Lorie Winchell Staver

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Education:

2007 – 2015, Ph.D., Marine, Estuarine, Environmental Science, University of Maryland, College Park
1984 – 1986, M.S., Marine, Estuarine, Environmental Science, University of Maryland, College Park
1978 – 1982, B.S., Biology, St. Lawrence University

Professional Background:

January 2018 – present, Associate Research Scientist, University of Maryland Center for Environmental Science Horn Point Laboratory
January 2016 – January 2018, Assistant Research Scientist, University of Maryland Center for Environmental Science, Horn Point Laboratory
2007 – 2016, Senior Faculty Research Assistant, University of Maryland Center for Environmental Science, Horn Point Laboratory,
2000 – 2006, Faculty Research Assistant, University of Maryland Center for Environmental Science, Horn Point Laboratory
1986 – 1997, Faculty Research Assistant, University of Maryland Center for Environmental Science, Horn Point Laboratory

Research

A. *Areas of Professional Expertise*: wetland ecology; submersed aquatic vegetation ecology; restoration ecology; water quality

B. *Peer Reviewed Publications*:

Plough, L., B. Lee, **L. W. Staver**. In press. The effect of dieback on the genetic diversity of *Spartina alterniflora* in restoration marshes of the Chesapeake Bay. *Wetland Ecology and Management*.

Morris, J.T., and **L.W. Staver**. 2024. Elevation Changes in Restored Marshes at Poplar Island, Chesapeake Bay, MD: II. Modeling the Importance of Marsh Development Time. *Estuaries and Coasts* 47: 1799–1813. https://doi.org/10.1007/s12237-024-01342-x

Staver, L.W., J.T. Morris, J.C. Cornwell, J.C. Stevenson, W. Nardin, P. Hensel, M.S. Owens, and A. Schwark. 2024. Elevation Changes in Restored Marshes at Poplar Island, Chesapeake Bay, MD: I. Trends and Drivers of Spatial Variability. *Estuaries and Coasts* 47: 1784–1798. https://doi.org/10.1007/s12237-023-01319-2

Kim, C., L.W. Staver, X. Chen, A. Bulseco, J.C. Cornwell, and S.Y. Malkin. 2023. Microbial Community Succession Along a Chronosequence in Constructed Salt Marsh Soils. *Microbial Ecology* 85: 931 - 950.

Cornwell, J. C., M. S. Owens, **L. W. Staver.** 2022. Nutrient retention and release in eroding Chesapeake Bay tidal wetlands. *Journal of American Water Resources Association* 58(6):940-957. https://onlinelibrary.wiley.com/doi/abs/10.1111/1752-1688.12984

Nardin W., Y. Taddia , M. Quitadamo , I. Vona , C. Corbau , G. Franchi , **L. Staver** , A. Pellegrinelli. 2021. Seasonality and characterization mapping of restored tidal marsh by NDVI imageries coupling UAVs and multispectral camera. *Remote Sensing* 13(21):4207. https://www.mdpi.com/2072-4292/13/21/4207

Staver, L. W., J. C. Cornwell, N. J. Nidzieko, K. W. Staver, J. C. Stevenson, M. Owens, W. Boynton, and L. Lopez-Gonzalez. 2021. The Fate of Nitrogen in Dredged Material Used for Tidal Marsh Restoration. *Journal of Marine Science and Engineering* 9(849). https://doi.org/10.3390/jmse9080849.

Taddia, Y., A. Pellegrinelli, C. Corbau, G. Franchi, **L. W. Staver**, and W. Nardin. 2021. High-Resolution Monitoring of Tidal Systems Using UAV: A Case Study on Poplar Island, MD (USA). *Remote Sensing* 13:1364. https://www.mdpi.com/2072-4292/13/7/1364

Baker, R., M. D. Taylor, K. W. Able, M. W. Beck, J. Cebrian, D. D. Colombano, R. M. Connolly, C. Currin, L. A. Deegan, I. C. Feller et al. 2020. Fisheries Rely on Threatened Salt Marshes. *Science* 370 (6517):670-71. https://www.science.org/doi/10.1126/science.370.6517.670-b

Colombano, D. D., S. Y. Litvin, S. L. Ziegler, S. B. Alford, R. Baker, M. A. Barbeau, J. Cebrián, R. M. Connolly, C. A. Currin, L. A. Deegan, J. S. Lesser, C. W. Martin, A. E. McDonald, C. McLuckie, B. H. Morrison, J. W. Pahl, L. M. Risse, J. A. M. Smith, **L. W. Staver**, R. E. Turner, and N. J. Waltham. 2021. Climate Change Implications for Tidal Marshes and Food Web Linkages to Estuarine and Coastal Nekton. Estuaries and Coasts 44:1637–1648 https://doi.org/10.1007/s12237-020-00891-1

Waltham, N. J., C. Alcott, M. A. Barbeau, J. Cebrian, R. M. Connolly, L. A. Deegan, K. Dodds, L. A. Goodridge Gaines, B. L. Gilby, C. J. Henderson, C. M. McLuckie, T. J. Minello, G. S. Norris, J. Ollerhead, J. Pahl, J. F. Reinhardt, R. J. Rezek, C. A. Simenstad, J. A. M. Smith, E. L. Sparks, **L. W. Staver**, S. L. Ziegler, and M. P. Weinstein. 2021. Tidal Marsh Restoration Optimism in a Changing Climate and Urbanizing Seascape. Estuaries and Coasts 44:1681–1690. https://doi.org/10.1007/s12237-020-00875-1

Cornwell, J. C., M. S. Owens, **L. W. Staver**, and J. C. Stevenson. 2020. Tidal Marsh Restoration at Poplar Island I: Transformation of Estuarine Sediments into Marsh Soils. Wetlands 40:1673-1686.

Staver, L., J. Stevenson, J. Cornwell, N. Nidzieko, K. Staver, M. Owens, L. Logan, C. Kim, and S. Malkin. 2020. Tidal Marsh Restoration at Poplar Island: II. Elevation Trends, Vegetation Development, and Carbon Dynamics. Wetlands 40:1687-1701.

Lipej, L., M. Mistri, M. Orlando-Bonaca, C. Palinkas, **L. Staver** and J. C. Stevenson. 2020. Status of Critical Habitats and Invasive Species. In: Vectors of Change in Coastal Ecosystems and the Services They Provide: A Comparative Analysis of the Northern Adriatic Sea and the Chesapeake Bay. Malone, T., A. Malej and J. Faganeli, editors. American Geophysical Union.

Fleri, J., W. Nardin, **L. W. Staver**, S. Lera and A.Gerevini. 2019. The effects of tides, channel morphology, and vegetation on sediment fluxes in a restored tidal marsh on Poplar Island (MD), USA. Earth Surface Processes and Landforms. DOI 10.1002/esp.4646.

Reese, J. G., P. C. McGowan, **L. W. Staver**, and C. R. Callahan. 2015. Fish crows (*Corvus ossifragus*) prey on eggs of Virginia rail (*Rallus limicola*) and common tern (*Sterna hirundo*). Maryland Birdlife **64**:51-57.

Staver, L. W., K. W. Staver, and J. C. Stevenson. 1996. Nutrient inputs to the Choptank River estuary: Implications for watershed management. Estuaries **19**:342-358.

Staver, L. W., and J. C. Stevenson. 1994. The impacts of the exotic species *Hydrilla verticillata* on the shallows in Chesapeake Bay. Pages 364-370 *in* Toward Sustainable Coastal Watersheds: The Chesapeake Experiment. Chesapeake Research Consortium, Norfolk, VA. CRC Press.

Stevenson, J. C., **L. W. Staver**, and K. W. Staver. 1993. Water-quality associated with survival of submersed aquatic vegetation along an estuarine gradient. Estuaries **16**:346-361.

Jones, T. W., and **L. Winchell**. 1984. Uptake and photosynthetic inhibition by Atrazine and its degradation products on four species of submerged vascular plants. Journal of Environmental Quality 13:243-247.

C. Reports and Other Publications:

Staver, L. W., J. C. Cornwell, J. C. Stevenson, W. Nardin, and M. S. Owens. 2018. Paul S. Sarbanes Ecosystem Restoration Project at Poplar Island Wetland Cells Monitoring Program: 2018 – 2019 Studies to Address Sustainability in the Poplar Island Marshes Final Report. University of Maryland Center for Environmental Science, Horn Point Laboratory.

Cahoon, D. R., J. H. Olker, A. G. Yeates, G. R. Guntenspergen, J. B. Grace, S. C. Adamowicz, S. C. Anisfeld, A. H. Baldwin, N. Barrett, L. Beckett, A. Benzecry, L. K. Blum, D. M. Burdick, W. Crouch, M. C. Ekberg, S. Fernald, K. W. Grimes, J. Grzyb, E. K. Hartig, D. A. Kreeger, M. Larson, S. Lerberg, J. C. Lynch, N. Maher, M. Maxwell-Doyle, L. R. Mitchell, J. Mora, V. O'Neill, A. Padeletti, D. J. Prosser, T. Quirk, K. B. Raposa, W. G. Reay, D. Siok, C. Snow, A. Starke, J. C. Stevenson, **L. Staver**, and V. Turner. 2019. Hurricane Sandy impacts on coastal wetland resilience. USGS Technical Report 2018-1142, Reston, VA.

Staver, L. W., J. C. Cornwell, J. C. Stevenson, L. Plough, W. Nardin, and M. S. Owens. 2018. Paul S. Sarbanes Ecosystem Restoration Project at Poplar Island Wetland Cells Monitoring Program: 2017 - 2018 Studies to Address Sustainability in the Poplar Island Marshes Final Report. University of Maryland Center for Environmental Science, Horn Point Laboratory. 70 pp.

Staver, L., J. C. Cornwell, J. C. Stevenson, and M. Owens. 2018. Paul S. Sarbanes Ecosystem Restoration Project at Poplar Island Wetland Cells Monitoring Program: 2016 - 2017 Studies to Address Sustainability in the Poplar Island Marshes Final Report. University of Maryland Center for Environmental Science, Horn Point Laboratory.

Stevenson, J. C., J. C. Cornwell, **L. W. Staver**, and M. Owens. 2017. Paul S. Sarbanes Ecosystem Restoration Project at Poplar Island Wetland Cells Monitoring Program: 2015 - 2016 Studies to Address Sea-Level Rise, Marsh Die Back, and Silicon-Related Issues. Final Report to Maryland Environmental Service. University of Maryland Center for Environmental Science, Cambridge, Md. 94 pp.

Stevenson, J. C., J. C. Cornwell, **L. W. Staver**, and M. Owens. 2016. Paul S. Sarbanes Ecosystem Restoration Project at Poplar Island Wetland Cells Monitoring Program: 2014 - 2015 Studies to Address Sea-Level Rise, Marsh Die Back, and Silicon-Related Issues.

Final Report to Maryland Environmental Service. University of Maryland Center for Environmental Science, Cambridge, Md. 94 pp.

Stevenson, J. C., J. C. Cornwell, **L. W. Staver**, and M. Owens. 2015. Paul S. Sarbanes Exosystem Restoration Project at Poplar Island Wetland Cells Monitoring Program: 2013 Studies to Address Sea-Level Rise, Marsh Dieback and Silicon-Related Issues Final Report. University of Maryland Center for Environmental Science, Cambridge, Md.

Stevenson, J. C., J. C. Cornwell, **L. W. Staver**, and M. Owens. 2013. Paul S. Sarbanes Ecosystem Restoration Project at Poplar Island Wetland Cells Monitoring Program: 2010 Studies to Address Sea-Level Rise and Marsh Dieback. University of Maryland Center for Environmental Science, Cambridge, MD.

Batiuk, R. A., R. J. Orth, K. A. Moore, W. C. Dennison, J. C. Stevenson, **L. W. Staver**, V. Carter, N. B. Rybicki, R. E. Hickman, S. Kollar, S. Bieber, and P. Heasly. 1992. Chesapeake Bay Submerged Aquatic Vegetation Habitat Requirements and Restoration Targets: A Technical Synthesis. Chesapeake Bay Program. 186 pp.

Conference Presentations

Staver, L. W. et al. Special session on the Poplar Island restoration project. Restore America's Estuaries 2024

Palinkas, C., **L. Staver**. Sediment-vegetation interactions in the created marshes of living shorelines: does age matter? Biennual meeting of the Coastal and Estuarine Research Federation. November 2021.

L. W. Staver, J. C. Stevenson, P. McGowan, C. Evaluating marsh response to environmental stressors: what can we learn from monitoring data? Coastal and Estuarine Research Federation, November 1-11, 2021.

Palinkas, C., **L. Staver**. Sediment-vegetation interactions in the created marshes of living shorelines: does age matter? Restore America's Estuaries Living Shoreline Technology Transfer. October 2021.

L. W. Staver, J. C. Stevenson, J.C. Cornwell, N. Nidzieko, K. W. Staver, M. S. Owens. Blue carbon potential in beneficial use projects: an example from Poplar Island. Maryland Water Monitoring Council, December 4, 2020.

Palinkas, C., **L. Staver**, M. Bolton. The impact of living shorelines to adjacent nearshore (subtidal) habitats. American Shore and Beach Protection Association. October 2020.

Palinkas, C., **L. Staver**. Assessing the effectiveness and potential resiliency of living shorelines in mesohaline Chesapeake Bay. Restore America's Estuaries National Coastal and Estuarine Summit. September 2020.

Palinkas, C., **L. Staver**. Long-term impacts of living shorelines to SAV habitats in Chesapeake Bay. Chesapeake Bay Trust Pooled Monitoring Forum. June 2020.

Palinkas, C., **L. Staver**. Sediment-vegetation feedbacks in the created marshes of living shorelines. Chesapeake Community Research Symposium. June 2020.

Palinkas, C., **L. Staver**. Integrating biogeomorphic feedbacks in the coastal zone to bolster coastal resiliency. European Geosciences Union. April 2020.

Palinkas, C., **L. Staver**. Role of living shorelines in effective and sustainable coastal-management strategies. Social Coast Forum. February 2020.

Osborn, Michelle and **L. W. Staver.** Poplar Island – challenges and successes of a large-scale restoration project in the Chesapeake Bay. Delaware Wetlands Conference, January 28-29, 2020, Wilmington, DE.

Palinkas, C., **L. Staver**, C. Gurbisz, M. Bolton*. Comparing ecosystem services provided by submersed aquatic vegetation (SAV) beds and created tidal marshes. Biennial Meeting of the Coastal and Estuarine Research Federation. November 2019.

Staver, L. W., J. C. Stevenson, J. C. Cornwell, N. Nidzieko and M. S. Owens. The influence of high nutrient availability on the carbon balance in restored marshes: an example from Poplar Island, Maryland in Chesapeake Bay. Coastal and Estuarine Research Federation, November 3-7, 2019, Mobile, AL.

Staver, L. W. Striking a balance between competing goals in tidal marsh restoration: habitat value versus resilience to sea-level rise. Coastal and Estuarine Research Federation, Workshop: Concepts and Controversies in Tidal Marsh Ecology, November 2-3, 2019, Dauphin Island, AL.

Staver, L.W., J. C. Stevenson, J. Cornwell, M. Owens. Including Ecology in Ecological Restoration: Design Considerations for Tidal Marsh Restoration with Fine-Grained Dredged Material. Society of Wetland Scientists, May 28-31, 2019, Baltimore, MD.

Cornwell, J. C., M. S. Owens, **L. W. Staver**, J. C. Stevenson. Wetland Soils Derived From Estuarine Sediments: Geochemical Observations. Society of Wetland Scientists, May 28-31, 2019, Baltimore, MD.

Palinkas, C., **L. Staver**. Quantitative assessment of living shoreline effectiveness and impacts to adjacent habitats over the last decade. Marsh Resilience Summit. February 2019.

Staver, Lorie, J. C. Stevenson, J. Cornwell, M. Owens, and N. Nidzieko. The Influence of High Nutrient Availability on the Carbon Balance in Restored Marshes: An Example from Poplar Island, MD in Chesapeake Bay. American Geophysical Union, December 2018, Washington, D.C.

Nardin, W., Y. Taddia, C. Corbau, G. Franchi, G. Silsbe and **L. Staver**. UAVs to assess channels' shape evolution in a restored salt marsh. American Geophysical Union, December 2018, Washington, D.C.

Palinkas, C. M. and **L. Staver**. Promoting living shorelines for shoreline protection: understanding potential impacts to and ecosystem trade-offs with adjacent submersed aquatic vegetation (SAV). American Geophysical Union, December 2018, Washington, D.C.

Staver, Lorie, J. C. Stevenson, P. Hensel and N. Nidzieko. Tidal marsh restoration in the mid-Atlantic: designing for resilience to accelerating sea-level rise. Coastal and Estuarine Research Federation November 2017, Providence, RI.

J. C. Stevenson, **L. Staver**, M. Kearney. Geomorphic and ecological factors and survival of tidal wetlands: the necessity of determining inflection points. Coastal and Estuarine Research Federation November 2017, Providence, RI.

J. C. Stevenson, **L. Staver**. Optimizing resilience in tidal marshes created with fine-grained dredged material in upper Chesapeake Bay. Restore America's Estuaries, December 2016, New Orleans, LA.

Staver, L. W., J. C. Stevenson, J. C. Cornwell, M. S. Owens and P. Hensel. Destabilizing effects of nitrogen in created tidal marshes in upper Chesapeake Bay. Coastal and Estuarine Research Federation, November 2015, Portland, OR.

Staver, L. W., J. C. Stevenson, J.C. Cornwell, M. Owens and P. Hensel. Sustainability in the created marshes at Poplar Island restoration project in mid-Chesapeake Bay National Conference on Ecosystem Restoration, July 2013, Chicago, IL.

Staver, L. W., J. C. Stevenson, J. C. Cornwell, M. Owens, and P. Hensel. Organic deposition and sediment accretion in the nutrient rich tidal marshes at Poplar Island, MD. Coastal and Estuarine Research Federation, November 2013, San Diego, CA.

Stevenson, J. C., **L. W. Staver,** J. C. Cornwell, M. Owens, and P. Hensel. Can we build tidal marshes in estuaries to keep abreast of sea-level rise? Coastal and Estuarine Research Federation, November 2013, San Diego, CA.

Mentorship

Graduate Students

Ben Malmgren (MS); co-advisor; expected graduation 12/24
Julia Charest (MS); expected graduation 08/25
Erika Koontz (MS); co-advisor
Amanda Schwark (PhD); co-advisor

Graduate Committees

Anji Cooper (MS)