C. Mel Lytle, PhD

1810 E. Hazelton Ave. • Stockton, California 95201 • (209) 468-3089 • mlytle@sjgov.org

Qualified By

Dr. Mel Lytle has worked in the water and natural resources field in both the United States and Latin America for over 17 years. After graduating in 1994 with his Ph.D. from Brigham Young University, Dr. Lytle completed a three-year Post-doctoral Fellowship at the University of California Berkeley. Since that time, his professional experience has advanced to the senior-management level while working in both private consulting and public sectors. Work experience has involved water right investigations; water supply development; surface & groundwater resources planning; conjunctive use & groundwater recharge; lake, wetland & watershed assessment, restoration & management; passive wastewater treatment, storm water 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, Stockton, California

County Water Resource Coordinator - Senior management-level direction in the development of consensus-based water resources planning, project development, design and implementation together with surface & groundwater quality investigations to fulfill regional water management program directives established by the County Board of Supervisors and other local & regional authorities. In addition, responsibility for water right investigations, expert witness and legislative advocacy for County interests at local, State and Federal levels.

'00 to '02 Cooper & Lake Environmental, Inc. , Tracy, California

Principal - Project Focus: Surface water quality, lake restoration, groundwater contamination, storm water & watershed assessments, wetland ecology, treatment wetland feasibility & design in US and Latin America.

'98 – '00 David Evans and Associates, Inc., San Ramon, California

Senior Scientist - Project Focus: Wetland ecology, storm water & watershed quality monitoring & assessment, wetland delineation/mitigation and restoration, treatment wetland investigations in US and Latin America.

'95 –'98 Department of Plant and Microbial Biology, University of California, Berkeley, California

Post-doctoral Fellow - Research Focus: Fresh and saline wetland functional analysis, design and construction, Plant eco-physiology, phyto-remediation, biogeochemical processes and x-ray speciation of bio-accumulated trace metals in aquatic species. Lecturer: Environmental Biology.

'86 – '94 Departments of Botany and Agronomy, Brigham Young University, Provo, Utah

Graduate Research & Teaching Assistant - Research Focus: Plant eco-physiology and biogeochemical cycling of trace metals in fresh, saline and hyper-saline wetlands in the Great Basin, x-ray speciation of bio-accumulated trace metals and crop nutrient uptake mechanisms Lecturer: Plant Physiology, Plant Physiology Lab, Principles of Biology Lab, Biology for Honors and Soil Science, Soil Fertility, Saline & Sodic Soils Laboratories.

'82 – '86 R. Bogetti Farms, Inc., Tracy, California

Farm Manager - Supervised all cultural practices, budgeting and personnel on row-crop farms totaling over 2,000 acres in the Delta and San Joaquin Valley of California.

Formal Education

Ph.D. (1994) - Department of Botany and Range Science, Brigham Young University, Provo, Utah. **Dissertation**—*Heavy Metal Bioaccumulation in Great Basin Submersed Aquatic Macrophytes.*

M.S. (1990) - Department of Agronomy and Horticulture, Brigham Young University, Provo, Utah. **Thesis**—*Iron Deficiency Stress Response of Various C_3 and C_4 Grain Crop Genotypes.*

B.S. (1988) - Department of Agronomy and Horticulture, Brigham Young University, Provo, Utah

High School Graduate (1977) – Glacier High School, Highline School District, Seattle, Washington

Continuing Education

- University of California Davis Extension, Sacramento, California
  - Groundwater Law, Hydrology and Management (2003)
  - Facilitating for Groups in Conflict (2005)
  - Fluvial Geomorphology (2005)
  - Salmonid Biology (2006)

- Groundwater Resources Association of California, Sacramento, California
  - "Artificial Groundwater Recharge: Nexus of Quantity and Quality in California (2005)

- Continuing Legal Education - International, San Francisco, California
  - California Water Law & Policy (2004)
  - California Water Law & Policy (2005)
  - California Water Law & Policy (2006)
  - California Water Law & Policy (2007)

Project and Program Experience

2002 – Present San Joaquin County Flood Control and Water Conservation District, Stockton, California

The Water Resource Coordinator is primarily responsible for the coordination and management of San Joaquin County's water interests and through Division staff & contracted consultants prepares, evaluates and administers the annual program and personnel budgets for the San Joaquin County Public Works - Water Resource Division, the Flood Control and Water Conservation District Zone 2, the Mokelumne River Water and Power Authority and 11-member agency Groundwater Banking Authority.

Major duties and responsibilities include efforts to obtain supplemental surface water supply through project leadership and by maintaining liaison among numerous public jurisdictions, agencies, private entities, and the general public to encourage cooperation on all water issues and to resolve potential conflicts through a consensus-based approach. Responsibilities have also included the management and formulation of coalitions, authorities, and MOU with other agencies for the development of water resource projects, plans, studies & programs and representation of the County's interests in federal, state, and local governing boards, committees and task forces and when necessary provided testimony at federal, state, regional and local proceedings to describe and defend the County's water interests.

Projects, Studies & Programs

Eastern San Joaquin County Integrated Regional Water Management Plan & Program EIR – Initiated and provided project management, direction and coordination for the development of an integrated regional water management plan and for the Eastern San Joaquin Integrated Conjunctive Use Program. A three-year effort of the Northeastern San Joaquin County Groundwater Banking Authority and the collaboration of over 40 stakeholder agencies to develop objectives, plans and strategies to better manage water resources in a critically over-drafted groundwater basin (Project Timetable 2005-2008; Project Budget $1.35 million).

Freeport Element of the American River Use Strategy Project Feasibility Study – Initiated and provided project management, direction and coordination for the development of feasibility analysis for an engineering preferred project alternative centered on use of unassigned pipeline capacity in the East Bay Municipal Utility District Freeport Regional Water Project to wheel American River water under San Joaquin County's water right filing 29657 (Project Timetable 2007-2009; Project Budget $750,000).

Mokelumne River Regional Water Storage and Conjunctive Use Project Feasibility Study & Project EIR (MORE WATER) - Initiated and provided project management, direction and coordination in concert with the US Bureau of Reclamation to complete engineering feasibility and environmental documentation for a new off-stream 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, water banking and water supply reliability for San Joaquin County and the Bay-Delta Region of California (Project Timetable 2003-2017; Project Budget~$4.5 mil).

U.S. Geological Survey Joint Salinity Study – Initiated and provided project management, direction and coordination of a five-year, $3 million regional groundwater salinity intrusion study in San Joaquin County jointly-sponsored by the Northeastern Groundwater Banking Authority, the California State Department of Water Resources and the US Geological Survey.

Eastern San Joaquin Basin Groundwater Management Plan – Initiated and provided management, direction and coordination for the development of a regional groundwater management plan for the Eastern San Joaquin Sub-basin. An 18-month effort of the Northeastern San Joaquin County Groundwater Banking Authority led to the collaboration of over 35 stakeholder agencies to develop basin-wide objectives and plans to better manage groundwater resources (Project Timetable 2002-2004; Project Budget $600,000).

San Joaquin County Flood Control and Water Conservation District Groundwater Monitoring Network Project – Initiated and provided management and coordination for 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 Timetable 2003-2005; Project Budget $550,000).

San Joaquin County Water Management Plan - Provided management and coordination for the completion and adoption of the San Joaquin County Water Management Plan in 2002. This plan has acted as a steering document that sets forth water resource project alternatives designed to meet 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 Eastern San Joaquin Groundwater Sub-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*
Responsible for the development and management of water resource related projects including treatment wetlands, 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 storm water, 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 Cuajone Mine, Southern Peru Copper Mining Company, Tacna, Peru – Provided environmental, feasibility & design evaluations for wetland systems to treat potential acid mine drainage from the Cuajone Mine river redirection and overburden projects.

Dos Lagos Lake Quality Monitoring and Analysis Program, Corona, California – Conducted quantitative limnology studies and established a 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 of municipal wastewater discharged within a proposed residential development.

1998 - 2000 *David Evans and Associates, Inc., San Ramon, California*
Senior Scientist and Project Manager responsible for water resource related projects for local, national and international clients including treatment wetlands, 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 program 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 storm water monitoring program at the Palos Colorados development to assess the impact of storm water contaminants in local watersheds, Moraga, California.

Klamath Straits Drain Wetland System Feasibility Analysis and Site Assessments, Klamath Falls, Oregon –Conducted 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 – Conducted 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 research.

Field Studies
Electric Power Research Institute 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, University of California 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 food 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 potential environmental impact to feeding waterfowl species.

Lecturer, Witness and Advocacy Experience

2002 – Present San Joaquin County Flood Control and Water Conservation District, Stockton, California

State and Federal Congressional Hearing Testimony:

"Testimony on HR 3812 (Sponsor Congressman Richard Pombo) authorization for Mokelumne River Feasibility Study" before US Senate Committee on Energy and Natural Resources, Subcommittee on Water and Power, March 30, 2006. Washington, DC

"Testimony on Senate Bill 350 (Sponsor State Senator Mike Machado) Restoration of the San Joaquin River" before California State Assembly Committee on Water, Parks and Wildlife, June 28, 2005. Sacramento, CA

"Testimony on HR 4045 (Sponsor Congressman Richard Pombo) authorization for Mokelumne River Feasibility Study" before US House Subcommittee on Water & Power, May 18, 2004. Washington DC

"Testimony on Senate Bill 833 (Sponsor State Senator Mike Machado) Eastern Water Alliance Joint Powers Agency" before California State Senate Committee on Agriculture and Water Resources, April 2003. Sacramento, CA

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., San Ramon, California*

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 residuals 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.

Publication History

35. B. Nakagawa and CM Lytle (2008) Establishment of a Stakeholder-Supported Management Framework and Conditions Scale for the Recovery of an Over-drafted Ground Water Basin. (In Preparation).

34. Ye, ZH, SN Whiting, JH Qian, CM 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, ZH, SN Whiting, Z-Q Lin, CM Lytle, JH 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 Cr^{6+} to Cr^{3+} 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 C_3 and C_4 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
Member, Association of California Water Agencies Committee on Local Government
Secretary, San Joaquin County Advisory Water Commission
Chair, 2003 Water Environment Research Foundation Project Subcommittee *for Innovative Metals Removal for Urban Storm water Treatment* (Project Budget $650,000)
County Engineers Association of California
National Ground Water Association

Awards, Scholarships and Recognitions
1988 Department of Agronomy Award
1992 Julia Greenwell Award
1992 Botanical Science Scholarship
1994 S. Paul and Hilda F. Stewart Scholarship
1993 Department of Botany & Range Award
1995 Sigma Xi Outstanding Dissertation of the Year

San Joaquin Council of Governments Regional Excellence Awards:
2003 Judges Award for the San Joaquin County Water Management Plan
2005 Development Honorable Mention for the Eastern San Joaquin Groundwater Management Plan
2008 Development Award for the Eastern San Joaquin Integrated Regional Water Management Plan

Personal Interests
Outdoor sports, saltwater sport fishing, hiking, photography, gardening and watercolor painting