



## CURRICULUM VITAE

### **PORTER HOAGLAND**

Oceanographer Emeritus  
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**Date of Birth:** October 9, 1955

**Place of Birth:** Red Bank, New Jersey

**Nationality:** United States of America

### **EDUCATION:**

Ph.D., Marine Policy, University of Delaware, Newark, DE, January 2000

M.P.A., Public Administration, Harvard University, Cambridge, MA, March 1993

M.M.P., Marine Policy, University of Delaware, Newark, DE, June 1982

B.S., Biology, Hobart College, Geneva, NY, June 1977

### **RESEARCH INTERESTS:**

Economics and public policy of marine resources and the ocean environment; optimal management of ocean and coastal resources and their uses; distribution and allocation of property rights in ocean and coastal resources; economic impacts of marine natural hazards; technology transfer and intellectual property problems; marine science and technology policy; underwater archaeological resource management.

### **PROFESSIONAL EXPERIENCE:**

Oceanographer Emeritus, Woods Hole Oceanographic Institution, 2020 to present

Senior Research Specialist, Woods Hole Oceanographic Institution, 2008 to 2020

Research Specialist, Woods Hole Oceanographic Institution, 2000-08

Research Associate, Woods Hole Oceanographic Institution, 1985-2000

Research Assistant, Woods Hole Oceanographic Institution, 1983-84

Conservation Intern, National Wildlife Federation, 1982

Research Intern, Environmental Law Institute, 1981

Research Assistant, College of Marine Studies, University of Delaware, 1981-82

Administrative Legal Assistant, Howrey and Simon, 1979-80

Paralegal, Howrey and Simon, 1977-79

### **AWARDS:**

Cooperative Institute for North Atlantic Research (CINAR) Fellowship, 2013-16

Frances Severance Award for Dissertation in Public Policy, University of Delaware, 2000

Marine Policy Program Fellow, College of Marine Studies, University of Delaware, 1993-94

Crump Fellow, Center for Business and Government, Harvard University, 1992

E. Sam Fitz Professional Development Award, University of Delaware, 1983

Academic Council Award for Master's Thesis in Marine Policy, University of Delaware, 1982

**PROFESSIONAL ACTIVITIES:**

Visiting Professor of Ocean and Coastal Policy, Sea Education Association, 2018 to present  
Adjunct Professor, Graduate Faculty, Department of Marine Affairs, University of Rhode Island, 2012 to present  
Faculty Member, MIT-WHOI Joint Program, 2018 to present  
Adjunct Professor, Intercampus Graduate School of Marine Sciences and Technology, University of Massachusetts, 2000 to present  
Adjunct Professor, The Union Institute, Cincinnati, Ohio, 2001-08  
Advisor, Institute Advisory Committee, WHOI Coastal Ocean Institute, 2001-16  
Advisor, WHOI Office for Applied Oceanography, 2009-14  
Editorial Advisory Board, *Harmful Algae*, 2014 to present  
Editorial Advisory Board, *Encyclopedia of Ocean Sciences*, Academic Press, 2001 to present  
Member, International Institute of Fisheries Economics and Trade, 2007 to present  
Member, Marine Technology Society, 1996-2015  
Research Associate, Center for Maritime & Underwater Resource Management, East Lansing, Michigan, 1995 to present  
Member, National Harmful Algal Bloom Committee, 2006-13  
Advisor, Research Advisory Committee, Waquoit Bay National Estuarine Research Reserve, 2017-18  
Advisor, Stellwagen Bank National Marine Sanctuary Advisory Committee, 2007-10 (Alternate Advisor 2001-07)  
Member, Steering Committee, National Scientific Research, Development, Demonstration, and Technology Transfer Plan on Reducing Impacts from Harmful Algal Blooms, 2006-07  
Director, Board of Directors, Council on Ocean Law, 1995-2005  
Chairman, Marine Resources Division, Marine Technology Society, 1996 to 2004  
Chairman, Ecosystem Alteration Working Group, Stellwagen Bank National Marine Sanctuary, 2004  
Chairman, Site Characterization Working Group, Stellwagen Bank National Marine Sanctuary, 2003-04  
Member, Panel on Peer Review, Committee to Assess the US ACoE Methods of Analysis and Peer Review for Water Resources Project Planning, National Research Council, 2001-02  
Member, Working Group on the Economic Aspects of Marine Mammal-Fisheries Interactions, North Atlantic Marine Mammal Commission, 2000  
Member, Steering Committee, Massachusetts Ocean Resources Roundtable, Massachusetts Office of Coastal Zone Management, 1997-98  
Member, Massachusetts Governor's Task Force on Aquaculture Development and Marketing, 1995  
Advisor, Plymouth Beaches Advisory Committee (Vice-Chairman 1992-93), Town of Plymouth, Massachusetts, 1990-93

**REFEREE:** *BIODIV. CONSERV.*; *CAFÉ*; *CLIM. CHANGE*; *COASTAL MANAG.*; *CONSERV. BIO.*; *CURR. TRAD. MED.*; *DEEP-SEA RES. PT. II*; *ECOL. ECON.*; *ECOL. FOOD NUTR.*; *FRONTIERS MAR. SCI.*; *ENVIRON. DEV. ECON.*; *ENVIRON. CONSERV.*; *ENVIRON. MANAG.*; *ENVIRON. MOD. SOFTW.*; *FISH.*; *FISH. RES.*; *HARM. ALG.*; *ICES J. MAR. SCI.*; *INT'L INST. FISH. ECON. TR.*; *J. COAST. RES.*; *J. ENVIRON. DEV.*; *J. ENVIRON. ECON. MANAG.*; *J. ENVIRON. MANAG.*; *J. GEOG. REG. PLAN.*; *J. OC. COAST. ECON.*; *J. OC. UNIV. CHINA*; *J. SHELLFISH RES.*; *MAR. POL'Y*; *MAR. POLL. BULL.*; *MAR. RES. ECON.*; *MAR. TECH. SOC. J.*; *MINERALS*; *NAT. RESOUR. RES.*; *OC. COAST. MANAG.*; *OC. DEV. INT'L L.*; *OC. YRBK.*; *RESOUR. POL'Y*; *SCIENCE*; *SCIENCENOW*; *SUSTAINABILITY*; *TOXINS*.

**PAPERS IN REFEREED JOURNALS: [\* = student author]**

- Hoagland P**, Beet A, Ralston D, Parsons G, \*Shirazi Y, \*Carr E. 2020. Salinity intrusion in a modified river-estuary system: a framework for integrated source-to-sea management. *Front. Mar. Sci.*. <https://doi.org/10.3389/fmars.2020.00425>
- Hoagland P**, Kirkpatrick B, Jin D, Kirkpatrick G, Fleming L, Reich A, Ullmann S, Beet A, Hitchcock G, Kohler K, Li Z, Garrison B, \*Diaz RE, Lovko V. 2020. Lessening the hazards of Florida red tides: a common sense approach. *Front. Mar. Sci.* 7(June):538. <https://doi.org/10.3389/fmars.2020.00538>
- Hein CJ, \*Fallon AR, Georgiou IP, **Hoagland P**, Rosen P, Baker S, Marino GB. 2019. Shoreline dynamics along a developed river mouth barrier island: multi-decadal cycles of erosion and event-driven mitigation. *Front. Earth Sci.* 7(May):103. <https://doi.org/10.3389/feart.2019.00103>.
- \*Luk S, **Hoagland P**, Rheuban JE, Costa JE, Doney SC. 2019. Modeling the effect of water quality on the recreational shellfishing cultural ecosystem service of Buzzards Bay, Massachusetts. *Mar. Poll. Bull.* 140:364-373. <https://doi.org/10.1016/j.marpolbul.2018.12.047>.
- \*Rawson K, **Hoagland P**. 2019. Sea cucumbers in a pickle: the economic geography of the serial exploitation of sea cucumbers. *Ecol. Soc.* 24:35. <https://doi.org/10.5751/ES-11140-240435>
- \*Shirazi Y, \*Carr EW, Parsons GR, **Hoagland P**, Ralston DK, Chen J-L. 2019. Increased operational costs of electricity generation in the Delaware River and Estuary from salinity increases due to sea-level rise and a deepened channel. *J. Environ. Manag.* 244:228-234. <https://doi.org/10.1016/j.jenvman.2019.04.056>.
- \*Diaz RE, Friedman MA, Jin D, Beet A, Kirkpatrick B, Reich AR, Kirkpatrick G, Ullmann SG, Fleming LE, **Hoagland P**. 2018. Neurological illnesses associated with Florida red tide (*Karenia brevis*) blooms. *Harm. Alg.* 82:73-81. <https://doi.org/10.1016/j.hal.2018.07.002>.
- \*Hutcheson WE, **Hoagland P**, Jin D. 2018. Estimating the economic value of environmental education in the Hudson River Estuary. *Ecosys. Svcs.* 31C:387-394. <https://doi.org/10.1016/j.ecoser.2018.03.005>.
- \*Carr EW, \*Shirazi Y, Parsons G, **Hoagland P**, Sommerfield CK. 2017. The economic value of carbon sequestration by wetlands in the Delaware Estuary: historic estimates and future projections. *J. Environ. Mgmt.* 206:40-50. <https://doi.org/10.1016/j.jenvman.2017.10.018>.
- \*Graikoski M, **Hoagland P**. 2017. Market-based rolling easements to reduce the vulnerability of coastal communities in Massachusetts. *Sea Grant L. & Pol'y J.* 8:117-149.
- \*Fallon AR, **Hoagland P**, Jin D, \*Phalen W, Fitzsimons G, Hein C. 2017. Adapting without retreating: responses to shoreline change on an inlet-associated coastal beach. *Coast. Manag.* 45:360-383. <https://doi.org/10.1080/08920753.2017.1345607>.
- \*Patrolia E, Thompson R, Dalton T, **Hoagland P**. 2017. The influence of weather on the recreational uses of coastal lagoons. *Mar. Pol'y* 83:252-258. <http://dx.doi.org/10.1016/j.marpol.2017.06.019>.

- Trusty MF, Wikgren B, Lagueux K, Kite-Powell HL, Jin D, **Hoagland P**, Kenney RD, Kraus SD. 2017. Co-occurrence mapping of disparate data sets to assess potential aquaculture sites in the Gulf of Maine. *Rev. Fish. Sci. & Aquacult.* <http://dx.doi.org/10.1080/23308249.2017.1343798>
- Jin D, DePiper G, **Hoagland P**. 2016. An empirical analysis of portfolio management as a tool for implementing ecosystem-based fishery management. *No. Am. J. Fish. Mgmt.* 36:652-669. <http://dx.doi.org/10.1080/02755947.2016.1146180>.
- Berdalet E, Fleming LE, Gowen R, Davidson K, Hess P, Backer LC, Moore SK, **Hoagland P**, Enevoldsen H. 2015. Marine harmful algal blooms, human health and wellbeing: challenges and opportunities in the 21st century. *J. Mar. Biol. Assoc. UK* 96:61-91. <https://doi.org/10.1017/S0025315415001733>.
- \*Bush D, **Hoagland P**. 2015. Public opinion and the environmental, economic, and aesthetic impacts of offshore wind. *Oc. Coast. Mgmt.* 120:70-79. <http://dx.doi.org/10.1016/j.ocecoaman.2015.11.018>.
- Hoagland P**, Dalton TM, Jin D, \*Dwyer J. 2015. An approach for assessing the spatial welfare and distributional effects of siting wind energy in the ocean: the Rhode Island/Massachusetts "Area of Mutual Interest." *Mar. Pol'y* 58:51-59. <http://dx.doi.org/10.1016/j.marpol.2015.04.010>.
- Jin D, **Hoagland P**, \*Au DK, \*Qiu J. 2015. Shoreline change, seawalls, and coastal property values. *Oc. Coast. Mgmt.* 114:185-193. <https://doi.org/10.1016/j.ocecoaman.2015.06.025>.
- \*Li Z, Garrison B, Ullmann SU, Kirkpatrick B, Fleming LE, **Hoagland P**. 2015. Risk in daily newspaper coverage of red tide blooms in southwest Florida. *Appl. Enviro. Educ. & Comm.* 17:167-177. <https://doi.org/10.1080/1533015X.2015.1067579>.
- Reich A, \*Lazensky RF, \*Faris J, Fleming LE, Kirkpatrick B, Ullmann S, Kohler K, **Hoagland P**. 2015. Assessing the impact of shellfish harvesting area closures on neurotoxic shellfish poisoning (NSP) incidence during Florida red tide (*Karenia brevis*) blooms. *Harm. Alg.* 43:13-19 <http://www.sciencedirect.com/science/article/pii/S1568988315000025>.
- Davidson K, Gowen RJ, Harrison PJ, Fleming LE, **Hoagland P**. 2014. Anthropogenic nutrients and harmful algae in coastal waters. *J. Environ. Manag.* 146:206-216. <https://doi.org/10.1016/j.jenvman.2014.07.002>.
- Hoagland P**, Jin D, Beet A, Kirkpatrick B, Reich A, Ullmann S., Fleming LE, Kirkpatrick G. 2014. The human health effects of Florida red tides: an expanded analysis. *Environ. Int'l.* 68:144-153. <http://dx.doi.org/10.1016/j.envint.2014.03.016>.
- Kirkpatrick B, Kohler K, Byrne M, Fleming LE, \*Scheller K, Reich A, Hitchcock G, Kirkpatrick G, Ullman S, **Hoagland P**. 2014. Human responses to Florida red tides: policy awareness and the effectiveness of local fertilizer ordinances. *Sci. Tot. Environ.* 493:898-909. <https://doi.org/10.1016/j.scitotenv.2014.06.083>.
- Hoagland P**, Kite-Powell HL, Jin D, Solow AR. 2013. Supply-side approaches to the economic valuation of coastal and marine habitat in the Red Sea. *J. King Saud Univ.-Sci.* 25:217-228. <http://dx.doi.org/10.1016/j.jksus.2013.02.006>.

- Jin D, Ashton A, **Hoagland P**. 2013. Optimal responses to shoreline changes: an integrated economic and geological model with application to curved coasts. *Nat. Res. Model* 26:572-604. <http://onlinelibrary.wiley.com/doi/10.1111/nrm.12014/abstract>.
- Jin D, **Hoagland P**, Wikgren B. 2013. An empirical analysis of the economic value of ocean space associated with commercial fishing. *Mar Pol'y* 42:74-84. <https://doi.org/10.1016/j.marpol.2013.01.014>.
- Hoagland, P**, Jin D, Kite-Powell HL. 2012. The costs of beach replenishment along the US Atlantic coast. *J. Coast. Res.* 28:199-204. <http://dx.doi.org/10.2112/JCOASTRES-D-11-00066.1>.
- Jin D, **Hoagland P**, Dalton TM, Thunberg EM. 2012. Development of an integrated economic and ecological framework for ecosystem-based fisheries management in New England. *Prog. Oceanog.* 102:93-101. <http://dx.doi.org/10.1016/j.pocean.2012.03.007>.
- Jin D, Kite-Powell HL, **P. Hoagland P**, Solow AR. 2012. A bioeconomic analysis of traditional fisheries in the Red Sea off the coast of the Kingdom of Saudi Arabia. *Mar. Res. Econ.* 27:127-138. <http://dx.doi.org/10.5950/0738-1360-27.2.137>.
- Fleming LE, Kirkpatrick B, Backer LC, Walsh CJ, Nierenberg K, Clark J, Reich A, Hollenbeck J, Benson J, Cheng YS, Naar J, Pierce R, Bourdelais AJ, Abraham WM, Kirkpatrick G, Zaias J, Wanner A, Mendes E, S, **Hoagland P**, Stephan W, Bean J, Watkins S, Clarke T, Byrne M, Baden DG. 2010. Literature review of Florida red tide: implications for human health effects. *Harm. Alg.* 3:99-115. <http://dx.doi.org/10.1016/j.hal.2010.08.006>.
- Hoagland P**. 2010. A (social) scientific look at ecosystem-based management. *Oc. Coast. L. J.* 15:167-175. <http://mainelaw.maine.edu/academics/oclj/vol-15-no-1.html>.
- Hoagland P**, Beaulieu S, Tivey MA, Eggert RG, German C, Glowka L, Lin J. 2010. Deep-sea mining of seafloor massive sulfides. *Mar. Pol'y* 34:728-732. <http://dx.doi.org/10.1016/j.marpol.2009.12.001>.
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- Bauer M, **Hoagland P**, Leschine TM, Blount BG, Pomeroy CM, Lampl LL, Scherer CW, Ayres DL, Tester PA, Sengco MR, Sellner KG, Shumacker J. 2009. The importance of human dimensions research in managing harmful algal blooms. *Front. Ecol. Environ.* <https://doi.org/10.1890/070181>.
- Hoagland P**, Jin, \*Polansky LY, Kirkpatrick B, Kirkpatrick G, Fleming LE, Reich A, Watkins SM, Ullmann SG, Backer LC. 2009. The costs of respiratory illnesses arising from Florida Gulf Coast *Karenia brevis* blooms. *Environ. Health Persp.* 117:1239-1243. <http://ehp.niehs.nih.gov/docs/2009/0900645/abstract.html>.
- Kite-Powell, H.L., L.E. Fleming, L.C. Backer, E.M. Faustman, **P. Hoagland**, A. Tsuchiya, L.R. Younglove, B.A. Wilcox and R.J. Gast. 2008. Linking the oceans to public health: current

- efforts and future directions. *Environ. Health J.* 7(Supp. 2):S6. <http://www.ehjournal.net/supplements/7/S2>.
- Jin, D. and **P. Hoagland**. 2008. The value of HAB predictions to the commercial shellfish fishery in the Gulf of Maine. *Harm. Alg.* 7:772-781. <http://dx.doi.org/10.1016/j.hal.2008.03.002>.
- Jin, D., E. Thunberg and **P. Hoagland**. 2008. Economic impact of the 2005 red tide event on commercial shellfish fisheries in New England. *Oc. Coast. Manag.* 51:420-429. <http://dx.doi.org/10.1016/j.ocecoaman.2008.01.004>.
- Hoagland, P.** and D. Jin. 2007. Accounting for marine economic activities in large marine ecosystems. *Oc. Coast. Manag.* 51:246-258. <http://www.sciencedirect.com/science/journal/09645691>.
- Jin, D., H.L. Kite-Powell and **P. Hoagland**. 2007. Anticipating the growth of an open-ocean aquaculture industry. *Aquacult. Econ. Manag.* 11:225-242. <https://doi.org/10.1080/13657300701530118>.
- Hoagland, P.** and D. Jin. 2006. Science and economics in the management of an invasive species. *BioSci.* 56:931-935. <http://hdl.handle.net/1912/1363>.
- Herrera, G. and **P. Hoagland**. 2006. Commercial whaling, tourism, and boycotts: an economic perspective. *Mar. Pol'y* 30:261-269. <http://dx.doi.org/10.1016/j.marpol.2004.12.005>.
- Jin, D., **P. Hoagland** and A.R. Solow. 2006. The economic value of environmental research in understanding the relative contributions of sources of nutrients to coastal waters. *Nat. Res. Model.* 19:201-220. <http://dx.doi.org/10.1111/j.1939-7445.2006.tb00180.x>. [WHOI Contrib. No. 11,296.]
- Jin, D., **P. Hoagland** and E. Thunberg. 2006. An analysis of the relationship between the fish harvesting and processing sectors in New England. *Mar. Res. Econ.* 21:47-62. <https://doi.org/10.1086/mre.21.1.42629494>.
- Hoagland, P.** and A.R. Solow. 2005. Regional ocean governance: a critique of two recent proposals. *Mar. Tech. Soc. J.* 38:61-67. <https://doi.org/10.4031/002533204787522325>. [WHOI Contrib. No. 11,301.]
- Jin, D., H.L. Kite-Powell and **P. Hoagland**. 2005. Risk assessment in open-ocean aquaculture: a firm-level investment-production model. *Aquacult. Econ. Manag.* 9:369-387. <http://dx.doi.org/10.1080/13657300500242261>. [WHOI Contrib. No. 11,394.]
- Hoagland, P.,** D. Jin and H.L. Kite-Powell. 2003. The optimal allocation of ocean space: aquaculture and wild harvest fisheries. *Mar. Res. Econ.* 18:129-147. <https://doi.org/10.1086/mre.18.2.42629389>. [WHOI Contrib. No. 10,932.]
- Jin, D., **P. Hoagland** and T.M. Dalton. 2003. Linking economic and ecological models for a marine ecosystem. *Ecol. Econ.* 46:367-385. <http://dx.doi.org/10.1016/j.ecolecon.2003.06.001>. [WHOI Contrib. No. 10,705.]
- Steele, J.H. and **P. Hoagland**. 2003. Are fisheries "sustainable"? *Fish. Res.* 64:1-3. <http://dx.doi.org/10.1016/j.fishres.2003.08.001>. [WHOI Contrib. No. 11,004.]

- Hoagland, P.**, D.M. Anderson, Y. Kaoru and A.W. White. 2002. The economic effects of harmful algal blooms in the United States: estimates, assessment issues, and information needs. *Estuar. Coast.* 25:677-695. <http://dx.doi.org/10.1007/BF02804908>. [WHOI Contrib. No. 10,637.]
- Kite-Powell, H.L., **P. Hoagland** and D. Jin. 1998. Policy, law, and public opposition: the prospects for abyssal ocean waste disposal in the United States. *J. Mar. Sys.* 14:377-396. [http://dx.doi.org/10.1016/S0924-7963\(97\)00036-5](http://dx.doi.org/10.1016/S0924-7963(97)00036-5). [WHOI Contrib. No. 9053.]
- Hoagland, P.** 1997. Managing the underwater cultural resources of the China Seas: a comparison of public policies in Mainland China and Taiwan. *Int'l J. Mar. Coast. L.* 12:265-283. <http://dx.doi.org/10.1163/157180897X00095>. [WHOI Contrib. No. 9148.]
- Hoagland, P.** and D. Jin. 1997. A model of bycatch involving a passive use stock. *Mar. Res. Econ.* 12:11-28. <https://doi.org/10.1086/mre.12.1.42629179>. [WHOI Contrib. No. 9370.]
- Hoagland, P.**, H.L. Kite-Powell and M.E. Schumacher. 1996. Regulating marine toxic pollution under the London Convention. *Int'l Iss.* 39:25-43. [WHOI Contrib. No. 9324.]
- Schumacher, M., **P. Hoagland** and A.G. Gaines. 1996. Land-based marine pollution in the Caribbean: incentives and prospects for an effective regional protocol. *Mar. Pol'y* 20:99-121. [http://dx.doi.org/10.1016/S0308-597X\(95\)00044-7](http://dx.doi.org/10.1016/S0308-597X(95)00044-7). [WHOI Contrib. No. 9002.]
- Kaoru, Y. and **P. Hoagland**. 1994. The value of historic shipwrecks: conflicts and management. *Coastal Manag.* 22:195-213. <http://dx.doi.org/10.1080/08920759409362231>. [WHOI Contrib. No. 8384.]
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- Hoagland, P.** 1992. Measuring voting power on the Council of the International Seabed Authority. *Oc. Pol'y Res. (Korea)* 7:251-276. [WHOI Contrib. No. 8124.]
- Hoagland, P.** and H.L. Kite-Powell. 1991. European advanced marine electronic instrumentation: A U.S. perspective. *Mar. Pol'y* 15:431-454. [http://dx.doi.org/10.1016/0308-597X\(91\)90052-D](http://dx.doi.org/10.1016/0308-597X(91)90052-D). [WHOI Contrib. No. 7785.]
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- Hoagland, P.** 1986. Seabed mining patent activity: some first steps toward an understanding of strategic behavior. *J. Res. Manag. Tech.* 14:211-222. [WHOI Contrib. No. 6346.]
- Broadus, J.M. and **P. Hoagland.** 1984. Conflict resolution in the assignment of area entitlements for seabed mining. *San Diego L. Rev.* 21:541-576. [http://www.sandiego.edu/law/news/blogs\\_publications/publications/journals/law\\_review/archive/archive.php?focus=1635](http://www.sandiego.edu/law/news/blogs_publications/publications/journals/law_review/archive/archive.php?focus=1635).
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#### **CHAPTERS IN BOOKS:**

- Hoagland P,** Jin D, Beaulieu S. 2020. A primer on the economics of natural capital and its relevance to deep ocean exploitation and conservation. In Baker MC, Ramirez-Llodra E, Tyler PA, eds., *Natural Capital and Exploitation of the Deep Sea*. Oxford, UK: Oxford University Press (forthcoming). <https://doi.org/10.1093/oso/9780198841654.003.0002>
- Adams CM, Larkin SL, **Hoagland P,** \*Sancewich B. 2018. Assessing the economic consequences of harmful algal blooms: a summary of existing literature, research methods, data, and information gaps. In Shumway SE, ed., *Harmful Algal Blooms: A Compendium Desk Reference*. New York: John Wiley, pp. 337-354.
- Hoagland P.** 2014. Coupled nature-human (CNH) systems: generic aspects of human interactions with blooms of Florida red tide (*Karenia brevis*) and implications for policy responses. In Rossini GP, ed., *Toxins and Biologically Active Compounds from Microalgae*. Vol. 2: Biological Effects and Risk Management. Boca Raton, FL: CRC Press, pp. 502-537.
- Hoagland P,** ed. 2010. *Marine Policy and Economics*. New York: Academic Press, 618pp.
- \*MacLeod MS, \*Lynch M, **Hoagland P.** 2009. Ocean zoning. In Steele JH, Thorpe SA, Turekian KK, eds., *Encyclopedia of Ocean Sciences*. 2<sup>nd</sup> edition. Cambridge, UK: Elsevier. Online at: <http://www.sciencedirect.com/science/referenceworks/9780123744739>.
- Sherman K, Belkin I, Seitzinger S, **Hoagland P,** Jin D, Aquarone M-C, Adams S. 2009. Indicators of changing states of large marine ecosystems. In K. Sherman, M-C. Aquarone and S. Adams, eds., *Sustaining the World's Large Marine Ecosystems*. Gland, Switz.: International Union for the Conservation of Nature and Natural Resources, pp. 13-49.
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