

JOSH NOWLIS

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✉ 11714 38th Ave NE
Seattle, WA 98125
USA

Areas of Expertise

➤ *Quantitative and qualitative analysis of:*

- Sustainable fishery management systems
- Marine protected areas and other spatial planning design and function
- Environmental policies
- Biological systems, especially fisheries and coral reefs
- Economic systems, including property rights, ecosystem services, and water
- Software: R, SAS, SQL, Access, Excel

➤ *Science and technical communication, including:*

- Grant writing
- Scientific publications, technical reports, and non-technical articles
- Public speaking
- Instruction, both formal and informal
- Software: Word, PowerPoint

➤ *Project and program management*

- Developed funded, and led multiple cross-functional teams and projects with annual budgets up to \$1 million
- Completed a highly competitive 18-month leadership training program. Supervised numerous students and interns.
- Low-level security clearance, along with Foreign Affairs Counter Threat certified training (exp. Sep-24).

Education and Training

Ph.D. Ecology and Evolutionary Biology—Cornell University, Ithaca, NY

1994

Dr. Nowlis researched gastropod host choice behavior using theoretical tools and empirical observations/statistical analyses.

M.A. Economics—Stanford University, Stanford, CA

2012

Dr. Nowlis studied environmental and behavioral economics, focusing on cognitive models of decision making and policy analysis.

A.B. Biology—Brown University, Providence, RI

1988

Rescue Diver—PADI

1995

Professional Experience

Economist/Fisheries Scientist—ECS Tech in service of NOAA., Seattle, WA

2016-present

Dr. Nowlis leads and coordinates NOAA technical capacity building, modeling, and mentoring efforts to promote the development of sustainable fisheries management systems across the globe (e.g., Indonesia, Colombia, Alaska). This \$0.5 million a year project is primarily supported through a NOAA-USAID partnership. Dr. Nowlis has also collaborated with economists and stock assessment scientists at the Northwest Fisheries Science Center to assess the economic and ecological consequences of recreational fishing policies in Oregon and Washington using coding, data manipulation, and statistical analysis. The resulting models provide insight that cannot be obtained by biological or economic analysis alone.

President/Founder—Bridge Environment, Seattle, WA

2012-present

Dr. Nowlis founded and ran Bridge Environment, a nonpartisan environmental consultancy focused on bridging the divides that exist between the scientific and policy worlds, and between social and biological sciences. His projects included: Evaluation of fishery status and management options in the US Virgin Islands despite severe data limitations; Assessment of the health of Colombia's Caribbean spiny lobster stock and of the effectiveness of existing regulations; and evaluation and revision of the management plan for the Seaflower Biosphere Reserve, Colombia. Dr. Nowlis led all aspect of these projects including analysis, communication, fund raising, and administration.

Research Assistant and Teaching Assistant—Stanford University, Stanford, CA 2008-2012

As a graduate student, Dr. Nowlis studied the economics of water and the design and utility of decision support tools. He organized workshops and assisted in teaching Regulatory Economics, Intermediate Microeconomics, Introductory Economics, and Money and Banking.

Research Fisheries Ecologist—Southeast Fisheries Science Center, NOAA, Miami, FL 2004-2007

Dr. Nowlis provided analyses in support of fisheries management, including stock assessments and comparison of potential management actions for the U.S. Southeast, Gulf of Mexico, and Caribbean regions. He contributed to assessments of some of the most complex and contentious fisheries in the world. He led teams to incorporate ecological and human elements into the stock assessment process, and to assess stocks in the US Caribbean. Dr. Nowlis also completed a highly-competitive NOAA-wide 18-month long leadership training program. As part of the program, he served as an adviser on transitioning technology from research to operations. He also provided insight into the value of improved forecasting of atmospheric rivers because of the enhanced ability to balance flood risk against water supply replenishment from these powerful, wet weather phenomena.

Scientific Liaison—Southeast Regional Office, NOAA, St. Petersburg, FL 2003-2004

At the policy-making heart of the Southeast region, Dr. Nowlis informed fishery management decisions and processes with the best available science from the scientific community, scientific literature, and his own analyses. To do so, he collaborated with and coordinated agency, academic, and other research scientists.

Science Adviser—Alaska Oceans Network, Anchorage, AK & Berkeley, CA 2002-2003

Dr. Nowlis provided scientific advice to a diverse coalition of small Alaskan organizations. He supported strategic campaign development, collaborated with network member conservation, fishing, and science groups, and coordinated with government and academic scientists.

Senior Scientist/Pacific Fish Project Manager—The Ocean Conservancy, San Francisco, CA 1998-2002

Dr. Nowlis led scientific activities for the two largest programs—Fish and Ecosystems—of a large international organization. He conducted scientific expeditions, advanced scientific knowledge of effective management methods, and supported advocacy, communications, and development efforts. Prior to his role as Senior Scientist, Dr. Nowlis led the organization's advocacy efforts at federal Fishery Management Councils in the U.S. Pacific, and at California's Fish and Game Commission and Department of Fish and Game.

National Research Council Research Associate—NE Fisheries Science Center, NOAA, Woods Hole, MA 1997-1998

Dr. Nowlis researched potential conflicts between fisheries and marine mammals' food sources in the Gulf of Maine.

Research Assistant Professor and Instructor—University of the Virgin Islands, St. Thomas, USVI 1994-1997

Dr. Nowlis studied marine protected areas and sedimentation on nearshore coral reefs. He taught Evolution, Science and Research Diving; and supervised independent student projects.

Instructor, Population and Evolutionary Ecology—Cornell University, Ithaca, NY 1994

Mr. Nowlis co-taught and designed the laboratory for a graduate level ecological theory course.

Scientific Policy Adviser—Congressional Research Service, Washington, DC 1992-1993

Mr. Nowlis advised Congress on the Endangered Species Act and marine ecosystem management.

Awards and Honors

- Outstanding Teaching Assistant, Stanford University
- NOAA Bronze Medal Award for developing leading-edge assessments of Gulf of Mexico red snapper stock by integrating new and diverse sources of biological and fishery data
- NOAA Leadership Competencies Development Program (LCDP)
- Admin Appreciation Award for pleasant work demeanor from administrative staff, NOAA Fisheries Southeast Regional Office
- National Research Council Research Associate Fellowship.
- National Science Foundation Training Grant Fellowship, "The Dynamics of Heterogeneous Ecological and Evolutionary Systems"
- National Science Foundation Pre-Doctoral Graduate Fellowship
- Sage Graduate Fellowship, Cornell University
- James Kidwell Prize for academic excellence in Biology, Brown University

Professional Activities and Affiliations

Group Leader or Organizer

- Tools to Promote Sustainable Fisheries Management Even on a Limited Budget. 12th Asian Fisheries and Aquaculture Forum, Iloilo, Philippines, April 2019.
- Sea Level Rise in the Pacific Northwest: A Story Map. A Center for Creative Conservation Incubator Project, October 2017.
- Mini Workshops, GCFI Special Workshop on Data-Limited Stock Assessments, November 2013
- Woods Institute of the Environment Uncommon Dialogue, The Economic and Policy Implications of Water Banking, May 2009
- Woods Institute of the Environment Uncommon Dialogue, Comprehensive Studies of Aquifer Depletion and Salinization, December 2008
- Fisheries Assessment Groups: Gulf of Mexico gag grouper recreational statistics (2006), Gulf of Mexico gray triggerfish (2005), Caribbean spiny lobster and yellowtail snapper (2004-05)
- Scientific Adviser, Legal battle to protect the Virgin Islands tree boa (*Epicrates monensis*), 1995-1997

Group Member, Fisheries

- NOAA Fisheries Stock Assessment Improvement Program Working Group, 2005-2007
- Scientific Working Group and Working Group on Methods, Caribbean Regional Fisheries Mechanism (CRFM), 2004-2007
- Framework for the Evaluation of Management Strategies (ICCAT and ICES with NOAA participation), 2004-2005
- Fisheries Assessment Groups: Gulf of Mexico red snapper (2004-05), S Atlantic and Caribbean deep-water snapper-grouper (2003-04)
- Fishery Management Council Groups: South Atlantic Coral Reef Conservation Program Working Group on Fishing Impacts (2004-05), Western Pacific Ecosystem & Habitat Advisory Panel (1999-2001), Pacific Groundfish Advisory Sub-panel (1999-2000)
- Pacific Offshore Cetacean Take Reduction Team, 1998-1999
- St. Thomas/St. John Marine Fisheries Advisory Board, 1996-1997

Group Member, Protected Areas

- NOAA Fisheries National Ecosystem Modeling Workshop Steering Committee, 2007-2008
- Fishery Management Council Groups: Caribbean Sustainable Fisheries Act Working Group (2002-03), Pacific Groundfish Advisory Sub-Panel (1999-00)
- Marine Conservation Biology Institute Scientific Workshop, Establishing a National System of Marine Protected Areas in the United States, 2000
- Technical Advisory Board, Sustainable Seas Expedition, 1998-1999
- ReefKeeper International Scientific Advisory Board, 1997-1999
- Conservation Data Center of the Virgin Islands Advisory Board, 1995-1997
- Higher Trophic Levels Ecosystem Modeling Initiative Review Panel for the Florida Bay Program, 1997

Summary of Academic Achievements

- 12 peer-reviewed journal publications, along with 3 peer-reviewed book chapters, 11 of which have been cited >11 times.
- 29 grant awards totaling over \$6 million.
- Over 20 plenary addresses, with over 20 other invited presentations to national and international science and policy forums.

Peer-Reviewed Journal Publications

- Nowlis, J, AA van Benthem. 2012. Do property rights lead to sustainable catch increases? *Marine Resource Economics* 27(1): 89-105. <https://doi.org/10.5950/0738-1360-27.1.89>
- Nowlis, JS. 2004. Performance indices to facilitate informed, value-driven decision making in fisheries management. *Bulletin of Marine Science* 74(3): 709-726.
- Friedlander, A, JS Nowlis, JA Sanchez, R Appeldoorn, P Usseglio, C McCormick, S Bejarano, A Mitchell-Chui. 2003. Designing effective marine protected areas in Seaflower Biosphere Reserve, Colombia, based on biological and sociological information. *Conservation Biology* 17(6): 1769-1784.
- Appeldoorn, RS, A Friedlander, JS Nowlis, P Usseglio, and A Mitchell-Chui. 2003. Habitat connectivity in reef fish communities and marine reserve design in Old Providence-Santa Catalina, Colombia. *Gulf and Caribbean Research* 14(2): 61-77.
- Nowlis, JS. 2003. Improving the ecology-policy interface. *Frontiers in Ecology and the Environment* 1(4): 178-179.
- Nowlis, JS, B Bollermann. 2002. Methods for increasing the likelihood of restoring and maintaining productive fisheries. *Bulletin of Marine Science* 70(2): 715-731.
- Nemeth, RS, JS Nowlis. 2001. Monitoring the effects of land development on the near-shore reef environment of St. Thomas, USVI. *Bulletin of Marine Science* 69(2): 759-776.
- Nowlis, JS. 2000. Short- and long-term effects of fishery management tools on depleted populations. *Bulletin of Marine Science* 66(3): 651-662.
- Nowlis, JS, CM Roberts. 1999. Fisheries benefits and optimal design of marine reserves. *Fishery Bulletin* 97: 604-616.
- Nowlis, JS, CM Roberts. 1997. You can have your fish and eat it, too: theoretical approaches to marine reserve design. *Proceedings of the 8th International Coral Reef Symposium* 2: 1907-1910. Smithsonian Tropical Research Institute, Panama.
- Nowlis, JS, CM Roberts, AH Smith, E Siirila. 1997. Human-enhanced impacts of a tropical storm on nearshore coral reefs. *Ambio* 26(8): 515-521.
- Nowlis, JP. 1993. Mate- and oviposition-influenced host preferences in the coral-feeding snail, *Cyphoma gibbosum*. *Ecology* 74(7): 1959-1969. <https://doi.org/10.2307/1940839>

Peer-Reviewed Book Chapters

- Friedlander, A, J Nowlis, H Koike. 2014 (invited). Stock assessments, reference points, and historical data: stock status and catch limits. Pp. 91-118 in (JN Kittinger, LE McClenachan, K Gedan, LK Blight, eds) *Applying Marine Historical Ecology to Conservation and Management: Using the Past to Manage for the Future*. University of California Press, Berkeley, CA (USA).
- Kleisner, K, JS Nowlis, D Olson, D Die. 2007. An analysis of dolphinfish abundance related to environmental factors, using satellite-derived data and fishery-dependent data from the United States and Venezuelan longline fleet. Pp. 181-196 in (T Nishida, PJ Kailola, A Caton, eds) *GIS/Spatial Analyses in Fishery and Aquatic Sciences, vol. 3*. Fishery-Aquatic GIS Research Group, Saitama (Japan).
- Nowlis, JS, AM Friedlander. 2005. Marine reserve design and function for fisheries management. Pp. 280-301 in (EA Norse, LB Crowder, eds) *Marine Conservation Biology: The Science of Maintaining the Sea's Biodiversity*. Island Press, Washington, DC (USA).

Peer-Reviewed Government Reports

- Haltuch, MA, J Wallace, C Allen Akselrud, J Nowlis, LAK Barnett, JL Valero, T-S Tsou, L Lam. 2017. 2017 Lingcod Stock Assessment. Pacific Fisheries Management Council. Portland, OR.
- Sladek Nowlis, J, C Brown, C-P Chih, L Lombardi, V Matter, S Turner. 2006. Derived and observed catch at age from the Gulf of Mexico red grouper stock. SEDAR12-AW06. US Dept. Commerce-NMFS-SEFSC-SEDAR, Charleston, SC.
- Sladek Nowlis, J. 2006. Virtual population analysis of the Gulf of Mexico gag grouper stock: the continuity case. SEDAR10-RW01. US Dept. Commerce-NMFS-SEFSC-SEDAR, Charleston, SC.
- Sladek Nowlis, J (ed.). 2006. *Southeast Data, Assessment, and Review SEDAR 9 Addendum: Assessment Report for Gray Triggerfish*. US Dept. Commerce-NMFS-SEFSC-SEDAR, Charleston, SC.

- Sladek Nowlis, J. 2006. Rebuilding projections for the Gulf of Mexico gray triggerfish (*Balistes capriscus*) stock. SEDAR9-AW11. US Dept. Commerce-NMFS-SEFSC-SEDAR, Charleston, SC.
- Sladek Nowlis, J. 2006. Age-based analyses of the Gulf of Mexico gray triggerfish (*Balistes capriscus*) stock. SEDAR9-AW9. US Dept. Commerce-NMFS-SEFSC-SEDAR, Charleston, SC.
- Sladek Nowlis, J, S Saul. 2006. An aggregated production model for the Gulf of Mexico gray triggerfish (*Balistes capriscus*) stock. SEDAR9-AW8. US Dept. Commerce-NMFS-SEFSC-SEDAR, Charleston, SC.
- Sladek Nowlis, J. 2006. Updated fishery-dependent indices of abundance for Gulf of Mexico gray triggerfish (*Balistes capriscus*). SEDAR9-AW7. US Dept. Commerce-NMFS-SEFSC-SEDAR, Charleston, SC.
- Sladek Nowlis, J (ed.). 2005. *Southeast Data, Assessment, and Review SEDAR 9: Gulf of Mexico Gray Triggerfish* (*Balistes capriscus*). *Section II. Data Workshop Report*. US Dept. Commerce-NMFS-SEFSC-SEDAR, Charleston, SC.
- Sladek Nowlis, J. 2005. Standardized abundance indices for Gulf of Mexico gray triggerfish (*Balistes capriscus*) based on catch rates as measured from commercial logbook entries with handline gear. SEDAR9-DW30. US Dept. Commerce-NMFS-SEFSC-SEDAR, Charleston, SC.
- Sladek Nowlis, J. 2005. Standardized abundance indices for Gulf of Mexico gray triggerfish (*Balistes capriscus*) based on catch rates as measured by the NMFS Southeast zone headboat survey. SEDAR9-DW29. US Dept. Commerce-NMFS-SEFSC-SEDAR, Charleston, SC.
- Sladek Nowlis, J. 2005. Standardized abundance indices for Gulf of Mexico gray triggerfish (*Balistes capriscus*) based on catch rates as measured by the marine recreational fisheries statistics survey (MRFSS) SEDAR9-DW28. US Dept. Commerce-NMFS-SEFSC-SEDAR, Charleston, SC.
- Sladek Nowlis, J (ed.). 2005. *Southeast Data, Assessment, and Review SEDAR 8: Caribbean Yellowtail Snapper* (*Ocyurus chrysurus*). *Section III. Stock Assessment Workshop Report*. US Dept. Commerce-NMFS-SEFSC-SEDAR, Charleston, SC.
- Sladek Nowlis, J. 2005. Further explorations of a stock production model incorporating covariates (ASPIC) for yellowtail snapper (*Ocyurus chrysurus*) in the US Caribbean. SEDAR8-RW1. US Dept. Commerce-NMFS-SEFSC-SEDAR, Charleston, SC.
- Sladek Nowlis, J. 2005. Observations on yellowtail snapper caught in US Virgin Islands' commercial fisheries from 1983 through 2003. SEDAR8-DW10. US Dept. Commerce-NMFS-SEFSC-SEDAR, Charleston, SC.
- Sladek Nowlis, J. 2005. A history of yellowtail snapper (*Ocyurus chrysurus*) assessments from the US Caribbean and Florida. SEDAR8-DW2. US Dept. Commerce-NMFS-SEFSC-SEDAR, Charleston, SC.
- Sladek Nowlis, J (ed.). 2005. *Southeast Data, Assessment, and Review SEDAR 8: Caribbean Spiny Lobster* (*Panulirus argus*). *Section III. Stock Assessment Workshop Report*. US Dept. Commerce-NMFS-SEFSC-SEDAR, Charleston, SC.
- Sladek Nowlis, J, SL Cass-Calay. 2004. Revised: Bootstrapping a Gulfwide implementation of an age-structured-assessment-procedure (ASAP) for red snapper (*Lutjanus campechanus*) from 1962 to 2003. SEDAR7-RW5. US Dept. Commerce-NMFS-SEFSC-SEDAR, Charleston, SC.
- Cass-Calay, SL, GA Diaz, J Sladek Nowlis. 2004. Revised assessments of Gulf of Mexico red snapper during 1962-2003 using a Gulfwide implementation of an age-structured-assessment-program (ASAP). SEDAR7-RW3. US Dept. Commerce-NMFS-SEFSC-SEDAR, Charleston, SC.
- Sladek Nowlis, J, SL Cass-Calay. 2004. Draft: Bootstrapping a Gulfwide implementation of an age-structured-assessment-procedure (ASAP) for red snapper (*Lutjanus campechanus*) from 1962 to 2003. SEDAR7-AW32. US Dept. Commerce-NMFS-SEFSC-SEDAR, Charleston, SC.
- Cass-Calay, SL, GA Diaz, J Sladek Nowlis. 2004. Draft assessments of Gulf of Mexico red snapper during 1962-2003 using a Gulfwide implementation of an age-structured-assessment-program (ASAP). SEDAR7-AW31. US Dept. Commerce-NMFS-SEFSC-SEDAR, Charleston, SC.
- Sladek Nowlis, J. 2004. Gulf of Mexico red snapper observed catch at age. SEDAR7-AW19. . US Dept. Commerce-NMFS-SEFSC-SEDAR, Charleston, SC.
- Sladek Nowlis, J. 2004. *A priori* estimates of natural mortality rates and stock-recruitment curve steepness for Gulf of Mexico red snapper. SEDAR7-DW49. US Dept. Commerce-NMFS-SEFSC-SEDAR, Charleston, SC.

Non-Peer-Reviewed Publications

- Nowlis, J. 2014. Casting deeper and more widely to perform stock-specific fisheries assessments when data are sparse. *Proceedings of the Gulf and Caribbean Fisheries Institute* 66: 100-103.

- Nowlis, J, E Castro, M Prada, T Forbes, H Wilson, H Bent, L Alvarez Bustillo. 2013. The economic determinants of fishing effort in Colombia's Caribbean spiny lobster fishery and implications for improved stock assessments. *Proceedings of the Gulf and Caribbean Fisheries Institute* 65: 470-475.
- Olsen, D, R Nemeth, J Nowlis. 2014. Management of St. Thomas grouper fishery. *Proceedings of the Gulf and Caribbean Fisheries Institute* 66: 228-231.
- Olsen, D, J Nowlis, D Bryan. 2014. A collaborative assessment of the Virgin Islands spiny lobster fishery. *Proceedings of the Gulf and Caribbean Fisheries Institute* 66: 440-451.
- Nowlis, JS. 2004. California's Channel Islands and the U.S. West Coast. Pp. 237-267 in (J Sobel, C Dahlgren) *Marine Reserves: A Guide to Science, Design, and Use*. Island Press, Washington, DC (USA).
- Nowlis, JS, AM Friedlander. 2004. Design and designation of marine reserves. Pp. 128-163 in (J Sobel, C Dahlgren) *Marine Reserves: A Guide to Science, Design, and Use*. Island Press, Washington, DC (USA).
- Nowlis, JS, AM Friedlander. 2004. Research priorities and techniques. Pp. 187-233 in (J Sobel, C Dahlgren) *Marine Reserves: A Guide to Science, Design, and Use*. Island Press, Washington, DC (USA).
- Nowlis, JS. 2002. *Scientific Consensus for Marine Reserves*. The Ocean Conservancy, Washington, DC. 4 p.
- Nowlis, JS. 2001. Can we have our fish and eat it too? *blueplanet quarterly* 1(2): 36.
- Nowlis, JS. 2001. *Marine Reserves: Conserving the Natural Legacy of the Channel Islands*. The Ocean Conservancy, Washington, DC. 4 p.
- Nowlis, JS. 1999. Modeling marine reserves. Pp. 8-15 in *Strategies for Developing and Applying Marine Protected Area Science in Puget Sound/Georgia Basin* (L. Scinto, ed.). Puget Sound Water Quality Authority, Olympia, WA, for the Puget Sound/Georgia Basin International Task Force.
- Nowlis, JS, MM Yoklavich. 1998. Design criteria for rockfish harvest refugia from models of fish transport. Pp. 32-40 in *Marine Harvest Refugia for West Coast Rockfish: A Workshop* (MM Yoklavich, ed.). NOAA Technical Memorandum, NOAA-TM-NMFS-SWFSC-255. U.S. Department of Commerce, Pacific Grove, CA.
- Nowlis, JS. 1997. Lessons for reserve design from models of adult and larval transport. P. 21 in *The Design and Monitoring of Marine Reserves* (TJ Pitcher, ed.). Fisheries Centre Research Reports 5(1). The Fisheries Centre, University of British Columbia, Vancouver.
- Nowlis, JS. 1996. Protecting coral reefs by managing land development. *Eastern Caribbean Center Explorer* Vol. 3, No. 1.
- Nowlis, JS, CM Roberts. 1995. Quantitative and qualitative predictions of optimal fishery reserve design. P. B-12 in *Review of the Use of Marine Fishery Reserves in the U.S. Southeastern Atlantic* (by C Roberts, WJ Ballantine, CD Buxton, P Dayton, LB Crowder, W Milon, MK Orbach, D Pauly, J Trexler, CJ Walters). NOAA Technical Memorandum, NMFS-SEFSC-376. U.S. Department of Commerce, Miami, FL.
- Roberts, CM, JP Hawkins, JS Nowlis. 1995. Economic and social benefits of marine resource management in the Caribbean. *Caribbean Perspectives* December: 3-8.
- Roberts, CM, JP Hawkins, J Sladek Nowlis. 1994. Science in the service of coastal management. *Eastern Caribbean Center Explorer* Vol. 2, No. 3.
- Nowlis, JP. 1994. *The Causes and Consequences of Host Preferences in Marine Gastropods*. Dissertation, Cornell University, Ithaca, New York.
- ¹Buck, EH. 1993. Marine ecosystem management. *Congressional Research Service Report* 93-679 ENR. U.S. Congress, Washington, DC.
- ¹Corn, ML. 1992. The listing of a species: legal definitions and biological realities. *Congressional Research Service Report* 92-944 ENR. U.S. Congress, Washington, DC.

¹Researched and written by Joshua P. Nowlis. Congressional Research Service's policy denies authorship to temporary interns so that future inquiries are directed to permanent employees.

Grants

NOAA-USAID Partnership in Coral Reef Conservation, "Applications of FishPath to develop sustainable fisheries management systems using NOAA expertise and guidance" 2017-present (co-PI with J Cope).

Government of St. Vincent and the Grenadines, "Preliminary assessment of spiny lobster and queen conch, with technical recommendations" February-April 2020 (co-PI with M Prada and R Appeldoorn).

Gobención del Archipiélago de San Andrés, Providencia, y Santa Catalina, "Assess lobster fishery and develop database management software for fisheries in the Seaflower Biosphere Reserve," February-April 2018.

Center for Creative Conservation Project Incubator, "A regional story map of climate change impacts for the Northwest," January-May 2017 (with co-PI Lisa Hayward Watts).

Gobenación del Archipiélago de San Andrés, Providencia, y Santa Catalina, "Assess lobster fishery and develop performance measures for the management of finfish fisheries in the Seaflower Biosphere Reserve," July-December 2016.

Universidad Nacional de Colombia/ Global Environment Facility, "Review and revision of the management plan for the Seaflower Biosphere Reserve, Colombia," December 2013-May 2014.

St. Thomas Fishermen's Association, "Preliminary assessments of US Virgin Islands fisheries for spiny lobster, yellowtail snapper, and red hind, incorporating data from fishermen," December 2012-February 2014.

Bechtel Foundation, Grant to Stanford's Woods Institute for the Environment, "Water in the West", May 2010-April 2012 (co-PI with Wolak).

Stanford's Woods Institute for the Environment, "An integrated model of the California water system," September 2008-August 2009 (co-PI with F Wolak).

NOAA Fisheries and the Environment (FATE), "A Coupled Bio-physical Approach to Fisheries Habitat in the Southeastern North Atlantic," June 2006-May 2008 (co-PI with J Lamkin and D Olson).

NOAA Fisheries Ecosystem-Based Management Pilot Project, "Development of quantitative performance indicators to address tradeoffs in fisheries management, with a focus on robustness against uncertainty, ecological interactions among fisheries, and spatial dynamics," April 2004-April 2005 (co-PI with C Porch).

Global Environment Facility, "Seaflower Biosphere Reserve establishment," September 2000-June 2005 (funding provided to CORALINA, a Colombian government agency).

University of Puerto Rico's Sea Grant Program, "The potential effectiveness and optimal design of a marine fishery reserve in Lameshur Bay, St. John, U.S. Virgin Islands," March 1998-February 2000.

Virgin Islands Department of Planning and Natural Resources/Maier & Martschitsch, Inc., "Coral reef monitoring—Caret Bay Villas construction," June 1997-March 2001.

University of Puerto Rico's Sea Grant Program, "Mathematical/computer analyses of the design and function of marine fishery reserves," August 1996-July 1998.

National Science Foundation International Travel Grant, Spring 1993.

Lerner-Gray Fund for Marine Research, 2 Grants—Summers 1990, 1991.

Sigma Xi Grant-In-Aid of Research, National, 2 Grants—Summers 1991, 1992.

Sigma Xi Grant-In-Aid of Research, Cornell Chapter, 1 Grant—Summer 1991.

Cornell Graduate School Research Travel Grant, 5 Grants—Summers 1990-1992; Springs 1991, 1993.

Rabinowitz Fund, Ecology & Systematics, Cornell University, 2 Grants—Summers 1989, 1990.

Aquarius Mission, National Undersea Research Program, National Oceanic and Atmospheric Administration, 1 Grant—Winter 1989 (co-PI with D Harvell and J Miles).

Plenary Addresses

Nowlis, J. "Architectural principles of harvest control rules based on dynamic equilibrium analysis." University of Washington Think Tank Series, Seattle, WA, February 2018.

Nowlis, J. "A bio-economic model of marine recreational fisheries off Washington and Oregon." National Oceanic and Atmospheric Administration Economics and Human Dimensions Meeting, Boston, MA, September 2016.

Nowlis, J. "Lessons from cognitive psychology to guide communication of science to policy-makers." National Oceanic and Atmospheric Administration Monster Seminar Jam, Northwest Fisheries Science Center, Seattle, WA, June 2016.

Nowlis, JS. "Ecosystem-based management in the real world." National Oceanic and Atmospheric Administration Ecosystem Science Seminar Series, NOAA Headquarters, Silver Spring, MD, March 2007.

Nowlis, JS. "Ecosystem-based management—how we can use more ecology without necessitating a paradigm shift." Departments of Zoology and of Fisheries and Aquatic Sciences, University of Florida, Gainesville, FL, November 2006.

Nowlis, JS. "Fisheries management with limited data." Laboratory of Marine Ecology Seminar Series, Vilnius University, Vilnius, Lithuania, July 2006.

- Nowlis, JS. "Techniques to manage uncertain fisheries and provide clearer advice on multiple management objectives." Southeast Fisheries Science Center, Miami, FL, December 2003.
- Nowlis, JS. "Achieving optimum yield for the Caribbean Fishery Management Council." Caribbean Fishery Management Council, St. Croix, VI, August 2002.
- Nowlis, JS. "Achieving optimum yield despite information gaps." Southeast Fisheries Science Center, Miami, FL, August 2002.
- Nowlis, JS. "Making management decisions: how to address ecological and socio-economic considerations when information is limited." Southwest Fisheries Science Center Lecture Series, La Jolla, CA, July 2002.
- Nowlis, JS. "Managing uncertain fisheries." South Cascadia Institute, Institutes for Journalism and Natural Resources, Crescent City, CA, June 2002.
- Nowlis, JS. "Biological/ecological goals of fisheries management." Marine Resources, a Stanford Law Course, Stanford University, Palo Alto, CA, January 2000 / March 2001.
- Nowlis, JS, AM Friedlander. "The scientific evidence for marine protected areas." Developing a Baja to Bering Sea Marine Conservation Initiative (B2B), La Paz, Mexico, May 2000.
- Nowlis, JS. "Modeling marine reserves." Strategies for Developing and Applying Marine Protected Area Science in Puget Sound/Georgia Basin, Puget Sound/Georgia Basin International Task Force, Bellingham, WA, May 1999.
- Nowlis, JS. "A theory of marine reserve design and function." National Marine Fisheries Service Tiburon Laboratory Seminar Series, Tiburon, CA, May 1999.
- Nowlis, JS. "Theoretical and field evidence for the use of marine reserves." Bodega Marine Laboratory Seminar Series, Bodega Bay, CA, January 1999.
- Nowlis, JS. "Population-level effects of marine reserves." Mote International Symposium on Marine Reserves and Essential Fish Habitat, Sarasota, FL, November 1998.
- Nowlis, JS. "Design criteria for marine reserves in the Virgin Islands." Caribbean Fishery Management Council, St. Thomas, VI, February 1998.
- Nowlis, JS. "Reserve design from models of fish transport." Workshop on Marine Harvest Refugia for West Coast Rockfish, Pacific Grove, CA, September 1997.
- Nowlis, JS. "Sustainable development and marine conservation." Symposium on the San Andrés Archipelago Biosphere Reserve: Demography, Environment, and Development, San Andrés, Colombia, September 1997.
- Nowlis, JS. "What benefits would fishers gain from a marine reserve in the Virgin Islands?" St. Thomas/St. John Fisheries Advisory Board, St. Thomas, VI, August 1997.
- Nowlis, JS. "Modeling marine reserves: design principles and economic and conservation benefits." Northeast Fisheries Science Center Seminar Series, Woods Hole, MA, August 1996.
- Nowlis, JP. "Host preferences in marine gastropods: sex-seeking sophisticates or escargot?" Ecology and Systematics Colloquium Series, Cornell University, Ithaca, NY, May 1994.
- Nowlis, JP. "Mate-influenced host preferences in marine gastropods." Ecology and Evolutionary Biology Seminar Series, Brown University, Providence, RI, April 1992.

Other Invited Presentations

- Nowlis, J, L Anderson, O Hamel. "Predicting the effects of angler regulations off Washington and Oregon using discrete choice surveys and stock assessments." North American Association of Fisheries Economists. La Paz, Mexico, March 2017.
- Nowlis, J, L Anderson. "A bioeconomic model of marine recreational fisheries off Washington and Oregon." NOAA Economics & Human Dimensions Meeting. Boston, MA, September 2016.
- Nowlis, J, D Olsen. "A collaborative assessment of the US Virgin Islands spiny lobster fishery." Caribbean Fishery Management Council's Scientific and Statistical Committee Meeting. San Juan, Puerto Rico, November 2013.
- Nowlis, J, D Olsen. "Analysis of grouper landings relative to annual catch limits on St. Thomas, with a focus on red hind." Caribbean Fishery Management Council's Scientific and Statistical Committee Meeting. San Juan, Puerto Rico, November 2013.
- Nowlis, J. "Casting deeper and more widely to perform stock-specific fisheries assessments when data are sparse." Gulf and Caribbean Fisheries Institute Annual Meeting. Corpus Christi, Texas, November 2013.
- Nowlis, JS. "Some design principles for devising harvest control policies that balance competing objectives." American Fisheries Society Annual Meeting, San Francisco, CA, September 2007.

- Nowlis, JS, A Friedlander, E DeMartini, E Brown. "Assessing shallow water Hawaiian reef fish stocks through the use of a spatially heterogeneous management regime." Society for Conservation Biology Annual Meeting, San Jose, CA, June 2006.
- Nowlis, JS. "Evaluation of the total allowable catch setting system for North Pacific Groundfish." National Stock Assessment Workshop, National Marine Fisheries Service, San Francisco, CA, April 2006.
- Nowlis, JS. "Lessons in designing and implementing marine reserves from over a decade of theory development and practical experience." First International Marine Protected Areas Congress, Geelong, Australia, October 2005.
- Kleisner, K, JS Nowlis. "Dolphinfish in the western Atlantic—an Ecosystem-Based Case Study." Workshop on GIS Tools Supporting Ecosystem Approaches to Management, Charleston, SC, September 2004.
- Nowlis, JS. "Conservation and nearshore fisheries management." Workshop on Assessing and Managing Nearshore Fisheries, California Department of Fish and Game, Santa Barbara, CA, June 1999.
- Nowlis, JS. "Control systems optimization and fisheries." National Academy of Sciences Committee on Improving the Collection and Use of Fisheries Data, Seattle, WA, June 1999.
- Nowlis, JS. "Theoretical and empirical evidence from around the world." Effectiveness of Marine Reserves in Meeting Objectives: Theory and Empirical Evidence, Pacific Fishery Management Council's Marine Reserves Committee, Portland, OR, May 1999.
- Nowlis, JS. "The potential uses of marine reserves in the Pacific." Pacific States Marine Fisheries Commission Panel on Sanctuaries and Reserves, Sun Valley, ID, October 1998.
- Nowlis, JS. "What we know, what we suspect, and what we may never know about marine reserves as a management tool." California Fish and Game Commission Meeting, Monterey, CA, October 1998.
- Nowlis, JS. "Actual and detectable benefits from marine reserves depend on the mode of larval transport." Society for Conservation Biology Annual Meeting, Sydney, Australia, July 1998.
- Nowlis, JS. "Marine reserves: modeling studies and implications for design criteria." South Atlantic Fishery Management Council, St. Augustine, FL, June 1998.
- Nowlis, JS. "A comparison of design principles for protected areas on land and in the sea." Society for Conservation Biology Annual Meeting, Victoria, BC, June 1997.
- Nowlis, JS. "Lessons for reserve design from models of adult and larval transport." The Design and Monitoring of Marine Reserves Workshop, Vancouver, BC, February 1997.
- Nowlis, JS, CM Roberts. "You can have your fish and eat it, too: theoretical approaches to marine reserve design." 8th International Coral Reef Symposium, Panama City, Panama, June 1996.
- Nowlis, JS. "Predictions of optimal marine fishery reserve design: a field work stimulus." Sea Grant Workshop on Marine Protected Areas, Mayagüez, Puerto Rico, October 1995.
- Nowlis, JS. "Ecological models of marine fishery reserves, field work needs, and testable predictions." Center for Marine Conservation's Workshop on Marine Protected Areas, Lee Stocking Island, Bahamas, September 1995.
- Nowlis, JS, CM Roberts. "Quantitative and qualitative predictions of optimal marine fishery reserve design." American Fisheries Society Annual Meeting, Tampa, FL, August 1995.
- Roberts, CM, JS Nowlis. "Application of marine reserve principles towards reef fishery management in the southeastern U. S." American Fisheries Society Annual Meeting, Tampa, FL, August 1995.

Contributed Presentations

- Nowlis, J. L. Anderson, M. Harsch. "Predicting the impacts of recreational fishing by modeling angler incentives and bioeconomic dynamics." Biennial Conference of the International Institute of Fisheries Economics and Trade, Seattle, WA, July 2018.
- Nowlis, J., J. Cope, N. Dowling, F. Satria, S. Miller. "Applying the decision support tool FishPath to guide the establishment of a fisheries management system in Indonesia." Biennial Conference of the International Institute of Fisheries Economics and Trade, Seattle, WA, July 2018.
- Nielson, JR, B Pallisgaard, M Anderson, M Dickey-Collas, S Pascoe, D Holland, O Thébaud, H Curtis, T Mildenberger, MC Rufener, F Bastardie, J Nowlis. "Challenges in implementing stock assessment, economic fishery analysis, and risk assessment for sustainable management strategies of data-poor stocks." Biennial Conference of the International Institute of Fisheries Economics and Trade, Seattle, WA, July 2018.
- Nowlis, J. "A catch limit 'theory of everything:' Architectural principles for harvest control rules based on equilibrium stability analysis." 13th National Stock Assessment Workshop, National Marine Fisheries Service, Irvine, CA, May 2018 (poster).

- Nowlis, J. "A management strategy evaluation of stock recruit proxies." Groundfish Productivity Workshop, Pacific Fisheries Management Council Scientific and Statistical Committee. Seattle, WA, December 2016.
- Olsen, D, J Nowlis, D Bryan. "A collaborative assessment of the Virgin Islands spiny lobster fishery." Gulf and Caribbean Fisheries Institute Annual Meeting. Corpus Christi, Texas, November 2013.
- Nowlis, JS, E Castro, M Prada, T Forbes, H Wilson, H Bent, L Alvarez Bustillo. "Estimating illegal, unreported, and unregulated fishing effort using economic variables from Colombia's Caribbean spiny lobster fishery." North American Association of Fisheries Economists. St. Petersburg, FL, May 2013.
- Nowlis, JS, E Castro, M Prada, T Forbes, H Wilson, H Bent. "Economic determinants of fishing effort in Colombia's Caribbean spiny lobster fishery." Gulf and Caribbean Fisheries Institute Annual Meeting. Santa Marta, Colombia, November 2012.
- Ralph, FM, D Kingsmill, P Restrepo, J Sladek Nowlis, A White. "The hydrometeorological testbed (HMT): Opportunities for scenario development in a framework of improving precipitation and streamflow science and prediction." American Geophysical Union Meeting. San Francisco, CA, December 2006.
- Nowlis, JS. "United States Management System Evaluation: From the North Pacific to the Caribbean." 4th World Fisheries Congress. Vancouver, BC, Canada, May 2004 (poster).
- Nowlis, JS. "Assessing the performance of fishery management systems in the face of environmental uncertainty." Lowell Wakefield Fisheries Symposium on Assessment and Management of New and Developed Fisheries in Data-Limited Situations. Anchorage, AK, October 2003.
- Nowlis, JS. "Socioeconomic trade-offs in the context of ecosystem-based management." Mote International Symposium on Confronting Trade-offs in the Ecosystem Approach to Fisheries Management. Sarasota, FL, November 2002.
- Nowlis, JS, B Bollermann. "Biologically- and ecologically-safe fishery quota-setting systems with reference to levels of uncertainty and socioeconomic tradeoffs." Second Symposium on Marine Conservation Biology, San Francisco, CA, June 2001.
- Nowlis, JS, B Bollermann. "A framework for precautionary and ecosystem management." Mote International Symposium on Targets, Thresholds, and the Burden of Proof, Sarasota, FL, November 2000.
- Nowlis, JS, CM Roberts. "Protecting biodiversity and sustaining fisheries with marine fisheries reserves." Society for Conservation Biology/Ecological Society of America Joint Annual Meeting, Providence, RI, August 1996.
- Nowlis, JS, CM Roberts. "Valuing nature: a modeling study of marine fisheries reserves." Society for Conservation Biology Annual Meeting, Ft. Collins, CO, June 1995.
- Nowlis, JS, CM Roberts. "Predicting the optimal size of fisheries reserves." Western Society of Naturalists Annual Meeting, Monterey, CA, December 1994.
- Nowlis, JP, JM West. "An induced response in *Plexaurella dichotoma* and the reaction of specialist and generalist congeneric snail grazers." Ecological Society of America Annual Meeting, Madison, WI, August 1993.
- Nowlis, JP. "Variation in the deterrent effect of an inducible defense." Marine Benthic Ecology Meeting, Newport, RI, March 1992.
- Nowlis, JP. "The influence of reproductive concerns on host choice in *Cyphoma gibbosum*." Western Society of Naturalists Annual Meeting, Monterey, CA, December 1990.

Teaching

Instructor

FishPath and Harvest Control Rules for Data-Limited Fisheries—*Throughout Southeast Asia* 2019-present
Co-teaching ongoing workshops on data-limited techniques in assessment and management to scientists and managers from around Southeast Asia, including the Philippines, Timor-Leste, Papua New Guinea, and the Solomon Islands, with the goal of supporting them in restructuring their data collection, assessment, and adaptive management systems.

Data-limited Stock Assessment and Control Rules Training—*Department of Fish & Game, Alaska* 2019-present
Co-taught two workshops on data-limited techniques in assessment and management to Alaskan scientists and managers, with the goal of supporting them in restructuring their data collection, assessment, and management decision systems specifically for rockfish species.

Data-Limited Assessment and Management Techniques—*Ministry of Maritime Affairs and Fisheries, Indonesia* 2017-present
Co-teaching ongoing workshops on data-limited techniques in assessment and management to Indonesian scientists and managers, with the goal of supporting them in restructuring their data collection, assessment, and adaptive management systems.

Data-Limited Assessment and Management Techniques — <i>Universidad Nacional de Colombia</i>	2018-present
Co-teaching ongoing workshop on data-limited techniques in assessment and management to Colombian scientists and managers, with the goal of empowering them to potentially restructure their data collection, assessment, and adaptive management systems.	
Improving Science Communication by Understanding its Context — <i>NW Fisheries Science Center, NOAA</i>	2017
Taught second of two-semester sequence on marine biology, coral reef natural history, and underwater scientific techniques. Gave lectures and led SCUBA field trips weekly.	
Research Diving — <i>University of the Virgin Islands</i>	1997
Taught second of two-semester sequence on marine biology, coral reef natural history, and underwater scientific techniques. Gave lectures and led SCUBA field trips weekly.	
Science Diving — <i>University of the Virgin Islands</i>	1996
Taught first of two-semester sequence on marine biology, coral reef natural history, and underwater scientific techniques. Gave lectures and led SCUBA field trips weekly.	
Evolution — <i>University of the Virgin Islands</i>	1995
Taught biology majors about basic evolutionary theory. Course met three times per week, including one discussion section focusing on controversial issues.	
Population and Evolutionary Ecology — <i>Cornell University</i>	1993
Taught one-third of course for graduate and upper-level undergraduate students on advanced ecological and evolutionary theory. Course met for three lectures and one three-hour lab each week. Designed the computer laboratory and lectured on the more mathematical material.	

Teaching Assistant

Regulatory Economics/Regulated Industries — <i>Stanford University</i>	2010, 2011
Designed and conducted sections, and gave a few lectures. Won Outstanding Teaching Award from the Economics Department.	
Intermediate Microeconomics — <i>Stanford University</i>	2011, 2012
Designed and conducted sections, graded homework and exams.	
Economic Policy Analysis — <i>Stanford University</i>	2011
Guided independent student research projects, including project organization, analysis, and writing.	
Money and Banking — <i>Stanford University</i>	2011
Designed and conducted sections, graded homework and exams.	
Introductory Economics — <i>Stanford University</i>	2011
Designed and conducted sections, graded homework and exams.	
Population and Evolutionary Ecology — <i>Cornell University</i>	1991 1992
Designed and conducted sections, including twelve 3-hour-long computer laboratory exercises.	
Mathematics for Biologists — <i>Cornell University</i>	1989
Designed and presented biweekly hour-long lectures/discussions.	
Ecology, Animal Behavior — <i>Brown University</i>	1987-1988
Ran weekly hour-long sections for both courses; designed the sections, wrote, and graded all tests.	

Student Adviser

Dissertations

University of Puerto Rico	1997-2002
Served as a member of Martha Prada's dissertation committee (Mapping benthic habitats off southwest Puerto Rico using side scan sonar technology).	
University of Miami	2003-2008
Served as a member of Kristin Kleisner's dissertation committee (Assessment of the western Atlantic dolphinfish stock).	

Undergraduate Supervision

University of the Virgin Islands	1995-1997
Supervised three students in the development of independent literature projects, which they wrote up and presented as a 40-minute seminar. Student topics included: non-point source pollution, endangered species, and marine fishery reserves.	
Cornell University Coral Reef Program in Akumal, Mexico	1994
Assisted three undergraduates in performing independent research projects and in establishing long-term monitoring stations.	