

## ROBERT W. HOWARTH

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### A. Professional Preparation

Amherst College, Biology, B.A. (*magna cum laude*) 1974  
Massachusetts Institute of Technology/Woods Hole Oceanographic Institution Joint Program in  
Biological Oceanography, Ph.D. 1979  
Marine Biological Laboratory (Woods Hole), Noyes Postdoctoral Fellow, 1979

### B. Appointments

1993-present David R. Atkinson Professor of Ecology and Environmental Biology, Cornell  
2000-present Adjunct Senior Scientist, Ecosystems Center, Marine Biol. Lab, Woods Hole  
1983-present Founding Editor, *Biogeochemistry*; Editor-in-Chief (1983-2004)  
2000-2002 Senior Scientist and Oceans Program Director, Environmental Defense Fund  
1990-1993 Professor, Section of Ecology and Systematics, Cornell  
1985-1990 Associate Professor, Section of Ecology and Systematics, Cornell  
1984-1985 Associate Scientist, Ecosystems Center, Marine Biological Lab, Woods Hole  
1980-1984 Assistant Scientist, Ecosystems Center, Marine Biological Lab, Woods Hole

### C.1 Publications – 5 most relevant:

Howarth, R.W., M. Hayn, R.M. Marino, K. Foreman, P. Berg, A.E. Giblin, K. McGlathery, and D. Walker. 2014. Metabolism of a nitrogen-enriched coastal marine lagoon during the summertime. *Biogeochemistry* DOI 10.1007/s10533-013-9901-x

Hayn M, Howarth RW, Marino R, Ganju N, Berg P, Foreman PB, Giblin AE, and McGlathery K. 2013. Exchange of nitrogen and phosphorus between a shallow lagoon and coastal waters. *Estuaries & Coasts* DOI 10.1007/s12237-013-9699-8

Ganju, N.K, M. Hayn, S. Chen, R.W. Howarth, P.J. Dickhudt, A.L. Aretxabaleta, R. Marino. 2012. Tidal and groundwater fluxes to a shallow, microtidal estuary: constraining inputs through field observations and hydrodynamic modeling. *Estuaries and Coasts* 35: 1285-1298.

Howarth, R. W., G. Billen, F. Chan, D. Conley, S. C. Doney, J. Garnier, and R. Marino. 2011. Coupled biogeochemical cycles: Eutrophication and hypoxia in coastal marine ecosystems. *Frontiers in Ecology & Environment* 9: 18-26

Conley, D. J, H. Paerl, R. W. Howarth, D. F. Boesch, S. P. Seitzinger, K. E. Havens, C. Lancelot, & G. E. Likens. 2009. Controlling eutrophication: Nitrogen and phosphorus. *Science* 323: 1014-1015.

### C.2. Five other significant publications:

Howarth, R. W., D. Swaney, G. Billen, J. Garnier, B. Hong, C. Humborg, P. Johnes, C. Morth, and R. Marino. 2012. Nitrogen fluxes from large watershed to coastal ecosystems controlled by net anthropogenic nitrogen inputs and climate. *Frontiers in Ecology & Environment* 10: 37-43

Howarth, R., W., and A. Ingraffea. 2011. Should fracking stop? Yes, it is too high risk. *Nature* 477: 271-273.

- Townsend, A. & R. W. Howarth. 2010. Human acceleration of the global nitrogen cycle. *Scientific American* 302 (1): 32-39
- Howarth, R. W. 2008. Coastal nitrogen pollution: A review of sources and trends globally and regionally. *Harmful Algae* 8:14-20.
- Howarth, R. & R. Marino. 2006. Nitrogen as the limiting nutrient for eutrophication in coastal marine ecosystems: Evolving views over 3 decades. *Limnol. Oceanogr.* 51:364-376.

#### **D. Synergistic Activities**

**Governmental advisory boards:** Member, UNEP Working Group on Land and Soils of the International Resource Panel, United Nations Environmental Program (2008 – 2014); Representative from State of New York to the Scientific and Technical Advisory Committee of the Chesapeake Bay Program (2005-2013); Member, Northern Gulf of Mexico Hypoxia Advisory Panel, US Environmental Protection Agency (2006-2008); Coordinator and lead author, Working Group to Develop a Federal Interagency Research Plan for Coastal Nutrient Pollution (NOAA, EPA, USGS, and USDA, 2002-2003); and Chair, Committee on Causes and Consequences of Coastal Nutrient Pollution, National Academy of Sciences (1998-2000)

**Leadership on international programs:** Chair, International SCOPE Biofuels Project, International Council of Science (2007 - 2012); Director, North America Nitrogen Center, International Nitrogen Initiative (2003-2006); Lead Author, chapter on nutrient pollution, Millennium Ecosystem Assessment (2004-2005); and Co-Chair, International SCOPE Nitrogen Project, International Council of Science (1992-2002).

**Leadership in scientific societies:** President, Coastal & Estuarine Research Federation (2007-2009); Member, Board of Directors, Council of Scientific Society Presidents (2008-2010); and Chair, Committee on Energy & Environment, Council of Scientific Society Presidents (2007-2012)

**Recent awards:** Earth Day Keynote speaker, SUNY Stony Brook (2014), Ian Morris Distinguished Scholar, Horn Point Laboratory, University of Maryland (2014), Featured plenary speaker, World Water Day, Michigan Technological University (2014), Co-Winner, 2013 Atlas Award for Climate Heroes, Pritchard Award for Best Physical Oceanographic Paper in 2012-2013, Coastal & Estuarine Research Federation (2013); David Schindler Visiting Scholar, Trent University (2013); One of Time Magazine's 50 "People Who Mattered," Person of the Year issue (2011); Zayed International Prize for the Environment (2007); Selected by ISI Web of Science (Scientific Citation Index) as one of 250 most cited scientists in ecology and environmental science disciplines (2006, 2007, 2008, 2009, 2010, 2011, 2012, and 2013); Appointed to "Biology Faculty of 1,000" (2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, and 2013).