

Alan W. Groeger

Associate Professor

I. ACADEMIC / PROFESSIONAL BACKGROUND

EDUCATION:

Ph.D. 1986	University of Oklahoma	Zoology	"Photosynthetic Carbon in Freshwater Metabolism Phytoplankton"
M.S. 1979	Central Michigan University	Biology	"Organic Matter Flow Through Isabella and the Chippewa River" Lake
B.S. 1976	Purdue University	Environmental Sciences	

UNIVERSITY EXPERIENCE:

Texas State University–San Marcos	Associate Professor	1994-
Southwest Texas State University	Assistant Professor	1989-94
University of Oklahoma (Biological Station)	Summer Faculty	1991, 1995, 1999
Murray State University	Postdoctoral Research Associate	1988-89
University of Oklahoma	Teaching Assistant	1979-81
Michigan State University (Kellogg Biological Station)	Teaching Assistant	1979
Central Michigan University	Teaching and Research Assistant	1976-79

RELEVANT PROFESSIONAL EXPERIENCE:

U.S. Environmental Protection Agency	Postdoctoral Research Associate	1986-88
Lockheed EMSCO/ USEPA	Environmental Scientist	1984-86
Oak Ridge National Laboratory	Research Assistant	1981-84

II. TEACHING

HONORS AND AWARDS:

Nominated for Presidential Award for Excellence in Teaching, 1992

COURSES TAUGHT AND PREPARED:

Biology 1310	Principles of Biology
Biology 4470/5470	Limnology / Lab
Biology 5319P	Plankton / Lab
Biology 5110L	Reservoir and Large River Ecosystems, Aquatic Ecosystems of the Edwards Plateau General Aquatic Ecology
Zoology 4970/5970	Reservoir Ecology (University of Oklahoma)
Biology 5471/7471	Reservoir Ecology / Lab
Biology 1430	Functional Biology
Zoology 4970/5970	Methods in Field Ecology (University of Oklahoma)
Biology 7102/5101L	Aquatic Resources Seminar
Biology 7322	Scientific Method and Aquatic Resources
Biology 7401	Assessment Techniques for Aquatic Resources
Biology 3470	Invertebrate Zoology

GRADUATE THESES /DISSERTATIONS DIRECTED AND COMPLETED:

Jesse C. Becker. 2008. Spatial variability in speciation and bioaccumulation of mercury in a subtropical reservoir system : Amistad International Reservoir, Texas, USA. Texas State University – San Marcos Thesis, 49 pp.

Daniel N. Woodward. 2007. Physical, chemical, and biological dynamics within the plunge point region of a small stratified reservoir. Texas State University – San Marcos Thesis, 62 pp.

Michael S. Cave. 2006. Effects of surface and groundwater interactions on the solution chemistry of a subtropical karst stream. Texas State University – San Marcos Thesis, 47 pp.

Joe M. Martin. 2004. Influence of abiotic factors on white bass growth in a subtropical Texas reservoir. Texas State University – San Marcos Thesis, 24 pp.

Connie R. Johnson. 2001. The distribution of the water flea (Cladocera: Daphnidae) in a central Texas reservoir. Southwest Texas State University Thesis, 84 pp.

- Thomas M. Allemand. 2001. Calcium dynamics in a subtropical reservoir. Southwest Texas State University Thesis, 67 pp.
- David A. Bass. 2000. The heat budget for Canyon Reservoir, a subtropical impoundment in southcentral Texas. Southwest Texas State University Thesis, 74 pp.
- Toni Pennington. 1999. Identifying sediment nutrients that further characterize the habitat associated with the endangered Texas wildrice (*Zizania texana* Hitch.). Southwest Texas State University Thesis, 44 pp.
- Bryan P. Cook, 1998. Seasonal and longitudinal variation in nitrate and chlorophyll a in a central Texas reservoir. Southwest Texas State University Thesis, 70 pp.
- Elizabeth Davis. 1997. Use of a short-term bioassay method to determine nutrient limitation of periphyton growth in the Colorado River, Texas. Southwest Texas State University Thesis, 25 pp.
- Erica B. Schlickeisen, 1997. A comparison of decomposition processes and microbial dynamics between an aquatic macrophyte (*Sagittaria platyphylla*) and a terrestrial leaf (*Populus deltoides*) in a thermally constant, spring-fed stream. Southwest Texas State University Thesis, 31 pp. (co-advised with Arsuffi).
- John Senter, Non-thesis, 1997.
- Patrick F. Brown. 1996. Influences of flow and basin morphometry on nutrient dynamics in a series of Texas reservoirs. Southwest Texas State University Thesis, 65 pp.
- Todd E. Tietjen. 1996. Influence of advection on the ecosystem structure of Canyon Lake reservoir. Southwest Texas State University Thesis, 87 pp.
- Ted A. Ground. 1992. Relationships of watershed climate and geochemical processes to trophic characteristics in Texas reservoirs. Southwest Texas State University Thesis, 56 pp.

CURRICULUM DEVELOPMENT:

I served on the Department's Curriculum Committee from 1989 to 2003, and chaired the Committee in 1997 and from 2000 to 2003. I helped to plan, initiate and develop the changes in our undergraduate core courses and the department's Ph.D. program in Aquatic Resources.

FUNDED EXTERNAL TEACHING GRANTS AND CONTRACTS:

Host a RUSS (Remote Underwater Sampling Station system) with the NSF-funded educational WOW (Water on the Web) Group on the Guadalupe River- have received a 50 % match of the \$20,000 needed from the International Institute for Sustainable Water Resources, SWT – the remainder of funds came from \$3,000 each from the Canyon Regional Water Authority, Friends of Lake McQueeney, and Preserve Lake Dunlap Association, and \$1,000 from the San Marcos River Foundation 2003-2004. A. W. Groeger put the consortium together, and was the sole P.I.

Internet and component-based modeling system for lake water quality and fish habitat projections, 1999. Advanced Technology Program, Texas Higher Education Coordinating Board, \$158,134 to Xing Fang, Wen-Ran Zhang, Theodore Cleveland, and A. W. Groeger. Part of this project was aimed at middle school and high school science education.

Enhancing the microbial ecology and biogeochemistry curriculum in aquatic biology and ecology. 1990. National Science Foundation for \$86,359, to A. W. Groeger and T. L. Arsuffi.

FUNDED INTERNAL TEACHING GRANTS AND CONTRACTS:

Microcomputer/video enhancement of aquatic biology courses. 1992. Instructional Mini-grant, Southwest Texas State University for \$17,445 to A.W. Groeger, T.L. Arsuffi, and D. Huffman.

Enhanced instruction of microbial ecology through computer-assisted image analysis and video. 1992. Southwest Texas State University for \$8,649 to T.L. Arsuffi and A.W. Groeger.

III. SCHOLARLY / CREATIVE

ARTICLES - refereed (* denotes student coauthor):

Kamps, R.H.(*), M. Gault, G. Tatum and A.W. Groeger. 2009. Discharge and Water Quality of the Submerged Goodenough Spring, International Lake Amistad, Texas, USA. *Hydrogeology Journal*. 17: xx1-xx9. DOI. 10.1007/s 10040-008-0404-0.

Becker, J.C.(*) and A.W. Groeger. In Press. Distribution of mercury in the sediments of Amistad International Reservoir, Texas, USA. *Proceedings of the International Association of Theoretical and Applied Limnology*.

Groeger, A.W. 2007. Nutrient limitation in Crater Lake, Oregon. *Hydrobiologia*. 574: 205-216.

Cave , M.S.(*) and A.W. Groeger. 2007. Weathering and water quality in the Blanco River, a subtropical karst stream. *Texas Journal of Science* 59:163-178.

- Tietjen, T.E., A.W. Groeger, and D. Woodward(*). In Press. The impact of a plunging inflow on extracellular enzyme activity in a reservoir ecosystem. *Proceedings of the International Association of Theoretical and Applied Limnology*.
- Groeger, A.W., R. H. Kamps(*), M. D. Funk(*), D. Woodward(*), A. Thompson(*), J. R. Branom and M. Cave(*). Mixing of the desert rivers: limnology of the International Amistad Reservoir. Accepted to the *Proceedings of the 6th Symposium on the Natural Resources of the Chihuahuan Desert*.
- Fang, X., R. Shrestha, A.W. Groeger, C. Lin, and M. Jao. 2007. Simulation of impacts of streamflow and climate conditions on Amistad Reservoir. *Journal of Contemporary Water Research and Education* 137: 14-20.
- Groeger, A. W. and D.A. Bass. 2005. Empirical predictions of water temperatures in a subtropical reservoir. *Archiv für Hydrobiologie*. 162: 267-285.
- Groeger, A. W., B.G. Kelley(*), and Joe M. Martin(*). 2005. Influence of climatic variability on Texas reservoirs. *Water for Texas*. Norwine, J., J.R. Giardino, and S. Krishnamurthy [editors]. Texas A & M University Press. pp. 159-163.
- Schlickeisen, E., T.E. Tietjen, T. L. Arsuffi and A.W. Groeger. 2003. Detritus processing and microbial dynamics of an aquatic macrophyte and terrestrial leaf in a thermally constant, spring-fed stream. *Microbial Ecology*. 45:411-418.
- Groeger, A. W. and T. E. Tietjen(*). 1998. Hydrological and thermal regime in a subtropical reservoir. *International Review of Hydrobiology*. Special Issue 83: 83-92.
- Groeger, A.W., P.F. Brown(*), T.E. Tietjen(*), and T.C. Kelsey(*). 1997. Water quality of the San Marcos River. *Texas Journal of Science* 49: 279-294.
- Groeger, A. W. and T. A. Ground(*). 1994. Salinity and ionic composition of Texas reservoirs. *Archiv für Hydrobiologie Beihefte Ergebnisse der Limnologie*. 40: 27-33.
- Ground, T. A. (*) and A. W. Groeger. 1994. Chemical classification and trophic characteristics of Texas reservoirs. *Lake and Reservoir Management*. 10: 189-201.
- Groeger, A. W. and J. J. Gustafson(*). 1994. Chemical composition and variability of the waters of the Edwards Plateau, central Texas, p. 39-46. IN J. A. Stanford and H. M. Valett [eds.], *Proceedings of the Second International Conference on Ground Water Ecology*, American Water Resources Association, Herndon, VA.

- Groeger, A. W. and T. E. Tietjen(*). 1993. Physiological responses of nutrient-limited phytoplankton to nutrient addition. *Verhandlungen der Internationale Vereinigung für Limnologie*. 25: 370-372.
- Butler, J.M., A.W. Groeger, and J.S. Fletcher. 1992. Characterization of monochlorinated biphenyl products formed by Paul's Scarlet Rose cells. *Bulletin of Environmental Contamination and Toxicology*. 49: 821-826.
- Groeger, A. W., M. D. Schram, and G. R. Marzolf. 1991. Influence of food quality on growth and reproduction in *Daphnia*. *Freshwater Biology*. 26: 11-19.
- Marzolf, G. R., G. Cantrell, A. W. Groeger, K. Johnston, G. T. Rice and M. D. Schram. 1991. Spatial variability in ¹⁴C estimates of phytoplankton productivity in Kentucky Lake, an impoundment of the Tennessee River, U.S.A. *Verhandlungen der Internationale Vereinigung für Limnologie*. 24: 1300-1303.
- Groeger, A. W. and B. L. Kimmel. 1989. Relationship between photosynthetic and respiratory carbon metabolism in freshwater phytoplankton. *Hydrobiologia*. 173: 107-117.
- Groeger, A. W., M. B. Bonoff, J. R. Baker, and E. P. Meier. 1989. Comparison of chemical analysis of boat and helicopter-collected water samples. *Hydrobiologia*. 182: 161-163.
- Groeger, A. W. and B. L. Kimmel. 1988. Phytoplankton photosynthetic carbon metabolism in a nitrogen-limited reservoir. *Canadian Journal of Fisheries and Aquatic Sciences*. 45: 720-730.
- Groeger, A. W. and J. S. Fletcher. 1988. The influence of increasing chlorine content on the accumulation and metabolism of polychlorinated biphenyls (PCBs) by Paul's Scarlet Rose cells. *Plant Cell Reports* 7: 329-332.
- Fletcher, J. S., A. W. Groeger, J. McGrady, and J. C. McFarlane. 1987. Polychlorobiphenyl (PCB) metabolism by plant cells. *Biotechnology Letters*. 9: 817-820.
- Fletcher, J. S., A. W. Groeger, and J. C. McFarlane. 1987. Metabolism of 2-chlorobiphenyl by suspension cultures of Paul's Scarlet Rose. *Bulletin of Environmental Contamination and Toxicology*. 39: 960-965.
- Kimmel, B. L. and A. W. Groeger. 1986. Limnological and ecological changes associated with reservoir aging, p. 103- 109. IN G. E. Hall [ed.], *Reservoir Fisheries Management: Strategies for the 80's*, American Fisheries Society, Allen Press, Lawrence, Kansas, 327 pp.
- Groeger, A. W. and B. L. Kimmel. 1984. Organic matter supply and processing in lakes and reservoirs, p. 282-285. IN *Lake and reservoir management*. Proc. North American Lake

Management Society Symposium. EPA 440/5/84-001. U.S.E.P.A., Washington D.C., 604 pp.

Kimmel, B. L. and A. W. Groeger. 1984. Factors controlling primary production in lakes and reservoirs, p. 277-281. IN Lake and reservoir management. Proc. North American Lake Management Society Symposium. EPA 440/5/84-001. U.S.E.P.A., Washington D.C., 604 pp.

REPORTS:

Groeger, A.W. and M.S. Cave. 2004. Water Quality in the Blanco River. Chapter 5 in Ecological characterization of the Blanco River Basin, Texas. Report submitted to the Texas Nature Conservancy from Texas State University.

Groeger, A.W. 2002. Trophic status of the reservoirs of the lower Guadalupe River, particularly in relation to flow, report to GBRA and TNRCC, ≈ 400 pp.

Groeger, A.W. and J. Martin. 2002. Trophic status of Lake Dunlap, Summer, 2001. Final report submitted to the Preserve Lake Dunlap Association. 46 pp.

Oborny, E., T.L. Arsuffi, and A.W. Groeger. 2002. Comprehensive and critical period monitoring program to evaluate the effects of variable flow on biological resources in the Comal Springs/River Aquatic Ecosystem. Draft 2002 Annual Report to the Edwards Aquifer Authority.

Oborny, E., A.W. Groeger and T.L. Arsuffi. 2002. Comprehensive and critical period monitoring program to evaluate the effects of variable flow on biological resources in the San Marcos Springs/River Aquatic Ecosystem. Draft 2002 Annual Report to the Edwards Aquifer Authority.

Groeger, A.W. 2000. Nutrient limitation in Crater Lake, Oregon. Submitted to U.S. Geological Survey, 35 pp. (Final Report).

Groeger, A.W. 2000. Progress report on Guadalupe River Instream Flow project, 1999 data report, to GBRA and TNRCC, 44 pp.

Groeger, A.W. 1998. Progress report- Nutrient limitation in Crater Lake, Oregon. Submitted to U.S. Geological Survey, 15 pp.

Whiteside, B. G., A. W. Groeger, T. Kelsey(*), and P. Brown(*). 1993. Longitudinal Changes in the Physiochemical Properties and Fish Assemblages of the San Marcos River. Report to Texas Parks and Wildlife, 60 pp.

Groeger, A. W. and E. E. Davis(*). 1992. Determination of Nutrient Limitation in the Colorado River Below the City of Austin. Report to the Lower Colorado River Authority, 25 pp.

Groeger, A. W. 1991. Program Review and Suggestions for the SFWMD Phytoplankton Research Program on Lake Okeechobee. Report to the South Florida Water Management District, 8 pp.

Groeger, A. W. and B. L. Kimmel. 1987. Spatial and seasonal patterns of photosynthetic carbon metabolism in DeGray Lake. Waterways Experimental IN Kennedy, R. H. and J. Nix [eds.], Proceedings of the DeGray Lake Symposium. Technical Report E-87-4, US Army Engineer Station, Vicksburg, Miss.

Kimmel, B. L. and A. W. Groeger. 1987. Size distribution of planktonic autotrophy and microheterotrophy in DeGray Reservoir, Arkansas. IN Kennedy R. H. and J. Nix [eds.], Proceedings of the DeGray Lake Symposium. Technical Report E-87-4, US Army Engineer Waterways Experimental Station, Vicksburg, Miss.

Kimmel, B. L. and A. W. Groeger. 1986. Size distribution of planktonic autotrophy and microheterotrophy in DeGray and West Point reservoirs: A comparative study. Tech. Report E-86-8, US Army Engineer Waterways Experiment Station, Vicksburg, Miss., 45 pp.

PAPERS PRESENTED AT PROFESSIONAL MEETINGS (since 1990) (*)- student author:

Becker, J.C. (*), A.W.Groeger, M.M. Chumchal, D. Hahn & W.H. Nowlin. 2008. DISTRIBUTION AND BIOACCUMULATION OF MERCURY IN A SUBTROPICAL RESERVOIR SYSTEM. Oral Presentation at the 3rd Oklahoma-Texas Aquatic Research Group and Great Plains Limnological Conference. University of Oklahoma Biological Station, Lake Texoma, Oklahoma

Becker, J.C. (*), A.W.Groeger, M.M. Chumchal, D. Hahn & W.H. Nowlin. 2008. DISTRIBUTION, SPECIATION, AND BIOACCUMULATION OF MERCURY IN A SUBTROPICAL RESERVOIR SYSTEM. Oral Presentation at the annual SETAC South Central Regional Meetings. Houston, Texas.

The impact of a plunging inflow on extracellular enzyme activity in a reservoir ecosystem. Tietjen, T.E. A.W. Groeger, and D. Woodward(*). International Association of Theoretical and Applied Limnology, Montreal, Canada. August, 2007.

Distribution of mercury in the sediments of Amistad International Reservoir, Texas, USA. Becker, J.C.(*), and A.W. Groeger. International Association of Theoretical and Applied Limnology, Montreal, Canada. August, 2007.

Current and historical water flow in the Blanco River watershed. Groeger, A.W., D. Huffman, A. Broun, and M. S. Cave(*), Texas Academy of Science, Waco, TX. March 2007.

Surface and groundwater interactions in a subtropical karst stream. Cave, M.S.(*), and A.W. Groeger, Texas Academy of Science, Waco, TX. March 2007.

The impact of flood timing and intensity on the thermal structure and dissolved oxygen distribution in a Texas reservoir. Tietjen, T.E. and A.W. Groeger. North American Lake Management Society International Symposium. Indianapolis, Indiana. November 2006.

Salinization of a desert reservoir?: Inflows, solutes and mixing in Lake Amistad. Groeger, A.W., R.H. Kamps, M. Cave, J. Branom, D. Woodward, V. Fulcher, and M. D. Funk. University Council on Water Resources, Santa Fe, New Mexico, July 2006.

Influence of Goodenough Spring on Amistad Reservoir, Texas. Kamps, R.H. and A.W. Groeger. University Council on Water Resources, Santa Fe, New Mexico, July 2006.

Simulation of impacts of water availability and weather conditions on a management plan for Amistad Reservoir. Shrestha, R., X. Fang, J. Lin, M. Jao, and A.W. Groeger. University Council on Water Resources, Santa Fe, New Mexico, July 2006.

Groeger, A.W. and J. Godeaux(*). "Classification of Texas reservoirs on their hydrologic and morphometric characteristics: Consideration of reservoir type on sensitivity to nutrient loading" in a special session on lake classification at the North American Lake Management Society meeting, Madison, Wisconsin. (November 2005)

Kamps, R.H.(*), A.W. Groeger and M.D. Funk(*). Amistad Reservoir 2004-2005: A preliminary look at the refilling and refreshing of a desert reservoir. Talk given at the Texas River and Reservoir Management Society meeting at Baylor University, May 17, 2005.

Woodward, D.(*), and A.W. Groeger. The hydrological effects of plunging reservoir inflows on bacterioplankton and algal community structures: A closer look at the interrelated variables stimulating production and growth. Talk given at the Texas River and Reservoir Management Society meeting at Baylor University, May 17, 2005.

Cave, M.(*), and A.W. Groeger. Investigating organic and inorganic carbon dynamics in the Blanco River, Texas. Talk given at the Texas River and Reservoir Management Society meeting at Baylor University, May 17, 2005.

Funk, M.D.(*), and A.W. Groeger. Zooplankton distribution in a desert reservoir, 6th Symposium on the Natural Resources of the Chihuahuan Desert, Alpine, TX (Oct 2004)

Groeger, A.W., R. H. Kamps(*), M. D. Funk(*), D. Woodward(*), A. Thompson(*), J. R. Branom and M. Cave(*). Mixing of the desert rivers: limnology of the International Amistad Reservoir, 6th Symposium on the Natural Resources of the Chihuahuan Desert, Alpine, TX (Oct 2004)

Groeger, A.W., D. Mosier and M. Johnson. Interaction of impoundment and flow on water quality of the semi-arid Guadalupe River, Texas. Presented at the Aquatic Resources in Arid Lands Conference, Las Cruces, NM. (May 2003)

Johnson, C.R. and A.W. Groeger. Cyclomorphosis in an exotic riverine zooplankter, *Daphnia lumholtzi*, in response to temperature changes and an invertebrate predator. Meeting of the North American Benthological Society, Pittsburgh, PA. (June 2002)

Martin, J.M. (*), A.W. Groeger, and T.H. Bonner. Influence of limnological factors on white bass growth in a central Texas reservoir. Meeting of the Texas Academy of Science, Laredo, TX. **Honorable Mention- Best Paper** (March 2002)

Kelley, B.G. (*) and A.W. Groeger. Phosphorus and dissolved organic carbon dynamics in a southern reservoir. Meeting of the Texas Academy of Science, Laredo, TX. (March 2002)

Groeger, A.W., B.G. Kelley(*), and J.M. Martin(*). Influence of seasonal variability and storms on the hydrology of Spring Lake and its limnology. Meeting of the Texas Academy of Science, Laredo, TX. (March 2002)

Groeger, A.W. Patterns of vertical stratification in Texas reservoirs. Texas Academy of Science, San Marcos. (Mar 2001)

Allemand, T.M.(*), and A.W. Groeger. Longitudinal and seasonal calcium dynamics in subtropical Canyon reservoir. Texas Academy of Science, San Marcos. (Mar 2001)

Johnson, C.R.(*), and A.W. Groeger. The distribution, abundance and biomass of water fleas (Cladocera: Daphniidae) and total phosphorus concentrations in a central Texas reservoir. Texas Academy of Science, San Marcos. (Mar 2001)

Allemand, T.M.(*), and A.W. Groeger. Calcium sedimentation as a possible control against eutrophication in a subtropical impoundment. *Southwestern American Naturalist*, Hays, Kansas (Apr 2001)

Groeger, A.W., J. Martin (*), S. Magnelia, and J. Tibbs. Predictive temperature model for the Guadalupe River downstream of Canyon Reservoir. Texas Academy of Science, Texas A & M University-Kingsville, Kingsville, TX. (March 2000)

Bell, K.L. (*), J. Koke (*), B.G. Kelley (*), and A.W. Groeger. Pre- and post-flood limnology of Spring Lake reservoir, San Marcos, Texas. Texas Academy of Science, Texas A & M University-Kingsville, Kingsville, TX. (March 2000)

Kelley, B.G. (*), T.M. Allemand (*), C.R. Johnson (*), and A.W. Groeger. Water movement and nutrient-limitation in Spring Lake reservoir, San Marcos, Texas. Texas Academy of Science, Texas A & M University-Kingsville, Kingsville, TX. (March 2000)

Lindsay, L.R. (*), A.W. Groeger, T.M. Brandt. Feeding habits, life history, and reproductive biology of the threatened Devils River Minnow: Tactics for establishing a refugium. Texas Academy of Science, Texas A & M University-Kingsville, Kingsville, TX. (March 2000)

Groeger, A. W., B.G. Kelley(*), and Joe M. Martin(*). Influence of climatic variability on Texas reservoirs. Water for Texas 2000 and Beyond, Texas A&M University. (Sept 2000)

Tietjen, T.E., Schlickeisen, E.B., A.W. Groeger, B.G. Kelley(*). Longitudinal nutrient limitation of phytoplankton and bacteria along a reservoir gradient. American Society of Limnology and Oceanography, Santa Fe, NM. (February 1999)

Pennington, T.(*), A.W.Groeger, P. Power, and R.D. Doyle. Sediment nutrients associated with an aquatic macrophyte *Zizania texana* in the San Marcos River. Texas Academy of Science, Texas Lutheran University, Seguin, TX. (March 1999)

Springer, T.(*), A.W. Groeger, B.G. Kelley(*). Limnology of Spring Lake, Texas. Texas Academy of Science, Texas Lutheran University, Seguin, TX. (March 1999)

Cook, B.P(*). and A.W. Groeger. Seasonal and longitudinal variation in nitrate and chlorophyll a in a central Texas reservoir. American Society of Limnology and Oceanography, St Louis (June 1998)

Kelley, B.G.(*), and A.W. Groeger. Interactions of dissolved organic carbon (DOC), suspended particles, and chlorophyll a in the light regime of a southcentral Texas reservoir. American Society of Limnology and Oceanography, St Louis (June 1998)

Schlickeisen, E.B.(*), T.E. Tietjen(*), A.W. Groeger, and T.L. Arsuffi. A comparison of decomposition processes and microbial dynamics between an aquatic macrophyte and a terrestrial leaf. American Society of Limnology and Oceanography, St Louis (June 1998)

Pennington, T.(*), A.W.Groeger, P. Power, and R.D. Doyle. Identifying sediment nutrient concentration and composition to further characterize the habitat associated with the endangered Texas wild rice (*Zizania texana* Hitch). Texas River and Reservoir Management Society, Denton, TX. (October 1998)

Groeger, A. W. and T. E. Tietjen.(*). Influence of interannual variation in flow on the ecosystem structure in a subtropical reservoir. 3rd International Conference on Reservoir Limnology and Water Quality, Ceske Budejovice, Czech Republic (August 1997)

Bass, D. A.(*), B. P. Cook(*), and A. W. Groeger. The influence of a major flood on the limnology of Canyon Lake reservoir, Texas. North American Lake Management Society meeting, Houston (December, 1997)

Groeger, A. W. Advective control of reservoir ecosystem control. North American Lake Management Society meeting, Houston (December 1997)

Bass, D.(*). and A.W. Groeger. Seasonal and longitudinal differences in the composition of sedimenting phosphorus in Canyon Reservoir (Comal County), Texas. Texas Academy of Science, Corpus Christi (March 1996)

Groeger, A. W. and T. E. Tietjen.(*). Hydrological control of reservoir ecosystem structure. North American Lake Management Society Region 6 Conference, Fort Worth (April 1996)

Tietjen, T. E.(*). and A. W. Groeger. Alteration of the physical and chemical structure of a reservoir ecosystem during a year of extremely high flow. North American Lake Management Society Region 6 Conference, Fort Worth (April 1996)

Groeger, A.W., T.E. Tietjen(*), and D.A. Bass(*). Interannual variation in water residence time and temperature regime in a subtropical reservoir. American Society of Limnology and Oceanography, Milwaukee (June 1996)

Groeger, A. W. and T. A. Ground.(*). Trophic status of Texas reservoirs. 24th Water for Texas Conference, Austin (January 1995)

Tietjen, T. E.(*). and A. W. Groeger. Influence of climatic variability on ecosystem structure of Canyon Reservoir. 24th Water for Texas Conference, Austin (January 1995)

Groeger, A.W., D.M. Søballe, and B.L. Kimmel. Reservoir ecosystem structure: Conflicting influences of riverine advection and water column heating. American Society of Limnology and Oceanography, Reno, NV (June 1995)

Tietjen, T.E.(*), A.W. Groeger, J. Guajardo(*), H.H. Hannan. Patterns of dissolved oxygen depletion in reservoirs. American Society of Limnology and Oceanography, Reno, NV (June 1995)

Groeger, A. W. and T. E. Tietjen.(*). Annual hydrological regime and water column stability in a deep-storage, subtropical reservoir, Texas, USA. 26th International Congress, Societas Internationalis Limnologiae. Sao Paulo, Brazil (July, 1995)

Groeger, A.W., D.M. Søballe, and B.L. Kimmel. Influence of advective inflows on reservoir ecosystem structure. North American Lake Management Society, Toronto, Canada (November 1995)

Tietjen, T.E.(*), A.W. Groeger, J. Guajardo(*), H.H. Hannan. Predicting patterns of dissolved oxygen depletion in reservoirs. North American Lake Management Society, Toronto, Canada (November 1995)

Groeger, A. W. and J. Gustafson(*). Variability in flow and water chemistry in the streams of the Edwards Plateau. Second International Conference on Ground Water Ecology, Atlanta GA (March 1994)

Tietjen, T. E.(*), and A. W. Groeger. Alteration of the chemical and physical structure of a reservoir ecosystem during a year of extremely high flow. Texas Academy of Science, Texas Southern University, Houston, TX (March 1994)

Groeger, A. W. and J. Gustafson.(*). Flow and ionic composition of streams of the Edwards Plateau. Texas Academy of Science, Texas Southern University, Houston, TX (March 1994)

Groeger, A. W. and T. E. Tietjen.(*). Response of phytoplankton photosynthesis, and photosynthate partitioning to nutrient addition in an oligotrophic reservoir. American Society of Limnology and Oceanography, Miami, Florida (June 1994)

Brown, P. B.(*), and A. W. Groeger. Influences of flood conditions on nutrient loading and retention in a series of Texas reservoirs. American Society of Limnology and Oceanography, Miami, Florida (June 1994)

Tietjen, T. E.(*), and A. W. Groeger. Alteration of physical and chemical structure of a reservoir ecosystem during a year of extremely high flow. American Society of Limnology and Oceanography, Miami, Florida (June 1994)

Brown, P. B.(*), and A. W. Groeger. Physical factors influencing nutrient quality and quantity in a series of Texas reservoirs. Texas Academy of Science, University of North Texas, Denton, TX (March 1993)

Tietjen, T. E.(*), and A. W. Groeger. Influence of advection and stratification on reservoir phytoplankton production and distribution. Texas Academy of Science, University of North Texas, Denton, TX (March 1993)

Tietjen, T. E.(*), K. Kanbe(*), and A. W. Groeger. Influence of advection and stratification on reservoir phytoplankton production and distribution. American Society of Limnology and Oceanography meeting, Edmonton, Alberta Canada (June 1993)

Groeger, A. W. Photosynthetic carbon metabolism and fluorescence in nutrient-limited Scenedesmus obliquus. Texas Academy of Science, Wichita Falls, TX (March 1992)

Davis, E. E.(*) and A. W. Groeger. Determination of periphyton nutrient limitation in the Colorado River: Short- and long-term bioassays. Texas Academy of Science, Wichita Falls, TX (March 1992)

Tietjen, T. E.(*) and A. W. Groeger. Indicators of physiological stress in nutrient-limited phytoplankton. Texas Academy of Science, Wichita Falls, TX (March 1992)

Groeger, A. W. and T. A. Ground.(*) Geochemical and climatic factors affecting the ionic composition and salinity of Texas reservoirs. 2nd International Conference on Reservoir Limnology and Water Quality. Ceské Budejovice, Czechoslovakia (August 1992)

Groeger, A. W. and T. E. Tietjen.(*) Physiological responses of nutrient-limited phytoplankton to nutrient addition. 25th International Congress, Societas Internationalis Limnologiae. Barcelona, Spain (August 1992)

Tietjen, T. E.(*) and A. W. Groeger. Seasonal and spatial nutrient limitation in a Central Texas Reservoir. North American Lake Management Society Conference. Cincinnati (November 1992)

Ground, T.A(*). and A.W. Groeger. Biogeochemistry and trophic status of Texas reservoirs. Presented at the North American Lake Management Society, Denver, CO (November 15, 1991)

Groeger, A. W., M. D. Schram, and G. R. Marzolf. Influence of food quality on growth and reproduction in Daphnia pulex. Presented at Texas Academy of Science, SWT (March 1990)

Groeger, A. W., M. D. Schram, and G. R. Marzolf. Influence of food quality on growth and reproduction in Daphnia. Presented at the American Society of Limnology and Oceanography meeting, Williamsburg, VA (June 1990)

INVITED TALKS, LECTURES AND WORKSHOPS:

Dynamics of an advectively-stratified reservoir: Lake Dunlap, Guadalupe River, Texas, seminar presented at Waterways Experiment Station, US Army Corps of Engineers, Vicksburg, MS June 10, 2004

Water chemistry of the Blanco River, Groeger, A.W., M. Cave, T.L. Arsuffi & T. Bonner, invited talk at the Blanco River Watershed Summit (July 17, 2004)

Water Quality of Lake Dunlap, talk to the Canyon Regional Water Authority (March 10, 2003)

Lake Dunlap Water Quality and Future Studies, Talk to the Preserve Lake Dunlap Association (March 21, 2003)

Current Status of the Water Quality of Lake Dunlap, talk to the New Braunfels City Council, (March 11, 2002)

Limnology of Lake Dunlap, the annual meeting of the Preserve Lake Dunlap Association- summarizing our research on this reservoir over the preceding 4 years. Joe Martin was a co-presenter (March 15, 2002)

Water Quality in Sulphur Creek and the Springs watershed. Meeting sponsored by Friends of Sulphur Creek and Texas Watch (other sponsors include City of Lampasas, Brazos River Authority, and OMI)- analyzed and interpreted the monitoring data collected on Sulphur Ck and Lampasas R. sites and its significance to environmental problems and concerns on the Creek (May 11, 2002)

Response of Texas Reservoirs to Nutrient Loading, talk to the TNRCC Nutrient Criteria workshop (May 20, 2002)

Water chemistry and nutrients in the Guadalupe River, talk to Texas Watch Meeting of the Monitors, Aquarena Springs (March 31, 2001)

Non-point nutrient loading to Texas rivers, talk to LCRA River Monitors and teachers, Lake Buchanan (June, 2001)

Environmental Monitoring Workshop to Teachers, McKinney Roughs, LCRA River Watch (June 4, 1998)

Analyzing trends in river water quality, workshop on “Field, Laboratory, & Analysis Methods for water quality analysis” Edwards Aquifer Data and Research Center (June 20, 1998)

Analyzing trends in lake water quality, workshop on “Field, Laboratory, & Analysis Methods for water quality analysis” Edwards Aquifer Data and Research Center (June 20, 1998)

Nutrient loading and limitation in Texas waters: Examples from the Edwards Plateau region, talk given to the annual meeting sponsored by the Texas Natural Resources Conservation Commission for surface water parties, Bandera, Tx. (Sept 30, 1998)

Invited panelist on open forum for “Linking lake management needs with research priorities” at a national conference on Enhancing the States Lake Management Programs, U.S. EPA. Chicago, IL (April, 1997)

“What do high school students need to know to succeed in college science?” - a talk to a workshop-retreat for River Watch Teachers, Lake Buchanan Training Facility (June 1997)

Influence of advection on reservoir ecosystem structure, seminar to Department of Wildlife and Fisheries, Texas A&M University, (November 1996)

Geochemistry of the rivers draining the Edwards Plateau, seminar at UT Marine Sciences Center, Port Aransas, TX. (April 1995).

Groeger, A.W., D.M. Søballe, and B.L. Kimmel, Reservoir ecosystem structure: conflicting influences of riverine advection and water column heating, American Society of Limnology and Oceanography, Reno, NV (June 1995)

Lecture to San Marcos River Foundation on role of phosphorus and nutrient limitation in ecology of San Marcos River (Fall 1995)

Aquatic Ecosystems, talk to Laredo River Watch Group (Laredo Community College)- High School Teachers and students in Laredo TX, November 5, 1994.

Groeger, A. W. and T. A. Ground. Intrabasin variation in water chemistry in Texas rivers. Special Symposium on Instream Flow Requirements in Texas Rivers, Texas Academy of Science, University of North Texas, Denton, TX, March 1993.

Careers in Aquatic Sciences, talk given (four sessions), Wimberly High School, May 1993.

Determination of Nutrient Limitation in the Colorado River Below the City of Austin, talk to Environmental Quality branch of the Lower Colorado River Authority, June, 1992.

Determination of Nutrient Limitation in the Colorado River Below the City of Austin, talk to External Review Board of the Environmental Quality branch of the Lower Colorado River Authority, August, 1992.

Invited seminar at Baylor University, Sept 11, 1991. Physiological ecology of nutrient-limited algae.

Use of in vivo chlorophyll fluorescence to characterize phytoplankton, invited presentation at "Teaching the Limnology Laboratory Symposium" during the annual meeting of the Association of Southeastern Biologists, April 20, 1990, Baltimore, Maryland.

Invited participant in meeting on the *Prymnesium parvum* poisonings and fish kills in the Pecos River, January 31, 1990 in the offices of the Texas Water Commission, Stephen F. Austin State Office Building.

CONSULTANCIES:

South Florida Water Management District, Lower Colorado River Authority, U.S. Park Service, CMH2 Hill, San Marcos River Foundation, Hydrolab Corporation, Friends of Lake McQueeney, U.S. Geological Survey/ National Biological Survey, Preserve Lake Dunlap Association, BioWest, Inc., PBS&J, Northwest Comal County Environmental Coalition

GRANTS and CONTRACTS: (All at Texas State University)

External Funded Grants and Contracts

Classification of Texas reservoirs on their hydrological properties and their corresponding response to nutrient loading. Alan W. Groeger, Texas State University - San Marcos. \$23,540, Texas Commission on Environmental Quality – start date April 1, 2007, project through April, 2008.

Spatial and temporal patterns in the distributions of water quality and biotic assemblages in relation to natural and anthropogenic disturbance and stress in the Pedernales River, Texas. Funding from the Nature Conservancy. \$75,000. CoPI with Bonner, Lopes, and Curan. 2007-2008. \$25,000 to Groeger's lab.

Development of a conceptual ecosystem model for International Lake Amistad and its rivers. Alan W. Groeger, Texas State University - San Marcos. \$15,338, National Park Service– start date July 1, 2006, through September 30, 2007.

Classification of Texas reservoirs on their hydrological properties and their corresponding response to nutrient loading. Alan W. Groeger, Texas State University - San Marcos. \$30,000, U. S. Environmental Protection Agency – start date January 1, 2005, project through December, 2007.

Influence of Rio Grande reservoir water quality on downstream agricultural and urban usage: Understanding options for maintaining sustainability within the river basin. Alan W. Groeger, Texas State University- San Marcos & Xing Fang, Lamar University, \$99,000 for Groeger's group for year1, US Department of Agriculture - 2004-2005. (Fang funded separately through Lamar University for \$29,000). This has been re-funded for a second year- 2005-2006 - at an additional ≈\$59,994. (Fang's group funded separately through Lamar University for \$40,000). Funded for an additional \$45,000 for 2006-2007 for a third year of research to Groeger's group only.

Spatial and temporal patterns in the distributions of water quality and biotic assemblages in relation to natural and anthropogenic disturbance and stress in the Blanco River, Texas. Funding from the Nature Conservancy. \$88,000. CoPI with Bonner and Arsuffi. 2003-2004. This has been re-funded for a second year- 2004-2005 at an additional \$88,000.

Host a RUSS (Remote Underwater Sampling Station system) with the NSF-funded WOW (Water on the Web) Group on the Guadalupe River- have received a 50 % match of the \$20,000 needed from the International Institute for Sustainable Water Resources, SWT – the remainder of funds is coming from \$3,000 each from the Canyon Regional Water Authority, Friends of Lake McQueeney, and Preserve Lake Dunlap Association, and \$1,000 from the San Marcos River Foundation 2003-2004. A. W. Groeger put the consortium together, and was the sole P.I.

Effect of water quality and variable flow on biological resources of the Comal and San Marcos Spring and River ecosystems, 2003, contract for approximately \$25,000 to Southwest Texas State University. To Groeger and Arsuffi.

Trophic status of Lake Dunlap reservoir, \$3,000 to A.W. Groeger from the Preserve Lake Dunlap Association. (Summer of 2001).

Critical period monitoring of water quality and flow on biological resources of the Comal and San Marcos Spring and River ecosystems, 2000-2005, contract for up to \$2,500,000 (250,000 per event) to Bio-West, Southwest Texas State University, and U.S. Fish and Wildlife- sampling to occur when flows decline to pre-determined trigger flows (we carried out two sampling events in 2000). To Groeger and Arsuffi.

Effect of water quality and variable flow on biological resources of the Comal and San Marcos Spring and River ecosystems, 2001-2002, contract for approximately \$540,000 to Bio-West, Southwest Texas State University, and U.S. Fish and Wildlife. To Groeger and Arsuffi.

Effect of water quality and variable flow on biological resources of the Comal and San Marcos Spring and River ecosystems, 2000, contract for \$160,000 to PBS&J, Southwest Texas State University, and U.S. Fish and Wildlife. To Groeger and Arsuffi.

Influence of reservoirs of the lower Guadalupe River on downstream flows needed to maintain the integrity of the river ecosystem, 2000, \$34,000, Guadalupe-Blanco River Authority, to A.W. Groeger. These are federal USEPA moneys routed through TNRCC to GBRA.

Internet and component-based modeling system for lake water quality and fish habitat projections, 1999. Advanced Technology Program, Texas Higher Education Coordinating Board, \$158,134 to Xing Fang, Wen-Ran Zhang, Theodore Cleveland, and A. W. Groeger.

Travel expenses, housing, and approximately \$6,000 in supplies and consumables were provided for A. W. Groeger's stay at the Center for Reservoir Research, Murray State University as the Visiting Distinguished Researcher. 1998.

Level One Water Quality Trend Analysis on the lower basin [Colorado River] and Matagorda Bay Watershed Segments, 1999, \$5,000, Lower Colorado River Authority, to A.W. Groeger to act as one of three outside consultants (the other two were civil engineers/statisticians from UT).

Influence of reservoirs of the lower Guadalupe River on downstream flows needed to maintain the integrity of the river ecosystem, 1999, \$40,000, Guadalupe-Blanco River Authority, to A.W. Groeger. These are federal USEPA moneys routed through TNRCC to GBRA.

Nutrient-limitation in Crater Lake, U.S. Geologic Survey for \$4,500, 1997-98 to A. W. Groeger.

Impact of the A.E. Wood State Fish Hatchery on the San Marcos River, 1996, San Marcos River Foundation, \$1,300 to A. W. Groeger.

Residence time of Lake McQueeney forebay measured with fluorescence dyes, 1996, Friends of Lake McQueeney, \$1,723.50 to A. W. Groeger.

Determination of limiting nutrients in the San Marcos River. 1995. San Marcos River Foundation for \$1,700, to A. W. Groeger.

Longitudinal and diel nutrient dynamics in the San Marcos River. 1994. San Marcos River Foundation for \$400, to A. W. Groeger.

Determination of nutrient limitation of periphyton communities in the Colorado River. 1991-92. Lower Colorado River Authority for \$19,000, to A. W. Groeger.

Review of sampling program and protocol for Lake Okeechobee. 1991. South Florida Water Management District for \$2,000 to A. W. Groeger.

Physicochemical and fish survey of the San Marcos River. 1991. Texas Parks and Wildlife Department for \$25,000 to A.W. Groeger and B.G. Whiteside.

Enhancing the microbial ecology and biogeochemistry curriculum in aquatic biology and ecology. 1990. National Science Foundation for \$86,359, to A. W. Groeger and T. L. Arsuffi.

Funded Internal Grants and Contracts

Development of a short-term assay for determination of nutrient limitation in aquatic ecosystems. 1990. Office of Sponsored Projects, Southwest Texas State University for \$4,000, to A. W. Groeger.

Bioaccumulation of pollutants in aquatic food webs. 1991. Office of Sponsored Projects, Southwest Texas State University for \$3,977, to A. W. Groeger.

Microcomputer/video enhancement of aquatic biology courses. 1992. Instructional Mini-grant, Southwest Texas State University for \$17,445 to A.W. Groeger, T.L. Arsuffi, and D. Huffman.

Enhanced instruction of microbial ecology through computer-assisted image analysis and video. 1992. Southwest Texas State University for \$8,649 to T.L. Arsuffi and A.W. Groeger.

Fatty acids as a marker in tracing energy flows in aquatic ecosystems. 1992-93. Office of Sponsored Projects, Southwest Texas State University for \$5,806, to A. W. Groeger.

Role of seasonality and terrestrial influence on weathering processes and riverine ionic transport in the Guadalupe River, 1997, \$5,350, Office of Sponsored Projects, Southwest Texas State University, to A. W. Groeger.

FELLOWSHIPS, AWARDS, HONORS:

Oak Ridge Associated University Pre-doctoral Fellowship, 1981-1983

Summer Research Fellowship, Center for Reservoir Research, Murray State University, 1990

Summer Research Fellowship, School of Science, Southwest Texas State University, 1991

Fellow of Texas Academy of Science, 1994

President, Texas River and Reservoir Management Society, 1998

Visiting Distinguished Researcher (endowed chair), Center for Reservoir Research, Murray State University, 1999

IV. SERVICE

University:	University Radiation Safety Officer	1993-2002
	Radiation Safety Committee	1990-2004
	Ed Cape Water Resources Institute Comm.	1990
	Presidential Upper Level Scholarship Comm.	1991
	Environmental Review Committee for Aquarena Springs	1994-2004
	Committee to hire Safety personnel	2002

Departmental:	Curriculum Committee (Chair-1997, 2000-2003)	1989-2003
	Computer Committee	1989
	SWT Pond Use Committee (Chair –1999)	1991-
	Seminar Committee	1993-97, 2004
	Liaison with Geography Dept.	1994
	Executive Committee	1997-2004

	Tenure/Promotion/Continuance Comm.	1997-2002
	SACS/Departmental Strategic Plan Comm.	1997
	Safety Committee	2002-
	Vertebrate Physiologist Search Committee	1997
	Chair, Vertebrate Physiologist Search Committee	1998
	Chair, Laboratory Coordinator Position	1999
	Aquatic Director Search Committee	1999-00
	Ichthyologist Search Committee	2000
	Space- Freeman Building	2000-
	Curriculum - Ph.D. proposal	2000-2003
	Landscape Ecologist Search Committee	2003
	Quantitative Ecologist Search Committee	2003-04
	Graduate Committee	2004-2008
	Developmental Biologist	2004
	Wetland Ecologist	2004-2005
	Chairman Search	2005-2006
	Stream Ecologist	2005-2006
School of:	Review Faculty Research Enhancement Grants	1994
Science	Tenure and Promotion Comm. (Alternate)	1997
Community:	Talks to Wimberly H.S. Science students	1993
	Talks to teachers in SWT WILD program	1990-94
	Helps numerous young people with science projects	1989-
	Give formal and informal tours of Aquatic Station to interested parties and general public	1989-
	Testify and take deposition for citizens group at TWC hearing to recertify the Georgetown sewage treatment plant	1992-93
	Expert witness, recertification of San Marcos sewage treatment plant, TNRCC	1995
	Speak to San Marcos City Council on effects of sewage treatment plant on San Marcos River	1995
	Have given numerous talks to various River Watch groups around the state (LCRA, Laredo, San Marcos)	1994-
	Elected Board member, San Marcos River Foundation	1998-2000
		2001-2003
		2007-2010
	Spoke to the Northwest Comal County Environmental Coalition (7/27 at the Guadalupe Valley Telephone Co-op facility in Startzville) on the implications of development and point and nonpoint pollution to the Guadalupe River and Canyon Reservoir	2000
	Speak to the Preserve Lake Dunlap Association on the trophic status of Lake Dunlap reservoir, and sources of degradation	2001-2004

	Talked to K.A. Porter H.S. class on aquatic ecology	2002
Professional:	Chaired paper sessions at Texas Academy of Science annual meetings	1990, 92, 93, 1996, 97, 00
Professional:	Charter member of Texas Chapter of North American Lake Management Society (TRRMS)	1993
	Hosted meeting of North Texas Limnological Association at SWT (along with the Lower Colorado River Authority)	1993
	Elected Vice-chair of the Freshwater and Marine Science section, Texas Academy of Science	1994
	Elected to two, two-year terms as At-Large Director for Texas River and Reservoir Management Society	1994-97
	Texas River and Reservoir Management Society President,	1998-99
	Texas River and Reservoir Management Society	1999-00
	Chairperson, Freshwater and Marine Science Section, Texas Academy of Science	1995-96
	Session chair for Aquatic Biology session at Water for Texas conference, Austin	1995
	Member, Instream Flow Task Force of the Ecological Water Needs Technical Advisory Committee, Texas (TNRCC, TWDB, TPWD)	1995
	Host meeting of Texas River and Reservoir Management Society at Aquatic Station	1995
	Chaired session at Third International Conference on Reservoir Limnology and Water Quality, Czech Republic	1997
	Program co-chair for Houston national NALMS meeting, December 1997 (800 attendees)	1996-97
	Mentor Thia Springer, High School Science teacher, Science and Math Education Teaching Institute	1998
	Mentor Judy Koke and Kathy Bell, High School Science teachers, Science and Math Education Teaching Institute	1999
	International Advisory Committee for the 4 th International Conference on Reservoir Limnology and Water Quality	2000-02
	Led an internet chat that was hosted by Cyberways and Waterways, Texas Watch and the LCRA for Earth Day aimed at middle and high school students	2000
	Texas Watch talk, and talk to LCRA sponsored teachers group	2001
	Serve as a member of the Nutrient Criteria Development Work Group, (TNRCC-TCEQ) to set nutrient standards for Texas surface waters	2002-06
	Help organize and chair special session of the Texas Organization of Endangered Species (TOES) – Laredo, TX	2002
	Talk to the New Braunfels City Council, L. Dunlap water quality	2002
	Speak at a TNRCC public meeting on the relicensing of a L.	

Dunlap WWTP	2002
Talk to annual Texas Watch meeting on Sulphur Creek	2002
Talk to Canyon Regional Water Authority about water quality in L. Dunlap, and request for funds for RUSS project	2003

ORGANIZATIONS:

Honorary: Sigma Xi

Professional: American Society of Limnology and Oceanography
 Societas Internationalis Limnologiae
 North American Lake Management Society
 Texas Academy of Science
 Texas River and Reservoir Management Society