William M. Fleming

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EDUCATION

PhD, University of British Columbia. Civil Engineering (water resources/ecological modeling)

MS, Colorado State University. Watershed Management

AB, Dartmouth College. Geology

CURRENT POSITION

1999- Associate Professor, Community and Regional Planning Program, School of Architecture and Planning, University of New Mexico. Watershed management, regional studio, introduction to environmental problems, modeling the environment, foundations of natural resources planning, field methods.

PAST UNIVERSITY OF NEW MEXICO POSITIONS

2005-06 Sabbatical Visiting Scientist, Food and Agriculture Organization of the United Nations, Rome, Italy and the International Centre for Integrated Mountain Development, Kathmandu, Nepal.

1997-99 Visiting Associate Professor, School of Architecture and Planning, University of New Mexico. Watershed management, site and environment, planning studio, introduction to environmental problems, methods of natural resources planning, land restoration planning, economic development for planners, land and water economics, introduction to planning.

1994-97 Visiting Research Professor, School of Architecture and Planning, University of New Mexico.

1991-94 Adjunct Professor, Graduate Program in Water Resources, University of New Mexico. Interdisciplinary courses in water resources planning, watershed management, watershed and groundwater modeling, field methods in water resources assessment. Member Steering Committee.

LANGUAGES

first, English; second, Spanish.

AWARDS

2007 Faculty Acknowledgement Award, University of New Mexico Libraries.

1999 New Mexico Chapter of the American Planning Association, Award for Excellence: Public Education About Planning (excellence in public/private partnerships: New Mexico Watershed Watch).

1999 Dean's Award for Excellence in Teaching, School of Architecture and Planning, University of New Mexico.

1998 New Mexican Riparian Council Award for Public Awareness/ Education; founder and director of New Mexico Watershed Watch Program.

1997 Dean's Award for Excellence in Teaching, School of Architecture and Planning, University of New Mexico.

1997 National Endowment for the Humanities Fellowship to teach nature writing in environmental studies courses. Vassar College.

1995 Fulbright Scholar. Teaching/research award to initiate collaboration with the Escuela Politecnica Nacional, Quito, Ecuador. Presented courses on watershed modeling and management, directed graduate students in watershed modeling, monitored and modeled environmental impacts of a proposed reservoir in a critical watershed. Negotiated convenio between EPN and UNM (Spanish).

1979 and 1980 Professional Associate Awards, Environment and Policy Institute, East-West Center, Honolulu, Hawaii.. Developed environmental policy and cost-benefit analyses of watershed restoration projects in Nepal and Ecuador.

FUNDED RESEARCH

2011. Principal Investigator, Living Roof Demonstration and Research. $1,500 Research and Creative Work grant from UNM School of Architecture and Planning.

2011-2012. Collaborator, USDA Hispanic-Serving Institutions Education Grants Program (HIS/National Institute of Food and Agriculture). $290,000 award to UNM Sustainability Studies Program.

2009-2013 Co-principal Investigator (with J. Rivera). Socioeconomic and hydrologic impacts of projected climate change on acequia systems in northern New Mexico. National Science Foundation award to support undergraduate and graduate students, $144,825.

2008-2009 Principal Investigator, Alternative Stormwater Management Research Project. $5,000 award from the New Mexico Water Resources Research Institute to support Katherine Labadie's professional project research.

2007-2009 Principal Investigator, Living Roof on Pearl Hall, $15,000. McCune Foundation.

2006-2008 Co-Investigator (with J. Rivera). Mora Watershed Evaluation Project. $15,000 to support graduate students, $12,000 for water quality equipment, travel and presentation at conferences.

2002-2003 Principal Investigator: River Source/NM Game & Fish, $13,100 ($3500 to support a CRP graduate assistant): environmental education project to continue Watershed Watch program, teaching middle and high school teachers and students to monitor water quality and watershed health in 20 NM watersheds where schools are located and where land use issues impact water quality and riparian health.

2002-2003 Co-Investigator (with David Henkel): NM Comprehensive Outdoor Recreation Plan, $110,000 (supporting 4 CRP graduate students): to update the state's outdoor recreation plan, including a public participation component and an inventory of the state's facilities, wetlands and trails.

2002-2004 Co-Investigator (with Michael Campana, Michelle Minnis and others), US Agency for International Development Program "Institutional Partnerships in Higher Education for International Development," $100,000: to establish a Central American Water Resources Development Center with the Escuela Agricola Panamericana (Zamorano) in Honduras.

2002-2004 Faculty Participant (Principal Investigator: Teresa Cordova), Bernalillo County and City of Albuquerque $78,410 (supporting CRP graduate students): South Valley Water Utilities Extension Project, public involvement program to ensure that residents are basing their perspectives on their own values and available technical information.

2002-2004 Faculty Participant (with Michael Campana and others), funded by NATO, Science for Peace Programme and the Organization for Security and Cooperation in Europe ($370,000, with $42,000 allocated to the US): South Caucasus River Monitoring Project to assist the Republics of Armenia, Azerbaijan and Georgia in watershed management and STELLA water resources modeling.

2002 Travel Grant from Water Resources Program for March field trip to Rio Gavilan watershed in northern Chihuahua with 20 students, $500: watershed health survey of watershed 75 years after Aldo Leopold's essay Song of the Gavilan described ecological health; survey of riparian health and watershed condition.

2002 NM Game & Fish grant, $200: recording rain gage for School of Architecture & Planning; initiation of environmental monitoring plan for new School of Architecture and Planning building.

2002 UNM Extended University, Distance Learning Program, $3,000: adapting Watershed Management course for Distance Learning to reach communities (Los Alamos, Santa Fe, Socorro, Las Cruces, Taos).

1997-01 NM Department of Game & Fish, $216,000 to continue watershed monitoring program (Watershed Watch); awards for excellence NM Chapter of the American Planning Association (Public Education) and the NM Riparian Council (Environmental Awareness and Education).

1997-98 McCune Foundation, $9,000 to teach watershed planning methods to St. Catherine Indian School, development of a Nambe Watershed Management Plan (with R. Schrader)

1996-97 McCune Foundation, $12,000 to teach watershed monitoring methods to Santa Fe Indian School in the formulation of a Tesuque Watershed Management Plan (with R. Schrader)

1995 Fulbright Scholar grant, $12,000 for teaching and research at the Escuela Politecnica Nacional, Quito, Ecuador. Establishment of a convenio between the Escuela Politecnica Nacional and UNM.

1994 NM Office of the State Engineer, $18,000, policy analysis legal and technical incentives for municipal and agricultural water conservation in NM (with G.E. Hall, UNM Law School).

1993-97 NM Dept. of Game & Fish, $192,000 to develop environmental education program for high school teachers to monitor water quality and watershed health (NM Watershed Watch).

PAST EMPLOYMENT

1989-93 Hydrologist, John W. Shomaker, Inc., Santa Fe. Environmental impact assessment, water quality modeling, water policy and planning analyses, watershed management.

1982-89 Chief Hydrologist, New Mexico State Engineer Office, Santa Fe. Directed and coordinated hydrologic analyses concerning the development, conservation, adjudication, protection and distribution of the State's water resources. Supervised staff of eight. Water quantity and quality modeling of watersheds and ground water.

1979-82 Environmental Engineer, New Mexico Environmental Division, Santa Fe. Analyzed scientific, economic, and policy aspects of environmental regulations. Performed air and water quality risk assessments of uranium tailings restoration plans.

1978-79 Research Associate, Water Resources Research Institute, University of British Columbia, Vancouver. Evaluated hydrologic, environmental and economic impacts of the forest industry on watershed health.

1975-78 Watershed Scientist, Food and Agriculture Organization of the United Nations, Ecuador and Nepal. Recommended water-resource management policies to the Ecuadorian government and completed country-wide survey of land and water conservation problems. Formulated watershed management plan and benefit-cost analysis for Ecuador's largest reservoir. Surveyed 40 watersheds in Nepal to establish project priorities. Prepared land use, erosion control and reservoir management program for a critical watershed. Water resources economic development projects in Latin America and Asia.

1974-75 Project Team Leader, Edwin Reid and Associates, Vancouver, British Columbia. Analyzed economic and environmental impacts of resource planning alternatives.

1970-74 Principal Investigator, Reservoir Management Project, Water Resources/Pollution Control Section, Department of Civil Engineering, University of British Columbia. Formulated environmental and economic policies for the restoration of a polluted reservoir in British Columbia. Doctorate degree in water resources engineering.

1967-69 Research Hydrologist, Cold Regions Research and Engineering Laboratory, Hanover, NH. Research on the water quality and mixing regime of dimictic lakes and high-elevation snow hydrology in Yukon Territor

1964-66 Research Assistant, Hydrology, Watershed Management and Rocky Mountain Forest and Range Experiment Station, Colorado State Univ. Groundwater research, Medicine Bow Mountains, Wyoming for sustainable flow regime.

CONSULTANCIES

2002 Rangeland Erosion and Sedimentation Survey, Chilton Ranch, Arivaca, Arizona.

2000 Rangeland Riparian Health and Erosion Analysis, Chilton Ranch, Arivaca, Arizona.

1997 Agricultural Conservation Planning, Green Project, El Salvador, to develop local participatory methodology and economic assessment procedures for land use development in a rural watershed demonstration area.

1994 Watershed Planning, FAO/World Bank, Venezuela. Evaluated technical and economic parameters of a watershed management plan for the Cojedes Basin.

1992 Environmental Advisor, US Agency for International Development, Sri Lanka. Evaluated water quality impacts of Mahaweli water resources project.

1991 Watershed Planning, Irrigation Support Project for Asia and the Near East/US Agency for International Development, Sri Lanka. Prepared national watershed management policy and procedures for economic analysis. Government of Sri Lanka and USAID.

1990 Watershed Planning, Irrigation Support Project for Asia and the Near East/US Agency for International Development, Morocco. Analyzed economic and financial impacts of watershed conservation alternatives on water quality and sedimentation rates in Atlas Mountain reservoirs. Compared the benefits and costs of upstream watershed management with downstream improvements in irrigation efficiency using USAID criteria for economic evaluation.

1988 Watershed Management and Hydrology Planning, Food and Agriculture Organization of the United Nations, Nepal (three months). Conducted country-wide evaluation of water resources research and recommended national-level research policy. Trained personnel in Dept. of Soil Conservation and Watershed Management in the establishment of experimental watersheds and research methods for analysis of hydrological data.

1988 Water Resources Evaluation, USAID, Nepal (two months). Evaluated hydrologic, engineering and economic aspects of water supply, irrigation, reforestation, grazing management and erosion control components of AID project.

1988 Watershed Management Lecturer, Food and Agriculture Organization of the United Nations, Morocco and Rome Presented invited paper to FAO/World Bank seminar on national watershed management policy for Morocco.

1982 Environmental Consultant, U.S. Agency for International Development, Quito, Ecuador. Prepared analyses of Ecuador's watershed conservation and reservoir management priorities.

1981 Environmental Consultant, Fundacion Natura, Quito, Ecuador. Analyzed environmental issues in watershed management and reservoir projects.

1980 Professional Associate, East-West Environmental and Policy Institute, Honolulu. Prepared cost-benefit publication on watershed-management planning in Nepal.

1980 Environmental Consultant, Fundacion Natura, Quito, Ecuador. Analyzed Ecuador's environmental priorities in water resources projects.

1979 Professional Associate, East-West Environment and Policy Institute, Honolulu. Prepared publication on the economics of watershed and reservoir management in Ecuador.

1972 Environmental Consultant, Canadian Department of Environment, Vancouver, British Columbia. Economic and environmental impact analysis of hydroelectric project.

1964 Geohydrologist, U.S. Agency for International Development, Bahia, Brazil (three months). Preparation of economic feasibility studies for small industries.

DISSERTATION AND THESIS

A model of the phosphorus cycle and phytoplankton growth in Skaha Lake, British Columbia. Department of Civil Engineering, University of British Columbia, 161 p. (PhD dissertation).

Geohydrology of a mountain peat wetland, Medicine Bow Mountains Wyoming. Department of Watershed Management, Colorado State University, 113 p. (Master of Science thesis).

PUBLICATIONS AND REPORTS 2003-2012

Peer-reviewed book:

The next generation of watershed management programmes and projects. 2006. Food and Agriculture Organization of the United Nations Forestry Paper 150, Rome, 128p. (with P. Warren, T. Hofer, D. McGuire, B. Kiersch, S. Bernini).

Peer-reviewed journal and book articles (in preparation):

Ecological services of New Mexico acequia systems. 2013. Journal of Ecological Restoration (with J. Rivera, A. Miller and M. Piccarello).

The enduring role of Sand County Almanac in community planning: thinking like a mountain. 2013. In Rethinking Leopold's Land Ethic: Emerging Cultures of Sustainability (W. Forbes and T. Trusty, ed.).

Peer-reviewed journal articles (published):

Modeling water use in the Rio Hondo watershed. 2012. New Mexico Journal of Science 46:39-64 (with S. Sabu, J. Rivera, B. Thomson and V. Tidwell).

Viability of living roof systems in Albuquerque, New Mexico: thermal performance, water efficiency and carbon sequestration potential. 2012. International Journal of Architecture, Engineering and Construction (accepted for publication in September; with N. Ubechel).

Aldo Leopold: Albuquerque's first environmental planner. 2010. Western Planner 31(7): 10-12.
(with M. Schmader).

A watershed conservation success story in Nepal: land use changes over 30 years. 2009. Waterlines 28(1):29-46 (with J.P. Fleming).

Following in Leopold's footsteps: revisiting and restoring the Rio Gavilan watershed. 2006. Journal of Ecological Restoration 24(1):25-31 (with W. Forbes).

A watershed management framework for mountain areas: lessons from 25 years of watershed conservation in Nepal. 2006. Journal of Environmental Planning and Management 49(5):1-19 (with S. Achet).

Volunteer watershed health monitoring by local stakeholders: New Mexico Watershed Watch. 2003. The Journal of Environmental Education 35(1):27-32.

Book reviews in peer-reviewed journals:

Review of "Environmental Land Use Planning and Management" by John Randolph. 2005. Journal of Planning Education and Research 24(4):252-253.

Review of "The Colorado Plateau: Cultural, Biological, and Physical Research". 2006. New Mexico Historical Review Winter: 115-117.

Conference proceedings:

The greening of a watershed in Nepal. 2011. Proceedings 40th Annual Conference on South Asia. Madison, Wisconsin, 9p. (with J.P. Fleming).

Valuing urban green space: mapping a neighborhood watershed in Albuquerque, New Mexico for environmental benefits. 2004. Proceedings Environmental Design Research Association, Design for Diversity Conference, Vancouver, British Columbia (abstract).

Professional report:

Water supply threat assessment for the El Rito watershed. 2012. Report prepared for the El Rito Regional Water and Wastewater Association, El Rito, New Mexico (with S. Fernald).

ADDITIONAL PUBLICATIONS AND REPORTS

Review of "Great River of the West: Essays on the Columbia River". 2002. New Mexico Historical Review, Fall.

Transfer of development rights as an option for land Preservation in a historic New Mexico community: La Cienega La Cieneguilla, New Mexico. 2001. Natural Resources Journal 42(2):134-148 (with C. Ageton, D. Myers-Taylor, R.Messenger, J. Marmon, J. Rivera, A. Jandacek, M. Santelli, S. Moeller and L. Vitelli).

Community-based ecological monitoring: a rapid appraisal approach. 2001. Journal of the American Planning Association 67(4):456-466 (with D. Henkel).

Preservation of a riparian acequia landscape: transfer of development rights in La Cienega/La Cieneguilla, New Mexico. 2001. Proceedings of Fifth Annual Conference of the NM Riparian Society: Riparian Success Stories in New Mexico, 7p.

Ten steps to evaluate rangeland riparian health. 2001. Rangelands 23(6):22-27 (with D. Galt and J. Holechek).

Review of The Essential Aldo Leopold: Quotations and Commentaries. 2001. New Mexico Historical Review

76(1):109-111.

Review of Great River of the West: Essays on the Columbia River. 2002. New Mexico Historical Review (Fall)
Watershed planning and monitoring by local student stakeholders New Mexico Watershed Watch. 2001. Proc. Ann. Water Resources Conf., Am. Water Resources Assoc., p. 43.

National APA conference in New York City: McHarg and green mapping. 2000. Newsletter of the New Mexico Chapter of the American Planning Assoc., July:9-10.

Water conservation incentives for New Mexico: policy and legislative alternatives. 2000. Natural Resources Jour. 43(3):242-254 (with G.E. Hall).

Volunteer watershed health monitoring by local stakeholders. 2000. Proceedings 6the National Volunteer Monitoring Conference: Moving Into the Mainstream:149-153.

Watershed health: an evaluation index for New Mexico. 1999. In: Finch, D.M., J.C. Whitney, J.C. Kelly and S.R. Loftin, Eds., Rio Grande ecosystems: linking land, water, and people. Proc. Toward a Sustainable Future for the Middle Rio Grande Basin, US Forest Service, Rocky Mountain Res. Sta., p. 93-96.

New Mexico Watershed Watch Handbook. 1999. NM Game & Fish Department Aquatic Education Handbook Series, 3rd ed., 92p. (with R. Schrader).

Thinking like a watershed planner: Aldo Leopold in the southwest. 1998. Invited Paper, Proceedings American Literature Assoc. Symp. on Nature and Environmental Writing: Theory, Engagement and Practice, Puerto Vallarta, 4p.

Planning for sustainability in the Tesuque watershed. 1997. Final report to the McCune Foundation (with R. Schrader and Santa Fe Indian School students), 24p.

Local participatory approaches for agroforestry planning in El Salvador. 1997. Consulting report for Green Project.

Rehabilitation of the Cojedes watershed in Venezuela: a plan for long-term resource sustainability. 1995. FAO/World Bank Feasibility Report, 34p.

Research plan for watershed management activities in an Ecuadorian university. 1995. Fulbright Scholar Program Final Report, 14p.

Ecuadorian water quality impacts from land use in an Andean watershed: application of a watershed simulation model. 1995. Escuela Politecnica Nacional Technical Report, 12p.

Biotic indices for monitoring the health of New Mexico watersheds. 1995. NM Dept. of Game and Fish Watershed Watch Handbook, Second edition, 35p.

Watershed monitoring and planning guide for northern New Mexico. 1994. NM Watershed Watch Handbook, First edition, NM Dept. of Game and Fish, 23p.

Evaluation of gully erosion restoration plan for the Zuni Conservation Project: costs and benefits. 1994. Consulting report for the US Geological Survey, Albuquerque, 17p.

Supply and demand for water in the La Cienega watershed, Santa Fe County, New Mexico. 1994. Consulting report for Santa Fe County, 27p.
Water quality and quantity management plan for the restoration of Lake Acomita, Acoma Pueblo, New Mexico. 1992. John W. Shomaker, Inc. consultant report for Acoma Pueblo, 34 p. (with Roger Peery).

South Santa Fe County 40-year water plan. 1992. John W. Shomaker, Inc. consultant report for the Santa Fe Metropolitan Water Board, 56 p. (with E. Harvey, R. Peery and L. Moore).

Forty-year water plan for San Juan, McKinley and Cibola Counties, New Mexico. 1992. Leedshill-Herkenhoff, Inc. and John W. Shomaker, Inc. consultant report for the Northwest Council of Governments, 125 p. (with R. Peery, J.W.Shomaker, C. DuMars and W. Landon).

Recalibration of Santa Fe County ground-water model using revised recharge estimates. 1991. John W. Shomaker, Inc., Consulting report for the Santa Fe Metropolitan Water Board, 23 p. (with S. Finch).

Water level monitoring program for Santa Fe County. 1991. John W. Shomaker, Inc. consulting report for the Santa Fe Metropolitan Water Board, 45 p. (with J. Peterson).

Water quality monitoring program for Santa Fe County. 1991. John W. Shomaker, Inc. consulting report for the Santa Fe Metropolitan Water Board, 37 p. (with J. Peterson).

Watershed management policies for Sri Lanka. 1991. Irrigation Support Project for Asia and the Near-East Policy Paper, US Agency for International Development, 39 p.

Water availability studies for El Vadito de los Cerrillos Water Association. 1991. John W. Shomaker, Inc. consultant report, 39 p. (with John Shomaker and Roger Peery).

Evaluating a water rights application on an overappropriated New Mexico stream: Las Huertas Canyon, 1991. Univ. of New Mexico Water Resources Administration Program Field Course Report (with J. Brekhus, C. Chavez, C. Kilmer, L. Shore, J. Watson, B. Coe, R. Richardson and C. White).

Analysis of groundwater recharge estimates for the Santa Fe area. 1991. John W. Shomaker, Inc. consultant report to the Santa Fe Metropolitan Water Board, Santa Fe, New Mexico, 8 p.

Evaluation of the hydrogeologic basis for the south-boundary area of the USGS Santa Fe groundwater model, 1991. John W. Shomaker, Inc. consultant report to the Santa Fe Metropolitan Water Board, Santa Fe, New Mexico, 22 p.

Landfill siting evaluation for Santa Fe County, 1991. John W. Shomaker, Inc. consultant report to Santa Fe County and the City of Santa Fe, New Mexico, 27 p.(with S. Finch and R.Peery).

Santa Fe water quality monitoring program: 1990 results and problem identification, 1991. John W. Shomaker, Inc. Consultant report to the Santa Fe Metropolitan Water Board, 30 p.

Groundwater levels in Santa Fe County: seasonal and annual trends from 1950 to 1990, 1991. John W. Shomaker, Inc., Consultant report to the Santa Fe Metropolitan Water Board, New Mexico, 36 p.

Geohydrology report for the Matthews property, Santa Fe County, 1991. John W. Shomaker, Inc. consultant report to David Matthews, Santa Fe, New Mexico, 15 p.

Assessment of watershed management problems and opportunities in Azilal Province, Morocco, 1990. Irrigation Support Project for Asia and the Near East, 60 p. (with R.Poulin).

Water rights and technical evaluation of the Deaf Smith/Dixon water case, 1990. John W. Shomaker, Inc. consultant report to R. Skinner for Colfax County District Court hearing, 12 p.

Strategies for quantifying instream flows: a workshop manual, 1990. Watershed Resources, Inc. consultant report to The Wilderness Society, Utah, 120 p. (with Jim Tolisano).

Water availability report for San Juan Complex Partnership, Tesuque, New Mexico, 1990. John W. Shomaker, Inc. Consultant report to San Juan Complex Partnership, 11 p.

Otero County 40-year water plan, 1990. John W. Shomaker, Inc. and Leedshill-Herkenhoff, Inc. consultant report to Otero County, New Mexico, 86p. (with D. Dixon and W. Webster).

Water supply studies and 40-year water-supply master plan: City of Gallup, New Mexico, 1990. John W. Shomaker, Inc. and Leedshill-Herkenhoff, Inc. consultant report to Gallup, NM, 144 p. (with J. Shomaker and S. Balogh).

Benefits and costs of watershed management in New Mexico, 1989. Am. Water Res. Assoc. Conf. on Advances in Management of Southwestern Watersheds, Socorro, 12p.

Erosion rates and land use in northern New Mexico, 1989. Am. Water Res. Assoc. Conf. on Advances in Management of Southwestern Watersheds, Socorro (abstract; with F. West).

The research basis of forest hydrology and watershed management in semi-arid areas, 1989. Invited paper 15th Session, FAO Advisory Committee on Forestry Education, Antalya, Turkey, 18p.

Long-term options for municipal water conservation, 1989. J. Am. Water Works Assoc. 81(3):34-42 (with A. Grisham).

A watershed-management research strategy for Nepal, 1989. Consultant report to His Majesty's Government and the Food and Agriculture Organization of the United Nations, 48 p.

Watershed management in New Mexico: local involvement in reducing erosion and sedimentation, 1988. Proc. National Seminar on Watershed Management, Rabat, Morocco. Invited paper, FAO/World Bank, 14 p.

Final evaluation of Nepal resource conservation and utilization project, 1988. Consultant report Tropical Research and Development, Inc. to US Agency for Int. Dev., 100 p. (with K. Parker, R. Calnan, S. Achet and M. D. Joshi).

A water yield simulation model of Harris Creek watershed, Catron County, New Mexico, 1988. New Mexico State Engineer Office Hydrology Rpt. TDH-88-1, 11 p.

Land use, erosion rates and reservoir sedimentation in a coastal Ecuadorian watershed, 1987. Proc. International Symposium on Erosion and Sedimentation in the Pacific Rim, Corvallis, Oregon.

Municipal water conservation options for New Mexico, 1987. New Mexico State Engineer Office Hydrology Rpt. TDH-87-5, 31 p. (with A. Grisham).

A watershed simulation model of Alamocita Creek, Harding County, New Mexico, 1987. New Mexico State Engineer Office Hydrology Rpt. TDH-87-7, 13 p.

Impacts of groundwater pumping in the northern Mesilla Valley near Radium Springs, New Mexico, 1987. New Mexico State Engineer Office Hydrology Rpt. TDH-87-11, 6 p.

Water availability and use in the proposed El Malpais National Monument, 1987. New Mexico State Engineer Office Hydrology Rpt. TDH-87-1, 14 p. (with T. Morrison).

Risk estimation in watershed management: water quality impacts on salmon from logging in the Pacific Northwest, 1986. Trans. Am. Geophys. Union 67(44):951.

Analysis of 40-year municipal water supply and demand for Alamogordo, New Mexico, 1986. New Mexico State Engineer Office Hydrology Rpt. TDH-86-1, 34 p.

Watershed management information needs for water administration in New Mexico, 1985. Proc. Soc. of Am. Foresters Conv., Ft. Collins, Colorado, 18 p. (invited paper).

Consumptive water use in artificial snowmaking: Santa Fe Ski Area, New Mexico, 1985. New Mexico State Engineer Office Tech. Rpt 45, 14p. (with A.W. Smart).

Watershed management in Nepal: translating technical information into resource policy alternatives, 1985. Scientific Basis for Water Resources Management, Proc. of the Jerusalem Symp., Internat. Assoc. Sci. Hydrology Publ. 153, p.107-126.

Sodium carbonate-bicarbonate leaching of a New Mexico uranium ore and removal of long half-life radionuclides from the leach residue, 1985. Uranium 2:17-36 (with A. E. Torma and N. R. Pendleton).

Reservoir sedimentation in Amazonian Ecuador: benefits of upland watershed management, 1983. Trans. Am. Geophysical Union 64(45):697.

Phewa Tal catchment management program: benefits and costs of forestry and soil conservation in Nepal, 1983. In Forest and Watershed Development and Conservation in Asia and the Pacific, L. W. Hamilton, ed., Westview Press, Boulder, p. 217-288.

Soil conservation in Nepal: a case study, 1983. In Environment, Natural Systems, and Development: An Economic Valuation Guide, by M. M. Hufschmidt, D. E. James, Meister, B.T. Bower and J.A. Dixon, Johns Hopkins University Press, Baltimore, p. 175-185.

Environmental and economic impacts of water conservation on a major reservoir project in Ecuador, 1982. In Economic Approaches to Natural Resources and Environmental Quality Analysis, M. M. Hufschmidt and E. L. Hyman, eds., Tycooly International Press, Dublin, p. 292-299.

Reservoir and watershed management of sedimentation and eutrophication in subtropical Ecuador, 1982. Trans. Am. Geophys. Union 63(45):937.

A novel approach to tailings disposal, 1982. Proceedings Fifth Annual Uranium Seminar, Soc. of Mining Engineers, Am. Inst. of Mining, Metallurgical and Petroleum Engineers, 59-67 (with A. E. Torma, J. J. Santana, and A. Singh).

Uncertainties in the prediction of the environmental impacts of forest harvesting on salmonids, 1980. British Columbia Water Resources Research Institute Tech. Rpt., 49 p.

A comparison of wilderness recreation and hydroelectric development economic benefits in the Stikine River Basin, British Columbia, 1979. Sierra Club of Western Canada Wild River Workshop, 15 p. (with Irving K. Fox).

Resource-development alternatives: an evaluation strategy, 1977. The Annals of Regional Science, Vol. XI No. 1, p. 29-59 (with Jack L. Knetsch).

Outdoor recreation and resource choices: methodologies and strategies, 1975. British Columbia Department of Economic Development Special Report, 291 p. (with Jack L. Knetsch).

Predicting the impacts of phosphorus management policies on the eutrophication of Skaha Lake, British Columbia, Canada, 1975. Verh. Internat. Verein. Limnology 19:241-248(with J. Stockner).

A model of the phosphorus cycle and phytoplankton growth in Skaha Lake, British Columbia, Canada, 1975. Verh. Internat. Verein. Limnology 19:229-240.

Snow evaporation rates on Mt. Logan, Yukon Territory, 1973. Trans. Am. Geophys. Union 54(3):139.

Temperature structure of a mid-latitude dimictic lake during freezing, ice cover and thaw, 1970. Res. Rpt. 291, Cold Regions Res. Engr. Lab., 31 p. (with W. N. Parrott).

Feasibility study and preliminary design for a ceramic products industry, Bahia, Brazil, 1975. Project Colorado Feasibility Studies, Vol. 1, p. 5-14 (U.S. Agency for International Development).

AFFILIATIONS

American Planning Association
New Mexico Riparian Council, Board of Directors
Santa Fe Watershed Association, Technical Advisory Committee
Galisteo Watershed Association, Technical Advisory Committee
UNM Master of Water Resources, Program Board

TEACHING EXPERIENCE

University of New Mexico

Water Resources Summer Field Course (1991-96)
Watershed Management (1993-2006)
Watershed and Groundwater Modeling (1993)
Urban Planning Studio (1997)
Introduction to Planning (1999)
Introduction to Environmental Problems (1998-2006)
Watershed Evaluation and Restoration Methods (1997)
Advanced Planning Studio (1999-2006)
Land and Water Economics (1999)
Economics for Planners (1998)
Modeling the Environment (1999-2006)
Foundations of Natural Resources Planning (2001-2006)

Escuela Politecnica Nacional, Quito, Ecuador
Watershed Management (1995)
Modeling the Environment (1995)

New Mexico Highlands University
Watershed Hydrology (1996)

University of British Columbia
lake eutrophication seminar series (1972-74)

New Mexico Institute of Mining and Technology
thesis committees for three graduate students (1981-84)

Santa Fe Community College
short course on Santa Fe's water supply (1991)

Round River Conservation Studies
watershed health course, spring 1993, 1994, 1995, 1996)

Food and Agriculture Organization of the United Nations

watershed management short courses in Nepal, Ecuador, Morocco and Italy (1975-78; 1988)

US Agency for International Development
hydrology/watershed management seminars in Sri Lanka, Nepal and Ecuador (1982; 1988)

East-West Center, Environment and Policy Institute
watershed management seminars on Nepal and Ecuador (1979; 1980)

Wilderness Society
instream flow hydrology short course (1990)

Santa Fe Preparatory School
watershed ecology field course (1989; 1992)

PRESENTATION OF PAPERS AT PROFESSIONAL MEETINGS

Himalayan Policy Research Conference (2011 and 2012)
American Collegiate Schools of Planning
Ecological Society of America
American Planning Association (New Mexico Chapter)
International Association of Hydrological Sciences
American Water Resources Association
National Volunteer Monitoring Association
New Mexico Water Resources Association
Society of American Foresters
Food and Agriculture Organization of the United Nations
Society of International Limnology
The World Bank
US Agency for International Development
New Mexico Association of High School Science Teachers
Environmental Educational Association of New Mexico
National Ground Water Association
New Mexican Riparian Council
National Volunteer Monitoring Network
American Geophysical Union

The Geolocation.getCurrentPosition() method is used to get the current position of the device.Â maximumAge: integer (milliseconds) | infinity - maximum cached position age. timeout: integer (milliseconds) - amount of time before the error callback is invoked, if 0 it will never invoke. enableHighAccuracy: false | true. Current position of Celebrity Eclipse: Buenos Aires/Argentina. Time until departure 1 d 2 hrs 15 min to Montevideo/Uruguay (at 18:45 h local time). Current voyage: 15 days South America from Buenos Aires to San Antonio (21/12/19-05/01/20). Current weather in Buenos Aires (Dec 21, 2019). 23 Â°C 73 Â°F. 220Â°, 4,1 m/s (3 Beaufort).