

BRUCE J. PETERSON

The Ecosystems Center  
Marine Biological Laboratory  
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Birthplace: Chicago, Illinois  
US Citizen

Research Interests: The theme of my research is the general topic of aquatic productivity. My approach to understanding aquatic productivity has been through the study of the cycles of water, carbon, nitrogen, phosphorus and sulfur at the process, ecosystem, and global levels.

Education: Ph.D., Cornell University, Ithaca, NY, 1971  
B.S., Bates College, Lewiston, ME, 1967, Biology (with honors)

Research Experience:

January 1976 - Present: The Ecosystems Center, Marine Biological Laboratory, Woods Hole, Massachusetts. Senior Scientist, December 1987 to Present. Research on biological processes at the ecosystem level with emphasis on cycling of nitrogen, phosphorus, sulfur and carbon. Associate Scientist, January 1980 to December 1987; Assistant Scientist, January 1977 to January 1980; Postdoctoral Associate, January 1976 to January 1977

July 1975 to December 1975 – Postdoctoral Research, North Carolina State University, Raleigh, North Carolina. Develop nutrient cycling process models based on field measurements of nitrogen, phosphorus and carbon cycling in the Pamlico River Estuary of North Carolina.

May 1974 to November 1974 – Postdoctoral Research, Hubbard Brook Ecosystem Study. Study carbon, nitrogen and phosphorus cycling in plankton and benthos.

June 1968 to April 1974. Cornell University, Ithaca, New York. Research Associate, June 1971 to April 1974. Nutrient limitation, phosphorus cycling and primary productivity in Cayuga Lake, New York. Research Assistant, June 1969 to September 1970. Cayuga Lake studies. Research Assistant, June 1968 to September 1968: Conduct sampling program as part of Bell Station Nuclear Power Plant impact studies.

Teaching Experience:

January 2006 to Present- Course lecturer and graduate student advisor in Brown-MBL joint program.

September, 1997 to Present - Course lecturing and laboratory teaching in the Semester in Environmental Science offered at the Marine Biological Laboratory.

January 1976 to Present - Course lecturing and laboratory teaching during the January and Summer Ecology Courses offered at the Marine Biological Laboratory (1976 to 1981). Research program advisor to Year-in-Science, Interns-in-Science, Surdna fellowship students, REU students, postdoctoral researchers and graduate students.

Honors and Professional Societies:

Phi Beta Kappa, Bates College, 1967  
Member, American Society of Limnology and Oceanography

Member, American Association for the Advancement of Science  
Fellow, American Association for the Advancement of Science  
Member, Marine Biological Laboratory Corporation  
Member, Estuarine Research Federation  
Member, American Geophysical Union  
Member, North American Benthological Society

Reviewer:

NSF - Polar Programs  
Ecology  
Ecosystems (Panel Member 1987-1988)  
Atmospheric Chemistry  
Biological Oceanography  
Hydrology  
U. S. Department of Energy  
U. S. Department of Agriculture  
NASA

Reviewer for Journals:

Limnology and Oceanography  
Science  
Ecology  
Biogeochemistry  
North American Benthological Society Journal  
Canadian Journal of Fisheries and Aquatic Sciences  
Global Biogeochemical Cycles

Service to Societies:

Editorial Board, Limnology and Oceanography, 1982-1985  
Board Member at Large, Limnology and Oceanography, 1984-1987  
Program Manager for ASLO Winter Meeting with AGU, 1986

Publications and Theses:

Peterson, B. J. 1971. The role of zooplankton in the phosphorus cycle of Cayuga Lake. Ph.D. Thesis. Cornell University, Ithaca, New York. 131 pp.  
Peterson, B. J., J. P. Barlow and A. E. Savage. 1973. Experimental studies on phytoplankton succession in Cayuga Lake. Publ. No. 71, Cornell University Water Resources and Marine Science Center, Ithaca, New York.

- Barlow, J. P., W. R. Schaffner, F. DeNoyelles, Jr. and B. J. Peterson. 1973. Continuous flow nutrient bioassays with natural phytoplankton populations, pp. 209-319. In: G. E. Glass (ed.), *Bioassay Techniques and Environmental Chemistry*. Ann Arbor Sci. Publishers.
- Barlow, J. P., B. J. Peterson and A. E. Savage. 1973. Continuous flow studies of phosphorus as a limiting nutrient for Cayuga Lake phytoplankton, pp. 7-14. *Proc. 16th Conference Great Lakes Res. (Int. Assoc. Great Lakes Res.)*.
- Peterson, B. J., J. P. Barlow and A. E. Savage. 1974. The physiological state with respect to phosphorus of Cayuga Lake phytoplankton. *Limnol. Oceanogr.* 19:396-408.
- Peterson, B. J. 1977. Phytoplankton production and phosphorus supply in Cayuga Lake 1968-1973. *Hydrobiologia* 54:113-127.
- Peterson, B. J. 1978. Radiocarbon uptake: Its relation to net particulate carbon production. *Limnol. Oceanogr.* 23:178-184.
- Peterson, B. J., J. E. Hobbie and J. Haney. 1978. *Daphnia* grazing on natural bacteria. *Limnol. Oceanogr.* 23:1039-1044.
- Jordan, M. J., and B. J. Peterson. 1978. Sulfate uptake as a measure of bacterial production. *Limnol. Oceanogr.* 23:146-150.
- Jordan, M. J., J. E. Hobbie and B. J. Peterson. 1978. Effect of petroleum hydrocarbons on microbial populations in an Arctic lake. *Arctic* 31:170-179.
- Tiwari, J. L., J. E. Hobbie and B. J. Peterson. 1978. Random differential equations as models of ecosystems III. Bayesian inference for parameters. *Math. Biosci.* 38:247-258.
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- Hall, C. A. S., N. Tempel and B. J. Peterson. 1979. A benthic chamber for intensely metabolic lotic systems. *Estuaries* 2:178-183.
- Peterson, B. J. 1980. Aquatic primary productivity and the  $^{14}\text{C}$ - $\text{CO}_2$  method: A history of the plankton productivity problem. *Ann. Rev. Ecol. Syst.* 11:359-385.
- Peterson, B. J., R. W. Howarth, F. Lipshultz and D. Ashendorf. 1980. Salt marsh detritus: An alternative interpretation of stable carbon isotope ratios and the fate of *Spartina alterniflora*. *Oikos* 34:173-177.
- Peterson, B. J. 1981. Perspectives on the importance of the oceanic particulate flux in the global carbon cycle. *Ocean Science and Engineering* 6:71-108.
- Peterson, B. J., J. E. Hobbie, T. L. Corliss and K. Kriet. 1981. A continuous-flow periphyton bioassay: Tests of nutrient limitation in a tundra stream. *Limnol. Oceanogr.* 28:583-591.
- Peterson, B. J., P. A. Steudler, R. W. Howarth, A. I. Friedlander, D. Juers and F. P. Bowles. 1981. Tidal export of reduced sulfur from a salt marsh ecosystem. In: R. O. Hallberg (ed.), *Proc. 5th International Symposium on Environmental Biogeochemistry*. *Ecol. Bull.* 35:153-165.
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- Peterson, B. J., and J. M. Melillo. 1984. Global carbon-nitrogen-phosphorus cycle interactions: A key to solving the atmospheric CO<sub>2</sub> balance problem?, pp. 97-116. In: Moore and Pastor (eds.), *The Interaction of Global Biochemical Cycles*. NASA JPL Publication 84-21.
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