LISAMARIE WINDHAM-MYERS
National Research Program, Water Resources Division
Project: Biogeochemistry at Regional Scales
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Background:
I am a broadly-trained wetland ecologist with a focus on plant physiology and its influence on carbon, nutrient and trace metal biogeochemistry in tidal marshes. My approaches span landscape-to-molecular scales, as necessary to evaluate biogeochemical processes within an ecosystem context, and to better understand how human and stochastic alterations of wetland structure influence wetland function.

Education:

Ph.D.	Rutgers, The State University of New Jersey	(Ecology)	**1999**
M.S.	Rutgers, The State University of New Jersey	(Geography)	**1995**
B.A.	University of California, Los Angeles	(Environmental Engineering)	**1991**

Research and Professional Experience:

Biologist, National Research Program **2004-present**
Water Resources Division, United States Geological Survey, Menlo Park, CA
Lecturer, Coastal Wetlands (EARTHSYS 108/208) **2006-present**
Earth Systems Program, School of Earth Sciences, Stanford University, CA
Assistant Professor **2000-2004**
Department of Earth and Environmental Sciences, Lehigh University, Bethlehem, PA
Sabbatical - Visiting Scholar **2003**
Department of Geological and Earth Sciences, Stanford University, Stanford, CA
NSF Post-doctoral Fellow **1998-2000**
Department of Biological Sciences, Rutgers University, Newark, NJ
NASA Global Change Research Fellow **1995-1998**
Department of Biological Sciences, Rutgers University, New Brunswick, NJ
Geographic Information System Coordinator (part-time) **1992-1999**
Natural Heritage Program, New Jersey Department of Environmental Protection
Hyperspectral Remote Sensing Scientist **1989-1992**
Airborne Sensor Facility, NASA/Ames Research Center, Moffett Field, CA

Active Funding (current):
Ecosystem Restoration Program, California Department of Fish and Game - Wetland and Rice Management to Limit Methylmercury Production and Export
USGS Toxics Program - Investigations into the Availability of Inorganic Mercury for Methylation: A Multi-faceted Approach
USGS National Wetlands Research Center – Biogeochemical and Microbial Responses to Petroleum Incursion into Gulf Coast Wetland Areas
USGS Global Change Research Program – Greenhouse Gas Monitoring for Carbon Capture Wetland Farming . http://ca.water.usgs.gov/Carbon_Farm/
USGS Volcano Hazards - Elevated CO_2 in Forest and Soil Ecosystems (ECO2FASE) http://carbon.wr.usgs.gov/eco2fase.html
Elkhorn Slough National Estuarine Research Reserve – Technical Advisory Committee for Tidal Wetland Project. http://www.elkhornslough.org/tidalwetlandproject/
Sacramento River Watershed Program, CA State Water Resources Board - Non-Point Source Working Group for Implementation of Methylmercury TMDL. http://delta-mercury-nps.org/

Publications:

Windham-Myers, L., C. Mills, M. Marvin-Dipasquale, M. Waldrop, S. Piazza, M. Varonka, W. Orem, and D.P. Krabbenhoft (in preparation) Direct and Indirect Impacts of the Deepwater Horizon Oil Spill on Salt Marsh Microbial Processes. Ecological Applications

Windham-Myers, L. and J.Z. Drexler (in preparation). Tidal marsh organic accretion potential – can tidal elevations be maintained with less sediment? Wetlands

Windham-Myers, L (in preparation) Wetland plant physiology exhibits controls on carbon sequestration processes in restored temperate peatland of California. Global Change Biology

B. Bergamaschi, **Windham-Myers, L.**, and F. Anderson. (in preparation) Greenhouse gas exchange from a restored California peatland: Insights from continuous chamber measurements of CO_2, CH_4, CO, and N_2O flux along a hydrologic gradient. Global Biogeochemical Cycles

Schile, L., K.B. Byrd, **L. Windham-Myers**, and M. Kelly. (in review) Accounting for non-photosynthetic vegetation in remote sensing based estimates of carbon flux in wetlands. Remote Sensing Letters

Windham-Myers, L., J.T. Ackerman, J.A. Fleck, M. Marvin-DiPasquale, C.A. Stricker, P. Bachand, C.A. Eagles-Smith, D. Feliz, G. Gill, M. Stephenson, and C.N. Alpers. (in review). Mercury cycling in agricultural and managed wetlands: a synthesis of observations from an integrated field study of methylmercury production, hydrologic export, and bioaccumulation. Science of the Total Environment

Windham-Myers, L., Marvin-DiPasquale, M., Stricker, C., Agee, J.L., Kieu, L., and Kakouros, E. (in review) Mercury cycling in agricultural and managed wetlands, Yolo Bypass, California: Vegetation influences on methylmercury production. Science of the Total Environment

Marvin-DiPasquale, M.C., **L. Windham-Myers**, J.L. Agee, E. Kakouros, L.H. Kieu, and J. A. Fleck. (in reivew) Methylmercury production in sediment from agricultural and non-agricultural wetlands in the Yolo Bypass, California. Science of the Total Environment

Fleck, J.A., **L. Windham-Myers,** C.N. Alpers, B.A. Bergamaschi, G.Gill, D.P Krabbenhoft, and M. Stephenson (in review) Diel variability in aqueous MeHg concentrations of shallow-flooded environments, Yolo Bypass, California: Using in situ measurements to understand processes. Science of the Total Environment

Windham-Myers, L., M. Marvin-DiPasquale, E. Kakouros, J.L. Agee, L.H. Kieu, C. Stricker, J.A. Fleck, C.N. Alpers, and J.T. Ackerman (in review) Mercury cycling in agricultural and managed wetlands, Yolo Bypass, California: Vegetation influences on methylmercury storage, export, and bioaccumulation. Science of the Total Environment

Bachand, P.A.M., S. Bachand, J. Fleck, F. Anderson, and **L. Windham-Myers.** (in review) Hydrologic modeling for quantifying aqueous fluxes in shallow seasonal wetlands: why internal flowpaths are critical to understanding temporal mercury cycling. Science of the Total Environment

Bachand, P.A.M, J.A. Fleck, S. Bachand, C.N. Alpers, M. Stephenson, and **L. Windham-Myers.** (in review). Methylmercury production and export from agricultural wetlands in California, USA: Revelations from hydrologic analyses. Science of the Total Environment

Drexler, J.Z., J. Paces, C.N. Alpers, **L. Windham-Myers**, L. Neymark, T. Bullen, and H.E. Taylor (in review). $^{234}U/^{238}U$ and $^{87}Sr/^{86}Sr$ in Peat as Tracers of Paleosalinity in the Sacramento-San Joaquin Delta of California. Estuaries and Coasts

L. Windham-Myers and J.T. Ackerman. 2012. A Synthesis of Mercury Science to Support Methylmercury Control Studies for Delta Wetlands and Irrigated Agriculture. Report for the California State Water Board. 50 pp. http://delta-mercury-nps.org/documents/NPSWorkgroup_Memo_KnowledgeBase.pdf

L. Windham-Myers, and T. Jabusch. 2012. Yolo Bypass Findings Could Help Wetland Managers Reduce the Methylmercury Problem. Pulse of the Delta.

Anderson, F., B. Bergamaschi, **L. Windham-Myers**, R. Miller, and R. Fujii. 2012. Observations of the Atmospheric Carbon Cycle in Restored Wetlands. FluxNet Newsletter 4: 17-22

Windham-Myers, L., K. Ward,M. Marvin-DiPasquale, J.L. Agee, L.H.Kieu, and E.Kakouros. 2011. Biogeochemical Implications of Episodic Impoundment in a Restored Tidal Marsh of San Francisco Bay, California. Restoration Ecology doi: 10.1111/j.1526-100X.2011.00849.x http://onlinelibrary.wiley.com/doi/10.1111/j.1526-100X.2011.00849.x/abstract

Windham-Myers, L., Marvin-DiPasquale, M., Fleck, J.A., Alpers, C.N., Ackerman, J., Eagles-Smith, C., Stricker, C., Stephenson, M., Feliz, D., Gill, G., Bachand, P., Rice, A. and Kulakow, R., 2010, Methylmercury cycling, bioaccumulation, and export from natural and agricultural wetlands in the Yolo Bypass; Cooperator Report prepared for the State Water Resources Control Board, by the U.S.G.S., CA Department of Fish and Game, Moss Landing Marine Lab, Battelle Marine Sciences, Bachand and Associates, and the Yolo Basin Foundation. September 30, 2010,266 p.

Jones, S.A., D. Bornholdt, A. DeGange, D. Lavoie, D. Myers, R. Poore, J. Powell, J. Smith, A.B. Wade, **L. Windham-Myers**. 2010. USGS Long-Term Science Strategy in Response to the Deepwater Horizon Oil Spill. Submitted to USGS Management in support of Council of Environmental Quality Gulf Restoration Plan

Windham-Myers, L., Marvin-DiPasquale, M.C. , Erikson, L., Agee, J.L., Kieu, L.H., Kakouros, E., and Ward, K., 2010, Biogeochemical processes in an urban, restored wetland of San Francisco Bay, California, 2007–2009; Methods and Data for Plant, Sediment and Water Parameters: U.S. Geological Survey Open-File Report 2010-1299, 40 p. http://pubs.usgs.gov/of/2010/1299/

Windham-Myers, L., G. Aiken, J. Bales, B. Bekins, J. E Cloern, C. A Eagles-Smith, R. P Eganhouse, E. Kakouros, D. P. Krabbenhoft, J. R Lacy, L. G Larsen, L. Lucas, M. Marvin-DiPasquale, N. B Rybicki, A. Slowey, R. Stewart, C. Swarzenski, J. K Thompson, M. P Waldrop. Conceptual Model Framework for a Long-Term Science Plan Response to the Deepwater Horizon Oil Spill (April 2010). Submitted July 9, 2010 to USGS Management.

Grenier, L., Marvin-DiPasquale, M., Drury, D., Hunt, J., Robinson, A., Bezalel, S., Melwani, A., Agee, J., Kakouros, E., Kieu, L., **Windham-Myers, L.**, and Collins, J.. 2010. South Baylands Mercury Project. Cooperator Report prepared for the California State Coastal Conservancy by San Francisco Estuary Institute, U.S. Geological Survey, and Santa Clara Valley Water District, February 10, 2010, 97 p.

Windham-Myers, L. , Marvin-DiPasquale, M., Agee, J.L. , Cox, M.H. and Kakouros, E. 2009. Monitoring of Vegetation Characteristics for Methylmercury Production in Reference Marshes for Salt Pond Restoration in South San Francisco Bay. Final Report submitted to The San Francisco Foundation, 18 p

Windham-Myers, L., M. Marvin-DiPasquale, D.P. Krabbenhoft, J.L. Agee, M.H. Cox, P. Heredia-Middleton, C. Coates, and E. Kakouros. 2009. Experimental removal of wetland emergent vegetation leads to decreased methylmercury production in surface sediments. Journal of Geophysical Research 114, G00C05, doi:10.1029/2008JG000815

Yee, D., J. Collins, L. Grenier, J., Takekawa, D. Tsoa-Melcer, I. Woo., S. Schwarzbach, M. Marvin-DiPasquale, **L. Windham-Myers**, D. Krabbenhoft, S. Olund, and J. Evans, 2008. Mercury and Methylmercury Processes in Northern San Francisco Bay Delta Bay Tidal Wetlands Ecosystems. Project ERP-02D-P62 Final Report. Submitted to the California Bay-Delta Authority Ecosystem Restoration Program. 65 p.

Marvin-DiPasquale, M., Stewart, A.R., Fisher, N.S., Pickhardt, P., Mason, R.P., Heyes, A., and **Windham-Myers, L.**, 2007, Evaluation Of Mercury Transformations and Trophic Transfer in the San Francisco Bay/Delta: Identifying Critical Processes for the Ecosystem Restoration Program: Final Report for Project # ERP-02-P40. Submitted to the California Bay Delta Authority (CBDA), 40 p.

Alpers, C.N., C. Eagles-Smith, C.Foe, S. Klasing, M. Marvin-DiPasquale, D.G. Slotton, **L. Windham-Myers.** 2007. Mercury Conceptual Model — Delta Regional Ecosystem Restoration Implementation Plan (DRERIP). Submitted to San Francisco Estuary and Watershed Science

Windham-Myers, L. 2005. Effects of plant species on surficial tidal exchanges and porewater concentrations of dissolved inorganic nitrogen in brackish tidal marsh. Biogeochemistry 75:289-304

Windham, L., M. Laska, and J. Wollenberg. 2004. Evaluating the progress of wetland restorations in urban landscapes: Case studies for assessing connectivity and function. Urban Habitats 2(1):140-158

Windham, L., J.S. Weis, and P. Weis. 2004. Metal dynamics of plant litter of *Spartina alterniflora* and *Phragmites australis* in metal-contaminated salt marshes. Part 1: Patterns of decomposition and metal uptake. Environmental Toxicology and Chemistry 23:1520-1528

Windham, L. and J. Ehrenfeld. 2003. Conflicting effects of a plant invasion on nitrogen cycling processes within brackish tidal marshes. Ecological Applications 13(4): 883-896

Windham, L. and L. Meyerson. 2003. Impacts of *Phragmites australis expansion*s on nitrogen dynamics of tidal marshes. Estuaries 26 (2B): 452-464 (Invited Paper)

Lathrop, R.G., **L. Windham,** and P. Montesano. 2003. Does *Phragmites* expansion alter the structure and function of marsh landscapes? Patterns and processes revisited. Estuaries 26 (2B): 423-435 (Invited Paper)

Weis, J., **L. Windham,** and P. Weis. 2003. Patterns of metal accumulation in leaves of the tidal marsh plants *Spartina alterniflora* Loisel and *Phragmites australis* Cav. Trin ex Steud. over the growing season. Wetlands 23 (2): 246-250

Windham, L., Weis, J. and P. Weis. 2003. Uptake and distribution of metals in two dominant salt marsh macrophytes, *Spartina alterniflora* (cordgrass) and *Phragmites australis* (common reed). Estuarine, Coastal and Shelf Science 56:63-72

Weis, P., **L. Windham**, D. J. Burke and J. S. Weis. 2002. Release into the environment of metals by two vascular salt marsh plants. Marine Environmental Research. 54(3): 325-329

Weis, J.S., **L. Windham** and P. Weis. 2002 Growth, survival and metal content in marsh invertebrates fed diets of detritus from *Spartina alterniflora* Loisel and *Phragmites australis* Cav. Trin. Ex Steud. from metal-polluted and clean sites. Wetlands Ecology and Management 10(1): 71-84.

Windham, L., Weis, J.S. and P. Weis. 2001. Patterns and processes of mercury (Hg) release from leaves of two dominant salt marsh plants: *Spartina alterniflora* (salt cordgrass) and *Phragmites australis* (common reed). Estuaries 24(5): 787-799

Windham, L., J. S. Weis and P. Weis. 2001. Lead uptake, distribution, and effects in two dominant salt marsh macrophytes, *Spartina alterniflora* (cordgrass) and *Phragmites australis* (common reed). Marine Pollution Bulletin 42(10): 811-816

Windham, L. 2001. Comparison of biomass production and decomposition between *Phragmites australis* (common reed) and *Spartina patens* (salt hay) in brackish tidal marsh of New Jersey. Wetlands 21(2): 179-188

Weis, J.S.., **L. Windham,** C. Santiago-Bass and P. Weis. 2001. Growth, survival, and metal accumulation by marsh invertebrates fed diets of detritus from *Spartina alterniflora* Loisel and *Phragmites australis* Cav. Trin. Ex Steud from metal-contaminated and clean sites. Wetland Ecology and Management 9(1): 1-14

Rooth, J., and **L. Windham.** 2000. *Phragmites* on death row: Is biocontrol really warranted? Wetland Journal 12(1):29-37

Windham, L. 2000. Microscale spatial distribution of *Phragmites australis* (common reed) invasion into *Spartina patens* (salt hay)-dominant communities. Biological Invasions 1(2/3):137-147

Meyerson, L., K. Saltonstall, **L. Windham,** E. Kiviat, and S. Findlay. 2000. A comparison of *Phragmites australis* ecology in freshwater, brackish and high salt marshes of North America. Wetland Ecology and Management 8:89-103

Windham, L. and R. Lathrop. 1999. Effects of *Phragmites australis* (common reed) invasion on aboveground biomass and soil properties in brackish tidal marsh. Estuaries 22(4): 927-935

Windham, L. and T. Breden. 1999. A GIS-based threat analysis of *Helonias bulatta* (swamp-pink) populations of the Big Timber Creek watershed, New Jersey. Bartonia 60:37-48

Conference Presentations (December 2011-December 2012):

Byrd, K. , L.M. Schile, **L. Windham-Myers,** M. Kelly, J. Hatala, and D. Baldocchi**.** A hyperspectral approach to estimating biomass and plant production in a heterogeneous restored peatland. American Geophysical Union Fall Meeting, December 3-7, 2012, San Francisco, California.

Mills, C.T., **L. Windham-Myers**, M.P. Waldrop, D.P. Krabbenhoft, M.C Marvin-DiPasquale, W.H Orem, S. Piazza, M. Haw, J. McFarland, M.S. Varonka. Impacts of Deep Water Horizon Oil on Marsh Sediment Biogeochemistry in Barataria Bay, LA, USA. American Geophysical Union Fall Meeting, December 3-7, 2012, San Francisco, California.

Windham-Myers, L., J.Z. Drexler, K. Byrd, and L.M. Schile. Tidal marsh accretion processes in the San Francisco Bay-Delta – are our models underestimating the historic and future importance of plant-mediated organic accretion? American Geophysical Union Fall Meeting, December 3-7, 2012, San Francisco, California.

Eagles-Smith, C.A., J.T. Ackerman, J. Fleck, **L. Windham-Myers**, H. McQuillen, W. Heim, M. Stephenson. Experimental control of methylmercury in rice wetlands using alternative rice harvest practices. Society of Environmental Toxicology and Chemistry (SETAC) Annual Meeting, November 11-15, 2012, Long Beach, CA

Windham-Myers, **L.**, Coastal freshwater peat accretion – Physiologic processes and legacy impacts of dominant wetland plant species. Ecological Society of America Annual Meeting, August 5-9, 2012. Portland, Oregon

Windham-Myers , L. Wetland restoration for negative emissions. Stanford Global Climate and Energy Program Workshop: Energy Supply with Negative Carbon Emissions. June 15, 2012 http://gcep.stanford.edu/events/workshops_negemissions2012/presentationsandvideo.html

Windham-Myers, L., B. Bergamaschi and F. Anderson. Why is restored peatland NEE so high? Insights from three methods for CO_2 flux estimates. Invited Session. Society of Wetland Scientists, Annual Meeting, Orlando, FL, June 3-8, 2012.

Windham-Myers, L., B. Bergamaschi, R. Miller, R. Fujii and F. Anderson. Carbon-Capture Wetland Farming: Challenges and Opportunities for the CA Delta. Invited Session. Society of Wetland Scientists, Annual Meeting, Orlando, FL, June 3-8, 2012.

F. Anderson, **Windham-Myers, L.**, and B. Bergamaschi. Seasonal Carbon and Energy Fluxes for Restored Wetlands in the Sacramento – San Joaquin Delta Society of Wetland Scientists, Annual Meeting, Orlando, FL, June 3-8, 2012.

Windham-Myers, L., K..Byrd, S. Khanna, R. Miller, and F. Anderson., San Francisco, CA; Wetland plant physiology exhibits controls on carbon sequestration processes in restored temperate peatland of California, USA. Oral Presentation, AGU, Fall Meeting, San Francisco, CA, December 3-9, 2011

Byrd, K., S. Blanchard, L.M. Schile, S. Kolding, M. Kelly, **L. Windham-Myers**, and R. Miller. Advanced remote sensing to quantify temperate peatland capacity for belowground carbon capture. Oral Presentation, AGU, Fall Meeting, San Francisco, CA, December 3-9, 2011

Professional Service (current):

Associate Editor, Wetlands (Society of Wetland Scientists)

Session Co-Convener – American Geophysical Union Fall Meeting, December 3-7, 2012, San Francisco, California. Coastal and Continental Peat Accretion Dynamics

Session Co-Convener – Ecological Society of America Annual Meeting, August 5-9, 2012. Portland, Oregon. Ecosystem Consequences of Species Alterations: Special Symposium in Memory of Late Professor Joan Ehrenfeld

KQED Quest Program – Radio Interview, May 18, 2012
http://science.kqed.org/quest/audio/californias-deadlocked-delta-is-carbon-farming-the-future/

Undergraduate Mentor – Society of Wetland Scientists/ Ecological Society of America SEEDS

Carbon Sequestration Workgroup – Baylands Ecosystem and Habitat Goals

Scientific Journal Reviews (AOB, SBB, PNAS, BIOG, JGR-Biog., ECOLENG, STOTEN, Wetlands)

Scientific Proposal Reviews (NASA, NOAA, Elkhorn Slough Foundation, USGS)

Intergovernmental Panel on Climate Change, Expert Panel for Wetland Additional Guidelines for National Greenhouse Gas Inventories

National Center for Ecological Analysis and Synthesis, Tidal Wetland Carbon Sequestration Workshop http://www.nceas.ucsb.edu/projects/12503

Heinz Center Institute for Science Communication and Policy Development Workshop, participant (September 19-23, 2010, Davis, CA)

SFB-Delta Roadmap Project, The Nature Conservancy, Review Panel (since 2009)

Elkhorn Slough Foundation, National Estuarine Research Reserve, Science Advisory Panel (since 2006)

Suisun Technical Advisory Panel (since 2006)

Stanford University Co-Advisor (Earth Systems), Pre-Major Advisor (since 2006)