

## **CHRISTOPHER NEILL**

Senior Scientist  
Woods Hole Research Center  
149 Woods Hole Road  
Falmouth, MA 02540  
Phone: (508) 444-1559  
Email: [cneill@whrc.org](mailto:cneill@whrc.org)  
Fax: (508) 444-1859

### **EDUCATION:**

1992 Ph.D. University of Massachusetts, Amherst, MA.  
1988 M.S. University of Massachusetts, Amherst, MA.  
1980 B.S. Cornell University, Ithaca, NY.

### **PROFESSIONAL APPOINTMENTS:**

July 2016 –present. Senior Scientist, Woods Hole Research Center, Falmouth, MA  
November 2012 – June 2016. Director, The Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA  
February 2010 – June 2016. Senior Scientist, The Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA  
February 2010 – present. Director, Brown-MBL Partnership and Brown-MBL Graduate Program in Biological and Environmental Sciences  
August 2004 – January 2010. Associate Scientist, The Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA  
June 2005 – present. Associate Professor (MBL), Brown University, Providence, RI  
June 2001 – February 2015. Director, Hands-on Environmental Laboratory for MBL's Logan Science Journalism Program.  
May 1997 – July 2004. Assistant Scientist. The Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA  
July 1994 - May 1997. Research Associate. The Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA.  
November 1991 - July 1994. Post-Doctoral Research Associate, The Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA.  
June – August during 1991 and 1993. Graduate Faculty, Masters of Science in Environmental Studies Program, Bard College, Annandale-on-Hudson, NY. Taught *Ecosystem Ecology*.  
September 1985 - October 1991. Graduate Research Assistant and Instructor, University of Massachusetts, Amherst, MA.

### **RESEARCH INTERESTS:**

Watershed biogeochemistry, ecosystem responses to deforestation and other land use changes, soil carbon and nutrient dynamics and trace gas exchanges, ecosystem restoration, tropical agriculture, wetland plant ecology and biogeochemistry, use of stable isotopes in ecosystem research

**RECENT AWARDS AND PROFESSIONAL ACTIVITIES**

2015. Review team, Computer, Environmental and Life Sciences Division, Argonne National Laboratory, Lamont, IL. September 15-17.
2015. Review team, Centro de Energia na Agricultura, University of São Paulo, Piracicaba, SP, Brazil. August 17-19.
2012. Collaborating PI on the Northeast Climate Science Center, University of Massachusetts, Amherst, MA.
2010. Bullard Fellow in Amazon Ecology. Harvard University, Petersham, MA. January to August 2010
- 1998 - present. Teach in MBL's Semester in Environmental Science undergraduate semester
- 2007 - present. Advise 1 PhD student at Brown University
- 1994 - present. Co-advised 4 PhD students and 2 MS student at CENA/USP, 3 PhD and 2 MS students at the University of Potsdam, 1 MS student at the University of Central Florida
2007. Fulbright Fellowship, Brazil. Residence at University of São Paulo, Piracicaba, January to June 2007
2007. Organizer and guest editor, Special issue of *Biological Conservation* on the ecology and management of coastal New England sandplains
- 2000-2006. Science team, NASA Large-Scale Biosphere-Atmosphere (LBA) Experiment in Amazônia
2006. Organizer and guest editor, Special LBA issue of *Hydrological Processes*
2006. Leader of LBA small watershed synthesis activity
- 2002-2007. Subject editor, *Plant and Soil*
- 2000-2007. Supervised Research Experience for Undergraduates as part of "Coastal Bays of New England" REU site
2002. Review team for International Center for Tropical Agriculture, Amazon Program, Cali, Colombia, April 8-12.
- Reviewer for: NSF, EPA, USDA, Conservation Biology, Biogeochemistry, Ecological Applications, Ecosystems, Forest Ecology and Management, Global Change Biology, Hydrological Processes, Limnology and Oceanography, Nature

**PUBLICATIONS:**

- In press. Nagy, R. C., E. B. Rastetter, C. Neill and S. Porder. Nutrient limitation in tropical secondary forests following different management practices. *Ecological Applications*.
2017. Riskin, S. H., C. Neill, K. Jankowski, A. V. Krusche, R. McHorney, H. Elsenbeer, M. M. Macedo, D. Nunez and S. Porder. Solute and sediment export from Amazon forest and soybean watersheds. *Ecological Applications* 27: 193-207.
2016. Tully, K. L. J. Hickman, M. McKenna, C. Neill and C. A. Palm. Effects of increased fertilizer application on inorganic soil N in East African maize systems. *Ecological Applications* 26:1907-1919.
2016. Neu, V., N. D. Ward, A. V. Krusche and C. Neill. Organic and inorganic carbon flow paths in an Amazonian transitional forest. *Frontiers in Marine Science*  
doi.org/10.3389/fmars.2016.00114.
2016. Groffman, P. M., J. M. Grove, C. Polsky, N. D. Bettez, J. L. Morse, J. Cavender-Bares, S. J. Hall, J. B. Heffernan, S. E. Hobbie, K. L. Larson, C. Neill, K. Nelson, L. Ogden, J. O'Neil-Dunne, D. Pataki and R. Roy Chowdhury. Natural versus anthropogenic controls on water

- and nitrogen use in the American residential macrosystem. *Environmental Research Letters*. doi:10.1088/1748-9326/11/3/034004
2016. Neill, C. and M. N. Macedo. The rise of Brazil's globally-connected Amazon soybean agriculture. Pages 167-186, in M. Gutmann and J. Lesser (eds), *Global Latin America: Into the Twenty-First Century*, University of California Press.
2016. Trammell, T. L. E., D. E. Pataki, J. Cavender-Bares, P. M. Groffman, S. J. Hall, J. B. Heffernan, S. E. Hobbie, J. L. Morse, C. Neill, and K. C. Nelson. Plant nitrogen concentration and isotopic composition in residential lawns across seven U.S. cities. *Oecologia*. DOI 10.1007/s00442-016-3566-9.
2015. Wood, S. A., M. Almaraz, M. A. Bradford, K. McGuire, S. Naeem, C. Neill, C. Palm, K. L. Tully and J. Zhou. Farm management, not soil microbial diversity, controls nutrient loss from smallholder tropical agriculture. *Frontiers in Terrestrial Microbiology*. doi.org/10.3389/fmicb.2015.00090.
2015. Wheeler, M., C. Neill, E. Loucks, A. Weiler, B. Von Holle, M. Pelikan and T. Chase. Vegetation removal and seed addition influence coastal sandplain grassland establishment on former agricultural fields. *Restoration Ecology* 23:539–547. DOI: 10.1111/rec.12253.
2015. Tully, K. L., S. A. Wood, M. Almaraz, C. Neill and C. A. Palm. The effect of the African Green Revolution interventions on yields and nitrogen balances in smallholder maize farms in Western Kenya. *Agriculture, Ecosystems and Environment* 214:10–20.
2015. Rheuban, J. E., S. Williamson, J. E. Costa, D. M. Glover, R. W. Jakuba, D. C. McCorkle, C. Neill, T. Williams and S. C. Doney. Spatial and temporal trends in summertime climate and water quality indicators in the coastal embayments of Buzzards Bay, Massachusetts. *Biogeosciences* 12: 1-13, DOI: 10.5194/bg-12-1-2015.
2015. Neill, C., M. Wheeler, E. Loucks, A. Weiler, B. Von Holle, M. Pelikan and T. Chase. Influence of soil properties on coastal sandplain grassland establishment on former agricultural fields. *Restoration Ecology* 23:531-538. DOI: 10.1111/rec.12196.
2015. Nagy, R. C., S. Porder, C. Neill, P. M. Brando, R. M. Quantino and S. A. do Nascimento. Structure and composition of riparian forest fragments in an agricultural Amazonian landscape. *Ecological Applications* 26: 1725-1738.
2015. Larson, K. L., K. C. Nelson, S. R. Samples, S. J. Hall, N. Bettez, J. Cavender-Bares, P. M. Groffman, M. Grove, J. B. Heffernan, S. Hobbie, J. Learned, J. L. Morse, C. Neill, L. A. Ogden, J. O'Neil-Dunne, D. E. Pataki, C. Polsky, R. Roy Chowdhury, M. Steele, and T. L. E. Trammell. Ecosystem service preferences and priorities for residential landscapes: Homogeneity and heterogeneity across diverse cities. *Urban Ecosystems*. DOI 10.1007/s11252-015-0477.
2015. Hall, S. J., J. Learned, B. Rudell, K. Larson, J. J. Cavender-Bares, N. Bettez, P. M. Groffman, J. M. Grove, J. B. Heffernan, S. E. Hobbie, J. L. Morse, C. Neill, K. C. Nelson, J. O'Neil-Dunne, L. Ogden, D. E. Pataki, William D. Pearse, C. Polsky, R. Roy Chowdhury, M. K. Steele, and T. Trammel. Convergence of microclimate in residential landscapes across diverse cities in the US. *Landscape Ecology*. doi:10.1007/s10980-015-0297-y.
2015. Dias, L. C., M. N. Macedo, M. H. Costa, M. T. Coe and C. Neill. Effects of land cover change on evapotranspiration and streamflow of small catchments in the Upper Xingu River Basin, Central Brazil. *Journal of Hydrology—Regional Studies* 4:108-122.
2014. Steele, M. K., J. B. Heffernan, N. Bettez, J. Cavender-Bares, P. M. Groffman, M. Grove, S. Hall, S. E. Hobbie, K. Larson, J. L. Morse, C. Neill, K. C. Nelson, J. O'Neil-Dunne, L.

- Ogden, D. E. Pataki, C. Polsky and R. Roy Chowdhury. Convergent surface water distributions in US cities. *Ecosystems* 17: 685-697.
2014. Polsky, C., J. M. Grove, C. Knudson, P. M. Groffman, N. Bettez, J. Canvender-Bares, S. J. Hall, J. B. Heffernan, S. E. Hobbie, K. L. Larson, J. L. Morse, C. Neill, K. C. Nelson, L. A. Ogden, J. O'Neil-Dunne, D. E. Pataki, R. Roy Chowdhury and M. Steele. Assessing the homogenization of urban land management with an application to US residential lawn care. *Proceedings of the National Academy of Sciences* 111: 4432-4437.
2014. Groffman, P. M., J. Canvender-Bares, N. D. Bettez, J. M. Grove, S. J. Hall, J. B. Heffernan, S. E. Hobbie, K. L. Larson, J. L. Morse, C. Neill, K. Nelson, J. O'Neil-Dunne, L. Ogden, D. E. Pataki, C. Polsky, R. Roy Chowdhury and M. K. Steele. Ecological homogenization of urban USA. *Frontiers in Ecology and Environment* 12: 74-81.
2013. Von Holle, B., C. Neill, E. F. Largay, B. Ozimec, S. A. Clark, J. Oset, and K. Lee. Biogeochemical legacy of the introduced N-fixing tree, *Robinia pseudoacacia*, in Cape Cod forests. *Oecologia* 172:915-924.
2013. Riskin, S. H., S. Porder, M. Schipanski, E. Bennett and C. Neill. Soils mediate environmental consequences of intensive soybean agriculture. *BioScience* 63: 49-54.
2013. Riskin, S. H., S. M. Porder, C. Neill, A. M. Figueira, C. Tubbesing and N. Mahowald. The fate of phosphorus fertilizer along a chronosequence of soy fields on the Amazonian agricultural frontier. *Philosophical Transactions of the Royal Society B* 368: 20120154.
2013. Neill, C., M. T. Coe, S. H. Riskin, A. V. Krusche, H. Elsenbeer, M. N. Macedo, R. McHorney, P. Lebeuvre, E. A. Davidson, R. Scheffler, M. Figueira, S. Porder and L. A. Deegan. Small watershed responses to Amazon soybean cropland expansion and intensification. *Philosophical Transactions of the Royal Society B* 368: 20120425.
2013. Macedo, M. N., M. T. Coe, R. S. DeFries, M. Uriarte, P. M. Brando, C. Neill and W. S. Walker. Influence of land use and land management on headwater stream temperatures in the Amazon's agricultural frontier. *Philosophical Transactions of the Royal Society B* 368: 20120153.
2013. Deegan, L. A., C. Neill, R. L. Victoria, A. V. Krusche, M. V. R. Ballester, S. Thomas, and C. Hauptert. Using whole stream <sup>15</sup>N additions to streams understand the effects of land use change on stream function. Application of isotope techniques for water quality assessment and management, focusing on nutrient management, in rivers. Pages 69-92 in *Application of Isotope Techniques for Assessing Nutrient Dynamics in River Basins*, International Atomic Energy Agency, IAEA-TECDOC series, ISSN 1011-4289, no. 1695, Vienna, Austria.
2013. Ballester, M. V. R., R. L. Victoria, A. V. Krusche, M. Bernardes, C. Neill, L. A. Deegan and J. E. Richey. Physical and human controls on the carbon composition of organic matter in tropical rivers: An integrated analysis of landscape properties and river isotopic composition. Pages 173-186 in *Application of Isotope Techniques for Assessing Nutrient Dynamics in River Basins*, International Atomic Energy Agency, IAEA-TECDOC series, ISSN 1011-4289, no. 1695, Vienna, Austria.
2012. Raciti, S., T. Fahey, B. Hall, C. Driscoll, F. J. Carranti, D. Foster, P. S. Gwyther, J. Jenkins, J. Jenkins, S. Hamburg, C. Neill, S. Ollinger, B. W. Peery, E. Quigley, R. Sherman, R. Q. Thomas, M. Vadeboncoeur, D. Weinstein, G. Wilson, P. Woodbury and W. Yandik. Local scale carbon budgets and mitigation opportunities for the Northeastern United States. *BioScience* 62:23-38.
2012. Germer, S., A. Zimmerman, C. Neill, A. V. Krusche and H. Elsenbeer. Disproportionate single species contribution to canopy-soil nutrient flux in an Amazonian rainforest. *Forest*

- Ecology and Management* 267: 40-49.
2012. Baese, F., H. Elsenbeer, C. Neill and A. V. Krusche. Differences in throughfall and net precipitation between soybean and transitional tropical forest in the southern Amazon, Brazil. *Agriculture, Ecosystems and Environment* 159: 19-28.
2011. Scheffler, R., C. Neill, A. V. Krusche and H. Elsenbeer. Soil hydraulic responses to land-use change associated with the recent soybean expansion at the Amazon cropland frontier. *Agriculture, Ecosystems and Environment* 144: 281-289.
2011. Neu, V., C. Neill and A. V. Krusche. Gaseous and fluvial carbon export from an Amazon forest watershed. *Biogeochemistry* 105:133-147.
2011. Neill, C., J. Chaves, T. Biggs, E. A. Davidson, L. A. Deegan, H. Elsenbeer, R. Figueiredo, S. Germer, M. Johnson, J. Lehmann, D. Markewitz and M. C. Piccolo. Runoff sources and land cover change in the Amazon: An end member mixing analysis from small watersheds. *Biogeochemistry* 105:7-18.
2011. Markewitz, D., C. Lamon, M. Bustamante, J. Chaves, R. de O. Figueiredo, M. Johnson, A. Krusche, C. Neill and J. Solimão. Discharge-calcium concentration relationships in Brazil: Soil or land use controlled. *Biogeochemistry* 105:19-35.
2011. Hayhoe, S. J., C. Neill, S. Porder, R. McHorney, P. Lefebvre, M. T. Coe, H. Elsenbeer and A. V. Krusche. Conversion to soy on the Amazonian agricultural frontier increases streamflow without affecting stormflow dynamics. *Global Change Biology* 17: 1821-1833.
2011. Deegan, L. A., C. Neill, C. L. Hauptert, M. V. R. Ballester, A. V. Krusche, R. L. Victoria, S. M. Thomas and E. de Moor. Amazon deforestation alters small stream structure, nitrogen biogeochemistry and connectivity to larger rivers. *Biogeochemistry* 105:53-74.
2010. Germer, S., C. Neill, A. V. Krusche and H. Elsenbeer. Influence of land-use change on near-surface hydrological processes: Undisturbed forest to pasture. *Journal of Hydrology* 380: 473-480.
2010. Cleveland, C. C., B. Z. Houlton, C. Neill, S. C. Reed, A. R. Townsend and Y. Wang. Using indirect methods to constrain symbiotic nitrogen fixation rates: A case study from an Amazonian rain forest. *Biogeochemistry* 99:1-13.
2009. Tomasella, J., C. Neill, R. Figueiredo and A. D. Nobre. Water and chemical budgets at the catchment scale including nutrient exports from intact forests and disturbed landscapes. Pages 505-524 in M. Keller, M. Bustamante, J. Gash and P. S. Dias (eds), *Amazonia and Global Change*, Geophysical Monograph Series, Volume 186, American Geophysical Union, Washington, DC. 576 pp.
2009. Neill, C., M. O. Bezerra, R. McHorney and C. B. O'Dea. Distribution, species composition and management implications of seed banks in southern New England coastal plain ponds. *Biological Conservation* 142: 1350-1361.
2009. Kniffin, M., C. Neill, R. M. McHorney and G. Gregory. Nutrient limitation of periphyton and phytoplankton in Cape Cod coastal plain ponds. *Northeastern Naturalist* 16:395-408.
2009. Germer, S., C. Neill, T. Vetter, J. Chaves, A. V. Krusche and H. Elsenbeer. Implications of long-term land-use change on the hydrology and solute budgets of small catchments in Rondônia (Brazil). *Journal of Hydrology* 364: 349-363. doi:10.1016/j.jhydrol.2008.11.013.
2009. Chaves, J., C. Neill, S. Germer, S. Gouveia Neto, A. V. Krusche, A. Castellanos Bonilla and H. Elsenbeer. Nitrogen transformations in flowpaths leading from soils to streams in Amazon forest and pasture. *Ecosystems* 12: 961-972.
2008. Zimmermann, A., S. Germer, C. Neill, A. V. Krusche, J. Chaves and H. Elsenbeer. Spatio-temporal patterns of throughfall water and solute deposition in an open tropical rain

- forest, south–western Amazonia, Brazil. *Journal of Hydrology* 360: 87-102, doi: 10.1016/j.hydrol.2008.07.028.
2008. Davidson, E. A., G. P. Asner, T. Stone, C. Neill and R. O. Figueiredo. Objective indicators of pasture degradation from spectral mixture analysis of Landsat imagery. *Journal of Geophysical Research* 113: G00B03, doi:10.1029/2007JG000622.
2008. Chaves, J., C. Neill, H. Elsenbeer, A. Krusche, S. Germer and S. Gouveia Neto. Land management impacts on runoff sources in small Amazon watersheds. *Hydrological Processes* 22: 1766-1775.
2007. Piccolo, M. C. and C. Neill. Mineralização e nitrificação do nitrogênio do solo sob floresta e pastagem na amazônia brasileira. Pages 581-634 in T Yamada, S. R. Stipp and A. G. C. Vitte (eds), Nitrogênio e enxofre na agricultura Brasileira. International Plant Nutrition Institute, Piracicaba, SP, Brazil.
2007. Neill, C., W. A. Patterson, III and David W. Crary, Jr. Responses of soil carbon, nitrogen and cations to the frequency and seasonality of prescribed burning in a Cape Cod oak-pine forest. *Forest Ecology and Management* 250: 234-243.
2007. Neill, C., B. Von Holle, K. Kleese, K. R. Ivy, A. R. Collins, C. Treat and M. Dean. Historical influences on the vegetation and soils of the Martha's Vineyard, Massachusetts coastal sandplain: Implications for conservation and restoration. *Biological Conservation* 136: 17-32.
2007. Neill, C. The challenge of managing disturbance regimes, terrestrial communities and rare species in a suburbanizing region: the Northeastern U.S. coastal sandplain. *Biological Conservation* 136: 1-3.
2007. McHorney, R. M. and C. Neill. Alteration of water levels in a Massachusetts coastal plain pond subject to municipal ground water withdrawals. *Wetlands* 27:366-380.
2007. Germer, S., C. Neill, A. V. Krusche, S. Gouveia Neto and H. Elsenbeer. Seasonal and within-event dynamics of rainfall and throughfall chemistry in an open tropical rainforest in Rondônia, Brazil. *Biogeochemistry* 86: 155-174.
2006. Neill, C., M. C. Piccolo, C. C. Cerri, P. A. Steudler and J. M. Melillo. Soil solution and nitrogen oxide losses during clearing of lowland Amazon forest for cattle pasture. *Plant and Soil* 281: 233-245.
2006. Neill, C., L. A. Deegan, S. M. Thomas, C. L. Hauptert, A. V. Krusche, V. M. Ballester and R. L. Victoria. Deforestation alters channel hydraulic and biogeochemical characteristics of small lowland Amazonian streams. *Hydrological Processes* 20: 2563-2580.
2006. Neill, C., H. Elsenbeer, A. V. Krusche, J. L. Lehmann, D. Markewitz and R. O de Figueiredo. Hydrological and biogeochemical processes in a changing Amazon: Results from small watershed studies and the Large-Scale Biosphere-Atmosphere Experiment. *Hydrological Processes* 20: 2467-2476.
2006. Lezberg, A. L., K. Buresch, C. Neill and T. Chase. Mechanical land clearing to promote establishment of coastal sandplain grassland and shrubland communities. *Restoration Ecology* 14:220-232.
2005. Neill, C., P. A. Steudler, D. C. Garcia-Montiel, J. M. Melillo, B. J. Feigl, M. C. Piccolo, C. C. Cerri. Rates and controls of nitrous oxide and nitric oxide emissions following conversion of forest to pasture in Rondônia. *Nutrient Cycling in Agroecosystems* 71:1-15.
2005. Krusche, A. V., M. V. R. Ballester, R. L. Victoria, M. C. Bernardes, N. K., L. Hanada, R. Marcondes, D. C. Victoria, A. M. Toledo, J. P. Ometto, M. Z. Moreira, A. M. Toledo, M. A. Boloso, S. G. Neto, N. Bonelli, L. A. Deegan, C. Neill, S. M. Thomas, A. Aufdenkampe and

- J. E. Richey. As mudanças no uso da terra e a biogeoquímica dos corpos d'água na Amazônia. *Acta Amazonica* 35: 197-205.
2005. do Carmo, J. B., C. Neill, D. C. Garcia-Montiel, M. C. Piccolo, C. C. Cerri, P. A. Steudler, C. A. Andrade, C. C. Passianoto, B. J. Feigl and J. M. Melillo. Nitrogen dynamics during till and no-till pasture reformation sequences in Rondônia, Brazil. *Nutrient Cycling in Agroecosystems* 71:213-225.
2005. Cerri, C. C., J. M. Melillo, B. J. Feigl, M. C. Piccolo, C. Neill, P. A. Steudler, M. da C. S. Carvalho, V. P. Godinho, C. E. P. Cerri and M. Bernoux. Recent history of agriculture of the Brazilian Amazon Basin: Prospects for sustainable development and a first look at the biogeochemical consequences of pasture reformation. *Outlook on Agriculture* 34:215-233.
2004. Thomas, S. M., C. Neill, L. A. Deegan, A. V. Krusche, R. Victoria and M. V. Ballester. Influences of land use and stream size on particulate and dissolved materials in a small Amazonian stream network. *Biogeochemistry* 68:135-151.
2004. Garcia-Montiel, J. M. Melillo, P. A. Steudler, H. Tian, C. Neill, D. W. Kicklighter, B. Feigl and C. C. Cerri. Emissions of N<sub>2</sub>O and CO<sub>2</sub> from terra firme forests in Rondônia, Brazil. *Ecological Applications* 14: S214-S220.
2004. Davidson, E. A., C. Neill, A. V. Krusche, D. Markewitz, R. de O. Figueiredo and M. V. R. Ballester. Loss of nutrients from terrestrial ecosystems to streams and the atmosphere following land use change in Amazonia. Pages 147-158 in G. Asner and R. DeFries (eds.), *Ecosystems and Land Use Change*, American Geophysical Union Monographs Series 153.
2003. Peterson, G. G. and C. Neill. Using soil  $\delta^{13}\text{C}$  to detect the historic presence of little bluestem (*Schizachyrium scoparium*) grasslands on Martha's Vineyard. *Restoration Ecology* 11:116-122.
2003. Garcia-Montiel, D. C., P. A. Steudler, M. Piccolo, C. Neill, J. M. Melillo and C. C. Cerri. Nitrogen oxide emissions following wetting of dry soils in forest and pastures in Rondônia, Brazil. *Biogeochemistry* 64: 319-336.
2002. Steudler, P. A., D. C. Garcia-Montiel, M. C. Piccolo, C. Neill, J. M. Melillo, B. J. Feigl and C. C. Cerri. Trace gas responses to N and P fertilization of tropical forest and pasture soils. *Global Biogeochemical Cycles* 16: 7-1 to 7-12.
2002. Garcia-Montiel, D. C., J. M. Melillo, P. A. Steudler, H. Tian, C. Neill, D. W. Kicklighter and C. C. Cerri. Nitrous oxide emissions from the Amazon Basin as estimated by soil respiration. *Geophysical Research Letters* 29:14-1 to 14-3.
2001. Neill, C., L. A. Deegan, S. M. Thomas and C. C. Cerri. Deforestation for pasture alters nitrogen and phosphorus in soil solution and streamwater of small Amazonian watersheds. *Ecological Applications* 11: 1817-1828.
2001. Melillo, J. M., P. A. Steudler, B. J. Feigl, C. Neill, D. Garcia, M. C. Piccolo, C. C. Cerri and H. Tian. Nitrous oxide emissions from forests and pastures of various ages in the Brazilian Amazon. *Journal of Geophysical Research* 106:34,179-34,188.
2001. Garcia-Montiel, D. C., P. A. Steudler, M. C. Piccolo, J. M. Melillo, C. Neill and C. C. Cerri. Controls on soil nitrogen oxide emissions from forest and pastures in the Brazilian Amazon. *Global Biogeochemical Cycles* 15:1021-1030.
2001. Cornelissen, J. H. C., T. V. Callaghan, J. M. Atalalo, A. Michelsen, E. Graglia, A. E. Hartley, D. S. Hik, S. E. Hobbie, M. C. Press, C. H. Robinson, G. H. R. Henry, G. R. Shaver, G. K. Phoenix, D. Gwynn Jones, S. Jonasson, F. S. Chapin, III, U. Molau, C. Neill, J. A. Lee, J. M. Melillo, B. Sveinbjörnsson and R. Aerts. Global change and arctic ecosystems: is lichen decline a function of increases in vascular plant biomass? *Journal of Ecology* 89:984-994.

2000. Neill, C. and E. A. Davidson. Soil carbon accumulation or loss following deforestation for pasture in the Brazilian Amazon. Pages 197-211 in R. Lal, J. M. Kimble and B. A. Stewart (eds.), *Global Climate Change and Tropical Ecosystems*, CRC Press, NY.
2000. Garcia-Montiel, D., C. Neill, J. M. Melillo, S. M. Thomas, P. A. Steudler and C. C. Cerri. Soil phosphorus transformations after forest clearing for pasture in the Brazilian Amazon. *Soil Science Society of America Journal* 64:1792-1804.
1999. Neill, C., M. C. Piccolo, J. M. Melillo, P. A. Steudler and C. C. Cerri. Nitrogen dynamics in Amazon forest and pasture soils measured by  $^{15}\text{N}$  pool dilution. *Soil Biology and Biochemistry* 31:567-572.
1999. Hartley, A. E., C. Neill, R. Crabtree, J. M. Melillo and F. P. Bowles. Plant performance and soil N mineralization in response to simulated climate change in subarctic dwarf shrub heath. *Oikos* 86:331-343.
1998. Bernoux, M., C. Cerri, C. Neill and J. F. L. Moraes. The use of stable isotopes for estimating soil organic matter turnover rates. *Geoderma* 82:43-58.
1997. Neill, C., M. C. Piccolo, C. C. Cerri, P. A. Steudler, J. M. Melillo and M. Brito. Net nitrogen mineralization and net nitrification rates in soils following deforestation for pasture across the southwestern Brazilian Amazon Basin landscape. *Oecologia* 110:243-252.
1997. Neill, C., J. M. Melillo, P. A. Steudler, C. C. Cerri, J. F. L. Moraes, M. C. Piccolo and M. Brito. Soil organic matter stocks following forest clearing for pasture in the southwestern Brazilian Amazon. *Ecological Applications* 7:1216-1225.
1997. Neill, C., C. C. Cerri, J. M. Melillo, B. J. Feigl, P. A. Steudler, J. F. L. Moraes and M. C. Piccolo. Soil carbon stocks and dynamics following deforestation for pasture in Rondônia. Pages 9-28 in R. Lal, J.M. Kimble, R. F. Follett and B. A. Stewart (eds.), *Soil Processes and the Carbon Cycle*. CRC Press, NY.
1996. Steudler, P. A., J. M. Melillo, B. J. Feigl, C. Neill, M. C. Piccolo and C. C. Cerri. Consequence of forest-to-pasture conversion on  $\text{CH}_4$  fluxes in the Brazilian Amazon Basin. *Journal of Geophysical Research* 101:18,547-18,554.
1996. Piccolo, M. C., C. Neill, J. M. Melillo, C. C. Cerri and P. A. Steudler.  $^{15}\text{N}$  natural abundance in forest and pasture soils of the Brazilian Amazon Basin. *Plant and Soil* 182:249-258.
1996. Neill, C., B. Fry, J. M. Melillo, P. A. Steudler, J. L. Moraes and C. C. Cerri. Forest- and pasture-derived carbon contributions to carbon stocks and microbial respiration of tropical pasture soils. *Oecologia* 107:113-119.
1996. Fry, B., R. Garritt, K. Tholke, C. Neill, R. H. Michener, F. J. Mersch and W. Brand. Cryoflow: cryofocusing nanomole amounts of  $\text{CO}_2$ ,  $\text{N}_2$  and  $\text{SO}_2$  from an elemental analyzer for stable isotopic analysis. *Rapid Communications in Mass Spectrometry* 10:953-958.
1995. Neill, C., M. C. Piccolo, P. A. Steudler, J. M. Melillo, B. Feigl and C. C. Cerri. Nitrogen dynamics in soils of forests and active pastures in the western Brazilian Amazon Basin. *Soil Biology and Biochemistry* 27:1167-1175.
1995. Neill, C. Seasonal flooding, nitrogen availability and nitrogen utilization in a prairie marsh. *Biogeochemistry* 30:171-189.
1995. Moraes, J. L., C. C. Cerri, J. M. Melillo, D. Kicklighter, C. Neill, D. L. Skole and P. A. Steudler. Soil carbon stocks of the Brazilian Amazon basin. *Soil Science Society of America Journal* 59:244-247.
1995. Cornwell, J. C., C. Neill and C. Stevenson. Biogeochemical origin of  $\delta^{34}\text{S}$  signatures in a prairie marsh. *Canadian Journal of Fisheries and Aquatic Sciences* 52:1816-1820.



1994. Turner, R. E., J. M. Lee and C. Neill. Backfilling canals to restore wetlands: empirical results in coastal Louisiana. *Wetlands Ecology and Management* 3:63-78.
1994. Piccolo, M. C., C. Neill and C. C. Cerri. Net nitrogen mineralization and net nitrification along a tropical forest-to-pasture chronosequence. *Plant and Soil* 162:61-70.
1994. Piccolo, M. C., C. Neill and C. C. Cerri. <sup>15</sup>N abundance in soils along forest-to-pasture chronosequences in the western Brazilian Amazon Basin. *Oecologia* 99:112-117.
1994. Neill, C. Seasonal flooding and primary production in prairie marshes harvested for wild hay. *Canadian Journal of Botany* 72:801-807.
1994. Neckles, H. A. and C. Neill. Hydrologic control of litter decomposition in seasonally flooded prairie marshes. *Hydrobiologia* 286:155-165.
1994. Day, J. W., F. H. Sklar, C. Neill, W. H. Conner, C. S. Hopkinson, G. P. Kemp and R. Costanza. Modeling of Louisiana swamp forests (USA). Pages 95-128, in B. C. Patten (ed.), *Wetlands and Shallow Continental Waterbodies, Volume 2*. SBD Academic Publishing, The Hague, Netherlands.
1993. Neill, C. Seasonal flooding, soil salinity and primary production in northern prairie marshes. *Oecologia* 94:499-505.
1993. Neill, C. Growth and resource allocation of whitetop (*Scolochloa festucacea*) along a water depth gradient. *Aquatic Botany* 46:235-246.
1992. Neill, C. Life history and population dynamics of shoots of whitetop (*Scolochloa festucacea*) under different levels of flooding and nitrogen supply. *Aquatic Botany* 42:241-252.
1992. Neill, C. Comparison of biomass cores and ingrowth techniques for measuring belowground production. *Ecology* 73:1918-1921.
1992. Neill, C. and J. C. Cornwell. Stable carbon, nitrogen and sulfur isotopes in a prairie marsh food web. *Wetlands* 12:217-224.
1990. Neill, C. The effect of nitrogen additions on species composition in prairie whitetop (*Scolochloa festucacea*) marshes. *Canadian Journal of Botany* 68:1015-1020.
1990. Neill, C. Nutrient limitation of hardstem bulrush (*Scirpus acutus* Muhl.) in a Manitoba Interlake Region marsh. *Wetlands* 10:69-76.
1990. Neill, C. Effects of nutrients and water levels on emergent macrophyte biomass in a prairie marsh. *Canadian Journal of Botany* 68:1007-1014.
1987. Neill, C. and R. E. Turner. Comparison of fish communities in open and plugged backfilled canals in Louisiana coastal marshes. *North American Journal of Fisheries Management* 7:57-62.
1987. Neill, C. and R. E. Turner. Backfilling canals to mitigate wetland dredging in Louisiana coastal marshes. *Environmental Management* 11:853-836.
1987. Neill, C. and C. A. S. Hall. Shale oil. Pages 221-228, in C. A. S. Hall, C. J. Cleveland, and R. Kaufmann. *Energy, Resource Quality, and Economic Systems*. J. Wiley and Sons, NY.
1986. Neill, C. and L. A. Deegan. The effect of Mississippi River delta lobe development on the habitat composition and diversity of Louisiana coastal wetlands. *American Midland Naturalist* 116:296-303.
1984. Deegan, L. A., H. M. Kennedy and C. Neill. Natural factors and human modifications contributing to marsh loss in Louisiana's Mississippi River deltaic plain. *Environmental Management* 8:519-528.
1984. Costanza, R. and C. Neill. Energy intensities, interdependence, and value in ecological systems: a linear programming approach. *Journal of Theoretical Biology* 106:41-57.

1983. Turner, R. E., K. L. McKee, W. B. Sikora, J. P. Sikora, C. Neill, S. G. Leibowitz, and F. Pedrazini. The impact and mitigation of man-made canals in coastal Louisiana. *Water, Science and Technology* 16:497-504.

Non-Technical Articles, Published Proceedings and Reports:

2016. Neill, C., C. Palm, P. Lefebvre and K. Tully. Using soil characteristics to target sustainable intensification of maize-based agriculture in East Africa. Report to the International Wheat and Maize Improvement Center, Mexico City. 13 pp.

1994 - 2011. More than 150 columns on ecology, birds and conservation for *The Enterprise* newspaper, Falmouth, MA.

2011. Fahey, T., F. J. Carranti, C. Driscoll, D. Foster, P. S. Gwyther, S. Hamburg, B. Hall, J. C. Jenkins, J. Jenkins, C. Neill, S. Ollinger, B. W. Peery, E. Quigly, S. Raciti, R. Sherman. R. Q. Thomas, M. Vandeboncoeur, D. Weinstein, G. Wilson, P. Woodbury and W. Yandik. Carbon and communities: Linking carbon science with public policy and resource management in New England. Hubbard Brook Research Foundation, Science Links Publication, Volume 1, No. 4.

2004. Neill, C. Coyotes and the food chain. *Bird Observer* 32:172-173.

2003. Neill, C. Anatomical and physiological changes in birds. *Bird Observer* 31:229-230.

2003. Neill, C. Tracking ospreys with transmitters. *Bird Observer* 31:23-25.

2001. Hinckley, E.-L. S., C. Neill, R. McHorney and A. Lezberg. Dissolved nitrogen dynamics under a coastal Massachusetts forest. *Biological Bulletin* 201:288-290.

2001. Hauxwell, A. M., C. Neill, I. Valiela and K. D. Kroeger. Small-scale heterogeneity of nitrogen concentrations in groundwater at the seepage face of Edgartown Great Pond. *Biological Bulletin* 201:290-292

1998. Neill, C. Rondônia redux: Will Rondônia retrace New England forest history? *Sanctuary Magazine* (Magazine of the Massachusetts Audubon Society), September-October.

1993. Turner, R. E., J. M. Lee and C. Neill. Backfilling canals as a wetland restoration technique in coastal Louisiana. U.S. Department of Interior, Minerals Management Service, Gulf of Mexico OCS Regional Office, New Orleans, LA.

1988. Turner, R. E., I. A. Mendelssohn, K. L. McKee, R. Costanza, C. Neill, J. P. Sikora, W. B. Sikora and E. Swenson. Backfilling canals in coastal Louisiana. Pages 135-143, in J. A. Kusler, M. L. Quammen and G. L. Brooks, eds., *Proceedings of the National Wetlands Symposium: Mitigation of Impacts and Losses*. Association of State Wetland Managers, Berne, NY.

1987. Larson, J. S. and C. Neill, eds. *Mitigating Freshwater Wetland Alterations in the Glaciated Northeastern United States: An Assessment of the Science Base*. The Environmental Institute, University of Massachusetts., Amherst. 143 p.

1987. Neill, C. and R. E. Turner. Restoration of dredge canals in coastal marshes (Louisiana). *Restoration and Management Notes* 5:32.

1985. Deegan, L. A. and C. Neill. New life on the Mississippi. *Natural History*, June 1994, pp. 60-71.

1985. Neill, C. and R. E. Turner. *Atlas of Louisiana backfilled canals*. Coastal Management Division, Louisiana Department of Natural Resources, Baton Rouge.

1983. Turner, R. E. and C. Neill. Revisiting impounded marshes after 70 years. Pages 309-321, in R. J. Varnell, ed., *Water Quality and Wetland Management Conference Proceedings*, New Orleans, LA.

1983. Costanza, R., C. Neill, S. G. Leibowitz, J. R. Fruci, L. M. Bahr, Jr., and J. W. Day, Jr. Ecological characterization of the Mississippi Deltaic Plain Region. Data collection and presentation. U.S. Fish and Wildlife Service, Office of Biological Services. FWS/OBS-82/69.
1983. Bahr, L. M., Jr., J. W. Day, Jr., S. E. Bayley, R. Costanza, C. Neill, S. G. Leibowitz, and J. R. Fruci. Ecological characterization of the Mississippi Deltaic Plain Region. A narrative. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, D. C. FWS/OBS-82/68.
1983. Turner, R. E., S. G. Leibowitz, and C. Neill. A study design for the application of the U.S. Fish and Wildlife Service geographical information system in a study of the impacts of dredged spoil levees on habitat changes in coastal Louisiana. National Coastal Ecosystems Team, Office of Biological Services, U.S. Fish and Wildlife Service, Washington, D.C.
1982. Neill, C. Louisiana acts to save its wetlands. *Not Man Apart* 12(2):11.
1981. Cleveland, C. J., C. Neill, and J. W. Day, Jr. The impact of artificial canals on land loss in the Barataria Basin, Louisiana. Pages 425-434, in W. J. Mitsch, R. W. Bosserman, and J. M. Klopatek, eds., *Energy and Ecological Modelling*. Elsevier Scientific Publ. Co., NY.
1981. Costanza, R. and C. Neill. The energy embodied in the products of the biosphere. Pages 745-756, in W. J. Mitsch, R. W. Bosserman, and J. M. Klopatek, eds., *Energy and Ecological Modeling*. Elsevier Scientific, NY.

#### **FUNDING HISTORY:**

- 2017-2021. Collaborative Research: MSB-FRA: Alternative ecological futures for the American residential macrosystem. NSF-Emerging Frontiers Macrosystems Biology, \$360,200 (C. Neill, collaborative with P. Groffman and others).
- 2016-2017. Quantifying nitrogen removal by innovative alternative septic systems and potential for enhanced nitrogen removal by labile carbon additions. MA Division of Coastal Zone Management (C. Neill, collaborative with R. Jakuba and G. Heufelder), \$175,918.
- 2014-2023. Baywatchers—A Long-Term Ecological Monitoring Program for Buzzards Bay. Buzzards Bay Coalition, \$1,019,192. (C. Neill).
- 2015-2016. Reducing Nutrient Losses from Cranberry Agriculture. Massachusetts Department of Energy and Environmental Affairs, Coastal Zone Management, \$113,719. (C. Neill, collaborative with R. Jakuba, C. DeMoranville, C. Kennedy).
- 2015-2018. Collaborative Research: The Sustainability of Riparian Forests in Expanding Amazonian Agricultural Landscapes. NSF Division of Environmental Biology (recommended December 4, 2014), \$774,713. (C. Neill, collaborative with L. Deegan, M. Macedo, P. Brando and others).
- 2013-2016. Collaborative Research: Disrupted Nitrogen Cycles in the Brazilian Amazon, NSF Division of Environmental Biology, \$493,458 (C. Neill, collaborative with M. Macedo, M. Coe and E. Davidson).
- 2013-2016. Belmont Forum Collaborative Research: XINGU—Integrating Land Use Planning and Water Governance in Amazonia. NSF Belmont Forum, \$453,523 (C. Neill, collaborative with Alex Kruche and others).
- 2012-2016. Plum Island LTER. National Science Foundation, Division of Environmental Biology (LTER), \$1,880,000. (A. Giblin, L. A. Deegan, J. Vallino, C. Neill)
- 2011-2014. Science to Support Cultural Landscape Management and Restoration, Beech Tree and Paine Conservation Trusts, \$120,000 (C. Neill).

- 2011-2015. Ecological Homogenization of Urban America. National Science Foundation, Ecosystems Studies Macrosystems Biology, \$208,994 (C. Neill, collaborative with P. Groffman and others).
- 2010-2015. PIRE: Land Use, Ecosystem Services and Human Wellbeing: Responses to Millennium Village Interventions. National Science Foundation, Office of Informal Science Education, \$1,199,999 (C. Neill, C. A. Palm, L. K. Vanwey and others).
- 2010-2013. MSM Collaborative Research: Agricultural Expansion in the Brazilian Amazon and its Influence on the Water, Energy and Climate Cycles. National Science Foundation, Ecosystem Studies, \$337,010 (C. Neill, collaborative with M. T. Coe).
2010. Project on Naushon Island Vegetation. Beech Tree Trust, \$10,000 (C. Neill)
- 2011-2012. Socioenvironmental Impacts of "Green" Energy in the Amazon. Brown Office of the Vice President for International Affairs, \$50,000 (L. VanWey, C. Neill, A. Foster).
- 2011-2012. Cranberry Bog Nutrient Loss Study. Massachusetts Department of Environmental Protection, \$58,620 (\$38,400 to MBL for sampling). Collaboration with Buzzards Bay Coalition, University of Massachusetts Cranberry Experiment Station, Cape Cod Cranberry Growers Association and the Town of Carver, MA.
- 2009-2014. Baywatchers—A Long-Term Ecological Monitoring Program for Buzzards Bay. Buzzards Bay Coalition, \$396,328 (C. Neill)
- 2010-2010. MRI-R2: Acquisition of Trace Gas Analytical Instrumentation for Ecosystem Analysis, National Science Foundation, Division of Biological Infrastructure, \$418,048 (H. Ducklow, J. Tang, M. Conte, C. Neill).
- 2010-2011. Naushon Sandplain Vegetation. Beech Tree Trust, \$10,000 (C. Neill).
2009. Coupled Social and Natural Drivers of deforestation and Ecosystem Change at the Amazon Cropland Frontier. Brown University Environmental Change Institute, \$50,000 (C. Neill and L. VanWey).
- 2007-2009. Sandplain grassland restoration at Herring Creek. The Nature Conservancy, \$90,000 (C. Neill).
2008. Land use Change, Carbon Offsets and Carbon Sequestration: A Case Study in Essex and Middlesex Counties, MA. Hubbard Brook Research Foundation, \$10,000 (C. Neill).
- 2008-2011. IPY: Improving the public's understanding of polar research through hands-on fellowships for science journalists in the Arctic and Antarctic. National Science Foundation, Informal Science Education, \$365,289 (C. Neill, H. Ducklow, J. Hobbie, G. Shaver, B. Peterson).
- 2007-2011. Collaborative Research: Influence of Land Use on Watershed Hydrology and Biogeochemistry at the Amazon Agricultural Frontier. National Science Foundation, Ecosystem Studies Program, \$831,395 (C. Neill, H. Elsenbeer, A. Krusche, E. Davidson).
- 2004-2007. Building the Scientific Base for Coastal Plain Pond Conservation. Massachusetts Environmental Trust, \$61,340 (C. Neill, R. McHorney).
- 2004-2006. Overland F in the Humid Tropics Under Distinct Land Uses. German Government DADD. (Collaboration with Helmut Elsenbeer)
- 2004-2007. Science Journalism Program for the Arctic. National Science Foundation Office of Polar Programs. \$45,864 (J. E. Hobbie, C. Neill, K. Foreman, P. Clapp).
- 2004-2005. Scientific and Practitioner Network for Sandplain Conservation. The Kohlberg Foundation. \$25,000. (C. Neill)

- 2003-2006. Nitrogen Movement from Uplands to Streams in Forested and Deforested tropical watersheds. National Science Foundation, Ecosystems Studies Program. \$600,000. (C. Neill, H. Elsenbeer, A. V. Krusche, P. A. Steudler, J. M. Moraes).
2003. Hydrological Science to Support Biodiversity Conservation in Massachusetts. The Nature Conservancy, Massachusetts Chapter. \$95,000 (C. Neill)
- 2002-2003. The Nature Conservancy-MBL Sandplain Restoration and Conservation Experiment. Massachusetts Environmental Trust. \$20,389. (C. Neill)
- 2002-2005. Key Connections in Amazonian Stream Corridors. NASA LBA Program. \$754,661. (L. A. Deegan, C. Neill, R. L. Victoria, A. V. Krusche, M. V. Ballester).
2002. \$240,000. Controlled Environment Facilities for Examination of the Effects of Climate Change and Human Land Use on Terrestrial and Aquatic Ecosystems. NSF Field Stations and Marine Laboratories Program (G. R. Shaver and C. Neill).
- 2000-2003. \$900,000. The Biogeochemical consequences of Agricultural Intensification in the Amazon. NASA LBA Program. (J. M. Melillo, C. Neill, P. A. Steudler and C. C. Cerri).
2000. \$173,889. An Analytical Laboratory for Examination of Land Use Change and its Consequences for Aquatic Ecosystems. NSF Field Stations and Marine Laboratories Program (A. E. Giblin, C. Neill).
- 1998-2001. \$477,000. Linking Soil Biogeochemistry to surface Water Chemistry in Small Drainage Basins of the Amazon. NASA LBA Program. (L. A. Deegan, C. Neill, R. A. Victoria).
- 1996-1999. \$900,000. Trace Gas Fluxes Associated with Land-use and Land-cover Changes in the Brazilian Amazon Basin. NASA (J. M. Melillo, P. A. Steudler and C. Neill).
- 1996-1997. \$50,000. Biogeochemical Consequences of Land use Change in the Amazon Basin. National Science Foundation Inter-American Institute for Global Change Research (J. Melillo, C. Neill and P. Steudler).
- 1996-1998. \$290,000. Links Between Soil Nutrient Dynamics and Surface Water Biogeochemistry Following Deforestation for Pasture Agriculture in Amazonia. National Science Foundation Environmental Geochemistry and Biogeochemistry Program (L. Deegan and C. Neill).
- 1988-1990. \$30,700. Flooding, Primary Production and Plant Resource Allocation in Prairie Marshes. North American Wildlife Foundation, through the Delta Waterfowl and Wetlands Research Station, Portage la Prairie, Manitoba (C. Neill).
1989. \$600. Sigma Xi Grant-in-Aid of Research. Flooding, Primary Production and Resource Allocation in Prairie Marshes (C. Neill).
- 1986-1987. \$25,700. Control of the primary Production of Emergent Macrophytes in Prairie Marshes: Effects of Water Depth and Nutrient Availability. North American Wildlife Foundation (C. Neill).

### **TEACHING:**

2012. Taught Brown graduate seminar, "Natural and Social Dynamics of Land Use Change." This was developed as a core course for the Brown-MBL NSF PIRE (Partnership for International Research and Education) project.
- 2006-present. Brown PhD students. supervised: Shelby Riskin (2012), Chelsea Nagy (2015); committees of Maya Almaraz (current), Marc Mayes (current), Keith Spangler (current).
- 2006-present. Brown undergraduate theses supervised: Emily de Moor (2006), Elisabeth Ward (2013), Emma Dixon (2013), Adam Bouché (2014), Lena Champlin (2016).

- 1997-present. Teach ecosystem ecology in the Ecosystems Center's Semester in Environmental Science Program. Developed and present lectures on photosynthesis, scaling of production measurements, ecosystem water budgets, nitrogen cycling, ecosystems disturbance, tropical deforestation, land-water nitrogen movement. Developed and teach laboratories on biomass in terrestrial ecosystems, primary productivity, soil nutrient stocks and cycling, water budgets and land-water nutrient fluxes.
- 2001-2014. Teach the Environmental Science component of the Marine Biological Laboratory's Hands-On Science Writing Laboratory, a 2-week immersion fellowship program for working science journalists. The program leads journalists through research questions, field data collection, laboratory water chemistry analysis, data analysis and public data presentation. It focused on polar environmental change at Toolik Field Station, Alaska and Palmer Station, Antarctica in 2007-2010 and on environmental change in the Northeast US (2011-present).
2000. Taught science writing seminar in Ecosystems Center Semester in Environmental Science Program.
- 1991-1993. Graduate Faculty, Masters of Science in Environmental Studies Program, Bard College, Annandale-on-Hudson, NY. Taught Ecosystem Ecology.
- 1989-1990. Department of Forestry and Wildlife Management, University of Massachusetts, Amherst, MA. Taught introductory course in the wildlife biology major, Wildlife and Fisheries Biology 197, "Fauna of New England Ecosystems."

#### **PRESENTATIONS:**

2016. Sensing environmental change in tropical forests and croplands. Workshop for Lightweight and Low-power Sensors for Environmental Measurements, Argonne National Laboratory, September 20.
2016. Deforestation and the future of the Amazon, and Ecological dynamics at the Amazon agricultural frontier. Two lectures recorded for the iBio on-line biology lecture series. July 15 and 18.
2016. Wetland restoration to increase ecosystem resilience and ecosystem services. Keynote talk at the Atlantic White Cedar Conference, Plymouth, MA, May 23.
2016. Deforestation, agriculture and the future of the Amazon. Invited talk, Cornell University, Ithaca, NY, April 13.
2016. Not on my lawn! How fertilizer-free lawns help water and wildlife. Talk for Falmouth Water Stewards, Falmouth, MA, March 10.
2015. Water music. Commentary at a choral concert presented by the Rockefeller Memorial Chapel Choir, MBL, September 28.
2015. The ecological homogenization of urban America. Invited seminar, the Ecosystems Center, MBL, April 28.
2015. The sacred powers of water. Commentary at a choral concert premier. Rockefeller Memorial Chapel, University of Chicago, Chicago, IL, February 28.
2014. Amazon soybeans, China and the future of the Earth's greatest forest. "Science Before Supper" series, Falmouth, MA, December 18.
2014. The nitrogen pollution problem, status and opportunities for action. Invited talk to the Buzzards Bay Coalition Leadership Council, Marion, MA, October 17.
2014. Land purchase and restoration as key components of Cape Cod's water quality solutions. Invited speaker at The 300 Committee annual meeting, July 10.

2014. Ecological restoration and wastewater management on Cape Cod as novel ecosystem experiments. Invited talk at Environmental Protection Agency's Atlantic Ecology Division, Narragansett, RI. July 1.
2014. Deforestation, agriculture and the future of the Amazon. MBL Invited "Friday Night Lecture." July 3.
2014. Wastewater and sea level rise: Cape Cod's biggest environmental problems as ecological restoration opportunities. Keynote address, Society for Environmental Restoration, Amherst, MA, April 25.
2014. Temperature regime of a Cape Cod groundwater river influenced by impoundment and cranberry agriculture. Society for Environmental Restoration, April 25, Amherst, MA
2014. Wastewater and sea level rise: Cape Cod's biggest environmental problems as ecological restoration opportunities. Keynote address, Society for Ecological Restoration, Amherst, MA, April 15.
2013. Invited presentation on intensifying Agriculture in Latin America at launch of Columbia University Center for Agriculture and Food Security, September 22.
2013. Water flows and feedbacks in intensifying Amazon agriculture. Brown International Advanced Research Institutes, Brown University, Providence, RI, June 20.
2013. Deforestation, intensive agriculture and the future of the Amazon. Unitarian Society of Falmouth, Falmouth, MA, June 19.
2013. State of the Cape's bays and estuaries: Threats and impacts to coastal ecosystem health. Opening keynote talk for *The State of the Cape: Changing Waters and Shorelines*, Waquoit Bay National Estuarine Research Reserve 1st Annual Cape Coastal Conference, Hyannis, MA, June 13
2013. Intensification of agriculture in the Amazon soybean region of Mato Grosso, Brazil. Talk to Columbia School of Journalism students, Marine Biological Laboratory, Woods Hole, MA, April 25.
2013. Intensification of agriculture in the soybean region of Mato Grosso, impact or resilience—and what's next. Workshop on Agricultural Intensification, Marine Biological Laboratory, Woods Hole, MA, January 14.
2011. Linking land use, fire and climate in the Amazon. Invited speaker, Symposium on Climate Change in Latin America, Brown University, April 8.
2010. New England's coastal plain ponds—local biodiversity hotspots in the face of global change. Rhode Island Natural History Survey, Sept 29.
2010. Influences of soil and scale on land-water fluxes of water, carbon and nitrogen in lowland Amazon headwater streams. American Geophysical Union Meeting of the Americas, Foz do Iguaçu, August 10.
2010. Soybean cropland expansion and impacts to Amazon headwater stream ecosystems. American Geophysical Union Meeting of the Americas, Foz do Iguaçu, August 10.
2010. Deforestation, climate and the future of the Amazon. Brown Latin American Student Association, April 12.
2010. Deforestation, climate and the future of the Amazon. Harvard Forest, Petersham, MA, March 12.
2009. Valuing ecosystems for water filtration and nitrogen removal. University of New Hampshire, Durham, NH, October 15.
2009. Biodiversity hotspots on Cape Cod and the Islands. Falmouth Friends Society, Falmouth, MA, September 13.

2009. Deforestation, Brown University research and the future of the Amazon. Brown Club of Cape Cod, Hyannis, MA, June 9.
2009. Insights from experimental manipulation and management of Massachusetts coastal plain grasslands and shrublands Harvard Forest, Petersham, MA, May 8.
2009. Dangerous synergies: Deforestation, climate and the future of the Amazon. Department of Biology, University of Central Florida, Orlando, FL, January 9.
2008. Deforestation, farming, fire and drought: Emerging insights into the future of the Amazon, Washington and Lee University, Lexington, VA, November 6.
2008. The implications of soil seed banks for conservation and restoration in two endangered ecosystems of Massachusetts. Marine Biological Laboratory, Woods Hole, MA. October 21.
2008. Deforestation, farming, fire and drought: Emerging insights into the future of the Amazon. Massachusetts Institute of Technology Knight Journalism Fellows Program. Marine Biological Laboratory, Woods Hole, MA. October 9.
2008. Deforestation and the future of the Amazon. Watson Fellows Program, Brown University, Providence, RI. April 8.
2007. C. Neill, S. Germer, J. Chaves, A. V. Krusche and H. Elsenbeer. Land use and soils control the fate of dissolved nitrogen in Amazon watersheds. Fourth International Nitrogen Conference, Costa do Saúpe, Brazil. October 3.
2007. C. Neill, S. Germer, A. Krusche, J. Chaves, H. Elsenbeer, S. Gouveia Neto and A. Castellanos Bonilla. Water and solute balances in small Amazonian watersheds. Thirteenth LBA-Ecology Meeting, September 27-29, Salvador, Brazil.
2007. Águas. Conferências do Pan-Gnósio 2007, Invited talk in a series on advances, problems and questions, Escola Superior de Agricultura “Luiz de Queiroz,” Piracicaba, SP, March 26.
2007. Deforestation decreases biodiversity but increases nitrogen retention in lowland Amazon streams. Stroud Water Research Center, Avondale, PA, March 8.
2006. What are the environmental and social consequences of soybean expansion in the Amazon? Brown University, Environmental Change Institute, November 19.
2006. The importance of scale and riparian zones in modifying solute inputs from land to streams. Tenth LBA-ECO Science Team Meeting, Brasilia, October 5.
2006. The biogeochemistry of Amazon deforestation. Brown University, Department of Ecology and Evolutionary Biology, September 16.
2006. Amazon watershed research. Council of Visitors, Marine Biological Laboratory, July 23.
2006. Dangerous synergies: the future of the Amazon basin. Invited lecture, Symposium on Climate Change, Marine Biological Laboratory, June 30.
2006. Deforestation and the future of the Amazon. Invited lecture, Potsdam Climate Impact Research. June 20.
2006. Deforestation and the future of the Amazon. Invited lecture, Institute of Geocology, Potsdam University, June 13.
2006. Deforestation and the future of the Amazon. MBL Science Journalism Program, June 3.
2006. Physical and anthropogenic controls of the biogeochemistry of small stream in western Amazônia. Presentation at LBA Small Basin Synthesis Workshop, Piracicaba, Brazil, May 14
2006. Diversity and distribution of Cape Cod coastal plain pond seed banks. Cape Cod Natural History Conference, Barnstable, MA. March 25.



2006. Temperature regime of a Cape Cod groundwater river influenced by impoundment and agriculture. Cape Cod Natural History Conference, Barnstable, MA. March 25.2006.  
Amazon deforestation. Brown University, March 10.
2006. Abordagens para entender fluxos de água e material em pequenas bacias Amazonicas. Best Practices Workshop, Fazenda Tanguro, Canarana, Brazil. February 15.
2005. The effect of deforestation on Amazon streams. Sewanne College. October 3.2005.  
September 24. How well do mechanical land clearing and dormant-season prescribed burning promote establishment of coastal sandplain grassland and shrubland communities?  
September 24.
2005. The conservation implications of habitat and biogeochemical alteration of small lowland Amazonian streams caused by deforestation. Brasilia, July 19.
2005. Appearance on Cape Cod Environmental Connections television program, May 11.
2005. Deforestation and the future of the Amazon. Lecture to ISIS fellows, Southern Connecticut State University, March 16. MBL.
2005. Why restore ecosystems? Presentation to The Three Hundred Committee (Falmouth Land Trust), February 16, Falmouth, MA.
2004. Vegetation and Biogeochemical Responses to Sandplain Land Management: Results from Management Manipulations on Martha's Vineyard. Coastal Sandplain Science and Conservation Workshop, December 9-10, MBL
2004. From soils to solutes to stream channels: how deforestation is altering Amazonian stream ecosystems. Invited lecture, Biology Department, Grinnell College, Grinnell, Iowa.  
November 5.
2004. Controls of land-water nitrogen movement through small lowland Amazonian forest and pasture drainage basins in Rondônia (C. Neill, L. A. Deegan, A. V. Krusche, M. V. R. Ballester, H. Elsenbeer, J. M. Moraes, R. L. Victoria, S. M. M. Thomas, C. L. Hauptert and M. C. Piccolo). LBA Third Science Meeting, Brasilia, July 28.
2004. Deforestation and the future of the Amazon. Lecture to MBL Science Journalism Program, June 11.
2004. Deforestation and the future of the Amazon. Lecture to Brown University Luce Scholars Program, May 6.
2004. Land-water nitrogen movement following severe disturbance of a coastal forest: Insights from a conservation management experiment on Martha's Vineyard. The Ecosystems Center, March 16.
2004. Amazon update. Segment on National Public Radio's "Earth and Sky," February 18.
2003. Using  $^{15}\text{N}$  to trace nitrogen transformations and organic matter turnover in an Amazonian rainforest stream. VI Congresso Ecologico do Brasil, 9-14 November, Fortaleza, Brazil. (C. Neill, L. A. Deegan, A. V. Krusche, M. V. Ballester, S. M. Thomas, R. L. Victoria. A. F. Gessner).
2003. Soil nitrogen transformations and soil solution fluxes following clearing of Amazonian tropical forest for pasture. Large-Scale Biosphere-Atmosphere Experiment in Amazonia Science Meeting, November 5-8, Fortaleza, Brazil. (C. Neill, M. C. Piccolo, P. A. Steudler, L. A. Deegan, A. V. Krusche, S. M. Thomas, J. M. Melillo, D. C. Garcia-Montiel, M. V. Ballester, C. C. Cerri, R. L. Victoria and H. Elsenbeer).
2003. Key connections in Amazon stream corridors: Using  $^{15}\text{N}$  to trace N transformations and transport. Large-Scale Biosphere-Atmosphere Experiment in Amazonia Science Meeting,

- Novembre 5-8, Fortaleza, Brazil. (L. A. Deegan, C. Neill, M. V. Ballester, S. M. Thomas. A. V. Krusche)
2003. Fluxes of nitrogen following clearing of Brazilian Amazon tropical forest for pasture. (M. Piccolo, C. Neill, C. C. Cerri, J. Melillo. Controlling N flows and losses, 12<sup>th</sup> N Workshop, Institute for Grassland and Environmental Research, Devon, UK, 21-24 September.
2003. Conservation of ecosystem process in the Massachusetts Coastal Plain: What we have learned from the TNC-MBL experiments on Job's Neck. Martha's Vineyard Conservation Partnership, West Tisbury, MA, July 2.
2003. The land-water connection: Action steps to protect coastal salt ponds. West Tisbury's Coastal Salt Ponds Watershed Meeting, West Tisbury, MA, June 27.
2003. Conservation of ecological processes and rare species in the human-dominated Massachusetts Coastal Plain. Presentation to MBL's Hands-On Science Writing Program, June 6.
2003. Conservation of ecological processes and rare species in the Coastal Plain: Results of the MBL-TNC experiment on Job's Neck. Presentation to MA Chapter of The Nature Conservancy, April 15.
2003. Cape Cod birds as indicators of global change. MBL Elderhostel program, April 2.
2003. Restoring our back yards. Falmouth Garden Club, February 3.
2002. Land use and global change in the Amazon. Invited lecture to the Luce Scholars Program of Brown University, Woods Hole, MA, December 3.
2002. Martha's Vineyard Sandplain Ecosystem Study at Job's Neck: A synopsis of our field work tracking nitrogen and water flow. Annual meeting of the Great Ponds Foundation, Martha's Vineyard, MA, August 15.
2002. Land use change alters the biogeochemistry and downstream movement of nitrogen in small drainage basins, Oral presentation at the LBA All-Scientists Meeting, Manaus, Brazil, July 7-10. (Christopher Neill, Linda A. Deegan, Alex V. Krusche, Suzanne M. Thomas, M. Victoria R. Ballester, and Reynaldo L. Victoria).
2002. Alterations to nitrate and ammonium concentrations in pasture soils subjected to tilling. Poster presented at the LBA Science Meeting, Manaus, Brazil, July 7-10. (Carmo, J. B., C. C. Cerri, C. Neill, M. C. Piccolo and D. Garcia).
2002. Variability of soil microbial biomass carbon in different pasture restoration systems in Rondônia, Brazil. Poster presented at the LBA Science Meeting, Manaus, Brazil, July 7-10. (K. C., M. C. Piccolo, B. J. Feigl, C. C. Cerri, C. Neill, J. M. Melillo, P. A. Steudler and D. C. Garcia).
2002. Changes to inorganic nitrogen in soil solution following forest clearing for pasture in Rondônia. Poster presented at the LBA Science Meeting, Manaus, Brazil, July 7-10. (Cassiolato, M. E., M. C. Piccolo, C. Neill and C. C. Cerri)
2002. Neill, C., P. A. Steudler and M. C. Piccolo. Control of N<sub>2</sub>O and N<sub>2</sub> emissions from Amazonian pastures under intensified use: Availability of nitrogen, carbon and the effects of soil tillage. Poster presented at the LBA Science Meeting, Manaus, Brazil, July 7-10.
2002. C. Neill, L. A. Deegan, A. V. Krusche, S. M. Thomas, M. V. Ballester, and R. L. Victoria. Land use change alters the biogeochemistry and downstream movement of nitrogen in small drainage basins. Talk presented at the LBA Science Meeting, Manaus, Brazil, July 7-10.
2002. Rates and controls of nitrogen oxide emissions from soils following deforestation for pasture in Rondônia, Brazil. Invited lecture in the symposium, Land-Use Change and Greenhouse Gas Emissions, Soil C and Nutrient Cycling in the Tropics, Tsukuba, Japan,

- February 21-23.2002. Three segments highlighting my research were broadcast on the National Public Radio program, "Earth and Sky." The first was on methane emissions from Amazon forests and pastures, the second was on the effect of Amazon deforestation on stream chemistry, the third was on the future consequences of intensification of agriculture in the Amazon. Broadcast in January.
2002. Deforestation and the future of the Amazon. Lecture to the Cape Cod Group of the Sierra Club, Barnstable, MA, January 22.
2001. Deforestation and the future of the Amazon. Invited lecture, Massachusetts Chapter, Sierra Club, Boston, MA, June 15.
2001. Restoration of coastal shrublands and grasslands on the Cape and Islands. Norfolk Medical Society, Needham, MA. April 25.
2001. Deforestation, ecosystem science and the future of the Amazon, Department of Geography, Boston University, April 6.
2001. Deforestation and the future of the Amazon, Guest lecture to Connecticut science teachers education program in Woods Hole. March 2.
2001. Restoration of coastal shrub and grasslands on the Cape and the Islands. Invited lecture, Maria Mitchell Association, Nantucket, MA. January 26
2001. Deforestation and the future of the Amazon, Maria Mitchell Association, Nantucket, MA. January 12
2000. Deforestation, ecosystem science and the future of the Amazon. The Ecosystems Center 25<sup>th</sup> Anniversary Celebration, Woods Hole, MA. Oct. 14
2000. The ecosystem consequences of deforestation for pasture in Rondônia. Ecological Society of America, Snowbird, UT. August 8.
2000. Linking changes in ecosystem structure to changes in water balance and nitrogen retention during shrub and grassland restoration on Martha's Vineyard. 2000 Pine Barrens Research Forum, Brookhaven National Laboratory, Upton, NY.
2000. Links between soil biogeochemistry and water chemistry following deforestation for pasture in small watersheds in Rondônia. First LBA Scientific Conference, Belem, Brazil. June 27.
1999. Soil warming experiments at Abisko, Sweden. Soil Warming Workshop, National Center for Ecological Analysis and Synthesis, Santa Barbara, CA. February 1-5.
1999. Nitrogen cycling responses to elevated temperature and CO<sub>2</sub>. Invited talk. GCTE conference on how nutrient cycles constrain carbon balances in boreal forests and arctic tundra, June 15-18, Abisko, Sweden.
1999. Links between soil nutrient cycling, deforestation and water chemistry in small Amazonian streams. North American Benthological Society, May 25-28.
1999. Links between deforestation, soil nutrient cycling and water chemistry in Amazonian streams. Ecological Society of America, August 8-12.
1998. Links between soil nutrient cycling and surface water chemistry following deforestation in the Brazilian Amazon. Invited seminar, Division of Biology, Kansas State University, April 3.
1997. Nitrogen dynamics immediately following cutting and burning of tropical forest for pasture in Rondônia. Ecological Society of America, Albuquerque, NM, August 10-14.
1997. Factors influencing soil carbon accumulation of loss following deforestation for pasture in the Brazilian Amazon. Invited talk, Carbon pools and dynamics in tropical ecosystems, Belem, Brazil, December 1-5.

1996. Changes to nitrogen cycling caused by deforestation for pasture in Rondônia. Inter-American Institute for Global Change Research Workshop, "The Biogeochemical Consequences of Land Use Change in the Western Brazilian Amazon Basin, December 9-13, Cuiabá, MT, Brazil.
1996. Links between soil nutrient dynamics and stream biogeochemistry following deforestation in the Brazilian Amazon. Ecological Society of America, Providence, RI, August 11-15.
1996. Restoration of biogeochemical functioning in forests regrowing on abandoned pastures in the Brazilian Amazon. Ecological Society of America, Providence, RI, August 11-15.
1995. The vernal flood: how spring inundation controls plant production in prairie marshes. Society of Wetland Scientists, Cambridge, MA, May 29-June 1.
1994. Changes to soil carbon and nitrogen stocks and cycling rates following forest conversion to pasture in the Brazilian Amazon Basin. Ecological Society of America, August 7-11.
1994. Changes to soil carbon nitrogen stocks and nitrogen cycling rates caused by forest conversion to pasture in the Brazilian Amazon Basin. First GCTE Science Conference, Woods Hole, MA, May 23-27.
1993. The fate of the forest soil: implications of deforestation in the Brazilian Amazon for global climate change and the sustainability of tropical agriculture. Invited lecture, Bard College, Annandale, NY. July 30.
1991. Comparison of factors controlling emergent plant production in inland saline marshes and coastal salt marshes. Estuarine Research Federation, San Francisco, CA, November 10-14.
1991. Control of emergent plant production in saline prairie marshes: do they behave like coastal salt marshes? New England Estuarine Research Society, Yarmouth, NS, May 2-4.
1990. The effect of early spring flooding on nitrogen availability and plant biomass in a prairie marsh. Ecological Society of America, Snowbird, UT, July 29-August 2.
1987. Nitrogen limitation along a water depth gradient in a Manitoba prairie marsh. The Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA, December 15, 1987.
1987. Backfilling canals to mitigate canal dredging in Louisiana coastal marshes. Estuarine Research Federation, New Orleans, LA, October 26-30.
1985. Backfilling canals to create habitat for wintering waterfowl. Waterfowl in winter: a symposium and workshop, Galveston, TX, January 7-10.
1984. A comparison of the fish communities in open and plugged backfilled canals in Louisiana coastal marshes. Gulf Estuarine Research Society, Galveston, TX, October 25-27.
1984. Cyclical succession in wetlands of the Mississippi River deltaic plain. Ecological Society of America, Fort Collins, CO, August 6-9.
1984. Backfilling to mitigate the effects of oil and gas dredging in coastal Louisiana. Gulf Estuarine Research Society, Dauphin Island, AL, May 17-19.

#### **LOCAL SERVICE:**

- 2013-present. Board of Directors and Chair, Science Advisory Committee, Buzzards Bay Coalition, a local non-profit with a mission to protect Buzzards Bay. Organized and Chair, Science Advisory Committee.
- 2013-2014. Cape Cod Commission Section 208 Science Advisory Committee. Provide expertise on regional wastewater plan.
- 2003 - present. Board of Directors, Falmouth Associations Concerned with Estuaries and Salt Ponds (now Falmouth Water Stewards).

- 2010 - present. Board of Directors. Coonamessett River Trust, a local non-profit dedicated to restoring the Coonamessett River in Falmouth.
- 2010 - present. Board of Directors, BiodiversityWorks, a local non-profit dedicated to wildlife research, monitoring and public outreach.
- 2008 – 2013. President, Falmouth Associations Concerned with Estuaries and Salt Ponds, a local non-profit group that promotes actions to improve water quality in Falmouth, MA.
- 1994 - 2011. Wrote monthly op-ed column on environmental issues for *The Enterprise*, local newspaper in Falmouth, MA.
- 2006 - 2010. President, Coonamessett River Trust, a local non-profit devoted to river restoration
- 2011 - present. Advisory Board, Regional Technology Development Corporation of Cape Cod Water Incubator, an attempt to develop new water and wastewater technologies.
- 2003 - 2009. Board of Directors and Science Advisory Board, Association to Preserve Cape Cod, a regional non-profit environmental group.
2004. Outstanding achievement award, Massachusetts Chapter of the Sierra Club.
- 1996 - 2003. Chairman, Cape Cod Group of the Sierra Club.
- 2001 - 2002. Communications Committee and Capital Campaign Planning Committee, The 300 Committee, a Falmouth-based land trust.
- 1998 - 2000. Member of Executive Committee, Massachusetts Chapter of the Sierra Club.
- 1987 - 1989. Chairman, Solid Waste Planning Committee, Town of Wendell, MA.
- 1986 - 1989. Associate Member, Conservation Commission, Town of Wendell, MA.