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Nashua River, Massachusetts and New Hampshire. The Squannacook-Nissitissit sub-basin of the Nashua River is 132 square miles and spans four counties in both Massachusetts and New Hampshire. Increasing development pressures and the resulting decline of open space threaten the sub-basin's high quality water supply. The Nashua River Watershed Association (NRWA) will receive funds to implement a number of projects that, taken together, will protect valuable drinking water resources and surface water quality, in an area where groundwater and surface water are closely linked. With land stewardship being the goal, NRWA will work closely with property owners, foresters, resource developers, and the public to instill conservation and restoration approaches into land management plans. Specifically, NRWA will use the money from the Targeted Watershed grant toward a land stewardship and protection project; a forestry cooperative and training project; several conservation, restoration and demonstrations projects; a Smart Growth policy project; a public survey and messaging project, and a water quality sampling project.

Ipswich River, Massachusetts. Located in northeastern Massachusetts, the Ipswich River covers 155 square miles and all or part of 22 communities. Designated by American Rivers as the third most endangered river in the nation, the Ipswich is impaired by extremely low flows and extended periods of no flow along much of the upper watershed threatening groundwater and drinking water supplies. The nomination proposed by the The Massachusetts Department of Conservation and Recreation supports state and EPA priority work on restoring the headwaters region of the river. This nomination implements and quantifies the benefits of innovative low-impact development (LID) techniques for decreasing run-off and nonpoint source pollution while increasing infiltration to ground water; and implements and quantifies water savings of innovative conservation techniques. This nomination will use the extensive modeling capabilities already developed for the watershed to simulate and calculate the potential restoration benefits of these practices extrapolated over larger areas of the watershed. This will establish the framework for a standardized water trading mechanism for those who use water from the basin.

Passaic River, New Jersey. The Passaic River is an area of significant industrial activity and is one of the most impacted rivers in the state of New Jersey. Approximately two million people live within the 669 square miles of this watershed. Entitled "Development, Implementation, and Evaluation of a Water Quality Trading Program for the Non-tidal Passaic River Watershed," the NJ Department of Environmental Protection, along with a coalition of municipal wastewater treatment plants and two universities, will use funds from the Targeted Watershed grant to create a trading program focusing on both point-to-point and point-to-non-point source trading. It focuses on creating practical, effective, and economically sound results while providing valuable information that may serve as a model for other water quality trading initiatives. This project will be used to meet a phosphorus-based TMDL for the river.



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Schuylkill River, Pennsylvania. At 130-miles in length with over 180 tributaries, the Schuylkill drains an area of 2,000 square miles of southeastern Pennsylvania and is the largest tributary to the Delaware River Estuary. Industrialization and mining in the last two centuries has left the Schuylkill with problems of storm water runoff, agricultural pollution, active and abandoned mine drainages, and sewage overflows. The Schuylkill Action Network, a cooperative of federal, state, and municipal entities, was awarded a Targeted Watershed grant to: 1) demonstrate the use of water treatment residuals in agricultural riparian buffers, 2) test the use of a pharmaceutical process to remove phosphorus from effluent, and 3) test the use of reclaimed acid mine drainage discharge as water for thermodynamic power generation.

Cape Fear, North Carolina. The Cape Fear River Basin—the state’s largest—represents 23% of the state’s land area and supports 27% of the state’s population. The Cape Fear River Association’s proposal focuses on watershed management strategies in an effort to balance the competing goals of growth and the environment. Since the majority of the impaired waters in the Cape Fear River Basin occur in areas that are heavily urbanized, the basin represents an ideal setting for development of an incentive-based TMDL implementation program with a strong urban stormwater and development management component. This project will launch a water quality credit trading pilot in the Jordan Lake watershed of the upper basin, establish and test a technical and regulatory framework there, then share the products, process, and lessons so that similar approaches which include trading can be transported and applied down river to the other two major sub-basins.

Sangamon River, Illinois. The Upper Sangamon River watershed is located in Central Illinois and exhibits water quality problems typical of agricultural watersheds in the upper Midwest. In 1922, Lake Decatur, a prominent feature of the watershed, was formed to provide water for domestic use and processing of agricultural products. The Upper Sangamon River Watershed Committee, co-chaired by a farmer and a Decatur City Council member, will devote Targeted Watershed funds to three interrelated projects to improve water quality locally, regionally, and in the Gulf of Mexico by reducing unnecessary nutrient discharges from agricultural areas. One project will use GIS-based software and precision agriculture technology in on-farm trials to optimize nitrogen management. A second study will demonstrate drainage water management and subsurface bioreactors to reduce movement of nitrates through drainage tiles to surface waters. The third study will address economic and environmental benefits from soil testing and variable rate technology to improve phosphorus management.



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Kalamazoo River, Michigan. The Kalamazoo River in Michigan was nominated by the Match-E-Be-Nash-She-Wish band of Pottawatomi Indians. Situated in southwest lower Michigan, this 160-mile long river and 2,020 square mile watershed is comprised of 41% forest and open areas and 45% agriculture. Eighty miles of the river remain plagued with PCB-laden sediments and fish consumption advisories from the once predominant paper mill industry. The Match-E-Be-Nash-She-Wish will use their grant to build upon institutionalized market-based water quality trading techniques and to develop a model trading infrastructure and framework for successful agricultural participation. The tribe is leading this initiative on behalf of a watershed-wide group addressing eutrophication issues through a phosphorus-based TMDL.

Fourche Creek, Arkansas. Located in central Arkansas, the 170 square mile Fourche Watershed drains and filters over 99% of the Little Rock metropolitan area. In 2003, Fourche Creek was identified by EPA as federal priority with its Brownsfield Designation. The proposal, developed by Audubon Arkansas, is aimed at decreasing hypoxia contaminants, improving wetlands and water quality, and increasing public awareness and involvement in this urban watershed. Targeted Watershed funds will be used to revitalize wetland function through reforestation and stream bank and wetland restoration. The expected environmental outcomes of the project are a 5% reduction in sediment and nutrients, the establishment of more sustainable methods for municipal operations and maintenance, a 20% reduction of floatable trash, and an outreach campaign to reach at least 500,000 people in the watershed.

Upper Mississippi River, Iowa. The Integrated Drainage-Wetland Systems for Reducing Nitrate Loads from the Des Moines Lobe Watersheds project is a cooperative proposal by the Iowa Department of Agriculture and Land Stewardship and Iowa State University and will partner with three drainage districts in Palo Alto and Pocahontas counties in Iowa. The project focus is to reduce the nitrate load to the Gulf of Mexico by structural modifications to subsurface drainage systems. Soil, topography, and weather data will be used with improved crop growth, hydrologic, and wetland models to design integrated wetlands and controlled/shallow drainage systems to optimize reduction of NO_3 loads at the watershed scale to achieve a systems approach as compared to a conventional approach. Modeling results predicting performance and determining the preferred design will be used with landowner cooperation to develop the optimum drainage-wetland system design for specific study areas. A voluntary, cost-share program will be used for construction of this design to further reduce landowner costs. Performance of the designs will be monitored through water quality sampling to show NO_3 and hydrologic reductions and measurement of production impacts to demonstrate any enhanced economic returns. The designs and cost estimates will also be used to assess the extension of this technology and practice across the Des Moines Lobe.



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Bear River, Utah, Idaho and Wyoming. The Bear River watershed project was nominated on behalf of the Bear River Commission, a compact formed in 1958 to allocate water use throughout the basin. The 7,500 square mile watershed is unique in that it presents challenges and opportunities from three states, two EPA regions, and a multiple of jurisdictions and planning authorities. In addition to complexities stemming from the transboundary nature of the river, the river is faced with impairments from animal feeding operations, grazing, agriculture, urban development, phosphate mining, oil and gas exploration, and logging. This tri-state project will develop: 1) an integrated Watershed information System to facilitate data collection, data analysis, information transfer, and public outreach; 2) a water quality trading program to allow point and nonpoint pollutant sources to trade water quality credits, and 3) dynamic water quality modeling to support trading and analysis of potential water quality management scenarios.

Lake Tahoe, California and Nevada. Lake Tahoe is designated as an Outstanding National Resource Water because of its extraordinary clarity. However, since 1968, scientists have measured a decline in water clarity at an alarming rate of nearly one foot per year. Recent research highlights that in-basin atmospheric pollutants contribute significantly to the decline in clarity. The Lake Tahoe Basin will use Targeted Watershed funds to: 1) develop ground-rules for water quality trading; 2) identify new approaches for removing fine sediments and nutrients in cold climates, including for air-borne pollutants and centralized stormwater treatment; 3) establish numeric estimates for phosphorus, nitrogen and fine sediment reduction for the identified load reduction opportunities; and 4) complete a basin-wide load reduction potential, which will be used to directly guide watershed restoration activities. Expected benefits include the development of tools that, in concert with ongoing regulatory and stakeholder involvement, will be used for implementing the most effective BMPs for both terrestrial and atmospheric sources within a water quality trading strategy.

Siuslaw River, Oregon. The Siuslaw watershed is a 773 square mile basin located on the mid-Oregon coast. It is threatened by draining, diking and numerous tidegates in the estuary; aggressive forestry practices on the steep slopes; lead levels and temperature. Using Targeted Watershed funds, the Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians hope to implement a whole-basin restoration initiative that improves the health and vitality of water resources by: 1) restoring natural landscape process by repairing roads and culverts, 2) creating market incentives for forest managers to reduce the risk of sediment delivery to streams, 3) restoring 30 miles of riparian habitat and processes, 4) protecting and restoring an estuary corridor by removing tide gates and dikes, and 5) instituting a water quality monitoring and evaluation program.



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Dungeness River, Washington. At about 200 square miles in size, the Dungeness watershed is home to over 200 fish and wildlife species and is an important stop for migratory waterfowl. The 32 mile river flows through wilderness, forest and valley before reaching Puget Sound. Human-induced impacts, land use changes and physical alterations have hampered the natural flow of the river and bay process resulting in impaired water quality, bay shellfish closures and dwindling salmon runs. The James town S'Klallam Tribe in partnership with the State of Washington have been awarded a Targeted Watershed grant to attack several linked watershed threats at once. Funds will be used toward a microbial source tracking study to more precisely define pollutant sources; innovative BMPS related to stormwater, septic maintenance, water treatment and water conservation; and a cost effectiveness analysis of implemented BMPs.

Kenai River, Alaska. The Kenai River, located in the south central part of the state, is one of the most important watersheds in Alaska, providing world-class salmon fishing and wilderness recreation. The nomination addresses two watershed threats: nonpoint source hydrocarbon pollution caused by outboard motors, and stream bank erosion caused by boat wakes. Funds received through the Targeted Watershed program will be put to use to reduce hydrocarbon emissions on the Kenai by implementing market-based incentives to decrease the use of 2-stroke motors by individual boat owners and guides. The project also will seek to reduce the effects of boat wakes on stream bank erosion by implementing guide incentives and voucher programs to encourage the use of "low or no wake" boat hulls, while monitoring and evaluating boat wake effects on stream banks. The Kenaitze Indian Tribe I.R.A., the Alaska Department of Natural Resources and the Kenai Watershed Forum will collaborate to implement project activities.