

# CURRICULUM VITAE

**NAME:** Walter RAST

## **CONTACT**

### **DATE & PLACE OF BIRTH:**

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January 14, 1945

### **CURRENT POSITION:**

Distinguished Professor Emeritus, Aquatic Resources (retired)  
Fellow and Director of Watershed Studies,  
The Meadows Center of Water and the Environment  
Texas State University, San Marcos, Texas USA 78666  
and  
Adjunct Professor, Graduate Program in Environmental Sciences  
University of Texas at San Antonio  
San Antonio, Texas USA 78249

## **EDUCATION BACKGROUND**

- Ph.D. Environmental Science, The University of Texas at Dallas, 1978  
(specialization areas: Integrated water management; lake limnology/aquatic chemistry; sustainable ecosystem goods and services)
- M.S. Environmental Science, The University of Texas at Dallas, 1976.
- M.S. Molecular Biology, The University of Texas at Dallas, 1974.
- B.A. Zoology, The University of Texas at Austin, 1970.

## **PROFESSIONAL BACKGROUND**

- 2017-present Adjunct Professor, Graduate Program in Environmental Sciences, University of Texas at San Antonio, San Antonio, Texas USA
- 2015-present Fellow and Director, International Watershed Studies, The Meadows Center for Water and the Environment, Texas State University, San Marcos, Texas USA
- 2002-2015 Professor, Department of Biology, Texas State University, San Marcos, Texas USA
- 2000-2001 Environmental Scientist & Secretary/Great Lakes Water Quality Board, Great Lakes Regional Office, International Joint Commission (IJC), Windsor, Ontario, Canada
- 1999 Chief, Technical Cooperation Unit, Division of Policy Implementation, United Nations Environment Programme (UNEP), Nairobi, Kenya (*visiting lecturer, Univ, Nairobi*).
- 1996-1998 Deputy Director, Water Branch, UNEP, Nairobi, Kenya (*visiting lecturer, Univ. Nairobi*).
- 1993-1995 Chief, Freshwater Unit, UNEP, Nairobi, Kenya. (*visiting lecturer, Univ. Nairobi*).
- 1985-1992 Research Hydrologist, Water Resources Division, U.S. Geological Survey (USGS), Austin, Texas (*Instructor, Science & Mathematics Department, Austin Community College, Austin, Texas*).
- 1983-1985 Research Hydrologist, Water Resources Division, USGS, Sacramento, California.
- 1979-1982 Senior Environmental Advisor, U.S.-Canada International Joint Commission (IJC), Washington, D.C.
- 1977-1979 Limnologist, IJC, Great Lakes Regional Office, Windsor, Ontario, Canada (*Adjunct Assistant Professor, Wayne State Univ., Detroit, Michigan*).

### PROFESSIONAL COMMITTEES/SERVICE

- Member, Core Group, Control of Eutrophication of Lakes and Reservoirs, Programme on Man and the Biosphere (MAB), UNESCO, Paris, 1982 - 1989.
- Chair, Nutrient/Chemistry Workgroup, Phytoplankton Task Force, Interagency Ecology Program, Sacramento-San Joaquin Estuary, Sacramento, California, 1983 - 1985.
- Chair, Sacramento-San Joaquin Estuary Biological Impacts Assessment Committee, San Luis Drain Interagency Technical Advisory Group, Sacramento, California, 1984 - 1985.
- Member, Sacramento-San Joaquin Delta Export Curtailment Experiment Policy Development Committee, Sacramento, California, 1984 -1985.
- U.S. Chairman, Limnology Task Force, Flathead River International Study Board, International Joint Commission, Washington, D.C., 1986 - 1988.
- Member, Quality Control in Reservoirs Committee, American Water Works Association, 1987 - 1990.
- Member, International Committee, North American Lake Management Society, 1988-1992.
- Member, Task Group on Reservoir Water Quality Management, International Association for Water Pollution Research and Control, London, UK, 1987 - 1996.
- Chair, Technical Committee, Assessment and Control of Nonpoint Source Pollution of Aquatic Ecosystems, Programme on Man and the Biosphere (MAB), UNESCO, Paris, 1989-1996.
- Member, Task Force on Nonpoint Source Pollution, Galveston Bay National Estuary Program, 1990 - 1992.
- Editorial Board, International Journal of Water Resources Development, Oxford, United Kingdom, 1993 – 2002.
- Representative of United Nations Environment Programme (UNEP) to UN Commission on Sustainable Development, UN Committee on Natural Resources, UN Subcommittee on Water Resources, UN Subcommittee on Oceans and Coastal Areas, Global Water Partnership, World Water Council, and World Commission on Dams, 1993 to Sept. 1999.
- Member, Advisory Board, International Research and Training Center on Erosion and Sedimentation, Beijing, China, 1994 – 1998.
- Secretary, Water Working Group, UN Systemwide Special Initiative on Africa, United Nations, 1995 - 1998.
- Member, International Water Task Force, Global Environment Facility (GEF) Secretariat, Washington, D.C., 1996 - 1998.
- Member, Large Dams and Environment Working Group, Tokyo, Japan, 1996 - 1999.
- Member, Advisory Council, Inter-American Water Resources Network, Organization of American States (OAS), Washington, D.C., 1996-present.
- Member, Steering Committee on Global International Water Assessment, GEF, United Nations Environment Programme (UNEP), Nairobi, Kenya, 1997 – 1998.
- Member, Water Working Group, World Business Council on Sustainable Development, Geneva, Switzerland, 1998-1999,
- Member, Organizing Committee, Great Lakes of the World, 8<sup>th</sup> International Conference on the Conservation and Management of Lakes (Copenhagen, Denmark), 1999.
- Member, Organizing Committee, 4<sup>th</sup> International Conference on Reservoir Limnology and Water Quality (Ceske Budejovice, Czech Republic), 2000-2001.
- Member, Organizing Committee, 3<sup>rd</sup> International Workshop on Regional Approaches to Reservoir Development and Management in the La Plata River Basin: Focus on Sustainable Development (Buenos Aires, Argentina), 2000-2001.
- Member, Board of Governors, LakeNet, Annapolis, Maryland, 2000-2003.
- Vice-Chair, Scientific Committee, International Lake Environment Committee, Shiga, Japan, 2001- 2015.
- Editor-in-Chief, *Lakes and Reservoirs. Research and Management*, Wiley/Blackwell, 1999-present.

**PROFESSIONAL COMMITTEES/SERVICE (cont'd)**

- Roster of Experts, Scientific and Technical Advisory Panel, Global Environment Facility, United Nations Environment Programme (UNEP), Nairobi, Kenya, 2002-present.
- Chair, Drafting Committee, *World Lake Vision: A Call to Action*, International Lake Environment Committee, Kusatsu, Japan, 2002-2003.
- Program Co-Chair, 10<sup>th</sup> World Lakes and 46<sup>th</sup> International Association of Great Lakes Research Joint Conference, June 2003, Chicago, Illinois USA, 2002-2003.
- Chapter lead co-author, **Water**, Chapter 4, Global Environment Outlook-4 (GEO-4), Development and Environment, UNEP, Nairobi, Kenya, 2005-2007.
- Member, Organizing Committee, and Co-Chair, World Lake Vision Plenary Session, 11<sup>th</sup> World Lake Conference, Nairobi, Kenya, Nov. 2005.
- Invited Expert, Border Institute VIII. Cooperative Planning and Operation of Transboundary Watersheds, Southwest Consortium for Environmental Research and Policy (SCERP), Rio Rico, Arizona, May 2006.
- Invited Expert, North American Regional Report, GEO-4, UNEP, Washington, D.C., May 2006.
- Chair, Drafting Committee, **World Lake Vision Action Report**, ILEC, Kusatsu, Japan, 2006-2007.
- Board Member, Endowment for the Marine and Coastal Environment of the Northeast Pacific, Washington, D.C., 2007-present.
- Advisory Board, *Brazilian Journal of Biology*, Association of Brazilian Journal of Biology, São Carlos, Brazil, 2008-present.
- Coordinating Lead Author, **Water**, Global Environmental Outlook-5 (GEO-5), UNEP, Nairobi, Kenya, 2010-2012
- Scientific Advisory Committee, Global International Waters Science Conference, 2012, Bangkok Thailand, November, 2011- present.
- Chair, Conference Organizing Committee, 14<sup>th</sup> World Lake Conference, Austin, Texas, November, 2011.
- Project Manager, Lakes and Reservoirs Working Group, Transboundary Water Assessment Programme, United Nations Environment Programme, Nairobi, Kenya, and Global Environment Facility , Washington, D.C., 2013 – present.
- International Organizing Committee, 15<sup>th</sup> World Lake Conference, Perugia, Italy, September 2014.
- Chair, Scientific Committee, International Lake Environment Committee, Shiga, Japan, 2016-present.
- International Organizing Committee, 16<sup>th</sup> World Lake Conference, Bali, Indonesia, November 2016.
- Coordinating Lead Author, **Freshwater**, Global Environmental Outlook-6 (GEO-6), UNEP, Nairobi, Kenya, 2016-present.

**INVITED SPEAKER/PARTICIPANT**

<u>TOPIC</u>	<u>LOCATION/DATE</u>
• Int'l Cooperative Programme on Monitoring of Inland Waters	Organization for Economic Cooperation and Development (OECD), Paris (1980)
• Phosphorus-chlorophyll relationships in natural waters	U.S. Environmental Protection Agency, Seattle Washington (1980)
• Impacts of nonpoint sources on water quality	UNESCO Man and Biosphere Programme, Amsterdam, The Netherlands (1981)
• Nonpoint sources of aquatic pollutants	International Society of Applied and Theoretical Limnology (SIL), 22nd Congress, Lyon, France (1982)
• Chemical and physical characteristics of Sacramento-San Joaquin Estuary (1984)	Sacramento-San Joaquin Interagency Ecology Study Program, Maritime Academy, Vallejo, California
• Control of lake and reservoir eutrophication	1 <sup>st</sup> International Conference on Reservoir Limnology, Ceske Budejovice, Czechoslovakia (1987)
• Lake and reservoir water quality	Regional Workshop, North American Lake Management Society, Austin, Texas (1987)

**INVITED SPEAKER/PARTICIPANT (cont'd)**

<u>TOPIC</u>	<u>LOCATION/DATE</u>
• Nonpoint-source pollution of aquatic ecosystems	International Symposium on Management of Nonpoint Sources, Austin, Texas (1989)
• Reservoir limnology and water quality	Special Session, North American Lake Management Society, Denver, Colorado (1991)
• Socioeconomic issues in lake management and conservation	Plenary Session, 5th International Congress, International Lake Environment Committee, Stresa, Italy (1993).
• Integrated water monitoring and assessment	WMO Workshop on Water Quality Assessment, Stockholm, Sweden (1994)
• Environmentally-sound management of inland waters	International Water Quality Workshop, Mekong River Commission, Bangkok, Thailand (1995)
• Technology for developing countries	International Forum on Technology for Water Management in 21 <sup>st</sup> Century, Shiga, Japan (1996)
• Freshwater resources and sustainable development	Environment and Economic Speaker Series, University of Nairobi, Kenya (1997)
• Wetlands and water quality management	Wetlands Refresher Course, Delft Hydraulics Institute, Nairobi, Kenya (1998)
• Alien invasive species in the North American Great Lakes	Texas Academy of Sciences, Texas State University, San Marcos, Texas USA(2001)
• Integrated River Management	Water for People and the Environment, Regional Conference for South Central Texas, San Marcos (2002)
• Integrated Management for Sustainable Use of Lakes and their Resources	International Conference for Sustainable Water Resources Management, Shiga Prefecture, Japan (Feb. 2003)
• World Lake Vision: A Call To Action	Integrated Water Resources and Basin Management Session, 3 <sup>rd</sup> World Water Forum, Osaka, Japan (Mar., 2003)
• Sustainable Aquatic Resources: The Promise and the Reality	Sustainable Freshwater Systems: Changing Landscapes and Interdisciplinary Challenges, 24th Annual Meeting, Society of Wetland Scientists, New Orleans, Louisiana USA (June, 2003)
• State of the Waters of the State And the World	Water Environment Association of Texas, Austin, Texas USA (July, 2004)
• World Lake Vision: A Call for Action for Sustainable Use of Lakes	Keynote Address, "Sustainability of the Precious Water Environment, 2 <sup>nd</sup> Int'l Conference, Shimane University, Matsue City, Japan (Jan, 2005)
• Integrated Management of the Rio Grande and Its Drainage Basin	Rio Grande Basin Initiative, Sul Ross State University, Alpine, Texas USA (Apr, 2005)
• Integrated Lake Basin Management	International Conference on Integrated Water Resources, Lima, Peru (May, 2005)
• Lake Basin Management Initiative	3 <sup>rd</sup> International Waters Conference, Global Environment Facility, Salvador, Brazil (June, 2005)
• Conserving Water in the Rio Grande Basin	Border Health and Water Quality/Water Availability Int'l Consortium for Health and Environmental Security, City-Base, San Antonio, Texas USA (Aug, 2005)
• World Lake Vision: A Continuing Effort	Keynote Address, WLV Plenary Session, 11 <sup>th</sup> World Lake Conference, Nairobi, Kenya (Oct, 2005)

**INVITED SPEAKER/PARTICIPANT (cont'd)**

<u>TOPIC</u>	<u>LOCATION/DATE</u>
• Promoting World Lake Vision And Integrated Basin Management for the Future of Global Water	Keynote Address, Lake Basin Management Initiative, World Water Forum 4, Mexico City (Mar, 2006)
• Transboundary Diagnostic Analysis And the Rio Grande	Rio Grande Basin Initiative, Ruidoso, New Mexico USA (Mar, 2006)
• Agricultural Water Conservation	UCOWR/NIWR, Federal/University Stakeholder Partnerships, Research Program, Santa Fe, New Mexico USA (May, 2006)
• World Lake Vision and Lake Basin Management Initiative: What Next?	Next Steps in World Lake Conferences and Integrated Lake Basin Management, Stockholm Water Symposium (Aug, 2006)
• Integrated Water Resources Management and the Public	Public Outreach Session, 10 <sup>th</sup> Texas Water Monitoring Congress, Austin, Texas (Sept, 2006)
• Management of the Rio Grande for Sustainable Use	Project Rio Workshop, Ciudad Juarez, Mexico (Oct, 2006)
• Integrated Water Resources Promises and Realities	Keynote Address, 12 <sup>th</sup> Annual Conference Management: Management of Diffuse Pollution, Khon Kaen, Thailand (Aug, 2008)
• Integrated Lake Basin Management:	National Seminar on Managing Lakes and Their Basins for Sustainable Use, National University of Malaysia, Bangia, Malaysia (Feb, 2010)
• Integrated Water Management: Transboundary Water Systems -- USA, Mexico and Canada	International Symposium on Lake Basin Governance and Policy Reform in River Basin Management, Kusatsu, Japan (Nov. 2010)
• Integrated Water Resources Management: and Climate Change	Enhancing Water Management Capacity in a Changing World, International Symposium, São Paulo, Brazil (June, 2012)
• Integrated Lake Basin Management	Point and Nonpoint Pollution Assessment Project and Lake Chapala, Corazón de la Tierra, Guadalajara, Mexico (June, 2012)
• Integrated Water Resources Management	International Conference on Urban Lakes Ecology, Rejuvenations, and Lakes Urban Lake Technology and Economics, Mumbai, India (Sept 7-8, 2012)
• Transboundary Water Assessment Program: Lake Basins	International Waters Science Conference (IWSC), UNEP, Bangkok, Thailand (Sept, 2012)
• Integrated Lake Basin Management: The Promise and the Reality	National Lake Symposium, National Hydrologic Research Institute, Putrajaya, Malaysia (Sept, 2012)
• Integrated Lake Basin Management	Basin Symposium, Lake Taal, Philippines (Sept, 2012)
• Integrated Lentic-Lotic Basin Management	North American Lake Management Society (NALMS), 34 <sup>th</sup> Annual Symposium, Madison, Wisconsin (Oct, 2012)
• Integrated Lake Basin Management: Status and Trends	Keynote Address, 15 <sup>th</sup> World Lake Conference, Perugia, Italy (Sept. 2015)
• Transboundary Lakes Assessment: Status and Trends	Global Environment Facility, Transboundary Waters Assessment Programme, Colombo, Sri Lanka (Nov. 2016)
• Integrated Lentic-Lotic Basin Management	Keynote Address, 16 <sup>th</sup> World Lake Conference, Bali, Indonesia (Nov. 2016)
• Integrated Management of Lakes And Their Ecosystem Services	Dakar, Senegal (February 2018)
• Integrated Water Management: Past and Present	Technical Workshop, Panzcuaro, Mexico (March 2018)
▪ Integrated Management of Lakes and Their Linked Water Systems: Socio-Economic and Scientific Challenges To Sustainable Ecosystem Services	Special Session, World Water Forum, Brasilia, Brazil (March 2018)

## **BUSINESS/INDUSTRIAL EXPERIENCE**

<u>TOPIC</u>	<u>ACTIVITY</u>
• Water quality of steel mill effluents	Impacts of steel mill effluent discharges to Lake Michigan (1975).
• Impacts of copper foil plant effluents	Assessment of copper foil plant effluent discharges on aquatic organisms and water quality in Muskingum River near McConnellsville, Ohio (1976).
• Land use activities and reservoir water quality	Assessment of impacts of watershed land patterns on water quality in a water-supply impoundment near Dallas, Texas USA (1976-77).
• Phosphorus control options	Impacts of alternative phosphorus control strategies on Great Lakes water quality (1977-78).
• Industry and sustainable water	Policy document on industry role regarding sustainable freshwater resources, Water Working Group, World Business Council for Sustainable Development, Geneva, Switzerland (1998).

**Presented Short Courses:** "Assessment and Control of Eutrophication of Lakes and Reservoirs". The course is presented under the auspices of UNESCO's Programme on Man and the Biosphere (MAB; Paris) and the relevant national MAB committees, and is based on Volume I of the MAB book series (Ryding and Rast, 1989). Class participants comprised scientists, engineers, water-quality managers and policymakers from throughout the region in which the course is given. Previous courses were given in Tianjin, China (May, 1990), Bogor, Indonesia (November, 1991), Corrientes, Argentina (November, 1992), and Nairobi, Kenya (1995). Future courses are anticipated for western Africa, Eastern Europe and Southeast Asia upon revision of course text.

**Referee/Reviewer** for manuscripts submitted to American Society for Limnology and Oceanography; Environmental Management; Environmental Management and Planning; Environmental Science and Technology; Global Environmental Outlook series (United Nations Environment Programme); International Journal of Water; Journal of International Association for Great Lakes Research; Journal of Environmental Quality; Journal of American Water Works Association; Journal of Environmental Management and Planning, Lakes and Reservoirs: Research and Management; American Society of Testing Materials; Journal of Water Pollution Control Federation; Water; Water Policy; Water Resources Bulletin; Water Resources Research; Ecological Research Series (USEPA); US Geological Survey professional papers series.

**Grant proposal reviews** written for Global Environment Facility (GEF; Washington, D.C.); National Science Foundation (Washington, D.C.); National Research Committee (London, United Kingdom); International Foundation for Science (Stockholm, Sweden); U.S. Environmental Protection Agency (Environmental Research Labs - Duluth, Minnesota and Corvallis, Oregon; Grants Administration Division, Washington, D.C.); U.S. Department of Defense, Strategic Environmental Research and Development Program, Washington, D.C. United Nations Foundation (Washington, D.C.)

## PUBLICATIONS

- Rast, W. 1977. *A study of nutrient load - eutrophication response relationships and trophic status indices in natural waters*. Ph.D. Dissertation, Graduate Program in Environmental Sciences, Univ. of Texas at Dallas, Richardson, Texas. 765 p.
- Rast, W. and G.F. Lee. 1977. *Report on the nutrient loading - eutrophication response of Lake Wingra, Wisconsin*. In: Seyb, L. and K. Randolph (eds.), North American Project – A Study of U.S. Waterbodies, Ecological Research Series, No. EPA-600/3-77-086, U.S. Environmental Protection Agency, Corvallis, Oregon. p. 337-372.
- Piwoni, M.D., W. Rast and G.F. Lee. 1977. *The nutrient loading - eutrophication response of the open waters of Lake Michigan*. In: Seyb, L. and K. Randolph (eds.), North American Project - A Study of U.S. Waterbodies, Ecological Research Series, No. EPA-600/3-77-086, U.S. Environmental Protection Agency, Corvallis, Oregon. p. 481-498.
- Meckel, E., M. Abdul-Rahman, G.F. Lee, M. Gary, W. Cale, W. Rast and D. Cargo. 1977. *A study of eutrophication: Lake Ray Hubbard, Dallas, Texas*. Occasional Paper No. 15, Center for Environmental Studies, Univ. of Texas at Dallas. 388 p.
- Rast, W. and G.F. Lee. 1978. *Summary analysis of the North American (U.S. portion) OECD Eutrophication Project: Nutrient loading--lake response relationships and trophic state indices*. Ecological Research Series, No. EPA-600/3-78-008, U.S. Environmental Protection Agency, Corvallis, Oregon. 454 p.
- Lee, G.F., W. Rast and R.A. Jones. 1978. *Eutrophication of waterbodies: Insights into an age-old problem*. Environ. Sci. & Technol., 12:900-908. (also in Spanish in *Ingenieria Sanitario* 32/33:298-306).
- Nambu, S., S. Kunikan, G.F. Lee, W. Rast and R.A. Jones. 1978. *Recent advances in assessing aquatic plant nutrient load - eutrophication responses for lakes*. Japanese Jour. Water Pollut. Res. 1:157-167 (In Japanese).
- Rast, W. and D.J. Gregor. 1979. *Report on differences in Great Lakes phosphorus load estimates*. Tech. Report, Pollution From Land Use Activities Reference Group, Int'l Joint Commission, Great Lakes Regional Office, Windsor, Ontario (Canada). 27 p
- Rast, W., G.F. Lee and R.A. Jones. 1979. *Use of OECD eutrophication modeling approach for assessing Great Lakes water quality*. In: Lee, G.F. and R.A. Jones, Water Quality characteristics of the U.S. Waters of Lake Ontario during the IFYGL and Modeling Contaminant Load-Water Response Relationships in the nearshore waters of the Great Lakes, Technical Report, NOAA, Great Lakes Environmental Research Laboratory, Ann Arbor, Michigan. Chapter 6.
- Gregor, D.J. and W. Rast. 1979. *Characterization of trophic conditions in the nearshore zone of the Great Lakes*. Technical Report, Pollution From Land Use Activities Reference Group (PLUARG), International Joint Commission, Great Lakes Regional Office, Windsor, Ontario, Canada. 39 p.
- Jones, R.A., W. Rast and G.F. Lee. 1979. *Relationship between summer mean and maximum chlorophyll-a concentrations in lakes*. Environ. Sci. & Technol. 13:869-70.
- Vollenweider, R.A., W. Rast and J.J. Kerekes. 1980. *The phosphorus loading concept and Great Lakes eutrophication*. In: Loehr, R.C., C. Martin and W. Rast (eds.), Phosphorus Management Strategies for Lakes, Interscience, Ann Arbor, Michigan. p. 207-234.
- Lee, G.F., R.A. Jones and W. Rast. 1980. *Availability of phosphorus to phytoplankton and its implications for phosphorus management strategies*. In: Loehr, R.C., C. Martin and W. Rast (eds.), Phosphorus Management Strategies for Lakes, Interscience, Ann Arbor, Michigan. p. 259-308.
- Rast, W. 1981. *OECD North American Project: The United States study*. In: Restoration of Lakes and Inland Waters, Report No. EPA-440/5-81-010, U.S. Environmental Protection Agency, Office of Water Regulations and Standards, Washington, D.C. p. 17-19.
- Rast, W. 1981. *Quantification of the input of pollutants from land use activities in the Great Lakes Basin*. Workshop Proc., Programme on Man and the Biosphere (UNESCO), Amsterdam, The Netherlands. p. 98-141.
- Steenvoorden, J.H.A.M. and W. Rast (eds.). 1981. *Impact of non-point sources on water quality in watersheds and lakes*. Field measurements and the use of models. Workshop Proc., Programme on Man and the Biosphere (UNESCO), Amsterdam, The Netherlands. 231 p.

### PUBLICATIONS (cont'd)

- Gregor, D.J. and W. Rast. 1981. *Benefits and problems of eutrophication control*. In: Restoration of Lakes and Inland Waters, Report No. 440/5/81-010, U.S. Environmental Protection Agency, Office of Water Regs. and Standards, Washington, D.C. p. 166-171.
- Gregor, D.J. and W. Rast. 1982. *Simple trophic state classification of the Canadian nearshore waters of the Great Lakes*. Water Resour. Bull. 18:565-573.
- Rast, W. 1983. *Practical lake management for eutrophication control*. Technical Report, UNESCO/IIASA/OECD International Workshop on Control of Eutrophication, Laxenburg, Austria, Oct. 12-15, 1981. 175 p.
- Rast, W. and G.F. Lee. 1983. *Evaluation of nutrient loading estimates for lakes*. Jour. Amer. Society Civil Engr., Environ. Engr. Div. 109:502-517.
- Rast, W., G.F. Lee and R.A. Jones. 1983. *Predictive capability of U.S. OECD phosphorus loading - lake response models*. Jour. Water Pollut. Cont. Fed. 55:990-1003.
- Rast, W. 1984. *Summary report of the Nutrient/Chemistry Work Group, Interagency Phytoplankton Task Force*. Final Report, Interagency Ecological Study Program for the Sacramento-San Joaquin Estuary. 76 p.
- Holland, M.M. and W. Rast. 1985. *Lake Management: The influence of the scientist in policy formulation and decision-making*. In: Lake and Reservoir Management: Practical Applications, Proc., 4th Int'l Symp. on Lake and Watershed Management, North American Lake Management Society, McAfee, New Jersey, Oct. 16-20, 1984, p. 49-52.
- Rast, W. 1987. *Limnology of Flathead Lake, Montana*. Final Report, Limnology Task Force, Flathead River International Study Board, US/Canada International Joint Commission, Washington, D.C. 75 p.
- Thornton, J.A. and W. Rast. 1987. *Application of eutrophication modelling technique to manmade lakes in semi-arid southern Africa*. In: Nix, S.J. and P.E. Black, Monitoring, modeling and mediating water quality. American Water Works Assoc., Bethesda, Maryland. p. 547-558.
- Rast, W. and M.M. Holland. 1988. *Eutrophication of lakes and reservoirs: A framework for making management decisions*. Ambio 17:2-12.
- Thornton, J.A. and W. Rast. 1988. *A test of hypotheses relating to the comparative limnology and assessment of eutrophication in semi-arid man-made lakes*. Proc., 8<sup>th</sup> Int'l Symp., North American Lake Management Society, Nov. 15-17, 1988, St. Louis, Missouri.
- Rast, W. and J. Sutton. 1989. *Stable isotope analysis of striped bass food chain in Sacramento-San Joaquin Estuary, California, April-September, 1986*. Water Resources Investigations Rept. 88-4164, U.S. Geological Survey, Sacramento, California. 62 p.
- Ryding, S.-O and W. Rast. 1989. The Control of Eutrophication of Lakes and Reservoirs. Parthenon Press, Man and the Biosphere Series (MAB), vol. 1, UNESCO, Paris. 311 p.
- Thornton, J.A. and W. Rast. 1989. *Preliminary observations on nutrient enrichment of semi-arid, man-made lakes in the northern and southern hemisphere*. Lake & Reservoir Management 5:59-66.
- Rast, W., M.M. Holland and S.-O. Ryding. 1990. *Eutrophication of lakes and reservoirs: A management framework*. Man and the Biosphere Series (MAB), Digest No. 1, UNESCO, Paris. 84 p.
- Thornton, J.A. and W. Rast. 1990. *Comparative limnology of north and south sub-tropical, man-made lakes and implications for eutrophication assessment* (abstract). Arch. Hydrobiol. Beih. Ergebn. Limnol. 33:649.
- Holland, M.M., W. Rast and S.-O. Ryding. 1990. *Water quality management*. Nature & Resources 26:3-13.
- Rast, W. 1991. *Documentation of a data base on lake and reservoir water quality in the United States*. Report 91-230, U.S. Geological Survey, Austin, Texas. 76 p.
- Thornton, J.A., W. Rast and S.-O. Ryding. 1991. *The role of socioeconomic determinants in lake management in developing countries*. Lake & Reservoir Management 7:115-120.
- Thornton, J.A., W. Rast and S.-O. Ryding. 1992. *Lake management in southern Africa: Appropriate methodologies for assessing and controlling eutrophication in the Third World*. Lake and Reservoir Management.



### PUBLICATIONS (cont'd)

- Thornton, J.A. and W. Rast. 1993. *A test of hypotheses relating to the comparative limnology and assessment of eutrophication in semi-arid, man-made lakes*. In: Straskraba, M., J. Tundisi and A. Duncan (eds.), Comparative Reservoir Limnology and Water Quality Management, Developments in Hydrobiology, vol. 77, Kluwer, Dordrecht. pp. 1-24.
- Thornton, J.A. and W. Rast. 1994. *Not American lake management!* LakeLine, North American Lake Management Society, Alachua, Florida. pp. 11-14.
- Thornton, J.A. and W. Rast. 1995. *The management of international river basins*. In: D.M.L. da Motta Marques (ed.), Brazilian Jour. Hydrology (ABRH), Publ. No. 2, I Seminario de Qualidade de Aquas Continentas no MERCOSUL, Porte Alegre, Brazil, 7-9 Dec. 1994. p. 75-102.
- Lee, G.F., A. Jones-Lee and W. Rast. 1995. *Secchi depth as a water quality parameter*. Technical report, G. Fred Lee & Associates, El Macero, California USA. 20 p.
- Rast, W. 1996. *Integrated lake management*. Proceedings, 6<sup>th</sup>, International Conference on Management and Conservation of Lakes, International Lake Environment Committee, May 1996, Kasimadura, Japan. p. 4-12
- Rast, W. and J.A. Thornton. 1996. *Trends in eutrophication research and control*. Hydrological Processes 10:295-313.
- Fry, A. and W. Rast. 1996. *Industry, freshwater and sustainable development*. World Business Council for Sustainable Development, Geneva, and UNEP, Nairobi, Kenya. 82 p.
- Illueca, J.I. and W. Rast. 1996. *Precious, infinite and irreplaceable*. Our Planet 8:19-21.
- Vidal, O. and W. Rast. 1996. *Land and sea*. Our Planet 8:22-24.
- Thornton, J.A., W. Rast and W. Steele. 1996. *Reservoirs*. In: D. Chapman, Water Quality Assessments, E & FN Spon, Routledge Publishers, United Kingdom. p. 369-412.
- W. Rast, W. 1997. *Water scarcity, sustainable development and integrated management*. International Desalination and Waste Reuse Quarterly 7:64-70.
- Rast, W. and R. M. Slade. 1997. *Evaluation of water-quality data and monitoring program for Lake Travis, near Austin, Texas*. Water Resources Investigations Rept. 97-4257, Water Resources Division, U.S. Geological Survey, Austin, Texas. 33 p.
- Thornton, J.A. and W. Rast. 1997. *The use of copper and copper compounds as algicides*. In: Richardson, H.W., Copper Compounds Applications Handbook, Marcel Dekker, Inc., New York. p. 123-142.
- Lee, R.W. and W. Rast. 1997. *Light attenuation in a shallow, turbid reservoir, Lake Houston, Texas*. Water Resources Investigations Rept. 97-4064, Water Resources Division, U.S. Geological Survey, Austin, Texas. 33 p.
- Vanderbeck, I. and W. Rast. 1997. *Monitoring freshwater quality*. Water Management International 1998. p. 6-9.
- Rast, W. 1998. *International cooperation in global water problems*. Proc., International Forum on Technology and Water Management in 21<sup>st</sup> Century, 25-27 Nov. 1996, International Lake Environment Committee, Shiga, Japan. p. 221-234.
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Author of all or principal sections of the following reports of the International Joint Commission to the Governments of the United States and Canada:

- **Pollution in the Great Lakes Basin from land use activities.** March 1980. 141 p.
- **Seventh annual report on Great Lakes water quality.** October 1980. 101 p.
- **Water quality in the U.S./Canada Poplar River Basin.** January 1981. 268 p.
- **Supplemental report under the Reference on Pollution in the Great Lakes System from Land Use Activities on phosphorus management strategies.** January 1981. 24 p.
- **First biennial report under 1978 Great Lakes Water Quality Agreement.** June 1982. 31 p.
- **Alien Invasive Species and Biological Pollution of the Great Lakes Basin Ecosystem.** May 2001. 29 p.
- **Review of Progress Made Under Annex 3 (Controlling Phosphorus) of the Great Lakes Water Quality Agreement.** 2002. 15 p.

### **PROFESSIONAL INTERESTS**

- Integrated management of lakes, reservoirs and linked freshwater systems for sustainable ecosystem services.
- Social-ecological systems within the context of sustainable use of ecosystem goods and services.
- Integrated lake/reservoir/wetland basin management.
- Transboundary dimensions of integrated water resources management.
- Assessment and control of nonpoint-source pollution of aquatic ecosystems.
- Valuation of aquatic ecosystem goods and services as a water system management tool.
- Linkages between water-land-atmosphere-biodiversity and their relevance for sustainable use of aquatic ecosystem services.
- Comparative limnology of inland waters (rivers, lakes, wetlands, groundwater, large marine ecosystems).
- Lake and reservoir eutrophication.
- Sources, effects and fates of chemical contaminants.
- Simple models as assessment and management tools for addressing water and related environmental resources.

### **HONORS**

Recipient of "Excellence" Award, Canadian Society for Technical Communication, for "First Biennial Report Under the Great Lakes Water Quality Agreement of 1978", International Joint Commission report to Governments of the United States and Canada.

Identified in Who's Who in the South and Southwest, Who's Who in Frontiers of Science and Technology, Two Thousand Notable Americans, Personalities of America, International Book of Honor, and 5,000 Personalities of the World, publ. by Amer. Biographical Inst.

Recipient of "Unsung Hero" Award, Water Resources Division, U.S. Geological Survey, for international work on lake pollution (1990).

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