

FRANK A. WARD
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RECENT EXPERIENCE

Dr. Ward is a Professor in the Department of Agricultural Economics and Agricultural Business at New Mexico State University. His recent work has focused on promoting conservation and economically efficient use of water in 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 proposed policies for development and allocation of water supplies. These contributions include development of methods to conduct evaluations; formulation of interdisciplinary approaches to analysis of water policy issues; concepts and methods of valuing environmental water services. Dr. Ward has conducted integrated hydrologic-agronomic-institutional-legal-economic analyses to support sustainable river basin management. His recent work on integrated basin analysis has been applied to the Rio Grande Basin of North America and to river basins in Afghanistan, Egypt, Jordan, and Turkey. Dr. Ward has published extensively on water resources, including more than 50 peer-reviewed journal articles in water resources systems analysis and policy, environmental management and economics, 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 is currently an associate editor for the *Journal of Hydrology*.

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.

TEACHING AREAS:

Environmental and Natural Resource Economics (undergraduate)
Water Resource Economics (undergraduate)

Microeconomic Theory (graduate)

PAPERS IN PEER REFEREED JOURNALS (selected recent)

- Ward, F.A. and M. Pulido-Velazquez, "Water Conservation in Irrigation Can Increase Water Use," *Proc. of the National Academy of Sciences USA (PNAS)*, November 24, 2008.
- Ward, F.A. and M. Pulido-Velazquez, "Pricing and Cost Recovery at the Basin Scale," *Journal of Environmental Management*, January, 2009.
- 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*. Fall, 2008.
- Ward, F.A. and M. Pulido-Velazquez, "Efficiency, Equity, and Sustainability in a Water Quantity-Quality Optimization Model for the Rio Grande Basin," *Ecological Economics*, May 2008.
- 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 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. , 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.
- 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* 42 (March):doi: 10.1029WR00427.
- 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* (November).
- Hooper, B., and F.A. Ward. 2006. River Basin Governance: Challenges and Opportunities for the Rio Grande Basin. *Western Economic Forum* Vol. 4 (Spring).
- Booker, J.F., A.M. Michelsen, and F.A. Ward. 2005. Economic Impacts of Alternative Policy Responses to Prolonged and Severe Drought in the Rio Grande Basin. *Water Resources Research* 41 (March).
- 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 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.
- Ward, F.A. , and A.M. Michelsen. 2002. Economic Value of Water in Agriculture: Concepts and Policy Applications. *Water Policy* 4 (5):423-446.

BOOKS

- 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 (selected recent)

“Afghanistan Water, Agriculture, and Technology Transfer Program,” Funded by U.S. Agency for International Development for \$20 million, 2008-2010 (Co PI).

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

“Economics of Agricultural Water Conservation Programs in the Colorado River Basin, Texas,” funded by Lower Colorado River Authority, TX, for \$72,000, 2005-2006; \$78,000, 2006-07; \$35,000, 2007-08 (PI).

“Institutional Barriers to Water Conservation in the Rio Grande Basin,” Funded by U.S. Congress 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 U.S.D.A, 2002-04. PI

“Economic Efficiency Analysis for New Mexico State Parks,” funded for \$75,000, 2002-04, sponsored 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, 1996-98 (with Colorado State University and Texas A&M University). PI.