

### **Economic Costs and Benefits of Watershed Restoration**

For West Coast Watershed, ECO performed an economic evaluation of watershed-restoration projects in northern California, focusing on the projects' impacts on coastal and estuarine resources.

### **Analysis of Water Supply**

For California coastal communities, ECO staff helped to develop and customize a water supply tool for California communities. The tool includes consideration of water re-use and desalination options for water supply increases and reserves. The spreadsheet-based tool supports characterization of costs and benefits, both qualitative and quantitative, with input disaggregated by stakeholder group. In addition to financial considerations, non-market values are incorporated, including environmental, recreational, human health, and cultural costs and benefits.

### **Water Quality Crediting and Trading**

For communities surrounding Lake Tahoe, ECO staff are playing a lead role in the feasibility assessment and design of a water quality crediting and trading system for Lake Tahoe in California and Nevada. The project is identifying and developing mechanisms to provide the most water quality improvements possible with available funding. The program design considers the complex political network (two states), high environmental quality of the water resource, existing resource uses, and funding patterns to tailor the project to regional constraints and opportunities.

### **Impacts of Power Plant Cooling Operations**

For Earthjustice and the Coastal Alliance on Plant Expansion, ECO staff conducted economic analyses to assess the costs and benefits of various technological and ecological approaches to mitigating estuarine and marine impacts of power plant cooling operations.

### **Review of Economic Analysis of Critical Habitat Protection for the Tidewater Goby**

For a private client, ECO described the economic consequences of a proposal to protect critical habitat for the Tidewater Goby, a fish species that inhabits coastal lagoons and tidal marshes in California. ECO utilized a method previously developed for the U.S. Fish and Wildlife Service for assessing the economic effects of designating critical habitat for threatened or endangered species. The method incorporated a multi-sector, dynamic approach that emphasized the analysis of effects on non-habitat-degrading activities, quality of life, and cost of living. For the U.S. Fish & Wildlife Service, ECONorthwest described the potential economic consequences of a proposal to designate critical habitat in the Middle Rio Grande Valley of New Mexico for an endangered species, the Rio Grande silvery minnow.

### **Economic Benefits of Restoring Streamflows in the Eel River**

For the Center for Environmental Economic Development, ECO assisted with an analysis comparing the positive and negative economic consequences of restoring natural streamflows in the Eel River, California, rather than diverting the water to the Russian River. ECO analyzed these economic values in the context of salmon-population restoration and its impact on the well-being of humans.

### **Economic Assessment for Class Complaint**

For the Plaintiffs' Litigation Committee, ECO provided expert testimony on class certification for and economic impacts on area businesses and property owners affected by a pesticide spill in the Sacramento River.

### **Economic Impacts of an Oil Spill**

For attorneys representing private plaintiffs, ECO calculated the economic consequences of an oil spill off Huntington Beach, California. ECO studied the impacts of the spill on area businesses, including tourism and commercial fishing, and property owners.

### **Economic Analysis of Agenda to Restore Puget Sound**

For the Puget Sound Partnership, ECO conducted an economic analysis that focused on the costs and benefits of actions that the Partnership may undertake to restore the health of Puget Sound. The Partnership used the study as a tool to guide its funding strategies and identify priorities to frame and target the financing analysis.

### **Economic Analysis of the Benefits and Costs of Cleanup Alternatives for a Superfund Site**

For a state agency, ECO reviewed an analysis of the long-term benefits, costs, and risks of alternative cleanup remedies for a Superfund site located in a marine environment near a major metropolitan area. Specifically, ECO found that the analysis failed to fully account for the potential economic benefits associated with the long-term reduction of contaminants in groundwater, soil, and surface water.

### **Puget Sound Mining**

For a confidential private client, ECO examined the economic issues associated with a proposal to mine sand and gravel and construct a new pier and barge facility in a protected marine reserve on Vashon-Maury Islands in Puget Sound.

### **Critique of a Regulatory Assessment**

For the People for Puget Sound, ECO critically reviewed regulatory assessment of using boats to reduce the risk of oil spills in the Puget Sound Area, prepared by the U.S. Coast Guard.

### **Analysis of Proposed Appropriation for Coastal Dredging**

ECONorthwest determined the justification for and benefits from maintenance dredging, and developed a proposal to present to the Oregon Congressional Delegation.

### **Alternative Plans for Water-Resource Allocation**

For the Grand Canyon Trust, ECO assisted with an evaluation of the importance of the Virgin River in Utah to the economy of the surrounding region. ECO evaluated the economic consequences of alternative river-management strategies.

### **Socioeconomic Impacts of Ecological Riparian Restoration**

For the U.S. Environmental Protection Agency, ECO co-authored a conceptual manual for assessing the socioeconomic consequences of ecological restoration projects for rivers and wetlands. The manual compared the impacts realized from wetland management to the impacts from dam construction. The authors then employed the manual in a case study of the Vermillion River in South Dakota.

### **Economic Damages to a Native American Tribe**

For the Tulalip Tribe of Washington, ECO determined the damages to salmon spawning grounds incurred by a Native American tribe after the building of a dam on the Sultan River.

### **Economic and Environmental Impacts of the Exxon Valdez Oil Spill**

For the Combined Plaintiffs Damages Committee, representing the plaintiffs, the seven oiled cities on Prince William Sound, Alaska, ECO documented and described the economic and environmental impacts of the *Exxon Valdez* oil spill on the affected communities, fishermen and fish processors. ECO developed a framework for monitoring community effects of the spill and recommended ways to contend with problems and plan for future oil development. ECO identified appropriate areas for policy changes, and suggested where and how to apply community monetary or administrative resources to respond to the identified impacts. ECO also formulated legislation to insure protection of key resources and their values into the future.

### **Economic Impacts of the Exxon Valdez Spill**

For the private plaintiffs on the *Exxon Valdez* spill, ECO helped design and coordinate the technical analyses on damages for the various classes of plaintiffs (e.g., fishermen, landowners, businesses, and municipalities).

### **Economic Impacts of an Oil Spill**

For the Oregon Department of Justice, ECO calculated the damages to the State of Oregon associated with the permanent presence of wreckage from a ship, the *New Carissa*, which ran aground on the Oregon Coast. ECO calculated the damages stemming from the loss of existence and legacy values of the Coast and from the increased risk of death and injury to the public posed by the wreckage.

### **Economic Damages from an Oil Spill**

For the plaintiffs, ECO analyzed the economic damages incurred by citizens of the State of Yap, in the Federated States of Micronesia, from a ship grounding and oil spill. In 2002, the vessel *M/V Kyowa Violet* grounded on a coral reef and spilled fuel oil into a mangrove-reef ecosystem, contaminating the water, soil, shoreline, and mangroves. As a result, fishing and other activities were closed in the area. ECO evaluated the economic damages, including the losses of the numerous beneficial goods and services from the injured natural resources.

### **Damages from an Oil Spill**

For a private client, ECO determined the economic damages to oyster growers sustained from oil spilled from a grounded ship.

### **Economic Impacts of a Chemical Spill in Lake Superior**

For private plaintiffs, ECO assessed the economic impacts of a chemical spill near Superior, Wisconsin, which prompted the largest evacuation in U.S. history.

### **Potential Economic Costs of an Oil Spill at the Mouth of the Columbia River**

For a private party, ECO calculated the costs of a potential fuel spill at the mouth of the Columbia River. Potential costs included direct costs (such as ship damage, lost fuel, human injury, death, and operations to clean property affected by the spill) and indirect costs (such as damage to species, habitat, and industries dependent on river resources, including tourism, recreation, and river transportation).

### **Environmental Protection and Small Business Development in Louisiana**

For the Ford Foundation and Louisiana State University, ECO analyzed Louisiana's economy to help local stakeholders implement a strategy for moving the state towards conservation-based development.

### **Moving Toward Sustainability: A Strategy for Louisiana**

For the Ford Foundation, ECO developed and helped implement a strategy for moving Louisiana toward conservation-based development. ECO identified the potential costs and benefits associated with adopting practices and policies that can resolve pressing environmental problems and lead to a more sustainable economy in the state. ECO demonstrated that environmentally sustainable business and development practices can be good for businesses, as well as the environment.

### **Analysis of Alternatives**

For a private client, ECO analyzed the potential economic consequences of alternatives regarding state and federal management of fishery resources in the Gulf of Alaska.

### **Economics of Competing Water Demands**

For two regional foundations, and a collaborative group with divergent interests, ECO described the competing demands for water and related resources on the Upper Klamath River Basin and outlined win-win alternatives for coping with changes in the competing demands. ECO redefined the traditional framework that views local economies and ecosystem management as adversaries and constructed a new model in which the two contribute together to the well-being of local populations.

### **Economic Analysis of Seafood Industry Infrastructure Improvements**

For a private client, ECO conducted an economic analysis of proposed infrastructure improvements to enhance the seafood industry in Franklin County, Florida, which was impacted by hurricanes and is threatened by coastal development. ECO analyzed the benefits and impacts of a proposal to build a Seafood Industrial Park and Public Landing Parks.

### **Economic Consequences of Salmon Conservation**

ECO authored a letter outlining six analytical principles for assessing the economic consequences of salmon conservation and circulated it among professional colleagues. More than 75 co-signers endorsed the letter, which was sent to the governors of the four Pacific states and the premier of British Columbia. The letter particularly emphasized the need to consider the benefits of salmon conservation as well as the costs, and the positive as well as the negative impacts on jobs and incomes.

### **Economic Impacts of Recreational and Commercial Fishing**

For the Oregon Rivers Council, ECO integrated the results from past studies into a report that analyzed the economic importance of the salmonid fisheries in the Pacific Northwest and the possible economic consequences of a collapse of these fisheries, should riverine ecosystems not be protected.

### **Impacts of Habitat Protection to Groundfishery in Alaska**

For Earthjustice, ECO estimated the potential economic consequences of restricting Alaska's Groundfishery in the area of critical habitat for the endangered Stellar sea lions. ECO reviewed programs aimed at mitigating the impacts of fish-harvest loss, including aiding workers dislocated from the fishery industry.

### **Socioeconomic Impacts of a Water-Management Program**

For Washington State, Department of Ecology, ECO described the current conditions in the Columbia Basin and analyzed the socioeconomic impacts associated with different components of the Columbia River Water Management Program. The Program seeks to balance competing demands, such as agriculture and endangered aquatic species. ECO's analysis was included in a Draft Programmatic Environmental Impact Statement.

### **Assessment of Programs to Protect Oregon Coast**

For the Oregon Department of Land Conservation and Development, ECO described and evaluated all existing local, state, and federal programs for protecting and managing access to Oregon's coastal shorefront. The evaluation focused on each program's ability to meet the demand for public access and to provide resource protection within constraints imposed by the demand and funding for such facilities.

### **Economic Consequences of Hatchery-Management Program**

For the Columbia Basin Fish & Wildlife Authority, ECO examined the economic elements of the environment that might be affected by the alternative hatchery-management programs for the Columbia River Basin. ECO's analysis was incorporated into a Draft Programmatic Environmental Impact Statement.

### **Impacts of Fishery Regulations**

For a confidential private client, ECO evaluated the economic consequences of new restrictions on Alaska's fishing industry.

### **Economic Consequences of the American Fisheries Act**

For the American Fisheries Act Coalition, ECO analyzed the economic effects of the proposed American Fisheries Act legislation to exclude some foreign-owned factory trawlers from the Bering sea on the Washington state economy. ECO estimated market values associated with the effects of the proposed changes on fish stock, employment, income, and revenue. ECO also developed an input-output model to trace the direct, indirect, and induced effects of the legislation.

### **Techniques to Manage Growth and its Environmental Impacts**

For Clatsop County and the Oregon Department of Land Conservation and Development, ECO assisted in the identification of efficient development scenarios and implementation techniques to manage increased growth while mitigating environmental impacts to aquifers, lakes, streams and wetlands. As part of the project, ECO described how transferable development rights could be used to address land-use and water issues.