Building Capacity for Nonpoint Source Management

Case Studies Report

September 2003

United States Environmental Protection Agency

Building Capacity for Nonpoint Source Management

United States Environmental Protection Agency

Contract #68-C-00-169

Contents

Issues and Local Needs Faced by Local Watershed or Capacity Building Groups

		Budgeting	Building trust locally	Conflict resolution	Establishing (local and/or organizational) goals and objective	Establishing local partnerships	Establishing nongrant funding opportunities	Establishing roles and accountability	Evaluating effectiveness (of actions)	Grant and contract writing help	Hiring experts	Motivating people (locally)	Obtaining private grants	Procuring equipment and office space	Project planning	Policy making	Running effective meetings	Soliciting volunteers	Translating technical information for lay/volunteer audiences
LOCAL WATERSHED GROUPS BUILDING CAPACITY	Duck Creek Watershed Management Project					●			●						●			●	●
	North Fork of the Gunnison	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Nonpoint Source Education for Municipal Officers (NEMO)				●	●	●		●				●		●				●
	City of Griffin Stormwater Department	●				●	●								●	●			
	Lake County Stormwater Management Commission		●		●	●		●											●
	Wildcat Creek Watershed Alliance		●	●	●	●	●	●	●			●	●		●	●	●	●	●
	Cheney Lake Water Quality Project	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Hillsdale Water Quality Project	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●
	Lake Pontchartrain Basin Foundation					●	●								●			●	●
	Nashua River Watershed Association	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Chain of Lakes Clean Water Partnership					●						●							
	Spruce Run Reservoir Initiative		●			●	●			●			●		●				●
	Santa Fe Watershed Association					●			●				●						●
	Boquet River Association (BRASS)				●	●	●			●			●		●			●	
	Haywood Waterways Association	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Upper Broad River Watershed Protection Program	●	●		●	●		●	●	●	●	●		●	●	●	●		●
	Sugar Creek Watershed Farmers	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Friends of Lake Keowee Society										●		●		●			●	
	Friends of the Rappahannock						●		●						●	●		●	●
Organizations That Assist Watershed Groups In Building Capacity	California Coordinated Resource Management and Planning Council					●													●
	Watershed Restoration Action Strategies Partnership				●	●			●						●				
	Montana Watershed Coordination Council					●						●			●				●
	The Ohio Environmental Council						●					●				●			●
	Ohio Watershed Network						●			●									●
	For the Sake of the Salmon			●		●	●						●					●	
	Oregon Watershed Enhancement Board								●										
	River Network		●		●	●	●	●	●		●		●		●			●	●
	Growing Greener																		
	Grow Smart Rhode Island														●				
	Rhode Island Rivers Council		●			●	●									●			

Introduction

Capacity building means establishing resources needed to fulfill a mission or achieve a goal. The U.S. Environmental Protection Agency's (EPA) recognizes that watershed groups and local governments need a range of tools to effectively manage their local land and water resources. Local and state governments and watershed groups around the nation are employing innovative approaches to capacity building.

In an effort to provide another resource and tool to assist watershed groups and local governments as they build organizations that have strong foundations of adequate resources and technical tools, the EPA developed the State/EPA Nonpoint Source Partnership. The Capacity Building and Funding Workgroup has set out to help watershed organizations build strong foundations for managing nonpoint source pollution at the watershed scale.

The case studies included in this document highlight watershed groups, local governments, and organizations engaged in innovative approaches to group building and organization (establishing partnerships, soliciting volunteers), organizing capital resources and fiscal management (obtaining private grants and federal funding), and using technical and specialized resources (using experts, developing innovative projects, procuring office space and equipment).

The workgroup has also developed a web site (www.epa.gov/owow/nps/capacity/index.htm) to assist groups in developing knowledge by providing a compendium of web-based and printed resources and tools.

The organizations profiled here were suggested by watershed practitioners around the country. These organizations are only a few of the many groups working to manage nonpoint source pollution at the watershed scale. These case studies are not necessarily intended as a "Best Of" review; instead, they are presented as a diverse mix of groups from around the country, with the intent of stimulating ideas for building local capacity for watershed management."

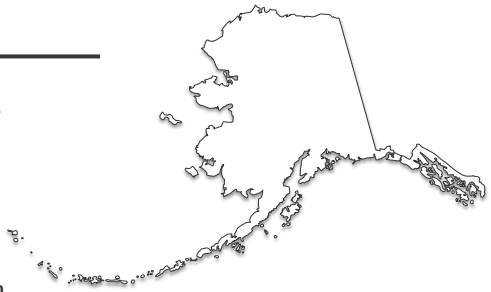
Local watershed groups and state and federal program managers can use this document to get ideas on how others are building their capacity for successful watershed management.

The first section of this document highlights local watershed groups and governments that have successfully built capacity. The second section highlights organizations that provide the tools for local watershed groups and governments to achieve their mission or goal.

The Internet was the primary resource for the information provided about each organization. In some cases, additional information was provided by the contacts listed for each group. An asterisk after a group's name indicates that only Internet information has been provided.

Local Watershed Groups Building Capacity

ALASKA



Duck Creek Watershed Management Project*

Keywords: fish habitat restoration, stream restoration, federal/state/local agency partnerships

Duck Creek is a small stream once important for salmon production but now adversely affected by urban development.

Group Building and Organization

In 1993 the Duck Creek Advisory Group (DCAG) was formed to coordinate activities for planning, initiating, and implementing a program to restore water quality and anadromous fish habitat in Duck Creek. The DCAG provides education and facilities to work with more than 25 organizations, including the City and Borough of Juneau, state and federal agencies, private businesses, conservation organizations, and homeowners, in the design of restoration projects and pollution control activities throughout the watershed. The DCAG holds monthly meetings and publishes a newsletter. Recently, it completed the *Duck Creek Watershed Management Plan,* which uses a watershed approach to focus on enforcement, management, and restoration.

Because of the substantial loss of aquatic resources in the watershed, the *Duck Creek Watershed Management Plan* recommends several restoration projects that will achieve community benefits beyond the statutory environmental standards.

Technical and Specialized Resources

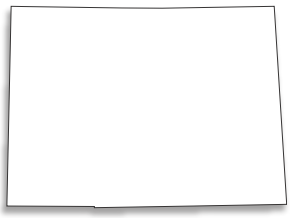
The DCAG use a science-based approach to accomplish and evaluate its restoration efforts and to ensure that Duck Creek will be an effective demonstration site for developing restoration technology. Restoration efforts have included performing streambank revegetation and channel modification, planting willow stakes and marsh vegetation, and restoring salmon spawning habitat by reconfiguring the stream channel, removing fine sediment, and increasing the dissolved oxygen level.

A stormwater treatment marsh (wetland) was created from a 2-acre borrow pit near the Church of the Nazarene on the East Fork of Duck Creek. The purpose of creating the wetland was to improve water quality and fish habitat by using aquatic plants to filter the heavy load of suspended sediment and iron floc to protect the pond and main channel downstream. In addition, the fill material used to create the wetland also acted as a cap over the source of iron-rich groundwater coming into the pond.

Over the years improvements were made on stream crossings, and an experimental "snow fence" designed to limit plowing of snow and road sand into Duck Creek was installed on the Nancy Street Crossing. More stream crossings and snow fences are planned.

Contact: Robert Tribelhorn, Duck Creek Advisory Group, c/o Southeast Conference, 213 3rd Street, Juneau, AK 99801; 907-463-3445; http://www.epa.gov/owow/showcase/duckcreek/dcsummary.html

COLORADO



North Fork of the Gunnison

Keywords: federal/state/local agency partnerships, agriculture partnerships, industry partnerships, stream restoration, community outreach, watershed planning

In 1996, a group of local landowners were losing their land to erosion. These landowners joined forces with the Colorado Soil Conservation Board and the Delta Conservation District to obtain nonprofit 501(c)(3) status. A morphological assessment was then performed on the river to find reaches that were in critical condition, and restoration projects began shortly thereafter.

Group Building and Organization

Established in 1996, the North Fork River Improvement Association (NFRIA) empowers a broad-based coalition of riverfront landowners, farmers and ranchers, environmentalists, irrigation companies, outdoor enthusiasts, instream gravel mining companies, and concerned members of the community as the driving force behind resource restoration efforts.

Originally formed to research alternative methods to reduce extreme and accelerated bank erosion along the North Fork of the Gunnison River in Colorado, NFRIA quickly transformed into an innovative local watershed group aimed at rehabilitating the ecology of the river corridor while working closely with all river interests to develop consensus and collaborative efforts.

By enhancing and restoring the river, NFRIA protects health, ensures economic viability, and serves as a steward of the natural world. NFRIA strives to be a model watershed organization, working hard to develop consensus, collaboration, and local participation on watershed issues in the North Fork Basin. The community is encouraged to participate in monthly board meetings and the annual membership meeting in March. Staff are regularly invited to speak to local schools, civic groups, and organizations about ongoing efforts to improve resource management and enhance the overall quality of life in the valley.

NFRIA's goals include the following:

- Encourage the community to build consensus and develop collaborative solutions to complex resource problems
- Restore proper riverine function to damaged stretches of the river
- Enhance fish and wildlife habitat
- Improve and monitor water quality
- Disseminate information on ecosystem protection and conservation to the community, government agencies, and other watershed groups
- Educate the community on the value of the river's natural resources and their responsible use
- Engage local farmers and ranchers in riparian enhancement and agricultural conservation
- Improve water conservation through innovative and sustainable irrigation practices

Capital Resources and Fiscal Management

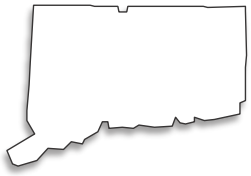
EPA, National Fish and Wildlife Foundation, National Forest Foundation, Colorado Water Conservation Board, and other state and federal government agencies have provided most of the funding for NFRIA's restoration projects thus far. These funds have been used to hire a local engineer and contractor for restoration. NFRIA is also partnering with Delta Sand and Gravel and the Town of Paonia to create a public riverfront park.

Technical and Specialized Resources

NFRIA has educated the community on the value of the river's natural resources and their responsible use, improved water conservation through innovative and sustainable irrigation practices, invited experts to conduct technical workshops on specific resource issues, and restored proper riverine function to 6 miles of damaged river. They have partnered with the Army Corps of Engineers, University of Colorado, and local towns and counties to conduct their programs. In addition, NFRIA developed a Watershed Restoration Action Strategy for long-range planning (2000), and reconstructed three irrigation diversions to conserve water, improve irrigation efficiency, and enhance habitat. NFRIA coordinates a volunteer water quality monitoring program and organizes the "Annual River Awareness Float," which connects 150 people down the river each year.

Contact: Teresa Steely,
2917 L50 Lane, Hotchkiss, CO 81419;
970-872-2433; teresasteely@tds.net;
http://www.nfria.paonia.com/

CONNECTICUT



Nonpoint Source Education for Municipal Officers (NEMO)

Keywords: federal/state agency partnership, university partnership, municipal official education, educational materials

Group Building and Organization

NEMO is a University of Connecticut (UConn) response to the nonpoint source pollution issues brought to light by the Long Island Sound National Estuary Program. Recognizing the educational potential of land cover information for local regulators, and with funding from the U.S. Department of Agriculture (USDA) Water Quality Initiative, NEMO was created in 1991-1992 as a collaboration between three branches of the University of Connecticut: the Cooperative Extension System, the Natural Resources Management and Engineering Department, and the Connecticut Sea Grant College Program. As of 2002 NEMO had worked with almost two-thirds of the 169 municipalities in Connecticut. NEMO staff in Connecticut conduct about 150 educational workshops a year. The National NEMO Network now has 33 funded projects in 30 states, and issued its first Network progress report in March 2003.

Capital Resources and Fiscal Management

Initial funding for the Connecticut project came in the form of a 3-year grant from the USDA Water Quality Initiative. At present funding is from the Connecticut Department of Environmental Protection Clean Water Act Section 319 nonpoint source program, the Connecticut Sea Grant College Program, and additional grants for specific projects. NEMO Network projects are largely dependent on state and federal grant funds. Funding comes from a wide variety of sources, including EPA, the National Oceanic and Atmospheric Administration (NOAA), USDA, and many types of state programs. Some of the more common sources are the Clean Water Act Section 319 nonpoint source program, the coastal nonpoint source program under section 6217 of the Coastal Zone Act Reauthorization Amendments, the Sea Grant Coastal Community Development Program, and internal University funds. Typically, technical resources are provided by one or more of the consortium partners. Technical work is occasionally done on a contractual basis.

Technical and Specialized Resources

Technical resources are largely contained within the group. An original and continuing NEMO partner is the UConn Lab for Earth Resource Information Systems, which provides remote sensing information and expertise.

The project offers presentations and materials to help communities move forward on the two major aspects of natural resource-based planning—planning for areas to be preserved and planning for developed or developing areas. NEMO also provides educational videos,

technical papers, and fact sheets, such as How To Get Started: Protecting Your Town From Polluted Runoff, Asking the Right Questions About Polluted Runoff, and Open Space Developments: A Better Way to Protect Water Quality, Retain Wildlife, and Preserve Rural Character. The project maintains an extensive Web site with a publication downloading page, case studies, a National Network section, and special features like the Reducing Runoff section, at http://nemo.uconn.edu.

Contact: Chester Arnold, Water Quality Educator, Project Director, Middlesex County Extension Center, 1066 Saybrook Rd., Box 70, Haddam, CT 06438; 860-345-4511; carnold@canr.uconn.edu

GEORGIA

City of Griffin Stormwater Utility

Keywords: federal/state/local agency partnership, stormwater management, user fees, community outreach, educational materials

Group Building and Organization

In anticipation of the regulations the City of Griffin would face under EPA's National Pollution Discharge Elimination System (NPDES) Phase II project, the Director of Public Works and Utilities began research on the creation of a Stormwater Utility. After researching alternative funding mechanisms for several years, in 1997 the City of Griffin began a comprehensive watershed management program implementing the Stormwater Utility to address its aging infrastructure and improve the quality of stormwater runoff. The Stormwater Utility's mission is to provide a comprehensive watershed management program that includes seeking out alternative funding mechanisms to enhance Griffin's stormwater management system, establishing programs to address infrastructure problems, providing cost-effective design and construction of the necessary improvements, providing leadership through the implementation of best management practices (BMPs) that will enhance water quality throughout the region, and improving the overall quality of life for the city and its citizens. The Stormwater Utility addresses the issue of stormwater pollutants and their removal or elimination before they enter the stormwater system. The Utility also provides the opportunity to integrate various technologies to manage stormwater, wastewater, and water using a holistic approach.

The City's Water and Wastewater Department has agreed to assist the Stormwater Utility in its water quality improvement projects by providing water quality analysis services for two major studies. The Potato Creek Wastewater

Plant on County Line Road is conducting analyses of stormwater and surface water. The facility laboratory and scientists are providing assistance in analyzing field samples from the Potato Creek Watershed Assessment and the TEA-21 urban stormwater study (funded by the Georgia Department of Transportation), and they have been instrumental in providing crucial data for both studies.

Capital Resources and Fiscal Management

The Stormwater Utility generates user fees based on impervious surface. The utility divides the fees among owners of developed properties so that each owner pays for only the demand that owner puts on the system. The amount of impervious area on all properties for non-single-family parcels is derived using aerial topography and field measurements. Aerial photography is also used to determine the median amount of impervious area. Owners of non-single-family residences are eligible for a credit if they have and maintain a stormwater detention or retention facility on their property in accordance with the City's policies.

Funding sources for the Stormwater Department's projects are as follows:

Project	Funding Source
Stormwater and Transportation Improvement Program	Special-purpose local option sales tax
State Revolving Fund Loan for stormwater improvement	Georgia Environmental Facilities Authority
Hazardous Mitigation Grant to design and construct drainage improvements in Lyndon Basin	Georgia Emergency Management Agency
Construction and monitoring of retrofitted stormwater detention ponds	Georgia Department of Natural Resources 319 grant
Stream restoration and flood control projects in Shoal Creek	U.S. Army Corps of Engineers
Evaluation of pollutant removal efficiencies of BMPs off a state highway system	TEA-21 Georgia Department of Transportation and the Federal Highway Administration
Protocol verification on storm drain insert devices	National Science Foundation/Environmental Technology Verification Pilots

Technical and Specialized Resources

The objective of the Stormwater Utility is to deliver a higher level of service in stormwater management through watershed management; stormwater quality; and public education, public involvement, and public participation.

Some of the Stormwater Utility's outreach projects are listed below:

- EnviroScape nonpoint source pollution teaching module
- Classroom education
- Stormwater Utility's Web site at www.griffinstorm.com
- Flyers included in utility bills and other mailouts
- Stormwater newsletter
- Project brochures
- Stormwater resident surveys
- Storm drain stenciling program
- Road signage at tributary crossing locations
- Hazardous materials recycling programs
- Georgia Adopt-A-Stream Program
- Local media notifications
- Erosion/sedimentation and BMP training
- Scholarship/work program

Contact: Brant D. Keller, Ph.D., Director, Stormwater Department, 134 North Hill Street, Griffin, GA 30224; 770-233-4138; bkeller@cityofgriffin.com; http://www.griffinstorm.com

ILLINOIS

Lake County Stormwater Management Commission

Keywords: stormwater management, local ordinance, community outreach, watershed restoration, comprehensive watershed plan

In Lake County, Illinois, the combination of growth and topography (nearly 20 percent of the surface area is composed of streams, lakes, wetlands, and floodplains) has long underscored the need for careful stormwater management. As far back as 1982, the Lake County Department of Planning, Zoning, and Environmental Quality was conducting surveys to assess the degree of municipal, township, and special district involvement in county flood, drainage, and stormwater control issues. In 1987, following two Presidential declarations for massive flooding, state legislators passed legislation enabling Lake County to create the Stormwater Management Commission (SMC). The legislation provided the framework to address comprehensive stormwater issues in all of the six counties in northeastern Illinois. The legislation required that stormwater agency boards be a municipal and county partnership. Consequently, the SMC Board of Commissioners is made up of six municipal representatives and six county board members. It is this partnership that made implementation and coordination of effective and comprehensive stormwater management possible in Lake County. The programmatic structure and defined role of SMC was outlined in the 1990 Lake County Comprehensive Stormwater Management Plan. The Plan was updated in 2002 and will serve as a guide for projects and programs for the next ten years.

Group Building and Organization

The SMC is responsible for implementing the Comprehensive Stormwater Management Plan. The plan establishes a framework to coordinate the stormwater activities of more than 90 jurisdictions in the county. The Watershed Development Ordinance (WDO), which regulates new development countywide, is one component of the plan.

The goal of the WDO is to ensure that new development does not increase existing stormwater problems or create new ones. The WDO establishes countywide standards for runoff maintenance, detention sites, erosion control, water quality, wetlands, and floodplains. In addition to the regulatory function, SMC also works on projects to reduce existing flooding and water pollution problems; rehabilitation of the existing drainage system; flood hazard mitigation; multipurpose use of open space, natural floodplains, and other natural resources through appropriate land use planning; inter-jurisdictional coordination and technical assistance; and public education.

SMC encourages public participation in everything they do. They involve stakeholders in watershed planning efforts, the ordinance amendment process, and the decision-making of the SMC board. A stakeholder is anyone with an interest or "stake" in an issue. Stakeholders can include municipalities; townships; drainage districts; homeowner associations; developers; county agencies; lakes management groups; landowners; and local, state, and federal agencies. SMC would not be as successful without the input, interest, and commitment of stakeholders. Ultimately, to successfully protect or restore resources in Lake County, residents and communities of the watersheds have to work together, sharing the costs and reaping the benefits of watershed improvements.

Capital Resources and Fiscal Management

SMC's property tax-based 2003 budget of $2.1 million reflects over 60 major projects. The FY'03 tax rate is $.009 per $100 of assessed valuation. A median priced home ($198,000) in Lake County pays $5.68 per year for SMC services. SMC's FY'03 budget is enhanced by over $6 million in grants.

Contact: Lake County Stormwater Management Commission, 333 Peterson Road, Libertyville, IL 60048-1085; 847-918-5260; http://www.co.lake.il.us/smc

INDIANA

Wildcat Creek Watershed Alliance

Keywords: stream restoration, watershed planning, state/local agency partnerships

The Wildcat Creek watershed has diverse land uses, several urban centers, extensive rural and agricultural areas, and streams that fail to meet the state's water quality standards.

Group Building and Organization

The Wildcat Creek Watershed Alliance is a partnership of concerned citizens dedicated to developing and implementing a successful watershed plan to improve and protect water resources in the Wildcat Creek watershed.

The Wildcat Creek Watershed Alliance is a watershed-based organization that includes stakeholders from the Wildcat Creek watershed. Watershed stakeholders are represented by local city, town, and county governments; water providers; utilities; industry; agriculture; environmental protection groups; and citizens living in the Wildcat Creek watershed.

In spring 2000 the Wildcat Creek Watershed Network, an organization assembled by the Indiana Department of Environmental Management (IDEM), submitted a Clean Water Act Section 319 project proposal through the Indiana Association of Soil and Water Conservation Districts (IASWCD) to address water quality issues in the Wildcat Creek watershed. The section 319 project proposal included the following goals: (1) hire an executive director or watershed coordinator, (2) build upon recommendations of the Wildcat Creek Watershed Restoration Action Strategy (WRAS), (3) coordinate planning efforts throughout watershed, and (4) develop two subwatershed management plans in the Wildcat Creek watershed.

In fall 2001 the Wildcat Creek Watershed Network reorganized, drafted by-laws, elected officers, and officially became the Wildcat Creek Watershed Alliance, Inc.

Capital Resources and Fiscal Management

The Wildcat Creek Watershed Alliance was funded from July 2001 through June 2003 through a section 319 grant. EPA awarded this grant for $109,500 to the IASWCD through IDEM. The Alliance is in the process of pursuing private and public funding. The Alliance has successfully obtained additional funds locally: $1,000 from Indiana-American Water Company, $5,000 from Delphi Delco Electronics, and $2,500 from Cinergy Corporation. In addition, the City of Kokomo Wastewater Treatment Plant donated approximately $4,500 in in-kind contributions for analysis of water quality samples over a 6-month period.

Technical and Specialized Resources

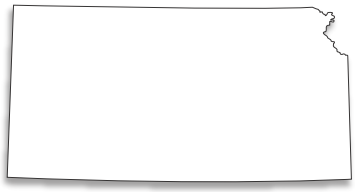
With the help of the watershed coordinator, the Alliance produced two 14-digit subwatershed plans and water quality-related programs to improve the quality of life in the Wildcat Creek watershed. The Wildcat Creek Watershed Alliance conducts quarterly public meetings to gather input and information from the citizen stakeholders in the watershed. The Alliance uses this information to develop subwatershed plans and other water quality improvement projects.

The Alliance invited Bob McCormick, "Planning With POWER" State Coordinator, to participate as a member of the Wildcat Creek Watershed Alliance Land Use Subcommittee. The "Planning with POWER" project is coordinated by the Illinois-Indiana Sea Grant College Program and the Purdue University Cooperative Extension Service. It is a statewide educational program that links land use planning with watershed planning at the local level. The project is designed to empower communities to prevent and solve natural resource problems resulting from changing land use in growing watersheds and to empower local officials to incorporate watershed protection measures into comprehensive land use plans.

The "Planning With POWER" presentation provided a foundation and background information in natural resource and water quality protection in land use planning. The guidance and support by "Planning With POWER" continues with the Wildcat Creek Watershed Alliance to address land use issues in two subwatersheds of Howard, Tipton, and Clinton Counties.

Contact: Sheila McKinley, Wildcat Creek Watershed Alliance, c/o Goode and Associates, P.O. Box 501, Kokomo, IN, 46903; smckinley@goode-associates.com; 317-254-8235; http://www.howard-county.net/detail.asp?RECORD_KEY=ID&ID=387, http://www.planningwithpower.org/ongoing.htm

KANSAS



Cheney Lake Water Quality Project

Keywords: watershed planning, federal/state/local agency partnerships, drinking water protection, community outreach, agriculture partnerships, stream restoration, educational materials

In the early 1990s, streambank erosion on the North Fork Ninnescah was a growing concern among landowners near the Cheney Reservoir. One farmer, who was displaced during the construction of the reservoir in the 1960s, recognized the connection between the streambank loss and sedimentation in the reservoir. About the same time, algal blooms in the reservoir were causing taste and odor problems in the City of Wichita's drinking water. Members of the Reno County and Sedgwick County Conservation Districts were able to establish a task force that included these interested farmers and representatives from the City of Wichita. This began a unique rural/urban partnership. The farmers recognized their part in protecting the quality of water moving through the watershed, and the City of Wichita saw the value in supporting farmers to protect a vital drinking water source.

Group Building and Organization

A task force representing stakeholders was formed in 1992 to study water quality in the North Fork Ninnescah and prepare a plan to identify and alleviate potential sources of pollution in the watershed and Cheney Reservoir. The task force was initiated through conversations among individual Conservation District board members in Reno and Sedgwick Counties. The task force members were a committee of landowners, members of the Reno County Conservation District and Sedgwick County Conservation District, Reno County Farm Service Agency, Reno County Health Department, Wichita Water & Sewer Department, Reno County Extension Service, Kansas Department of Wildlife & Parks, Kansas Department of Health & Environment, Natural Resources Conservation Service (NRCS), State Conservation Commission, Equus Beds & Big Bend Groundwater Management Districts, Bureau of Reclamation, U.S. Fish & Wildlife Service, U.S. Geological Survey, and EPA.

After the Task Force had completed an assessment of the watershed and developed a plan of work, a management committee was established under the Reno County Conservation District to operate the watershed project. The Citizen's Management Committee is made up of watershed farmers that actively lead the project. They have worked with other agencies and organizations to set the goals and understand the potential for remediation. Because the watershed involves a major drinking water source, this project has received cooperation and support that might not be typical of every watershed.

Community outreach is a priority of the Cheney Watershed Program because it supports implementation of the best management practices (BMPs) used to curtail identified pollution sources. Those BMPs include (but are not limited to) terracing, stubble mulch, grassed waterways, relocation of feedlots, proper fertilizer application, animal waste treatment, improved grazing management, and filter strips.

Capital Resources and Fiscal Management

The NRCS District Conservationist and the Reno County Conservation District manager supplied the staffing and other support during the task force phase. An EPA Clean Water Act Section 319 grant in 1994 provided the support to begin work on the project (e.g., clerical salary, part of project coordinator's salary, office expenses, demonstration projects, educational program). A $200,000 direct congressional appropriation administered through EPA allowed the Committee to conduct further educational programs and demonstration projects, and helped pay office rent. The Water and Sewer Department of the City of Wichita provided funding for an additional staff person. The project relied heavily on state and federal cost-share programs to implement BMPs. The City of Wichita agreed to pay the farmers' share so that farmers could implement practices without making a major financial commitment.

The Project continues to operate with EPA funds from the section 319 programs and support from the City of Wichita, the Reno County Conservation District, NRCS, and several smaller project grants from various sources. Farmers and landowners in the watershed provide volunteer hours and commitments of time and labor on projects.

Technical and Specialized Resources

The Cheney Watershed Program uses innovative, nonregulatory action to accomplish its goals and objectives. When Conservation Reserve Program contracts expire, landowners are encouraged to convert the grassland to pasture instead of cropping the acreage. The Committee provides partial funding for perimeter fence as an incentive. The Committee is also developing a program that will encourage farmers to plant grass filters along blue line streams within their cropland. By seeking input from local farmers, the Committee hopes to craft a program that will address farmers' concerns while treating one of the greatest potential contributors of nutrients and sediment in the watershed.

Another important emphasis of the watershed project is the improvement of household waste treatment and the construction of livestock waste systems for small dairies and

feedlots. The Committee also provides technical assistance to landowners and operators on nutrient management, conservation tillage, and crop rotation.

The task force conducts other community outreach by providing information and education. The Program produced a video to update producers on watershed improvement projects and educate downstream consumers about the watershed program. The Committee has implemented a program of one-on-one contact with local farmers to promote livestock waste utilization and nutrient management. Funding has been provided to area high schools for equipment and training for instructors and students, who will collect and analyze water samples as part of their course of study. The Committee is working with other agencies on the delivery and implementation of a program that promotes self-assessment for environmental issues on farmsteads and homesites.

Progress toward the Program's goals is reported quarterly. The Committee continually measures project management, one-on-one contacts, technical assistance, and financial assistance to ensure that the Cheney Watershed Program is on track with its program delivery strategy.

Contact: Lisa French, Project Coordinator, Cheney Watershed Citizens Management Committee, 18 East 7th Ave., South Hutchinson, KS 67505; 620-665-0231; http://www.cheneylakewatershed.org

Hillsdale Water Quality Project

Keywords: community outreach; agricultural partners; developer partners; industry partners; commercial business partners; utility partners; municipal partners; county partners; stormwater management; point source, nonpoint source, and conservation educational materials; utilizing volunteers.

In the 1940s, area landowners began lobbying for a flood control device. In 1954, the United State Congress authorized the Hillsdale Lake Project, and the U.S. Army Corps of Engineers completed the dam in 1982. Hillsdale Lake contributes to flood protection on the Marais des Cygnes, Osage, and Missouri rivers and provides recreational opportunities for nearly 2 million visitors annually.

More than 30,000 residents of southern Johnson County and northern Miami County rely on Hillsdale Lake as their primary source of drinking water. The lake can provide 17.3 million gallons daily for municipal and industrial needs of surrounding communities. By 2002, Miami County Rural Water District No. 2, Johnson County Rural Water District No. 7, Spring Hill, and the City of Gardner were using water from Hillsdale Lake.

Group Building and Organization:

Hillsdale Lake watershed covers about 144 square miles in Miami, Johnson, Douglas, and Franklin counties. Phosphorous, nitrogen, pesticides, and wastewater treatment discharges from throughout the watershed threaten Hillsdale Lake's water quality. Phosphorous levels

have promoted unwanted plant growth robbing the water of dissolved oxygen needed to support aquatic life. This process, known as eutrophication, can also cause the water to have an undesirable odor and taste. Typical problems associated with eutrophication include increased fish kills, shortages of the dissolved oxygen needed to support aquatic life, and algae blooms.

In 1991, citizens residing in the watershed initiated the Hillsdale Lake Water Quality Protection Project out of concern for the future of the reservoir as a drinking water supply and recreation area. The Project was established for the long-term protection of the lake and its watershed. Project goals include:

- Educating the public about point and nonpoint sources of pollution.
- Introducing pollution control practices in agricultural areas, construction sites, and neighborhoods.
- Reducing sediment entering the lake by 30 percent, a reduction of about 39,750 tons/year.
- Reducing the phosphorus load by 30 percent, a reduction of approximately 21,000 kg/year.

The Project's volunteer-based board of directors created committees to provide technical assistance. The Citizens Management Committee (CMC) and six implementation committees were formed. Each implementation committee is composed of seven people. The designated chairperson of each committee is also a member of the CMC. The original committees included: Institutionalization, Agricultural Pollutant Sources, Pollution Control Practices, Urban and Industrial Pollutant Sources, Water Quality and Information, and Education. By 2002, the committees had evolved to include: Information and Education for project promotion; Water Quality Committee for monitoring issues, and Pollution Control Committee for best management practices.

Capital Resources and Fiscal Management

The Hillsdale Water Quality Project incorporated in 1998 as a 501(c)(3) corporation in order to carry on efforts the Project initiated after funds from the EPA expire.

EPA funds the Project's initiation of a plan of action to protect water quality in the watershed through the Kansas Department of Health and Environment Section 319 grant program. Additional grants through the EPA's 104(b)3 program have also been used. The Lake Region's Resource, Conservation, and Development office (RC&D) served as the local sponsor. By 2002, more than $1.9 million has been received through the Project and used to assist in the efforts to improve, monitor,

and restore the water quality in Hillsdale Lake. Additional funds are generated by membership fees, ranging in cost from $15 to $250.

The work of the Hillsdale Water Quality Project is enhanced by partnerships with many agencies. Individuals from these organizations provide technical support to the Project ranging from the design of a livestock waste system to suggestions for reducing sedimentation from a construction site. This assistance allows local people to make decisions based on sound science. Providing a non-threatening arena for the exchange of ideas has encouraged many diverse groups to become involved in the protection of water quality. This increased understanding with the public has resulted in been better communication among agencies for the improvement of water quality.

Technical and Specialized Resources

The Hillsdale Water Quality Project was a pilot program using the Total Resource Management System planning process to achieve improved water quality and conservation of all resources. It was the first watershed in Kansas to use this planning process to actively involve local communities and gather local input through problem identification and development of alternative solutions.

Along with using the plan as a tool for natural resources protection, the Project also enlists a Geographic Information System (GIS). GIS can analyze and display geographic information for land resource planning and has been an excellent tool to demonstrate the implementation of pollution control practices to landowners. Currently GIS is being used to identify priority areas for pollution control practices and storm drain locations in the watershed.

As an organization with no regulatory authority, the Hillsdale Water Quality Project has successfully initiated the implementation of pollution control practices on a voluntary basis through educational programs. For example, the Project's 2001-2002 stormwater pollution prevention program developed a new community-based watershed approach to educate developers, builders, Planning Commission members, lawn chemical applicators, and residents about the detrimental effects of polluted stormwater runoff. The program included holding educational workshops, developing a public display on stormwater issues, and developing and implementing a public outreach storm drain stenciling program.

Since the beginning, the Hillsdale Project has conducted a monitoring study on the lake and tributary streams. The data collected from this study has assisted in determining the extent of pollutants entering the streams and lake. With the implementation of pollution control practices in the watershed to reduce nonpoint source pollution, the monitoring study remains a continuous source to track the effectiveness of all pollution control, best management, and educational efforts.

Over the years, Project volunteers and staff received the following national awards: CF Industries National Award in 1998 for outstanding leadership in protecting America's

water resources and the National Association of Counties Acts of Caring Award in 2002 for Environmental projects. In 1999, the Project received the Kansas Department of Health and Environment's Pollution Prevention Award for Excellence in Cooperative Efforts and Certificates of Appreciation from: the Environmental Protection Agency, Blue River Watershed Association, Spring Hill Chamber of Commerce, Kansas Department of Health and Environment, and many more.

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LOUISIANA

The Lake Pontchartrain Basin Foundation

Keywords: lake restoration, state/local agency partnerships, community outreach, educational materials, utilizing volunteers

Group Building and Organization

The Lake Pontchartrain Basin Foundation (LPBF) was established in 1989 by an Act of the Louisiana State Legislature in response to public outcry over the preservation and restoration of the Basin's ecosystem. The Foundation is a non-profit organization with a citizen-elected board. In partnership with over 90 government agencies and organizations, LPBF identifies and resolves major environmental issues in the watershed.

Technical and Specialized Resources

Through its partnership with the EPA, LPBF developed a grassroots, consensus-driven, Comprehensive Management Plan (CMP) to identify major environmental problems in the watershed in the early 1990's. LPBF fulfills the tasks outlined in the CMP through four core programs: Water Monitoring, Habitat Protection, Public Access, and Education.

Water Monitoring Program

LPBF, in cooperation with the New Orleans and north shore chapters of the U.S. Power Squadron and the Louisiana Department of Health and Hospitals (LDHH), began monthly water quality monitoring of up to 35 sites along the shore of Lake Pontchartrain in 1994. The Lake had not been monitored by LDHH since the early 1980's when fecal coliform bacteria counts typically ranged around 10,000 MPN (most probable number)/100 ml water, 50 times higher than the acceptable limit for swimming. Due to the encouraging results of this monitoring, LPBF began a Recreational Water Quality Monitoring Project in 2001. Through this project, LPBF monitors recreation sites around the Basin weekly for fecal coliform bacteria and physiochemical parameters and shares the data with the public via television, radio, newspaper, and LPBF's website. Additional sites are monitored bi-weekly for fecal coliform screening. Using this monitoring, LPBF is working to have LDHH re-examine and revise current swimming advisories for sites that now show improved water quality.

For sites with poor water quality, LPBF established a Sub-Basin Pollution Source Tracking Project in 2002. This project examines the relationship between water quality, land use patterns, and the input of the individual wastewater treatment plants within a targeted watershed. The objectives of this project include identifying sources that contribute fecal pollution to the selected sub-watershed, assessing ambient fecal coliform trends along the selected waterway over time, developing relationships with other environmental organizations, and educating the public on their role in preventing pollution. Project objectives are accomplished by conducting a water quality reconnaissance survey of the selected watershed, sampling the river and its tributaries for ambient conditions, investigating the relationship between water quality and land use through Geographic Information Systems (GIS), and offering no cost technical advice and support to small community (i.e. subdivision), private, and public wastewater treatment systems. LPBF partners with Louisiana Department of Environmental Quality, LDHH, and local environmental agencies and organizations to achieve these goals.

Habitat Protection Program

As development pressures continue to intensify basin-wide, LPBF's Habitat Protection Program works to conserve land and involve citizens in protecting local resources. The program educates and engages decision-makers and the public in land conservation efforts, develops and implements advocacy-based projects, coordinates with other conservation groups to build local partnerships, supports environmentally sustainable land use, participates in the regulatory process, and gathers related data.

The Habitat Protection Program uses three specific tools to address land use and development issues. From a regulatory standpoint, these include monitoring and responding to local environmental permits, attending or organizing public meetings and hearings, and providing technical assistance to citizens on habitat and land use issues. Further, the program educates and involves citizens and communities in land conservation efforts through the development and distribution of educational materials and presentations. More recently, LPBF is playing a more central role in leading local land conservation efforts through the habitat program.

Public Access Program

As water quality improves and habitat is protected, LPBF is working toward developing new recreation sites for public access to the Basin's natural areas. LPBF conducted a geographic assessment of the public access points in the Basin as part of a planning process to determine current public access opportunities and plan for new ones. The planning process addresses issues such as the amount and location of public access points within the Basin and their condition, the facilities available at each site, and their intended user groups. Other issues considered include assessing local environmental resources in need of protection and methods to protect them. Through this process, LPBF has prioritized several areas for public access improvements/development including beaches, bike/walking paths, and

river corridors. As this new program continues to grow, LBPF will be involved in preserving targeted areas and work toward developing new recreational opportunities in the Basin.

Education Program
While public education is a component of all LPBF programs, the Education Program serves to introduce the Basin to it youngest members. Objectives of this program are to develop and distribute environmental information through educational materials, provide learning venues such as workshops and presentations, and promote grassroots public participation in the cleanup of the Basin. These objectives are accomplished by producing curricula specific to the Basin, distributing it to area teachers, and performing teacher workshops; providing presentations on water quality, habitat, and land use issues to Basin teachers, students, and others; coordinating a student water quality monitoring project; and conducting beach sweeps and other events for public participation.

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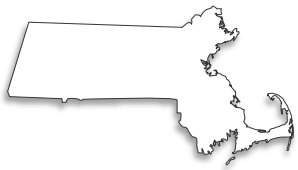
MASSACHUSETTS



Nashua River Watershed Association

Keywords: federal/state/local agency partnerships, stream restoration, watershed planning, community outreach, resource center, educational materials, utilizing volunteers

The Nashua River Watershed Association (NRWA) was formed because of a crisis: the River was deemed unfit to carry anything at all. A citizen leader brought the Clean Up Committee together and then partnered with businesses and all levels of government, leading to the formation of the Association in 1969. The mission of the NRWA is to work for a healthy ecosystem with clean water and open spaces for human and wildlife communities, where people work together to sustain mutual economic and environmental well-being in the Nashua River watershed.

Group Building and Organization
The Nashua River watershed comprises all or part of 31 communities in central Massachusetts and southern New Hampshire. The NRWA serves as educator, steward, advocate, and provider of technical assistance. It works cooperatively with land trusts, other conservation groups, municipalities, and state and federal agencies and interested citizens to achieve its goals. Among its accomplishments, the NRWA has helped protect 85 miles of riverfront land and more than 8,000 acres.

The NRWA's long-range plan, *1995 to 2020: Vision for the Nashua River Watershed,* establishes a road map for the watershed in the next quarter-century, with goals and strategies

for achieving the vision. The Association developed the plan with input from watershed communities and many local groups, agencies, and individuals. The "2020 Plan" recommends four basic strategic actions: environmental education, advocacy for resource stewardship, resource-based community planning, and working together for cooperative watershed management. In 2003, the Association partnered with the former Massachusetts Watershed Initiative Nashua Team to release a detailed "Five Year Plan" for the watershed on a subbasin basis.

Capital Resources and Fiscal Management

The NRWA depends on membership fees and donations as an essential part of its $450,000 annual operating budget. All members receive the NRWA's quarterly newsletter, and voting privileges at the NRWA Annual Meeting. The NRWA has more than 150 business and organizational members along with its individual members. It also receives funds through grants, contracts, and some events. The Association receives about $100,000 in in-kind goods and services each year.

Technical and Specialized Resources

The NRWA has a River Resource Center in Groton, Massachusetts, which houses the Bill Farnsworth Conservation Clearinghouse. The center provides public access to a wide variety of information about the Nashua River watershed; the NRWA's (GIS), providing mapping capabilities as part of the Clearinghouse; a large room for programs or meetings; and a nature trail on the River Resource Center property.

The Association assists towns with open space and recreational plans and a wide variety of land protection and land-use planning projects. In 2003 the Association published a CD-ROM on *Resource Protection Bylaws, Ordinances & Regulations for the Nashua River Watershed*. The Association conducts habitat inventories, and in 2003 published a CD-ROM on *Wildlife Habitat and Natural Resource Inventories in the Nashua River Watershed: A Citizen's "How-to Guide"*. The Association has also published a *Canoe Guide* and a *Greenway Guide* for the Nashua River watershed. During the year the NRWA conducts numerous watershed education programs for more than 6,500 youth and adults. It works with schools throughout the watershed to offer a variety of programs, all designed to promote active, science-based learning. The Association's "River Classroom" program provides canoe-based learning opportunities. The NRWA's adult programs offer speakers and workshops on technical issues and topics of interest to the public, such as sense of place, living with suburban wildlife, plant communities and rare plants, beavers, birds, and butterflies.

The NRWA has conducted a volunteer water quality monitoring program since 1993 with the intent of building baseline information to track trends and identify "hot spots" for remediation. Volunteer monitors collect up to 40 water samples monthly from April through October. In addition, the Association holds one or two training sessions for monitors, some including a laboratory session. The Association has an EPA and Massachusetts Department of Environmental Protection-approved Quality Assurance and Performance Plan.

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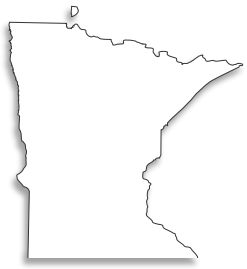
MINNESOTA



Chain of Lakes Clean Water Partnership

Keywords: federal/state/local agency partnerships, community outreach, educational materials, stormwater management

Chain of Lakes Clean Water Partnership is one of the largest urban watershed restoration initiatives in the nation.

Group Building and Organization

A partnership of six government agencies and cities is funding and managing the project. Partners include the City of Minneapolis, Minnehaha Creek Watershed District, Minneapolis Parks and Recreation Board, City of St. Lois Park, Hennepin County, and Minnesota Pollution Control Agency.

Capital Resources and Fiscal Management

This project is one of the largest and most ambitious projects ever undertaken in the Minneapolis metropolitan area. The implementation phase of the project was begun in 1997 with a $250,000 grant from the Clean Water Partnership program. In total, the contributions of the many partners in this project to date are $3,378,200 in cash and in-kind services.

Technical and Specialized Resources

Among the program's notable successes is the homeowner education program. The program targets homeowners through a variety of outreach methods to convey messages about the importance of water quality and steps citizens can take to improve and protect watershed. Several of these materials have been duplicated and modified for use by other watersheds in Minnesota and other parts of the nation. Through the program's assertive efforts to create wetlands, restore degraded shorelines, and improve stormwater management practices, water quality monitoring results from Cedar Lake have shown the highest quality documented in 30 years.

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NEW JERSEY

Spruce Run Reservoir Initiative

Keywords: drinking water protection, federal/state/local agency partnerships, watershed planning, local ordinance, utilizing volunteers, user fees

The Spruce Run Reservoir Initiative was developed by the New Jersey Water Supply Authority (NJWSA) to help protect its reservoir. The goal of the Spruce Run Reservoir Initiative is to prevent water quality degradation and the loss of water supply safe yields from this reservoir, New Jersey's third largest at 11 billion gallons.

Group Building and Organization

In 2001, the Townships of Bethlehem, Lebanon, and Union and the Boroughs of Glen Gardner and High Bridge each signed a Memorandum of Understanding with NJWSA to cooperate in meeting the Initiative's goal, in ways that benefit all partners and result in no loss of home rule.

Capital Resources and Fiscal Management

The NJWSA pays for the involvement of its staff in the project, including its portion of the work to help municipalities develop master plans, ordinances, and project review procedures. NJWSA also provides funding to cover administrative, legal, and property and land acquisition costs along with the cost of a nonpoint source loading model for the watershed and most of the matching costs for several grants.

The Authority provides all services as fiscal agent to the Initiative, through its business office for contracts and a comptroller for fiscal tracking and audits. Depending on the project, the Authority uses in-house staff or consultants for its work on the Initiative. The municipalities use volunteer local officials and consulting professionals (planners, engineers, hydrologists) for their Initiative efforts. The Initiative members use their funds and local volunteer time as matching funds for grants. One grant from the U.S. Forest Service resulted in the Critical Areas Preservation Plan. A Clean Water Act Section 319 grant will result in a watershed-based stormwater management plan for one tributary to the reservoir. The New Jersey Green Acres Program has committed $2 million for actual land acquisition, and the local county and municipalities are also involved in land acquisition.

Stream corridors will be acquired wherever possible. Acquisition efforts are under way with the cooperation of the Initiative members, the County of Hunterdon, and the New Jersey Department of Environmental Protection's Green Acres Program. A contract should be signed soon on a major property along one of the reservoir tributaries, and negotiations are in progress with a number of other landowners. The Initiative has drafted a Critical Areas Preservation Plan as one component of its open space preservation process. The plan

identifies a need to more than double the amount of dedicated open space in the watershed, adding approximately 6,900 acres.

The Initiative members are cooperating in grant applications to achieve some of these purposes. Two new grants have been received in 2003. One will help the municipalities improve their control of development and redevelopment of highway corridors through the reservoir watersheds, to reduce pollutant loadings while sustaining local economies and community character. EPA provided another grant under the Watershed Protection Initiative that includes the Spruce Run Reservoir watersheds, among others. The NJWSA also committed annual funding to protect the reservoir. NJWSA customers pay $5 per million gallons to a Source Water Protection Fund that covers "soft costs" for land acquisition (essentially any cost other than the land itself), contractual work, and matching funds for grants. As of July 1, 2003, another $5 per million gallons is committed to actual land acquisition costs, mostly in the Spruce Run Reservoir watersheds, using bonds supported by the State Revolving Fund and Environmental Infrastructure Trust. In addition, NJWSA customers support staff costs for the seven-person Watershed Protection Programs unit.

Technical and Specialized Resources

The Initiative conducts watershed management activities to control the impacts of new and existing land uses in the area. Initiative members are working with county and state governments to improve local land use ordinances and cooperative development controls to minimize the adverse effects from new development. NJWSA works closely with watershed municipalities to develop master plan updates, draft ordinances, and review development proposals.

Information from NJWSA's Raritan Basin Watershed Management Project is being used to identify additional needs. NJWSA has also received a major section 319 grant to develop a sophisticated stormwater management model and plan for the Mulhockaway Creek watershed, a 12-square-mile tributary to the reservoir that is dissected by a major interstate highway (I-78).

Best management practices are being implemented to reduce the impacts of existing land uses, both suburban and rural. NJWSA has contracted with a private consultant for a watershed-based nonpoint source loading model covering all streams flowing into the reservoir, as a way of identifying key areas for remedial work. NJWSA is also planning a comprehensive stream corridor assessment in 2003.

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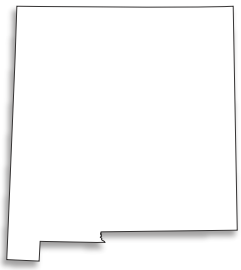
NEW MEXICO



Santa Fe Watershed Association

Keywords: stream restoration, forest management, watershed research, university partnerships, state/local agency partnerships

The mission of the Santa Fe Watershed Association is to restore the Santa Fe River to a living river and to balance human use with natural resource protection within the Santa Fe River watershed.

Group Building and Organization

The Santa Fe Watershed Association is a membership-based organization of approximately 200 members that strives to find the common ground in managing the landscape of the Santa Fe River for long-term sustainability.

The first exercise in this kind of "adaptive management" for the watershed emerged from the burning of thinned demonstration plots in an area visited on guided walking tours by many Santa Feans. The slash, or woody debris remaining from the thinning activity on these demo plots, was handled in two different ways. On one plot the slash was scattered; on the other plot the slash was collected in small piles. Both plots were burned in spring 2002. Preliminary data on the demo plots collected by the College of Santa Fe indicated that a number of trees in the "pile" plot were killed by the heat generated from burning the piles, whereas tree mortality on the "scatter" plot was much lower and limited primarily to a few small-diameter trees. This information was used to evaluate plans for burning slash in the areas of the watershed proposed for treatment in the Environmental Impact Statement (EIS). The Association continues coordinate the monitoring of the implementation of the EIS.

Capital Resources and Fiscal Management

The work of the Santa Fe Watershed Association is funded by a Clean Water Act Section 319 grant and challenge grants from the Thaw Charitable Trust, Brindle Foundation, and New Mexico Community Foundation. The Association receives further funding from the U.S. Forest Service and line item funding secured by a Senate delegation for the coordination of the monitoring program.

Technical and Specialized Resources

In January 2002 Santa Fe National Forest issued the Record of Decision on the EIS finalizing plans to thin and burn portions of the forested watershed east of the city of Santa Fe. Monitoring of ecological conditions in the watershed began more than 2 years before the start of management actions, which are intended to reduce the potential for a Cerro Grande-scale fire in the city's municipal watershed. The monitoring continues to be implemented through an unprecedented collaboration between government agencies and

non-governmental organizations, with third-party review by a volunteer scientific panel, the Technical Advisory Group.

To date, participants have collected data on water quality, riparian health, active beaver colonies, and fish populations. The number and condition of trees have been inventoried in areas that might later be thinned and burned. Stream gauges have been installed on the outlet streams of two adjacent subbasins at the east end of the upper reservoir. Almost two and one-half years of flow data from the two drainages has been collected. In spring 2004, one of the basins will be subjected to some combination of thinning and burning while the other will remain untreated, allowing a before-and-after and side-by-side comparison of the effects of the treatments on flow and erosion.

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NEW YORK

Boquet River Association (BRASS)

Keywords: stream restoration, water testing laboratory, agricultural partners, federal/state/local agency partnerships, membership fees, community education, industry partnerships, utilizing volunteers, educational materials

In the questionnaire of riparian landowners for the Boquet River, participants were asked about major river resources and issues, as well as how problems should be resolved. BRASS was formed after an overwhelming majority of respondents wanted more local control and believed that impacts should be minimized and problems should be solved through cooperation.

There was no crisis or serious pollution merely a number of issues everyone agreed were (or could be) problematic: littering, noisy parties along the river, flooding, streambank erosion, sedimentation of the river, water quality testing, and an unclear stack of riparian regulations.

Group Building and Organization

BRASS is a 200-member, grassroots nonprofit organization dedicated to enhancing the quality of water and life in the Boquet watershed. The group discusses and acts on issues related to land uses, point and nonpoint source pollution, in-stream and riparian species and habitats, recreation, and the economy.

Board members include appointees from each town in the watershed and those elected from the membership at large. The towns and the county "contract" yearly to the association for a modest amount of money (total of $3,000 to 5,000) to work on the identified issues.

The executive director is a full-time employee, and two laboratory employees work part-time. There isn't sufficient laboratory business for full-time operation; in fact, the lab is a "for-debt" operation that provides needed services to the community. The executive director is also the bookkeeper and is expected to raise a good part of their salaries through writing grant proposals.

BRASS works with various groups, such as farmers, local road departments, schools, libraries, museums, and local groups. BRASS also works with state agencies, like the New York State Department of Environmental Conservation's (NYSDEC) Fisheries Department; government agencies in Vermont and New York; and federal agencies, including EPA and the Federal Emergency Management Agency, to implement projects to educate and coordinate the skills and services of these diverse organizations.

Capital Resources and Fiscal Management

BRASS's key funding sources come from a small amount of "contracted" money from watershed towns and the county, about an equal amount from membership fees to the association; an annual campaign fund; and funding from successful proposals to federal or state grant programs or to foundations. The association owns and operates the only certified water testing facility in the county.

A strong factor in BRASS's capacity-building equation is local donations of materials and service. On a log crib erosion control project, for example, the county forest or a riparian landowner might provide cedar logs, a mining business in the watershed might provide large stones, and highway department trucks might transport all the materials. The material cost for a 150-linear-foot cribbing project would therefore apply only to hardware. BRASS once received a tractor-trailer load of seedlings to plant following an acid rain study. The association also uses every type of volunteer it can find: landowners, association members, Americorps and Student Conservation Association workers, international volunteers from Volunteers for Peace, offenders serving community service time, and local inmates. Volunteers sample water, plant trees, organize cleanups, build structures, work on exhibits, and assist when appropriate in grant studies on macroinvertebrates, sediment embeddedness, and invasive plant species.

BRASS conducted studies in sediment embeddedness, aquatic insects, native mussels, buffer zones, and semi-aquatic invasive plants with funding from the Lake Champlain Basin Program under the auspices of EPA. Through funding from the New York State Council on the Arts, BRASS designed the Elizabethtown River Walk, the Thrall Dam Park at the County Forest in Lewis, and the Noblewood Park on Lake Champlain at the mouth of the Boquet River. Through a World Wildlife Fund grant, BRASS worked with other local environmental, historic, and economic development groups to develop strategies for sustainable tourism that would use while protecting the area's natural and historic resources. BRASS also received an environmental education grant from EPA to introduce the raising of brook

trout and landlocked salmon from eggs into middle school classrooms as an exciting adventure in environmental studies.

Technical and Specialized Resources

BRASS has engineering and agricultural professionals, teachers, farmers, a land trust employee, and the owner of a hydroelectric plant on its board. Towns often provide resources or services.

Since its inception BRASS has planted 250,000 seedlings and trees on more than 10 streambank miles for erosion control; worked with farmers to stem erosion and increase buffer zones and wildlife habitat; pioneered the planting of large, native willow tree cuttings for streambank erosion control in the Lake Champlain Basin; built more than 1,400 feet of low-cost log cribbing and log terrace structures for erosion control; and produced, wrote, and published a stream erosion control booklet titled *How to Hold Up Banks: Using All the Assets*, and produced a 24-minute video titled *Looking For Answers: Developing Partnerships for the Control of Sediment Runoff from Rural Roads*. BRASS conducted studies in water quality, sediment embeddedness, aquatic insects, native mussels, riparian buffer zones, and stream morphology. The research into sediment embeddedness, with assistance from the Fisheries Department of NYSDEC, is one of the most complete long-term studies conducted in the Northeast.

One BRASS project built on a previous interdisciplinary middle school curriculum titled "Adopt-A-Salmon Family" (AASF). Developed by a consortium of persons from the U.S. Fish and Wildlife Service in New Hampshire, the New Hampshire/Main Sea Grant program, and the New England Salmon Association), the curriculum, which uses the Atlantic salmon, is now used in more than 100 schools in the Northeast. It is organized around monthly themes with a pre-prepared newsletter for student use; it also contains a teacher's guide, vocabulary, activities and demonstrations, references and resources, and the AASF Web site. BRASS added curricular materials about the Landlocked Atlantic Salmon and trout to expand the use of this valuable resource to classrooms throughout most of the nation.

BRASS has also established Essex County's only water testing laboratory certified by the Department of Health, helped redesign FEMA flood zones, designed riverside public access parks totaling over 600 acres, turned an industrial waste area into an attractive salmon fishing access, and implemented runoff controls with local road departments. Through its quarterly newsletter, the Association also has provided project information to members and to more than 100 agencies, schools, libraries, museums, and local governments.

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NORTH CAROLINA

Haywood Waterways Association

Keywords: stream restoration, utilizing volunteers, community outreach, membership fees, federal/state/local agency partnerships, university partnerships, watershed planning

In 1994 the Pigeon River Fund (PRF) was established by Carolina Power & Light (now Progress Energy) as part of the FERC re-licensing agreement for the Walters hydroelectric plant located on the Haywood County side of the North Carolina/Tennessee state line. Under the agreement, the PRF was to provide priority funding water quality projects in Haywood County. To ensure the development and submittal of worthwhile projects from Haywood County, a group of local citizens, including the Carolina Power & Light vice president, formed the beginnings of the Haywood Waterways Association (HWA).

Group Building and Organization

The HWA is a nonprofit association dedicated to maintaining and improving the water quality of the Pigeon River with a main focus on reducing nonpoint source pollution. HWA works toward this goal through a variety of voluntary initiatives, including conducting educational programs, gathering water resource information, sharing information to increase public awareness, supporting greenway efforts, sponsoring litter removal and stream clean-up days, and obtaining grants and other resources to address nonpoint source pollution problems. HWA is funded by contributions from members, grants, and donations.

Much of its work is guided by a Technical Advisory Committee with representatives from federal, state, and local agencies, as well as many volunteers with a variety of backgrounds and experiences.

HWA was selected to receive the "Water Conservationist of the Year" award in the 1999 Governor's Conservation Achievement Awards Program. This award was in recognition of several initiatives HWA has undertaken in recent years. These include an annual Kids in the Creek educational program, the Volunteer Water Information Network stream monitoring program, a geographic information system (GIS) database of the sources of nonpoint source pollution on the Pigeon River in Haywood County (through a partnership with the Tennessee Valley Authority), greenway planning and implementation, stream clean-up days, public workshops, and several other public information and awareness efforts.

Capitol Resources and Fiscal Management

HWA became a nonprofit, member corporation on September 23, 1998 and received its 501(c)(3) tax-exempt status from the Internal Revenue Service on January 29, 1999. The Association is expanding its efforts with new members, additional staff, and additional programs. With Pigeon River Fund grant assistance, memberships, and donations, HWA has

hired a director and a project manager. They both provide support to the HWA committees, which in turn provide opportunities for direct citizen involvement. HWA and its partners have written 30 successful grant applications and received almost $2,000,000 in state, federal, and other funding.

Technical and Specialized Resources

Water quality data are fundamental to understanding the conditions in local watersheds. Chemical and physical information about the water in streams is essential for maintaining and improving water quality. To be useful, this information must be gathered over a long period of time and in a very consistent manner. It was this basic need that led to the formation of the Volunteer Water Information Network. The network is a partnership of groups and individuals dedicated to preserving water quality in western North Carolina. The University of North Carolina (UNC)-Asheville Environmental Quality Institute provides technical assistance through laboratory analysis of water samples, statistical analysis of results, and written interpretation of data. HWA initiated a sediment monitoring program in 2002 and currently has 6 monitoring stations in Haywood County.

HWA published a comprehensive Watershed Action Plan for Haywood County in 2001. Starting with the 1999 GIS database and public forums conducted in May 2000, the Watershed Action Plan for the Pigeon River Watershed has evolved to the present document. This plan is a cooperative effort between the 23 members of the HWA Technical Advisory Committee. These members have brought hundreds of years of experience and strong professional backgrounds to the issue of how to reduce nonpoint source pollution in the Pigeon River Watershed.

The plan includes natural and historical perspectives on the watershed. It summarizes the available water quality data for the watershed. Using the latest GIS data, it identifies the sources of nonpoint pollution and quantifies the impacts. The watershed conditions of four subwatersheds (Upper Pigeon, Lower Pigeon, Richland Creek, and Jonathan Creek) are outlined. The plan then identifies possible ways to address the issues and selects a number of recommended strategies. These strategies are more fully developed in an addendum to the plan.

Contact: Ron Moser, P.O. Box 389, Waynesville, NC 28786; 828-452-9077 or 828-456-5195; ronmoser@charter.net; http://www.haywoodwaterways.org/index.htm

Upper Broad River Watershed Protection Program

Keywords: stream restoration, state/local agency partnerships, watershed planning, community outreach

Group Building and Organization

In 1996 Hickory Nut Gorge experienced a catastrophic flood that dropped nearly 11 inches of rain in 2 hours (17 inches in the 24 hour period). The resulting runoff and erosion severely impaired Lake Lure, where sediment was deposited. This also resulted in the loss of tourism revenue vital for local business and landowners. The Upper Broad River Watershed Protection (UBRWP) committee was formed to identify the sources of erosion and find a solution to the sedimentation problem. The committee is affiliated with Mountain Valleys RC&D, composed of residents of Hickory Nut Gorge, representatives from the local governments, and soil and water conservation specialists.

Capital Resources and Fiscal Management

The Clean Water Management Trust Fund approved grant funding of $641,000, which was used to initiate an erosion control and riparian protection program in October 1999. The UBRWP Committee began program start-up and implementation in October 1999 by hiring an erosion control specialist to administer the project. Since Mountain Valleys RC&D received the initial grant from the Clean Water Management Trust Fund, it has received two more grants to continue conservation work providing riparian easements and erosion control. The grants are funded through grants from the North Carolina Clean Water Act Section 319 nonpoint source grant program and the North Carolina Clean Water Management Trust Fund.

Technical and Specialized Resources

After months of preliminary study and deliberation by the Natural Resources Conservation Service, Isothermal Planning and Development Commission, local Soil Conservation District personnel, and members of Lake Advisory Committee for the Town of Lake Lure held a meeting on October 2, 1997, for technical water and soil conservation specialists from across North Carolina to discuss water quality issues in the Upper Broad River watershed. Preliminary studies indicated that there are more than 500 sites in the 94-square-mile watershed that dump between 50,000 and 200,000 tons of sediment into the Broad River Basin each year.

The Committee provides technical assistance and written Conservation Plans detailing treatments to stabilize existing eroding sites, as well as financial reimbursements to property owners to monitor the installation of approved Natural Resources Conservation Service practices.

The Committee also provides Riparian Conservation Easements to property owners desiring to protect water quality permanently with the sale or donation of their development rights and riparian trees for stream buffers and offers printed material to educate property owners

about the value of riparian buffers and watershed protection. A total of 63.33 acres are in riparian protection, protecting 9,770 linear feet of stream, creeks, and branches within the foothills of the Blue Ridge Mountains. Easements are held by the State of North Carolina and funded by the Clean Water Management Trust Fund

The UBRWP Committee conducts educational workshops to increase stakeholder participation and understanding and has developed an ArcView GIS watershed plan to assist in predicting future watershed protection needs.

They continue to provide water quality monitoring for long-term evaluation of sediment and pollutant sources in the Upper Broad River watershed. Since July 1996 the Town of Lake Lure has paid the cost for water quality monitoring managed through Volunteer Water Information Network collecting water samples from designated sites along streams and rivers in the watershed. Since August 1999 the Environmental Quality Institute has been collecting sediment samples from 25 sediment-monitoring stations in the watershed.

Contact: Clint Calhoun, Erosion Control Specialist; 828-625-9983, ext. 123; clintcalhoun@blueridge.net

OHIO

Sugar Creek Watershed Farmers

Keywords: agriculture partners, stakeholder facilitation, stream restoration, nutrient management plans, state/local agency partnerships

The Sugar Creek Watershed Farmers are receiving much attention in Ohio because of their selection process and farmer control of the group process. They have about one-third of the land in the subwatershed and potentially 8 miles of contiguous Conservation Reserve Program (CRP) buffer (3 miles in place now). The approach is holistic, and several new farm enterprises (dairy, low-input soybeans for sale to Japan, mushrooms, and free-ranging chickens) are planned as part of the project. The 2-year-old project concentrates on the headwater streams of the Muskingum watershed. It is an example of a landgrant college working very closely with local Soil and Water Conservation Districts (SWCDs).

Group Building and Organization

Team formation is key to the project. One key lead farmer chose several neighbors, who in turn chose several more. The approach worked very effectively because the farmers had a common purpose.

The farmers were already motivated by fear that because their watershed had been labeled the second worst in Ohio (following the burning Cuyahoga), the finger of blame would be pointed at them.

Although conflict resolution has not been important to date, it might become more important as the project develops further. One area of contention will be between the heavy polluter farmers once they have been clearly identified (which will be soon). The scale differences between large and small farmers might also result in conflict.

The farmers set the meeting agendas; facilitators try to provide opportunities to meet the agenda items. The farmers have said they don't want to waste words, and a meeting that moves point by point centering on finding the problems and fixing them is critical.

Capital Resources and Fiscal Management

Even before the project's U.S. Department of Agriculture grant and EPA Clean Water Act Section 319 grant started, the farmers had 3 miles of conservation reserve program buffer in place. The grants were important but not the determining factor in the farmers' participation in the project.

Technical and Specialized Resources

The farmers needed to have two people from the land grant college experiment station trained so they could help the SWCDs do their evaluations of NRCS Comprehensive Nutrient Management Plans and Conservation Plans. This step was necessary to speed up implementation of best management practices. They also had to help teach the local SWCDs how to use GIS in their work and for planning.

EPA data can be hard to understand, so the farmers need to bring everything down to the field level. Stemming from a strong value of social responsibility and land stewardship, the farmers needed to have water quality results they could relate to their own farms. Previously the Ohio EPA had 4 mainstem sites in their subwatershed of 26 square miles so the farmers and university raised this to 22 sites with samples taken bi-weekly. The intensive data resulted in a "hot spot" approach to pollution remediation because some sites were usually much higher than others.

Contact: Richard Moore, Sugar Creek Watershed—Researchers Team Leader, Associate Professor, Dept. of Human and Community Resource Development, OARDC/OSU, 201B Thorne Hall, 1680 Madison Ave., Wooster, OH 44691; moore.11@osu.edu; 330-202-3538; http://amp.oardc.ohio-state.edu/betha/index.html

SOUTH CAROLINA

Friends of Lake Keowee Society

Keywords: utilizing volunteers, educational materials, community outreach, industry partnerships

The Friends of Lake Keowee Society (FOLKS) is an all-volunteer, not-for-profit organization dedicated to the conservation and enlightened management of Lake Keowee and its watershed to preserve the beauty, enjoyment, and economic benefit for property owners, lake users, visitors, area businesses, and future generations.

Group Building and Organization

More than 3,000 residents of Oconee and Pickens Counties compose the membership of FOLKS. Members have diverse backgrounds and include scientists, agriculturists, marine and landscape professionals, outdoor enthusiasts, former professionals, and CEOs. Many are active in local civic and community affairs and closely follow state and national issues that might affect their quality of life.

To achieve its goals, FOLKS intends to do the following:

- Seek and make available reliable information that inspires appreciation of the lake and its watershed, defines their condition and value, reveals trends and outcomes of related impacts, and fosters the use of best management practices.
- Study and collect data on the impact of buffers and setbacks of septic systems in the Lake Keowee watershed.
- Promote local, state, and national policies that motivate and facilitate enlightened lake and river management.
- Sponsor local conservation projects and support other groups that are in harmony with the aims of FOLKS.
- Create public awareness of, support for, and involvement in conservation of the lake and watershed.

Capitol Resources and Fiscal Management

In July 1999 FOLKS was awarded a $240,000 matching funds grant from EPA and the South Carolina Department of Health and Environmental Control (DHEC) to help fund a range of remedial programs over the next 5 years to find and fix problems related to excessive fecal coliform bacteria, metals, and siltation.

Technical and Specialized Resources

FOLKS measures 89 sites for water clarity each month throughout the year using Secchi disks, a technique developed in 1865 and still in common use today. The organization has analyzed and charted the data from 1994 to the present to determine trends and to point out

areas of concern. Since 1998 ceramic tiles have been pulled monthly from seven locations, and the algae collected are analyzed in a laboratory for chlorophyll content and total weight. Again, the effort is to identify trends and specific areas of concern.

Information from the Secchi disk program and sediment stage bottles placed in streams flowing into the lake is used for the measurement of sediment. Ongoing studies by Duke scientist Dr. David Braatz show that Little River alone contributes about 4 tons of sediment each day during normal flow and thousands of times that during peak storm events.

Volunteers and citizens on the lake report abuses, ranging from septic overflows to unprotected construction activity, to FOLKS ombudsmen. The ombudsmen than follow up with local contractors or authorities and attempt to correct the abuses.

Each spring and fall hundreds of volunteers in more than 110 boats cover the 300 miles of shoreline to pick up trash left by unthinking lake users. Scuba divers pick up batteries, deck chairs, and television sets from the bottom in highly used areas. More than 12,000 bags of debris, mostly plastic bottles and cans, were collected since 1994. Duke Power assists with objects too heavy for the volunteers.

Informational materials are displayed in libraries and at area fairs. Talks are given to local organizations. FOLKS provides boats and support for the annual pontoon classroom run by the Clemson Extension Service to teach children about the science and ecology of the lake. FOLKS also hosts quarterly forums, with well-known guest speakers, and publishes a monthly newsletter.

Contact: Al Babinicz, Executive Director, Friends of Lake Keowee Society; 864-710-6968, al@kfmaps.com, or walker@thehappyberry.com, 864-868-2946; http://www.keoweefolks.org

VIRGINIA

Friends of the Rappahannock

Keywords: federal/state/local agency partnerships, construction industry partnerships, watershed planning, utilizing volunteers, community outreach, education materials

Group Building and Organization

Friends of the Rappahannock (FOR) initially formed by a group of interested citizens who felt a need to have ongoing advocacy on behalf of the river. FOR's mission is to promote the conservation, protection, and enjoyment of the natural, cultural, recreational, scenic, and historical values of the Rappahannock River and its tributaries. A number of project examples are provided here.

Capital Resources and Fiscal Management

FOR obtains its funding through the annual "Riverfest" fundraiser, corporate donations, federal grants, state grants, membership dues, interpretive trips, and small fundraisers.

Technical and Specialized Resources

To demonstrate the cost-effectiveness of low-impact development (LID) approaches, five existing commercial projects in the Fredericksburg, Virginia, area were redesigned on paper to incorporate LID practices, focusing particularly on incorporating stormwater "integrated management practices" (IMPs) throughout the landscape. These redesigns were performed at the request of FOR and the LID Center by engineering staff at the Silver Companies and Williamsburg Environmental Group in order to assess the cost and practicality of incorporating LID practices into various types of commercial designs. The resulting cost assessment led to the developer's willingness to use the LID approach in his subsequent projects.

FOR and the Center for Watershed Protection conducted an intensive 1-year project to promote consensus among diverse stakeholders for code changes that facilitate more river-friendly site design on development sites. The resulting document, *Model Development Principles for the Central Rappahannock,* is the basis for code revisions currently in the review stage for Stafford and Spotsylvania Counties.

FOR and Stafford County are currently implementing a comprehensive plan to guide the restoration of water quality and habitat on Stafford County's tributaries to the Rappahannock. Activities include global positioning system (GPS)-based assessment of more than 80 miles of streams to inventory erosion areas, migratory fish blockages, and pollutant sources. A comprehensive assessment of impervious cover is also being conducted to prioritize subwatersheds for future LID retrofit activities.

FOR also conducts river stewardship education projects, such as At the River's Edge, a summer environmental education program conducted in partnership with local school systems, scout groups, and other youth groups; riverside kiosks; education and recreation events; water quality monitoring; and cleanups.

Contact: Friends of the Rappahannock, P.O. Box 7254, Fredericksburg, VA 22404; 540-373-3448; cleanriver@pobox.com; http://for.communitypoint.org

Organizations That Assist Watershed Groups in Building Capacity

This second section highlights organizations that foster and provide the tools for local watershed groups and governments to achieve their mission or goal. The goal of this section is to spur ideas for new and existing organizations to help other organizations to manage nonpoint source pollution at the watershed scale.

CALIFORNIA

California Coordinated Resource Management and Planning Council*

Keywords: federal/state/local agency partnerships, agriculture partnerships, industry partnerships

The Coordinated Resource Management and Planning (CRMP) Council is a statewide partnership of 15 state and federal natural resource agencies. The partnership also includes 14 organization sponsors: California Chamber of Commerce, California Agricultural Commissioners Association, California Cattlemen's Association, California Farm Bureau Federation, California Trout Inc., Pacific Gas and Electric Company, Planning and Conservation League, Society for Range Management, Society of American Foresters, Soil and Water Conservation Society - California Chapter, Heritage Trails Fund, America Farmland Trust, National Audubon Society, and California State Grange.

Providing Group Building and Organization

The mission of the Council is to promote locally led planning for watershed management and watershed restoration efforts. The Council also promotes and fosters partnerships between locally led initiatives and participating agencies that have resources, funding and technical expertise.

Council participants share their expertise in the process of local level organization as well as technical approaches and methodologies that groups can use to be effective watershed stewards or restorers. The local organizations include watershed councils, groups, conservancies, and the like.

Providing Technical and Specialized Resources

The CRMP Council supports its mission by facilitating workshops to promote locally led planning. It also offers a handbook that lays out step-by-step instructions for CRMP groups, from getting organized to monitoring results. In addition to the handbook, the CRMP Council's Web site provides links to other organizations that can assist local groups, copies of newsletters, funding sources, and other helpful documents.

A Technical Advisory Council (TAC) deals with the specifics of the CRMP elements. The TAC is composed of technical representatives from the state and federal agencies whose role is as follows:

- Identify and support the best watershed management approaches
- Monitor the process for weaknesses and strengths
- Identify and resolve field problems

A program director plays a dedicated administrative and coordinating role. The program director also organizes the workshops that are the hallmark of the CRMP process, acts as an ad hoc information clearinghouse, and provides direct assistance to organizations attempting to use the CRMP process.

Contact: Mondy Lariz, Program Director, 801 K Street, Suite 1318, Sacramento, CA 95814; 916-447-7237, cacrmp@ca.nacdnet.org

MARYLAND

Watershed Restoration Action Strategies Partnership

Keywords: watershed planning, federal/state/local agency partnerships, agriculture partnerships, community outreach

Providing Group Building and Organization

The goal of the Watershed Restoration Action Strategies (WRAS) Partnership is to focus and coordinate federal, state, local, and private resources in identified priority watersheds—those areas most in need of restoration or protection. Partners work with local governments to build planning capacity and to help develop the Watershed Restoration Strategy for the watershed.

The Partnership aims to develop strategies that incorporate large-scale basin planning efforts like those of Maryland's Chesapeake Bay Tributary Teams and the Coastal Bays Program, with individual watershed concerns for the following:

- Maintaining key environmental resources
- Reducing water quality impairment

- Protecting wildlife habitat
- Addressing specific problems

The Partnership also works within the Chesapeake Bay Program, to which Maryland is a key signatory. Under that program, watershed plans must be developed and implemented in two-thirds of the multistate Chesapeake Bay watershed.

The responsibility for the Strategy rests primarily with local governments. In the process of developing and implementing it, however, myriad stakeholders and partners are involved, including nonprofit organizations, local Natural Resources Conservation Service offices, watershed associations, schools, farmers, local corporate citizens, and city and town governments. The Partnership recognizes that stakeholder input into the watershed planning process (for example, in developing measurable milestones and a time frame for reaching them or identifying individual water quality/habitat protection and restoration activities) is fundamental to the eventual success of the Strategy.

Providing Capital Resources and Fiscal Management

In terms of financial resources, the WRAS Partnership identifies state monies from Clean Water Act Section 319 and Coastal Zone Management Act Section 309 that can be used through grants for each watershed's Strategy or restoration effort. In addition, it coordinates targeted assessment efforts and state agency services, resources, and technical assistance. The Task Force has identified a "Tools, Training, Marketing and Incentives" Workgroup that is developing various tools and resources for use at the local level. To help watersheds benefit from other examples, the Task Force has compiled a survey of community watershed organizations' efforts to develop watershed plans.

Contact: Daniell Lucid, Watershed Strategies Program Manager, Maryland Department of Natural Resources, Coastal Zone Management Division; 410-260-8726; dlucid@dnr.state.md.us; http://www.dnr.state.md.us/bay/czm/wras/; http://www.dnr.state.md.us/bay/czm/wras/wras_rfp.pdf

MONTANA

Montana Watershed Coordination Council*

Keywords: resource identification assistance, partner identification assistance, educational materials, volunteer training, technical document review

The mission of the Montana Watershed Coordination Council (MWCC) is to serve as a forum to link local watershed groups both with each other, and with channels of access to state natural resource agencies and legislative processes. Its mission is to share resources and disseminate information efficiently so that watershed groups can benefit from each

other's experiences and gain knowledge on conducting the technical aspects of their work and on participating in legislative processes where the legislation is related to watersheds in the state.

Providing Group Building and Organization

The MWCC fosters coordination, communication, and cooperation rather than setting policy or usurping any other organization's authority or responsibility. It meets quarterly to hear from watershed groups and to provide informational updates from various sources.

Providing Technical and Specialized Resources

Several workgroups oversee different topic areas, with the aim of keeping watershed groups up-to-date on information and offering helpful ways to work on and address issues that those groups face. The workgroups have developed guidances, made recommendations to key agencies, performed a study on forest BMP effectiveness, provided volunteer monitor training, coordinated activities among different nonprofits and agencies, provided technical review for documents, and even sponsored an award program that recognizes innovative, locally led watershed approaches.

- **Watershed Linking Work Group:** Aims to develop a Watershed Information Link that allows people to learn about watershed activities and to help link watershed groups with sources of financial and structural assistance.
- **Watershed Recognition Work Group:** Formally recognizes innovative, locally led approaches to restoring Montana's watersheds at a high political level.
- **Grazing Practices Work Group:** Focuses on promoting one set of minimum grazing management measures that can be adapted to meet site-specific conditions to maintain and protect water quality on all grazing lands in Montana; the measures are to be voluntarily implemented without affecting private property rights.
- **Ground Water Work Group:** Responsible for promoting coordination and cooperation in implementing ground water protection programs, plans, and projects in Montana.
- **Information and Education Work Group:** reviews proposals for possible inclusion in Montana's annual 319 nonpoint source pollution grant. The state Department of Environmental Quality uses recommendations from the subcommittee to promote information and education activities addressing nonpoint sources.
- **Montana Wetlands Council:** An open membership Council that meets with the MWCC to promote stewardship of wetlands.
- **Water Activities Work Group:** Provides recommendations on watershed planning projects and activities.
- **Water Quality Monitoring Work Group:** Serves as a collaborative body to facilitate more effective collection, interpretation, and dissemination of aquatic resource monitoring data.

- **Reference Condition Subgroup:** A group composed of members of state agencies, along with watershed groups, that are tasked with using a strong QA/QC processed method to collect and share chemical, physical, and biological data being collected from reference streams in Montana.

The MWCC Web site provides a clearinghouse for tools provided by state agencies or particular watershed groups for technical activities such as stream corridor assessment, as well as announcements of interest to the watershed community.

Contact: Amy Miller, Montana Watershed Coordination Council; amy.miller@mt.usda.gov; http://water.montana.edu/watersheds/mwcc/default.asp

OHIO

The Ohio Environmental Council

Keywords: watershed group formation assistance, volunteer training, building and retaining membership, resource identification assistance, legal assistance, partner identification assistance, educational materials

The Ohio Environmental Council (OEC) has helped to form Watershed Councils in both central and northeast Ohio. Currently, the Central Ohio Watershed Council is a collection of local groups that meet quarterly to discuss their work and compare notes on organizational development. These meetings offer groups the opportunity to brainstorm and share ideas on combating problems peculiar to their region. They also give the OEC feedback on the types of training necessary for the organizations to grow as organizations.

Providing Technical and Specialized Resources

The OEC has worked with local citizens to form watershed groups in their areas. The OEC has also held workshops and training, targeting both capacity-building and technical process issues where groups have needed assistance. Typical topics for workshops and training include the following:

- Building and retaining membership.
- Innovative sources of funding for watershed restoration.
- Legal hurdles for nonprofits (definitions of lobbying for 501(c)(3) organizations).
- Clean Water Act conferences to teach local groups about Clean Water Act mechanisms through which they can participate, e.g., TMDL watershed restoration plans; commenting on section 401 certification and section 404 permits; nonpoint source pollution, e.g., nutrients, septic tanks; playing a watchdog role in permitting situations (issuance of a new permit or permit renewal).

- Water monitoring/photo monitoring training so that groups can establish their own monitoring programs.

The OEC has created "assistance directories" for different parts of the state with contact information for agencies and other groups that can be of assistance to a watershed group. The OEC has also distributed information to local watershed groups in the form of fact sheets. Examples include *A Citizen's Guide to 401/404 Permits*; *A Citizen's Guide to Drafting Bylaws*; and *When First Starting Up* (which details the process of becoming a 501(c)(3) or other options for groups).

The OEC has worked closely with River Network and the Clean Water Network to put together training and has used their materials to draft its own citizen guides and resource lists for local groups.

With the help of the Institute for Conservation Leadership, the OEC is planning a "Board Development Workshop."

Contact: Molly Flannagin, Clean Water Program Associate; molly@theoec.org; or Keith Dimoff, Assistant Director; keith@theoec.org; 614-487-7506; http://www.theoec.org.

Ohio Watershed Network

Keywords: watershed group formation assistance, partnership identification assistance, resource identification assistance, technical training

The Ohio Watershed Network (OWN) is a project of Ohio State University Extension. The purpose of the OWN is to support local watershed protection efforts by

- Providing educational programs in organizational development and watershed management principles and practices for new and existing watershed partnerships.
- Creating a statewide information network serving watershed groups and their agency partners.

The intended audience of OWN's outreach is community members and natural resource professionals working to protect their watershed resources.

Providing Capital Resources and Fiscal Management

Funding for the OWN is provided by the state and a grant from the Ohio Environmental Protection Agency.

Providing Technical and Specialized Resources

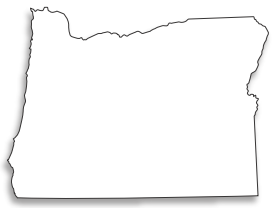
The OWN's principal outreach tool is a Web site that offers users the following resources:

- The *Watershed Toolshed* contains articles on topical issues related to watershed management.

- *Community-Based Watershed Management* outlines how individuals, groups, and institutions with a stake in watershed management outcomes can participate in identifying and addressing issues that affect or are affected by watershed functions. This section of the Web site includes OWN's popular Virtual Watershed Tour, as well as other information for those just getting started.
- *Watershed Groups in Ohio* offers a directory of watershed groups across the state. A map of Ohio allows a user to click on any county in Ohio and view a list of watershed groups in the area.
- *Resources & Reference* links to watershed-related Web sites, funding opportunities, and contact information for people and state agencies involved in watershed protection. Of particular note, contact information for Ohio State University Extension agents specializing in watershed management and members of the multiagency Area Assistance Teams is highlighted. The Web site also maintains a compendium of links, such as well-used references, publications, curriculum materials, videos, software, and a glossary of frequently used watershed terms.
- The *Ohio Watershed Academy* (OWA) is a non-credit, distance-education course led by university-based instructors from the Ohio State University Extension Service. Its purpose is to develop the knowledge and skills of watershed group leaders in Ohio so that they can develop community-based watershed Action Plans. This Web-based course is offered on a semi-regular basis, but the lessons and library materials are available at all times.

Contact: Joe Bonnell; bonnell.8@osu.edu; http://ohiowatersheds.osu.edu

OREGON



For the Sake of the Salmon*

Keywords: fish habitat restoration, technical training, watershed group formation assistance, volunteer training, outreach material development assistance, resource identification assistance, building and retaining membership

For the Sake of the Salmon (FSOS) is a capacity-building organization that aims to protect and restore salmon in the Pacific region by building consensus on salmon management issues, supporting efforts to restore and protect watersheds, and establishing a Pacific Salmon Fund.

Providing Capital Resources and Fiscal Management

FSOS's funding comes from the states of Oregon and California, National Marine Fisheries Service, Bureau of Land Management, EPA, and PacifiCorp Foundation. Its regional coverage focuses on Washington, Oregon, and California.

Providing Technical Resources and Specialized Resources

The FSOS Web site is an informational clearinghouse as well as a source of tools for watershed groups. Information is provided on forming and running a watershed group, as well as the technical work of watershed planning and outreach in the watershed. Links are provided to books, articles, guides, legal issues, Web resources, technical assistance, and other documents. A key tool is sample template documents that watershed groups can download and use with their own local references.

One of the key challenges that a watershed group faces is communicating with landowners, the public, and reporters. The "Getting Your Message Out" section of the Web site includes the following:

- Outreach materials on communicating with landowners and the public
- Material on working effectively with reporters
- Downloadable clipart
- Resources on recruiting, motivating, and training volunteers

The FSOS Web site provides information on funding sources. Organizations can find information on grant announcements, articles about funding sources and fundraising, and an extensive list of funding programs offered by federal and state governments and private foundations. The list is intended to give watershed groups an idea of various available funding sources.

FSOS designs outreach processes and facilitates multi-stakeholder meetings and workshops. Under its *Regional Facilitation Program* the meetings are designed to bring federal, state, and private agencies together with watershed groups, the public, and other salmon recovery stakeholders. Agencies represented include the National Marine Fisheries Service, U.S. Forest Service, Bureau of Land Management, EPA, and the states of Washington, Oregon, and California. The meetings enable better communication among parties whose number and scattered geographic distribution raise barriers to effective cooperation. FSOS often partners with its member organizations in delivering these facilitation services.

Under its *Watershed and Community Support Program,* FSOS offers timely and relevant information, resources, and assistance to watershed organizations, public agencies, tribes, and other partners that are working to protect and restore fish habitat and improve water quality. The program includes an electronic newsletter, periodic workshops,

and networking forums to help share information, avoid duplication of effort, and extract lessons learned.

Contact FSOS, 319 Southwest Washington, Suite. 706, Portland, OR 97204; 503-223-8511; http://www.4sos.org

Oregon Watershed Enhancement Board

Keywords: watershed planning, fish habitat restoration, grant giving, watershed group formation, technical training, volunteer training, educational materials

The Oregon Watershed Enhancement Board (OWEB) is a state agency. It consists of 17 members drawn from state natural resource agency commissions, federal agencies, and the public at large. This policy oversight board brings together a diverse range of interests to decide on applications for grant awards and set the vision for watershed restoration efforts in Oregon. Its strategic plan, *A Strategy for Achieving Healthy Watersheds in Oregon* explains OWEB's goals, which are to restore salmon runs, improve water quality, and strengthen ecosystems that are critical to healthy watersheds and sustainable communities through promoting and funding voluntary actions. To this end, the Board fosters the collaboration of citizens, agencies, and local interests.

Providing Technical Resources and Specialized Resources

OWEB awards more than $20 million annually. OWEB's "capacity-building" grants assist watershed groups as they equip themselves with the planning, human resources, project management, and technical skills necessary to carry out complex restoration projects. The following are some items covered by these grants:

- Watershed assessment
- Data gathering
- Monitoring of conditions
- Action plans
- Waterhed Council support
- Workshops
- Outreach materials
- Student programs

OWEB provides grants to carry out "on-the-ground" restoration projects that might include working with citizen groups and

landowners on efforts like instream habitat improvement or management of upland areas. Examples of such projects follow:

- Planting
- Reseeding
- Fencing
- Weed control
- Culvert replacement
- Wetland restoration
- Livestock watering
- Fish habitat
- Land and water purchases
- Conservation easements

OWEB also offers a small grant program to support landowner projects that improve watershed health. Under this program, soil and water conservation districts and watershed councils may apply for funds for small projects without going through the full application cycle.

OWEB provides technical assistance to landowners and local volunteer groups through manuals on how to undertake restoration projects and a biennial statewide conference to share ideas and expertise.

OWEB supports programs that teach students and adults about the importance of watershed health. With the aim of improving citizens' understanding of both urban and rural watershed issues, OWEB undertakes educational projects in schools, the field, and backyards through grants and staff assistance.

OWEB coordinates the collection, sorting, and analysis of data about watershed and natural resource conditions throughout Oregon. OWEB monitors the effectiveness of restoration efforts and OWEB also reports on the progress of the *Oregon Plan for Salmon and Watersheds*.

Contact: Geoff Huntington, Executive Director, Oregon Watershed Enhancement Board, 775 Summer Street, NE, Suite 360, Salem, OR 97301-1290; 503-986-0178; geoffrey.m.huntington@state.or.us; http://www.oweb.state.or.us

OREGON (NATIONAL OFFICE), DC, VERMONT

River Network*

Keywords: watershed group formation assistance, grant giving, technical training, educational materials, building and retaining membership, outreach material development assistance, partner identification assistance, volunteer training

River Network is a formal nonprofit organization with a $5 million budget and 34 staff working in offices across the United States. It has more than 500 partners working through its watershed-based programs, including individuals, organizations, agencies, tribal governments, and others. A significant achievement of River Network's River Conservancy Program is that it has acquired and protected more than 40,000 acres of key riverlands to date.

River Network has four watershed programs that correspond to the organization's areas of expertise and form the main themes of assistance offered to partners:

- Organizational Development
- River Watch
- River Protection and Restoration Tools
- Networking

Providing Capital Resources and Fiscal Management

River Network provides financial assistance through several grant programs. These include Re-grants, through funds provided by regional foundations, and Watershed Assistance Grants, through funds provided by EPA.

Providing Technical and Specialized Resources

River Network provides services and support to its partners through the River Source Information Center, training, consultation, and financial assistance in the following areas.

Organizational Development. Focuses its assistance on capacity building and helps partners to

- Decide what kind of organizing approach is best for their situation
- Form long-term goals and plans
- Develop and sustain leadership
- Raise the money they need to do their work
- Communicate effectively with their public
- Take other actions necessary to build strong, effective, stable organizations

River Watch. Focuses on baseline information gathering and helps partners to

- Understand the natural forces that shape their watersheds and make them unique;
- Determine how clean and healthy their rivers and streams are;
- Identify watershed problems and their sources;
- Take stock of the social, political and economic contexts for their work; and
- Evaluate the effectiveness of watershed protection and restoration activities.

River Protection and Restoration Tools. Focuses on techniques, programs, and laws, particularly the Clean Water Act, that they can employ or adapt and helps partners to

- Learn about available river conservation techniques, programs, and laws
- Decide how best to apply or adapt them to their situation
- Use them to greatest effect

Networking. Focuses on coalition-building for greater effect and wider, national-level impact. The organization itself

- Spreads the word about emerging issues and strategies
- Convenes parties with similar interests, strategies, or concerns
- Helps develop partnerships, build coalitions, and organize campaigns
- Organizes regional and national networking events, like as the Annual National River Rally
- Helps create a favorable national climate for watershed work

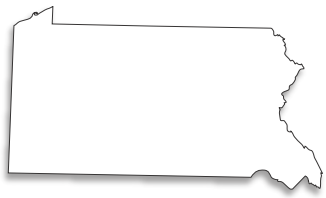
The River Source Information Center is the organization's primary vehicle for delivering services and support to its partners. Source Center services are available to all River Network partners at any time. Source Center staff respond to requests for assistance through a 1-800 hot line and keep people abreast of issues via e-mail lists and Web-based communication. They develop and distribute publications useful to partners, update the Web site contents, maintain an extensive resource library, conduct research, and offer referrals to other sources of assistance.

Training. River Network organizes some training programs directly; it also assists other organizations with the regional and statewide training events they organize. River Network's training services range from 1-hour workshops to week-long programs. They include standardized programs developed through years of evolution and customized programs developed in response to special requests.

Consultation services. River Network provides consultation services to a large and growing number of organizations each year. It works directly with specific organizations on consulting projects that range in duration from a half-day to 3 years. When setting up these projects, River Network works with the client group's staff and volunteer leadership to assess needs, establish project goals, and determine the scope and duration of the project. Goals for such projects may be organizational, programmatic, or both.

Contact: River Network National Office, 520 Southwest 6th Avenue #1130, Portland, OR 97204; 503-241-3506 or 1-800-423-6747; info@rivernetwork.org; http://www.rivernetwork.org/index.cfm

PENNSYLVANIA



Growing Greener

Keywords: grant giving, BMP funding, watershed plan funding, legal assistance, technical assistance

The Environmental Stewardship & Watershed Protection Act in Pennsylvania signed the Growing Greener Program into law in 1999. The program's purpose is to preserve farmland and protect open space, eliminate the maintenance backlog in State Parks, clean up abandoned mines and restore watersheds, and provide new and upgraded water and sewer systems.

Four different agencies are involved in implementing the program: the Departments of Environmental Protection, Agriculture, and Conservation and Natural Resources and PENNVEST. Its financial obligations are $650 million over a period of 5 years.

The Department of Environmental Protection (DEP) alone is allocated nearly $240 million in grants for acid mine drainage abatement, mine cleanup efforts, abandoned oil and gas well plugging, and local watershed-based conservation projects. Growing Greener Watershed Grants provide funds for watershed assessments and development of watershed restoration or protection plans, as well as the implementation of watershed restoration or protection projects including a variety of nonpoint source mitigation activities. Example projects include stormwater management wetlands, riparian buffer fencing and planting, streambank restoration, and agricultural BMPs. Also included are construction of mine drainage remediation systems, reclamation of previously mined lands, and demonstration and education projects and outreach activities.

Providing Capital Resources and Fiscal Management

Grants are available to a variety of eligible applicants, including counties, authorities, and other municipalities; county conservation districts; watershed organizations; and other organizations involved in the restoration and protection of Pennsylvania's environment.

Providing Technical and Specialized Resources

Growing Greener Technical Assistance Grants can pay for legal assistance between various associations and organizations to achieve a team-based approach to delivering assistance through Memorandums of Understanding. Other legal assistance includes land transactions, formalization of organizational standing

for watershed associations, Good Samaritan status, administration of grants, and one-on-one assistance.

The Pennsylvania DEP has established a growing network of technical assistance providers to help watershed organizations effectively and efficiently achieve their watershed protection goals. With funding from the Growing Greener program, these providers offer engineering, data management, program management, science mentoring, and technical services at no cost to eligible organizations for Growing Greener-type projects.

Contact: DEP Grants Center, RCSOB, 15th Floor, 400 Market Street, P.O. Box 8776, Harrisburg, PA 17105-8776; 717-705-5400; GrowingGreener@state.pa.us; http://www.dep.state.pa.us/growgreen/defaultdep.htm

RHODE ISLAND

Grow Smart Rhode Island

Keywords: outreach materials, technical training

Following a statewide conference on suburban sprawl held in the spring of 1997, Grow Smart Rhode Island's founding Chairman James Dodge (then the CEO of Providence Energy Corp.) worked with a broad range of organizations, agencies, and business leaders to establish Grow Smart as a statewide non-profit organization. Grow Smart works with a coalition of state agencies and nonprofit organizations to develop and present training programs for municipal councils, boards and commissions, and other audiences such as citizen groups and builders.

Providing Technical and Specialized Resources

The first training program, "Making Good Land-Use Decisions," debuted in the late fall of 2001. It provides 9 hours of training, presented on three evenings, by land use attorneys and professional planners. Participants receive a training manual to accompany the program. By the end of 2002, 200 officials from 21 different communities had attended the training. Grow Smart will offer "Making Good Land-Use Decisions" again in the spring and fall of 2003, and it is developing additional programs on site plan review, affordable housing, and conservation subdivisions for presentation in 2003. The coalition's intent is to identify means to institutionalize the training as an ongoing resource for Rhode Island municipalities and citizens.

Capital Resources and Fiscal Management

The Doris Duke Charitable Foundation, the Blackstone River Valley National Heritage Corridor Commission, EPA, the Rhode Island Statewide Planning Program, Rhode Island Department of Transportation, Rhode Island Housing, and the Rhode Island Builders Association provided the bulk of the funding for development and delivery of training

programs in 2002 and 2003. In addition, municipalities pay a small registration fee for each participant. Grow Smart and its allies are seeking government and private underwriting to continue the training programs in 2004.

Contact: Sheila Deming Brush, Director of Programs, Grow Smart Rhode Island, 345 South Main Street, Providence, RI 02903; 401-273-5711, ext. 3, sbrush@growsmartri.com; http://www.growsmartri.com

Rhode Island Rivers Council

Keywords: watershed plan funding, watershed group formation assistance, technical assistance, outreach material development assistance

The Rhode Island Rivers Council is a government agency within the Rhode Island Department of Administration. It was created by the Rhode Island General Assembly in 1991 to coordinate, oversee, and review efforts to improve and preserve the quality of the state's rivers and water bodies. It consists of 15 members who serve 3-year terms. The Council works with state legislators, state agencies, local government, and community members to develop and implement policies to clean, monitor, improve, and protect the state's rivers and watershed areas. With public input, the Council created the state's first Rhode Island Rivers Policy and Classification Plan.

Technical and Specialized Resources

The Council's functions are planning, coordination, and empowerment. The main vehicles to implement and monitor the policies in each watershed area are officially designated local watershed associations, which work cooperatively with the Rhode Island Rivers Council.

The Council hopes to designate one local watershed association for each Rhode Island watershed, and it will accept applications for new local councils in early 2003. The basic duties of the Council are as follows:

- Develop a Rhode Island State Rivers Policy and Classification Plan (Rivers Plan).
- Advise state agencies and municipalities concerning programs and measures to improve and protect river and watershed quality and to promote river use consistent with the Rivers Plan.
- Foster public involvement in river planning and decision-making through public education and promotional activities.
- Designate watershed councils as bodies corporate and politic with specific powers, duties, and responsibilities.

Contact: Meg Kerr, University of Rhode Island, Coastal Institute/Sea Grant, Program and Chairperson; mkerr@gso.uri.edu; http://www.planning.state.ri.us/rivers/default.htm

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