ABBREVIATED CURRICULUM VITAE

Andrew H. Baldwin

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Professional preparation

Louisiana State University	Botany	Ph.D., 1996
Tufts University	Biology	B.S., 1983
Tufts University	Engineering	B.S., 1983

Appointments

2018-present	Professor, Environmental Science & Technology Department, University of Maryland
2017-2018	Professor, Associate Chair, and Director of Undergraduate Programs, Environmental Science & Technology Department, University of Maryland
2015-2017	Professor and Director of Undergraduate Programs, Environmental Science & Technology Department, University of Maryland
2002-2015	Associate Professor and Director of Undergraduate Programs, Environmental Science & Technology Department, University of Maryland
1996-2002	Assistant Professor, Environmental Science & Technology Department, University of Maryland
1992-1996	Graduate Fellow, Louisiana State University
1986-1992	Ecologist and Department Manager, ABB Environmental, Inc., Wakefield, MA
1984-1986	Environmental Engineer, Alliance Technologies, Inc. Bedford, MA

Professional Certification

Professional Wetland Scientist (P.W.S.), License 2997, Society of Wetland Scientists Professional Certification Program.

Research Interests

My research centers on the ecology of natural and restored wetlands. Trained as a plant community ecologist, I am interested in the roles of global change processes, eutrophication, invasive species, and restoration techniques on the distribution and diversity of wetland plants. Recent projects include emerald ash borer impacts on tidal freshwater forested wetlands, microplastics in wetlands, and plant-microbe-biogeochemistry linkages in restored and natural wetlands.

Synergistic and Service Activities

- President of Society of Wetland Scientists, an international organization of >3,000 members (2009-2010)
- Teach graduate and undergraduate courses on wetland ecology and wetland restoration
- Faculty liaison for RESTORE, our department's student undergraduate group
- Mentored more than 25 M.S. and Ph.D. students and many undergraduate students in research
- Gave or coauthored over 150 invited and contributed oral or poster presentations
- Secured over $3.3M in contracts and grants.
- Served as Associate Editor of *Wetlands* and peer reviewer for 30 journals and 25 agencies
- Serve my institution as chair or member of committees and outreach activities

- Collaborate internationally on research and publications
- Led the development and subsequent revisions of the ENST undergraduate program, which received the Award for Departmental Excellence and Innovation in Teaching from the Center for Teaching Excellence-Lilly Teaching Fellows.

Books Edited

Batzer, D.P., and **A.H. Baldwin** (eds.), 2012. *Wetland Habitats of North America: Ecology and Conservation Concerns*. University of California Press, Berkeley. *My contribution was about 40% of the total effort.*

Barendregt, A., D.F. Whigham, and **A.H. Baldwin** (eds.), 2009. *Tidal Freshwater Wetlands*. Backhuys Publishers, Leiden, The Netherlands. 320 pp. *My contribution was about 30% of the total effort.*

Refereed Book Chapters

Baldwin, A.H., R.S. Hammerschlag, and D.R. Cahoon, in press. Evaluation of restored tidal freshwater wetlands. Chapter 29 in: G.M.E. Perillo, E. Wolanski, D.R. Cahoon, and M.M. Brinson (eds.), *Coastal Wetlands: an Integrated Ecosystem Approach*, 2nd Edition. Elsevier, Oxford, UK.

Conner W.H., K.W. Krauss, **A.H. Baldwin**, and S.Hutchinson, 2014. Wetlands, Tidal. In: *Encyclopedia of Natural Resources: Land*, Taylor and Francis: New York. Published online: 21 Oct 2014, 575-588.

Baldwin, A.H., P.J. Kangas, J.P. Megonigal, M.C. Perry, and D.F. Whigham, 2012. Coastal wetlands of Chesapeake Bay. Chapter 3 (pp. 29-43) in: Batzer, D.P., and A.H. Baldwin. *Wetland Habitats of North America: Ecology and Conservation Concerns*. University of California Press, Berkeley. 408 pp.

Baldwin, A.H., and D.P Batzer, 2012. Wetland habitats of North America: an introduction. Chapter 1 (pp. 1-9) in: Batzer, D.P., and A.H. Baldwin. *Wetland Habitats of North America: Ecology and Conservation Concerns*. University of California Press, Berkeley. 408 pp.

Baldwin, A.H., 2011. Plant communities of urban wetlands: Patterns and controlling processes. Chapter 2.1 (pp. 77-84) in: J. Niemelä, J.H. Breuste, G. Guntenspergen, N.E. McIntyre, T. Elmqvist, and P. James (eds.), *Urban Ecology: Patterns, Processes, and Applications*. Oxford University Press. 392 pp.

Whigham, D.F., A. Barendregt, and **A.H. Baldwin**, 2009. Synthesis and perspectives for the future. Chapter 24 (pp. 267-270) in: A. Barendregt, D.F. Whigham, and A.H. Baldwin (eds.), *Tidal Freshwater Wetlands*. Backhuys Publishers, Leiden, The Netherlands. 320 pp.

Whigham, D.F., **A.H. Baldwin**, and C.W. Swarth, 2009. Conservation of tidal freshwater wetlands in North America. Chapter 21 (pp. 233-240) in: A. Barendregt, D.F. Whigham, and A.H. Baldwin (eds.), *Tidal Freshwater Wetlands*. Backhuys Publishers, Leiden, The Netherlands. 320 pp.

Whigham, D.F., **A.H. Baldwin**, and A. Barendregt, 2009. Tidal freshwater wetlands. Chapter 18 (pp. 515-534) in: G.M.E. Perillo, E. Wolanski, D.R. Cahoon, and M.M. Brinson (eds.), *Coastal Wetlands: an Integrated Ecosystem Approach*. Elsevier, Oxford, UK. 974 pp.

Leck, M.A., **A.H. Baldwin**, V.T. Parker, L. Schile, and D.F. Whigham, 2009. Plant communities of tidal freshwater wetlands of the continental USA and southeastern Canada. Chapter 5 (pp. 41-58) in: A. Barendregt, D.F. Whigham, and A.H. Baldwin (eds.), *Tidal Freshwater Wetlands*. Backhuys Publishers, Leiden, The Netherlands. 320 pp.

Guntenspergen, G.R., **A.H. Baldwin**, D.M. Hogan, H.A. Neckles, and M.G. Nielsen, 2009. Valuing urban wetlands: Modification, preservation and restoration. Chapter 29 (pp. 503-520) in: M.J. McDonnell, A.K. Hahs, and J.H. Breuste (eds.), *Ecology of Cities and Towns—a Comparative Approach*. Cambridge University Press, Cambridge, UK. 736 pp.

Baldwin, A.H., R.S. Hammerschlag, and D.R. Cahoon, 2009. Evaluation of restored tidal freshwater wetlands. Chapter 29 (pp. 801-832) in: G.M.E. Perillo, E. Wolanski, D.R. Cahoon, and M.M. Brinson (eds.), *Coastal Wetlands: an Integrated Ecosystem Approach*. Elsevier, Oxford, UK. 974 pp.

Baldwin, A.H., A. Barendregt, and D.F. Whigham, 2009. Tidal freshwater wetlands—an introduction to the ecosystem. Chapter 1 (pp. 1-10) in: A. Barendregt, D.F. Whigham, and A.H. Baldwin (eds.), *Tidal Freshwater Wetlands*. Backhuys Publishers, Leiden, The Netherlands. 320 pp.

Baldwin, A.H., 2009. Restoration of tidal freshwater wetlands in North America. Chapter 19 (pp. 207-222) in: A. Barendregt, D.F. Whigham, and A.H. Baldwin (eds.), *Tidal Freshwater Wetlands*. Backhuys Publishers, Leiden, The Netherlands. 320 pp.

Baldwin, A.H., 2007. Vegetation and seed bank studies of salt-pulsed swamps of the Nanticoke River, Chesapeake Bay. Chapter 6 (pp. 139-160) in: W.H. Conner, T.W. Doyle, and K.W. Krauss, *Ecology of Tidal Freshwater Forested Wetlands of the Southeastern United States*. Springer, Dordrecht, The Netherlands. 505 pp.

Barendregt, A., D.F. Whigham, P. Meire, **A.H. Baldwin**, and S. Van Damme, 2006. Wetlands in the tidal freshwater zone. Chapter 6 (pp. 117-148) in: R. Bobbink, B. Beltman, J.T.A. Verhoeven, and D.F. Whigham (eds.), *Wetlands: Functioning, Biodiversity Conservation, and Restoration*. Ecological Studies, Vol. 191. Springer-Verlag, Berlin Heidelberg. 315 pp.

McKee, K.L., and **A.H. Baldwin**, 1999. Disturbance regimes in North American wetlands. Chapter 13 (pp. 331-363) in: L.R. Walker (ed.), *Ecosystems of Disturbed Ground*. Ecosystems of the World 16, Elsevier, Amsterdam. 900 pp.

Articles in Refereed Journals

(graduate students are underlined)

Maietta, C. et al., in press. Aggregation but not organo-metal complexes contributed to carbon (C) storage in tidal freshwater wetland soils. *Soil Science Society of America Journal*.

Nolte, S., C. Butzek, G. Felton, K. Jensen, and **A. Baldwin**, in press. Efficiency of different sediment traps under experimental conditions simulating tidal inundations. *Journal of Coastal Research*.

Mueller, P., Schile-Beers, L. M., Mozdzer, T. J., Chmura, G. L., Dinter, T., Kuzyakov, Y., de Groot, A. V., Esselink, P., Smit, C., D'Alpaos, A., Ibáñez, C., Lazarus, M., Neumeier, U., Johnson, B. J., **Baldwin, A. H.**, Yarwood, S. A., Montemayor, D. I., Yang, Z., Wu, J., Jensen, K., and Nolte, S.: Global-change effects on early-stage decomposition processes in tidal wetlands – implications from a global survey using standardized litter, *Biogeosciences*, 15, 3189-3202, https://doi.org/10.5194/bg-15-3189-2018, 2018.

Delgado, P., P. Hensel, and **A. Baldwin**, 2018. Understanding the impacts of climate change: an analysis of inundation, marsh elevation, and plant communities in a tidal freshwater marsh. *Estuaries and Coasts* 41: 25-35. https://doi.org/10.1007/s12237-017-0342-y

Eid, E.M., A.E. Keshta, K.H. Shaltout, **A.H. Baldwin**, A.A. Sharaf El-Din, 2017. Carbon sequestration potential of five Mediterranean lakes of Egypt. *Fundamental and Applied Limnology* 190: 87-96.

Wilcox, K.R., A.T. Tredennick, S.E. Koerner, E. Grman, L.M. Hallett, M.L. Avolio, K.J. La Pierre, G.R. Houseman, F. Isbell, D.S. Johnson, J.M. Alatalo, **A.H. Baldwin**, E. Bork, E.H. Boughton, W.D. Bowman, A J. Britton, J.F. Cahill Jr., S.L. Collins, G. Du, A. Eskelinen, L. Gough, A. Jentsch, C. Kern, K. Klanderud, A.K. Knapp, J. Kreyling, Y. Luo, J.R. McLaren, P. Megonigal, V. Onipchenko, J. Prevéy, J. Price, C.H. Robinson, O. Sala, M.D. Smith, N.A. Soudzilovskaia, L. Souza, D. Tilman, S.R. White, Z. Xu, L. Yahdjian, Q. Yu, P. Zhang, Y. Zhang, 2017. Asynchrony among local communities stabilizes ecosystem function of metacommunities. *Ecology Letters* 20: 1534–1545. doi:10.1111/ele.12861

Willson, K.G. A.N. Perantoni, Z.C. Berry, M.I. Eicholtz, Y.B. Tamukong, S.A. Yarwood, and **A.H. Baldwin**, 2016. Influences of reduced iron and magnesium on growth and photosynthetic performance of *Phragmites australis* subsp. *americanus* (North American common reed). *Aquatic*

Botany 137: 30-38. Note: All of the other authors except Yarwood were undergraduate students in a senior capstone project that resulted in this publication.

McFarland, E.K., M. LaForgia, M. Yepsen, D.F. Whigham, **A.H. Baldwin**, and M. Lang. 2016. Plant biomass and nutrients (C, N and P) in natural, restored and prior converted depressional wetlands in the mid-Atlantic Coastal Plain, U.S. *Folia Geobotanica* doi:10.1007/s12224-016-9239-y

Beckett, L.H., **A.H. Baldwin**, and M.S. Kearney, 2016. Tidal marshes across a Chesapeake Bay subestuary are not keeping up with sea-level rise., *PLoS ONE* 11(7): e0159753. doi:10.1371/journal.pone.0159753

Yarwood, S.A., **A.H. Baldwin**, M. Gonzalez Mateu, J.S. Buyer, 2016. Archaeal rhizosphere communities differ between the native and invasive line of the wetland plant *Phragmites australis* (common reed) in a Chesapeake Bay subestuary. *Biological Invasions* 18: 2717. doi:10.1007/s10530-016-1144-z

Prasse, C.E., **A.H. Baldwin**, and S.A.Yarwood, 2015. Site history and edaphic features override the influence of plant species on microbial communities in restored tidal freshwater wetlands. *Applied and Environmental Microbiology* 81: 3482-3491.

Silliman , B.R., T. Mozdzer, C. Angelini, J.E. Brundage, P. Esselink, J.P. Bakker, , K.B. Gedan, J. van de Koppel, and **A.H. Baldwin**, 2014, Livestock as a potential biological control agent for an invasive wetland plant. PeerJ 2:e567 https://doi.org/10.7717/peerj.567. Notes: I am senior author on this paper because data from a field grazing experiment conducted by my research lab formed the bulk of the experimental results of the paper and I wrote the methods, analyzed data, and prepared text and figures results for that part of the publication. I also supervised the graduate student.

Yepsen, M., **A.H. Baldwin**, D.F. Whigham, E. McFarland, M. LaForgia, and M. Lang, 2014. Agricultural wetland restorations achieve diverse native wetland plant communities but differ from natural wetlands. *Agriculture, Ecosystems, and Environment* 197:11-20

Baldwin, A.H., K. Jensen, and M. Schönfeldt, 2014. Warming increases plant biomass and reduces diversity across continents, latitudes, and species migration scenarios in experimental wetland communities. *Global Change Biology* 20:835-850.. Notes: The first two authors contributed equally.

Smith, C.D., **A.H. Baldwin**, J. Sullivan, P. T. Leisnham, 2013. Effects of elevated atmospheric CO_2 on competition between the mosquitoes *Aedes albopictus* and *Ae. triseriatus* via changes in litter quality and production. *Journal of Medical Entomology* 50:521-532. Note: P. Leisnham is senior author.

Baldwin, A.H., 2013. Nitrogen and phosphorus differentially affect annual and perennial plants in tidal freshwater and oligohaline wetlands. *Estuaries and Coasts* 36:547–558. Notes: Invited article for special section on tidal freshwater wetlands. Published online in 2011.

Sharpe, P.J., and **A.H. Baldwin**, 2013. Wetland plant species richness across estuarine gradients: the role of environmental factors and the mid-domain effect. *Aquatic Botany* 107: 23–32.

Sharpe, P.J., and **A.H. Baldwin**, 2012. Tidal marsh plant community response to sea-level rise: a mesocosm study. *Aquatic Botany* 101:34-40.

Bickford, W.A., **A.H. Baldwin**, B.A. Needelman, and R.R. Weil, 2012. Canopy disturbance alters competitive outcomes between two brackish marsh plant species. *Aquatic Botany* 103:23-29. Note: Baldwin and Needelman share senior authorship.

Bickford, W.A., B.A. Needelman, R.R. Weil, and **A.H. Baldwin**, 2012. Vegetation response to prescribed fire in Mid-Atlantic brackish marshes. *Estuaries and Coasts* 35:1432-1442.

Baldwin, A.H., K.M. Kettenring, and D.F. Whigham, 2010. Seed banks of *Phragmites australis*-dominated brackish wetlands: Relationships to seed viability, inundation, and land cover. *Aquatic Botany* 93:163-169.

Wojdak, J.., J. Guinan, J. Wirgau, R. Kugler, G. Hammond, C. Small, C. Manyara, F. Singer, C. Watts, B. Bodo, and **A. Baldwin**, 2010. University facilities as real-world foci of multidisciplinary science learning. *Journal of College Science Teaching* 39:8-16.

Hopfensperger, K.N., and **A.H. Baldwin**, 2009. Spatial and temporal dynamics of floating and drift-line seeds at a tidal freshwater marsh on the Potomac River, USA. *Plant Ecology* 201: 677-686.

Sharpe, P.J., and **A.H. Baldwin**, 2009. Patterns of wetland plant species richness across estuarine gradients of Chesapeake Bay. *Wetlands* 29: 225-235.

Neff, K.P., K. Rusello, and **A.H. Baldwin**, 2009. Rapid seed bank development in restored tidal freshwater wetlands. *Restoration Ecology* 17: 539-548. Note: published online in 2008.

Tawney, I., J.G. Becker, and **A.H. Baldwin**, 2008. A novel dual compartment, continuous-flow wetland microcosm to assess cis-dichloroethene removal from the rhizosphere. *International Journal of Phytoremediation* 10: 455-471.

Pendleton, F.N., and **A.H. Baldwin**, 2007. The effects of spraying deltamethrin for tsetse fly control on insectivorous bird populations in the Okavango Delta, Botswana. *African Journal of Ecology* 45: 566-576.

Peterson-Smith, J., and **A.H. Baldwin**, 2006. Constraints on understory vegetation communities of tidal freshwater swamps: a reciprocal transplant experiment. *Journal of the Torrey Botanical Society* 133: 566-576.

Neff, K.P., and **A.H. Baldwin**, 2005. Seed dispersal into wetlands: Techniques and results for a restored tidal freshwater marsh. *Wetlands* 25: 392-404.

Baldwin, A.H., 2004. Restoring complex vegetation in urban settings: the case of tidal freshwater marshes. *Urban Ecosystems* 7: 125-137.

Peterson, J.E., and **A.H. Baldwin**, 2004. Variation in seed and spore banks across a tidal freshwater landscape. *American Journal of Botany* 91: 1251-1259.

Peterson, J.E., and **A.H. Baldwin**, 2004. Seedling emergence from seed banks of tidal freshwater wetlands: Response to inundation and sedimentation. *Aquatic Botany* 78: 243-254.

Baldwin, A.H., and F.N. Pendleton, 2003. Interactive effects of animal disturbance and elevation on vegetation of a tidal freshwater marsh. *Estuaries* 26: 905-915.

Clarke, E., and **A.H. Baldwin**, 2002. Responses of wetland plant species to ammonia and water level. *Ecological Engineering* 18: 257-264.

Baldwin, A.H., M.S. Egnotovich, and E. Clarke, 2001. Hydrologic change and vegetation of tidal freshwater marshes: field, greenhouse, and seed bank experiments. *Wetlands* 21: 519-531.

Baldwin, A.H., M.S. Egnotovich, M.A. Ford, and W.J. Platt, 2001. Regeneration in fringe mangrove forests damaged by Hurricane Andrew. *Plant Ecology* 157: 151-164.

Baldwin, A.H., 2001. Got Mud? Field-based learning in wetland ecology. *Journal of College Science Teaching* 31(2): 94-100.

Schaafsma, J.A., **A.H. Baldwin**, and C.A. Streb, 2000. An evaluation of a constructed wetland to treat wastewater from a dairy operation in Maryland, U.S.A. *Ecological Engineering* 14: 199-206.

Baldwin, A.H., and E.F. DeRico, 1999. The seed bank of a restored tidal freshwater marsh in Washington, DC. *Urban Ecosystems* 3: 5-20.

Baldwin, A.H., and I.A. Mendelssohn, 1998. Response of two oligohaline marsh communities to lethal and nonlethal disturbance. *Oecologia* 116: 543-555.

Baldwin, A.H., and I.A. Mendelssohn, 1998. Effects of salinity and water level on coastal marshes: an experimental test of disturbance as a catalyst for vegetation change. *Aquatic Botany* 1250: 1-14.

Baldwin, A.H., I.A. Mendelssohn, and K.L. McKee, 1996. The influence of vegetation, salinity, and inundation on seed banks of oligohaline coastal marshes. *American Journal of Botany* 83: 470 479.

Baldwin, A.H., W.J. Platt, K.L. Gathen, J.M. Lessmann, and T.J. Rauch, 1995. Hurricane damage and regeneration in fringe mangrove forests of southeast Florida, USA. *Journal of Coastal Research* SI 18: 169-183.