

**Collaboration as a
Governance Strategy:
Lessons from Six Watershed
Management Programs**

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Abstract: An important challenge confronting practitioners is improving governance in a world of shared power where the capacity for solving policy problems is widely dispersed and few organizations have the power to accomplish their missions by acting alone. Collaboration is one strategy that practitioners can use to improve governance and implement policies in complex interorganizational settings. While collaboration is clearly a practical concern, the process is not well understood. This paper examines the use of collaboration as a strategy for improving governance in these complex multi-actor settings. In particular, it examines the role that collaboration plays in improving watershed governance in six watersheds: Inland Bays (DE); Narragansett Bay (RI, MA); Salt Ponds (RI); Lake Tahoe (CA, NV); Tampa Bay (FL); and, Tillamook Bay (OR). A conceptual framework is presented that illustrates how collaborative activities occur at the operational, policymaking, and institutional levels and how these activities can be interrelated. Understanding these relationships is important if practitioners want to design effective collaborative processes. The paper concludes by identifying some of the factors that influenced collaborative activities and draws lessons for practitioners seeking to use collaboration as a governance strategy.

Key Words: Collaboration, environmental management, implementation, governance, networks, policy networks, interorganizational networks, watershed management

Introduction

A growing number of researchers recognize the ubiquitous nature of networks and the roles they play in social and organizational life and their impact on policy implementation (Hall and O'Toole 2000; O'Toole 2000, 1995; Kickert, et al., 1997; Menzel 1987; O'Toole and Montjoy 1984; Hjern and Porter 1981).¹ In part, this is due to the tendency for policies and programs to collect around problems over time as a policy subsystem develops (Elmore 1985). As Bressers and others (1995, 4) observe, it is not uncommon to find that:

“no organization of government possesses sufficient authority, resources, and knowledge to effect the enactment and achievement of policy intentions. Instead, policies require the concerted efforts of multiple actors, all possessing significant capabilities but each dependent on multiple others to solidify policy intention and convert it into action. Indeed, it is often difficult for any one actor, or group of actors, to manage, or manipulate, the flow of problems and solutions onto the political agenda in the first place.”

This portfolio of programs also varies across state and local governments, reflecting differences in capacity and policy innovation that are an integral part of the changing nature of our polycentric federal system (V. Ostrom 1994, 1989; Wright 1988; Elazar 1987).

A central challenge for practitioners is to find ways to improve governance in this world of shared power where the capacity for solving policy problems is widely dispersed and few organizations have the power to accomplish their missions by acting alone (Milward and Provan

2000; Mandell 1989). Governance refers to the means for achieving direction, control, and coordination of individuals and organizations with varying degrees of autonomy in order to advance the objectives to which they jointly contribute (Lynn, et al. 2000; Frederickson 1996). It involves more than just the configuration of governmental and nongovernmental organizations. It includes their enabling statutes, organizational and financial resources, programmatic structures, and administrative rules and routines. Thus, governance is inherently political and involves bargaining, negotiation, and compromise. It also involves formal and informal rules, social norms, and structures that govern relationships between organizations involved in implementing public policy (Lynn, et al. 2000; Milward and Provan 2000; Frederickson 1996).

Collaboration is one strategy practitioners use to improve governance and implement policies in interorganizational settings. While collaboration is clearly a practical concern, the process is not well understood; nor is the pragmatic concern of how management of complex multi-actor networks differs from that of single organizations (Agranoff and McGuire 2001; Jones, et al. 1997; Mandell 1990). Moreover, while our polycentric federal system creates opportunities for collaboration it simultaneously imposes constraints that limit practitioners' abilities to exploit an interorganizational system's collaborative capacity. Federal, state, and local actors have competing statutory and budgetary responsibilities that protect different constituencies while placing organizations in conflict. Governmental and nongovernmental organizations (NGOs) might resist participating in efforts that adversely affect their interests or those of their constituencies. Organizations may lack the resources to become engaged in collaborative activities. Organizations may also wish to preserve their autonomy and "turf" (Imperial 1999a; Bardach 1996). Fortunately, while the constraints appear formidable, organizations often find numerous ways to work together.

This study examines the use of collaboration as a strategy for improving governance in complex multi-actor settings. Specifically, it examines the role that collaboration plays in improving watershed governance. The focus on watershed governance is deliberate. The usual tendency is to assume that no watershed is "managed" without having some form of centralized watershed program that emphasizes science, planning, and the preparation of detailed management plans using some sort of participatory planning process. Unfortunately, this conceptualization fails to recognize that every watershed is "managed" in some way by a wide range of governmental and nongovernmental organizations, whose decisions influence the health and integrity of ecological systems. Thus, watershed management is as much a challenge of governance as it is a question of science and designing effective policies. As one respondent in Tillamook Bay put it: "So much of what this work comes down to is less technical, less scientific than we make it out to be. It's more practical, political, and social and it's local." While scientific research helps define problems and set priorities, ultimately implementation efforts reflect participants' values, ideologies, constituencies, turf, power, and ego (Bardach 1998, 199).

Watersheds also provide an excellent policy subsystem for examining collaborative processes. A growing body of research highlights the important role collaboration plays in improving environmental conditions and enhancing watershed governance (Leach, et al. 2002; Leach and Pelkey 2001; Born and Genskow 2001; Imperial 2001; Imperial and Hennessey 2000; Margerum and Born 2000; Wondoleck and Yaffee 2000; Selin and Chavez 1995; Cortner and Moote 1994). There appears to be a high latent potential for using collaboration as a strategy for

improving watershed governance. Watershed problems span political, geographic, and ideological boundaries. Policy instruments and programs governing watersheds are specialized by medium (e.g., air, water, soil, land use, etc.), geographic location (e.g., wetlands, coastal zone, tidal waters, agricultural land, forest land, etc.), statute, or function (e.g., permitting, enforcement, public education, installing BMPs, issuing grants, etc.) (Imperial and Hennessey 2000). The corresponding institutional fragmentation often means that no organization has the power or authority to compel others to act. Thus, improving environmental conditions or enhancing watershed governance typically requires organizations to work together.

This paper examines the various ways that governmental and nongovernmental organizations worked together to improve environmental conditions and enhance watershed governance. The paper begins with a brief discussion of the methods used to collect and analyze the data. The collaborative activities observed in each watershed are then identified and a conceptual framework is presented that illustrates the complex ways that these activities are interrelated. Understanding these relationships is important because it helps practitioners evaluate the collaborative capacity present in an interorganizational system, which in turn can help them identify new ways to work together. The paper concludes by identifying factors that influenced the collaborative processes and drawing lessons for practitioners seeking to use collaboration as a governance strategy.

Methods

This study is part of a larger research project funded by the National Academy of Public Administration as part of its *Learning from Innovations in Environmental Protection Project* (National Academy of Public Administration 2000). Given the complexity of collaborative processes and the lack of precisely defined theories, the study was developmental and employed a qualitative, comparative case study research design to develop theory grounded in the data and the literature (Yin 1994; Agranoff and Radin 1991; Strauss and Corbin 1990; Glaser and Strauss 1967). Case selection was guided by criteria assuring there would be differences in ecological settings, environmental problems, institutional environments, and situational histories. The watersheds also utilized a variety of regulatory and nonregulatory policy instruments. This led to the selection of the following watersheds: Inland Bays (DE); Narragansett Bay (RI, MA); Salt Ponds (RI); Lake Tahoe (CA, NV); Tampa Bay (FL); and, Tillamook Bay (OR) [See Appendix A for a summary of the cases].²

Data were collected from two primary sources. Field interviews with over 200 individuals representing various organizations involved in governing the six watersheds. The individuals and organizations were identified using a snowball sampling technique (Leach 2002; Leach, et al. 2002).³ All interviews were confidential and recorded on tape to ensure the accuracy of these data. Telephone interviews were conducted with individuals who could not be reached in the field. Additional contacts and follow-up interviews clarified responses and obtained additional information. Some direct observation of interorganizational events and meetings also occurred during site visits. The other primary data source was documents and archival records about the programs, planning, and collaborative activities in each watershed. Examining different data sources was important because it allowed a strategy of triangulation to be used to improve the validity of the study's findings (Yin 1994).

Systematic qualitative techniques such as coding were used to examine these data. Codes were derived inductively and deductively from these data and generated based on a start list derived from previous research. As coding continued, patterns emerged and codes were used to dimensionalize concepts. When coding data, quotes and short vignettes were identified to provide some context to our observations. As the analysis continued, tables, figures, matrices, and network displays were developed to display data, identify trends, and make observations (Miles and Huberman 1994). Detailed timelines were prepared to help evaluate potential causal linkages. Detailed case studies for each watershed were then prepared and sent to the principal informants for factual verification (Hennessey and Imperial 2000a; Imperial 2000a, 2000b; Imperial, et al. 2000; Imperial and Summers 2000; Kauneckis, et al. 2000).

Cross-case analysis was then used to deepen our understanding of collaborative processes and determined the extent to which the findings extended beyond individual cases. The basic approach was one of synthesizing interpretations and looking for themes that cut across the cases (Miles and Huberman 1994). Potential rival explanations were contrasted against one another to identify logical inconsistencies and determine their consistency with these data (Yin 1994). The chain of events was examined to help determine causality. Potential threats to the validity were then analyzed.⁴

Using Collaboration to Improve Watershed Governance

One of the obstacles to theory building is that researchers employ different definitions of collaboration, which reflect competing theoretical perspectives and normative views (Wood and Gray 1991). Some researchers ignore the definitional question by focusing on a specific type of collaborative activity. Others recognize different types of collaboration but the analysis is mostly descriptive and little consideration is given to what differentiates activities or how they are interrelated (e.g., Wondolleck and Yaffee 2000; Selin and Chavez 1995; Gray 1989). The problem with both approaches is that they fail to contribute to our understanding of the complex relationships between different collaborative activities in an interorganizational network.

Following Phillips and others (2000), collaboration is defined broadly to capture the full range of activities and the relationships among them. Bardach (1998, 8), building on the work of Moore (1996), defines collaboration as any joint activity by two or more organizations intended to create public value by working together rather than separately. This interactive process involves an autonomous group of actors who use shared rules, norms, or organizational structures to act or make collective decisions (Wood and Gray 1991, 146). Power and politics are critical because the participants remain relatively autonomous and must be convinced to act because they cannot be forced to do so (Phillips, et al. 2000). This suggests that a central challenge for researchers is to explain how collaborative processes improve policy outcomes or enhance governance while recognizing the configurational and loosely-coupled character of the institutional setting (Lynn, et al. 2000, 257). A necessary first step appears to be improving our understanding of the wide range of collaborative activities and the relationships among them so that we can begin identifying factors that influence these processes.

Since there are many reasons to establish relationships, collaboration took many forms in the six watersheds. Activities were permanent, temporary, project-based, or ad hoc (Mandell 1990). Some activities were preparatory while others were “nested” such that one activity influenced or constrained another (Bardach 1998, 20). Some were extensions of traditional agency behavior while others were significant departures (Wondolleck and Yaffee 2000, 13). Different individuals were involved in activities at different levels. Line staff worked closely with their counterparts in other organizations on individual projects. Mid-level administrators negotiated policies while high-level administrators (or their designees) represented organizations in formal decision-making processes. Collaboration also tended to be a trial and error process with practitioners becoming engaged in new activities as they learned how to work together and discovered new ways to create public value. Thus, there was a clear evolutionary dimension to the pattern of activity in the watersheds where the outcomes of one collaborative activity often created inputs for subsequent efforts (Bardach 1998; and, Simonin 1997).

In order to better conceptualize the different types of collaborative activities and illustrate their relationships, a framework is developed that is loosely-based upon the three levels of analysis proposed by Kiser and Ostrom (1982). The framework organizes collaborative activities around three levels of action: operational; policy making; and institutional. Activities at each level are structured by a series of formal or informal rules, which sometimes evolve unconsciously as a result of repeated interactions. Within each level, different functions or conceptual differences are used to group activities. These categorizations are by no means exhaustive and elements of a single collaborative activity can cut across the different levels. For example, a memorandum of understanding (MOU) may serve as the basis for devolving permitting authority from one agency to another with some over-lapping or shared responsibilities (e.g., permitting, enforcement, reporting, monitoring, etc.). The actual permitting activity takes place at the operational level. Developing shared policies, which may or may not become institutionalized in a MOU, is an activity at the policy-making level that can influence or constrain activities at the operational level. Formally adopting the MOU would comprise an institutional level activity because it influences and constrains action at the policy making and operational levels.

The framework’s strength is that it systematically conceptualizes and categorizes collaborative activities and explains how collaborative activities at one level influence, constrain, or add value to activities occurring at other levels. Understanding these relationships is important. It helps explain an interorganizational system’s collaborative capacity or the potential opportunities for joint actions that exist. The relationships also improve our understanding of the developmental dynamics that are an essential part of collaborative processes. As Bardach (2001) notes, it is common to find that collaborative activities at one level often lead directly or indirectly to activities at other levels, which gives these processes an evolutionary and emergent character. Moreover, as Provan and Milward (2001) observe, collaboration generates public value at different levels (i.e., organizational/participant, network, and community levels). Understanding different types of collaboration may improve our understanding of how collaboration generates public value at different levels.

Before describing the framework it is important to note that the linkages and feedback loops are deliberately kept simple even though they can be quite complicated. The number of

levels is also somewhat arbitrary in that there are rules that affect activities at the institutional level. It is also possible that activities within each level may have their own set of interrelationships and hierarchical linkages. It is also quite possible that rules and activities will function at different levels for different actors. Those employing the framework should recognize that this complexity exists even though it is presented without the additional levels or linkages because they do not add much to this analysis and would only serve to make the framework more cumbersome and difficult to explain. Moreover, while the framework is tailored to the collaborative activities used to implement watershed management programs, it could readily be adapted for use in other policy subsystems.

Operational Level

The world of action is the operational level where organizations are free to take action without prior agreement of other actors (Kiser and Ostrom 1982, 206). Organizations may also choose to work together because it is difficult or impossible to accomplish these tasks without collaborating or a collaborative approach has the potential to generate greater public value than can be achieved by working alone. Collaborative activities at this level vary and largely involve government service delivery, which in the area of watershed policy typically consists of issuing grants, processing permits, installing best management practices (BMPs), acquiring land, restoring habitat, educating the public or decisionmakers, and collecting data on environmental conditions [Table 1]. The activities can be encouraged or required as a result of collaborative activities at the policy-making or institutional level. In some instances, it would be

Improving Environmental Conditions

Actions at the operational level can improve environmental conditions directly (e.g., installing sewers to remove OSDs) or indirectly (e.g., educating decisionmakers or the public). A common type of activity was a habitat restoration project where different organizations provided funding, land, technical expertise, engineering or design work, construction, maintenance, and management of the completed project. If volunteers were used, another organization might recruit, organize, and manage the volunteers. In some cases, habitat restoration was linked to other policy issues. For example, the Park Avenue Redevelopment Development project in Lake Tahoe linked economic development needs with those of habitat restoration. Coordinating land acquisition programs proved to be another means of protecting sensitive habitat. These activities were particularly pronounced in Lake Tahoe and Tampa Bay.

Collaboration was also used to install best management practices (BMPs) or other types of environmental infrastructure in order to address nonpoint source pollution on urban, agricultural, and forestry lands. It was not uncommon to find that one organization provided funding for the BMP while others provided technical assistance, encouraged landowner participation through educational efforts, and assisted in their installation. In other cases, collaborative efforts resulted in the removal of point source discharges (e.g., Inland Bays) or onsite sewage disposal systems (e.g., Inland Bays, Narragansett Bay).

Permitting processes were also improved as a result of collaboration. A frequent approach was for one agency to delegate permitting activities to another organization in order to

Table 1: Collaborative Activities at the Operational Level

Type of Collaboration	Inland Bays	Narragansett Bay	Salt Ponds	Tampa Bay	Tillamook Bay	Lake Tahoe
Improving Environmental Conditions						
▪ Habitat restoration projects	X	X	X	X	X	X
▪ Land acquisition	X		X	X		X
▪ Installing urban BMPs			X	X		X
▪ Installing agricultural BMPs	X			X	X	
▪ Installing forestry BMPs					X	X
▪ Installing sewers to remove OSDSs	X	X	X			X
▪ Upgrading OSDSs		X	X			
▪ Relying on another organization's technical review			X			X
▪ Agency tying its permit approval to that of another agency			X			X
▪ Standardizing information for permit applications			X			
▪ Agency implementing another's permits			X			X
Educating Decisionmakers and Public						
▪ Public education targeted at schools	X			X	X	
▪ Public education for homeowners				X		
▪ Public education for industry	X					
▪ Public education for resource users				X		
▪ Special events and conferences	X	X		X	X	X
▪ New school curriculum	X			X		
▪ Training programs	X	X	X		X	X
Monitoring and Enforcement						
▪ Environmental monitoring	X		X	X	X	X
▪ Joint reporting on implementation	X			X	X ^a	X
▪ One organization helping enforce another's regulations		X	X			X

X = undertaken; X^a = Planned;

streamline the permitting process. For example, the Tahoe Regional Planning Agency (TRPA) devolved some of its permitting authority to local governments and utility districts. Agencies may also rely on another agency with superior expertise, information, or jurisdiction to review a particular aspect of a development project (Bardach 1998, 151). For example, the Rhode Island Coastal Resources Management Council (CRMC) relies on the Rhode Island Department of Environmental Management's (RIDEM's) review of onsite sewage disposal systems (OSDS). In this case, the CRMC benefits from the RIDEM's technical specialization and economies of scale.

Educating the Public and Decisionmakers

Collaborative activities also educated the public and decisionmakers about the environment, watershed problems, or management strategies. Some public outreach activities involved informal efforts such as a speakers bureau where one agency served as the coordinator while others contributed speakers on various topics. Other efforts were more complex. For example, Tampa Bay developed materials such as the *Boaters Guide to Tampa Bay*, which is the product of a collaborative effort between the Tampa Bay Estuary Program (TBEP), Florida Department of Environmental Protection (FDEP), and the Florida Marine Research Institute (FMRI). It contains information on habitats, sport fish, and boating safety. More than 100,000 copies have been distributed through a partnership with county tax collectors, which distribute the materials to boat owners renewing their tags. Collaborative training and technical assistance programs also targeted teachers, industry officials, state and local decisionmakers, and homeowners. For example, the Inland Bays' WE C.A.R.E. (Comprehensive Agricultural Resource Effort) effort helped farmers develop individualized conservation plans while Tampa Bay's Florida Yards and Neighborhoods Program educated homeowners. Respondents were quick to note that these activities were an important way to build public and political support for watershed management. Public education and outreach activities could also lead to changes in behavior by industry officials, permit applicants, and homeowners.

Monitoring and Enforcement

Collaboration also improved monitoring by improving the scope and substance of data on environmental conditions and the activities taken to implement watershed management programs. One way this was accomplished was by developing volunteer water quality monitoring programs in the Inland Bays, Salt Ponds, and Tillamook Bay. In all three watersheds, local universities work with state and local officials to recruit volunteers to monitor water quality. University researchers analyze the data and put it in a form useful to decisionmakers. Collaboration also improved the performance of existing monitoring programs. Tampa Bay created an interagency monitoring program where the partners agreed to a common sampling design and monitoring protocols. They also share data and routinely swap samples to improve quality assurance-quality control (QA/QC).

Collaboration also improved enforcement efforts. The CRMC's efforts to educate municipal building officials about its regulations and permit jurisdiction had the added benefit of encouraging local officials to refer violators. In Lake Tahoe, the Lahontan Regional Water Quality Control Board (LRWQCB) helps the TRPA with its enforcement. Whereas the LRWQCB has the authority to impose administrative fines, the TRPA can only impose fines through the judicial system. Conversely, the TRPA is better staffed when it comes to enforcement efforts and refers violators to the LRWQCB. It was also common to find environmental organizations systematically monitoring development activity and permitting processes. These "watchdogs" often reported violators and helped ensure that agencies implemented their own regulations.

Policy-Making Level

Operational level activities are frequently guided by collaborative activities at the policy-making level, which is analogous to Kiser and Ostrom's (1982) collective-choice level. At this level, collective decisions by individuals and organizations determine, enforce, continue, or alter actions at the operational level (Kiser and Ostrom 1982, 208). Rather than having a direct affect on the real world, these activities influence, constrain, or enhance operational-level activities. They can also perform a steering function by improving communication between actors, coordinating actions, and integrating policies in a manner that advances collective goals (Peters and Pierre 1998; Osborne and Gaebler 1992).

The framework identifies three categories of collaboration at the policy-making level [Table 2]. Activities can share knowledge or pool resources in ways that allow new forms of collaboration to take place at the operational level. These activities can also result in shared policies. These activities are important because they enhance the governance system's ability to provide services. They also influence or constrain the scope and substance of operational-level activities. Decisions at this level are enforced through some sort of formal process or through informal mechanisms (e.g., peer pressure).

Knowledge Sharing

Ecosystems are complex, dynamic, and subject to an immense number of internal and external relationships that change over time. This creates conditions of extreme uncertainty, which presents unique challenges for the design and management of governance systems (Hollick 1993; Ophuls and Boyan 1992; Dryzek 1987). One way to cope with this uncertainty is to incorporate additional scientific and time and place information into decision making. When information is lacking, organizations often undertake research projects to generate new information (Busenberg 1999). When information exists, it is sometimes necessary for organizations to reach agreement on common facts, theory, or methods (Wondolleck and Yaffee 2000, 29). For example, the development of nutrient reduction and seagrass restoration goals in Tampa Bay required the participants to agree to a common set of facts, assumptions, computer models, and nutrient reduction credits.

Because the information needed by decisionmakers is often widely dispersed, it was common to find collaborative activities designed to reduce information asymmetries. Developing common databases (e.g., geographic information systems), technical resources (e.g., computer models), shared resource inventories, data syntheses (e.g., annual reports, status and trends reports, etc.), and other technical resources were all common activities. For example, the Tampa Bay Estuary Program (TBEP) regularly collects data produced by different monitoring programs, synthesizes the information, puts it in a form understandable to decisionmakers, and reports on progress towards collective goals.

Watershed problems are also complex and affect a wide range of human interests and values. Collaborative activities are often used to solve problems and reconcile competing values using work groups, task forces, advisory committees, or other periodic meetings as well as informal staff interactions. Membership in these activities was heterogeneous, representing a

Table 2: Collaborative Activities at the Policy-Making Level

Type of Collaboration	Inland Bays	Narragansett Bay	Salt Ponds	Tampa Bay	Tillamook Bay	Lake Tahoe
Knowledge Sharing						
▪ Joint research and fact finding	X	X	X	X	X	X
▪ Interagency databases (e.g., GIS)		X	X	X	X	X
▪ Development of joint technical information or resources	X	X	X	X	X	X
▪ Co-locating staff from different organizations		X		X	X	X
▪ One actor collecting information for another organization	X		X	X	X	X
▪ Ad hoc working groups	X	X	X		X	X
▪ Groups that meet on a regular basis	X			X	X	X
▪ Collaborative organizations meet regularly	X			X	X	X
Resource Sharing						
▪ One actor hiring staff to work in another organization					X	
▪ One organization recruiting and training volunteers to support another agency				X		
▪ One organization detailing staff to work in or support another's work				X	X	X
▪ Agencies pooling financial resources for a common set of activities				X		X
▪ One agency funding activities pursuant to another organization's priorities	X			X		X
Shared Policies, Regulations, and Social Norms						
▪ Priority for habitat restoration			X	X		X
▪ Priorities for infrastructure investment			X			X
▪ Priorities for land acquisition				X		X
▪ Formal shared goals				X	X	X
▪ Formal shared policies			X	X		X
▪ Joint budgeting	X			X	X	
▪ Informal social norms	X		X	X		X
▪ Agreement on formal monitoring protocols and QA/QC procedures				X		X
▪ Joint work plans				X		
▪ Report on progress towards environmental goals				X	X ^a	X
▪ Report on progress towards implementation activities	X			X	X ^a	X

X = undertaken; X^a = Planned;

range of stakeholders and competing interests, or homogenous and consist of a limited set of organizations with similar interests.

This category of activities performs various functions. The interactive processes create interorganizational networks that generate new ideas, share knowledge, build relationships, and establish trust. As information is exchanged, it becomes part of the shared knowledge base necessary to approach problems and this information is “owned” by all participants in a collaborative process (Wondolleck and Yaffee 2000, 27). As a result, managers are better informed and make better decisions about future actions at the policy-making or operational level (Wondolleck and Yaffee 2000, 23). This can eliminate information asymmetries.

Resource managers also function in a political environment where there is a competition for resources and direction. Since there are often asymmetries of power, these interorganizational meetings help agency leaders build concurrence or support for a desired course of action. Collaboration can also help practitioners find creative solutions to their collective problems. The networks created can also create valuable information channels. Politicians and upper-level agency officials get additional information about management issues and problems while lower-level staff gain a greater appreciation of the political and resource allocation issues (Wondolleck and Yaffee 2000, 31 - 33). These interactions also promote the policy-oriented learning observed by Sabatier and Jenkins-Smith (1999, 1993) in their work on understanding policy change and implementation.

Resource Sharing

A common complaint among respondents was that there was a shortage of resources (e.g., staffing, funding, and expertise) to implement watershed management plans. One strategy for overcoming these limitations was pooling organizational resources in ways that improved their ability to solve problems or enhance institutional performance. Various forms of resource sharing were employed. Some activities were relatively informal and involved something as simple as sharing water quality monitoring equipment (e.g., Tampa Bay). Other activities were more complex such as co-locating staff, allocating staff to support another agency’s efforts, or pooling financial resources. For example, in Tillamook Bay, the Oregon Department of Forestry (ODF) hired an Oregon Department of Fish and Wildlife (ODFW) wildlife specialist to work entirely on habitat restoration in the Tillamook State Forest. This allowed the ODF to increase its restoration activities and improved communication. In Rhode Island, the Department of Transportation (DOT) hired staff to work in the regulatory agencies such as the RIDEM and CRMC to review permit applications and expedite the reviews. Collaborative arrangements were also used to solicit volunteers to perform tasks that support agency activities (e.g., water quality monitoring, habitat restoration, etc.).

In some cases, an organization’s slack resources were allocated to support another program’s implementation efforts. For example, the Narragansett Bay Estuary Program (NBEP) deployed staff to help rewrite the state’s OSDS regulations and helped administer its Section 319 Nonpoint Source Management Program. There were also examples where agencies pooled financial or staff resources to complete specific projects (e.g., habitat restoration, stormwater improvement, etc.). Another common strategy was to adopt common funding priorities for

operational projects. For example, Florida's land acquisition programs, the Southwest Florida Water Management District (SWFWMD), and local governments all target habitat restoration and land acquisition using the TBEP's priorities. In other cases, organizations collaboratively applied for grants or shared project funding. Respondents noted that incorporating a NGO as a partner often had the added benefit of removing the funding from the government's contracting and purchasing requirements, which often helped them cut costs and expedite projects. In other cases, the inclusion of co-applicants increased the possibility that the federal government would fund a project. For example, respondents in Rhode Island suggested that they would not have received a \$270,000 grant from the National Oceanic and Atmospheric Administration (NOAA) to develop a coastal habitat restoration program unless the NBEP, CRMC, and Save the Bay were co-applicants.

Developing Shared Policies, Regulations, and Social Norms

Since there are different laws, programs, and competing constituency groups, there are many legitimate objectives and no single answer to the question of how to manage a watershed (Wondolleck and Yaffee 2000, 30). Thus, a common focus of collaborative activities was developing shared policies, which took many forms. All six watersheds developed one or more shared policy documents. For example, Tampa Bay developed a series of binding commitments for habitat restoration and nutrient reduction while in the Salt Ponds the state and local governments reached agreement on a common set of land use policies.

Relations among individuals and organizations involved in collaborative activities were structured by formal policies. However, many times they were also based upon tradition and the type of shared norms and informal agreements that govern much of our political and social lives (Axelrod 1997). While social norms will not be sufficient in all cases, they can be particularly useful in situations where there is no legal authority to compel other organizations to act. Even in Tampa Bay, where the partners signed a "binding" interlocal agreement, there is no legal way to compel a signatory to implement the agreement. Instead, it is social norms and peer pressure that encourages the actors to adhere to the agreement combined with the threat of formal (e.g., being removed as a partner) or informal (e.g., verbal and nonverbal) sanctions.

Respondents reported that developing shared policies and social norms were strong motivators for joint action because it created a shared sense of purpose, which in turn led to the political commitments and resource allocations necessary to support collaborative activities (Wondolleck and Yaffee 2000, 76). Shared policies and norms also created the peer pressure at the political, professional, and individual levels that enforced agreements and encouraged continued commitment for collaborative efforts at the policy-making and operational levels (Bardach 1998, 145). Peer pressure appeared to be particularly effective when the participants had a long history of frequent interactions, strong interpersonal relationships and trust exists, and the partners are subject to some form of routine monitoring or joint reporting (Imperial and Hennessey 2000).

Table 3: Collaborative Activities at the Institutional Level

Type of Collaboration	Inland Bays	Narragansett Bay	Salt Ponds	Tampa Bay	Tillamook Bay	Lake Tahoe
Institutionalizing Shared Policies						
▪ MOUs			X	X	X	X
▪ Creating a new program		X				
▪ Capital improvement programs				X		
▪ Comprehensive land use plans	X		X	X		
▪ Harbor management/water use plans	X		X			
▪ Incorporating policies into other policies or programs	X	X	X	X		X
▪ Resolution of decision-making body					X	
▪ Legal agreements				X		
▪ Federal or state legislation	X					X
Collaborative Organizations						
▪ Nonprofit organization	X					
▪ Alliance of governmental entities				X		
▪ Performance partnership					X	
▪ Regional planning agency						X
▪ Informal organizations	X			X	X	X

X = undertaken; X^a = Planned;

Institutional Level

Successful collaborative efforts not only established meaningful interaction, but participants found ways to make these relationships endure over time by institutionalizing shared policies into a higher order set of rules and by creating new organizational structures (Wondolleck and Yaffee 2000, 115). These activities at the institutional level are analogous to the constitutional level proposed by Kiser and Ostrom (1982) and are important because they improve the collective capacity for solving environmental problems and create institutional infrastructure that future efforts can build upon. It also makes collaborative activities at the policy-making level less dependent on personal relationships or leaders that are hard to replace. It can also minimize problems resulting from turnover such as the loss of institutional memory or trust embedded in personal relationships (Bardach 1998, 298).

The activities at the institutional and policy-making levels are related in complex ways. The key distinction is that institutional level decisions precede and constrain interactions and decisions at the policy-making level (Kiser and Ostrom 1982, 210). Thus, the inclusion of a shared set of policies in some higher-order set of rules influences collaborative activities at the policy-making and operational levels. For example, the creation of a new collaborative organization often required its members to adhere to specific policies and make decisions in certain ways. However, activities at the policy-making level may be a precursor to activities at

Table 4: Examples of Collaborative Organizations

Watershed	Collaborative Organizations
Inland Bays	<ul style="list-style-type: none"> ▪ Center for the Inland Bays ▪ Citizens Advisory Committee (CAC) (during planning process) ▪ Scientific and Technical Advisory Committee (STAC) ▪ Sussex County Association of Towns (SCAT) ▪ Inland Bays Monitoring Committee (IBMC)
Lake Tahoe	<ul style="list-style-type: none"> ▪ Tahoe Regional Planning Agency ▪ Tahoe Transportation and Water Quality Coalition ▪ Coordinated Transit System ▪ Tahoe Research Group
Tampa Bay	<ul style="list-style-type: none"> ▪ Agency on Bay Management ▪ Tampa Bay Estuary Program ▪ Nutrient Management Consortium ▪ Florida West Coast Regional Ambient Monitoring Program ▪ Scientific and Technical Advisory Committee
Tillamook Bay	<ul style="list-style-type: none"> ▪ Tillamook County Performance Partnership ▪ Tillamook Coastal Watershed Resource Center ▪ Tillamook Watershed Council

the institutional level. For example, a committee may meet over a period of years to develop a set of shared policies, which are then institutionalized through a formal agreement (e.g., MOU).

Formalizing Shared Policies and Social Norms

There are several ways to institutionalize shared policies and norms [Table 3]. A common technique was formalizing a MOU. For example, Lake Tahoe used a MOU to institutionalize its delegation of permitting authority to local governments and utility districts. Shared policies could also be incorporated into higher order rules that are binding on other organizations. One common technique was to incorporate shared policies into local comprehensive plans or capital improvement programs to ensure that shared policies were implemented and operational level projects were funded. In the Salt Ponds, local governments amended their zoning ordinances to implement the shared land use policies.

Shared policies could also be incorporated into some higher order management plan or policy document. In Narragansett Bay, the Comprehensive Conservation and Management Plan (CCMP) was adopted as an element of the *State Guide Plan*, the repository of state policies. Theoretically, this could produce changes in decision-making at the state or local level, although there was no evidence to suggest this occurred. In Tampa Bay, the FDEP and Environmental Protection Agency (EPA) incorporated Tampa Bay’s nitrogen management strategy into a Total Maximum Daily Loading (TMDL) promulgated pursuant to the Clean Water Act. Meanwhile,

the SWFWMD plans to incorporate the nitrogen goals into its revised surface water improvement management (SWIM) plan and Comprehensive Water Management (CWM) plans.

Developing Collaborative Organizations

The other common activity at the institutional level was developing new collaborative organizations, or organizations comprised of other organizations [Table 4]. When a group of individuals or organizations begins to embrace collaborative processes, makes joint decisions, and acts as a single entity they are in effect acting as a new organization (Jones, et al. 1997; Finn 1996). Researchers refer to this organizational form in various ways including partnerships, coalitions, strategic alliances, consortiums, and interorganizational networks. Collaborative organizations also perform various functions such as a conveynor, catalyst for action, conduit for information, advocacy, organizer, funder, technical assistance provider, capacity builder, partner, dispute resolver, or facilitator (Himmelman 1996, 35 -37).

While organizations typically comprise the membership in a collaborative organization, there can be provisions for citizens or interest group representatives to serve as member, much the same way they participate on advisory boards and policymaking bodies in the human service area (Bardach 1998, 214). A common characteristic of this organizational form is that there tend to be no formal hierarchies among the members, even though outside the partnership there may be significant power differences (Huxham 1996, 6). This can limit their ability to address controversial problems and often requires participants to rely on consensus-building to compensate for the imperfections that would result from other decision-making rules (Bardach 1998, 220). Membership in a collaborative organization is voluntary but has consequences. Partners typically agree, explicitly or implicitly, to a set of shared policies or behavior norms, which can be departures from normal organizational behavior. Membership can also require sharing information or resources or compel participation in various activities at the policy-making or operational levels.

The structure of the collaborative organizations varied in their complexity and formality ranging from prescriptions in statutes and binding legal documents to informal structures based primarily on shared social norms. Tillamook Bay established the Tillamook County Performance Partnership (TCCP) through a resolution of the Tillamook County Board of Commissioners and its by-laws are poorly developed. Conversely, the TBEP has detailed rules governing its operations and decision-making procedures contained in a binding legal document, the interlocal agreement. The advantage of formal structures is that clear parameters for action and rules for making decisions and resolving conflicts exist (Bardach 1998, 220). This makes them less reliant on individuals and personal relationships.

My analysis suggested that collaborative organizations are important because they improve problem-solving capacity in the governance system and provide institutional infrastructure that other collaborative efforts and programs can build upon. For example, the SWFWMD linked its funding for habitat restoration projects to the TBEP's restoration policies. Many of the collaborative organizations were either staffed directly (i.e., partners contributed resources) or one partner provided the staff support. These staff resources provide an important source of slack resources that could be used to support or conduct collaborative activities. They

also absorb the transaction costs associated with organizing collaborative activities at the policy-making and operational levels.

Factors Influencing Collaborative Processes

As indicated by Tables 1, 2, and 3, each watershed displays a different pattern of collaborative activities that are the product of different contextual factors such as the physical environment, configuration of the problems, institutional setting, situational histories, and programmatic context (Imperial 2001; Imperial and Hennessey 2000). The combination of these factors creates opportunities for joint action as well as incentives and constraints that influence whether the participants can find opportunities for collaboration that fit their collective constraint set. While a complete discussion of these factors is beyond the scope of this paper, it is useful to discuss several of the more important factors that suggest lessons for practitioners seeking to use collaboration as a governance strategy.

Collaborative Inertia and Bandwagon Effects

While the specific collaborative activities varied, a common pattern was evident. Initial collaborative efforts were often slower than expected and then increased in scope and number as participants gained experience and learned how to work together. Respondents frequently reported that it took longer than expected to develop shared policy documents and new collaborative organizations were often affected by common operational problems associated with developing new organizations. It was also common to find that it took longer than expected to conduct the planning and design work necessary to expand the level of collaborative activity at the operational level. Eventually the pace of collaborative activity quickened and practitioners became engaged in new activities as they learned how to work together and discovered ways to create public value.

Collaboration research refers to these phenomena as “collaborative inertia” and the “bandwagon effect” (Bardach 1998, 270). Researchers often find that when actors decide to become engaged in collaborative efforts, initial progress is slower than expected. Participants underestimate the time and effort required to build relationships and trust, which are precursors to joint action. It also takes time to develop shared understanding of problems, to find opportunities for joint action that have some potential for mutual gain, and to find the resources necessary to implement these actions (Wondolleck and Yaffee 2000; Bardach 1998). While progress is often slower than expected, once a threshold level of success is achieved, the situation often changes and collaborative processes become susceptible to a new dynamic (Bardach 1998, 270). Early problems are overcome, relationships and trust develop, the actors learn how to work together, and the time it takes to plan and implement projects quickens. The efforts then build momentum, pick up speed, gain new members and resources, and expand to address new issues and problems. Researchers refer to this phenomenon as the “bandwagon effect” (Bardach 1998, 276; Wondolleck and Yaffee 2000; Kraatz 1998).

Collaborative inertia and the bandwagon phenomena were evident to varying degrees in each watershed but were perhaps most pronounced in Lake Tahoe. After more than two decades of conflict, the governmental and nongovernmental actors became increasingly dissatisfied with

the costs and problems associated with inaction. As the incentives for collaboration increased, a subset of actors began to work together in what eventually came to be known as the Tahoe Transportation and Water Quality Coalition. Initially, progress was slower than expected. Time was spent building relationships, finding problems of mutual concern, identifying mutually beneficial activities, and learning how to work together. As the organizations experienced success they began looking for additional opportunities for joint action. Additional organizations joined the Coalition as it branched out to address new issues. As a result of its continued successes, the Coalition attracted additional political support and financial resources, which in turn led to additional collaborative efforts. A similar pattern can be observed in terms of the current efforts to streamline the regulatory process as well as the current efforts to develop and implement the Environmental Improvement Program (EIP) in Lake Tahoe.

Developing Collaborative Know How

Several factors help explain this pattern of collaborative inertia followed by the bandwagon effect. One is that organizations involved in collaborative processes become engaged in a particular form of organizational learning called “collaborative know how” (Simonin 1997). In essence, organizations and the individuals that comprise them learn how to collaborate by collaborating. Organizations and their representatives must learn how to govern collaborative processes and find ways to reduce the transaction costs associated with these activities (Dyer and Singh 1998; and Kraatz 1998). Respondents often noted the importance of this learning process and indicated that it tended to take longer than anticipated. For example, participants must learn how to collectively manage grants and contracts and manage personnel in ways that do not exacerbate their administrative costs. It also takes time to discover which organizations make good partners. It was also clear that some organizations make better partners than others in that they are viewed as being more trust worthy, reliable, and cooperative. It also appeared that organizations with prior collaborative experience made desirable partners, perhaps because they were more effective in managing these processes or their interorganizational relationships (Dyer and Singh 1998; Gulati 1995). Developing collaborative know how can also enable organizations to obtain additional benefits from collaborative activities as they learn how to implement them more effectively (Gulati 1995; Dyer and Singh 1998; and Kraatz 1998; Simonin 1997). For example, as a result of their prior experiences, organizations may spend less time and money on planning and designing operational level projects (e.g., habitat restoration projects, stormwater projects, etc.). This suggests that practitioners need to maximize these learning opportunities and plan to gradually scale up collaborative efforts over time.

Importance of Trust and Relationships

Equally important is the level of trust and relationships (or lack thereof) that develop as a result of interactions.⁵ Numerous respondents pointed to trust and the development of personal and relationships as an important precursor to and product of collaborative processes. This finding is consistent with previous watershed (Born and Genskow 2001; Wondolleck and Yaffee 2000; Lubell, et al. 1998) and network (Fountain 1998; Putnam 1995; Coleman 1990; Ostrom 1990; Axelrod 1997, 1984) research. This “social capital” is important because it facilitates cooperative efforts since there is a preference for transacting with individuals and organizations whose reputation is known.⁶ Shared norms and trust are also important governance mechanisms

that lower transaction costs by promoting smooth and efficient resource exchanges because participants are less likely to fear that they are being taken advantage of by other organizations (Tsai and Ghoshal 1998; Wicks, et al. 1999). Information from trusted individuals or organizations is also likely to be viewed as being more reliable and accurate (Granovetter 1985).

The importance of trust has several implications for practitioners. It takes time to build trust as well as the personal and interorganizational relationships necessary to facilitate collaborative processes (Axelrod 1997, 1984; Ostrom, et al. 1994). During early collaborative efforts there is likely to be less trust and weaker personal and organizational relationships. As trust and relationships build, collaboration becomes easier and efforts expand to new areas, making trust an antecedent to and outcome of collaborative processes (Leana and Van Buren 1999; Bardach 1998; Tsai and Ghoshal 1998; Simonin 1997). Thus, a “virtuous circle” of escalating trust and further collaboration can develop if initial collaborative efforts are effective, which helps explain the emergence of the bandwagon effect (McCaffrey, et al. 1995; Zaheer and Venkatraman 1995).

Unfortunately, “[t]here is no magic recipe for building trust and relationships (Wondolleck and Yaffee 2000, 158).” What the cases suggest is that an important ingredient for generating the requisite trust and relationships is repeated interactions. The repeated interactions could be the result of operational level projects or through some sort of ongoing interactive process (e.g., advisory committee, permit review process, etc.) (Kiser and Ostrom 1982, 203). They could even be the result of repeated interactions surrounding interorganizational conflict (e.g., Lake Tahoe). Axelrod (1984, 126) further suggests “enlarging the shadow of the future” by making the interactions durable and frequent thus allowing actors to use the implicit threat of retaliation to enforce voluntary agreements. This was accomplished in different ways. For example, the 2007 deadline for achieving their Environmental Threshold Carrying Capacities (ETCCs) and the Environmental Improvement Program (EIP) fill this purpose in Lake Tahoe. In Tampa Bay, it was through the development of new collaborative organizations that meet frequently and participants are required to prepare five-year implementation plans and regular reports on implementation progress. In the Salt Ponds, it is through an informal permit process that increases interactions between local and state officials.

Practitioners should also remember that once trust and relationships have developed, they must be maintained. Moreover, some effort is required to socialize new participants to the norms, values, and routines of collaborative processes (Leana and Van Buren 1999). Otherwise, trust and relationships will erode, especially when there is a high turnover in staff or agency leadership or new organizations join the effort and they have different goals and priorities. This suggests that practitioners should institutionalize informal agreements and interpersonal relationships whenever possible. This will make the collaborative effort’s success less reliant on particular individuals (e.g., dynamic leader) and will help socialize new members to the shared policies. Conversely, while trust tends to build slowly over time, it is destroyed quickly by negative experiences (Leana and Van Buren 1999; Axelrod 1984). Respondents frequently noted that negative experiences had much stronger impacts on their decision making than positive ones. Thus, practitioners should avoid situations that have a high risk of failure or are likely to generate conflict, particularly when the participants have a limited based of collaborative experience.

Think Holistically but Act Strategically

It was also clear that collaboration should not be viewed as some sort of panacea that can or should be used to address every watershed problem. Organizations can have important institutional constraints on participating in collaborative efforts. Even when an organization's formal rules do not conflict, its behavioral norms, professional values, knowledge, experience, autonomy, and abilities can limit its participation in a collaborative activity (Wondolleck and Yaffee 2000, 60; Ostrom 1999, 42; Chisholm 1995). Accordingly, when organizations want to collaborate, the configuration of their collective constraints may limit the plausible activities that can be implemented (Axelrod 1997; Chisholm 1995). Understanding these constraints is important. Some are fixed by external organizations (e.g., Congress limits how grant funds are used) others are more malleable or are based on perceptions (sometimes faulty) of what collaboration will cost or what will be gained.

Fortunately, as indicated by Tables 1, 2, and 3, when collaboration highlights common values and interests, participants often find ways to work together. However, these activities should be limited to situations where opportunities for joint action exist that fit the collective constraint set, the status quo condition is viewed as being unacceptable, and the proposed activity offers the possibility for generating public value that cannot be achieved when the actors work alone.⁷ Thus, collaboration is both an individually rational strategy as well as means of collectively improving watershed governance (McCaffrey, et al. 1995).

This has several implications. First, while it is important to understand how an ecological system functions, it is equally important to understand the "ecology of governance". That is, the watershed's unique contextual setting, the tradeoffs among problems, and how the institutions that address problems function and interact (Imperial and Hennessey 2000; Hennessey 1994). Essentially, practitioners must understand how the institutional ecosystem that corresponds to the ecological system functions. The institutional system creates important opportunities for joint action but it also imposes constraints that limit the participants' ability to utilize the interorganizational system's collaborative capacity. Essentially, what is suggested is that practitioners perform the type of forward and backward mapping recommended by Elmore (1985). This analysis will not only help practitioners find opportunities for collaboration but it can identify supportive coalitions or potential sources of political conflict (Wondolleck and Yaffee 2000, 82).

Second, while watershed management encourages practitioners to view ecosystems holistically, collaboration is inherently strategic. Collaboration is typically limited to issues of mutual interest that are primarily to win-win or at least win-no-lose situations (Wondolleck and Yaffee 2000, 48).⁸ Consequently, it is unlikely to be an appropriate strategy for addressing controversial problems involving win-lose situations (i.e., zero sum games). Moreover, while participants will work together on some issues, they have to be willing to agree to disagree on others and respect these differences if they are to maintain cooperative working relationships.

Finally, the cases suggest that it may be more effective to use several focused collaborative efforts rather than trying to centrally direct all collaborative activities in a

watershed using a centralized committee structure. While this approach can generate frequent contacts among individuals and organizations, offers some measure of centralization and control, and provides a central point of contact, it can also increase transaction costs with little corresponding benefit. By way of contrast, the Inland Bays, Lake Tahoe, and Tampa Bay utilized a series of targeted collaborative efforts, which included only those organizations that had something to contribute. This reduced transaction costs and allowed potential collaborators to negotiate directly with one another, adding additional certainty that agreements would be implemented.

It is important to recognize that this polycentric approach to watershed governance can often be equally effective (Imperial 1999a; Ostrom, et al 1993; Blomquist 1992). While information moves quickly among organizations with strong ties, the spread of new information, ideas, and opportunities typically come through weak or nonredundant ties (Burt 1992; Granovetter 1973). A series of separate collaborative efforts targeted at specific problems allows a greater number of organizations to be involved in the overall effort, which increases the size of the interorganizational system and the opportunities for joint action. Moreover, each organization will be involved with different combinations of organizations in each collaborative activity. This increases the number of weak or nonredundant ties linking organizations together, which in turn facilitates the spread of information and creates additional interactive processes. These interactive processes are important because they provide governmental and nongovernmental actors with an opportunity to communicate and share information, build trust and personal relationships, and ultimately identify opportunities for joint actions that improve environmental conditions or enhance watershed governance (Wondolleck and Yaffee 2000, 48). Thus, practitioners should recognize that creating several smaller, targeted, and even overlapping problem-solving entities instead of one large centralized entity may be equally effective strategies depending on the interorganizational system and its resources.

Leadership

Another common observation was the importance of leadership in initiating, maintaining, and expanding collaborative processes. This finding is consistent with research on watershed management (e.g., Born and Genskow 2001; Leach and Pelkey 2001; Wondolleck and Yaffee 2000; Selin and Chavez 1995) and collaboration (e.g., Bardach 1998; 1977; McCaffrey, et al. 1995; Mandell 1989). Given that collaboration is inherently “political” and involves extensive discussions, bargaining, and negotiation, it was not surprising that respondents pointed to the importance of having entrepreneurs, coordinators, fixers, brokers, or champions with the political skills necessary to navigate the collective constraint set and find ways to work together. Moreover, not all of the constraints on an organization’s participation in a collaborative effort are fixed. Persuasive individuals often encouraged organizations to “bend the rules” or to “think differently” about a problem, proposed course of action, or the potential benefits associated with a proposed activity in order to initiate or build support for a collaborative effort.

“Leadership” came in different forms. Some were “entrepreneurs” who viewed collaborative processes as a way to attract new resources to address local problems. They used collaborative processes to elevate local problems on the policy agendas of federal decisionmakers. The efforts of the small groups of individuals that initiated the Inland Bays,

Tampa Bay, and Tillamook Bay efforts are excellent examples where this occurred. Others took advantage of a focusing event to initiate a new collaborative process. For example, the Presidential Summit in Lake Tahoe provided an opportunity to initiate the development of the EIP, which had long been discussed but never acted upon. In other cases, individuals performed the role of being an “unsnarler,” helping navigate the bureaucratic maze of constraints in order to find ways to conduct the desired collaborative activity.

Respondents also noted the importance of having a “coordinator.” This appeared to be particularly important at the onset of relatively informal processes. Someone had to call meetings and provide a central point of contact. It was also important for someone to keep the effort going as interest naturally ebbed and flowed over time. Less clear was the importance of having an outside facilitator. Some researchers note that facilitators are important because they resolve disputes that emerge during group decision-making (Wondolleck and Yaffee 2000; Khator 1999). In some cases, individuals were brought in to be facilitators. The best example was during the negotiations surrounding the interlocal agreement in Tampa Bay. In the Salt Ponds and Inland Bays, university researchers filled this role. Committee members, staff in collaborative organizations, and respected agency officials filled this role to varying degrees in different watersheds. While it was unclear whether outside facilitators are needed, it appeared that someone needed to fill this role during the development of shared policies and someone had to help resolve disputes among members of collaborative organizations.

It was also important that there were individuals to play the role of “fixer,” “broker,” or “devil’s advocate” (Bardach 1977; Levin 1986). Watershed coordinators often played the role of “fixer” or “broker” by helping participants find opportunities for joint action. Respondents frequently noted the importance of having someone keep participants “eye on the ball” and making sure that peripheral issues did not sidetrack them. In Tampa Bay, respondents noted the importance of several individuals that continually pushed the group to prepare “more than just a plan.” Respondents also noted that it was important that some participants took on the role of “devils advocate” and challenged the group’s assumptions and kept everyone grounded in political and practical realities.

Others were “champions,” providing leadership to reach agreement on a particular course of action. The importance of “champions” has been noted in watershed research (Wondolleck and Yaffee 2000; Khator 1999). The “champions” tended to be strong supporters of the collaborative efforts and encouraged others to participate. These individuals also lobbied for particular courses of action on controversial issues and used their powers of argument and persuasion to encourage others to follow. Excellent examples of the constructive roles played by “champions” are in Tampa Bay and Tillamook Bay where a few individuals got the participants to agree to the Interlocal Agreement and the TCPP, respectively (Imperial and Summers 2000; and, Khator 1999).

Resources

Another factor influencing collaborative processes was the presence of stable and flexible resources. Respondents were quick to note that it takes resources such as time, money, equipment, staff, technical expertise, and legal authority to get things done. It also appeared that

when these resources were widely distributed among different organizations, it created complementary relationships that produced incentives for collaboration (Wondolleck and Yaffee 2000, 198). The importance of adequate resources should not be ignored. Watershed management (Wondolleck and Yaffee 2000; Imperial and Hennessey 2000; Leach and Pelkey 2001; and Lubell, et al. 1998), implementation (e.g., O'Toole 1986), and network (Alexander 1995; Hall 1995) research all point to their importance.

However, the presence of adequate resources is best viewed as a necessary but not a sufficient condition for success. When funding is available, the way governments allocate and account for expenditures creates constraints on collaborative activities (Wondolleck and Yaffee 2000, 57). As a result, when collaboration is contingent upon external funding sources, it becomes difficult to make a sustained effort to address specific problems over time. Thus, when viewed over the long term, collaborative efforts may amount to little more than what respondents in Tillamook Bay called "random acts of environmental kindness". In other words, implementation consists of discrete, loosely-connected projects. Viewed over the long term, these projects may produce isolated environmental improvements but are too limited in scale, scope, number, magnitude, or duration to significantly change the underlying problems when viewed from the perspective of the larger ecological system (Imperial and Hennessey 2000, 8.120; Imperial 2001, 194).

Respondents were also quick to note the importance of slack organizational resources or resources that could readily be re-deployed to support collaborative efforts. While some implementation efforts (e.g., habitat restoration projects) require capital funding others require slack resources such as staff or equipment that can be allocated to support a collaborative effort.⁹ After all, if organizations can contribute nothing more than sending a staff member to attend meetings, then it is unlikely that the group will accomplish much. Undertaking the collaborative efforts described in Tables 1, 2, and 3 requires staff to organize and support these activities. Conversely, organizations lacking the requisite slack resources may be unwilling to participate in some collaborative activities (Alexander 1995).

Organizations with slack resources may also be likely to make investments in relation-specific assets that enhance collaborative activities such as shared databases, research projects, web pages, or other technical resources (Wondolleck and Yaffee 2000, 101). Organizations may be more willing to invest in hiring staff whose skills, knowledge and experience is tailored to specific needs of collaborative activities, which in turn can help reduce the transaction costs associated with administering these projects (Milward and Provan 2000, 372; Huxham 1996; Cropper 1996; Zaheer and Venkatraman 1995). Actors engaged in frequent, recurring interactions are also more likely to develop specialized governance structures designed to reduce their transaction costs (Dyer and Singh 1998; Williamson 1985). However, it is important for practitioners to recognize that the incentives for making investments in relation-specific assets is tempered by the fact that the more specialized these resources become, the more difficult it is for an organization to use them in other ways (Dyer and Singh 1998; Park 1996).

It was also important that there was stability in funding levels so practitioners could plan and budget with confidence. Stability also facilitated the repeated interactions that build trust and create the personal and interorganizational relationships, which in turn encourage future

collaborative efforts (Milward and Provan 2000; Axelrod 1997, 1984; Ostrom, et al. 1994; Ostrom 1990). Stability also creates an opportunity for participants to become engaged in the type of learning that leads to the development of collaborative know how, which in turn improves future collaborative efforts (Milward and Provan 2000; Dyer and Singh 1998; Simonin 1997; Park 1996).

Summary and Conclusions

There are many ways that collaboration was used to improve environmental conditions or enhance watershed governance. At the operational level, collaborative activities improved environmental conditions by restoring habitat, acquiring land, and installing BMPs or other forms of environmental infrastructure. Collaboration also improved the delivery of government services such as permitting, public education, training, environmental monitoring, and data collection. At the policy-making level, collaborative efforts involved activities such as ad hoc working groups and interorganizational meetings, which allowed the participants to develop relationships and explore opportunities for joint action at the operational level. Organizations also shared staff and pooled financial resources in ways that collectively enhanced their implementation efforts. At the institutional level, shared policies were formalized in various ways such as MOUs. In other cases, new collaborative organizations were formed.

While these findings suggest that collaboration can be an effective strategy for improving policy outcomes or enhancing governance, it is only one strategy and there are clear limits on its use. Direct unilateral action such as policy changes, litigation, lobbying, and legislative intervention will remain important strategies for improving watershed governance. Collaboration is also unlikely to be an appropriate strategy for addressing all problems. Since it tends to focus on win-win or win-no-lose situations (i.e., non zero-sum games), important problems may be ignored because they inherently involve winners and losers. Thus, an over emphasis on collaboration will tend to narrow the range of potential policy solutions considered when addressing watershed problems. Moreover, some conflict can and should occur because it is an important component of our federal system that promotes a healthy competition of ideas that stimulates policy change and learning (Imperial 1999a, 1999b; Blomquist 1992, 360; Ostrom 1994, 258).

Accordingly, I do not count myself among the “true-believers” that view collaboration as some sort of magical elixir that will cure all governance problems. Nor do I view collaboration as an end in and of itself; it is a means to an end. It should be valued in so far as it produces better organizational performance or lower costs than can be achieved without it. As Bardach (1998, 17) advises:

“We should not be impressed by the idea of collaboration per se. That collaboration is nicer sounding than indifference, conflict, or competition is beside the point. So, too, is the fact that collaboration often makes people feel better than conflict or competition. I do not want to oversell the benefits of interagency collaboration. The political struggle to develop collaborative capacity can be time consuming and divisive. But even if no such struggle were to ensue, the benefits of collaboration are necessarily limited.”

Even the most imaginative practitioners are constrained by a federal system that places government organizations in conflict with one another. The polycentric nature of our federal system also creates an underlying tension as to whether federal, state, regional, or local priorities should govern decision making at the watershed level. Limits exist with respect to whether different organizations can, or should be willing to sacrifice their priorities or those of the constituencies they represent for the sake of collaboration, no matter how noble the goal. Moreover, no amount of creativity will overcome the shortage of resources (e.g., staff, money, etc.) that is frequently an important obstacle to collective action (Bardach 1998, 17).

Accordingly, while the portfolio of government programs in various policy arenas creates opportunities for collaboration, there are limits with respect to a practitioner's ability to extract the collaborative capacity present in an interorganizational system. The challenge is to find opportunities for collaboration that create public value while at the same time minimizing the problems and transaction costs that result. Practitioners are therefore cautioned to use collaboration wisely. When used in inappropriate situations it can create more problems than it solves. When used correctly, collaboration can be an effective strategy for improving environmental conditions or enhancing watershed governance.

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Endnotes

¹ Conversely, Kettl (1993, 1990) argues that most implementation actually occurs in relatively simple, hierarchical institutional arrangements. However, these arguments are not supported by an empirical analysis and Hall and O'Toole's (2000) analysis suggests that most implementation actually occurs in networks with more complicated structures.

² Four of the watersheds participated in the EPA's National Estuary Program (NEP) (i.e., Inland Bays, Narragansett Bay, Tampa Bay, and Tillamook Bay). Lake Tahoe was a federal-state compact. A special area management plan (SAMP) was developed for the Salt Ponds as part of the state's federally approved coastal zone management (CZM) program.

³ Interviewing a wide range of individuals representing a wide range of organizations is important. A recent study of watershed partnerships indicates that information obtained from watershed coordinators is often systematically biased towards success. It also found that the differences between participants and nonparticipants are not nearly as great as the differences between the coordinators and everyone else (Leach 2002).

⁴ For additional discussion of our research methods and findings see the original report prepared for the National Academy of Public Administration (Imperial and Hennessey 2000a), the supporting technical reports (Hennessey and Imperial 2000a; Imperial 2000a, 2000b; Imperial, et al. 2000; Imperial and Summers 2000; Kauneckis, et al. 2000), and related publications (Imperial 2000).

⁵ Trust arises when actors have something at risk and mutual confidence that no party to an exchange will exploit another's vulnerabilities (e.g., Jeffries and Reed 2000; Tsai and Ghoshal 1998; and, Nooteboom, et al. 1997).

⁶ Viewed broadly, social capital encompasses social ties, trusting relations, and value systems that facilitate the individual and organizational actions within that context. It is something that is jointly owned rather than controlled by one party to a relationship. Thus, social capital is both the resources contacts hold and the structure of a network (e.g., Leana and Van Buren 1999; Tsai and Ghoshal 1998; Putam 1995; Burt 1992; and Coleman 1990).

⁷ Regardless of the terminology used, the general argument that collaboration should only be used when it generates public value, better organizational performance, or reduced transaction costs than acting alone is well accepted in the collaboration literature (e.g., Bardach 1998; Moore 1996; Huxham 1996; Dyer and Singh 1998; Zaheer and Venkatraman 1995). The argument is also consistent with various theories on interorganizational relations. Resource dependency/exchange theory suggests that collaboration would be used to obtain resources (e.g., Alexander 1995; Pfeffer and Salancik 1978). Transaction cost theory argues that collaboration might be useful when it reduces transaction costs (e.g., Dickson and Weaver 1997; Osborn and Hagedoorn 1997; Alexander 1995; Williamson 1985). Institutional theory suggests that participants view collaborative processes as being the most effective way to solve important economic, technical, and strategic problems. Isomorphic processes then encourage organizations to adopt these practices (e.g., Osborn and Hagedoorn 1997; DiMaggio and Powell 1999). Collaboration also provides a process that spreads and institutionalizes rules, resources, and practices among the members of an interorganizational field (e.g., Phillips, et al. 2000). Regardless of the rationale for collaboration, at the heart of each explanation is the idea that collaboration produces some value, real or perceived, for the organizations participating in these activities.

⁸ The negotiation literature offers similar support for this conclusion (Fisher 1983; Fisher and Ury 1981).

⁹ This finding is also supported by research in the areas of watershed management (e.g., Imperial and Hennessey 2000; Wondolleck and Yaffee 2000), interorganizational networks (e.g., Alexander 1995; Hall 1995), and implementation (e.g., Goggin, et al. 1990).

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Appendix A: Summary of the Six Case Study Watersheds

	Inland Bays	Lake Tahoe	Narragansett Bay	Salt Ponds	Tampa Bay	Tillamook Bay
Physical Environment						
Water body	Inland Bays (DE)	Lake Tahoe (CA, NV)	Narragansett Bay (RI, MA)	Salt Ponds (RI)	Tampa Bay (FL)	Tillamook Bay (OR)
Size of watershed	300 square miles	501 square miles	1,600 square miles	32 square miles	2,300 square miles	570 square miles
Population	131,000 ^a	53,000	Over 2,000,000	32,000	Over 2,000,000	17,000
Focal problem(s)	Nutrient loading	Nutrients & sedimentation	None	Nutrient loading	Nutrient loading & seagrass loss	Shellfish closures, sedimentation, & endangered species
Sources/causes of problem(s)	Chicken farms, OSDS, point sources, & stormwater	Stormwater, erosion, & habitat loss from urbanization	Diverse sources & causes	OSDSs, point sources, habitat loss, & stormwater from urbanization	nutrient loading from diverse sources & habitat loss	bacterial loading & sedimentation from agricult., forestry, & urban sources
Planning Process						
Duration	1989 - 1995	1980 – 1987	1985 – 1993	1979 – 1984, 1994 - 1999	1990 – 1998	1993 – 1999
Driving force	State officials	Citizens, NGOs, state officials	Congress	Citizens, local officials	State and regional agencies	State agencies & Tillamook County
Program	EPA’s National Estuary Program	Federal-State compact	EPA’s National Estuary Program	NOAA – CZMA	EPA’s National Estuary Program	EPA’s National Estuary Program
Jurisdictional complexity	Low	High	High	Low	Medium – High	Low – Medium
Level of conflict	Medium	High	High.	Low	Low	Low
Implementation Activities						
Coordinating Agency	Center for the Inland Bays	Tahoe Regional Planning Agency	RI Dept. of Envntl. Mgt.	Coastal Res. Mgt. Council	Tampa Bay Estuary Program	Till. Cnty. Perform. Partnership
Organizational form	Nonprofit Organization	Regional Planning Agency	Line program in RIDEM	Intergovernmental partnership	Intergovernmental partnership	Intergovernmental partnership
Level of conflict	Low	Medium	Low	Low	Low	Low
Shared policies/regulations	No	Yes	No	Yes	Yes	Yes
Primary Funding Sources	Federal Grants	Federal, state, regional, & local agencies	Federal grants	Federal, state, & local agencies	Federal, state, regional, & local agencies	Federal Grants; OR Dept. of Forestry
Funding amount/stability	Low/Medium	High/High	Low/Low	Low/Medium	High/High	Medium/Medium

Note: All assessments of high, medium and low are based on comparisons among the six programs. ^a Measured at the county level