SUMMARY OF THE REGIONAL WATERSHED ROUNDTABLE REPORTS

June 21, 2001

NATIONAL WATERSHED FORUM

Building Partnerships for Healthy Watersheds

For

THE NATIONAL WATERSHED FORUM

In Support of

LOCAL WATERSHEDS

SUMMARY OF THE REGIONAL WATERSHED ROUNDTABLE REPORTS

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I. Executive Summary

Purpose

This Summary is a compilation of the efforts of individuals from watersheds across the country who participated over the last few years in 13 Regional Watershed Roundtables (Roundtables). The Roundtable participants identified issues of concern to their regions and developed draft recommendations for addressing those issues. This Summary details the issues and proposed recommendations, and is intended to serve as the primary background document for the National Watershed Forum (Forum) on June 27 – July 1, 2001.

The Forum will bring together approximately 500 people from a broad diversity of interests to create a shared vision for the future of our nation's watersheds. Delegates attending the Forum will explore new directions for cooperative action to sustain watersheds into the future by building on the efforts of the Roundtables. The issues and proposed recommendations summarized in this Summary will provide the starting point for deliberations at the Forum.

The Issues we Face and Recommendations to Address Them

While there are important regional distinctions among the Roundtables, many are facing similar challenges. The Summary is organized around seven issue areas or 'tracks' of broad relevance, each of which is divided into two to four sub-issues, around which deliberations at the Forum will be conducted in discussion groups. A brief overview of issues and proposed recommendations from the Roundtables is presented below by track.

Track One – Resources

Without exception, one of the top priorities identified by all the regions was ***funding***. Issues include inadequate funding to support the growing number of community-based watershed initiatives, difficulty in identifying possible funding sources, complicated application processes and/or contracting mechanisms, the lack of fundraising capacity in local watershed partnerships, accountability, and the need to create synergies and increase efficiency among groups seeking funding. Proposed recommendations include a variety of suggestions for simplifying application processes and/or contracting mechanisms, increasing fundraising capacity in local watershed partnerships, improving accountability, and creating synergies and increasing efficiency among groups seeking funding.

In addition, many watershed initiatives struggle to secure the ***technical support*** and information required to make informed decisions. Roundtable recommendations included sustaining and substantiating existing programs that provide technical assistance, creating new sources of technical support, and building the capacity of watershed groups to identify and secure the technical support they need.

Track Two – Watershed Partnership Effectiveness

Watershed groups around the country face common challenges with ***structure and function*** – the internal operational process - of their groups. The Roundtables developed a variety of recommendations for improving internal operational processes, effective decision-making structures, staffing, membership, and networking mechanisms to optimize efficiencies among groups within a region.

While initiatives around the country have involved a wide diversity of interests, many have experienced the need to improve ***participation and partnership*** and have struggled to obtain and sustain interest and involvement by all concerned stakeholder groups. The Roundtables recommended a variety of strategies to build trust, motivate participation, and build partnerships, particularly with groups that are currently under-represented in many watershed initiatives.

The need for ***education and outreach*** to help build understanding about watershed issues among local residents, the general public, elected officials, and others was identified by many Roundtables as a significant concern and barrier to advancing watershed protection. Roundtables proposed a number of ways to build awareness about watershed needs and provide education at various levels about watershed partnerships and protection issues.

In addition, those watershed initiatives that do not have a motivated leader and/or a skilled facilitator often face greater challenges in convening and sustaining a watershed effort. Roundtable participants recommended a variety of strategies to enhance ***leadership*** and make ***facilitation*** services more readily available to watershed partnerships.

Track Three: Water Management

A great deal of time, money, and effort is going into assessing sources of drinking water, but much remains to be done in the area of ***source water protection.*** Roundtable participants developed recommendations for building better understanding of source water protection benefits, conserving aquifer recharge and surface water supplies, capitalizing on the public's concern regarding safe drinking water, and more effectively using source water assessment information.

In addition, preserving ***instream flows*** can be one of the more contentious issues facing watersheds. Roundtable recommendations focused on a variety of education, conservation, and allocation strategies included increasing stakeholder awareness of the factors influencing instream flows, and integrating instream flow criteria in state water quality standards.

Track Four: Information and Research

Collecting quality and compatible data is key to watershed protection and restoration. Many watershed initiatives site problems with flawed or incompatible data. Roundtable participants recommended a variety of strategies relative to ***data collection and monitoring*** including more precision in defining the purposes of data collection efforts, effective utilization of volunteers and partners, and development of consistent approaches and standards.

Roundtable participants recognized the need for ***research*** to address gaps in knowledge to support watershed protection and restoration. Their recommendations included a variety of suggestions for expanding, funding, and coordinating research efforts through partnering and other strategies.

Roundtables identified the need to improve ***communication and information exchange*** to increase the efficiency of watershed initiatives. They recommended exploring an array of opportunities including internet-based tools, Geographic Information Systems (GIS), databases, etc. to improve communication and help make watershed initiatives more efficient and effective.

Track Five: Planning and Evaluation

Watershed planning strategies are becoming much more sophisticated, but are applied with varying degrees of quality and success around the country. Roundtable participants recommended increasing the understanding of the elements of watershed planning and improving watershed assessments, planning processes, plan contents, and plan implementation.

Growth management and sprawl are often core issues facing both urban and rural watersheds. Roundtable participants recommended addressing these issues by focusing on ***smart growth*** strategies in the context of overall watershed management.

Watershed partnerships everywhere are confronted with the need to develop and evaluate measures of success, often under the rubric of adaptive management. Roundtable recommendations included guidance, trainings, and additional funding to help increase the utilization and effectiveness of ***evaluation***.

Track Six: Ecosystem Management

Aquatic, riparian, and/or terrestrial ***habitat*** degradation frequently motivate the establishment of a watershed initiative. Roundtable recommendations to address habitat issues focused on education, partnering, leveraging opportunities such as the Farm Bill reauthorization, and a variety of other integrated approaches.

Endangered species are often the catalyst for the creation of watershed initiatives and a source of controversy among interest groups. Roundtable participants recommended addressing some of the challenges with implementation of the Endangered Species Act (ESA) focusing primarily on utilization of the provisions for private landowners.

Following on the devastating wildfires of 2000, fuels management and other fire prevention efforts, as well as fire response strategies are a growing issue in watersheds. Key recommendations from the National Fire Strategy are included for consideration by the Forum delegates, since the Roundtables did not develop any specific recommendations relative to ***fire protection.***

Track Seven: Policy and Program Implementation

Despite the regional nature of many of the problems being tackled by watershed initiatives, there is often a lack of communication, coordination, and integration among local, state, tribal, and federal agencies on the issues effecting watershed protection and restoration. Roundtable participants recommended focusing on ways to improve or create mechanisms to clarify responsibilities and enhance cooperation – ***jurisdiction and coordination*** - among and between agencies and local watershed initiatives.

Total Maximum Daily Loads (TMDLs) are an increasingly important mechanism for protecting water quality. The Roundtables identified a number of challenges associated with implementing the TMDL program. Their recommendations dealt with funding, staffing, and timing of TMDL implementation as well as outreach and education to the variety of stakeholders included in the TMDL process.

The ***permitting*** process often creates bureaucratic and/or regulatory hurdles for restoration projects and other watershed efforts. Roundtable recommendations focused on a variety of strategies for streamlining, consolidating and coordinating local, state, and federal permitting processes to make them easier to understand and less time-consuming.

II. Introduction

This report represents the combined efforts of individuals from watersheds across the country that came together to participate in 13 Regional Watershed Roundtables (Roundtables). It has been developed to provide background information to support the development of the agenda for the National Watershed Forum (Forum). In particular, this summary has shaped the topics that will be addressed in the interactive discussion groups at the Forum. Additionally, it is intended to serve as an important background document for the Forum participants. The format for the Forum has been designed to capitalize and build upon the work of the Roundtables. We realize that it is impossible to fairly summarize and condense the exceptional work of hundreds of individuals meeting on numerous occasions throughout the country into a single comprehensive report. However, we believe that it is vital to document key learnings of these Roundtables in order to integrate them into the planning for the Forum and to better inform Forum delegates as they deliberate and make recommendations for enhancing the future of watershed efforts.

A. Background

Over the last several decades, it has become evident that the traditional regulatory tools and the billions of dollars invested in reducing pollutants from point sources alone are not going to completely achieve clean waters across America. After successfully addressing many point sources of pollution, problems remain. Today, the States identify siltation, nutrients, organic enrichment, pathogens, and metals as some of the leading pollutants causing impairment of assessed waterbodies. The States identify some of the leading sources of impairment as resource extraction, urban runoff/storm sewers, atmospheric deposition, municipal point sources, and agriculture. Overcoming these complex problems will require the commitment of local citizens who have a stake in the creeks, rivers, lakes, estuaries, and groundwater flowing through their neighborhoods and their communities.

Over the past several years, there has been a tremendous increase in the number of community-oriented, local watershed protection and restoration efforts. For example, more than 50 new watershed groups formed across Pennsylvania during 2000. Citizens are recognizing that to make further improvements in the condition of the aquatic resources in their communities, they need to organize into local watershed groups and seek collaborative partnerships. The U.S. Environmental Protection Agency (EPA) estimates there are more than 3,000 such efforts nationwide. The proliferation of watershed efforts around the country has changed the nature of environmental protection. An emphasis on citizen stewardship is supplementing traditional top-down regulatory approaches to cleaning our nation's waterways. The government is increasingly turning to local citizens to help address the complex problems of meeting our clean water goals. This shift in regulatory culture has given those people who depend on the aquatic resources for their health, livelihood, or quality of life a voice in the decision-making processes and a responsibility in the management of these resources.

B. The Regional Watershed Roundtables

All across the country diverse watershed interests have been gathering in Regional Watershed Roundtables (Roundtables) to discuss the challenges facing today's watersheds. The independent conveners of the Roundtables have assembled diverse stakeholders from watersheds in their regions to support collaboration on community-based watershed protection and restoration efforts by:

- enhancing communication among local watershed interests;
- providing forums for stakeholder discussions of barriers and innovative solutions to watershed management challenges;
- providing peer-to-peer learning opportunities;
- identifying areas of common ground; and,
- identifying priorities and solving problems.

Conveners have hosted Roundtables in the following thirteen regions to date. Many of them have met more than once.

- Alaska
- Eastern -Coal
- California
- Great Lakes
- Heartland
- Intermountain
- Mid Atlantic
- Northeast
- Pacific Northwest
- Rocky Mountain
- South Central
- Southeast
- Upper Mississippi

Appendix B includes a list of the contacts and geographic area for each of the Roundtables.

The conveners of the Roundtables participated in the planning of the Forum and helped to ensure that it meets the needs of the diverse array of stakeholders involved in collaborative watershed protection and restoration efforts throughout the nation.

C. The National Watershed Forum

Approximately 500 delegates from watershed initiatives around the country will gather in Arlington, Virginia for the first National Watershed Forum from June 27th through July 1st, 2001. The Forum is an unprecedented event designed to give voice to geographically, politically, and culturally diverse individuals who will create a shared vision for the future of our nation's watersheds.

This event is intended to forge a stronger partnership between government and its citizens, to empower community residents to continue their progress in improving the health of their watersheds, and to inspire government agencies to support the efforts of the growing community-based watershed movement. The Forum will explore new directions for cooperative action to sustain watersheds into the next century and beyond by building on the efforts of the Roundtables.

The Forum will provide delegates the opportunity to participate in peer-to-peer learning opportunities and to interact with experts and key decision-makers from around the country. Equally important, through interactive discussion groups, delegates to the Forum will voice their ideas and opinions for advancing watershed efforts. These discussion groups will allow delegates to deliberate and make recommendations on issues that the participants in Roundtables identified as pressing.

After the conclusion of the Forum, delegates will help communicate the results to others from their regions and/or interest sectors and will share in the responsibility for implementing Forum recommendations.

III. The Issues We Face and Recommendations For Consideration

The following summary of issues is based on the reports from the Roundtables. While each watershed effort is unique, many are facing similar challenges. Common issues and suggestions for addressing those issues were identified by many of the Roundtables. Regional, state, Tribal and local differences are apparent in some cases. The issues and suggestions summarized here are those that have broad relevance and will provide lessons for watersheds throughout the country. The Forum will provide an excellent opportunity to pool resources, knowledge and energy among participants in watershed initiatives to tackle these common challenges.

The Regions emphasized the importance of taking responsibility and action across all decision-making levels. Improvements need to be made at the local, state, Tribal, regional and national level by government, private industry, non-governmental organizations (NGOs) and local citizens.

The opinions presented do not represent the perspectives of all the Roundtables or their participants. Rather, they reflect the broad diversity of knowledge and opinions represented at the numerous Roundtables.

Deliberations at the Forum will be conducted in discussion groups organized around the issues that came out of the Roundtables and summarized herein. This summary is intended to help inform the discussions and development of recommendations at the Forum. The organization of this summary is consistent with the Forum tracks and discussion groups. Each section includes a list of applicable Roundtable recommendations for consideration by delegates at the Forum. Because this summary represents a compilation of ideas from a diversity of sources with varying degrees of specificity, it will be apparent to the reader that additional work is needed to review, refine, and prioritize the proposed recommendations and clarify who the implementing entities might be.

A) Funding

"Having a pot of gold to help the needy is useless unless you provide a rainbow to help find it."

Availability of Funding

Without exception, one of the top priorities identified by representatives of watershed initiatives throughout the regions was inadequate funding. The challenge associated with insufficient funding to get the job done right was identified by all of the Roundtables as a significant hurdle in sustaining a successful watershed effort. The nature of this problem has been identified in various ways. While inadequate funding for watershed work at "all levels" was the primary concern, stakeholders also identified other nuances of the funding problem:

1. The highly competitive nature (low success rate) of the applications for funding creates a significant disincentive for volunteers who often have to develop the applications on their own time.

2. The Roundtables cited a lack of funds for long-term maintenance of completed remediation projects. High staff turnover is part of the problem. Management of restoration projects requires a lot of staff time for which funds often cannot be found, and high staff turnover is a result that contributes to lack of consistency and continuity.

3. Consistently, watershed partnerships expressed the need for administrative money to support their groups beyond start up seed money. Typically, it is more difficult to obtain funds to implement and maintain projects after the partnerships are established. The Roundtables noted that some States allow a portion of their Section 319 (Clean Water Act) grants that they provide to local governments and nonprofit organizations to be used for administrative costs, but other States do not. The Roundtables identified the need for all States to allow a portion of their Section 319 grants to be used to support administrative costs, like staff time.

4. Since it is difficult or impossible to use federal dollars as a match for federal grants, many watershed groups are finding it very difficult to qualify for government grants. They feel there is a need to relax local match requirements.

Additional Issues

1. There is a need for substantial and reliable government funding for cooperative regional watershed initiatives.

2. The status of the Abandoned Mine Land Trust Fund is uncertain.

3. There is inadequate funding to support the growing number of community-based watershed initiatives.

4. Most funding sources are temporary in nature.

5. There has been a lack of appropriations to Natural Resources Conservation Service (NRCS) for the Rural Abandoned Mine Program (RAMP).

6. There is not enough funding to help private landowners.

7. There is a need for more travel funding for state and federal agencies to support their attendance in partnership efforts.

Accessibility of Funds

1. Many of the funds available are not widely publicized, making it difficult for watershed partnerships to identify them as opportunities.

2. Small watershed groups do not have the capacity of infrastructure to navigate the government grants processes which are complicated to access and manage, including grant applications, monitoring, evaluations, and reporting requirements.

3. Small grants are just as time and labor intensive for local administration as large grants.

4. Many of the local volunteers do not have skills or experience to write successful grant applications. Building the capacity of the local participants through training was identified as a priority to help secure funding and to help effectively apply the funds.

Education and Communication

1. Local groups often have too narrow a view of sources of funding and resources.

2. There is often a lack of synergies among groups seeking funding consequently groups with similar goals are competing with one another for the same dollars.

Shaping the Discussion for the Future

Strong watershed partnerships often require an established financial resource base and draw upon a variety of creative and diverse funding approaches to support their efforts. A common theme among the Roundtables was the need to support collaborative watershed groups that are community-based. They advocated for obtaining commitments from foundations, the private sector, state and federal agencies for assistance with the start-up and continuation of collaborative watershed groups and to fund the operation and capacity building of such groups. Some of the Roundtables identified the need to coordinate among watershed efforts to create synergies and increase efficiency as they seek funding. The Roundtables identified many other ideas for solutions to the funding challenges facing watersheds. Some of the comments focused on increasing access to funding or improving the efficiency of funding vehicles. The following recommendations relative to funding were suggested by the Roundtables for consideration by Forum delegates.

Availability of Funds

1. Create state watershed funds to help sustain community-based watershed efforts.
2. Streamline approaches for State and Federal funding programs.
3. Fund a position to help groups identify and apply for funding sources.
4. Provide funds to support stakeholder involvement in watershed groups.
5. Sustain those Federal Agency grant programs that provide more flexibility than State agencies (e.g., EPA Small Award Grants, U.S. Department of Agriculture Forest Service (USFS) Challenge Cost-Share Grants).
6. Develop special purpose districts with taxing authority (e.g., Water Development Districts).
7. Use recreation fees, licenses etc. to fund initiatives (e.g., South Dakota Habitat Stamp; Future Fisheries Grants in Montana; Lottery Funds for Great Outdoors Colorado).
8. Develop watershed-wide stakeholder Memoranda of Understanding (MOUs) with base funding for coordinator and operations (e.g. Provo Watershed, Council of Governments in Colorado, Tri-State Council in Clark Fork of Columbia). This could be an alternative to Special Purpose Districts, perhaps one that would work in the absence of a willingness to commit to the taxing powers.
9. Coal companies pay nearly $300,000 each year into the Abandoned Mine Reclamation Fund to reclaim mine land abandoned before 1977 as mandated by the Surface Mining Control and Reclamation Act (SMCRA), but congressional appropriations have lagged behind. Full appropriation by Congress of this money is needed to move forward with the lands and waters damaged by past mining practices.
10. Encourage funding from local corporations who have a stake in local watershed efforts.

Accessibility of Funds

1. Develop an effective funding delivery system for grant recipients. Address the ongoing need for a user-friendly grant process for recipients of State and Federal restoration grants that also meet accountability standards of the grantors.
2. Encourage interagency teams to work with NGOs on financial and technical support.
3. Develop a web-based inventory of financial resources and funding opportunities.
4. Better publicize the government funding that is available to support watershed initiatives and help watersheds find and access them more efficiently.
5. Streamline relevant Federal funding regulations [such as 319 and Environmental Quality Incentives Program (EQIP) funds].
6. Move Agency funding from central agencies, to field action priorities.
7. Create a regional directory of funding sources and “tips” for accessing resources.

8. Get the federal government to remove legislative and administrative barriers to the service procurement process (e.g., cooperative agreements instead of low bid contracting).

9. Modify 319 funding so it is a "holistic" funding source (i.e., for Operation and Maintenance (O&M), assessment, implementation, etc.)

10. Broaden thinking to "protection of human health" and look for funding sources that support this purpose.

11. Increase the accessibility of Clean Water Act and Safe Drinking Water Act (SDWA) State Revolving Loan Funds for non-structural restoration and protection measures such as conservation easements and land purchases.

Education and Communication

1. Increase the number of training programs and workshops on grant writing and grants management to build the capacity of local watershed organizations for obtaining funds and better managing the funds received.

2. Foster national collaboration among local watershed partnerships (e.g., a national watershed alliance).

B) Technical Support

"Local problems need to be solved locally with assistance both in funding and technical support from governmental agencies. This requires not only substantial but also long-term funding and technical resources to make informed decisions"

Many community-based watershed initiatives have struggled to secure the technical expertise required to make informed decisions at the local level. Securing and sustaining the participation of technical experts to insure that scientifically sound decisions can be made comes at a cost that many local watershed efforts cannot bear.

The perceived bias of technical experts is another factor that complicates technical support. Even in the cases where watershed initiatives do have technical support it may not be a trusted opinion. Often, private entities and governmental agencies can provide funding for experts but their funding may be perceived as influencing the expert's interpretation of the data. In response, other participants may secure experts to represent their positions and balance out the perceived bias. This creates the potential for confusion over conflicting expert opinions. Many of the Roundtables identified the need to develop neutral sources of technical expertise.

Many Roundtables are aware of Federal and State programs that provide technical assistance for watershed efforts, but there are not a sufficient number of them to satisfy the demand. They stressed the need to sustain the existing Federal programs of direct assistance. Federal land management agencies and U.S. Geological Survey (USGS), for example, have been important sources of valuable technical assistance for local watershed groups. Some of the Roundtables identified colleges and universities as large, untapped resources that could supply local watershed groups with needed technical expertise. Engineering/scientific societies were noted as sources of technical experts.

Some regions suggested that local watershed groups might also benefit from having technical experts on the boards of their organizations. Having engineers/scientists as board members can give the organization technical credibility with government agencies and help the group make informed decisions. Technical experts know the right contacts to make in seeking help from state/federal agencies. Without in-house technical expertise, watershed groups may be more limited in what they can accomplish.

Shaping the Discussion for the Future

The following recommendations relative to technical support were suggested by the Roundtables for consideration by Forum delegates.

1. Watershed groups need to develop strategies to identify the kind of technical expertise they need to accomplish their goals, and then develop strategies for obtaining that expertise, (e.g., possibly attracting technical experts to serve as board members). In-house expertise is essential to cutting through the maze of red tape associated with securing technical assistance from federal and state agencies.

2. Watershed groups need help identifying the technical experts, government agencies, and elected officials who will contribute the watershed group's efforts.

3. Watershed groups need to be more aware of how to work with the media when communicating about the technical assistance provided to them, to prevent the potential for misrepresentation of the assistance provided and help to foster continued assistance.

4. Develop "one-stop-shopping" for technical, engineering, educational, financial and other resources for watersheds via the Internet. This will save both grass roots organizations and government time and money in identifying and accessing the resources available.

5. Develop a clearinghouse/technical center to be cost shared among government agencies. For example, Office of Surface Mining (OSM) provides construction moneys through the Appalachian Clean Streams Initiative (ACSI) and the NRCS has the ability to support restoration efforts with engineering services.

6. Government agencies should provide direct allocation of work months for employees to assist grassroots watershed efforts in obtaining grants and permits for restoration actions.

7. Environmental agencies at all levels should hire and support the development of individuals that have multi-disciplinary backgrounds (i.e., communications, sociology and environmental science) not just technical expertise.

8. Develop a University/College "adopt a watershed" initiative that brings the diverse technical expertise of instructors to support community-based watershed efforts.

9. Restore the budget for the NRCS, an agency that is being dismantled through federal budget cuts. NRCS has local technical assistance built into its mission.

10. Develop and support programs like that of the OSM.

11. Provide local watershed assistance in Government Performance and Results Act (GPRA), so that it becomes a performance factor for government workers.

"A consistent factor in most successful community-based watershed initiatives has been the cultivation of a long-term ethic of responsibility."

C) Structure and Function of Watershed Groups

Decision-making processes, communication systems, staffing, operating procedures, membership, and other organizational structure and function issues are all elements that influence the effectiveness of a watershed organization. Watershed groups around the country face a common challenge in establishing the internal processes that can sustain the organization. Some choose to form independent non-profit organizations while others choose various informal structures and rely on their members to provide the administrative support, funding mechanisms and other formal structures as needed.

When a watershed group needs an administrative structure that will allow them to receive grants, the structure of a watershed group commonly becomes an issue. Several Roundtables recognized that the structural needs and challenges of a new group may be different than a seasoned group. However, they also recognized that maintaining interest and involvement of a balanced membership base is a challenge common among watershed groups regardless of age.

The Roundtables found that the decision-making frameworks established by watershed groups vary widely. Examples include consensus-based organizations; voting groups with balanced, representative membership; and informal groups that do not make decisions, but function as forums for information exchange. In any case the decision-making system needs to be consistent with the purpose of the group.

Roundtables identified that communication and information exchange is also an important element in the efficient functioning of watershed initiatives. In some cases, capacity building for communities and watershed groups may be necessary to establish communication systems that work best for each group. While electronic tools to facilitate communication and information exchange are available (e.g., web sites, (GIS), databases, list serves, etc.) the need to make these tools better known and more accessible to the public was emphasized by some of the Roundtables.

Other issues identified by the Roundtables that are associated with structure and function of watershed groups included:

- The challenges of sustaining a volunteer based effort versus sustaining funding for staff.
- The importance of implementing a transparent process, including a clear mission, operating procedures and decision-making structure to help avoid confusion as the group matures.
- The establishment of work groups and subcommittees to efficiently implement tasks.

Shaping the Discussion for the Future

The following recommendations regarding the structure and function of watershed groups were suggested by the Roundtables for consideration by Forum delegates.

1. Watershed groups should sponsor safe public forums (such as town meetings) or other processes that allow for diverse people to come together to speak freely and be listened to in order to deal with watershed planning and related issues of concern. Develop trust and respect at the local level so that all of the stakeholders are willing to discuss issues and create their best outcome.

2. Watershed groups should increase their capacity in order to plan and conduct meetings in which meaningful decisions are made.

3. Watershed groups should build shared purpose and ownership among participants (e.g., by use of a collective statement process).

4. Watershed groups should encourage all responsible parties to participate in identifying problems, taking actions, monitoring impacts, and being accountable.

5. Watershed groups should form statewide umbrella organizations and/or other kinds of networks of local watershed groups so that watershed groups can benefit from one another's experience to help promote credible process, share models, create information exchange, increase communication, support constituency building, and improve their capacity for organizational effectiveness.

6. Watershed groups should engage the appropriate parties to develop an intermunicipal and regional communications strategy for engaging local land-use decision-makers.

7. Partnering should be encouraged to promote effective functioning of watershed groups, particularly partnering between public and private organizations.

D) Participation and Partnerships

While watershed initiatives around the country have involved a wide diversity of interests, many watershed initiatives have struggled to maintain involvement among a balanced representation of interests. Partnerships, sometimes among unlikely organizations and individuals, have contributed to the success of many initiatives, and these partnerships cannot be developed unless key stakeholders with divergent opinions are willing to sit together at the same table. Groups have voiced concern over the difficulty experienced in motivating participation, particularly increasing the involvement of key local decision-makers.

Roundtables recognized that maintaining participation and partnerships is a task requiring vigilance. Who is involved is important, but so is the nature of their involvement. A common theme was the need to ensure all stakeholders are heard and that a level playing field is provided for all participants. Roundtables emphasized the need to make sure that watershed groups encompass a diversity of stakeholders who participate in the decision-making. They acknowledged that a local collaborative process must actively outreach to diverse cultural groups to ensure their participation. Similarly, the participation provided by key agency representatives, particularly those that have regulatory authority, can provide the transparency and credibility that may be integral to the success of the effort. If agencies with authority to regulate or assist with implementing the decisions of the watershed partnership are not at the table or are not active, the process may not be regarded as legitimate and worthwhile. Circumstances where the presence of regulatory agencies discourages public participation present a challenge, but can sometimes be addressed through the design of the group's decision-making process, taking the time to develop relationships between of the agencies and the regulated public, and by other means.

Organizing and sustaining stakeholder involvement, emphasizing accountability, and cultivating trusted relationships and awareness of diverse perspectives all feed into a group's success in encouraging dialogue and maintaining an open process.

Shaping the Discussion for the Future

The following recommendations relative to participation and partnerships were suggested by the Roundtables for consideration by Forum delegates.

Watershed partnerships should create collaborative processes that:

1. Are inclusive, and bring a balance of diverse stakeholders together, early on in the process, and avoid disproportionate representation by specific interests.
2. Include strategies/processes that build time in for fostering personal interaction and human-to-human relationships.
3. Are focused on balancing the needs of the health of the watershed and the needs of the diversity of stakeholders.
4. Keep people interested by taking advantage of the "low-hanging" fruit and highlighting early successes.
5. Makes it as easy as possible for citizens to participate in decision-making by defining the issues in a way citizens can understand why it is important to be involved in the solution.
6. Have meetings at convenient locations and times for citizens.
7. Build trust and allow everyone to listen and be heard before beginning a more complex or controversial problem solving dialogue.
8. Foster partnerships with special interests that historically may not have participated in watershed activities.

The following recommendations are specific to the support and participation that watershed efforts need from government agencies, at all levels:

1. In addition to incorporating private landowners in watershed efforts, include local, state, Tribal, and federal land managers that have property in the watershed.

2. Government agencies need to be responsible partners at the local level. Increase the support of agency managers for collaborative, relationship building activities pursued by agency staff at the local level (e.g., travel funding, flexible schedules, etc.). One of the biggest complaints heard from agency employees is "With all our other requirements, who has time to collaborate?" Involvement of agency managers in the collaborative process needs to become a priority.

3. Create positions within various agencies that are designed solely to involve the public before, during and after environmental processes, including implementation.

E) Education and Outreach

Education and outreach are essential features of effective watershed efforts. Roundtable participants recognized this by acknowledging the fundamental importance of (1) educating and training those who lead and participate directly in watershed work; and (2) reaching out to educate and inform the broader public audiences who have a stake in watershed efforts. These two education threads are so integral to watershed work that they surface elsewhere in several other issue areas identified by Roundtable participants. If there is a resulting education theme for those who work in watersheds it may be summarized as: "We must educate and train ourselves, as we educate and inform others."

The individuals and organizations that do the day-to-day work of watershed protection and restoration are challenged to play many roles and accomplish diverse tasks. The knowledge base and skills required for them to be effective run the gamut from watershed science and technology to accounting, administration, grant writing and meeting management. They are also expected to be spokespersons, advocates, public relations specialists for the watershed effort and interpreters for interested, apathetic and even opposed stakeholders of the watershed efforts. Their strengths and weaknesses in fulfilling these tasks are a measure of their preparedness to accomplish them. Education and training to create the capacity to successfully accomplish the work of watershed groups is, therefore, a necessity.

Broader public understanding of watersheds inspires positive action and fosters a conservation ethic. Conversely, the lack of understanding among local residents, the general public, elected officials and others was identified by many watershed initiatives as a significant concern and barrier to advancing watershed protection. For example, improving understanding of the relationships between land use, water use and flow, ecosystem health, water quality, and riparian buffers could greatly improve the local capacity to make informed decisions and improve watershed health. Roundtables identified the need to coordinate education and outreach efforts on watersheds to increase public awareness and understanding of watershed issues, and to foster involvement in watershed efforts.

The goals of education and awareness efforts are often: 1) increased participation in watershed initiatives, 2) informed and improved watershed management decisions, and 3) increased awareness of issues among members of the general public, particularly the residents of the watershed, and local officials. There is a potential for a broader impact of such targeted educational and outreach efforts. Education campaigns, targeting priority groups such as students, local decision-makers, private interest organizations and others have the potential to increase the general public's awareness of watershed related issues. Sharing knowledge, data and other information helps to encourage broad public understanding and support for watershed initiatives.

An area of concern identified by Roundtables was the dissemination of scientific information in such a way that the general public can easily understand it. As a result of the limited time and resources of technical experts, public education is often regarded as an afterthought or a luxury. Education needs to be built into the process of developing the science from the point of proposal on.

Shaping the Discussion for the Future

The following recommendations relative to education and outreach were suggested by the Roundtables for consideration by Forum delegates.

1. Funders of watershed research should also target education and public outreach activities to scientists.
2. Target education and outreach to legislators and elected officials in order to develop public officials' understanding and buy in of watershed goals, process and desired results.
3. Target education and outreach to local officials to help them make the connection between land use and water quality, water quality and water quantity, and water resources and the quality of life.
4. Share state-of-the-art watershed restoration methods and effectiveness through State and regional meetings, (e.g., by conducting an annual statewide watershed restoration conference).
5. Develop website sharing of restoration information.
6. Develop a one-stop-shopping website that consolidates public watershed education and outreach information. Provide fact sheet templates that can be downloaded and customized at the local level. Provide information on the most effective methods to educate the public.
7. Develop central list serves for statewide announcements and information sharing.
8. Identify effective local conduits for disseminating information to save time, money and effort. Go to the people on their turf. Support of agencies that can provide such conduits are needed on both regional and national levels.
9. Determine the most effective methods for educating the public on watershed issues and changing behaviors, and share this information with educators and watershed groups.
10. Promote clean water as "good business."
11. Move education from afterthought to forethought—it is the foundation of effective watershed work, public understanding and effective watershed restoration by individuals and groups.

F) Leadership and Facilitation

Many watershed initiatives have clearly benefited from strong leadership and facilitation, coming from a variety of sources. Those that do not have the benefit of a motivated leader and/or a skilled facilitator face greater challenges in convening and sustaining a watershed effort. Such skills can come from a variety of sources and benefit the group in many ways.

The capacity to resolve problems was identified by the Roundtables as a motivation for strong leadership and facilitation. Most multi-party initiatives will face significant conflict at some point in their process. A skilled mediator or facilitator may be necessary to keep the process on track and help the parties to resolve their disputes without derailing the process. Many groups cited the lack of trust among parties as a significant hurdle. A neutral facilitator can be instrumental in identifying and addressing the interests and concerns of the parties, identifying sources of animosity and building the trusted relationships necessary for the process to be effective.

A lack of leadership at the local level is particularly de-stabilizing. Without the support of key local decision-makers, the process may be perceived as being driven by "outsiders" and may lack credibility. Furthermore, support from local leaders helps to ensure a bottom-up approach to decision-making that has fueled the success of watershed initiatives. Tapping the knowledge of local leaders helps to ensure that the interests of the community will be taken into consideration and will help shape the solutions.

Roundtables recognized that facilitation and leadership were an important factor in establishing effective decision making processes and achieving ecosystem, economic, social or organizational goals.

Shaping the Discussion for the Future

The following recommendations relative to leadership and facilitation were suggested by the Roundtables for consideration by Forum delegates.

1. Provide facilitation training to leaders of watershed efforts.
2. Leaders of watershed efforts should strive to break the "us versus them" mentality.
3. Develop sources of support for facilitation services for watershed groups that want it. Make funding of a facilitator a priority.
4. Leaders of local watershed efforts should encourage agencies with jurisdiction to participate if appropriate.
5. Develop a cadre of agency staff to be trained in consensus processes and be available to communities/groups for consensus-based facilitation.
6. Create a facilitation/coordination service resource list and skills database and develop service delivery mechanisms linked to the database. (Perhaps this could be a private entity that serves watershed initiatives).

"We have issue overload. There are so many highly charged complex issues, issues too big to solve. There are a number of competing interests related to water quality."

G) Source Water Protection

A great deal of time, money, and effort is going into assessing both the surface and ground water sources of drinking water, but it is the responsibility of local stakeholders to take action and protect their drinking water source. Through the SDWA Congress made source water assessment programs mandatory and prevention programs voluntary. As such, local efforts to protect drinking water sources can and should be developed to compliment and enhance current and future watershed protection efforts. There is a need to more effectively use source water assessment information and protection strategies to compliment and enhance watershed protection efforts and vice versa. Awareness and collaboration between source water protection and watershed initiatives must be a priority.

Shaping the Discussion for the Future

The following recommendations relative to source water protection were suggested by the Roundtables for consideration by Forum delegates.

1. Watershed groups and public water suppliers, together, should enhance local capacity to understand the source water protection benefits (e.g., human health benefits) of protecting and restoring riparian buffers and wetlands.
2. Water suppliers should be active in protecting and conserving aquifer recharge and surface source water supplies.
3. Educate public water suppliers regarding how TMDL assessments may provide valuable information, thereby saving some time and money, for source water protection assessments.
4. Watershed groups should help educate their local public regarding the local source water assessment and protection process and help the interested public participate in the process. A structure for a public involvement process is in the Safe Drinking Water Act of 1996 for developing Source Water Assessment Programs.
5. Watershed groups should capitalize on the public's concern regarding safe drinking water and public health to help increase participation in local restoration/protection efforts.

H) Instream Flows

Instream flows can be one of the more contentious issues facing watershed initiatives. Roundtables recognized that ecosystem health and water quality and quantity issues are inextricably linked and need to be addressed holistically. Without adequate stream flow some believe we will not be able to solve water quality problems. Some of the Roundtable participants felt that antiquated water law constrains options for resolving instream flow problems.

Shaping the Discussion for the Future

The following recommendations relative to instream flows were suggested by the Roundtables for consideration by Forum delegates.

1. Develop (on a regional basis) a mechanism to improve public, private and, government understanding of the relationships between land use, water use, flow and ecosystem function and health by:

- creating an outreach strategy;
- identifying sources of funding for education;
- maximizing use of existing tools;
- defining the target audiences and associated message formats.; and,
- developing an incentive-based program to award water conservation and environmental efficiency.

2. All States should include flow criteria that protect biological resources in their water quality standards. In order to encourage such action, regional conferences should be held on in-stream flow protection, science and policy to educate and improve regulatory policy.

Other instream flow suggestions offered by Roundtables included:

1. Educate decision makers on the need for instream flow allocation permits for low-flow and dry-up river sections by taking them to visit these sites.
2. Encourage water suppliers to show individual month-by-month use on water bills.
3. Develop widespread consensus on a definition of stream flow that includes magnitude, duration, and frequency.
4. Encourage annual awards for towns or individuals for their reduced water use or recycling.
5. Incorporate stream flow aquatic biology monitoring into funding under EPA/State performance partnerships.
6. Fund research and pilot projects on the interconnectedness of inflow streams and surrounding habitats and build on current Midwest interagency efforts toward this goal.
7. Review historic water uses and the grand fathering of water use when allocations are renewed.
8. Increase water pricing so that all users pay all the costs.
9. Consider Tribal precedents for water rights.

"We need science as a tool for decisions."

I) Data Collection and Monitoring

Collecting quality and compatible data is important to understanding a watershed and making sound decisions about how and where to focus improvement efforts. Roundtable participants noted that incomplete data has been cited as a common concern among watershed efforts, and disagreements about how much information is required to make a scientifically sound decision are common among stakeholders. This is particularly a problem among efforts that rely solely on volunteer monitoring. Volunteer monitoring programs can provide a vital supplement to professional data collection. However, coordination of the myriad of data collection efforts was recognized as a critical link to developing a comprehensive understanding of the watershed needs and making sound scientific decisions. In many cases, participants identified the need to develop systematic and scientifically sound approaches to data collection and monitoring for quality watershed assessment. Some participants also felt that there is still a lack of public access to understandable water quality data for making local decisions on watershed projects.

The lack of compatible and comparable data also represents a challenge to understanding watersheds. Incompatible and incomparable data can result when the purpose of data collection is not clear. As an example, data collected to identify and characterize the extent and severity of a contamination problem will result in a lot of information on the contaminant of concern. Those data would probably not be compatible with data collected for compliance monitoring, which are also limited to the permitted contaminants to determine if the permit conditions for concentration and timing are met. In contrast, data collected to determine ambient water-quality conditions may include the measurement of many contaminants at levels far below permit or criteria levels for regulated contaminants, and may also be measuring unregulated contaminants. Making sense of data from these different sources can be confusing and time consuming, without correlating the purpose of the collection efforts with the data. Information on the purpose for sampling does not often accompany the data, making the task of data analysis problematic.

Shaping the Discussion for the Future

The following recommendations relative to data collection and monitoring were suggested by the Roundtables for consideration by Forum delegates.

1. Clearly define the purpose(s) for data collection in preparation for any data collection effort (volunteer, State, Federal) and correlate the purpose with the management decision-making system in place (e.g., to identify impaired waters for restoration, identify high quality waters for protection, or to assess the effectiveness of a management activity in restoring the integrity of an aquatic community).

2. Include more than water chemistry in the sampling program because information on habitat and biology are also essential to restoring the "..physical, chemical, and biological integrity of the Nation's waters."

3. Work with all potential partners, including NGOs, to develop and implement a systematic, scientific approach for collecting monitoring data for watershed assessments (e.g., drawing on a selection of resources like the USGS National

Water Quality Assessment (NAWQA) protocols, USGS Field Manual for Water quality Data Collection, Save Our Streams/Izaak Walton League stream assessment guidelines, USFS Hydrologic Condition Assessment guidelines, and EPA guidelines). For this purpose, consider developing a quality assessment/quality control process on a standard approach for collecting monitoring data for volunteers.

4. Develop a technical support center or system to assist volunteer monitoring efforts in producing quality data that states feel comfortable using.

5. Establish a task force to develop a system to enhance data comparability and ensure compatibility of data (e.g., multi-agency, public private partnership effort to develop a common set of data elements for water quality data).

6. Develop a volunteer program for landowners to monitor their property according to a set of standards. (This helps educate and promote responsibility in addition to filling data gaps.)

7. Prepare state-specific watershed handbooks and guidelines to provide consistency and clear expectations to watershed groups, managers, and restoration practitioners about methods for water quality and habitat monitoring, data reporting, and developing watershed assessments and plans.

8. Continue long-term data gathering activities like USGS stream gages and the NRCS soil surveys. Do not use precious local dollars for such broad public benefit efforts. Make sure the state comes up with their needed matching dollars.

9. Encourage local partners to collect quality long-term monitoring data on restoration project areas.

10. Encourage or require States to develop a system to monitor all significant surface water bodies and ground water aquifers on a regular schedule.

J) Research Needs

Similar to the needs identified for water quality and quantity data, Roundtable participants noted that there are needs for other information vital to making watershed decisions. For example, links among the components of a watershed (surface water, groundwater, wetlands, atmosphere, etc.) are not well understood; a geographical area must be understood as a functioning ecosystem. The element of human behavior and its linkage to the other biophysical components of watershed dynamics is also not well understood; human economic activity and effects on land use are vital missing components. The lack of consistently accurate and reliable modeling applications is another such example recognized by roundtable participants; although models exist, they must be applied correctly. Some Roundtable participants perceive that significant research is required in the areas of contaminant source information, impacts, and remediation techniques. These research needs represent gaps in our knowledge and understanding of watersheds and limit our ability to develop effective protection and restoration alternatives.

Roundtable participants felt that incorporating research into watershed protection programming will aid citizens in their efforts to conduct community and regional planning and decision-making. Comprehensive information was identified as crucial to making lasting and sound decisions, but is often lacking. Even when the data are available, decision-makers may not always understand what it means.

Shaping the Discussion for the Future

The following recommendations relative to research needs were suggested by the Roundtables for consideration by Forum delegates.

1. Ensure that the States include credible watershed science within State Agency processes through integrated review and advice by independent team(s) of scientists using an interdisciplinary approach. Establish Scientific Peer Review Team(s) for Watershed Management in each State.

2. Make sure the science that actions are based on, is sound and appropriate for the intended area.

3. Engage local colleges and universities to develop interdisciplinary research teams (e.g., hydrologists, biologists, ecologists, chemists, soil scientists, social scientists, etc.) that serve as information centers for the research needs of local stakeholders and decision-makers that are engaged in watershed protection and restoration efforts. Build such research upon the existing State Water Resource Research Institutes (SWRRI).

4. Develop strategies and processes to coordinate watershed research efforts to avoid duplication and minimize gaps in knowledge/research. Broadly communicate these strategies/processes so scientists are aware of them and can help fill the gaps. Utilize such existing institutions as “Know Your Watershed” to promote this effort.

5. Engage human behavior researchers in watershed efforts to better understand how to motivate individuals, businesses, and corporations to change their actions or behaviors that contribute to watershed degradation. Pay special attention to specialists in water resource economics and alternative dispute resolution for knowledge that will aid such understanding.

K) Information Management

Many watershed efforts rely on numerous entities to collect and manage the information needed for watershed management. Multiple government agencies, private firms and other organizations are often working in parallel. With so many entities involved it is difficult to coordinate the management of information in such a way that all stakeholders have equal access. No one entity usually has sufficient funding to be able to manage all the data and information in a central repository for the local watershed effort. Furthermore, the organization collecting the information may create a real or perceived bias. The establishment and implementation of mechanisms and standards for information sharing at all levels was identified by some Roundtables as a necessary step in increasing access to data and other information necessary for making informed decisions. Roundtables identified the need to improve the availability and exchange of information to improve efficiency and decisions, and to increase trust in the watershed initiative. They recognized that protection of confidentiality, turf issues and cultural differences complicate efforts to openly manage and share information.

Shaping the Discussion for the Future

The following recommendations relative to information management were suggested by the Roundtables for consideration by Forum delegates.

1. Address the issues of availability and costs of managing watershed information by establishing and implementing policies and programs for information sharing among all levels (e.g., local, State, Tribal, and Federal Agencies, industry, landowners, researchers, and watershed groups), such as Internet repositories.

2. Coordinate GIS information through state or regional GIS clearinghouses and develop coordinated strategies among local, state and Federal Agencies, and other stakeholders to address the overlaps and gaps in the GIS data.

3. Train local watershed groups on how they can access watershed information that is being collected by various local, state, Tribal and Federal Agencies, universities and others.

4. Train local watershed groups on how they can make their own information data accessible to others (e.g., local, and State and Federal Agencies).

L) Watershed Planning

As watershed initiatives mature, watershed planning becomes more sophisticated. Roundtable participants suggested that comprehensive watershed planning processes should exhibit the following characteristics: multi-stakeholder involvement; sustainable by design; based on sound science and data; reflective of regional and local concerns; and supported by State, regional and Federal efforts. There is a need to focus on understanding and improving watershed assessments, planning processes, plan contents, and plan implementation. The Roundtable participants also identified the integration of growth management policies and tools as important elements in a comprehensive watershed planning process.

Shaping the Discussion for the Future

The following recommendations relative to watershed planning were suggested by the Roundtables for consideration by Forum delegates.

1. One of the Roundtables identified the need for a statewide watershed approach to planning and managing of watershed resources. Such an approach could include naming a coordinator for each watershed. That person would be responsible for coordinating a collaborative watershed planning process. A planning process was also identified as needed in order to define and prioritize problems (and prioritize watersheds).

2. Complete a user-friendly database of Federal, State and NGOs resources related to watershed planning and make the database available to the public.

3. Raise the awareness of the need for comprehensive watershed planning to State and regional decision-makers to eliminate crisis management in water resources management.

4. Establish planning guidelines and expectations for protecting healthy watersheds with little or no (present) human impact, rather than focusing just on degraded watersheds (at the expense of not preventing degradation of healthy watersheds).

5. Create multidisciplinary resource teams available to watershed and community groups to assist in watershed assessment and planning, problem solving, and implementation.

6. Coordinate the myriad of natural resources assessment and planning processes into one overall (ecosystem-based) watershed assessment and planning process with local goals and good data and information.

M) Smart Growth

"At the heart of citizen involvement in watershed protection is education for sustainable communities."

Growth management and sprawl are often core issues facing both urban and rural watersheds and the interface between them. Many of the Roundtables recognized the need to look at the issues beyond water quality as critical and interconnected elements of watershed health. Development pressures can further degrade aquatic resources by overtaxing storm water, wastewater, and combined sewer systems; causing more wetlands and riparian areas to be lost to sprawl; and replacing vegetation with impervious surfaces associated with new development. These activities can result in increased flooding and polluted runoff. An understanding of the significance of the interconnectedness of all of these factors is a primary goal of some of the watershed initiatives.

Roundtable participants identified the need to integrate growth management policies, tools, and techniques with watershed planning so that growth management becomes a key component of watershed plan implementation. Some of the participants felt that some regions have a cultural resistance to land-use planning, zoning and other tools for minimizing the impacts of growth. It was noted that there is a lack of data, technical assistance and coordination to address the impacts of development on watershed health.

Shaping the Discussion for the Future

The following recommendations relative to smart growth were suggested by the Roundtables for consideration by Forum delegates.

1. Develop a growth management template that can be adopted by many watershed initiatives as part of watershed assessments and plans.
2. Identify, publicize and endorse "smart growth" examples in each watershed.
3. Watershed groups should develop collaborative working partnerships with developers and the growth management/planning community.
4. Emphasize key watershed resources when planning for open space acquisition/protection
5. Develop economic and other incentives for developers to minimize new development based on the health of the watershed.
6. Balance economic and environmental considerations when making growth decisions.
7. Educate and engage watershed groups, local governments, and local elected officials about the environment, fiscal and economic benefits of growth management and how to develop zoning that minimizes sprawl and encourage pollution prevention.
8. Develop more programs that use visual tools, like the Non-point Education for Municipal Officials (NEMO), to link land use and water quality, to help educate community leaders and the public.

N) Evaluation

Watershed partnerships are confronted with the need to develop and evaluate measures of success, often under the rubric of adaptive management. Evaluation is an important and under-utilized step in the ongoing improvement of watershed assessment, planning, protection, and restoration activities. It can be instrumental in determining whether course corrections are needed to achieve desired goals and can save time and work involved in the leaning process for the next related undertaking. Evaluation of environmental outcomes, the ultimate goals of many watershed efforts, will be critical to determining the success of all watershed efforts.

Many watershed partnerships that have attempted to evaluate success have found it challenging to develop performance-based watershed evaluation criteria. Often it can take decades of effort to see progress in restoring watershed health, which makes evaluation very difficult. Furthermore, establishing a baseline from which to evaluate progress can be difficult. It is a challenge to measure the progress of a watershed effort when more and more stressors are entering the watershed and can overwhelm the progress made toward ameliorating existing stressors.

State and federal agencies and other funding sources such as foundations are increasingly requiring or encouraging watershed initiatives that receive their funds to measure success. Watershed partnerships often have to explain in their grant proposals how they will evaluate the activities that are being funded by the State, Federal Agency or other funding source. These funding sources will increasingly require objective measures of performance to keep their programs and dollars flowing to local watershed partnerships, and evaluation is an important means for measuring and documenting progress.

Shaping the Discussion for the Future

The following recommendations regarding evaluation were suggested for consideration by Forum delegates.

1. Develop and market/advertise guidance to local watershed efforts on successful methods to evaluate their protection and restoration efforts, their education and outreach efforts, and their efforts at expanding their partnerships with other entities. Catalogue methods of evaluation in a user-friendly Internet database that is accessible to the public.

2. Develop workshops on evaluation methods and provide travel support for local watershed groups to attend these workshops.

3. Evaluate, on a national basis, how successful grassroots watershed efforts are at achieving their goals, over the short-term and the long-term.

4. Grant makers (state and federal agencies and foundations) and national nonprofit organizations should educate local watershed partnerships on the importance of evaluation.

5. Develop a nationally standardized set of (a) evaluation criteria and (b) data collection protocols. This will allow watershed initiatives, agencies, and scholars around the country to pool their evaluation data for the purpose of systematically comparing large samples of watershed efforts, and to identify factors that influence success.

6. Convene a National Conference on Evaluating Watershed Initiatives to develop standardized evaluation criteria and protocols.

7. Urge organizations that fund watershed initiatives to include funding for short and long-term evaluation, and to require that evaluation occur, in most cases.

8. Promote widespread knowledge about how to conduct valid evaluation studies. Possible implementation options include certification courses, workshops, conferences, websites, etc.

9. Urge watershed initiatives to practice the "theory of change" approach to evaluation in which the stakeholders make explicit (and try to reach consensus on) the major problems in the watershed, the major causes of those problems, and the most promising remedies. Evaluation should be focused on monitoring each link in the stakeholders' "theory" about how problems are caused, and how they can be remedied.

"Today we have to balance interests more than in the past. We cannot separate fish, water and people. We need to look at the whole picture rather than just concentrating on one issue. We can live well and also live sustainably and be good land stewards."

A wide variety of ecosystem management issues were raised during the Roundtables. Roundtable participants recognized the value of addressing ecosystem management issues on a watershed and ecosystem basis. The need for collaboration and a holistic approach was identified as crucial to developing lasting solutions for these complex problems.

O) Habitat

Declines in many aquatic species have been largely recognized as the consequence of habitat degradation that results from the cumulative impacts of upstream human disturbances of the landscape. These aquatic species declines frequently motivate the establishment of a watershed initiative. Watershed efforts can provide a framework for habitat restoration and protection efforts. Oregon and Washington are leaders in utilizing watershed approaches to address habitat degradation. Because the health of aquatic species is dependent upon the myriad of activities within a watershed, addressing upland habitat degradation within a watershed has benefits for aquatic species too. Many stakeholder groups, such as anglers, commercial fishermen, hunters, conservationists, and birders, have a keen interest in restoring and protecting habitat. Engaging these stakeholder groups in watershed partnerships can bring new energy, resources, and in some cases, broader support of the effort.

Adopting a watershed perspective can benefit local habitat restoration/preservation efforts. The birds-eye view that a watershed approach brings can allow for a better understanding of which elements are most critical to restoring and protecting habitat, and avoiding wasting resources on elements that are less critical. It can show how individual parts of the landscape contribute to the health of species that reside within the watershed. It can also help educate landowners on how actions on their property impact the health of species.

Shaping the Discussion for the Future

The following recommendations relative to habitat were suggested by the Roundtables for consideration by Forum delegates.

1. Watershed efforts should engage local citizens in habitat issues by developing and communicating to the public biological indicators of watershed health.

2. Watershed groups and fish and wildlife agency field offices should develop partnerships to get the public interested in habitat (e.g., by offering regular field trips for the public and promoting general hands-on involvement in watershed issues through such programs as "Adopt-a-Stream").

3. Local watershed groups should create partnerships with anglers, birders, commercial fishermen, hunters, and other habitat conservation organizations, and fish and wildlife agencies to achieve common habitat goals.

4. Develop a national directory for habitat expertise, information, and resources. The availability of and access to information about habitat in a watershed context could be increased through GIS maps, websites and other communication tools.

5. Utilize the reauthorization of the Farm Bill to sustain and improve private landowner habitat conservation programs and incentives.

6. Develop a directory for habitat restoration to enable watershed groups that are not familiar with the various organizations and agencies that can provide assistance and guidance. Habitat issues are often looked at in a piece-meal fashion that may or may not make the most sense in a watershed context.

7. Develop effective strategies to promote community involvement with watershed restoration. Communities and volunteer involvement play an integral role in the success of a restoration program.

8. Develop restoration projects with a "whole" approach. Many project plans and specific project descriptions often narrowly define the benefits in a watershed context.

9. Promote and encourage restoration using native species.

10. Develop strategies to reduce competition among all groups involved in habitat restoration.

11. Develop leadership to encourage cooperation versus competition.

12. Couple effective outreach with restoration activities to ensure that an informative message is provided to public.

13. Define restoration needs on a watershed or sub-watershed level to promote effective implementation and reduce overall costs. Such efforts will assist to speed implementation of specific projects.

14. Recognizing that restoration per se may be of limited interest to many potential funders, write grant proposals to appeal to the broader interests of the funding entity.

15. Recognize the staff commitment involved in implementing an effective watershed program, staffing versus on-the-ground resources.

16. Identify and focus efforts to control exotic invasive species.

17. Promote team problem solving in order to reduce the dangers of leaping to the identification of solutions that for some restoration projects may not always address the true causes of the problems.

P) Endangered Species

Protection of endangered species under the (ESA) is often the catalyst for the creation of watershed initiatives and a source of controversy among interest groups because it is viewed by many as a "big stick." Some Roundtable representatives felt that endangered species protection measures come too late and often with few options to avoid jeopardizing species and with high socio-economic costs to private property owners and local communities. They want more support directed to conserving species and their habitat not yet threatened and impaired to avoid future listings. A major issue is how to obtain that support since it is sometimes easier to obtain resources and take action for recovery once a species is listed, but harder to obtain support for conserving species before they become threatened or endangered. Roundtable participants also recognized the benefits of taking a watershed approach in helping to protect and recover multiple species, and examining all the water quality issues that might be impacting species, as opposed to concentrating on just one issue or species in isolation of others. The problems of the species cannot be separated from the water resource concerns and human needs. A second major issue is how to address species protection and recovery at a watershed level in a way that is manageable, economically practicable and feasible and balances human needs.

Shaping the Discussion for the Future

The following recommendations regarding habitat are suggested for consideration by Forum delegates:

1. Expand public education program on the benefits of a pro-active approach to conserving species to avoid future listings.
2. Disseminate information regarding sources of financial assistance and/or partners for addressing endangered species needs.
3. Use tax and other incentives (assurances for developers and private property owners) in developing multi-species Habitat Conservation Plans.
4. Use of more programmatic consultations under section 7 of the ESA to address multi-federal and interrelated actions and impacts on multi-species at a watershed level. More training needed for federal agencies and stakeholders on how to get involved.
5. Use of adaptive management as a component of reasonable and prudent alternatives when scientific data is lacking regarding the outcome of actions.

Q) Fire Protection

Following on the devastating wildfires of 2000, fuels management and other fire preventative efforts, as well as fire response strategies are a growing issue in watersheds. Uncontrolled fires can have serious impacts for property, residents, air quality, and the health of the watershed. Uncontrolled fires and sometimes controlled burns are followed by substantial flooding, erosion, and sedimentation. The debate over protection through prescribed burns versus fuels thinning versus fire suppression continues. Some of the debate includes issues like: which fire protection methods are most appropriate, how to pay for fire protection, what research is needed in the fire protection and restoration arena, and stakeholder involvement in developing fire protection strategies. The threat of fire can catalyze citizens to get involved in fire protection and related watershed management efforts and provide opportunities for hands-on education about forests, ecosystems, and watersheds.

Shaping the Discussion for the Future

A National Fire Strategy was prepared for former President Clinton by the Secretaries of Agriculture and the Interior. This strategy outlines measure to manage the impact of wildfires on communities and the environment. Recommendations in the strategy include: continue to make all necessary firefighting resources available, restore landscapes and rebuild communities, invest in projects to reduce fire risk, and work directly with communities.

The following recommendations involving fire protection are suggested for consideration by Forum delegates.

1. Ensure sufficient firefighting resources in the future:

- Continue to make all necessary firefighting resources available. As a first priority, the Departments will continue to provide all necessary resources to ensure that firefighting efforts protect life and property.

2. Restore landscapes and reduce fire hazards near homes and communities:

- Restore damaged landscapes. Landscape restoration will include watershed restoration and soil stabilization. Priority will focus on protecting public health and safety (e.g. municipal watersheds).
- Expand community participation by using local labor for the work that needs to be done.
- Rebuild communities and assess the economic needs of communities.
- Increase local capacity for home and community fire protection by providing financial and technical assistance to state, local, and volunteer firefighting efforts.
- Learn from the public by encouraging grassroots ideas for reducing fire risk that are best suited to the community.
- Expand outreach and education to homeowners and communities about fire prevention and techniques to make their homes and families safer from fire.

3. Reduce fire risk through fuel reduction:

- Develop a locally led, coordinated effort between the Departments of Agriculture, the Interior, and Commerce, and other appropriate agencies through the establishment of integrated fuels treatment teams at the regional and field levels. The role of each team would be to identify and prioritize projects targeted at communities most at risk, coordinate environmental reviews and consultations, facilitate and encourage public participation, and monitor and evaluate project implementation. Each team will work closely with local communities to identify the best fit for each community.
- Invest in projects to reduce fire risk. Addressing the brush, small trees, and downed material that have accumulated in many forests because of past management activities, especially a century of suppressing wildland fires, will require significant investments to treat landscapes through thinning and prescribed fire.
- Utilize small diameter trees and other woody forest materials that contribute to fire hazard. Develop and expand markets for traditionally underutilized small diameter wood and other biomass as a value added outlet for excessive fuels that have been removed.
- Allocate funds and commit resources to support planning, assessments, and project reviews to ensure that hazardous fuels management is accomplished expeditiously and in an environmentally sound manner.

R) Jurisdiction and Coordination

The regional nature of many of the problems being tackled by watershed initiatives requires communication, coordination, and integration among local, state, Tribal, and federal agencies on the issues effecting watershed protection and restoration. Such coordination and communication does not always exist. Furthermore, multiple and overlapping jurisdiction creates confusion about who is responsible for making and implementing decisions. Some Roundtable participants noted that interstate and trans-boundary cooperation is often lacking and that all forms of political boundaries continue to pose barriers to effective watershed management. Improving or creating a mechanism to ensure that local citizens have knowledge of key agency activities and authorities will help to clarify roles and responsibilities. The conflicting mandates, lack of trust and changes in local leadership were cited as hampering coordination on a watershed level. Some of the Roundtable participants identified that some states do not want federal agencies involved in local watershed efforts because of lack of trust.

Tribal issues are key to jurisdiction and coordination. Some Roundtable participants noted that a lack of commitment to share responsibility and manage cooperatively with tribal interests has created a lack of trust. There is a need to improve communication with tribal leaders and intertribal entities.

In addition to inter-agency coordination issues, Roundtable participants also identified difficulties NGOs have in coordinating with agency bureaucracies on watershed activities.

Roundtable participants cited the inconsistent implementation of the Clean Water Act among States as a major source of confusion about jurisdiction and coordination.

Shaping the Discussion for the Future

The following recommendations relative to jurisdiction and coordination were suggested by the Roundtables for consideration by Forum delegates.

1. Formalize responsibilities within watersheds through formal agreements. For example, participants could develop MOUs for Watershed Management that clearly state their commitments, roles and responsibilities to cooperative watershed management efforts. Clarification was encouraged at all levels, such as:

- Among departments within agencies
- Among State Agencies
- Among Federal Agencies
- Between State and the Federal Agencies
- Between State and Local governments
- Between State and watershed groups

2. Federal and State Agencies should continue efforts to develop dialogue that is diverse and broadly supported across jurisdictional boundaries and at the watershed and basin scale. Private organizations should leverage their human resources to assist in promoting dialogue.

S) Total Maximum Daily Loads

The development and implementation of TMDLs are increasingly being relied upon as a mechanism for restoring impaired waters. Some Roundtable participants believe that the TMDL schedules and the framework for developing and implementing TMDLs does not foster collaborative problem solving, and, as a result, opportunities for developing lasting solutions may be missed. Some Roundtable participants believe there are large inconsistencies in the kinds of data and models being used for TMDL development, as well as mechanisms for accountability in the implementation of TMDLs. A lack of adequate staff was cited as contributing to these inconsistencies

Another concern voiced by some Roundtable participants was that in some cases controls on point source of pollutants were being emphasized when the primary sources of impairment were a result of non-point sources.

Shaping the Discussion for the Future

The following recommendations relative to TMDLs were suggested by the Roundtables for consideration by Forum delegates.

TMDL Development and Implementation:

1. Develop funds for States and Tribes to use to hire dedicated TMDL staff to adequately develop and fully implement TMDLs.
2. Secure more funds from the legislature to implement non-point source controls needed to meet load allocations developed by the TMDL process.
3. Encourage States to use all available water quality data, including data collected by NGOs, when developing TMDLs.
4. Do not rush states or scientists to develop TMDLs because the results could be compromised and valuable time, money, and effort could be wasted.
5. Expand the TMDL process to develop goals and targets for the entire watershed, rather than just pollutant targets for a stream segment, and utilize Watershed Restoration Act Strategies to meet these goals and targets for the watershed.
6. Encourage collaborative and creative TMDL partnership approaches to restoring impaired waters as alternatives to TMDL lawsuits.
7. Implement a collaborative team approach by federal/state/local agencies that coordinates TMDL development and implementation.

TMDL Outreach and Education:

1. Provide training to those agencies responsible for TMDL development and implementation on how to engage the public and diverse stakeholders in a coordinated and collaborative process for TMDL development and implementation.

2. Require agencies to actively seek local stakeholder input early and often in the TMDL development and implementation process (not just the end of the process).

3. Provide widespread education and training to local governments, landowners, and other stakeholders on the TMDL regulations and TMDL development and implementation and stakeholder opportunities and responsibilities in TMDL development and implementation.

4. When communicating to the general public, communicate the issue of "clean water" and the role TMDLs play in clean water. Many people are confused about TMDLs, their purpose and their role in restoring impaired waters. The public, however, understands "clean water."

5. Provide a clearinghouse and communications network for stakeholders interested in information relevant to TMDL development and implementation.

6. Agencies need to collaborate to develop agreements and methods to deliver a unified (one source) message to the public, grass roots watershed groups, and landowners regarding TMDLs.

T) Permitting and restoration

The Federal and State environmental permitting processes often create bureaucratic and/or regulatory hurdles for restoration projects and other watershed efforts. The time, cost, and complexity of regulatory review to implement restoration work by local watershed groups, private landowners, and local government can be a deterrent to completing existing or doing any additional activities. Current agency review practices too often act as disincentives to voluntary initiatives to improve land and water management. Concerns are increasing among restoration practitioners about the delays, conflicts and hassles of the paperwork barriers of permitting; a problem also attributed to helping increase the "burn-out" rate among staff. Can watershed restoration work proceed effectively within the existing regulatory agency mandates designed to "command and control" the effects of pollution and other adverse impacts? Can the permitting processes be made simpler, easier, and less costly to help encourage better practices and more projects? Do any environmental laws or regulations need to be changed to better accommodate positive incentives for watershed restoration, or is it the process of implementation that is causing the problems?

Shaping the Discussion for the Future

The following recommendations relative to permitting were suggested by the Roundtables for consideration by Forum delegates.

1. Federal and state agencies should develop streamlined and flexible government approaches and regulations in order to make them easier to understand and implement.
2. Consolidated permitting (e.g., general watershed permit for restoration work, or one-stop regulatory shopping) may increase compliance and improve cooperation for water quality and habitat improvements.
3. Agencies could provide a service to assist in completing permit applications.
4. Promote greater real public participation/involvement in the development of regulations.
5. Develop incentives and compensation for those protecting and restoring water quality, fish, watershed health, recycling, land conservation.
6. Agencies need to have incentives to integrate across missions and disciplines.
7. Identify a package of new incentives that need to be developed, and existing disincentives that need to be removed, in order to improve watershed management.
8. Better coordination is needed among staff of State and Federal regulatory agencies to minimize permit condition conflicts and time delays with watershed restoration projects.

Appendix A

Acronyms

ACSI – Appalachian Clean Streams Initiative

EPA – U.S. Environmental Protection Agency

EQIP – Environmental Quality Incentives Program

ESA – Endangered Species Act

GIS – Geographic Information Systems

GOCO – Great Outdoors Colorado

GPRA – Government Performance and Results Act

MOUs – Memoranda of Understanding

NAWQA – National Water-Quality Assessment

NEMO – Non-point Education for Municipal Officials

NGOs – Non-governmental Organizations

NRCS – Natural Resources Conservation Service

O&M – Operation and Maintenance

OSM – Office of Surface Mining

RAMP – Rural Abandoned Mine Program

SDWA – Safe Drinking Water Act

SMCRA - Surface Mining Control and Reclamation Act

SWRRI – State Water Resource Research Institutes

TMDLs – Total Maximum Daily Loads

USFS - U.S. Department of Agriculture Forest Service

USGS – U.S. Geological Survey

Appendix B

Regional Watershed Roundtables

Heartland
Rachael Herpel – rachael@groundwater.org
Includes Kansas, Iowa, Missouri, Nebraska

Alaska
Paul Jackson - pjackson@TNC.org
Includes Alaska

Southeast
James Johnston – nbumppo@dnet.net
Includes Alabama, Florida, Georgia, Kentucky, North Carolina, South Carolina, Tennessee, Virginia, and Mississippi, and Puerto Rico

Northeast
Leslie Kane – kanel@ci.guilford.ct.us
Includes Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont

South Central
Laura Koesters - koesters@eden.infohwy.com
Includes Arkansas, Louisiana, New Mexico, Oklahoma, and Texas

Great Lakes
Rae Ann Maday – madayrae@badriver.com
Includes Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin

Upper Mississippi
Dan McGuiness – dmcguiness@audubon.org
Includes Illinois, Iowa, Minnesota, Missouri, and Wisconsin

Pacific Northwest
Don Nelson – nelsond@wsu.edu
Includes Idaho, Oregon, and Washington

Mid Atlantic
Carol O'Beirne – cobeirne@frostvalley.org
Includes Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania, Virginia and West Virginia

Intermountain
Lee Roberts – shopaitr6@aol.com
Includes Arizona, Nevada, New Mexico (South Central), and Utah

California
Sari Sommarstrom – sari@sisqtel.net
Includes California

Appalachian-Coal
Barry Thacker – barryt@geoe.com
Includes Alabama, Georgia, Kentucky, Illinois, Indiana, Maryland, Michigan, Mississippi, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, and West Virginia

Rocky Mountain
Mary Ellen Wolfe – mwolfe@montana.edu
Includes Colorado, Montana, North Dakota, South Dakota and Wyoming