

## CURRICULUM VITAE

05/13

### WAYNE S. GARDNER

#### PERSONAL

Citizenship: USA

#### ADDRESS & TELEPHONE

The University of Texas at Austin  
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#### EDUCATION

Ph.D., Water Chemistry (Biochemistry minor), University of Wisconsin, Madison, 1971  
M.S., Water Chemistry, University of Wisconsin, Madison, 1964  
B.S., Chemistry, University of Wisconsin, Stevens Point, 1963

#### PROFESSIONAL EXPERIENCE

2012-present Co-Editor-in-Chief, *Estuaries and Coasts*, Coastal and Estuarine Research Federation, Solomons, Maryland  
1996-present Professor, The University of Texas at Austin, Department of Marine Science, Port Aransas, Texas  
1996-2004 Director, Marine Science Institute, and Chairman, Department of Marine Science, The University of Texas at Austin, Port Aransas, Texas; Nancy Lee and Perry R. Bass Regents Chair in Marine Science  
1989-1996 Senior Physical Scientist, NOAA Great Lakes Environmental Research Laboratory, Ann Arbor, Michigan  
1981-1989 Head, Ecosystem and Nutrient Dynamics Group, NOAA Great Lakes Environmental Research Laboratory, Ann Arbor, Michigan  
1979-1981 Physical Scientist, NOAA Great Lakes Environmental Research Laboratory, Ann Arbor, Michigan  
1977-1979 Lead Chemist, Field Research Group, Columbia National Fishery Research Laboratory, Columbia, Missouri  
1974-1977 Assistant Professor, Skidaway Institute of Oceanography, Savannah, Georgia  
1971-1974 Research Associate, Skidaway Institute of Oceanography, Savannah, Georgia  
1966-1971 Graduate Assistant, University of Wisconsin, Madison  
1964-1966 Chemist, U.S. Public Health Service (Commissioned Corps), Cincinnati, Ohio

AWARDS

- 1984 Co-recipient of Chandler-Misener Award for the best paper published in the Journal of Great Lakes Research
- 1964 Commission in U.S. Public Health Service
- 1959 High School Valedictorian, Granton High School, Wisconsin

PROFESSIONAL SOCIETIES

American Society of Limnology and Oceanography  
 International Association for Great Lakes Research  
 International Association of Theoretical and Applied Limnology  
 American Geophysical Union  
 American Association for the Advancement of Science  
 Coastal and Estuarine Research Federation  
 Member of Sigma Xi  
 Member of Phi Lambda Upsilon

PROFESSIONAL ACTIVITIES

- 2011 Research proposal review panel for the NOAA Ecology and Oceanography of Harmful Algal Blooms (ECOHAB) program, January 25-27, Silver Spring, Maryland
- 2010 Nueces Estuary Basin and Bay Expert Science Team (BBEST) (Committee to provide advice to Texas decision makers on how to optimize controlled freshwater inputs into the Nueces Estuary to maintain a “Sound Ecological Environment”)
- 2009 Participant, Gulf of Mexico Alliance Draft Nutrient Criteria Research Framework, Presented a talk “Nitrogen dynamics in Nueces Estuary, Texas,” March 2009, New Orleans, LA
- 2006 Member NOAA Coastal Ocean Program’s Coastal Hypoxia Research Program (CHRP) Review Panel, December 7-8, at the Center for Bioenvironmental Research, New Orleans, LA
- 2005 Presented invited keynote lecture “Nutrient cycling in eutrophic shallow lakes and comparable aquatic systems” at the International Symposium on the Eutrophication Process and Control in Large Shallow Lakes (With Special Reference to Lake Taihu, a Subtropical Chinese Lake), April 2005, Nanjing, China
- 2005 Member NOAA Scientific Review Panel for the University of Michigan’s Cooperative Institute for Limnology and Ecosystems Research (CILER), Ann Arbor, Michigan
- 2004-2005 Member Science Committee for “International Symposium on the Eutrophication Process and Control in Large Shallow Lakes (with Special Reference to Lake Taihu, a Subtropical Chinese Lake), April 23-26, Nanjing, China

- 2003-2004 Member Coastal Research Committee for the Southeastern Universities Research Association (SURA)
- 2001-2005 Member Texas Sea Grant Advisory Committee
- 2000 Committee for the External Review of the Louisiana Universities Marine Consortium (LUMCON)
- 1998 Presented invited plenary lecture "Effects of natural light on nitrogen dynamics in diverse aquatic environments" at the International Association of Theoretical and Applied Limnology Congress in Dublin, Ireland
- 1997-2004 Member, Technical Advisory Committee for the National Science Foundation Episodic Events Great lakes Experiment (EEGLE)
- 1995 Invited Speaker at Gordon Conference on Carbon-Nitrogen Coupling in Coastal Ecosystems, Plymouth, New Hampshire
- 1993-1995 Member Saginaw Bay National Watershed Initiative Technical Advisory Committee
- 1993 Member, GLERL Team that visited Lake Maracaibo, Venezuela, to discuss pollution problems and potential future research collaborations
- 1992-1996 Fellow, Cooperative Institute for Limnology and Ecosystem Research (CILER), University of Michigan, Ann Arbor, Michigan
- 1992-1995 GLERL Personnel Management Committee (PMAC)
- 1992-1994 Member Technical Advisory Committee for Nutrient Enhanced Coastal Ocean Productivity (NECOP), NOAA Coastal Ocean Program
- 1991 Member, Special Scientific Panel of the National Sea Grant College Program formed to evaluate proposals for zebra mussel research
- 1985 Member Committee to Develop an Interagency Federal Research Plan for the Great Lakes
- 1984 NOAA Nutrient Over-enrichment Work Group. Represented GLERL at workshop, Nationwide Review of Oxygen Depletion, at Brookhaven National Laboratory
- 1984 Member, Ohio Site Review Team for National Sea Grant, 1984
- 1983-1984 Chair and Report Editor of Working Group to evaluate NOAA Quality Assurance Practices for Inorganic Nutrient Measurements
- 1983 Participant and Speaker, NOAA Conference on Estuaries at Newark, Delaware

#### Journal Reviews (partial list)

*Aquatic Ecology; American Soc. Test. Mater.; Aquat. Microb. Ecol.; Archiv Für Hydrobiol.; Biogeochemistry; Can. J. Fish Aquatic Sci.; Can. J. Zool.; Continent. Shelf Res.; Geochem. Cosmochim. Acta; Environ. Sci. Technol.; Estuaries; Estuar. Coast. Shelf Sci.; Functional Ecol.; Electrophoresis; Gulf and Caribbean Research; Hydrobiologia; J. Exp. Mar. Biol. Ecol.; J. Great Lakes Res.; J. Freshwater Ecol.; J. North Amer. Benthol. Soc.; J. Plankton Res.; Limnol. Oceanogr.; Mar. Biology; Mar. Ecol. Prog. Ser.; Mar. and Freshwater Res.; Mar. Environ. Res.; Organic Geochemistry; Science; Stain Technology; Water Research*

#### Agency Reviews

American Chemical Society; Hudson River Foundation; IAGLR/Mott Foundation; National Atmospheric and Oceanic Administration (Coastal Ocean Program, Sea Grant, National

Undersea Research Program, and Environmental Research Laboratories); National Environmental Research Council, United Kingdom; National Science Foundation; Texas Agricultural Station; U.S. Environmental Protection Agency; U.S. Fish and Wildlife Service

## PUBLIC SERVICE

Member of Port Aransas Club of Rotary International  
Participated in Career Day at Port Aransas High School  
GLERL and UTMSI Open Houses

## COURSES TAUGHT

### Undergraduate

MNS 307, Introduction to Oceanography, Department of Marine Science, The University of Texas at Austin, Austin, Texas, Spring 2006, Fall 2006, Spring 2008, Fall 2008, Fall 2009, Fall 2010 (Co-taught with D-H. Min)

### Graduate

MNS 482C, Marine Biogeochemistry, Department of Marine Science, The University of Texas at Austin, Port Aransas, Texas, Spring 2010, Spring 2011, Spring 2012 (Co-taught with Z. Liu)

MNS 383, Coastal Processes, Department of Marine Science, The University of Texas at Austin, Port Aransas, Texas, Fall 2007 (Co-taught with D-H. Min)

## GRADUATE STUDENTS & POSTDOCTORAL SUPERVISION

### Graduate Students

<u>Supervisor</u> (for degree completion)	<u>Degree Awarded</u>	<u>Yr. Graduated</u>
Afonso C. Souza	Ph.D.	2009
Amy Townsend-Small	Ph.D.	2006

### Research Advisor

Mark J. McCarthy	Ph.D. Proposal Committee (Université du Québec à Montréal) 2007-2009
Mark J. McCarthy	M.S. (Texas A&M, Corpus Christi) 2001
Margaret B. Lansing	M.S. (Eastern Michigan University) 1991
Joann F. Cavaletto (Informal advisor)	M.S. (Eastern Michigan University) 1989
Jeff M. Gauvin	M.S. (Eastern Michigan University) 1987

### Postdoctoral Fellows/Visiting Scientists/ International Students

2011-2012	Dai Ruihua. Visiting Faculty Member, Fudan University, Shanghai, P.R. China
2010-2012	Denise Bruesewitz, EPA-sponsored (grant to E. Buskey) Postdoctoral Fellow

2010-2011	Lin Xiao, Visiting Ph.D. Student, East China Normal University, Shanghai, P.R. China
2008-2009	Hou Lijun, Ph.D., Postdoctoral Visiting Scientist, State Key Laboratory of Estuarine and Coastal Research, East China Normal University, Shanghai, P.R. China
2006-2009	Steve Carini, NSF-sponsored Postdoctoral Fellow at UTMSI
2006-2007	Chuanhai Wang, Ph.D. Student from Nanjing Institute of Geography and Limnology, Chinese Academy of Science, Nanjing, Jiangsu, P.R. China
2004-2005	Zhang Lu, Ph.D. Student, Nanjing Institute of Geography and Limnology, Chinese Academy of Science, Nanjing, P.R. China
2001-2003	Dmitri Sobolev, Nancy Lee and Perry R. Bass Postdoctoral Fellow at UTMSI
2000	Tan Yehui, Visiting Ph.D. Student, South China Institute of Oceanology, Chinese Academy of Sciences, Guangzhou, China
2000	Brian Eadie, Visiting Scientist, NOAA Great Lakes Environmental Research Laboratory
1999-2000	Soonmo An, Postdoctoral Fellow at UTMSI
1999-2000	Frank Jochem, Nancy Lee and Perry R. Bass Postdoctoral Fellow at UTMSI
1997-1998	Peter Lavrentyev, Nancy Lee and Perry R. Bass Postdoctoral Fellow at UTMSI
1995	Yang Longyuan, Visiting Scientist, Nanjing Institute of Geography and Limnology, Chinese Academy of Science, Nanjing, Jiangsu, P.R. China
1994-1996	Peter A. Lavrentyev, Postdoctoral Fulbright Scholar and Cooperative Institute for Limnology and Ecology Research (CILER) Fellow
1993-1995	Harvey A. Bootsma, Postdoctoral National Research Council (NRC) and CILER Fellow
1993-1994	Janusz Tomaszek, Foundation Fellow, Rzeszow University of Technology, Rzeszow, Poland. Kosciuzsko
1991-1992	Robert T. Heath, Academic Sabbatical Scholar, Kent State University
1990-1992	James B. Cotner, Postdoctoral CILER Fellow
1990-1991	Sharon A. Fitzgerald, Postdoctoral NRC Fellow
1987	Christopher Parrish, Postdoctoral Visiting Scientist, Dalhousie University, Halifax, Nova Scotia

#### UNIVERSITY & DEPARTMENTAL COMMITTEES

2010-2012	Member, Department of Marine Science Seminar Committee
2010-2012	Chairman, Department of Marine Science Course and Curriculum Committee
2012-2012	Member, College of Natural Sciences Course and Curriculum Committee
2010-2011	Member, Department of Marine Science, Merit Review Committee
2008-2009	Chairman, Department of Marine Science, Merit Review Committee
2008-2009	Member, Department of Marine Science, Library Committee
2008-2009	Member, Department of Marine Science, Seminar Committee
2007-2008	Chairman, Department of Marine Science, Awards Committee
2007-2008	Member, Department of Marine Science, Course & Curriculum Committee
2006-2007	Chairman, Department of Marine Science, Awards Committee
2006-2007	Member, Department of Marine Science, Course & Curriculum Committee
2005-2006	Member, Department of Marine Science, Awards Committee
2005-2006	Member, Department of Marine Science, Seminar Committee
2005-2006	Chairman, College of Natural Sciences Promotion and Tenure Committee

PARTICIPATION IN SCIENTIFIC EXPEDITIONS (partial list)

2008-2012	Northern Gulf of Mexico (NGOMEX) field trips on R/V Pelican
2009	Lake Okeechobee, Florida, field trip
2004-2007	Texas coastal field trips
2000-2004	Lake Taihu, China field trips

WORKSHOPS ATTENDED

2012	NOAA 3rd Annual Gulf of Mexico Hypoxia Research Coordination Workshop in Bay St. Louis, Miss., March 27-28, 2012
2010	GCORP-BP Horizon Spill Workshop, University of Texas at Austin, Jackson School of Geosciences, J.J. Pickle Research Campus, November 18, 2010
2009	All Hands Meeting for the Northern Gulf of Mexico (NGOMEX) Project "Processes Controlling Hypoxia," led by Steve DiMarco, Texas A&M University, College Station, May 2009 (Invited)
2009	Conceptual Ecosystem Modeling Workshop for the Mission-Aransas National Estuarine Research Reserve, UTMSI, Port Aransas, TX, April 2009 (Invited)
2007	China Harmful Cyanobacterial Workshop, 26-28 March, 2007: Developing research and management strategies for controlling harmful cyanobacterial blooms (CyanoHABs) in large lakes: Lake Taihu, China, case study. Sponsored by EPA. The University of North Carolina – Chapel Hill, Morehead City, North Carolina, March (Co-organized with H. Paerl)
2006	Gulf of Mexico Hypoxia Symposium: Assessing the State of the Science on Hypoxia in the Northern Gulf of Mexico. Sponsored by NOAA and EPA. New Orleans, Louisiana, April (Invited)
2006	The State of the Gulf of Mexico Summit, sponsored by the Harte Research Institute for Gulf of Mexico Studies, Corpus Christi, Texas, March (Invited)
2002	NOAA Monitoring, Modeling and Research (MMR) Workshop, St. Louis, Missouri, Oct 16-18, 2002
2001	Harte Research Institute for Gulf of Mexico Studies Advisory Council Meeting, Texas A&M University-Corpus Christi, Corpus Christi, Texas, (Invited Speaker), October 15, 2001
1998-2000	Episodic Events Great Lakes Experiment (EEGLE) Workshops, Great Lakes
1994	National Science Foundation to develop a research plan for Great Lakes Coastal Ocean Processes (CoOP), Milwaukee, Wisconsin, (Served as a working group Rapporteur)
1994	NECOP Synthesis Workshop to formulate titles and collaborators for synthesis papers on NECOP results, Baton Rouge, Louisiana
1993	MACII Planning Workshop to form a NOAA Research plan for the Mississippi/Atchafalaya River plume/Gulf Shelf system. Miami, Florida, (Served as Rapporteur and wrote working group report)
1993	NECOP Principal-Investigator Workshop at Gulf Park Campus of University of Mississippi, Mississippi, (presented paper, Mineralization of organic material and bacterial dynamics in the Mississippi River plume)

- 1992 The Great Lakes-Coastal Program Workshop to plan a NOAA Great Lakes Coastal Initiative. Ypsilanti, Michigan, (presented talk on Nutrient cycling in Saginaw Bay and other Great Lakes Coastal Regions)
- 1991 NOAA Coastal Ocean Program Nutrient Enhanced Coastal Productivity Synthesis Meeting. LUMCON Marine Center, Chauvin, Louisiana
- 1989 Priorities for Great Lakes Coastal Wetland Research: A Planning Conference. Old Woman Creek National Estuarine Research Reserve, Huron, Ohio
- 1989 Cycling of Reduced Gases in the Hydrosphere, a workshop in conjunction with the 24th Congress of the International Association of Theoretical and Applied Limnology, Munich, Federal Republic of Germany
- 1989 Nutrient Enhanced Coastal Ocean Productivity, NOAA sponsored workshop to design a research plan for NOAA's new Coastal Ocean Program, Baton Rouge, Louisiana
- 1987 Food Webb II. Great Lakes workshop sponsored by the International Joint Commission, Canada Centre for Inland Waters, Burlington, Ontario
- 1986 Basic Issues for Great Lakes Research. Workshop sponsored by the National Science Foundation, Kellogg Biological Station, Michigan State University, Hickory Corners, Michigan
- 1986 Experimental Estuarine Ecology. Sponsored by EPA-MERL and Sea Grant, University of Rhode Island
- 1986 Planning for Interdisciplinary Lake Ontario Research (Pilor). Research Center, State University of New York College, Oswego, New York

### GRANTS & CONTRACTS

- National Science Foundation. Dimensions: "Collaborative Research: Anthropogenic nutrient input drives genetic, functional and taxonomic biodiversity in hypereutrophic Lake Taihu, China." \$500,000 (2013-2017). Co-PI
- University of North Carolina at Chapel Hill. Sub-contract on proposal "Assessment of the cycling and compartmentalization of nitrogen, phosphorus and organic carbon in Lake George, Florida." \$27,500 (2009-2010). Co-PI
- South Florida Water Management District. "Nitrogen Studies in Lake Okeechobee" (Contract). \$50,000 (2009). PI
- Center for Sponsored Coastal Ocean Research: National Oceanic and Atmospheric Administration. "NGOMEX 2006: Nitrogen, Microbial Food Webs & Hypoxia," \$781,000. (2007-2010). PI
- National Science Foundation. "Salinity Effects on Nitrogen Dynamics and Fate in Shallow Coastal Sediments," \$499,885. (2004-2007). PI
- Coastal Ocean Program: National Oceanic and Atmospheric Administration. "Salinity, Nutrients, and Food Webs in Florida Bay," \$75,479 for two years. (\$299,999). (2004-2006). PI
- National Science Foundation. "U.S.-China Cooperative Research: Impacts of Water Column and Sediment-Water Interface Nitrogen Dynamics on Water Quality in Taihu Lake, China," \$41,880. (2002-2003). PI
- Texas Water Development Board. "Nitrogen Cycling, Fluxes, and Sediment Denitrification in East Matagorda Bay," \$40,000. (2001-2002). PI

- Texas Water Development Board. "Nitrogen Cycling, Fluxes, and Sediment Denitrification in Sabine Lake," \$40,000. (2000-2001). PI
- Texas Water Development Board. "Nitrogen Cycling, Fluxes, and Sediment Denitrification in Corpus Christi Bay," \$55,000. (1998-2000). PI
- NOAA Great Lakes Environmental Research Laboratory. "Effects of a Recurrent Spring Plume on the Dynamics and Structure of the Lower Food Web in Southern Michigan," \$137,439. (1997-2002). PI
- NOAA Coastal Ocean Program. "Nutrient Dynamics and Limitation in the Water and Sediments of Florida Bay," \$54,000. (1994). PI
- National Sea Grant Zebra Mussel Program. "Zebra Mussel and Sediment Interactions: Is there an Effect on Nitrogen and Phosphorus Regeneration Ratios?" \$144,124. (1993-1995). Co-PI
- NOAA Coastal Ocean Program. "Organic Matter Decomposition, Nitrogen Recycling, and Oxygen Consumption in the Mississippi River Plume, Gulf Shelf Region," \$299,500. (1992-1994). PI
- Ohio Sea Grant National Sea Grant Program. "Influence of Zebra Mussel Invasion on Nutrient Dynamics in Plankton Communities: Field Verification of Mesocosm Findings in Saginaw Bay," \$63,973. (1992-1994). Co-PI
- NOAA Coastal Ocean Program. "The Fate and Effects of Riverine (and Shelf-derived) Dissolved Organic Matter on Mississippi River Plume/Gulf Shelf Processes," \$300,000. (1990-1992). Co-PI

#### PUBLICATIONS IN PEER-REVIEWED SCIENTIFIC JOURNALS

- An, S., Lee, J., and W.S. Gardner. 2013. Stable Isotope Measurement of Ammonium Using HPLC-RTS (high performance liquid chromatography-retention time shift). *The Sea: Journal of the Korean Society of Oceanography*. 18: 47-52
- McCarthy, M. J., S.A. Carini, Z. Liu, N.E. Ostrom, and W.S. Gardner. 2013. Oxygen consumption in the water column and sediments of the northern Gulf of Mexico hypoxic zone. *Estuarine, Coastal and Shelf Science* 123 46-53
- Smyth, A.R., S.P. Thompson, K.N. Siporin, W.S. Gardner, M.J. McCarthy, M.F. Piehler. 2013. Assessing nitrogen dynamics throughout the estuarine landscape. *Estuaries and Coasts*. DOI 10.1007/s12237-012-9554-3
- Hou, L. M. Lou, S.A. Carini, W. S. Gardner. 2012. Transformation and fate of nitrate near the sediment–water interface of Copano Bay. *Continental Shelf Research* 35 (2012) 86–94
- Souza, A.C., T.K. Pease, and W.S. Gardner. 2012. Vertical profiles of major organic geochemical constituents and extracellular enzymatic activities in sandy sediments of Aransas and Copano bays, TX. *Estuaries and Coasts*: 35, 308-323
- Souza, A.C., T.K. Pease. and W.S. Gardner. 2011. The direct role of enzyme hydrolysis on ammonium regeneration rates in estuarine sediments. *Aquatic Microbial Ecology*. 65: 159–168
- James, T.J., W.S. Gardner, M.J. McCarthy, and S.A. Carini. 2011. Nitrogen dynamics in Lake Okeechobee: forms, functions, and changes. *Hydrobiologia* 669:199–212
- Paerl, H.W., Hai Xu, M.J. McCarthy, G. Zhu, B. Qin, Y. Li, and W.S. Gardner. 2011. Controlling harmful cyanobacterial blooms in a hyper-eutrophic lake (Lake Taihu,



- China): The need for a dual nutrient (N & P) management strategy. *Water Research*. 45:1973-1983
- Lin, Xiao, M.J. McCarthy, S.A. Carini, and W.S. Gardner. 2011. Net, actual, and potential sediment-water interface  $\text{NH}_4^+$  fluxes in the northern Gulf of Mexico (NGOMEX): Evidence for  $\text{NH}_4^+$  limitation of microbial dynamics. *Continental Shelf Research*. 31:120-128
- Carini, S.A., M.J. McCarthy, and W.S. Gardner. 2010. An isotope dilution method to measure nitrification rates in the northern Gulf of Mexico and other eutrophic waters. *Continental Shelf Research* 30:1795-1801
- McCarthy, M.J., W.S. Gardner, P.J. Lavrentyev, F.J. Jochem, and C.J. Williams. 2009. Water column nitrogen cycling and microbial plankton in Florida Bay. *Contributions in Marine Science* 38:49-62
- Gardner, W.S., M.J. McCarthy, S.A. Carini, A. Souza, L. Hou, K.S. McNeal, M.K. Puckett, and J. Pennington. 2009. Collection of intact sediment cores with overlying water to study nitrogen- and oxygen-dynamics in regions with seasonal hypoxia. *Continental Shelf Research* 29: 2207-2213
- McCarthy, M.J., T. James, Y. Chen, T. L. East, W. S. Gardner. 2009. Nutrient ratios and phytoplankton community structure in the large, shallow, eutrophic, subtropical Lakes Okeechobee (Florida, USA) and Taihu (China), *Limnology*
- Gardner, W.S. and M.J. McCarthy. 2009. Nitrogen dynamics at the sediment–water interface in shallow, sub-tropical Florida Bay: why denitrification efficiency may decrease with increased eutrophication. *Biogeochemistry* 95:185-198
- Fennel, K., Brady, D., DiToro, D., Fulweiler, R., Gardner, W.S., Giblin, A., McCarthy, M.J., Rao, A., Seitzinger, S., Thouvenot-Korppoo, M., Tobias, C. 2008. Modelling denitrification in aquatic sediments - *Biogeochemistry*, 93: 159-178
- McCarthy, M.J., K.S. McNeal, J.W. Morse, & W.S. Gardner. 2008. Bottom-water hypoxia effects on sediment-water interface nitrogen transformations in a seasonally hypoxic, shallow bay (Corpus Christi Bay, Texas, USA). *Estuaries and Coasts* 31(3): 521-531
- Scott, J.T., M.J. McCarthy, W.S. Gardner, and R.D. Doyle. 2008. Denitrification, dissimilatory nitrate reduction to ammonium, and nitrogen fixation along a nitrate concentration gradient in a created freshwater wetland. *Biogeochemistry* 87:99-111
- Rao, A. M. F., M.J. McCarthy, W.S. Gardner, and R. A. Jahnke. 2008. Respiration and Denitrification in Permeable Continental Shelf Deposits on the South Atlantic Bight:  $\text{N}_2$ :Ar and Isotope Pairing Measurements in Sediment Column Experiments. *Continental Shelf Research* 28:602-613
- Dagg, M.J., J.W. Ammerman, R.M.W. Amon, W.S. Gardner, R.E. Green, and S.E. Lohrenz. 2007. Water column processes influencing hypoxia in the northern Gulf of Mexico: A synthesis. *Estuaries and Coasts* 30:735-752
- Rao, A.M.F., M.J. McCarthy, W.S. Gardner, and R.A. Jahnke. 2007. Respiration and denitrification in permeable continental shelf deposits on the South Atlantic Bight: Rates of carbon and nitrogen cycling from sediment column experiments. *Continental Shelf Research* 27:1801-1819
- McCarthy, M.J., W.S. Gardner, P.J. Lavrentyev, K.M. Moats, F.J. Jochem, and D.M. Klarer. 2007. Effects of hydrological flow regime on sediment-water interface and water column nitrogen dynamics in a Great Lakes coastal wetland (Old Woman Creek, Lake Erie), *Journal of Great Lakes Research* 33:219-231

- McCarthy, M.J., P.L. Lavrentyev, L. Yang, L. Zhang, Y. Chen, B. Qin, and W.S. Gardner. 2007. Nitrogen dynamics relative to microbial food web structure in a subtropical, shallow, well-mixed, eutrophic lake (Taihu Lake, China). *Hydrobiologia (Special issue on Lake Taihu)* 581:195-207
- Townsend-Small, A., M.J. McCarthy, J.A. Brandes, L.Y. Yang, L. Zhang, and W.S. Gardner. 2007. Seasonal stable isotopic composition of nitrate in Taihu Lake and major inflow rivers. *Hydrobiologia (Special issue on Lake Taihu)* 581:135-140
- Gardner, W.S., M.J. McCarthy, S. An, D. Sobolev, K.S. Sell, and D. Brock. 2006. Nitrogen fixation and dissimilatory nitrate reduction to ammonium (DNRA) support nitrogen dynamics in Texas estuaries. *Limnology and Oceanography (Special issue on Eutrophication)* 51:558-568
- Lavrentyev, P.J., M.J. McCarthy, D.M. Klarer, F.J. Jochem, and W.S. Gardner. 2004. Microbial food web and nitrogen dynamics in a storm-driven LAKE ERIE wetland. *Microbial Ecology* 48:567-577
- Jochem, F.J., M.J. McCarthy, and W.S. Gardner. 2004. Microbial ammonium cycling in the Mississippi River plume during the drought spring of 2000. *Journal of Plankton Research* 1265-1275
- Gardner, W.S., P.J. Lavrentyev, J.F. Cavaletto, M.J. McCarthy, B.J. Eadie, T.H. Johengen, and J.B. Cotner. 2004. The distribution and dynamics of nitrogen and microbial plankton in southern Lake Michigan during spring transition 1999-2000. *Journal of Geophysical Research* 109 (C03007):1-16
- Bernot, M.J., W.K. Dodds, W.S. Gardner, M.J. McCarthy, D. Sobolev, and J.L. Tank. 2003. Comparing denitrification estimates using acetylene inhibition and membrane inlet mass spectrometry in a Texas estuary. *Appl. Environ. Microbiol.* 69:5950-5956
- McCarthy, M.J. and W.S. Gardner. 2003. An application of membrane inlet mass spectrometry to measure denitrification in a recirculating mariculture system. *Aquaculture* 218:341-355
- Chen, C., R. Ji, D.J. Schwab, D. Beletsky, G.F. Fahnenstiel, M. Jiang, T.H. Johengen, H. Vanderploeg, B. Eadie, J.W. Budd, M.H. Bundy, W. Gardner, J. Cotner, and P.J. Lavrentyev. 2002. A model study of the coupled biological and physical dynamics in Lake Michigan. *Ecological Modeling* 152:145-168
- Ji, R., C. Chen, J.W. Budd, D.J. Schwab, D. Beletsky, G.L. Fahnenstiel, T.H. Johengen, H. Vanderploeg, B. Eadie, J. Cotner, W. Gardner, and M. Bundy. 2002. Influences of suspended sediments on the ecosystem in Lake Michigan: a 3-D coupled bio-physical modeling experiment. *Ecological Modeling* 152:169-190
- An, S. and W.S. Gardner. 2002. Dissimilatory nitrate reduction to ammonium (DNRA) as a nitrogen link, versus denitrification as a sink in a shallow estuary (Laguna Madre/Baffin Bay, Texas). *Marine Ecology Progress Series* 237:41-50
- An, S., W.S. Gardner, and T. Kana. 2001. Simultaneous measurement of denitrification and nitrogen fixation using isotope pairing with membrane inlet mass spectrometry analysis. *Applied Environmental Microbiology* 67:1171-1178
- Gardner, W.S., L. Yang, J.B. Cotner, T.H. Johengen, and P.J. Lavrentyev. 2001. Nitrogen dynamics in sandy freshwater sediments (Saginaw Bay, Lake Huron). *Journal of Great Lakes Research* 27:84-97
- Cotner, J.B., R.H. Sada, H. Bootsma, T. Johengen, J.F. Cavaletto, and W.S. Gardner. 2000. Nutrient limitation of heterotrophic bacteria in Florida Bay. *Estuaries* 23:611-620

- Lavrentyev, P.J., W.S. Gardner, and L. Yang. 2000. Effects of the zebra mussel on nitrogen dynamics and the microbial community at the sediment water interface. *Aquatic Microbial Ecology* 21:187-194
- Gardner, W.S., P.J. Lavrentyev, H.A. Bootsma, J.F. Cavaletto, F. Troncone, and J.B. Cotner. 2000. Effects of natural light on nitrogen dynamics in diverse aquatic environments. *Proceedings International Association of Theoretical and Applied Limnology* 27:64-73
- Gardner, W.S., J.F. Cavaletto, H.A. Bootsma, P.J. Lavrentyev, and F. Troncone. 1998. Nitrogen cycling rates and light effects in tropical Lake Maracaibo, Venezuela. *Limnology and Oceanography* 43(8):1814-1825
- Lavrentyev, P.J., Bootsma, H.A., T.H. Johengen, J.F. Cavaletto, and W.S. Gardner. 1998. Microbial plankton response to resource limitation: insights from the community structure and seston stoichiometry in Florida Bay, USA. *Marine Ecology Progress Series* 165:45-57
- Vanderploeg, H.A., J.F. Cavaletto, J.R. Liebig, and W.S. Gardner. 1998. *Limnocalanus macrurus* (Copepoda; Calanoida) retains a marine arctic lipid and life cycle strategy in Lake Michigan. *Journal of Plankton Research* 20:1581-1597
- Lavrentyev, P.J., W.S. Gardner, and J.R. Johnson. 1997. Cascading trophic effects on aquatic nitrification: experimental evidence and potential implications. *Aquatic Microbial Ecology* 13:161-175
- Tomaszek, J.A., W.S. Gardner, and T.H. Johengen. 1997. Denitrification in sediments of a Lake Erie coastal wetland (Old Woman Creek, Huron, Ohio, USA). *Journal of Great Lakes Research* 23(4):403-415
- Gardner, W.S., J.F. Cavaletto, J.B. Cotner, and J.R. Johnson. 1997. Effects of natural light on nitrogen cycling rates in the Mississippi River plume. *Limnology and Oceanography* 42(2):273-281
- Cavaletto, J.F., T.F. Nalepa, R. Dermott, W.S. Gardner, M.A. Quigley, and G.A. Lang. 1996. Seasonal variation of lipid composition, weight, and length, in juvenile *Diporeia* spp. (Amphipoda) from Lakes Michigan and Ontario. *Canadian Journal of Fisheries and Aquatic Sciences* 53:2044-2051
- Gardner, W.S., R. Benner, R.M.W. Amon, J.B. Cotner, J.F. Cavaletto, and J.R. Johnson. 1996. Effects of high molecular weight dissolved organic matter and light on heterotrophic nitrogen dynamics in the Mississippi River plume. *Marine Ecology Progress Series* 133:287-297
- Gardner, W.S., P.A. St. John, C. Evans, and J. Cavaletto. 1996. HPLC retention-time-shift determination of nitrogen isotope ratios in enriched water. *American Laboratory* (Distinguished Authors' Issue) 28:17C-17H
- Cotner, J.B., Jr., W.S. Gardner, J.R. Johnson, R.H. Sada, J.F. Cavaletto, and R.T. Heath. 1995. Effects of zebra mussels (*Dreissena polymorpha*) on bacterioplankton: Evidence for both size-selective consumption and growth stimulation. *Journal of Great Lakes Research* 21:517-528
- Gardner, W.S., J.F. Cavaletto, T.H. Johengen, J.R. Johnson, R.T. Heath, and J.B. Cotner, Jr. 1995. Effects of the zebra mussel, *Dreissena polymorpha*, on community nitrogen dynamics in Saginaw Bay, Lake Huron. *Journal of Great Lakes Research* 21:529-544
- Heath, R.T., G.L. Fahnenstiel, W.S. Gardner, J.F. Cavaletto, and Soon-Jin Hwang. 1995. Ecosystem-level effects of zebra mussels (*Dreissena polymorpha*): An Enclosure Experiment in Saginaw Bay, Lake Huron. *Journal of Great Lakes Research* 21:501-516

- Lavrentyev, P.L., W.S. Gardner, J.F. Cavaletto, and J.R. Beaver. 1995. Effects of the zebra mussel (*Dreissena polymorpha* Pallas) on planktonic protozoa and phytoplankton in Saginaw Bay, Lake Huron. *Journal of Great Lakes Research* 21:545-557
- Gardner, W.S., H.A. Bootsma, C. Evans, and P.A. St. John. 1995. Improved chromatographic analysis of  $^{15}\text{N}$ : $^{14}\text{N}$  ratios in ammonium or nitrate for isotope addition experiments. *Marine Chemistry* 48:271-282
- Gardner, W.S., R. Benner, G. Chin-Leo, J.B. Cotner, Jr., B.J. Eadie, J.F. Cavaletto, and M.B. Lansing. 1994. Mineralization of organic material and bacterial dynamics in Mississippi River plume water. *Estuaries* 17:816-828.
- Cotner, J.B., Jr. and W.S. Gardner. 1993. Heterotrophic bacterial mediation of ammonium and dissolved free amino acid fluxes in the Mississippi River plume. *Marine Ecology Progress Series* 93:75-87
- Fitzgerald, S.A. and W.S. Gardner. 1993. An algal carbon budget for pelagic/benthic coupling. *Limnology and Oceanography* 38:547-560
- Gardner, W.S., J.B. Cotner, Jr., and L.R. Herche. 1993. Chromatographic measurement of nitrogen mineralization rates in marine coastal waters with  $^{15}\text{N}$ . *Marine Ecology Progress Series* 93:65-73
- Gardner, W.S., E. Escobar Briones, E. Cruz Kaegi, and G. Rowe. 1993. Benthic invertebrate excretion and sediment-water nitrogen flux in the Gulf of Mexico near the Mississippi River outflow. *Estuaries* 16:799-808
- Lansing, M.B., W.S. Gardner, and B.J. Eadie. 1993. Catecholamines as potential sub-lethal stress indicators in Great Lakes macrobenthic invertebrates. *Journal of Great Lakes Research* 19:569-581
- Smith, R.E.H., J.F. Cavaletto, B.J. Eadie, and W.S. Gardner. 1993. Growth and lipid composition of high arctic ice algae during the spring bloom at Resolute, Northwest Territories, Canada. *Marine Ecology Progress Series* 97:19-29
- Deibel, D., J.F. Cavaletto, M. Riehl, and W.S. Gardner. 1992. Lipid and lipid class content of the pelagic tunicate *Oikopleura vanhoeffeni*. *Marine Ecology Progress Series* 88:297-302
- Parrish, C.C., B.J. Eadie, W.S. Gardner, and J.F. Chandler. 1992. Lipid class and alkane distribution of settling particles in the upper Laurentian Great Lakes. *Organic Geochemistry* 18:33-40
- Vanderploeg, H.A., S.J. Bolsenga, G.L. Fahnenstiel, J.R. Liebig, and W.S. Gardner. 1992. Plankton ecology in an ice-covered bay of Lake Michigan: Utilization of a winter phytoplankton bloom by reproducing copepods. *Hydrobiologia* 243/244:175-184
- Vanderploeg, H.A., W.S. Gardner, C.C. Parrish, J.R. Liebig, and J.F. Cavaletto. 1992. Lipids and life-cycle strategy of a hypolimnetic copepod in Lake Michigan. *Limnology and Oceanography* 37:413-424
- Gardner, W.S., L.R. Herche, P.A. St. John, and S.P. Seitzinger. 1991. High performance liquid chromatographic determination of  $^{15}\text{NH}_4$ :[ $^{15}\text{NH}_4$  +  $^{14}\text{NH}_4$ ] ion ratios in seawater for isotope dilution experiments. *Analytical Chemistry* 63:1838-1843
- Gardner, W.S., S.P. Seitzinger, and J.M. Malczyk. 1991. The effects of sea salts on the forms of nitrogen released from estuarine and freshwater sediments: Does ion pairing affect ammonium flux? *Estuaries* 14:157-166

- Gardner, W.S. and P.A. St. John. 1991. High-performance liquid chromatographic method to determine ammonium ion and primary amines in seawater. *Analytical Chemistry* 63:537-540
- Nalepa, T.F., W.S. Gardner, and J.M. Malczyk. 1991. Phosphorus cycling by mussels (*Unionidae: Bivalvia*) in Lake St. Clair. *Hydrobiologia* 219:239-250
- Seitzinger, A.P., W.S. Gardner, and A.K. Spratt. 1991. The effect of salinity on ammonium sorption in aquatic sediments: Implications for benthic nutrient recycling. *Estuaries* 14:167-174
- Gardner, W.S., P.F. Landrum, and J.F. Cavaletto. 1990. Lipid-partitioning and disposition of benzo[a]pyrene and hexachlorobiphenyl in Lake Michigan *Pontoporeia hoyi* and *Mysis relicta*. *Environmental Toxicology and Chemistry* 9:1269-1278.
- Cavaletto, J.F., H.A. Vanderploeg, and W.S. Gardner. 1989. Wax esters in the freshwater zooplankton *Limnocalanus macrurus*. *Limnology and Oceanography* 34:785-789
- Gardner, W.S., J.F. Chandler, and G.A. Laird. 1989. Organic-nitrogen mineralization and substrate limitation of bacteria in Lake Michigan. *Limnology and Oceanography* 34:478-485
- Gardner, W.S., B.J. Eadie, J.F. Chandler, C.C. Parrish, and J.M. Malczyk. 1989. Mass Flux and nutritional composition of settling epilimnetic particles in Lake Michigan. *Canadian Journal of Fisheries and Aquatic Sciences* 46:1118-1124
- Gauvin, J.M., W.S. Gardner, and M.A. Quigley. 1989. Effects of food-removal on nutrient release rates, lipid content, and survival time of Lake Michigan *Pontoporeia hoyi*. *Canadian Journal of Fisheries and Aquatic Sciences* 46:1125-1130
- Quigley, M.A., J.F. Cavaletto, and W.S. Gardner. 1989. Lipid composition related to size and composition of the amphipod *Pontoporeia hoyi*. *Journal of Great Lakes Research* 15:601-610
- Schelske, C.L., J.A. Robbins, W.S. Gardner, D.J. Conley, and R. Bourbonniere. 1988. Sediment record of biogeochemical responses to anthropogenic perturbations of nutrient cycles in Lake Ontario. *Canadian Journal of Fisheries and Aquatic Sciences* 45:1291-1303
- Gardner, W.S., J. Chandler, G.A. Laird, and H.J. Carrick. 1987. Sources and fate of dissolved free amino acids in epilimnetic Lake Michigan water. *Limnology and Oceanography* 32:1353-1362
- Gardner, W.S., T.F. Nalepa, and J.M. Malczyk. 1987. Nitrogen mineralization and denitrification in Lake Michigan sediments. *Limnology and Oceanography* 32:1226-1238
- Manny, B.A., G.L. Fahnenstiel, and W.S. Gardner. 1987. Stimulation of Lake Michigan phytoplankton growth by acid rain. *Journal of Great Lakes Research* 13:218-223
- Gardner, W.S., J.F. Chandler, G.A. Laird, and D. Scavia. 1986. Microbial response to amino acid additions in Lake Michigan: Grazer control vs. substrate limitation of bacterial populations? *Journal of Great Lakes Research* 12:161-174
- Vanderploeg, H.A., G.A. Laird, J.R. Leibig, and W.S. Gardner. 1986. Ammonium release by zooplankton in suspensions of heat-killed algae and an evaluation of the flow-cell method. *Journal of Plankton Research* 8:341-352
- Gardner, W.S., W.A. Frez, E.A. Cichocki, and C.C. Parrish. 1985. Micromethod for lipids in aquatic invertebrates. *Limnology and Oceanography* 30:1099-1105

- Gardner, W.S., T.F. Nalepa, W.A. Frez, E.A. Cichocki, and P.F. Landrum. 1985. Seasonal patterns in lipid content of Lake Michigan macroinvertebrates. *Canadian Journal of Fisheries and Aquatic Sciences* 42:1827-1832
- Eadie, B.J., R.L. Chambers, W.S. Gardner, and G.L. Bell. 1984. Sediment trap studies in Lake Michigan: Resuspension and chemical fluxes in the southern basin. *Journal of Great Lakes Research* 10:307-321 (Chandler-Misener Award paper)
- Landrum, P.F., S.R. Nihart, B.J. Eadie, and W.S. Gardner. 1984. Reverse-phase separation method for determining pollutant binding to Aldrich humic acid and dissolved organic carbon in natural waters. *Environmental Science Technology* 18:187-192
- Paffenhöfer, G.A. and W.S. Gardner. 1984. Ammonium release by juveniles and adult females of the subtropical marine copepod *Eucalamus pileatus*. *Journal of Plankton Research* 6:505-513
- Gardner, W.S. and J.M. Malczyk. 1983. Discrete injection segmented flow analysis to measure nutrients in small volume water samples. *Analytical Chemistry* 55:1645-1647
- Gardner, W.S., T.F. Nalepa, D.R. Slavens, and G.A. Laird. 1983. Patterns and rates of nitrogen release by benthic chironomidae and oligochaetes. *Canadian Journal of Fisheries and Aquatic Sciences* 40:259-256
- Nalepa, T.F., W.S. Gardner, and J.M. Malczyk. 1983. Benthic invertebrates and sediment phosphorus flux in the Great Lakes. *Coastal Oceanography and Climatology News* 5:33-34
- Nalepa, T.F., W.S. Gardner, and J.M. Malczyk. 1983. Phosphorus release by three kinds of benthic invertebrates: Effects of substrate and water medium. *Canadian Journal of Fisheries and Aquatic Sciences* 40:810-813
- Eadie, B.J., W. Faust, W.S. Gardner, and T. Nalepa. 1982. Polycyclic aromatic hydrocarbons in sediments and associated benthos in Lake Erie. *Chemosphere* 11:185-191
- Gardner, W.S., P.F. Landrum, and D.A. Yates. 1982. Fractionation of metal forms in natural waters by size exclusion chromatography with inductively coupled argon plasma detection. *Analytical Chemistry* 54:1196-1198
- Gardner, W.S. and G.A. Paffenhöfer. 1982. Nitrogen regeneration by the subtropical copepod *Eucalanus pileatus*. *Journal of Plankton Research* 4:725-734
- Gardner, W.S. and H.A. Vanderploeg. 1982. Micro sample-filtering device for liquid chromatography or flow-injection analysis. *Analytical Chemistry* 54: 2129-2930
- Scavia, D. and W.S. Gardner. 1982. Kinetics of nitrogen and phosphorus release by *Daphnia magna*. *Hydrobiologia* 96:105-111
- Gardner, W.S., W.H. Miller, III, and M.J. Imlay. 1981. Free amino acids in mantle tissue of the bivalve *Amblema plicata*: Possible relation to environmental stress. *Bulletin of Environmental Contamination and Toxicology* 26:157-162
- Gardner, W.S. and W.H. Miller, III. 1981. Intracellular composition and net release rates of free amino acids in *Daphnia magna*. *Canadian Journal of Fisheries and Aquatic Sciences* 38:157-162
- Gardner, W.S., T.F. Nalepa, M.A. Quigley, and J.M. Malczyk. 1981. Release of phosphorus by certain benthic invertebrates. *Canadian Journal of Fisheries and Aquatic Sciences* 38:978-981
- Gardner, W.S. and D. Scavia. 1981. Kinetic examination of nitrogen release by zooplankters. *Limnology and Oceanography* 26:801-810

- Gardner, W.S., B.J. Eadie, and W.H. Miller, III. 1980. Microtechnique to remove particles from high performance liquid chromatographic samples. *Journal of Liquid Chromatography* 3:1585-1592
- Gardner, W.S. and W.H. Miller. 1980. Reverse-phase liquid chromatographic analysis of amino acids after reaction with o-phthalaldehyde. *Analytical Biochemistry* 101:61-65
- Claus, C., F. Benijts, G. Vanderputte, and W. Gardner. 1979. The biochemical composition of the larvae of two strains of *Artemia salina* (L.) reared on two different algal foods. *Journal of Experimental Marine Biology and Ecology* 36:171-183
- Gardner, W.S., R.F. Lee, K.R. Tenore, and L.W. Smith. 1979. Degradation of polycyclic aromatic hydrocarbons in coastal sediments: Importance of microbes and polychaete worms. *Water, Air and Soil Pollution* 11:339-347
- Gardner, W.S. and R.B. Hanson. 1979. Dissolved free amino acids in interstitial waters of Georgia salt marsh soils. *Estuaries* 2:113-118.
- Gardner, W.S. 1978. Microfluorometric method to measure ammonium in natural waters. *Limnology and Oceanography* 23:1069-1072
- Gardner, W.S. and J.A. Stephens. 1978. Stability and composition of terrestrially derived dissolved organic nitrogen in continental shelf waters. *Marine Chemistry* 6:335-342
- Hanson, R.B. and W.S. Gardner. 1978. Uptake and metabolism of two amino acids by anaerobic microorganisms in four diverse salt marsh soils. *Marine Biology* 46:101-107
- Gardner, W.S., D.R. Kendall, R.R. Odum, H.L. Windom, and J.A. Stephens. 1978. The distribution of methylmercury in a contaminated salt marsh ecosystem. *Environmental Pollution* 15:243-251
- Gardner, W.S. 1978. Sensitive fluorometric procedure to determine individual amino acids in marine waters. *Marine Chemistry* 6:15-26
- Lee, R.F., W.S. Gardner, J.W. Anderson, J.W. Blaylock, and J. Barwell-Clarke. 1978. Fate of polycyclic aromatic hydrocarbons in controlled ecosystem enclosures. *Environmental Science and Technology* 12:832-838
- Gardner, W.S., D.S. Wynne, and W.M. Dunstan. 1976. Simplified procedure for the manual analysis of nitrate in sea water. *Marine Chemistry* 4:393-396
- Windom, H.L., W.S. Gardner, J.A. Stephens, and F.E. Taylor. 1976. The role of methylmercury production in the transfer of mercury in salt marsh ecosystems. *Estuarine and Coastal Marine Science* 4:579-583
- Gardner, W.S. and G.F. Lee. 1975. The role of amino acids in the nitrogen cycle of Lake Mendota. *Limnology and Oceanography* 20:379-388
- Gardner, W.S. and D.W. Menzel. 1974. Phenolic aldehydes as indicators of terrestrially derived organic matter in the sea. *Geochimica et Cosmochimica Acta* 38:813-822
- Gardner, W.S. and G.F. Lee. 1973. Gas chromatographic procedure to analyze amino acids in lake waters. *Environmental Science Technology* 7:719-723
- Schafer, M.L., J.T. Peeler, J.E. Campbell, and W.S. Gardner. 1969. Pesticides in drinking waters from the Mississippi and Missouri Rivers. *Environmental Science Technology* 3:1261-1269
- Gardner, W.S. and J.E. Campbell. 1967. Composite water sampling device. *Journal of American Water Works Association* 59:1187-1189
- Gardner, W.S. and G.F. Lee. 1965. Oxygenation of lake sediments. *International Journal of Air and Water Pollution* 9:553-564

## BOOKS AND BOOK CHAPTERS

- Burgin, A.J., S. K. Hamilton, W.S. Gardner, and M.J. McCarthy. 2012. Nitrate Reduction, Denitrification and Dissimilatory Nitrate Reduction to Ammonium in Wetland Sediments. In: *Methods in Biogeochemistry of Wetlands*. Soil Science Society of America Book Series (In Press)
- Cavaletto, J.F. and W.S. Gardner. 1998. Seasonal dynamics of lipids in freshwater benthic invertebrates. In: *Lipids in Freshwater Ecosystems*. M. Arts and B. Wainman (eds.), pp. 109-131. Springer-Verlag New York, Inc., New York
- Gardner, W.S., M.A. Quigley, G.L. Fahnenstiel, D. Scavia, and W.A. Frez. 1990. *Pontoporeia hoyi* -- A direct trophic link between spring diatoms and fish in Lake Michigan. In: *Large Lakes Ecological Structure and Function*. M.M. Tilzer and C. Serruya (eds.). Springer-Verlag, NY
- Gardner, W.S. and P.F. Landrum. 1983. Characterization of ambient levels of ultraviolet-absorbing dissolved organic materials in natural waters by aqueous liquid chromatography. In: *Aquatic and Terrestrial Humic Materials*. R.F. Christman and E.T. Gjessing, (eds.), pp. 203-217. Ann Arbor Science Publishers
- Eadie, B.J., W.R. Faust, P.F. Landrum, W.S. Gardner, and T. Nalepa. 1983. Bioconcentration of PAH by some benthic organisms. In: *Polynuclear Aromatic Hydrocarbons VII*. M.W. Cooke and A.J. Dennis (eds.), pp. 437-449. Batelle Press, Columbus, Ohio
- Gardner, W.S. 1980. Salt Marsh Creation: Impact of heavy metals. In: *Rehabilitation and Creation of Selected Coastal Habitats: Proceedings of a Workshop*. J.C. Lewis and E.W. Bunce (eds.). Office of Biological Services, Fish and Wildlife Service, U.S. Dept. of Interior, Washington, DC
- Lee, R.F., S.C. Singer, K.R. Tenore, W.S. Gardner, and R.M. Philpot. 1979. Detoxification system in polychaete worms: Importance in the degradation of sediment hydrocarbons. In: *Marine Pollution Functional Responses*. W.B. Vernberg, F.P. Thurberg, A. Calabrese, and J. Vernberg (eds.), pp. 23-37. Academic Press
- Windom, H.L., W.M. Dunstan, and W.S. Gardner. 1975. River input of inorganic phosphorus and nitrogen to the southeastern salt marsh estuarine environment. In: *Mineral Cycling in southeastern Ecosystems: Proc. of A.E.C. Sympos.* May 1-3, 1974
- Windom, H.L., W.S. Gardner, W.M. Dunstan, and G.A. Paffenhöfer. 1976. Cadmium and mercury in a coastal marine ecosystem. In: *Marine Pollutant Transfer*. H.L. Windom and R.A. Duce (eds.). Lexington Books, Toronto
- Gardner, W.S., H.L. Windom, J.A. Stephens, F.E. Taylor, and R.R. Stickney. 1975. Concentrations of total mercury and methylmercury in fish and other organisms: Implications to mercury cycling. In: *Mineral Cycling in southeastern Ecosystems: Proc. of A.E.C. Sympos.* May 1-3, 1974

## CONTRIBUTED ARTICLES TO PROFESSIONAL NEWSLETTERS AND SYMPOSIUM PROCEEDINGS

- Eadie, B.J., R. Amon, R. Benner, J. Cavaletto, J.B. Cotner, W.S. Gardner, M. Lansing, and D. Pakulski. 1995. Organic matter decomposition, nitrogen recycling, and oxygen consumption in the Mississippi River plume/Gulf Shelf region. In: *Nutrient-Enhanced*



- Coastal Ocean Productivity*, Proceedings of 1994 Synthesis Workshop, Produced by Louisiana Sea Grant College Program, Baton Rouge, Louisiana
- Benner, R., G. Chin-Leo, W. Gardner, B. Eadie, and J. Cotner. 1992. The fates and effects of riverine and shelf-derived DOM on Mississippi River plume/Gulf shelf processes. *Nutrient Enhanced Coastal Ocean Productivity NECOP workshop Proceedings October 1991*. Texas A&M University Sea Grant College Program

#### TECHNICAL REPORTS

- McCarthy, M.J., and W.S. Gardner (Appendix by Dmitri Sobolev). 2002. Nitrogen cycling in East Matagorda Bay. A report for *The Texas Water Development Board*. Contract No. 2001-483-387
- An, S., M.J. McCarthy, and W.S. Gardner. 2001. Nitrogen cycling in Sabine Lake. A report for *The Texas Water Development Board*. Contract No. 2000-483-337
- An, S. and W.S. Gardner. 2000. Nitrogen cycling in Laguna Madre and Baffin Bay. A report for *The Texas Water Development Board*. Contract No. 99-483-278
- Gardner, W.S., G.A. Barbarian, P.L. Brezonik, A. Frake, B. Nowicki, J.E. O'Reilly, J.G. Sanders, and T.E. Whitledge. 1984. Methodology and quality assurance for nutrient measurements by NOAA: Current status and recommendations for the future, a report resulting from a Technical Working Group Meeting in Miami, Florida, December 8-9, 1983. *NOAA Quality Assurance Program*
- Gardner, W.S. and B.J. Eadie. 1981. Chemical factors controlling phosphorus cycling in lakes. *In: Nutrient Cycling in the Great Lakes: A Summarization of Factors regulating the Cycling of Phosphorus*. Scavia, D. and R. Moll, (eds.). Special Report No. 83 of the *Great Lakes Research Division*, University of Michigan, Ann Arbor