

Gary Sullivan
Wetlands Restoration Ecologist

The Wetlands Initiative
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EDUCATION

1995	Ph.D.	Plant Ecology	Binghamton University, Binghamton, NY
1988	B.S.	Biology	Elmira College, Elmira, NY
1975	B.A.	Anthropology	St. John Fisher College, Rochester, NY

PROFESSIONAL EXPERIENCE

2001-2009	Senior Restoration Ecologist	The Wetlands Initiative
1996-2002	Adjunct Assistant Professor	San Diego State University
1999-2001	NRC Postdoctoral Fellow	USEPA Coastal Ecology Branch
1995-1999	Research Ecologist	Pacific Estuarine Research Lab
1994-1995	Postdoctoral Research; Adjunct Professor	Binghamton University
1989-1994	Dissertation Research	Binghamton University
1988-1994	Research/Teaching Assistant; Lab Instructor	Binghamton University
1988	Research Assistant; Lab Instructor	Elmira College

PUBLICATIONS

- P.G. Bajer, G. Sullivan, and P.W. Sorenson. 2009. Effects of a rapidly increasing population of common carp on vegetative cover and waterfowl in a recently restored shallow lake. *Hydrobiologia*. DOI 10.1007/s10750-009-9844-3.
- Sullivan, G., J. C. Callaway and J. B. Zedler. 2007. Plant assemblage composition explains and predicts how biodiversity affects salt marsh functioning. *Ecological Monographs*. 77: 569-590.
- Titus, J. E., D. Gris , G. Sullivan, M. D. Stephens. 2004. Monitoring submersed vegetation in a mesotrophic lake: correlation of two spatio-temporal scales of change. *Aquatic Botany*. 79:33-50.
- Morzaria-Luna, H., J.C. Callaway, G. Sullivan, and J.B. Zedler. 2004. Relationship between topographic heterogeneity and vegetation patterns in a Californian salt marsh. *Journal of Vegetation Science*. 15: 523-530.
- Callaway, J. C., Sullivan, G., and Zedler, J. B. 2003. Species-rich plantings increase biomass and nitrogen accumulation in a wetland restoration experiment. *Ecological Applications*. 13:1626-1639.
- Sullivan, G. 2002. Restoring a complex of backwater lakes, wetlands, and prairie on the Illinois River. *Ecological Restoration*. 20:134-135.
- Sullivan, G. 2001. Establishing vegetation in restored and created coastal wetlands. *in*: J. B. Zedler (ed.), *Handbook of restoring coastal wetlands*. CRC Marine Science Series. CRC Press, Boca Raton, FL.
- Zedler, J. B., J. C. Callaway, and G. Sullivan. 2001. Declining biodiversity: Why species matter and how their functions might be restored in Californian tidal marshes. *Bioscience*, 51, 1005-1017.

- Titus, J. T. and G. Sullivan. 2001. Heterophylly in the yellow water lily *Nuphar variegata* (Nymphaeaceae): effects of [CO₂], natural sediment type, and depth. *American Journal of Botany*. 88:1469-1478.
- Sullivan, G. and G. B. Noe. 2001. Coastal wetland plant species of southern California. *in*: J. B. Zedler (ed.), *Handbook of restoring coastal wetlands*. CRC Marine Science Series. CRC Press, Boca Raton, FL.
- Callaway, J. C. and G. Sullivan. 2001. Sustaining restored wetlands: Identifying and solving management problems. *in*: J. B. Zedler (ed.), *Handbook of restoring coastal wetlands*. CRC Marine Science Series. CRC Press, Boca Raton, FL.
- Callaway, J. C., G. Sullivan, G. D. Williams, J. S. Desmond and J. B. Zedler. 2001. Assessment and monitoring of restored wetlands. *in*: J. B. Zedler (ed.), *Handbook of restoring coastal wetlands*. CRC Marine Science Series. CRC Press, Boca Raton, FL.
- Sullivan, G. and J. B. Zedler. 1999. Functional redundancy among tidal marsh halophytes: a test. *Oikos*. 84: 246-260.
- Zedler, J. B., J. C. Callaway, J. S. Desmond, G. Vivian-Smith, G. D. Williams, G. Sullivan, A. E. Brewster, and B. K. Bradshaw. 1999. Californian salt marsh vegetation: An improved model of spatial pattern. *Ecosystems* 2:19-35.
- Zedler, J. B., J. Desmond, S. Phinn, B. Nyden, G. Sullivan, G. D. Williams, J. Callaway, K. E. Boyer, A. Powell. 1997. New tools for assessing coastal habitats. *in*: O. T. Magoon, H. Converse, B. Baird, and M. Miller-Henderson (ed.), *California and the World Ocean '97*. Vol. 1. American Society of Civil Engineers, Reston, VA. 1016-1027.
- Sullivan, G., and J. E. Titus. 1996. Physical site characteristics limit pollination and fruit set in the dioecious hydrophilous species, *Vallisneria americana*. *Oecologia*. 108: 285-292.
- Pueschel, C. M., G. Sullivan, and J. E. Titus. 1995. Occurrence of the red alga *Thorea violacea* (Batrachospermales: Thoreaceae) in the Hudson River, New York State. *Rhodora*. 97: 328-338.
- Sullivan, G. 1995. A tradeoff between sexual and asexual reproduction in the dioecious clonal macrophyte *Vallisneria americana*: environmental and genetic influences. Ph.D. Dissertation, Binghamton University, Binghamton, NY.

CONTRIBUTED PAPERS AT PROFESSIONAL SOCIETY MEETINGS

- Sullivan, G., J. C. Callaway and J. B. Zedler. 2001. Species richness and system function in experimental salt marsh microcosms. *Ecological Society of America Annual Meeting*. Madison, WI.
- Sullivan, G., J. C. Callaway and J. B. Zedler. 1999. Diversity affects function in experimental salt marsh plant assemblages. *Ecological Society of America Annual Meeting*. Spokane, WA.
- Sullivan, G. and J. B. Zedler. 1997. Biodiversity and system function in experimental salt marsh assemblages. *Ecological Society of America Annual Meeting*. Albuquerque, NM.
- Sullivan, G., J. Callaway and J. B. Zedler. 1997. Poster: Salt marsh establishment from seedlings: an alternative to transplantation. *Estuarine Research Federation Biannual Meeting*. Providence, RI.
- Sullivan, G. 1995. The genetic basis to the relationship between sexual and asexual reproduction in the dioecious clonal macrophyte *Vallisneria americana* Michx. *Society for the Study of Evolution Annual Meeting*. Montreal, Quebec, Canada.
- Sullivan, G., and J. Titus. 1995. Site-specific pollen limitation in a submersed hydrophilous macrophyte. *Ecological Society of America Annual Meeting*. Snowbird, UT.

- Sullivan, G. 1994. Genetic variation in the tradeoff between sexual and asexual reproduction in a dioecious clonal plant. Ecological Society of American Annual Meeting. Knoxville, TN.
- Sullivan, G., and J. Titus. 1992. Balancing sexual and asexual reproduction in a submersed dioecious clonal plant. Ecological Society of America Annual Meeting Honolulu, HA.
- Sullivan, G., and J. Titus. 1990. Relating asexual reproduction to growth and fruit production in a submersed plant. Ecological Society of America Annual Meeting. Snowbird, UT.

RESEARCH EXPERIENCE

- 2006 - 2009: Field study examining invasive management techniques and their impact on the development of alternative stable states in restored communities.
- 2004 - 2009: Field study examining impacts of the invasive common carp (*Cyprinus carpio*) on a Midwestern shallow lake.
- 2003 - 2009: Field study evaluating restoration strategies for large-scale restorations characterized by a heterogeneous landscape: hydrology, topography, soils, and the resulting plant communities.
- 2001 - 2008: Field study evaluating the role of biodiversity in establishing ecosystem functions in a backwater lake – prairie complex on the Illinois River.
- 2000 - 2001: Field study examining the establishment of annual *Zostera marina* populations along hydrology gradients in Pacific Northwest estuaries.
- 2000 - 2001: Field study on the contribution of *Alnus rubra* (red alder) to stream nitrogen in Pacific Northwest coastal streams.
- 1999 - 2001: Manipulative field experiments examining seagrass and macroalgae interactions in Pacific Northwest Estuaries.
- 1995 - 2001: Manipulative field experiments in Southern California intertidal salt marsh systems: 1) design and implementation of experiments examining biodiversity and ecosystem function; 2) experimentation and design of salt marsh restoration techniques; 3) establishment and growth of seedlings and transplants under intertidal field conditions; 4) mesocosm growth experiments.
- 1996 - 1999: Design and implementation of field studies in the salt marshes of Southern California and Baja California, Mexico.
- 1995 - 1999: Manipulative greenhouse experiments: 1) design and implementation of intertidal microcosm experiments; 2) establishing techniques for seed germination and growth of halophytes in greenhouse experiments.
- 1990 - 1995: Greenhouse aquatic mesocosm experiments: 1) manipulative growth and allocation experiments; 2) examining genetic variation in plant breeding experiments; 3) germination and establishment of seeds and tubers in physiological response studies.
- 1989 - 1995: Field experiments in aquatic ecosystems: 1) submersed pot experiments in lakes using SCUBA; 2) lake and river pollination studies; 3) underwater transect sampling and data collection with SCUBA; 4) design of collection methods for aquatic plants and sediments with SCUBA.

RESEARCH GRANTS

2006. Illinois State Wildlife Grant. Directing development among alternative stable endpoints at the Hennepin and Hopper Lakes wetland restoration.
1999. NRC Research Associateship Award. Impacts of green macroalgae on seagrass and mudflat habitats within Pacific Northwest estuaries.

1996. NSF award # DEB96-19875. The role of diversity in ecosystem function. Co-PI with J. B. Zedler and J. Callaway.

RESTORATION PROJECT FUNDING

Midewin National Tallgrass Prairie 44-ha Lower Drummond Prairie and Wetland Restoration

- 2007 to 2009 \$303,000

Hennepin and Hopper Lakes 1,113-ha Prairie, Wetland, and Lake Restoration

- 2002 to 2007 \$530,000

Midewin National Tallgrass Prairie 117-ha Dolomitic Prairie and Wetland Restoration

- 2002 to 2006 \$284,000

Midewin National Tallgrass Prairie 184-ha South Patrol Road Prairie and Wetland Restoration

- 2002 to 2003 \$115,000

CONSULTING EXPERIENCE

2008: Metropolitan Water Reclamation District of Chicago. Review design and feasibility of achieving restoration goals at the MWRD Centennial Trail Marsh and Powerhouse Marsh sites on the Des Plaines River, IL.

2007: US Forest Service, Midewin National Tallgrass Prairie, Joliet IL. Developing a strategy to restore dolomitic and typic prairie and wetland habitat for rare and endangered species on the Lower Drummond Prairie at Midewin.

2005-2007: Metropolitan Water Reclamation District of Chicago. Developing restoration strategies for reclaiming wetlands on the Illinois River floodplain in northeast Illinois.

2004: Montgomery, Watson, Harza of Chicago, and the Republic of Bulgaria. Developing strategies for large-scale restoration of wetlands and nutrient removal functions on the Danube River floodplain in Bulgaria.

2001: US Forest Service, Midewin National Tallgrass Prairie, Joliet IL. Developing strategies to restore rare wet- and mesic dolomitic and wet deep soil prairies at the Midewin National Tallgrass Prairie Restoration.

1999: US Navy, South Western Division; Camp Pendelton Marine Corps Base, Camp Pendelton, CA. Analysis on the impacts to coastal wetland habitats of secondarily treated sewage effluent at the Santa Margarita River Estuary, CA. 1999.

1997-1998. Tijuana River National Estuarine Research Reserve. Member of the Research Committee Panel, developing priorities for research and assisting in the selection and guidance of NERR graduate fellows.

TEACHING EXPERIENCE

San Diego State University Co-Instructor with Joy Zedler and John Callaway

1995. Aquatic Ecology

Binghamton University Course Instructor

1994 – 1995. Biological Diversity; Introductory Biology: Organisms and Population; General Ecology

Binghamton University Laboratory Instructor/Teaching Assistant

1988 – 1994. Microbiology; Phycology; Introductory Cellular Biology; Botany; Environmental Science; General Ecology; Zoology; Introductory Organismal Biology

Elmira College Laboratory Instructor

1988. Introductory Cellular Biology

GUEST LECTURER / INVITED SPEAKER

2009. Restoration goals and strategies for developing biologically diverse wetlands in the Midwest. Ecology Seminar Series. University of Binghamton, Binghamton, NY.
2007. Prairie-wetland restoration through a partnership with the U.S. Forest Service at the Midewin National Tallgrass Prairie. National Grassland Manager's Meeting, Joliet, Illinois.
2007. Wetland Ecology and Wetland Restoration Ecology seminar series and field studies course. Metropolitan Water Reclamation District of Chicago, Chicago, IL.
2006. Wetland restoration within the context of Nutrient Farming. Chicago Wilderness, Chicago, IL.
2005. (I) Restoring backwater lake ecosystems in the Illinois River Valley; and (II) Opportunities for teaching students in Chicago area wetland ecosystems. Chicago Academy of Sciences Peggy Notebaert Museum and the University of Illinois at Chicago's Institute for Environmental Science and Policy.
2004. Restoring wetlands in the Midwest: backwater lakes, marshes, fens, seeps, sedge, and wet meadows. Keynote speaker, Chicago Wilderness education seminar. Chicago, IL.
2004. Developing restoration strategies and evaluating outcomes on a 2700-acre backwater lake – prairie wetland restoration and an 800-acre dolomitic and typic wet prairie restoration in Illinois. Illinois Native Plant Society 2004 Annual Meeting, Peoria, IL.
2002. Biodiversity vs. species identity effects on salt marsh ecosystem functioning in experimental microcosms. Ecology Seminar Series. University of Wisconsin, Madison, Madison, WI.
1998. Salt marsh plant ecology lecture. Tijuana River NERR Education Lecture Series, Tijuana Estuary, CA.
1998. Theory and empirical research on the relationship between biodiversity and ecosystem function. Restoration Ecology lecture, San Diego State University, San Diego, CA.
1998. Salt marsh restoration research at Tijuana Estuary. Tijuana River NERR research program seminar, Tijuana Estuary, CA.
1997. Salt marsh plant propagation techniques. PERL research summary presentation, San Diego State University, San Diego, CA.
1996. Coastal wetland revegetation techniques seminar. US Fish and Wildlife Service, San Diego State University, San Diego, CA.

PROFESSIONAL AFFILIATIONS

Ecological Society of America
Society of Wetland Scientists