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Qualified By

Dr. Mel Lytle has worked in Water and Natural Resources consulting, research and teaching for over 12 years. After the completion of a Ph.D. in 1994, Dr. Lytle finished a Postdoctoral Fellowship at the University of California, Berkeley where he conducted a nationwide study of the design and efficiency of constructed wetland systems for wastewaters from mining, industry and agriculture. His project expertise in both the Private and Public Sectors includes water supply development, water resource management planning, conjunctive use, lake, wetland & watershed assessment, restoration & management, treatment wetlands, stormwater and groundwater quality. Dr. Lytle has broad teaching experience, a solid publication history and is a frequent invited lecturer at local, national and international workshops & symposia.

Professional Experience

- '02 to Present** **San Joaquin County Dept. of Public Works - Water Resource Division** **Stockton, California**
Division Head & Resource Coordinator, Development, design and implementation of water resource, water quality, groundwater banking, conjunctive use and water supply projects and plans to fulfill Countywide water management program directives.
- '00 to '02** **Cooper & Lake Environmental, Inc.** **Tracy, California**
Senior Scientist, *Project Focus*: Water quality, lake restoration and management, groundwater contamination, watershed quality assessment, wetland ecology, treatment wetland feasibility evaluation & design.
- '98 - '00** **David Evans and Associates, Inc.** **Portland, Oregon**
Senior Scientist, *Project Focus*: Wetland ecology, water & watershed quality monitoring & assessment, wetland delineation/mitigation and restoration, treatment wetland feasibility evaluation & design.
- '95 - '98** **Department of Plant and Microbial Biology** **University of California Berkeley**
Postdoctoral Fellow, *Research Focus*: Plant ecophysiology, plant physiology, phytoremediation, wetland system functional analysis, design and construction supervision, biogeochemical processes and x-ray speciation of bioaccumulated trace metals in aquatic species. *Courses Taught*: Environmental Biology
- '86 - '94** **Departments of Botany and Agronomy** **Brigham Young University, Utah**
Graduate Research & Teaching Assistant, *Research Focus*: Plant ecophysiology and biogeochemical cycling of trace metals in aquatic plants of Great Basin Wetlands & Watersheds, x-ray speciation of bioaccumulated trace metals in wetland plants and crop nutrient uptake mechanisms *Courses Taught*: Plant Physiology, Plant Physiology Lab, Principles of Biology, Biology for Honors and Soil Science, Soil Fertility, Saline & Sodic Soils Laboratories.
- '82 - '86** **R. Bogetti Farms, Inc.** **Elk Grove, California**
Farm Manager, Supervised cultural practices, budgeting and personnel on row-crop farms totaling 2,200 acres in the San Joaquin Valley of California.

Education

- Ph.D. Botany (1991-94)** - Department of Botany and Range Science, Brigham Young University, Provo, Utah. *Dissertation*—Heavy Metal Bioaccumulation in Great Basin Submersed Aquatic Macrophytes. **Awards & Scholarships**: 1995 Sigma Xi Outstanding Dissertation of the Year; 1994 S. Paul and Hilda F. Stewart Scholarship; 1992 Julia Greenwell Award; 1992-93 Botanical Science Scholarship; 1993 Department of Botany & Range Award.
- M.S. Agronomy (1988-90)** - Department of Agronomy and Horticulture, Brigham Young University, Provo, Utah. *Thesis*—Iron Deficiency Stress Response of Various C₃ and C₄ Grain Crop Genotypes. **Awards & Scholarships**: Agronomy Dept. Award 1988-90.
- B.S. Agronomy (1988)** - Ricks College, Rexburg, Idaho and Department of Agronomy and Horticulture, Brigham Young University, Provo, Utah.
- Graduate (1977)** - Glacier High School, Highline School District, Seattle, Washington

Work Experience

2002 – Present *San Joaquin County Department of Public Works, Water Resource Division Stockton, California*

The Water Resource Coordinator is responsible for the coordination and management of San Joaquin County's water interests and prepares, administers and evaluates the annual program and budget for the Water Resource Division, the Flood Control and Water Conservation District and other associated local Authorities. Duties and responsibilities include efforts to obtain supplemental surface water supply by maintaining liaison among public jurisdictions, private entities, and the public to encourage cooperation on all water issues and to resolve potential conflicts. Responsibilities also include the management and formulation of coalitions with other agencies, the development of water resource plans, studies & programs and represent the County's interests in federal, state, regional and local governing boards, committees and task forces; testifies when necessary at federal, state, regional and local governing boards to describe and defend the County's interests.

Projects & Programs

Eastern San Joaquin County Integrated Regional Water Management Plan - Provided project management, direction and coordination for the development of an integrated regional water management plan and program environmental documentation for the Eastern San Joaquin Integrated Conjunctive Use Program. A 24-month effort of the Northeastern San Joaquin County Groundwater Banking Authority lead to the collaboration of over 40 stakeholder agencies to develop objectives and plans to better manage groundwater resources in a critically overdrafted basin (Project Budget ~ \$850,000).

Mokelumne River Regional Water Storage and Conjunctive Use Project – MORE WATER, Stockton, California – Provided project management, direction and coordination to complete engineering feasibility and environmental documentation for a new surface water storage facility to capture flood flows from the Mokelumne River and regulate water supply to an integrated system of conjunctive use facilities providing additional storage capability, groundwater recharge, banking and water supply reliability for San Joaquin County and the Bay-Delta Region of California (Project Budget ~ \$4.5 mil).

USGS Joint Salinity Study, Stockton, California – Provided project management, direction and coordination of a five-year, \$2.5 million, jointly-sponsored regional groundwater salinity intrusion study between the Northeastern Groundwater Banking Authority, the California State Department of Water Resources and the US Geological Survey.

Eastern San Joaquin Basin Groundwater Management Plan, Stockton, California - Provided management, direction and coordination for the development of a regional groundwater management plan for the Eastern San Joaquin Basin. An 18-month effort of the Northeastern San Joaquin County Groundwater Banking Authority lead to the collaboration of over 40 stakeholder agencies to develop objectives and plans to better manage groundwater resources in a critically overdrafted basin.

San Joaquin County Flood Control and Water Conservation District Groundwater Monitoring Network Project, Stockton, California – Provided management and coordination of a detailed hydrogeologic investigation conducted over several years and the construction of depth specific monitoring wells at locations along the projected saline front within San Joaquin County to improve the accuracy of groundwater quality data, assess the vertical and lateral extent of saline water migration, determine the source of the saline water and understand the hydrogeologic properties in the area of concern (Project Budget – \$550,000).

San Joaquin County Flood Control and Water Conservation District Water Management Plan, Stockton, California - Provided management and coordination for the adoption of the San Joaquin County Water Management Plan. This plan acts as a steering document that sets forth water resource project alternatives designed to meet year 2030 water supply demands. The overall goal of the plan is three-fold: (1) identify viable water supply and conjunctive use options in order to prevent further overdraft of the Northeastern Groundwater Basin, (2) retard or eliminate the degradation of groundwater supplies due to saline water intrusion from the Bay-Delta, and (3) meet future water demand for the entire county. (Project Budget - \$650,000).

2000 - 2002

Cooper & Lake Environmental Inc., Tracy, California

Senior Scientist and Project Manager responsible for the development and management of water resource related projects including wetland system, lake, surface water, groundwater and watershed projects for private sector clients and public agencies.

Projects

Phase I Evaluation of the La Oroya Township Treatment Wetlands, Doe Run Peru Mining Company, La Oroya, Peru – Provided reconnaissance-level feasibility assessments & design evaluations for wetland systems to treat municipal wastewater from the Andean Township of La Oroya, Peru (elevation 3,800 m).

Las Virgenes Creek Watershed Investigation, Los Angeles County, California – Performed a review of historic water quality data and reports of the Las Virgenes Creek watershed. Performed a site review of point and non-point sources of pollution including stormwater, municipal wastewater and industrial sources to determine BMPs utilization program. Determine the effectiveness of the existing BMPs based on available analyses for the reduction of listed 303-(d) contaminants for inclusion in watershed restoration program.

Phase I Environmental and Feasibility Assessments for Wetland System Development at the Cuajane Mine, Southern Peru Copper Mining Company, Tacna, Peru – Provided environmental, feasibility & design evaluations for wetland systems to treat potential acid mine drainage from the Cuajane Mine river, redirection and overburden projects.

Dos Lagos Lake Quality Monitoring and Analysis, Corona, California – Conducted quantitative lake quality monitoring program including thermal stratification, dissolved oxygen, mixing, water column oxygen (WOD) and sediment oxygen demand (SOD) of two lakes for the development of a Lake Quality Restoration & Management Plan for a large multi-phased development in Southern California.

Feasibility Assessments for Tertiary Treatment of Municipal Wastewater, Vacaville, California – Conducted project regulatory and feasibility assessments for the development of an integrated treatment wetland system to provide tertiary treatment for municipal wastewater discharged within a proposed residential development.

1998 - 2000

David Evans and Associates, Inc., Portland, Oregon

Senior Scientist and Project Manager responsible for water resource related projects for local, national and international clients including wetland systems, water quality and watershed projects.

Projects

Williamson River Delta Restoration Environmental Assessment, Klamath Falls, Oregon - Evaluated potential impacts of the 4,800-acre Williamson River Delta wetland restoration on water, wetland and watershed quality issues to Upper Klamath Lake, Oregon for the U.S. Department of Agriculture Natural Resources Conservation Service in partnership with The Nature Conservancy.

Laguna and Coyote Creek Watershed Quality Monitoring Program, Richland Development Company, Moraga, California - Developed and conducted a quality assurance stormwater monitoring program at the Palos Colorados development to assess the impact of stormwater contaminants in local watersheds, Moraga, California.

Klamath Straits Drain Wetland System Feasibility Analysis and Site Assessments, Klamath Falls, Oregon – Conducted reconnaissance level feasibility analysis and site assessments for an approx. 3,300-acre wetland treatment system to treat agricultural wastewater from the Klamath Straits Drain, Lost River and Lower Klamath Basin near Klamath Falls, Oregon for the U.S. Bureau of Reclamation.

Watershed Quality Investigations of the Klamath and Lost Rivers, Klamath Falls, Oregon - Conducted hydrological, conveyance, wetland and best management practice evaluations for the improvement of water quality in the Lower Klamath and Lost River watersheds, Oregon for the U.S. Bureau of Reclamation.

Treatment Wetland Redesign Assessments, Santa Rosa and Santiago Mines, Buenaventura Mining Company, Peru - Provided design evaluations of a treatment wetland that receives acid-mine water from the Santa Rosa and Santiago gold mines at an elevation of approx. 15,000-ft. in the Andes Mountains for the Buenaventura Mining Company, Arequipa, Peru.

1995 -1998

Department of Plant and Microbial Biology, University of California, Berkeley

Post-Doctoral Fellow responsible for the development and implementation of quantitative, multi-year field studies of constructed wetlands located throughout the United States to determine seasonal changes in treatment effectiveness together with other associated plant ecophysiology-related research.

Field Studies:

EPRI Constructed Wetland Research Program

Conducted a two-year quantitative wetland field study, sponsored by the Electrical Power Research Institute (EPRI), to evaluate the function and engineering design of wetland systems for the remediation of acid mine drainage, coal-ash leachate and oil refinery wastewater. This study was conducted at monthly intervals over two-years at several constructed wetland systems including: the Chevron Water Enhancement Wetland, Chevron Oil Refinery (Richmond, California), the Allegheny Power Passive Treatment Wetland (Springdale, Pennsylvania) and the Tennessee Valley Authority Widows Creek Wetland and Coal Mine Wetlands (Flatrock, Alabama).

Tulare Lake Drainage District Wetland System Feasibility Analysis, Design and Construction

Provided technical design criteria, directed construction and planting of a 10-cell wetland system in the Tulare Lake Basin, California. This 5-acre wetland was planted with eight different wetland plant species, which was designed to test the concept that wetland plants may remediate toxic selenium in agricultural tile-drainage water via biological volatilization. This collaborative effort was sponsored by the Tulare Lake Drainage District, J.G. Boswell & Company, UC Salinity Drainage Task Force, and the California State Department of Water Resources.

Tulare Lake Drainage District Wetland System Monitoring Study

Conducted a 12-month quantitative field study, sponsored by the UC Salinity Drainage Task Force and the California State Department of Water Resources, to determine the seasonal fate, cycling and chemical speciation of selenium and other trace elements from contaminated agricultural drainage water in the Tulare Lake Drainage District Flow-Through Constructed Wetland.

1990 - 1994

Department of Botany and Range, Brigham Young University, Provo, Utah

Field Studies:

Trace Metal Bioaccumulation in Great Basin Wetland and Watershed Habitats- Conducted a two-year quantitative field study, sponsored by the Wildlife Society, of the Fish Springs National Wildlife Refuge, Bear River Migratory Bird Refuge, Clear Lake Wildlife Management Area wetlands, the Provo and Sevier River watersheds to determine the extent of heavy metal bioaccumulation among aquatic plant species utilized by waterfowl. This study included the monthly monitoring and speciation of heavy metals within wetland plant tissues, surface water, sediments and wildlife tissues to determine their biogeochemical cycling, fate and environmental impact.

Teaching Experience

2002 – Present *San Joaquin County Department of Public Works, Water Resource Division Stockton, California*

Invited Lectures:

“San Joaquin County Integrated Regional Water Management Planning” Greater Stockton Chamber of Commerce, September 2005, Stockton, California
“Conjunctive Management Program in San Joaquin County: Value and Benefits” California State Department of Water Resources, January 2005, Sacramento, California
“Groundwater Management Planning for the Eastern San Joaquin Basin” San Joaquin County Farm Bureau Federation, September 2004, Stockton, California
“San Joaquin County Water Resource Management Planning Update” Stockton Area Business Council, August 2004, Stockton, California
“A Consensus-based Approach to Groundwater Management Planning for the Eastern San Joaquin Basin” Association of California Water Agencies Conference, December 2003, San Diego, California
“San Joaquin County Regional Water Supply Projects” San Joaquin Valley Engineers Association, September 2003, Stockton, California
“Future Water Supply for San Joaquin County” American Public Works Association, November 2002, Sacramento, California
“How to Succeed in Groundwater Management” California Water Policy Conference - 12, Los Angeles, California, October 2002
“San Joaquin County Water Management Issues” California State Department of Water Resources – US Geological Survey Joint Technical Workshop, Sacramento, California, September 2002

2000 - 2002

Cooper & Lake Environmental Inc., Tracy, California

Invited Lectures:

“Potential Use of Treatment Wetlands for the Treatment of Domestic Sewage and Industrial Wastewaters at High Altitudes.” Doe Run Peru Mining Technical Presentation, La Oroya, Peru, September 2001.

1998 - 2000

David Evans and Associates, Inc., Portland, Oregon

Invited Lectures:

“Use of Constructed Wetland Systems to Treat Mine and Mineral Processing Waters.” 5th International Conference on Clean Technologies for the Mining Industry, May 2000, Santiago, Chile.
“Utilizacion de los humedales en el tratamiento de aguas residuales domesticos e industriales.” Conferencia: Tecnologias de proteccion ambiental, Universidad Nacional Agraria La Molina, Setiembre 1999, Lima, Peru.
“Sustainable Water Quality Treatment Alternatives Using Watershed Restoration and Preservation.” 5th Annual GCOE Environmental Solutions Conference and Trade Show, May 1999, Anaheim, California.

1995 - 1998

Department of Plant Biology, University of California, Berkeley

Invited Lectures:

“Exploiting Constructed Wetland Biogeochemistry for Applied Phytoremediation Purposes.” Department of Chemistry, University of Texas at El Paso. October 1998, El Paso, Texas.
“Constructed Wetland Treatment System Biogeochemical Processes.” Allegheny Power Company Constructed Wetlands for Industrial Wastewater Treatment Workshop. July 1998. New Kensington, Pennsylvania.
“Plant Establishment, Growth and Biomass Production in Flow-Through Treatment Wetlands.” UC Salinity Drainage Program Annual Meeting, April 1998. Sacramento, California.
“Selenium Remediation by Flow-Through Wetlands: Design, Construction and Initial Findings.” 10th Annual Agroforestry Conference, Sequential Reuse of Drainage Water for Salt and Selenium Management, October 1997. Hanford, California.
“XAS Analysis of Plant-based Trace Element Detoxification.” 24th Annual SSRL User's Conference Workshop, October 1997. Stanford Synchrotron Radiation Laboratory, Stanford, California.
“The Role of Wetland Plants in Trace Element Remediation in Constructed Wetlands.” Electric Power Research Institute, Water Toxics Assessment and Watershed Management Business Area Council Meeting, June 1997. Golden, Colorado.

"Potential Use of Soft X-ray Radiation in Phytoremediation Research." Molecular Environmental Research in the Soft X-ray Region Workshop, March 1997. Lawrence Berkeley National Laboratory, Berkeley, California.

"Recent Applications of XAS to the Emerging Science of Phytoremediation." 23rd Annual SSRL User's Conference, October 1996. Stanford Synchrotron Radiation Laboratory, Stanford, California.

"The Potential Use of Flow-through Wetlands for Selenium Remediation." Tulare Lake Drainage District Annual Board of Directors Meeting, December 1995. Corcoran, California.

1990 - 1994

Department of Botany and Range Science, Brigham Young University, Provo, Utah

Lectures:

"Seasonal changes in valence and chemical speciation of bioaccumulated manganese in *Potamogeton pectinatus*." 14th Missouri Symposium, April 19-22, 1995. University of Missouri, Columbia, Missouri.

"Chemical speciation of manganese in exhaust, soil and plants impacted by an unleaded fuel additive, MMT." ASA, SSSA and CSSA 86th Annual Meeting, November 13-18, 1994. Seattle, Washington.

"X-ray absorption spectroscopy – an analytical tool for element chemical speciation providing enhanced characterization of hazardous wastes." 8th Annual Regional Environmental Business & Management Conference, October 11-13, 1994. Denver, Colorado.

"Manganese accumulation along Utah roadways: A possible indication of motor vehicle exhaust pollution." AAAS Pacific Division Annual Meeting, June 12-16, 1994, San Francisco, California.

"Trace metal accumulation and potential trophic channeling in Great Basin submersed aquatic plants." Utah State University, Spring Plant Ecology Conference, May 20-21, 1994. Bear River Lodge, Logan, Utah.

"Manganese and iron accumulation by *Potamogeton pectinatus* L., A potential trophic channeler in freshwater wetlands." Ecological Society of America Annual Meeting, July 31-August 4, 1993. Madison, Wisconsin.

"Metabolic stress induced by organomercurials in a free floating aquatic macrophyte, *Lemna minor* L." Ecological Society of America Annual Meeting, August 9-13, 1992. Honolulu, Hawaii.

Publications

34. Ye, Z.H., S.N. Whiting, J.H. Qian, C.M. Lytle, Z.-Q. Lin, and N. Terry. 2001. Trace element removal from coal ash leachate by a 10-year-old constructed wetland. **Journal of Environmental Quality** 30, 1710-1719.

33. Ye, Z.H. S.N. Whiting, Z.-Q. Lin, C.M. Lytle, J.H. Qian, and N. Terry. 2001. Removal and distribution of Fe, Mn, Co, and Ni within a Pennsylvania constructed wetland treating coal combustion by-product leachate. **Journal of Environmental Quality** 30, 1464-1473.

32. Lytle, CM, BN Smith, MS Hopkin, LD Hansen and RS Criddle (2000) Oxygen-dependence of metabolic heat production in the appendix tissue of the voodoo lily (*Sauromatum guttatum* Schott). **Thermochimica Acta** 5112, 1-6.

31. de Souza MP, Lytle CM, Mulholland MM, Otte ML, Terry N 2000 Selenium assimilation and volatilization from dimethylselenoniopropionate by Indian mustard. **Plant Physiology** 122, 1281-1288.

30. Lytle, CM FW Lytle, J-H Qian, and N Terry (2000) Manganese removal and detoxification by cattail (*Typha latifolia*) grown in a constructed treatment wetland system. *In* **Stanford Synchrotron Radiation Laboratory 1999 Activity Report, Stanford University, Stanford, CA.**

29. Lytle, CM and C Jofre (2000) Use of constructed wetland systems to treat mine and mineral processing waters. M.A. Sanchez, F. Vergara and S.H. Castro, University of Concepcion (eds). *In* **Proceedings of the V International Conference on Clean Technologies for the Mining Industry, Volume I, Santiago – Chile, May, 2000, pgs. 161-171.**

28. Jones, AR, CM Lytle, RL Stone, LD Hansen and BN Smith (2000) Methylcyclopentadienyl manganese tricarbonyl (MMT), plant uptake and effects on metabolism. **Thermochimica Acta** 5113, 1-6.

27. Lytle, C. M., 2000. Water Quality Data Review and Wetland Size Estimate for the Treatment of Wastewaters from the Klamath Straits Drain. *In* **U.S. Bureau of Reclamation Technical Memorandum, July 2000.**

26. Pilon-Smits, EAH S Hwang, CM Lytle, Y Zhu, JC Tai, RC Bravo, Y Chen, T Leustek, and N Terry (1999) Overexpression of ATP sulfurylase in Indian Mustard (*Brassica juncea*) leads to increased selenate uptake, reduction and tolerance. **Plant Physiology**, 119, 123-132.

25. Lytle, CM (1999) Treatment Wetlands: Effective Cleanup of Contaminants in Mine/Mineral Processing Waters. **Latin America Mining Record Vol. 6, 22-23.**

24. Lytle, CM FW Lytle, N Yang, J-H Qian, D Hansen, A Zayed and N Terry (1998). Reduction of (CrVI) to (CrIII) by wetland plants: Potential for in situ heavy metal detoxification. **Environmental Science and Technology** 32, 3087-3093.

23. Pilon-Smits, EAH MP De Souza, CM Lytle, C Shang, T Lugo and N Terry (1998) Selenium volatilization and assimilation by hybrid Poplar (*Populus tremula x alba*) **Journal of Experimental Botany** 49, 1889-1892.

22. Lytle, CM FW Lytle and N Terry (1998) X-ray spectroscopy study of a wetland plant-based heavy metal detoxification mechanism. *In* **Stanford Synchrotron Radiation Laboratory 1997 Activity Report, Stanford University, Stanford, CA. 259-262.**

21. Zayed, A CM Lytle and N Terry (1998) Accumulation and volatilization of different chemical species of selenium by plants. **Planta** 206, 284-292.

20. de Souza, MP EAH Pilon-Smits, CM Lytle, S Hwang, J Tai, T Honma, L Yeh and N Terry (1998) Rate-limiting steps in selenium assimilation and volatilization by Indian mustard. **Plant Physiology** 117:1487-1494.

19. Zayed, A CM Lytle, J-H Qian and N Terry (1998) Chromium accumulation, translocation and speciation in vegetable crops. **Planta** 206, 293-299.

18. Lytle, CM FW Lytle, A Zayed and N Terry (1997) X-ray absorption spectroscopy of bioaccumulated chromium in selected vegetable crops and water hyacinth. *In Stanford Synchrotron Radiation Laboratory 1996 Activity Report*, Stanford University, Stanford, CA. 356-357.
17. Smith, BN and CM Lytle (1997) Air Pollutants. *Invited chapter in: M.V.N. Prasad (ed.) Plant Ecophysiology*. Chapter 12. John Wiley & Son, New York. p. 375-392.
16. Lytle, CM FW Lytle and BN Smith (1996) Use of XAS to determine the speciation of bioaccumulated manganese in *Potamogeton pectinatus* (Sago pondweed). *Journal of Environmental Quality* 25, 311-316.
15. Lytle, CM FW Lytle, A Zayed and N Terry (1996) Phytoconversion of Cr⁶⁺ to Cr³⁺ by Water Hyacinth — A Case for Phytoremediation. *Bulletin of the Ecological Society of America* 77, 235.
14. Lytle, CM and BN Smith (1995) Seasonal nutrient cycling in *Potamogeton pectinatus* of the lower Provo river. *Great Basin Naturalist* 55, 164-168.
13. Lytle, CM, BN Smith and CZ McKinnon (1995) Manganese accumulation in soil and plants along Utah roadways: A possible indication of motor vehicle exhaust pollution. *Bulletin of the Ecological Society of America* 76, 163.
12. Lytle, CM, BN Smith and CZ McKinnon (1995) Manganese accumulation along Utah roadways: a possible indication of motor vehicle exhaust pollution. *The Science of the Total Environment* 162, 105-109.
11. Lytle, CM, CZ McKinnon and BN Smith (1994) Roadside manganese in soil and plants. *Naturwissenschaften* 81, 509-510.
10. Lytle, CM and FW Lytle (1994) X-ray absorption spectroscopy an analytical tool for element chemical speciation providing enhanced characterization of hazardous wastes. *In Proceedings of the Colorado Hazardous Waste Management Society 8th Annual Regional Environmental Conference*. Denver, Colorado, Report No. 23.
9. Smith, BN CM Lytle and LD Hansen (1994) Predicting plant growth rates by dark respiration: an experimental approach. USDA Forest Service Intermountain Research Station. Wildland Shrub and Arid Land Restoration Symposium. *US Department of Forestry, General Technical Report INT-GTR-315*, 243-245.
8. Lytle, CM and BN Smith (1993) Manganese and iron accumulation by *Potamogeton pectinatus* L.: A potential trophic channeler in freshwater wetlands. *Bulletin of the Ecological Society of America* 74, 339.
7. Smith, BN CM Lytle, LD Hansen, J Lipp and H. Ziegler (1992) Isotopic fractionation respiration and growth in seedlings of cold-desert shrubs. *Bulletin of the Ecological Society of America* 73, 347-348.
6. Smith, BN CM Lytle and LD Hansen (1992) Oxygen availability and respiration rate in voodoo lily appendix tissue at anthesis. *American Journal of Botany* 79, 107-108.
5. Lytle, CM and BN Smith (1992) Metabolic stress induced by organomercurials in a free-floating aquatic macrophyte, *Lemna minor* L. *Bulletin of the Ecological Society of America* 73, 257.
4. Smith, BN CM Lytle, LD Hansen, J Lipp and H. Ziegler (1992) Respiration and plant growth in seedlings of cold desert shrubs. USDA Forest Service Intermountain Research Station. Ecology and Management of Riparian Shrub Communities. *US Department of Forestry, General Technical Report INT-289*, 190-93.
3. Lytle, CM VD Jolley and JC Brown (1991) Iron deficiency stress response of various C₃ and C₄ grain-crop genotypes: Strategy II mechanism evaluated. *Journal of Plant Nutrition* 14, 341-362.
2. Brown, JC VD Jolley and CM Lytle (1990) Comparative evaluation of iron solubilizing substances (phytosiderophores) released by oat and corn: iron-efficient and iron inefficient plants. *Plant and Soil* 130, 157-163.
1. Lytle, CM VD Jolley and JC Brown (1990) Iron-efficient and iron-inefficient oat and corn respond differently to iron-deficiency stress. *Plant and Soil* 130, 165-172.

Committees, Societies and Organizations

- *Secretary*, San Joaquin County Flood Control and Water Conservation District, Advisory Water Committee
- *Former Chair*, Water Environment Research Foundation Project Subcommittee - *Innovative Metals Removal for Urban Stormwater Treatment* (Project Budget \$650,000). Final Report Entitled "Metals Removal Technologies for Urban Stormwater (2003)"
- Association of California Water Agencies
- Groundwater Resources Association of California

Continuing Education

- University of California Davis Extension, Sacramento, California
 - Groundwater Law, Hydrology and Management (2003)
 - Facilitating for Groups in Conflict (2005)
 - Fluvial Geomorphology (2005)
- Groundwater Resources Association of California, Sacramento, California
 - "Artificial Recharge: Nexus of Quantity and Quality in California (2005)

Interests

Outdoor sports, saltwater fishing, hiking, photography, gardening and watercolor painting