



University of
New Hampshire
School of Marine Science
and Ocean Engineering

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RESEARCH AREAS

Ecology and restoration of coastal wetlands and their plants
Science and management of created and restored wetlands

EDUCATION

1973-1977 **B.S. Chemistry**, Hobart College, Geneva, NY
1982-1988 **Ph.D. Marine Sciences**, Louisiana State University, Baton Rouge, LA

TEACHING

Wetland Ecology & Management
Wetlands Restoration & Mitigation
Freshwater Resources
Science and Management of Coastal Wetlands
Salt Marsh Restoration & Monitoring at Eagle Hill

HONORS & AWARDS

LSU Alumni Fellowship
GERS Freeport Sulfur Award
LSU Lipsey Award
Mayors Award: Great Bog
Coastal America Partnership
Greater Piscataqua Education Partners Award
UNH Outreach Scholar
Gulf of Maine Council's Visionary Award
Gulf of Maine Council's Susan Snow Cotter Leadership Award
EPA Environmental Merit Award

PROFESSIONAL APPOINTMENTS

1979-1981 Research Assistant, Center for Coastal Studies, Provincetown, MA
1981-1982 Research Assistant, National Marine Fisheries Service, Sandy Hook, NJ
1982-1988 Graduate Student, Department of Marine Sciences, Baton Rouge LA
1988-1990 Postdoctoral Investigator, Biology Department, WHOI, Woods Hole, MA
1990-1993 Research Scientist, Jackson Estuarine Laboratory, UNH, Durham NH
1993-1999 Assistant Research Professor, Jackson Estuarine Laboratory, UNH, Durham NH
1999-Present Associate Research Professor, NREN & Jackson Estuarine Laboratory, UNH
2011-2013 Class of 1937 Professorship in Marine Science, Marine Program, UNH
2014-2019 Interim Director, Jackson Estuarine Laboratory
2020-Present Director, Jackson Estuarine Laboratory

SERVICE AND OUTREACH

Societies: Northeastern Estuarine Research Society, Coastal Estuarine Research Federation, Society of Wetland Scientists, Society for Ecological Restoration

Recent and Current Activities: National Academy of Sciences: Monitoring and Assessment of Gulf of Mexico Restoration Activities; NH Coastal Adaptation Workgroup; Advocates for North Mill Pond; Piscataqua Region Estuaries Partnership, Technical Advisory Committee; Great Bay NERR Research Advisory Board; NHDES Landowner Technical Assistance Program

SELECTED PUBLICATIONS - Peer-Reviewed Journals *=Student

- Burdick, D.M. and I.A. Mendelssohn. 1990. Relationship between anatomic and metabolic responses to soil waterlogging in the coastal grass *Spartina patens*. *Journal of Experimental Botany* 41:223-228.
- Short, F.T., D.M. Burdick, J. Kaldy. 1995. Mesocosm experiments quantify the effects of coastal eutrophication on eelgrass, *Zostera marina* L. *Limnology and Oceanography* 40:740-749.
- Burdick, D.M., M. Dionne, R.M. Boumans, F.T. Short. 1997. Ecological responses to tidal restorations of New England salt marshes. *Wetlands Ecology and Management* 4:129-144.
- Short, F.T., D.M. Burdick, C.A. Short, R.C. Davis, P. Morgan. 2000. Developing success criteria for eelgrass, salt marsh and mud flat habitats. *Ecological Engineering* 15:239-252.
- Seliskar, D.M., J.L. Gallagher, D.M. Burdick, L.A. Mutz. 2002. The regulation of ecosystem functions by ecotypic variation in the dominant plant: *Spartina alterniflora*. *Journal of Ecology* 90:1-11.
- Konisky*, R.A., D.M. Burdick, M. Dionne, H.A. Neckles. 2006. A regional assessment of salt-marsh restoration and monitoring in the Gulf of Maine. *Restoration Ecology* 14:516-525.
- Morgan, P.A., D.M. Burdick, F.T. Short. 2009. The functions and values of fringing salt marshes in northern New England, USA. *Estuaries and Coasts* 32:483-495.
- Eberhardt*, A.L., D.M. Burdick, M. Dionne. 2011. Effects of road culverts on nekton in New England salt marshes. *Restoration Ecology* 19: 776-785.
- Vincent*, R.E., D.M. Burdick M. Dionne. 2013. Ditching and ditch-plugging in New England salt marshes. *Estuaries and Coasts* DOI 10.1007/s12237-012-9583-y
- Mora*, J.W., D.M. Burdick. 2013. Effects of man-made berms upon plant communities in New England salt marshes. *Wetlands Ecology & Management* DOI 10.1007/s11273-013-9285-7
- Raposa, K.B., M.L. Cole Ekberg, D.M. Burdick, N.T. Ernst, S.C. Adamowicz. 2016. Elevation change and the vulnerability of Rhode Island (USA) salt marshes to sea-level rise. *Regional Environmental Change*.
- Payne*, A.R., D.M. Burdick, G.E. Moore. 2019. Potential effects of sea level rise on salt marsh elevation dynamics in a New Hampshire estuary. *Estuaries and Coasts* 42:1405-1418. doi:10.1007/s12237-019-00589-z
- Burdick, D.M., G.E. Moore, S.C. Adamowicz, G.M. Wilson, C.R. Peter. 2020. Mitigating the legacy effects of ditching in a New England Salt marsh. *Estuaries and Coasts*. 43:1672–1679. doi: 10.1007/s12237-019-00656-5
- Adamowicz, S.C., G. Wilson, D.M. Burdick, W. Ferguson, R. Hopping. 2020. Farmers in the marsh: Lessons from history and case studies for the future. *Wetland Science and Practice, Society of Wetlands Scientists* 37:183-95.
- Diefenderfer, H., G. Steyer, M. Harwell, A. LoSchiavo, H. Neckles, D. Burdick, G. Johnson, K. Buenau, E. Trujillo, J. Callaway, R. Thom, N. Ganju, R. Twilley. 2020. Applying cumulative effects to strategically advance large-scale ecosystem restoration. *Frontiers in Ecology & the Environment*. doi:10.1002/fee.2274
- Moore G.E., D.M. Burdick, M.R. Routhier, A.B. Novak, A.R. Payne. 2021. Effects of a large-scale, natural sediment deposition event on plant cover in a Massachusetts salt marsh. *PLoS ONE* 16(1): e0245564.
- McKown, J.G., G. Moore, D. Burdick, T. Ballesterro, N. White. 2023. Short-term recovery of pilot living shoreline projects for salt marsh habitat in New Hampshire. *Estuaries and Coasts*. <https://doi.org/10.1007/s12237-023-01284-w>
- Kirshen, P., D. Burdick, S. Aytur, T. Lippmann, S. Nick, C. Watson. 2023. Protecting the built environment in a barrier beach and marsh system: A case study of the Hampton-Seabrook Estuary. *Shore and Beach* 91:19-29.
- McKown, J.G., D. Burdick, G. Moore, C. Peter, A. Payne, J. Gibson. 2023. Runnels reverse mega-pool expansion and improve marsh resiliency in the Great Marsh, Massachusetts (USA). *Wetlands* 43:35.
- Raposa, K., A. Woolfolk, C. Endris, M. Fountain, G. Moore, M. Tyrrell, R. Swerida, S. Lerberg, B. Puckett, M. Ferner, J. Hollister, D. Burdick, L. Champlin, J. Krause, D. Haines, A. Gray, E. Watson, K. Wasson. 2023. Evaluating thin-layer sediment placement as a tool for enhancing tidal marsh resilience: a coordinated experiment across eight US National Estuarine Research Reserves. *Estuaries and Coasts* 46:595-615.
- McKown, J.G.; Burdick, D.M.; Moore, G.E.; Gibson, J.L., and Ferguson, W., 2024. Evaluation of drainage enhancement for vegetation recovery in New England salt marshes using public domain, high-resolution aerial imagery. *Journal of Coastal Research*, 40(6), 1144–1159.

SELECTED PUBLICATIONS - Outreach Products

- Dock Design with the Environment in Mind. D.M. Burdick and F. T. Short. UNH, Jackson Estuarine Laboratory. CD/Web distribution 2003/2005
- Tidal Marsh Restoration: A Synthesis of Science and Practice. Roman, C.T., D.M. Burdick (eds.). 2012. Island Press. Washington. 406 pp.
- Effective Monitoring to Evaluate Ecological Restoration in the Gulf of Mexico. 2016. The National Academies of Sciences Press, Washington, DC. 10.17226/23476