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M.F.S., Yale University, New Haven, Connecticut, 1970-1972
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Experience:

The Ecosystems Center, Marine Biological Laboratory, Woods Hole, 1976-Present
Distinguished Scientist, 2010-present; Director Emeritus, The Ecosystems Center 2010-present
Co-Director, 1989-2009; Acting Director, 1988-1989
Senior Scientist, 1987-2009; Associate Scientist, 1982-1987; Assistant Scientist, 1976-1982
Professor of Biology, Brown University, 2003-2016
Associate Director for Environment, Office of Science and Technology Policy, Office of the President,
Washington, DC, 1996-1997
Director, Ecosystems Studies Program, National Science Foundation, Washington, DC, 1986-1988
Associate in Research, Hubbard Brook Ecosystem Study, Yale University, New Haven, CT, 1975-1976
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Teaching Assistant in Soils, Yale University, New Haven, CT, 1973-1975

May, 2020

Jerry M. Melillo

- Climate Warming: Results from Native Populations, Communities and Ecosystems. Pp. 61-156.
In: *Ecosystem Consequences of Soil Warming*. J.E.Mohar(ed)U.K. Elsevier,
- Morrison, E., A. Pringle, L.T. van Diepen, A.S Grandy, J. M. Melillo, S.D. Frey. 2019. Warming alters
fungal communities and litter chemistry with implications for soil carbon stocks. *Soil Biology
and Biochemistry*. 132:120-130.
- Moss, R.H., S. Avery, K Baja, K. Jacobs, A. Jones, J. Melillo, L. Scarlett, M. Stults, D. Zarrilli. 2019. A Civil
Society Consortium for Conducting Applied Climate Assessments: Collaborations and Knowledge
for Confronting Climate Risk. *Weather, Climate and Society*. [tps://doi.org/10.1175/WCAS-18-0134.1](https://doi.org/10.1175/WCAS-18-0134.1)
- 2018 Li J., G. Wang, M.A. Mayes, S. D. Allison, S.D. Frey, Z. Shi, X-M. Hu, Y. Luo, J. M. Melillo. 2018.
Reduced carbon use efficiency and increased microbial turnover with soil warming. *Global
Change Biology*. DOI: 10.1111/gcb.14517
- Svensson, B.M., B.Å. Carlsson, J.M. Melillo. 2017. Changes in vegetation cover after seven years of
elevated atmospheric CO₂ and warming in a subarctic birch forest understory, as modified by
rodent and moth outbreaks. *PeerJ* <https://peerj.com/articles/4843>.
- Tian, H., Q. Yu, F Jin, J. Yang, S. Pan, Y. Lu, C. Lu, B. Fu, J. Reilly, C. Palm, R. Miao, J. Melillo, W. Ren, Z.
Ouyang. Optimizing resource use efficiencies in the Food-Energy-W a RL 4.Eto2ai1m Td(r)Tj (d)-00.9 (21 (R)14B

larger lessons from the third US national climate assessment. *Climatic Change*. 135:187–201
DOI 10.1007/s10584-015-1530.

Pold G, Billings AF, Blanchard JL, Burkhardt DB, Frey SD, Melillo JM, Schnabel J, van Diepen LTA and DeAngelis KM (2016) [Long-term warming alters carbohydrate degradation potential in temperate forest soils \(link is external\)](#). Applied and Environmental Microbiology. 82(22):6518-6530. doi:10.1128/AEM.02012-16

Reilly, J.M. and J.M. Melillo Climate and Land: Tradeoffs and Opportunities. 2016. Geoinformatics & Geostatistics: An Overview. 4:1-2. dx.doi.org/10.4172/2327-4581.1000135

Taylor, B., A.E. P

May, 2020

Jerry M. Melillo

- Lu, X., D. Kicklighter, J.M. Melillo, P. Yang, B. Rosenzweig, C.J. Vörösmarty, B. Gross and R.J. Stewart. 2013. A contemporary carbon balance for the Northeast region of the United States. *Environmental Science and Technology* 47:13230-13238, doi: 10.1021/es4033097z.
- Zhuang, Q., M. Chen, K. Xu, J. Tang, E. Saikawa, Y. Lu, J.M. Melillo, R.G. Prinn and A.D. McGuire. 2013. Response of global soil consumption of atmospheric methane to changes in atmospheric climate and nitrogen deposition. *Global Biogeochemical Cycles* 27:1-14, doi: 10.1002/gbc.20057.
- 2012 Berbeco, M., J.M. Melillo and C. Orians. 2012. Soil warming differentially accelerates decomposition of woody debris. *Plant and Soil* 356:405-417, doi: 10.1007/s11104-012-1130-x.
- Brzostek, E.R., J.M. Blair, J.S. Dukes, S.D. Frey, S.E. Hobbie, J.M. Melillo, R.J. Mitchell, E. Pendall, P.B. Reich, G.R. Shaver, A. Stefanski, M.G. Tjoelker and A.C. Finzi. 2012. The effect of experimental warming and precipitation change on proteolytic enzyme activity: positive feedbacks to nitrogen availability are not universal. *Global Change Biology*, doi: 10.1111/j.1365-2486.2012.02685.x.
- Butler, S.M., J.M. Melillo, J.E. Johnson, J. Mohan, P.A. Steudler, H. Lux, E. Burrows, C.L. Vario, T.D. Hill, N. Aponte and F. Bowles. 2012. Soil warming changes the nitrogen cycle: nitrogen-driven changes in species composition. *Oecologia* 168:819-828, doi 10.1007/s00442-011-2133.
- Houlton, B.Z., E. Boyer, A. Finzi, J. Galloway, A. Leach, D. Liptzin, J. Melillo, T.S. Rosenstock, D. Sobota and A.R. Townsend. 2012. Intentional vs. unintentional nitrogen use in the United States: Trends, efficiency implications. *Biogeochemistry*, doi: 10.1007/s10533-012-9801-5.
- Jiang, Y., Q. Zhu Ind ennn

I e2d[(l)-12.9 (n)-0J3 (n)-0.2

- Gurgel, A., T. Cronin, J. Reilly, S. Paltsev, D. Kicklighter and J. Melillo. 2011. Food, fuel, forests, and the pricing of ecosystem services. *American Journal of Agricultural Economics* 93(2):342-348, doi: 10.1093/ajae/aaq087.
- Hayes, D.J., A.D. McGuire, D.W. Kicklighter, T.J. Burnside and J.M. Melillo. 2011. The effects of land cover and land use change on the contemporary carbon balance of the arctic and boreal terrestrial ecosystems in northern Eurasia, pp. 109-136. In: G. Gutman and A. Reissell (eds.), *Eurasian Arctic Land Cover and Land Use in a Changing Climate*. Springer, New York, NY, doi: 10.1007/978-90-481-9118-5_6.
- Hayes, D.J., A.D. McGuire, D.W. Kicklighter, K.R. Gurney, T.J. Burnside and J.M. Melillo. 2011. Is the northern high latitude land-based CO₂ sink weakening? *Global Biogeochemical Cycles* 25:1004, doi: 10.1029/2010GB003703, Td/J/1029.

- and warming in a subarctic birch forest understory. *Global Change Biology* 16: 1820–1829. doi: 10.1111/j.1365-2486.2009.02079.x.
- Tian, H., G. Chen, C. Zhang, J.M. Melillo and C.A.S. Hall. 2010. Pattern and variation of C:N:P ratios in China's soils: a synthesis of observational data. *Biogeochemistry* 98:139-151, doi: 10.1007/s10533-009-9382-0.
- 2009 Melillo, J.M., J.M. Reilly, D.W. Kicklighter, A.C. Gurgel, T.W. Cronin, S. Paltsev, B.S. Felzer, X. Wang, A.P. Sokolov and C.A. Schlosser. 2009. Indirect emissions from biofuels: how important? *Science* 326:1397-1399, doi: 10.1126/science.1180251. [Supporting Data].
- Balshi, M.S., A.D. McGuire, P. Duffy, M. Flannigan, D.W. Kicklighter and J. Melillo. 2009. Vulnerability of carbon storage in North American boreal forests to wildfires during the 21st century. *Global Change Biology* 15:1491-1510, doi: 10.1111/j.1365-2486.2009.01877.x.
- Bustamante, M.M.C., H. Watson, J. Melillo, D.J. Connor, H. Hardy, E. Lambin, H. Lotze-Campen, N.H. Ravindranath, T.D. Searchinger and J. Tscharley. 2009. What are the final land limits? Chapter 16, pp. 271-291. In: R.W. Howarth and S. Bringezu (eds.), *Biofuels: Environmental Consequences and Interactions with Changing Land Use*. Cornell University, Ithaca, NY.

- Frumhoff, P.C., J.J. McCarthy, J.M. Melillo, S.C. Moser and D.J. Wuebbles. 2007. *Confronting Climate Change in the U.S. Northeast: Science, Impacts, and Solutions*. Synthesis report of the Northeast Climate Impacts Assessment (NECIA). Cambridge, MA: Union of Concerned Scientists (UCS).
- Reilly, J., B. Felzer, D. Kicklighter, J. Melillo, H. Tian and M. Asadoorian. 2007. Prospects for biological carbon sinks in greenhouse gas emissions trading systems, pp. 115-142. In: D.S. Reay, C.N. Hewitt, K.A. Smith and J. Grace (eds.), *Greenhouse Gas Sinks*. CABI, Wallingford, Oxfordshire, United Kingdom.
- Reilly, J., S. Paltsev, B. Felzer, X. Wang, D. Kicklighter, J. Melillo, R. Prinn, M. Sarofim, A. Sokolov and C. Wang. 2007. Global economic effects of changes in crops, pasture and forests due to changing climate, carbon dioxide and ozone. *Energy Policy* 35:5370-5383, doi: 10.1016/j.enpol.2006.01.040.
- Sokolov, A.P., D.W. Kicklighter, J.M. Melillo, B. Felzer, C.A. Schlosser and T.W. Cronin. 2007. *Consequences of Considering Carbon/Nitrogen Interactions on the Feedbacks between Climate and the Terrestrial Carbon Cycle*. MIT Joint Program on Science and Policy of Global Change Report No. 151. Massachusetts Institute of Technology, Cambridge, Massachusetts.
- Zhuang, Q., J.M. Melillo, A.D. McGuire, D.W. Kicklighter, R.G. Prinn, P.A. Steudler, B.S. Felzer and S. Hu. 2007. Net emissions of CH₄ and CO₂ in Alaska: Implications for the region's greenhouse gas budget. *Ecological Applications* 17(1):203-212.
- 2006 Cerri, C.E.P., M.C. Piccolo, B.J. Feigl, K. Paustian, C.C. Cerri, R.L. Victoria and J.M. Melillo. 2006. Interrelationships among soil total C and N, microbial biomass, trace gas fluxes, and internal N- and L5 (c) 3(01302)(2)5 and (100212)(1)19j2TT0((c.9 ()]Tj/TT0d)]Tj0 Tc 69 7 1.522 C

pasture reformation. *Outlook on Agriculture* 34(4):215-223,

May, 2020

Jerry M. Melillo

Time:

- 2002 Melillo, J.M. 2002. How Camest Thou in this Pickle?, pp. 23-31. In: Engineering and Environmental Challenges. National Academy of Engineering Annual Meeting, October 24, 2000. National Academy Press, Washington, DC.
- Melillo, J.M., and E.B. Cowling. 2002. Reactive nitrogen and public policies for environmental protection. *Ambio* 31:150-158, <http://dx.doi.org/10.1579/0044-7447-31.2.150>.
- Melillo, J.M., P.A. Steudler, J.D. Aber, K. Newkirk, H. Lux, F.P. Bowles, C. Catricala, A. Magill, T. Ahrens and S. Morrisseau. 2002. Soil warming and carbon-cycle feedbacks to the climate system. *Science* 298:2173-2176, doi: 10.1126/science.1074153.
- Bernoux, M., V. Eschenbrenner, C. Cerri, J. Melillo and C. Feller. 2002. LULCF-based CDM: Too much ado for ... a small carbon market. *Climate Policy* 2:379-385, doi: 10.1016/S1469-3062(02)00022-0.
- Clein, J.S., A.D. McGuire, X. Zhang, D.W. Kicklighter, J.M. Melillo, S.C. Wofsy, P.G. Jarvis and J.M. Massheder. 2002. Historical and projected carbon balance of mature black spruce ecosystems across North America: The role of carbon-nitrogen interactions. *Plant and Soil* 242:15-32, doi: 10.1023/A:1019673420225.
- Dargaville, R.J., M. Heimann, A.D. McGuire, I.C. Prentice, D.W. Kicklighter, F. Joos, J.S. Clein, G. Esser, J. Foley, J. Kaplan, R.A. Meier, J.M. Melillo, B. Moore III, N. Ramankutty, T. Reichenau, A. Schloss, S. Sitch, H. Tian, L.J. Williams and U. Wittenberg. 2002. Evaluation of terrestrial carbon cycle models

- Shaver, G.R., J. Canadell, F.S. Chapin III, J. Gurevitch, J. Harte, G. Henry, P. Ineson, S. Jonasson, J. Melillo, L. Pitelka and L. Rustad. 2000. Global warming and terrestrial ecosystems: A conceptual framework for analysis. *BioScience* 50:871-882, doi: 10.1641/0006-3568(2000)050[0871:GWATEA]2.0.CO;2.

Tian, H., J.M. Melillo, D.W. Kicklighter, A.D. McGuire, B. Moore III and C.J. Vorosmarty. 2000. Climatic and biotic controls on annual carbon storage Amazonian ecosystems. *Global Ecology and Biogeography* 9:315-335, doi: 10.1046/j.1365-2699.2000.00198.x.

Melillo, J.M. 1999. Warm, warm on the range. *Science* 283:183-184, doi: 10.1126/science.283.5399.183.

Hartley, A.E., C. Neill, J.M. Melillo, R. Crabtree and F.P. Bowles. 1999. Plant performance and soil nitrogen mineralization in response to simulated climate change in subarctic dwarf shrub heath. *Oikos* 86:331-343, doi: 10.2307/3546450.

Jenkins, J.C., D.W. Kicklighter, S.V. Ollinger, J.D. Aber and J.M. Melillo. 1999. Sources of variability in net primary production predictions at a regional scale: a comparison using PnET-II and TEM 4.0 in northeastern US forests. *Ecosystems* 2:555-570, doi: 10.1007/s100219900102.

Kicklighter, D.W., M. Bruno, S. Dönges, G. Esser, M. Heimann, J. Helfrich, F. Ift, F. Joos, J. Kaduk, G.H. Kohlmaier, A.D. McGuire, J.M. Melillo, R. Meyer, B. Moore III, A. Nadler, I.C. Prentice, W. Sauf, A.L. Schloss, S. Sitch, U. Wittenberg and G. Würth. 1999. A first-order analysis of the potential role of CO₂ fertilization to affect the global carbon budget: A comparison of four terrestrial biosphere models. *Tellus* 51B:343-366, doi: 10.1034/j.1600-0889.1999.00017.x.

Lewis, D.L., A.W. Garrison, K.E. Wommack, A. Whittemore, P. Steudler and J. Melillo. 1999. Influence of environmental changes on degradation of chiral pollutants in soils. *Nature* 401:898-901, doi: 10.1038/44801.

May, 2020

Jerry M. Melillo

- Program on Science and Policy of Global Change Report No. 18. Massachusetts Institute of Technology, Cambridge, Massachusetts. 28 p.
- 1996 Melillo, J.M. 1996. Carbon and nitrogen interactions in the terrestrial biosphere: Anthropogenic effects, pp. 431-450. In: B. Walker and W. Steffen (eds.), *Global Change and Terrestrial Ecosystems*. IGBP Book Series 2. Cambridge University Press, Cambridge.
- Melillo, J.M. 1996. Elevated carbon dioxide, litter quality and decomposition, pp. 199-206. In: A.I. Breymeyer, D.O. Hall, J.M. Melillo and G. Ågren (eds.), SCOPE volume 56: *Global Change: Effects on Coniferous Forests and Grasslands*. John Wiley & Sons.
- Melillo, J.M., R.A. Houghton, D.W. Kicklighter and A.D. McGuire. 1996. Tropical deforestation and the global carbon budget. *Annual Review of Energy and the Environment* 21:293-310-

May, 2020

Jerry M. Melillo

May, 2020

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VEMAP Members. 1995.

McGuire, A.D., L.A. Joyce, D.W. Kicklighter, J.M. Melillo, G. Esser and C.J. Vorosmarty. 1993.
Productivity response of climax t

- 1990 Melillo, J.M., and P.A. Steudler. 1990. The effect of nitrogen ferti-0.004.26(r)-2.8 Aq29 0 Td(p(Tg(r)-2.8 (o)1.2 nd)-0.7 ((o)
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May, 2020

Jerry M. Melillo

- 1980 Aber, J.D., and J.M. Melillo. 1980. Litter decomposition: Measuring relative contributions of organic matter and nitrogen to forest soils. *Canadian Journal of Botany* 58:416-421, doi: 10.1139/b80-046. .Vol12&D(o)138(p).06 144r9.9 (M..)Tc10.117-Td79nc02 (14.2
- Aber, J.D., G.R. Hendrey, D.B. Botkin, A.J. Francis and J.M. Melillo. 1980. Simulation of acid precipitation effects on soil nitrogen and productivity in forest ecosystems. Brookhaven National Laboratory Report BNL-28658, Upton, N.Y.
- 1979 Melillo, J.
Y. 19Tw Td79 P9.1 7(or)0-3(od92(a)13.5)T8:c08(9u)t13.5 3 (g.7 (a)173 (th92(3

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h-factor (May 2020) – all, 137; since 2015, 73