

Andrew A. Rosenberg, Ph.D.
Director, Center for Science and Democracy
Union of Concerned Scientists

CURRICULUM VITAE



Education

Ph.D., Biology, 1984, Dalhousie University, Halifax, Nova Scotia, Canada

M.S., Oceanography, 1980, Oregon State University, Corvallis, Oregon

B.S., magna cum laude, Fisheries Biology, 1978, University of Massachusetts, Amherst, Massachusetts

PROFESSIONAL EMPLOYMENT

Director, Center for Science and Democracy

present

Union of Concerned Scientists

- Develop a new Center focused on the role of science in the democratic process
- Develop strategy for the new Center
- Fundraise to build capacity for the Center for Science and Democracy
- Speak out on issues of science and democracy for UCS

Senior Vice President for Science + Knowledge

2010 - 2012

Conservation International

- Chief Scientist for major international environmental NGO
- Senior manager of CI's science program – 75 staff
- Major fundraising responsibilities for science program
- Spokesperson for the organization on science issues
- Research on ecosystem-based management, climate adaptation, fisheries science and management

Professor of Natural Resources and the Environment

2004 – present

(affiliate status currently)

University of New Hampshire

- Faculty in the Institute for the Study of Earth, Oceans and Space and Department of Natural Resources and the Environment.
- Offering courses in environmental policy, ecosystem-based management, fisheries population dynamics, and ocean policy at undergraduate and graduate levels.
- Major professor and mentor for graduate students at M.S and Ph.D level.
- Research on ecosystem-based management of human impacts, ocean policy, historical ecology, marine science, ocean and fisheries management.

Dean, College of Life Sciences and Agriculture, 2000 - 2004
University of New Hampshire, Durham , NH

- Academic and administrative management responsibility for eight departments with 160 faculty and a budget of \$30 million.
- Increased externally funded research from 2.6 million to \$17 million in four years.
- Initiated review, reinvigoration and re-alignment of College programs academically and administratively.
- Professor of Natural Resources.

Deputy Director, National Marine Fisheries Service 1998 - 2000
National Oceanic and Atmospheric Administration, Silver Spring, Maryland

- Senior career official (Senior Executive Service 3) with programmatic and administrative responsibility for a federal agency with 2,800 employees and a budget of over \$500 million.
- Responsible for implementing fisheries, protected resources and habitat management efforts nation-wide including regulatory actions, grant programs, and science and research programs.
- Key agency spokesperson in policy discussions and presentations for the Administration, Congress and with the public.
- Head of Delegation for the United States to international marine science and management organizations.

Northeast Regional Administrator, National Marine Fisheries Service 1995 - 1998
National Oceanic and Atmospheric Administration, Gloucester, MA

- Senior federal official for regional activities from Canada to Cape Hatteras with 400 employees and a budget of \$30 million.
- Negotiated on behalf of the government, recovery plans for New England and Mid-Atlantic fishery resources, endangered species protections such as for harbor porpoise and right whales, and habitat conservation programs region-wide.
- Oversight responsibility for the Northeast Fisheries Science Center laboratories in Woods Hole, Narragansett, Sandy Hook and the Smithsonian.
- Key agency spokesperson to the public, Congress and internationally.

Chief of Research Coordination, National Marine Fisheries Service 1990 - 1995
National Oceanic and Atmospheric Administration, Northeast Region

Assistant Professor/Lecturer in Environmental Technology, 1986 - 1990
Imperial College of Science and Technology, University of London, England

NATO Postdoctoral Researcher, Centre for Environmental Technology 1984 - 1986
Imperial College of Science and Technology, University of London, England

SELECTED PROFESSIONAL ACTIVITIES AND APPOINTMENTS

Co-chair, Science and Technical Advisory Committee, UN Intergovernmental Oceanographic Commission Transboundary Waters Assessment Project.	2014-2016
Member, U.S. National Climate Assessment Development Advisory Panel, Convening lead author for oceans chapter, member Exec Sec.	2011 - 2015
Editor, Conservation Letters	2012 – present
US Ocean Research Advisory Panel (Navy)	2012 - 2015
Panel Member, National Academy of Science, America’s Climate Choices, Climate Adaptation Strategy	2008 - 2010
National Academy of Sciences, Ocean Studies Board	2008 – 2013
National Science Foundation, Geosciences Advisory Board	2009 - 2012
Commissioner, U.S. Commission on Ocean Policy U.S. Presidential Appointment and	2001 - present
President, MRAG Americas Inc. Environmental consulting company	2004 - present
Panel of Experts, UN World Ocean Assessment (convening author for several chapters)	2006 – 2016
Chairman, U.S. Steering Committee for the Census of Marine Life	2006 - 2010
Advisor on Ocean Affairs, U.N. Division for Ocean Affairs and Law of the Sea	2006
Commissioner and Head of Delegation North Atlantic Salmon Conservation Organization U.S. Presidential appointment	1996 - 2000
Commissioner and Head of Delegation Northwest Atlantic Fisheries Organization U.S. Secretary of Commerce appointment	1997 - 2000

SELECTED INVITED LECTURES

Yale University Law School, Science in the Trump Administration	2019
Government of Canada, Science Advice for Areas Beyond Nat. Jurisd.	2019
Capitol Hill Oceans Week, The Oceans in 2050	2019
StormSurge, Science in the Trump Administration	2019
AAAS. Fighting Back Against Trump	2017-2019
United Nations Law of the Sea, Assessing Biodiversity Beyond Nat. Jurisd.	2018
Brown University, Food, Fish and Sustainability	2018
The Broad Institute, Science and the Trump Administration	2018
Clark University, Science and the Trump Administration	2017

HONORS AND AWARDS

Ecological Society of America Sustainability Science Award for Paper in Science (2009)	2011
AAAS Fellow, Societal Contributions to Science and Engineering,	2006
Watkins Award, Consortium for Ocean Research and Education	2005
Presidential Award for Meritorious Service to the United States,	2000
U. S. Coast Guard 1 st District Commendation	1998
World Wildlife Fund Commendation for Conservation,	1998
Distinguished Alumnus Award, University of Massachusetts	1998
NOAA Bronze Medal Awards (3),	1997
NATO Postdoctoral Research Fellowship,	1985 - 1986
Killam Memorial Scholarship,	1982 - 1984

SELECTED PUBLICATIONS

Walsh, J.C., C. Minto, E. Jardim, S. C. Anderson, O. P. Jensen, J. Afflerbach, M. Dickey-Collas, K.M. Kleisner, C. Longo, G. C. Osio, E. R. Selig, J. T. Thorson, | M. B. Rudd, K. J. Papacostas, J. N. Kittinger, Andrew A. Rosenberg, A.B. Cooper. 2018. Trade-offs for data-limited fisheries when using harvest strategies based on catch-only models. *Fish and Fisheries*. <https://doi.org/10.1111/faf.12316>

Rosenberg, A. A., K. M. Kleisner, J. Afflerbach, S. C. Anderson, M. Dickey-Collas, A. B. Cooper, M. J. Fogarty, E. A. Fulton, N. L. Gutiérrez, K. J. W. Hyde, E. Jardim, O. P. Jensen, T. Kristiansen, C. Longo, C. V. Minto-Vera, C. Minto, I. Mosqueira, G.C. Osio, D. Ovando, E. R. Selig, J. T. Thorson, J. C. Walsh, and Y. Ye. 2017. Applying a new ensemble approach to estimating stock status of marine fisheries around the world. **Conservation Letters**. <https://doi.org/10.1111/conl.12363>

Goldman, G. T., E. Berman, M. Halpern, C. Johnson, Y. Kothari, G. Reed and A. A. Rosenberg. 2017. Ensuring scientific integrity in the age of Trump. **Science** 355: 696-698.

J. Sullivan, E. Cerny-Chipman, A. A. Rosenberg and J. Lubchenco. 2017. Strategies for bridging the science-policy interface for adaptive solutions in the anthropocene. *In* Levin, P. and M. Poe. Conservation in the anthropocene ocean. Academic Press, New York. 504pp.

Storch, L. S., S. M. Glaser, H. Ye, A. A. Rosenberg. 2017. Stock assessment and end-to-end ecosystem models alter dynamics of fisheries data. *PLoS ONE* 12(2):e0171644.

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

Saavedra-Diaz, L. M., R. Pomeroy and A.A. Rosenberg. 2016. Managing small-scale fisheries in Colombia. **Maritime Studies** 15:15 DOI 10.1186/s40152-016-0054-0

Sala, E. C. Costello, J. DeBourbon Parme, M. Fiorese, G. Heal, K. Kelleher, R. Moffitt, L. Morgan, J. Plunkett, K.D. Rechberger, A.A. Rosenberg and R. Sumaila. 2016. Fish banks; an economic model to scale marine conservation. **Marine Policy** 73:154-161.

Beever, E.A., J. O’Leary, C. Mengelt, J.M. West, S. Julius, N. Green, D. Magness, L. Petes, B. Stein, A. B. Nicotra, J. J Hellmann, A. L. Robertson, M. D Staudinger, A.A. Rosenberg, E. Babij, J. Brennan, G. W. Schuurman, and G. E Hofmann. 2015. Improving conservation outcomes with a new paradigm for understanding species’ fundamental and realized adaptive capacity. **Conservation Letters** DOI: 10.1111/conl.12190

Rosenberg, A. A., L. M. Branscomb, V. Eady , P. C. Frumhoff, G. T. Goldman, M. Halpern, K. Kimmell, Y. Kothari, L. D. Kramer, N. F. Lane, J. J. McCarthy, P. Phartiyal, K. Rest, R. Sims, C. Wexler. Congress's attacks on science-based rules. **Science** 29 May 2015: Vol. 348 no. 6238, pp. 964-966.

Saavedra Diaz, L. M., Martin Lopez, B., A. A. Rosenberg. 2015. Social perceptions of Colombian small-scale marine fisheries conflicts: insights for management. **Marine Policy** 56:61-70.

Halpern, B. S., C. Longo, JS Stewart Lowndes, B. D. Best, M. Frazier, S. K. Katona, K. M. Kleisner, A. A. Rosenberg, C. Scarborough, and E. R. Selig. 2015. Patterns and emerging trends in global ocean health. **PloS one** 10 (3): e0117863.

Rosenberg, A.A. 2015. Uncertainty inevitable but not an excuse for inaction. **The Environmental Forum** 32(2): 53.

Rosenberg, A. A., P. Phartiyal, G. Goldman, L. M. Branscomb. 2014. Exposing fracking to sunlight. **Issues in Sci and Technol.** 31 (1): 74-79.

Rosenberg, A. A., M. J. Fogarty, A. B. Cooper, M. Dickey-Collas, E. A. Fulton, N. L. Gutierrez, K. J. W. Hyde, K. M. Kleisner, C. Longo, C. V. Minte-Vera, C. Minto, I. Mosqueira, G. C. Osio, D. Ovando, E. R. Selig, J. T. Thorson, and Y. Ye. 2014. Developing new approaches to global stock status assessment and fishery production potential of the seas. **FAO Fisheries and Aquaculture Circular**, Rome, Italy.

Guidetti P., P. Baiata, E. Ballesteros, A. Di Franco, B. Hereu, E. Macpherson, F. Micheli, A. Pais, P. Panzalis, A. A. Rosenberg, M. Zabala, and E. Sala. 2014. Large-Scale Assessment of Mediterranean Marine Protected Areas Effects on Fish Assemblages. **PLoS ONE** 9(4): e91841. doi:10.1371/journal.pone.0091841

DeLauer, V.G., A. A. Rosenberg, N. C. Popp, D. R. Hiley, and C. Feurt. 2014. The Complexity of the Practice of Ecosystem-Based Management. **Integral Review** 10:4-28.

Micheli, F., B. S. Halpern, S. Walbridge S. Ciriaco, F. Ferretti, S. Frascchetti, R. Lewison, L. Nykjaer, and A. A. Rosenberg. 2013. Cumulative human impacts on Mediterranean and Black Sea marine ecosystems: assessing current pressures and opportunities. **PLoS One**. 8(12): e79889. doi:10.1371/journal.pone.0079889

Rosenberg, A.A., Halpern, .M, Shulman, S., Wexler, C., Phartiyal, P. 2013. Reinvigorating the Role of Science in Democracy. **PLoS Biol** 11(5): e1001553.

Glaser, S. M., M. J. Fogarty, H. Liu, I. Altman, C.H. Hsieh, L. Kaufman, A.D. MacCall, A. A. Rosenberg, H. Ye, G. Sugihara. 2013. Complex dynamics may limit prediction in marine fisheries. **Fish and Fisheries** DOI 10:1111/faf 12037.

Menzel, S., C. V. Cappel, B. Broitman, F. Micheli, A. A. Rosenberg. 2013. Linking human activity and ecosystem condition to inform marine ecosystem based management. **Aquat. Cons. Mar. Freshw. Ecosyst.** 23:506-514

Sala, E., C. Costello, D. Dougherty, G. Heal, K. Kelleher, J. H. Murray, A. A. Rosenberg, R. Sumaila. 2013. A general business model for marine reserves. **PLoS One** 8(4): e58799. doi:10.1371/journal.pone.0058799

Branscomb, Lewis M., and Andrew A. Rosenberg. 2012. Researchers and conscientious citizens must unite against the partisan rancor in American politics and restore the role of scientific information in policymaking." **Scientist** 26 (10): 23.

Liu, H., Fogarty, M.J., Glaser, S.M., Altman, I., Hsieh, C.H., Kaufman, L., Rosenberg, A.A., Sugihara, G. 2012. Nonlinear dynamic features and co-predictability of the Georges Bank fish community. **Mar Ecol Prog Ser.** 464: 195-207.

Sala, E., E. Ballesteros, P. Dendrinos, A. Di Franco, F. Ferretti, D. Foley, S. Frascchetti, A. Friedlander, J. Garrabou, H. Güçlüsoy, P. Guidetti, B. S. Halpern, B. Hereu, A. A.

Karamanlidis, Z. Kizilkaya, E. Macpherson, L. Mangialajo, S. Mariani, F. Micheli, A. Pais, K. Riser, A.A. Rosenberg, M. Sales, K. A. Selkoe, R. Starr, F. Tomas, M. Zabala. 2012. The structure of mediterranean rocky reef ecosystems across environmental and human gradients, and conservation implications. **PLOS One**, 7(2): e32742. doi:10.1371/journal.pone.003274

Halpern, B. S., C. Longo, D. Hardy, K.L. McLeod, J. F. Samhuri, S. K. Katona, K. K. Kleisner, S. E. Lester, J. O'Leary, M. Ranneletti, A. A. Rosenberg, and 21 others. 2012. An index to assess health and benefits of the global ocean. **Nature** 488: 615-620.

Rosenberg, A. A. 2012. Changing U.S. ocean policy can set a new direction for marine resource management. **Ecology and Society** 14(2):6. 5p.

Halpern, B.S., J. Diamond, S. Gaines, S. Gelcich, M. Gleason, S. Jennings, S. Lester, A. Mace, L. McCook, K. McLeod, N. Napoli, K. Rawson, J. Rice, A. Rosenberg, M. Ruckelshaus, B. Saier, P. Sandifer, A. Sholtz, A. Zivian. 2011. Near-term priorities for the science, policy and practice of Coastal and Marine Spatial Planning (CMSP). **Marine Policy** 36:198-205.

Sugihara, G., J.R. Beddington, , C. Hsieh, E. Deyle, , M.J. Fogarty, S. M. Glaser, R. Hewitt, A. Hollowed, R. M. May, S. B. Munch, C. Perretti, A.A. Rosenberg, S. A. Sandin, and H. Ye. 2011. Are exploited fish populations stable? **Proc.of the Nat.Acad. of Sciences**. 108: E1224-E1225.

Wing, K.T, B. D. Gold, E. L. Miles and A. A. Rosenberg. 2011. President Obama's ocean policy and the rise of ecosystem-based management. **Solutions** 2: 31-32.

Garcia, S. M. and A. A. Rosenberg. 2010. Food security and marine capture fisheries: characteristics, trends, drivers and future perspectives. **Phil. Trans. Royal Soc Series B**. 365: 2869-2880.

Fautin, D., Dalton, P., Incze, L. S., Leong, J. C., Pautzke, C., Rosenberg, A., Sandifer, P., Sedberry, G., Tunnell, Jr, J. W., Abbott, I., Brainard, R. E., Brodeur, M., Eldredge, L. G., Feldman, M., Moretzsohn, F., Vroom, P. S., Wainstein, M., and Wolff, N. 2010. An overview of marine biodiversity in US waters. **PLOS ONE** 5(8): 47p.

Costello, C., A. Rassweiler, D. Siegel, G. de Leo, F. Micheli and A. A. Rosenberg. 2010. The value of spatial information in MPA network design. **Proc. Nat. Acad. Sci**.

Altman , I., A. M. H. Blakeslee , G. C. Osio, C. Rillahan , S. J. Teck , J. J. Meyer, J. E. Byers, and A. A. Rosenberg. 2010. A practical approach to guide the implementation of ecosystem-based management using the Gulf of Maine marine ecosystem as a case study. **Frontiers in Ecology and the Environment**.

Rosenberg, A. A. and C. B. Mogensen. 2010. Information issues and constraints in the design and implementation of stock rebuilding programs. Chapter 8 in OECD. Proceedings of the Workshop on the Economics of Rebuilding Fisheries.

Worm, B. R. Hilborn, J. K. Baum, T. A. Branch, J. S. Collie, C. Costello, M. J. Fogarty, E. A. Fulton, J. A. Hutchings, S. Jennings, O. P. Jensen, H. K. Lotze, P. M. Mace, T. R. McClanahan, C. Minto, S. R. Palumbi, A. M. Parma, D. Ricard, A. A. Rosenberg, R. Watson and D. Zeller. 2009. Rebuilding global fisheries. **Science** 325: 578-585.

Rosenberg, A. A.. 2009. Changing U.S. Ocean Policy Can Set a New Direction for Marine Resource Management. **Ecology and Society** 14 (2): 6. [online]

Grizzle, R. E., L. A. Ward, H. A. Abeels, L. A. Mayer, J. K. Greene, M. A. Malik, M. A. Brodeur, A. B. Cooper and A. A. Rosenberg. 2009. Effects of a large fishing closure on benthic communities in the western Gulf of Maine: recovery from the effects of gillnets and otter trawls. **Fish. Bull. U.S.** 107: 308-317.

MacKenzie, B.R., H. Mosegaard and A. A. Rosenberg. 2009. Impending collapse of bluefin tuna in the northeast Atlantic and Mediterranean. **Conservation Letters** 2(1):25-34.

Rosenberg, A. A. and P. A. Sandifer. 2009. Manager's perspective: the scientific and technical basis for implementing marine ecosystem-based management. In K. O. McLeod and H. Leslie (eds.) Ecosystem-based management of the ocean. Island Press, Washington, DC. 392p.

Rosenberg, A. A., M. Mooney-Seus, I. Kiessling, C.B. Mogensen, R. O'Boyle, J. Peacey, 2009. Lessons from national level implementation in North America and beyond. In K. O. McLeod and H. Leslie (eds.) Ecosystem-based management of the ocean. Island Press, Washington, DC. 392p.

Prager, M. H. and A. A. Rosenberg. 2008. Closing the loop in fishery management: the importance of instituting regular management review. **Conserv. Biol.** 22: 830-831.

Rosenberg, A. A. 2008. News and Views: the price of lice. **Nature** 451: 23-24.

Leslie, H. M., A. A. Rosenberg and J. Eagle. 2008. Two views: marine ecosystem-based management. **Frontiers in Ecol. Envir** 6: 2-7.

Halpern, B., K. O. McLeod, A. A. Rosenberg and L. B. Crowder. 2007. Managing for cumulative impacts in ecosystem-based management through ocean zoning. **Ocean and Coastal Manag.** 51: 203-211.

Rosenberg, A. A. 2007. Fishing for certainty – an essay on science and politics. **Nature** 449: 989.

Rosenberg, A. A. and C. W. Glass. 2007. Fisher's responses to management measures and their socio-economic effects. **ICES J. Mar. Sci.** 64: 1612-1613.

Rosenberg, A. A. 2007. Four ways to take the policy plunge: How should researchers best interact with policy-makers for maximum benefit to society? review of *The Honest Broker: making sense of science, policy and politics* by Roger Pielke Jr. **Nature** 448:867.

Myers, R. A., S. A. Boudreau, R. D. Kenney, M. J. Moore, A. A. Rosenberg, S. A. Sherrill-Mix, B. Worm. 2007. Saving Endangered Whales at No Cost. **Current Biology** 17(1): R10-R11.

Crowder, L. B., G. Osherenko, O.R. Young, S. Airame, E.A. Norse, N. Baron, J.C. Day, F. Douvère, C.N. Ehler, B.S. Halpern, S.J. Langdon, K.L. McLeod, J.C. Ogden, R.E. Peach, A.A. Rosenberg and J.A. Wilson. 2006. Resolving mismatches in U.S. ocean governance. **Science** 313: 617-618.

Stefansson, G. and A. A. Rosenberg. 2006. Designing marine protected areas for migrating fish stocks. **J. Fish. Biol.** 69: 66-78.

Rosenberg, A. A., J. H. Swasey, M. B. Bowman. 2006. Rebuilding US fisheries: progress and problems. **Frontiers in Ecology and the Environment** 4(7):303-308.

Rosenberg, A. A. 2006. Regional Governance and Ecosystem-Based Management of Ocean and Coastal Resources: can we get there from here? **Duke Environmental Law and Policy Forum** 16: 179-186.

Harrington, J. M., R. A. Myers and A. A. Rosenberg. 2005. Wasted fishery resources: discarded by-catch in the USA. **Fish and Fisheries** 6: 350-361.

Safina, C., A. A. Rosenberg, R. A. Myers, T. Quinn, and J. Collie 2005. U.S. Ocean fish recovery: keepers, throwbacks, and staying the course. **Science** 309: 707-708.

Rosenberg, A. A. and K. O. MacLeod 2005. Implementing ecosystem-based approaches to management for the conservation of ecosystem services. **Marine Ecol. Prog. Ser.** 300: 270-274.

Rosenberg, A. A., W. J. Bolster, K. E. Alexander, W. B. Leavenworth, A. B. Cooper, and M. G. McKenzie. 2005. The history of ocean resources: modeling cod biomass using historical records. **Frontiers Ecol. Envir.** 3:84-90.

Stefansson G. and A. A. Rosenberg. 2005. Combining control measures for more effective management of fisheries under uncertainty; quotas, effort limitation and protected areas. **Phil.**

Trans. Royal Soc Ser. B. 360:133-146.

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Rosenberg, A. A. 2002. The precautionary approach from a manager's perspective. **Bull. Marine Sci.** 70:577-588.

Maguire, J.J., R. Hilborn, A. Parma and A. A. Rosenberg. 2000. The precautionary approach and risk management: can they increase the probability of successes in fishery management? **Can. J. Fish Aquatic Sci.** 58:99-107.

Rosenberg, A. A. 1998. Controlling marine fisheries 50 years from now. **Journal of Northwest Atlantic Fishery Science**, 23:95-103.

Fogarty, M.J., R.K. Mayo, L. O'Brien, F.M. Serchuk and A. A. Rosenberg. 1996. Assessing uncertainty and risk in exploited marine populations. **Reliability Engineering and System Safety**, 54: 183-195.

Myers, R. A., N. J. Barrowman, J.A. Hutchings and A. A. Rosenberg. 1995. Population dynamics of exploited fish stocks at low population levels. **Science** 269.

Rosenberg, A. A., M. J. Fogarty, M. P. Sissenwine, J. R. Beddington and J.G. Shepherd 1993. Achieving sustainable use of renewable resources. **Science** 262: 828-829.

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Rosenberg, A. A. 1993. Defining overfishing - defining stock rebuilding: report of the second annual National Stock Assessment Workshop. U.S. Dept. Commerce NOAA Tech. Memo NMFS-F/SPO-8. 68p.

Rosenberg, A. A. and W. Hobart (eds) 1992. Our living oceans: report on the status of U.S. living marine resources, 1992. U.S. Dept. Commerce NOAA Tech Memo NMFS-F/SPO-2. 148p.

Fogarty, M. J., A. A. Rosenberg and M. P. Sissenwine. 1992. Fisheries risk assessment: sources of uncertainty. **Envir. Sci. Technol.** 26(3): 440-451.

Gulland, J. A. and A. A. Rosenberg. 1992. A review of length based methods of fish stock assessment. **FAO Tech. Rpt.** 323, 100p.

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Ye, Y. and A. A. Rosenberg. 1991. A study of the dynamics and management of the hairtail fishery in the East China Sea. **Aquat. Living Resour.** 4: 65-75.

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Rosenberg. A. A., J. R. Beddington, G. Kirkwood and J. Crombie. 1990. Assessing stocks of annual squid species. **Fisheries Research** 8; 335-350.

Beddington, J. R. , A. A. Rosenberg and J. Crombie 1990. Stock assessment and the provision of management advice for the shortfin squid fishery around the Falkland Islands. **Fisheries Research** 8: 351-365.

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Rosenberg. A. A. and J. R. Beddington. 1987. Monte Carlo testing of two methods for estimating growth from length frequency data with general conditions for their applicability. in Pauly, D. and G.R. Morgan (eds) Length based methods in fisheries research. ICLARM Conf. Proc. 13.

Rosenberg. A. A. and J. R. Beddington 1987. Harvesting interacting species of different lifespans. **IMA Journ. Math Appl. Med. Biol.**

Rosenberg. A. A. and J. G. Pope 1987. Comments on age-length vs length-age relationships. in Pauly, D. and G.P.Morgan (eds) Length based methods in fisheries research. ICLARM Conf. Proc. 13.

Rosenberg. A. A. and R. W. Doyle 1986. The dependence of recruitment on age-specific stock density for southwest Nova Scotia herring. **Can. J. Fish Aquat. Sci.** 43: 674-679.

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Lough, R. G., M. Pennington, G. Bolz and A. A. Rosenberg. 1982. Age and growth of larval Atlantic herring in the Gulf of Maine George's Bank region based on otolith growth increments. **Fish. Bull. U. S.** 80:187-199

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