

RESUME

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EDUCATION:

Ph.D. Colorado State University, 1978, Economics
M.S. Colorado State University, 1975, Economics
B.S. Colorado State University, 1970, Economics

PROFESSIONAL EXPERIENCE:

Professor, New Mexico State University, 1988 to present.
Associate Professor, New Mexico State University, 1983 to 1988.
Assistant Professor, New Mexico State University, 1978 to 1983.

SUMMARY OF RECENT WORK:

Dr. Ward is a Professor in the department of Agricultural Economics and Agricultural Business at New Mexico State University. His recent work has looked at conservation and economically efficient use of water resources with special emphasis on irrigated agriculture. It also includes policy planning, program formulation for water resources development, analysis of water resource systems, and institutional strengthening. Additional contributions to research and teaching lie in economic evaluation of policies for development and allocation of water, including development of methods to conduct economic appraisals; developing interdisciplinary approaches to analysis of water policy issues; concepts and methods of valuing environmental water services. Dr. Ward has conducted integrated hydrologic-agronomic-institutional-economic analyses to support sustainable water basin management and policy analysis. His recent work on integrated river basin analysis has been applied to the Rio Grande Basin of North America and to the Tigris-Euphrates, Jordan, Nilufer, Murray-Darling, Nile, and Amu Darya. He has published extensively on water resources, including more than 50 peer-reviewed journal articles in water resources systems analysis and policy, environmental management, and irrigation economics. He has authored 2 books on the economics of natural resources and the environment. He served as associate editor for *Water Resources Research* from 1991-2000 and the *Journal of Hydrology* from 2008-2011. Selected recent research papers are posted at <http://agecon.nmsu.edu/fward/water/>.

PEER REVIEWED ARTICLES SINCE 2002 (Excludes published abstracts and conference proceedings)

Ward, F.A. and M. Pulido-Velazquez (2012) , Economic Costs of Sustaining Water Supplies: Findings from the Rio Grande, *Water Resources Management*, 2012, forthcoming.

Ward, F. A. (2012), Cost Benefit and Water Resources Policy: A Survey, *Water Policy*, 14(2), 250-280.

Dagnino, M., and F. A. Ward (2012), Economics of Agricultural Water Conservation: Empirical Analysis and Policy Implications, *International Journal of Water Resources Development*, in press.

Ramirez, O. A., F. A. Ward, R. Al-Tabini, and R. Phillips (2011), Efficient Water Conservation in Agriculture for Growing Urban Water Demands in Jordan, *Water Policy*, 13(1), 1-24.

Gohar, A. A., and F. A. Ward (2011), Gains from Improved Irrigation Water Use Efficiency in Egypt, *International Journal of Water Resources Development*, 27(4), 735-758.

DeMouche, L., S. Landfair, and F. A. Ward (2011), Water Right Prices in the Rio Grande: Analysis and Policy Implications, *International Journal of Water Resources Development*, 27(2), 291-314.

Ward, F. A. (2010), Financing Irrigation Water Management and Infrastructure: A Review *International Journal of Water Resources Development*, 26, 321-349.

Torell, G. L., and F. A. Ward (2010), Improved Water Institutions for Food Security and Rural Livelihoods in Afghanistan's Balkh Basin, *International Journal of Water Resources Development*, 26(4), 613-637.

Gohar, A. A., and F. A. Ward (2010), Gains from Expanded Irrigation Water Trading in Egypt: An Integrated Basin Approach, *Ecological Economics*, 69, 2535-2548.

Ward, F. A., and M. Pulido-Velazquez (2009), Incentive Pricing and Cost Recovery at the Basin Scale, *Journal of Environmental Management*, 90, 293-313.

Ward, F. A. (2009), Economics in Integrated Water Management, *Environmental Modelling and Software*, 24, 948-958.

Gürlük, S., and F. A. Ward (2009), Integrated Basin Management: Water and Food Policy Options for Turkey, *Ecological Economics*, 68, 2666-2678.

Brinegar, H., and F. A. Ward (2009), Basin Impacts of Irrigation Water Conservation Policy, *Ecological Economics*, 69, 414-426.

Ward, F. A., and M. Pulido-Velazquez (2008), Efficiency, Equity, and Sustainability in a Water Quantity-Quality Optimization Model for the Rio Grande Basin, *Ecological Economics*.

Ward, F. A., and M. Pulido-Velazquez (2008), Water Conservation in Irrigation Can Increase Water Use, *Proceedings of the National Academy of Sciences of the U.S.A.*, 105(47), 18215-18220.

Ward, F. A., M. J. Kealy, G. Guy, and L. Manning (2008), Efficient Conservation Measures in Irrigated

Agriculture to Sustain Urban and Environmental Water Demands, *Review of Agricultural Economics*, 30(3), 425-434.

Ward, F. A., A. M. Michelsen, and L. DeMouche (2007), Barriers to Water Conservation in the Rio Grande Basin, *Journal of the American Water Resources Association*, 43, 237-253.

Ward, F. A. (2007), Decision Support for Water Policy: A Review of Economic Concepts and Tools, *Water Policy*, 9, 1-31.

Ward, F. A., A. M. Michelsen, and J. F. Booker (2006), Integrated Economic, Hydrological, and Institutional Analysis of Policy Responses to Mitigate Drought Impacts in the Rio Grande Basin, *Journal of Water Resources Planning and Management*, 488-502.

Ward, F. A., B. H. Hurd, T. Rahmani, and N. Gollehon (2006), Economic Impact of Federal Policy Responses to Drought in the Rio Grande Basin *Water Resources Research*, 4427-4440.

Ward, F. A., and J. F. Booker (2006), Economic impacts of instream flow protection for the Rio Grande silvery minnow in the Rio Grande basin, *Reviews in Fisheries Science*, 14(1-2), 187-202.

Hooper, B., and F. A. Ward (2006), River Basin Governance: Challenges and Opportunities for the Rio Grande Basin, *Western Economic Forum*, 4.

Booker, J. F., A. M. Michelsen, and F. A. Ward (2005), Economic impact of alternative policy responses to prolonged and severe drought in the Rio Grande Basin, *Water Resources Research*, 41(2), W02026.

Ward, F. A., and J. F. Booker (2003), Economic costs and benefits of instream flow protection for endangered species in an international basin, *Journal of the American Water Resources Association*, 39(2), 427-440.

Cowley, D. E., F. A. Ward, R. Deitner, and M. D. Hatch (2003), Optimizing the allocation of hatchery-produced fish among multiple stocking sites, *North American Journal of Fisheries Management*, 23(1), 216-229.

Ward, F. A., and A. M. Michelsen (2002), The Economic Value of Water in Agriculture: Concepts and Policy Applications, *Water Policy*, 4(5), 423-446.

BOOKS (Commercially Published)

Ward, F.A. 2006. *Environmental and Natural Resource Economics*. Prentice-Hall.

Ward, F.A. and D.J. Beal. 2000. *Valuing Nature with Travel Cost Models*. Edward Elgar (UK).

CONTRACTS AND GRANTS (since 2000)

Monitoring and Forecasting Climate, Water, and Land Use for Food Production in Iraq, US Geological Survey, 2011-13, \$230,000 per year (\$30,000 per year for NMSU); PI.

Monitoring and Forecasting Climate, Water, and Land Use for Food Production in Afghanistan, US Geological Survey, 2008-13, \$260,000 per year (\$30,000 per year for NMSU); PI.

“Afghanistan Water, Agriculture, and Technology Transfer,” Funded by USAID for \$20 million, 2008-11. NMSU is lead institution. Partner institutions are Colorado State University, University of Illinois, and Southern Illinois University; Co-PI.

“Development of a Database for New Mexico Water Right Prices,” Funded by the New Mexico Water Resources Research Institute, \$30,000, 2008-09.

“Economically Sustainable Agricultural Water Conservation Policies in the Rio Grande Basin,” Funded by U.S. Congress - Rio Grande Basin Initiative, for \$200,000, 2004-07, PI.

“Economics of Agricultural Water Conservation Programs in the Colorado Basin, Texas,” Funded by the City of San Antonio, TX, for \$190,000, 2006-2008, PI.

“Institutional Barriers to Water Conservation in the Rio Grande Basin,” Funded by U.S. Congress - Rio Grande Basin Initiative, for \$180,000, 2001-04, PI.

Effects of Water Supply Adjustments on Farm Returns and Resource Use: Findings from the Rio Grande Basin in Designing Federal Insurance Programs. Funded for \$25,000 by USDA, 2002-04. PI

“Economic Efficiency Analysis for New Mexico State Parks,” funded for \$75,000, 2002-04, by New Mexico State Parks Department, PI.

“Visitor Preferences for New Mexico State Parks,” funded for \$75,000, 2000-02; New Mexico State Parks Department. PI.

“Development of a Procedure for Allocating Hatchery-Produced Rainbow Trout,” Funded for \$57,000, 1998-2000, New Mexico Department of Game and Fish. PI.

“Institutional Adjustments for Coping with Prolonged and Severe Drought in the Rio Grande Basin,” US Geological Survey, Funded for \$790,000, 1996-2000 (with Colorado State University and Texas A&M University). PI.

ASSOCIATE EDITOR FOR PEER-REFEREED JOURNALS:

Journal of Hydrology, 2008-2011

Water Resources Research, 1991-2000.

North American Journal of Fisheries Management, 1997-98.

Transactions for the American Fisheries Society, 1997-98.