

## EDWARD MACMULLAN

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M.S. Agricultural Economics and International Agricultural  
Development, University of California at Davis  
B.S. Soil Science, Oregon State University

Edward MacMullan has been a senior economist with ECONorthwest since 1990. His areas of experience include litigation support for antitrust, intellectual property, right-of-way, and healthcare topics, and assessing the economic effects of public policies that affect natural-resource management. Before joining ECONorthwest he studied as a Fulbright Scholar at the Energy Studies Unit of the University of Strathclyde where he assessed the socioeconomic impacts of energy development projects in the highlands and islands of Scotland.

His recent consulting and litigation-support work includes calculating restoration costs at mining Superfund sites, assessing alleged anti-trust behavior in markets for hospital and health-care services, reviewing the literature on the economics of Low-Impact Development, conducting an economic benefit-cost analysis of greenroofs, assessing the economic effects of violations of trade secrets on manufacturing firms; studying the impacts of approving a hospital's Certificate-of-Need application on market concentration; evaluating municipal right-of-way fees challenged by telecommunications firms; and studying the economic factors associated with avoiding and complying with regional water quality regulations and county permitting processes.

### **Right-of-Way Studies**

- Conducted a valuation of a right-of-way occupied by a discharge pipeline from the Georgia Pacific facility in Toledo for the City of Newport
- Submitted an affidavit in support of the fee that the City charges to access the municipal right-of-way
- Analyzed the economic issues of telecommunications firms' challenge, under the Telecommunications Act of 1996, regarding Portland's franchise-fee agreements for right-of-way use, City of Portland
- Evaluated the fees that a city in California charged a telecommunications company to access the city-owned right-of-way, private client
- Reviewed economic issues specific to the Telecommunications Act of 1996 regarding the fees charged to telecommunications firms for right-of-way, City of Huntsville, Alabama
- Evaluated right-of-way fees that were challenged by a telecommunications company under the Telecommunications Act of 1996, City of Tucson, Arizona
- Provided economic analysis regarding the economic value of municipal rights-of-way and use of the rights-of-way by a telecommunications company, City of Portland, Oregon
- Analyzed the economic damages from trespass outside a right-of-way in a New Mexico Pueblo during the construction of a petroleum production pipeline, Kelly, Haglund, Garnsey & Kahn

## **Economic and Socioeconomic Impact Analysis**

- Reviewed the market for workers' compensation insurance in Oregon.
- Assessed the financial implications of switching from franchise fees to a gross-revenue tax on telecom services provided in the municipalities.
- Conducted an economic benefit-cost comparison of a conventional roof and a greenroof on a commercial building, for the City of Portland.
- Assessed the impacts of greenstreets in the Puget Sound on property values for adjacent properties.
- Analyzed the operations and financial performance of a timber company's cogeneration facilities and determined the profits earned by the company as a result of unfair competition stemming from violations of air-quality regulations
- Described the economic aspects of zoning incentives to protect natural resources, City of Corvallis, Oregon
- Conducted a market analysis for industrial products in regional and world markets, private client
- Evaluated the socioeconomic impacts of hospitals on rural economies, Mercy Medical Center
- Conducted a cost-benefit analysis of energy efficiency and renewable energy resources, Alaska Coalition
- Calculated the economic impacts of restricting snowmobiles from several national parks, The Wilderness Society
- Analyzed the potential economic impacts of designating a national monument on land currently managed by the Siskiyou National Forest and Bureau of Land Management, Siskiyou Educational Project
- Reviewed an economic impact assessment of a submarine cable and terminus at San Luis Obispo, California, North State Resources
- Assessed the socioeconomic impacts of the proposed Pelican Butte ski area, Winema National Forest
- Evaluated the economic consequences of new restrictions on Alaska's fishing industry, Earth Justice
- Analyzed the Interior Columbia River Basin Ecosystem Management Project to ensure it internalized the externalities of resource-extraction industries on federal lands in eastern Washington, eastern Oregon, and Idaho, W. Alton Jones Foundation

## **Microeconomic Analysis**

- For attorneys representing plaintiffs in a class action lawsuit, performed an analysis of the economic aspects of alleged violations by mortgage brokers of consumer truth-in-lending practices.
- For attorneys representing plaintiffs in a class action lawsuit, assessed the economic aspects of alleged inflated home appraisals.

- Determined the appropriate sample size required to confirm key characteristics about a phone pole population.
- Conducted an economic evaluation of a property at issue in a claim against a state.
- Provided economic analysis regarding litigation over a city's method of collecting user fees for stormwater services.
- Evaluated the financial feasibility of a proposed destination resort in Central Oregon on the Gould and Cline Buttes
- Calculated the plaintiff's lost profits and reasonable royalty in a patent infringement case, Schwabe, Williamson & Wyatt
- Studied the factors that determine the market price for grass seed grown in Oregon, private client
- Determined a royalty rate as compensation for economic damages in a breach of contract lawsuit, Schwabe, Williamson & Wyatt
- Provided economic analysis of a patent infringement claim regarding suspension systems for bicycles, Schwabe, Williamson & Wyatt
- Analyzed the national market for cookware items and the financial performance of firms that participate in the market, Schwabe, Williamson & Wyatt
- Evaluated the market for professional manuals used by attorneys and legal assistants in Oregon, private client
- Calculated the economic impacts associated with a proposed petroleum-products pipeline across Texas, George & Donaldson
- Assessed the economic effects associated with a proposed petroleum-products pipeline in Washington state, Schwabe, Williamson & Wyatt
- Determined the economic consequences of a breach of contract associated with a computer software program, Moore & Orr
- Calculated uncompensated expenses and lost profits associated with a contract dispute between a manufacturer of video lottery terminals and the Oregon State Lottery, Davis Wright Tremaine
- Analyzed lost profits from various patent infringement cases, Kolisch, Hartwell, Dickinson, McCormack, & Heuser

#### **Antitrust Economics**

- Assessed potential anti-trust behavior in the market for acute care and tertiary medical services.
- Assessed economic aspects of alleged patent infringement of computer toolbar technology.
- For the plaintiffs, assessed economic damages to patent holders of alleged patent infringement in the power equipment market
- Addressed the economic issues of class certification and damage calculations related to alleged antitrust violations in the market for residential lots

- Studied the market for MRI services in the Boise area and assessed alleged anticompetitive behavior in this market
- Analyzed claims of misappropriation of trade secrets, intentional interference with economic relations, and breach of contract, Schwabe, Williamson & Wyatt
- Analyzed the market for diagnostic-imaging services in the Portland metropolitan area, Haglund, Kirtley, Kelley & Horngren
- Calculated the economic impacts of alleged price fixing in the market for agricultural commodities, Tonkon, Torp, Galen, Marmaduke & Booth
- Provided economic consultation in preparation for litigation regarding workers' compensation insurance, private client
- Assessed the economic consequences of price discrimination and other antitrust behavior in the wholesale market for petroleum products in Cordova, Alaska, Condon Shoup

### **Economics of Health Care**

- Evaluated how the approval of a hospital's Certificate-of-Need application would influence market concentration, Thorp Purdy Jewett Urness & Wilkinson
- Studied economic aspects of defining a hospital's service area as it applied to Oregon's Certificate-of-Need requirement for new or relocated hospitals, Thorp Purdy Jewett Urness & Wilkinson
- Identified the relevant markets for hospital services and evaluated the extent to which hospitals exercised market power over insurance firms and competing hospitals, Schwabe, Williamson & Wyatt
- Studied the market for home intravenous care in preparation for a possible antitrust lawsuit, Watkinson Laird Rubenstein Lashway & Baldwin
- Provided economic consultation on the market for healthcare services in Southern Oregon, Schwabe, Williamson & Wyatt
- Evaluated damage claims, researched prices for hospital services, and provided advice on the distinction between fixed and variable costs, Schwabe, Williamson & Wyatt
- Calculated lifetime medical expenses and lost wages as part of various personal injury and wrongful death lawsuits, private clients
- Assessed the economic impacts of a breach of contract associated with a medical diagnostic technique, Stoel Rives
- Quantified the net present value of lifetime medical services associated with a medical malpractice suit, private client
- Evaluated the growth and discount rates of life care plans, Calkins & Calkins

### **Analysis of Economic Damages to Natural Resources**

- Assessed a construction company's ability to pay civil penalties associated with alleged violations of air-quality regulations.
- Described the economic value of water resources in California.
- Assessed the economic impacts on an oyster grower of the oil spilled from the grounding of the *New Carissa*, Davis Wright Tremaine

- Conducted an economic analysis of the damages stemming from the Wheeler Point fire in central Oregon, Kafoury & McDougal
- Calculated the economic impacts of the Exxon *Valdez* oil spill on Alaskan salmon fishermen, municipal governments, area businesses, and cannery workers, Stoll, Stoll, Berne, Lokting, Shlachter
- Evaluated damage claims by area businesses and property owners affected by a pesticide spill in the Sacramento River, Lieff, Cabraser & Heimann
- Assessed the economic consequences of a chemical spill on the municipality of Superior, Wisconsin, private client
- Determined the economic impacts on area businesses of an oil spill off Huntington Beach, California, Law Offices of Gretchen Nelson
- Evaluated the demand for recreational fishing in the Flathead Lake area of Montana, Montana Attorney General's Office

#### **Public Policy and Government Regulations**

- Calculated the economic damages to a seafood-related business as a result of a license dispute with the State of Washington, private client
- Studied the economic performance of the ski industry in the Lake Tahoe area, the market conditions that affect this sector of the region's economy, and the economic factors associated with avoiding and complying with regional water quality regulations and county permitting processes, California Attorney General's Office
- Provided economic analysis regarding a contract dispute between the City of Eugene, Oregon and a tenant leasing city-owned property, Harrang Long
- Calculated tobacco company profits associated with the consumption of cigarettes by underage smokers, Attorneys General of Washington, Arizona, and Connecticut

#### **Labor and Welfare Economics**

- Calculated the economic loss resulting from the employment termination of a 56-year-old male, private client
- Quantified the economic loss to a regional bank associated with breach of contract by former employees, Arnold Gallagher Saydack Percell
- Provided economic analysis for wage arbitration with municipal employees, City of Coos Bay, Oregon

#### **Endangered Fish and Wildlife**

- Described the economic effects of designating critical habitat for two endangered species of fish in the Klamath Basin of Oregon and California, U.S. Fish and Wildlife Service
- Critiqued a draft report on the potential economic consequences of designating critical habitat for the Steller's and spectacled eiders, private client
- Evaluated the potential economic impacts of restricting Alaska's groundfishery in critical habitat for the endangered Steller sea lion, private client
- Analyzed the economic consequences of designating critical habitat in California, Oregon, and Washington for the marbled murrelet, U.S. Fish and Wildlife Service

- Assessed the economic effects of an injunction to protect salmon habitat on the Wallowa-Whitman and Umatilla National Forests, private client

### **Forest Resources**

- Prepared a critique of the U.S. Forest Service's estimated demand for timber from the Tongass National Forest, Alaska Rainforest Campaign
- Analyzed the economic consequences on southeast Alaska's economy of reduced timber harvest in the Tongass National Forest, Sierra Club Legal Defense Fund and the Alaska Rainforest Campaign
- Studied the relationships between forested ecosystems and regional economies in Oregon, Alaska, North Carolina, New Hampshire, New Mexico, and Wisconsin, National Science Foundation
- Evaluated the opportunities and threats facing timber-dependent communities affected by logging restrictions on federal land in Washington state, Washington Community Development Department

### **Water Resources**

- Developed an economic model to determine the economic benefits of riparian-restoration projects for Clean Water Services.
- Co-instructed a seminar at Portland State, "USP 505 Evaluating Low Impact Development (LID)," that focuses in part on the economic costs and benefits of managing stormwater by LID and conventional controls
- Calculated the value of ecosystem services that could be degraded by stormwater runoff from expanded urban and commercial developments in the East Butte area of Portland for the City of Portland
- Assisted the City of Portland staff in developing an approach to study the economic benefits and costs of alternative stormwater-management techniques in support of the City's Watershed Plan
- Conducted a review of the literature on the economics of Low Impact Development for Waterkeeper Alliance
- Analyzed the range of economic costs and benefits of projects and policy options affecting water quality and quantity in a Portland, Oregon watershed that drains to the Willamette River, City of Portland
- Described the economic tradeoffs of allowing, limiting, or prohibiting development in significant riparian areas and wildlife habitat in the Portland metropolitan area, Metro
- Developed a handbook on the economic factors associated with relicensing a hydroelectric dam, Hydropower Reform Coalition
- Developed an economic model to determine the net economic benefits of riparian-restoration projects in Oregon, Clean Water Services
- Reviewed the U.S. Army Corps of Engineers' *Final Environmental Impact Statement* on deepening the shipping channel in the Columbia and Willamette Rivers, private client

- Studied the economic issues associated with water management services and the economic implications associated with the federal Endangered Species Act and Clean Water Act, Clean Water Services
- Evaluated the economic impacts of bypassing four federal dams on the Lower Snake River and developed a plan to mitigate the negative consequences of the bypass, Trout Unlimited and Earthjustice
- Determined the direct and indirect economic impacts of economic development projects in the Columbia River Gorge funded by the National Scenic Area Act, Columbia River Gorge Commission
- Evaluated the potential impacts of a proposed gold mine in Montana's Blackfoot River watershed on employment and quality of life, Blackfoot Legacy
- Assessed the economic consequences of modifying hydroelectric dams to protect and enhance riparian habitat, private client
- Prepared a response to the Draft Environmental Impact Statement for the Columbia River System Operation Review, Confederated Tribes of the Umatilla Indian Reservation
- Assessed the economic consequences of alternative strategies for managing the Columbia River and its tributaries, Northwest Water Law and Policy Project

### **Recent Presentations**

- "Low-Impact Development Economics." October 22, 2008. NEMO University-6.
- "The Economics of Low-Impact Development." NY/NJ Baykeeper 2008 Low Impact Development Conference. January 23, 2008. New York City, New York.
- "Assessing Low-Impact Development Using a Benefit-Cost Approach." California Stormwater Quality Association (CASQA) 3<sup>rd</sup> Annual Stormwater Conference. September 11, 2007. Costa Mesa, California.
- "Valuing Ecosystem Services in Portland, Oregon: A Case Study." Emerging Issues Along Urban/Rural Interfaces II Conference. April 9-12, 2007. Atlanta, Georgia.
- "Assessing Low Impact Developments Using a Benefit-Cost Approach." 2<sup>nd</sup> National Low Impact Development Conference. March 12-14, 2007. Wilmington, North Carolina.

### **Publications**

"Low-Impact Stormwater Controls Can Increase the Bottom Line." *Home Building News*. August 2008.

*The Economics of Low-Impact Development: A Literature Review*. Waterkeeper Alliance. With S. Reich. November 2007.

"Cities Challenged in Their Economic Interpretation of the Telecommunications Act of 1996." *Municipal Lawyer*. With E. Whitelaw and A. Pearce. September/October 2006.

"A Framework for Estimating the Costs and Benefits of Dam Removal." *BioScience* 52 (8). With E. Whitelaw. August 2002.

*The Economic Benefits of Renewable Energy and Cost-Effective Energy Efficiency*. Alaska Coalition. With E. Niemi and A. Fifield. September 2001.

- An Economic Strategy for the Lower Snake River.* Trout Unlimited. With E. Whitelaw. November 1999.
- The Potential Economic Consequences of Designating Critical Habitat for the Marbled Murrelet: Final Report.* U.S. Fish and Wildlife Service, Portland Field Office. With E. Niemi, E. Whitelaw, and D. Taylor. 1996.
- The Potential Economic Consequences of Critical Habitat Designation for the Lost River Sucker and the Shortnose Sucker: Final Report.* U.S. Fish and Wildlife Service, Portland Field Office. With E. Niemi and E. Whitelaw. August 1995.
- Economic Consequences of Management Strategies for the Columbia and Snake Rivers.* Confederated Tribes of the Umatilla Indian Reservation. With E. Niemi and E. Whitelaw. July 1995.
- Economic Consequences of an Injunction to Protect Salmon Habitat on the Wallowa-Whitman and Umatilla National Forests: Preliminary Report.* With E. Niemi and E. Whitelaw. 1995.
- The Columbia River and the Economy of the Pacific Northwest.* With E. Niemi, E. Whitelaw, and A. Gorr. May 1995.
- The Potential Economic Consequences of a Reduction in Timber Supply from the Tongass National Forest.* With E. Whitelaw. December 1994.