES Journal of Marine Science, Conservation Biology, Global Environmental Change

WORKING GROUPS

Use of Multi-Indicator Frameworks in Data-Limited Fisheries Management (2019-Present)

Developing a Shared Research Agenda for Blue Water MPAs (2019-Present)

SNAP Working Group: [Data-Limited Fisheries](#) (2014-2016)
Developing tools and training for the implementation of science-based fisheries management in data-limited contexts

Conservation International Data Poor Fisheries Group (2013-2015)
Implementing tools for comparing and utilizing multiple catch-only data-limited assessments

FAO/Conservation International Data Poor Fisheries Group (2012-2013)
Developing tools for comparing and utilizing multiple catch-only data-limited assessments