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Embracing Watershed Politics

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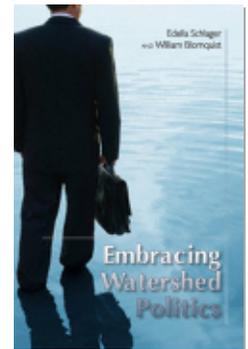
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Watersheds, Politics, and Institutions

PAST AND PRESENT ASSESSMENTS

The principal thing that experience suggests is that pragmatism is the best policy: it leads to the most effective regional organizations.

MARTHA DERTHICK (1974, 226)

The research and policy literature on watershed management expanded rapidly from the late 1980s to the present, as has the number of initiatives undertaken in the United States to create watershed-based efforts at resource management. The concept has shown great appeal among academics and policy makers (Walther 1987, 439; Milon, Kiker, and Lee 1998, 37) and has spawned considerable activity (Kraft et al. 1999; Lubell et al. 2002).¹ It is not an exaggeration to characterize this combination of publications and actions as a “watershed movement.” The “movement” is not so much a formally organized effort as a burgeoning literature of academic

and practitioner recommendations to organize water resources management around watersheds rather than around the discrete water resources—streams, lakes, aquifers, wetlands—they contain (e.g., Harkins and Baggs 1987; U.S. EPA 1991; Bates et al. 1993; Doppelt et al. 1993; Goldfarb 1994; Naiman 1994; U.S. Coastal America Organization 1994; MacKenzie 1996; Newsom 1997; Gregg et al. 1998; Hinchcliffe, Thompson, and Pretty 1998).

Despite the rapid increase in the number of writings about watershed management over the past twenty years, the idea of watersheds (or river basins) as the appropriate units for resource planning and management is hardly new.² Each of the different water management eras Sabatier, Weible, and Ficker (2005) identify, from the beginning of the twentieth century to the present day, includes an emphasis on watershed management. The watershed is considered the appropriate scale for organizing water resource management because all water sources and uses within a watershed are interrelated. Not only are the water resources in a watershed related to one another, but they are intertwined with land and other natural resources. Accordingly, the uses and conditions of any natural resource within a watershed may (and very likely will) affect the others (see Pereira 1989, xv–xvi; Bates et al. 1993, 93; Kerr and Chung 2001, 539).

As Derthick (1974) has noted, the scale issue has a close counterpart: that of coordination. Given the variety of water and land resources within a watershed and the multitude of uses made of them, what would be the best way to coordinate and manage such complexity? The answer, according to a number of scholars (see Holmes 1972; Goldfarb 1994; Adler 1995; Kenney 1999; Sabatier, Weible, and Ficker 2005), varies by time period or era. Each era is characterized by a distinct management approach or suite of approaches, which at the time was argued to be the best approach, especially compared to the approaches that preceded it. As time passed, that best approach became subject to sustained criticism for its failure to address new and pressing issues or realize cherished values, and was eventually transformed, with new approaches promising to address the many pitfalls of the previous era. For instance, Sabatier, Weible, and Ficker (2005, 36–38) argue that the “Environmental Era” replaced the “New Deal Era” as environmental values came to the forefront along with distrust of federal water agencies and their commitment to realizing environmental values. In turn, the “Environmental Era” has been replaced by the “Watershed Collaborative Era” as citizens and local organizations attempt

to gain greater access to decision making and efforts center on holistic management approaches.

Thus, one common way of reading the historical record is as a constant search for the best way to govern watersheds, with the one best way redefined as circumstances change.³ Each era does not represent a sweeping away of previous management approaches as much as a grafting of new strategies and policies to old ones. The current era, the “Watershed Collaborative Era,” has certainly not seen the abolition of the specialized federal and state water quality agencies and programs that emerged during the “Environmental Era,” just as new agencies and programs in the “Environmental Era” did not replace the large federal water development agencies that blossomed during the “New Deal Era.”

Even though each era is characterized by a new best approach to managing watersheds, that new best approach is often a blend of idealism and pragmatism. Idealism appears in the consistent desire to create a comprehensive, integrated watershed authority, and pragmatism emerges by settling for the approach that is feasible at the time and comes closest to the ideal. In 1972, for example, the National Water Commission recognized the desirable qualities of a federal corporation like the Tennessee Valley Authority (TVA), but realized that such a form was unlikely to be adopted, and instead recommended the federal-interstate compact commission as the preferred form for water resources planning and management (National Water Commission 1973). It was the most comprehensive and integrated form thought politically feasible.⁴

This chapter examines this underlying set of political issues during three eras: 1933 to 1965, or roughly from the New Deal to the formal creation of river basin commissions with the passage of the 1965 Water Resources Act; 1965 to 1980, the period covering the creation, operation, and dissolution of the river basin commissions; and the 1980s to the present, covering the emergence of the watershed movement and the creation of many different types and forms of watershed collaboratives.⁵ The overall period covered, from 1933 to 2007, encompasses the major concerted efforts to realize in practice comprehensive, integrated watershed management in the United States.⁶ We choose to focus on three broad time periods for clarity and economy. We wish to explore how elected officials, public managers, and water users were regularly confronted with and repeatedly addressed a variety of political concerns. Whether examining a single era or multiple eras, the constancy of political issues remains.⁷

Although there are distinctions among the eras, in this chapter we focus on their underlying unity. That unity centers on politics: they all share a common set of political issues and concerns that policy makers and citizens alike struggled with. The common political challenges include the motivation for pursuing integrated management; the scale at which water should be managed; who should participate in decision making; what values, benefits, and goals are to be realized; and the obstacles that limit achievement of comprehensive, integrated watershed management.⁸ Explicitly drawing out the common and enduring political issues and questions turns attention away from the search for the one best way to manage watersheds and instead centers it on the ever-present challenges of realizing a range of conflicting and compatible goals and values in the context of complex adaptive and adaptable biophysical and social systems. The eras are characterized by a common set of political issues; they differ in the answers adopted.

As Goldfarb (1994) has noted, the contemporary watershed movement has its roots in the unified river basin management movement. That movement unfolded over much of the twentieth century, ending in the 1980s when the Reagan administration dissolved the Title II river basin commissions. The centerpiece of unified river basin management had been basin-wide programs with multipurpose storage projects. Prior to 1965, the president, Congress, and federal water agencies experimented with different forms of river basin planning and management, typically centering on a board or council, located either in the Executive Office of the President or among cabinet departments, and individual ad hoc river basin planning committees. These experiments had little direction from the president or Congress, except for the short-lived National Planning Board, and they were criticized for failing to realize comprehensive management plans or tight coordination among federal agencies (Derthick 1974, 136).

The Title II river basin commissions changed that. Created by the 1965 Water Resources Act, the commissions were composed of representatives from federal water agencies and the states located in the respective basins. Each commission was granted a director with an independent budget and a small staff to oversee day-to-day operations and support planning activities. The commissions were guided and supported by the Water Resources Council, located in the Executive Office of the President. Overall, commissions lagged in their planning activities; many produced general studies of

their river basins, but few produced detailed documents identifying specific water projects and none was able to prioritize projects (Derthick 1974).

By the time most of the river basin commissions were formed and operational—in the mid-1970s—their time had perhaps already passed. In 1980, Wengart wrote: “As a major governing concept in water policy, integrated river basin development is in trouble. In the public mind, it is being superseded by concerns for environmental improvement, protection of ecosystems, and the complex problems of water pollution control” (1981, 9). Citizens were increasingly concerned with environmental values not readily captured by the kinds of traditional management activities and traditional water projects on which the commissions focused.⁹

Even though the commissions were dissolved at the beginning of President Reagan’s first term, the federal government, state and local governments, and citizens did not abandon the hope of “watershed” management. Attention turned during the 1980s from more ambitious (from an engineering and financial standpoint) river basin projects to a more modest “best management practices” approach, and from the federal government to state and local governments as the locus of watershed planning, with federal agencies such as the EPA strongly encouraging such activity as an important approach for addressing non-point sources of water pollution.

Thus, within each era some ideas and approaches prevailed, which provide points of contrast even as we recognize the consistency of certain political issues and challenges. For each era we can characterize dominant ideas and directions concerning (1) why integrated management should be pursued; (2) at what scale and (3) by what means water resource activities would best be organized in order to achieve integrated management; and (d) the goals and values to be achieved via integrated management. We begin with the issues and ideas motivating efforts toward integrated management.

MOTIVATION FOR INTEGRATED MANAGEMENT

A given across all three time periods is that the diverse dimensions of a watershed, natural and human, are intertwined, making integrated management necessary. What differed over time were the types of watershed interactions emphasized and in need of integration and coordination. Earlier periods focused on the interaction among water development projects within a single basin. Later periods focused on the interaction among the biophysical

dimensions of a watershed and how to minimize the environmental impacts of water development projects and other destructive uses of river basins.

River Basin Development, 1933 to 1965

The beginning of this era was marked by the Great Depression and an unprecedented federal response to realize economic recovery on a national scale. One of the centerpieces of economic recovery was massive investment in public works, particularly large-scale, multipurpose water projects. Not only did the construction of the projects provide jobs for thousands of people, but improved navigation, flood control, water for irrigation, and hydropower spurred economic development and recovery. The major federal water development agencies, the Army Corps of Engineers and the Bureau of Reclamation, had been established decades earlier and, over time, had been authorized to engage in the planning for and construction of multipurpose projects (Holmes 1972). What was missing were plans for comprehensive river basin development and institutional mechanisms to ensure that the water development programs of the federal agencies fit within and were coordinated with the comprehensive plans. As Holmes (1972, 13) argued, “New Deal planners were very intent on avoiding the accusation of maintaining a pork barrel composed of ill-planned, jerry-rigged projects.” Integration was vital for ensuring that the many water projects to be built were complementary and coordinated, promoting comprehensive development of the waters of a river basin. At the scale of the project, multiple uses required coordination; at the scale of the river basin, multiple projects needed coordination. Thus, integration, as discussed below, centered on experimenting with a variety of coordinating mechanisms, all of which were found wanting, providing considerable justification for new forms of river basin management.

River Basin Commissions, 1965 to 1980

By the 1950s, criticism of river basin development identified a lack of both comprehensiveness and integration. The lack of comprehensiveness centered on two issues. First, most multipurpose water projects provided water, electricity, and flood control for irrigation districts and rural communities. Increasingly, representatives of urban areas demanded that a larger

range of uses be incorporated within existing and new projects, particularly municipal and industrial water supplies and recreational opportunities. Second, most of the benefits of multipurpose water projects were directed to a narrow range of constituents—farmers and residents of rural areas, primarily located in the western United States. Critics of the federal water agencies wanted to see the benefits of water projects extended more equitably across the United States and include uses valued by urban residents.

The lack of integration also centered on two issues. First, critics argued that the Army Corps of Engineers and the Bureau of Reclamation managed to avoid close coordination and integration of their water activities. On a number of occasions the two agencies engaged in public squabbles over who was to plan and develop particular projects in a river basin, such as the King and Kern Rivers development, in which the Army Corps of Engineers won out over the Bureau of Reclamation (Knott and Miller 1987, 154). In other river basins, public conflicts were avoided by the two agencies' carving up of different portions of a river basin. For instance, the bureau was allowed to build irrigation projects in the upper Missouri River Basin, and the corps was allowed to build several main-stem dams to regulate flooding and provide navigation improvements (Knott and Miller 1987, 154). Second, the lack of integration extended to who was allowed to participate in river basin planning and development. Many federal agencies with interests in a river basin—such as the National Park Service, the U.S. Forest Service, and the Federal Power Commission, among others—resented the Army Corps of Engineers' domination of decision making (Derthick 1974, 137). They were joined by states and localities who also sought more active participation in river basin planning (Holmes 1972). In the end, Congress and the president attempted to respond to these criticisms through the passage of the Water Resources Act of 1965, which attempted to centralize and integrate river basin management to an extent never seen before or since, as will be discussed below.¹⁰

The Watershed Movement, 1980s to 2007

The motivation for integration over the past two decades is distinctly different from the previous two eras. No longer were public officials, managers, and water users faced with the challenges of integrating new multipurpose projects into river basins. Rather, they were confronted with integrating

a host of environmental values into water management. Thus, the focus moved from attending to interactions among multiple-use projects across a river basin to the environmental effects of the previous seventy-five years of river basin development.

The lack of comprehensiveness and integration of water management activities in previous eras was largely blamed for many environmental problems. The lack of coordination among water resource programs established a relatively lax management setting in which agricultural, industrial, and other forms of development flourished to the detriment of the condition of the nation's water resources (McGinnis 1999, 497). Furthermore, environmental water programs—such as contamination prevention and remediation, wetlands protection, and species preservation—were adopted in an incremental and uncoordinated fashion that failed to recognize the connections among these programs and the water problems they were meant to address (Mann 1993; Behrman 1993, 11; U.S. EPA 1995, iii). Finally, the incremental and uncoordinated programs created barriers to citizen participation. The presence of multiple governmental units and agencies operating within any given watershed, each carrying out some program or policy that affected only one portion of the overall water environment therein, discouraged active public participation. Citizens found it difficult to know or learn where to find information, whom to contact or how, and how to participate effectively (Nakamura and Born 1993, 812). In the end, “the need to integrate across traditional program areas (e.g., flood control, wastewater, land use) and across levels of government (federal, state, tribal, local) [led] natural resource management toward a watershed approach” (U.S. EPA 1995, iii).

Across each of the eras, the need for comprehensive, integrated management was clearly articulated, whether its purpose was to coordinate river basin development or environmental restoration. What was also clear to advocates in each era was that management in previous eras was “fragmented,” “piecemeal,” “inadequate,” “myopic” (Milon, Kiker, and Lee 1998, 38), and the like. Thus, within each era, the promise to finally realize comprehensive, integrated management was made.

SCALE OF ORGANIZATION

Across each of the eras, elected officials, public managers, and citizens supported management at the river basin or watershed scale. As the Environ-

mental Protection Agency has noted, however, a watershed can mean many things, because “watersheds occur on a range of scales from the subnational or regional (e.g., the Mississippi watershed) down to local scale (e.g., the watershed of a small creek)” (U.S. EPA, 1995, 1–8). How a given watershed was defined, and therefore the scale at which watershed management should occur, differed over time, ranging from a regional meaning of watershed to a local meaning of watershed, as described by the EPA.

River Basin Development, 1933 to 1965

The scale of comprehensive integrated management during the era of river basin development was distinctly regional. Early plans and projects were developed for the main stems of major rivers—such as the Tennessee, the Colorado, the Columbia, the Mississippi, and the Missouri. Comprehensive planning centered on the main stems of rivers, with little attention paid to tributaries. A prime example of a main-stem focus is the development of the Colorado River. From the Colorado River Compact, an agreement initially adopted by the seven basin states in 1922 that allocated the water of the river among the states, to the Boulder Canyon Act of 1928, in which Congress directed the Bureau of Reclamation to build and operate the major projects that would allow the basin states to realize the compact’s water allocations, to later acts and developments, attention centered almost exclusively on the main stem, leaving the basin states to do what they would with the Colorado’s tributaries. Only in the last decade, as severe drought has persisted over much of the basin and as tension has risen among the basin states over one another’s water use, have some states attempted to extend basin-wide management to include tributaries.

River Basin Commissions, 1965 to 1980

As suggested in the previous section on motivation for integration, this era began with formal efforts to engage in more comprehensive and integrated management efforts than what occurred during the era that preceded it; this period includes a more comprehensive view of scale. The emphasis remains on regional river systems, as river basin commissions are organized around such systems, but planning and management extend to encompass tributaries (Holmes 1979). The planning process established by

the 1965 Water Resources Act included Type I plans that provided a broad overview of the water resources, problems, and challenges occurring within the basin and Type II plans that addressed specific problems and solutions all within the context of Type I plans. The specific problems and solutions often focused on tributaries (Derthick 1974). For instance, the Ohio River Commission, as part of its Type II planning process, included instream flow studies on different tributaries, such as the Monongahela River (Holmes 1979; Joering 1980).

The Monongahela River, although certainly a tributary of the Ohio River, is a major river in its own right, highlighting the flexibility of the terms “watershed” and “river basin.” In practice, the boundaries of river basin commissions were hydrologically based, but whether they encompassed a single major river and its tributaries or multiple rivers with no single major drainage largely depended on the desires of the states that formed the commissions. Contrast the Ohio River Commission with the New England River Basin Commission, which encompassed twenty-eight river basins, sixteen of which were either interstate or international (McCrea 1980). Thus, efforts were directed toward comprehensive planning at scales that encompassed major rivers and their primary tributaries.

The Watershed Movement, 1980s to 2007

Sabatier, Weible, and Ficker (2005) argue that the primary distinguishing feature of the Watershed Collaborative Era is the active participation of a wide variety of stakeholders, most notably local citizens, in watershed governance. We would add one more—the scale of organization.¹¹ Watershed collaboratives are organized at the scale of streams or segments of smaller rivers. They are intrastate and, in a number of instances, intracounty. These streams and stream/river segments were rarely, if ever, considered in the previous two eras; they were simply too small. They are now the focus of active planning and management. Watershed management at the local scale is viewed favorably because it is ecologically meaningful, and “the health of an entire watershed can be measured by the health of the aquatic ecosystem” (McGinnis 1999, 498).

The scope of management during the first two eras centered on regional-level watersheds with some attention paid to major tributaries. Once the federal government removed itself from river basin planning and plan funding,

such efforts faltered. Watershed planning and management fell to the states, where its scope and purpose substantially changed. Local watershed planning focused on addressing serious water quality degradation of streams and stream segments.

ORGANIZATIONAL BASICS

How to organize planning and management of watersheds was constantly debated and experimented with over time. Who should participate, how should decisions be made, and how will implementation occur? Although organizational form varied, decision-making and implementation processes remained remarkably similar.

River Basin Development, 1933 to 1965

The organization of comprehensive integrated river basin management consisted of variations on two distinct forms. The first, more centralized form, which lasted for a decade, was a congressionally created or funded organization under the direct control of the president. The second, voluntary form consisted of a committee of cabinet-level secretaries and their staffs who consulted with each other on river basin activities by agencies within their departments.

The centralized form, which at different times in its incarnation was named the National Planning Board, the National Resources Board, and the National Resources Committee, assisted the president in planning the many public works projects (water projects being the most important) for recovering and rebuilding the economy (Holmes 1972). Over the ten years of its existence, from 1933 to 1943, its membership varied. Sometimes it only consisted of three “non-aligned” experts from the business or university sectors who were trusted to give the president sound advice. At other times it consisted of three “non-aligned” experts and the secretaries of war, interior, agriculture, and labor (Holmes 1972, 14–18). Much of its water project planning was conducted by a water committee whose makeup reflected that of the board’s, three “non-aligned” experts and representatives from the Departments of War, Interior, Agriculture, and Labor. The committee developed river basin plans and studies of water projects for congressional adoption based on basins as entire units. This committee, in turn, relied

on regional committees to investigate and develop plans and proposals for specific river basins. The regional committees usually consisted of field representatives of the major federal agencies, although on occasion, state representatives were invited to participate (Holmes 1972).

The National Resources Board exercised a variety of powers that supported its efforts at comprehensive, integrated river basin development. It had the authority to review and revise the six-year construction plans of the Army Corps of Engineers and the Bureau of Reclamation, and it eventually gained authority in conjunction with the Bureau of the Budget to review the two agencies' budgets and to prioritize projects slated for construction. Overall, the board exercised powers that allowed the president to provide some direction and coherency to river basin development (Holmes 1972, 18).¹²

In 1943, Congress abolished the National Resources Planning Board (Holmes 1972, 22). The secretaries of agriculture, interior, and war and the head of the Federal Power Commission voluntarily created the Federal Interagency River Basin Committee as a coordinating mechanism, although it had no central executive supervision. It largely mimicked the structure of its predecessor with a central committee and numerous regional committees organized around specific river basins. And, like its predecessor, participants were federal government political appointees, public managers, and experts, although state representatives were occasionally invited to participate. Unlike its predecessor, however, it could not develop integrated river basin plans, nor could it settle conflicts among different federal agencies. These limitations were largely due to its decision rule, consensus, and the manner in which the regional river basin committees were organized. Consensus decision making led to logrolling, with federal agencies carving up river basins and basin projects among themselves. Furthermore, regional committees were convened only after agencies had created project proposals or after a single agency invested extensively in planning for a particular river basin, making any type of integrated planning across agencies virtually impossible (Holmes 1972, 38). Not surprisingly, both the national and regional committees were regularly criticized for their inability to coordinate the activities of all federal agencies in a coherent manner. Also, federal agencies resented the dominating position of the Army Corps of Engineers on many of the regional committees, and states actively pressed for a more central role (Derthick 1974, 135–137).

River Basin Commissions, 1965 to 1980

By the end of the 1950s, reports of study commissions were piling up, all urging greater centralization and coordination of river basin development (Holmes 1972). One particular report, issued by the Senate Select Committee on National Water Resources in 1960, spurred action. It envisioned a looming water crisis that could only be adequately addressed through centralized and coordinated river basin planning and by the expansion of existing agency programs to encompass water quality, municipal and industrial water supplies, recreation, and fish and wildlife protection and enhancement (Holmes 1972, 41).

The 1965 Water Resources Act attempted to realize more centralized and coordinated river basin planning and management largely by formalizing the practices of the previous era. The act created a Water Resources Council located in the Executive Office of the President. As a cabinet-level council, the council consisted of the secretaries of agriculture, army, interior, HEW, and the Federal Power Commission, with the secretary of the interior as the chair. Its primary tasks included developing regular national assessments of regional water supply and demand, establishing river basin commissions, reviewing river basin plans, and developing more standards for project evaluation besides just cost-benefit analyses, among others (Holmes 1979, 256). It operated on the basis of consensus.

The Water Resources Council would only agree to the creation of a river basin commission upon a state's request and with the concurrence of all states in the basin. The commissions consisted of a federal representative appointed by the president who oversaw the commission's staff and who was to coordinate the other federal members of the commission. The other federal members consisted of representatives from each federal agency with an interest in the water resources of the basin. Also, each state appointed a representative. In practice, participation in commission activities was much broader. Many commissions created and relied on citizen advisory committees to assist in developing both Type I and Type II plans. The citizen advisory committees consisted of local government officials and representatives from voluntary associations and civic groups.

Commissions were forums for coordination and planning, not independent decision makers. Operating on the basis of consensus, each commission was responsible for preparing and updating comprehensive plans.

No government was responsible for carrying out the plans unless they were adopted by the legislatures of the states (Derthick 1974, 138–140; Holmes 1979, 256). No state ever adopted a commission plan, and, in fact, most commissions labored under the twin burdens of inadequate staff and funding and the rule of consensus to even develop plans. Those commissions that did develop plans largely put together wish lists of projects, unable to prioritize among them (Derthick 1974).

Derthick (1974, 151) argues that states were reluctant partners in joining and participating in commissions. States that did participate did so for defensive reasons, protecting their interests from the adverse actions of either the federal government or other state governments. In other words, commissions were valuable to the extent they provided states with veto power that they otherwise would not have been able to exercise.

The Water Resources Council and the river basin commissions were different from the coordinating committees of the 1950s in some important respects. The commissions' operations were not solely dependent on federal agencies; rather, they had an independent federal representative appointed by the president who was supposed to coordinate the federal agencies and settle conflicts among them. Furthermore, commissions had their own staffs and some funding to carry out their planning work. Also, participation was considerably broader. Federal employees were just one of several groups participating instead of the only participants. State and local officials and citizens participated on commissions and in commission activities. In other respects, the Water Resources Council and the river basin commissions replicated the weaknesses of their predecessors, namely, consensus decision making, which inhibited the development of comprehensive integrated river basin plans and voluntary implementation. Components of plans would be realized only if federal or state agencies agreed to adopt and implement them.¹³

The Watershed Movement, 1980s to 2007

Sabatier, Weible, and Ficker (2005) argue that watershed partnerships and collaboratives arise, in part, as a reaction to three defining characteristics of environmental regulation—the fragmentation of environmental programs across many different agencies, inadequate opportunities for citizens to participate in decision making, and the contentiousness of adversarial

legal proceedings. The organizational forms adopted to address the three challenges distinguish collaboratives and partnerships from the committees, councils, and commissions of earlier eras.

Fragmentation and limited participation are addressed through the same mechanism—the identification and inclusion of stakeholders of all types—citizens, nonprofit organizations and civic groups, business associations, government officials at all levels—representing the full range of interests, including water quality, water quantity, land use planning, agricultural policy, wildlife management, and habitat protection and restoration. As the EPA succinctly states: “All parties with a stake in the specific local situation should participate in the analysis of problems and the creation of solutions,” and “The actions undertaken should draw on the full range of methods and tools available, integrating them into a coordinated, multiorganization attack on the problems” (U.S. EPA 1991, 1).

Once a broad range of stakeholders is convened, they work with facilitators to elicit and share information about resource conditions; development and its impacts within the watershed; the beliefs, interests, values, and concerns of all participants; possible courses of action to remedy perceived problems; and so forth. The partnerships exercise little formal authority; rather, they provide a forum in which management plans and projects are discussed and revised and eventually turned over to the public-sector agencies for implementation (Sabatier et al. 2005).¹⁴ Accordingly, consensus decision-making processes are supposed to be used to develop goals, plans, and projects. Consensus decision making is viewed much more positively than in previous eras, when it was largely considered a tool used by federal and state agencies and state governments to protect their interests and their turf by vetoing plans and projects. Consensus decision making is the key to successful partnerships because it allows for people from diverse and conflicting backgrounds to sympathetically learn with and from each other and to search and find common ground on which to build collective action.

The movement’s impact on policy makers is evident in the considerable amount of activity to promote watershed-scale planning groups, councils, interagency coordination efforts, collaborative watershed partnerships, and the like. At least some, and perhaps most, of this activity has occurred in response to federal and state initiatives (Goldfarb 1994). That activity has been promoted in several ways by the national government, although it is occurring mostly at the regional and substate levels (Gregg et al. 1998;

Nakamura and Born 1993; Sabatier et al. 2005). McGinnis (1999, 498) reports that “17 federal resource agencies and state governments officially have embraced some form of watershed approach” and that more than 200 watershed groups have been created in California alone. Kenney and colleagues (2000) identified 346 watershed partnerships in the western United States. Sabatier and colleagues (2005) believe that total is an undercount as they found 150 in California and 60 in Washington. A survey by Yaffee and colleagues (1996) found more than 600 ecosystem management projects—many of them watershed projects—in the United States.¹⁵

In one of the few large-n empirical studies of watershed partnerships, Leach and Sabatier (2005) examine the keys to success of partnerships and in so doing reveal strengths and weaknesses of these informal advisory bodies. Leach and Sabatier randomly sampled 47 of 150 identified watershed partnerships in California and 29 of 60 partnerships identified in Washington. They used three measures of success: (1) reaching agreement on issues, goals, implementation actions, and management plans; (2) implementing projects; and (3) perceived effectiveness of partnership actions (Leach and Sabatier 2005, 241). Many of the partnerships reached agreement on issues and goals with fewer developing implementation actions and management plans. Partnerships in which members believed their watersheds were in crisis were more likely to reach agreements, as were partnerships with higher levels of trust, particularly those that were in existence for three years or more. Of the seventy-six partnerships, only thirty-six, or 47 percent, had attempted to implement projects. Project implementation largely depended on funding and the age of the partnership. Finally, partnerships that implemented projects and that were infused with trust and norms of reciprocity were evaluated more positively by their stakeholders (Leach and Sabatier 2005, 250).

Watershed partnerships can point to a number of successes. The inclusiveness of membership and consensus-based decision making result in participants viewing partnerships as highly legitimate forums for engaging in conversations, discussions, and arguments over problems, goals, and solutions to watershed problems. Such legitimacy is built through growing levels of trust, as widely divergent participants come to know one another better and discover common ground. Furthermore, given the extensive participation of federal, state, and local officials,¹⁶ they hold promise of supporting and encouraging intergovernmental coordination. As Lubell and colleagues (2005, 288) note, however, the success of watershed partnerships ultimately

rests in results, and at present it is unclear whether collaboratives improve environmental conditions in their watersheds.

Collaborative, and even primarily nongovernmental, watershed arrangements have had achievements. An important question remains regarding whether such achievements represent proof of concept—that is, whether they validate the collaborative partnership as an organizational type—or have been instead due to particular circumstances in certain locations at certain moments. Leaning more toward the latter interpretation, Woolley and McGinnis (1999, 591) surmised:

If watershed organizations succeed . . . we expect that this will be due to several special conditions. First, it could be because the actual range of interests or ideas represented in the organization is not very broad or deep. This can be the case of some watersheds that are not very large or organizations that do not incorporate a very wide range of kinds of economic activities. Second, successful cooperation could be because the “facts” about the condition of the watershed are clear and uncontested and point unambiguously to a set of actions that must be taken, but this is rarely the case. Third, it could be because the organization is not, in fact, truly voluntary, in the sense that it operates under a more or less explicit threat of external intervention by some other governmental level.

Gregg and colleagues (1998) employed more optimistic language but reached a similar substantive conclusion:

While broad governance issues . . . are at the core of the watershed movement, most individual watershed initiatives are much more pragmatic, concerned with finding and implementing solutions to localized problems. In fact, one of the strengths of watershed initiatives is their ability to focus their activities directly at the most pressing natural resource problems of particular watersheds, often operating outside of normal governmental processes and free from the constraints of inflexible mandates or program requirements.

Both sets of authors, then, share the view that successful watershed efforts are often *not* comprehensive, *not* integrated, and *not* legitimized with formal authority but focused on particular concerns that are deemed to require separate and immediate attention.

Even Lubell and colleagues (2005, 289–290), who argue that watershed partnerships represent a quiet revolution in watershed management, are cautious. They state:

The collaborative approach to watershed management is not a magic bullet that addresses all situations at all times or that will even be appropriate most of the time. . . . [W]e recommend that the collaborative approach to watershed management be used as a method for resolving environmental and socioeconomic problems only when there are high stakes, high social distrust, high governmental distrust, and high knowledge uncertainty. Collaborative approaches are particularly useful for addressing issues that perplex command-and-control institutions, such as nonpoint source pollution and habitat destruction. Collaborative approaches are probably not justified when existing institutions are already adequate.

In other words, watershed partnerships should be used as a last resort for particularly problematic watershed settings.

Most watershed-scale arrangements established thus far have been on what Nakamura and Born (1993, 808) call the “weaker” end of the spectrum: watershed discussion forums, advisory bodies, interagency agreements to collaborate on research, and the like (see Lubell et al. 2002). These typically have little capacity and no authority to take formal decisions, only advisory decisions; implementation largely rests with their governmental partners; and they do not have the ability to sanction entities within the watershed whose behavior fails to conform to plans.

Over the past seventy-five years, comprehensive integrated watershed management efforts have taken a variety of organizational forms, from a national planning agency in the Executive Office of the President and its regional river basin committees to the hundreds of watershed partnerships and collaboratives currently in existence. Not only have organizational forms differed over the eras but so too has participation. During the river basin development era, participation was largely restricted to experts in the federal agencies in charge of planning and building water projects. Participation broadened over time to eventually include state officials formally seated on river basin commissions, and with watershed partnerships, participation was actively sought for all stakeholders representing a wide variety of interests. Although organization forms and participation varied, decision rules and implementation processes did not. The dominant decision rule was consensus, and plan implementation was largely voluntary, relying on the support and cooperation of individual government agencies. In the earlier eras, both practices were singled out as the primary sources of failure of comprehensive integrated management (Derthick 1974; Holmes

1979). Whether consensus decision making and voluntary implementation will also spell failure for many of the watershed partnerships is an open question, although there is nothing distinct about the structure of such partnerships to suggest otherwise.

GOALS AND VALUES OF INTEGRATION

The goals, benefits, and values to be realized by engaging in comprehensive, integrated watershed management varied over each time period, particularly biophysical goals. Biophysical goals center on uses made of a watershed, such as water for irrigation, protection from flooding, low-flow regulation to protect water quality, or the protection of rich riparian habitat. In contrast, overall political and socioeconomic goals and values tended to remain stable, varying by the emphasis placed on the different dimensions of the overall goal. For example, protecting and enhancing democracy runs throughout each era, but what democracy means and how it should be realized changes over time.

River Basin Development, 1933 to 1965

The biophysical goals of this era were clear-cut. Large-scale water projects were to realize either singly or in combination the goals of navigation, flood control, irrigation water, and hydropower. These biophysical goals were stepping-stones to accomplishing pressing political and socioeconomic goals. Large-scale public works projects were the keys for realizing both short-term and long-term goals. In the short term, such projects put many people to work and pulled the nation out of the Great Depression. In the long term, water projects supported regional economic development—plentiful and inexpensive power and water spurred investment in agriculture and industry and flood control protected such investments.

Furthermore, multipurpose water projects realized economy and efficiency through several avenues. Multipurpose water projects avoided water waste by capturing and storing river flows and floodwaters that would otherwise be lost to the oceans. And, only those projects that were efficient, or cost-effective, were built. The federal water agencies were required to subject their plans and projects to cost-benefit analyses.

More than efficiency and economy, though, multipurpose water projects protected and enhanced democracy by ensuring an equitable distribution

of benefits. Navigation projects and improvements and publicly owned and operated power projects protected the average citizen from railroad and power trusts, granting them ready and affordable access to the transportation and energy they needed to raise and ship their products to markets (Holmes 1972, 13).¹⁷ Overall, large-scale water projects were viewed as examples of how science and technology could be used to transform nature to enhance people's lives (Holmes 1979, 77). In other words, they were socially transformative.

River Basin Commissions, 1965 to 1980

The biophysical goals of this era included all of those from the previous era—navigation, flood control, irrigation water, and hydropower—plus many others, such as municipal and industrial water supplies, water quality protection and enhancement through low-flow regulation and dilution, recreational areas and opportunities, and protection of areas of natural beauty. Like the previous era, these many goals were accomplished primarily, although not exclusively, through the construction and operation of multipurpose water projects and their careful placement (Holmes 1979, 111). These projects were not necessary to spur regional economic development as much as they were needed to respond to rapidly growing urban populations, a booming economy, and increasing demands for recreational opportunities by greater numbers of affluent citizens.¹⁸

Attempting to realize a wider variety of goals, some of which were in direct conflict, in an economical and efficient manner required something more than cost-benefit analysis. Additional techniques were necessary. The Water Resources Council developed and advocated the use of multiple objective planning processes. River basin objectives would be identified and weighted; multiple alternatives, both structural and nonstructural, for achieving objectives would be identified and evaluated. The best combination of alternatives for achieving the objectives would be selected. The goal was to move beyond justifying each project through cost-benefit analysis and toward achieving the *optimal* use of water and land resources in a basin by selecting the best combination of projects and activities (Holmes 1979, 267).

The optimal development of river basins required greater participation and consent from a broader cross-section of policy makers and citizens. No longer could critical development decisions rest largely in the hands of fed-

eral government experts. Participation in decision making was expanded by the composition and functioning of river basin commissions. Notably, state representatives took seats alongside federal representatives as voting members of the commissions. Some commissions also actively relied on a variety of citizen and science advisory groups to provide assistance and input to planning processes (Harrison 1980; Joering 1980). Commission meetings governed by consensus allowed the major state and federal actors to meet together, to share information and problems, to learn about interests and activities, and to eventually agree on specific goals, thereby transforming relations among participants who previously found themselves at odds with one another (Joering 1980). Consensus-building processes supported cooperation and eventually coordination (Joering 1980).

The Watershed Movement, 1980 to 2007

The biophysical goals of the previous eras largely rested on reengineering river systems to meet human needs. The biophysical goals of the watershed movement era are notably different. They entail reengineering human uses to restore and protect the natural processes of watersheds and the environmental services those processes provide. Reclaiming watersheds involves placing water back in the stream, operating dams to mimic the natural hydrographs of rivers, preventing non-point source pollution from degrading water quality, protecting and restoring wetlands, and so forth. These biophysical goals are not only different from those of earlier eras, but they directly challenge them and seek to reverse their effects.

Socioeconomic goals also differ from previous eras. Science replaces economics as the primary guide for action. Basic scientific information about different dimensions of a watershed guides the selection and adoption of projects. Economic decision making, even cost-benefit analysis, is still used to justify projects, but different sorts of projects, such as dismantling dams. Also, environmental services, such as water cleansing and flood control provided by wetlands, are valued and compared to the costs of replacing such services if the wetlands are destroyed.

But most importantly, the partnerships support democracy. Just as multipurpose water projects were viewed as experiments in democracy, enabling people to pursue productive livelihoods and so become active and contributing citizens, watershed partnerships are also viewed as experiments

in democracy, but a different type of democracy. Partnerships support the practice of direct democracy, allowing citizens to make decisions that directly affect their lives rather than allowing those decisions to be made by experts. Partnerships engage citizens in self-governance, allowing them to take control of their lives and their communities. In so doing, partnerships also forge a new identity among residents of a watershed. No longer are these residents only citizens of a town or a state; they are citizens of a watershed with all the benefits and responsibilities that entails for ensuring good governance.

Each era differed in the goals and values pursued, but advocates in each era repeatedly pointed to the transformative powers of comprehensive integrated watershed governance.

CONCLUSION

Nationwide efforts toward comprehensive, integrated watershed management in the United States have a long and rich history—from large-scale river basin commissions organized by federal law to watershed partnerships organized around smaller, intrastate watersheds. While engaging in such efforts, policy makers, public managers, interest groups, and citizens have repeatedly struggled with answering fundamental political questions. How watershed management unfolded depended on how the questions were answered.

During the river basin development era, the goals were to stimulate economic activity and regional economic development by investing in large-scale multipurpose projects. Participation in planning, development, and construction was limited to government experts who built and operated the projects. Decision making and plan implementation changed over time. Initially, the president, through the National Resources Committee, created by executive order, exercised some control over the development of integrated river basin plans and negotiated with Congress and the federal water agencies over plan implementation. Once Congress eliminated the National Resources Committee, planning floundered on the consensus decision processes of the Federal Interagency River Basin Committee.

Frustration over the limited goals, limited participation, and weak decision-making processes of the river basin development era eventually led to a search for a better way to manage river basins, and a new comprehensive integrated watershed planning and management effort unfolded. Answers

to the political questions incrementally changed. Goals and values changed by adding municipal and industrial water users and recreational enthusiasts as beneficiaries of water projects. Decision-making processes changed by formalizing the processes of the previous era into a formally constituted council in the Executive Office of the President that oversees the river basin planning processes of the river basin commissions. Although the council consists only of cabinet secretaries, participation in planning is extended to states, local governments, and citizens through the constitution of the commissions and their use of citizen advisory committees. Furthermore, a federal representative, independent of the federal water agencies, serving as commission chair and controlling an independent staff and budget, was believed to be sufficient to bring the federal agencies on board in developing and supporting integrated river basin plans. Decision-making processes remained the same, however; at all levels, decisions were by consensus, and implementation of plans was voluntary. In the end, most commissions functioned no better at developing and implementing integrated river basin plans than did their predecessors (Derthick 1974).

The watershed movement emerged not only in reaction to the dismantling of the river basin commissions but primarily in reaction to the excesses and shortcomings of more than a decade of environmental regulation (Sabatier, Weible, and Ficker 2005). In some ways, advocates of watershed planning were justified in their harsh criticism of the status quo approaches to water resources management as “fragmented,” “piecemeal,” “inadequate,” “myopic” (Milon, Kiker, and Lee 1998, 38), and the like. Not only were no formal efforts at comprehensive integrated management occurring among the water development agencies (with the dissolution of the council and commissions), but federal efforts appeared all the more fragmented because of the addition of numerous environmental programs spread across different federal agencies, with no attempt to coordinate them either. Consequently, the search for comprehensive integrated management begins again, but in a distinctly different manner.

The answers to the political questions are not just incrementally different, as was the case in the transition between the river basin development and river basin commission eras, but qualitatively different. The overarching goal is ecosystem health to be achieved by mitigating the effects of decades of watershed development. Achieving ecosystem health is a complex process requiring considerable time and information about such things as non-

point pollution sources and the structure and function of ecosystem processes. Not only are the goals qualitatively different but so is participation. Although government employees are primary participants, so too are the many citizens and representatives of different nonprofit and private organizations. However, decision-making and implementation processes remain similar to those from the previous eras. Watershed partnerships constituted of members from a wide variety of interests and walks of life use consensus decision processes to develop common goals and plans, and implementation of those plans is voluntary. Those that succeed are likely to do so in spite of—not because of—such institutional mechanisms. They have the right combination of leadership, constituency support, and resources that allow them to move forward and act.

Historically, efforts at comprehensive integrated watershed management have failed. Not only has there been no one best way, but whatever way was chosen proved neither comprehensive nor integrated. Why? These efforts have all been grounded in relatively weak coordinating mechanisms, which as Derthick (1974, 143) explains, act as a “‘forum of peers,’ which is less an organization than a meeting place of organizations. . . . The forum is supposed to foster goodwill, facilitate communication in matters of shared interest, and provide a setting within which mutual adjustments may take place, but it lacks authority or other means for inducing mutual adjustments.” Furthermore, particularly in the first two eras, comprehensive integrated planning and management efforts were centrally planned as opposed to responding to pressing needs or problems in particular river basins. Derthick (1974, 227) argues that “for a regional organization to be centrally planned is practically a guarantee that it will be weak and ineffectual.” The reasons are many. Centrally planned organizations “imposed” on river basins are not likely to have strong constituent support, nor are they likely to have independent sources of funding. Also, they typically do not interfere with or challenge the authority of existing agencies. For the most part, they simply reflect the interests of their centralized creators, in this case, the president and Congress (Derthick 1974), who were searching for means of coordinating the federal agencies.

Ironically, a somewhat similar argument may be made in relation to many of the watershed partnerships. Their widespread emergence beginning in the late 1980s was not a coincidence. Numerous federal and state agencies viewed partnerships as promising mechanisms to assist them in

addressing particularly vexing environmental problems, such as mitigating non-point source pollution and restoring riparian habitats. Congress and state legislatures alike directed agencies to work with local collaboratives, providing technical expertise and funding (Koontz et al. 2004, 8). Although some partnerships are initiated by citizens and others by governments, they all bear the imprint of governments, from statutorily defined environmental goals to participation by government employees. Whether partnerships accomplish integrated management and a more equitable distribution of power among stakeholders will largely be determined by the actions of governments (Koontz et al. 2004, 184).

If most efforts to create comprehensive integrated watershed management end in failure, is watershed management impossible? Our answer to that question is no, and in the remainder of the book we explain why comprehensive integrated watershed management does not occur and how watershed management typically unfolds instead. As we will explore in the following chapters, answers to both questions are based in politics, in the limits to human decision making and transaction costs, and in the political and organizational features of polycentricity.

In the end, we agree with Derthick's conclusion (1974, 230): "[I]n the formation of regional organizations with operating or regulatory functions the *best results* are likely to be achieved *ad hoc*, in response to particular needs that can be shown to require organization on a regional scale and to require it so urgently that the inevitable costs in administrative confusion are worth paying" (emphasis added). In the following chapters, we examine the many different and inevitable choices that people must repeatedly make in governing the different dimensions of watersheds, choices that are likely to keep integrated management elusive.

NOTES

1. The sheer volume of literature on watershed management that has been produced in the last twenty years appears to distinguish this period from previous ones. Derthick (1974), in analyzing regional organizations, including river basin compacts and commissions, theorized at the time that little had been written about the appropriate functions or ideal forms for regional organizations because political scientists have paid scant attention. Much of the recent literature is by political scientists (Lubell et al. 2002; Weber 2003; Koontz et al. 2004; Sabatier et al. 2005).

2. This does not prevent contributors to the literature from having different views of its origin, as the following examples attest. “The concept of watershed-based policymaking is not new. In 1878, John Wesley Powell, head of the U.S. Geological Survey, proposed to Congress that new states in the semiarid West be organized and governed in accordance with the appropriate watershed boundaries rather than straight-line political boundaries. For Powell, the watershed was the ideal medium for a new form of self-governance” (McGinnis 1999, 498; see also Bates et al. 1993, 170–171). “The United States Inland Waterways Commission, appointed in the 1890s to undertake a comprehensive assessment of the nation’s interior water resources, ‘reported to Congress in 1908 that each river system—from its headwaters in the mountains to its mouth at the coast—is an integrated system and must be treated as such’” (U.S. EPA 1995, 1-1). “The Tennessee Valley Authority became ‘an exploratory concept in soil and water management because of its approach to erosion control; ‘watershed management’ was a term first used there and an agency spawned by the approach—the U.S. Soil Conservation Service—was to have a major influence throughout the world’” (Newson 1997, 97). “Since the 1970s, there has been dramatic and imaginative experimentation with new approaches to water and land resources management at the state and local levels. Many of these efforts have reinvigorated the idea that most water resource problems should be addressed on a watershed basis, and have experimented with ways to achieve a more integrated, or at least better coordinated, resources management” (Nakamura and Born 1993, 807). “One of the most striking and innovative characteristics of water management in the 1990s is a renewed interest in local, generally sub-state watersheds as the preferred administrative unit” (Gregg et al. 1998; see also Kraft et al. 1999, 10).

3. Derthick (1974, 3) characterizes the historical record as a series of intellectual fads and fashions.

4. For additional examples, see *Water Resources Activities in the United States: Reviews of National Water Resources During the Past Fifty Years*, printed for the use of the Senate Select Committee on National Water Resources, 86th Cong., 1 sess., 1959.

5. These eras are a modification of those used by Wengart (1981), who also used three eras, nineteenth century to 1933, 1933 to 1965, and 1965 to 1980. We drop his first time period and add the contemporary period of “watershed collaboratives.”

6. Prior to 1933, policy makers and technical experts alike expressed considerable interest in comprehensive river basin development. Not until 1933, however, with the creation of the National Planning Board as part of the National Industrial Recovery Act, was there a formal organization charged with coordinating the activities of the different federal water agencies (Holmes 1972). For instance, in the early 1900s a series of high-profile study commissions, such as the Inland Waterways Commission and the National Waterways Commission, issued reports that pro-

posed the creation of bodies to coordinate the work of the several federal water development agencies (Holmes 1972). Also, prior to 1933, the federal water development agencies were all granted powers to engage in planning for comprehensive river basin development. For instance, the Army Corps of Engineers used the Board of Engineers for Rivers and Harbors to review all river basin studies (Horton 1972). However, there was no single person or agency charged with reviewing and coordinating the plans and construction activities of the different agencies.

7. For an excellent analysis of how political issues were addressed in a variety of ways within a single time period, see Koontz et al. (2004).

8. These criteria are commonly accepted in the political science watershed collaborative literature; see Koontz et al. (2004) and Sabatier, Weible, and Ficker (2005).

9. Derthick (1974, 150) quotes Minnesota's commissioner on the Great Lakes and Souris-Red-Rainy commissions as saying: "The Federal legislation is designed not to create independent state planning bodies to take over planning responsibilities which are too much for Federal agencies to carry. They are designed, instead, to supply a basis of state legitimation for the traditional construction activities of the Federal development agencies, i.e., the Corps of Engineers, the Social Conservation Service, and the Bureau of Reclamation."

10. As Holmes (1972) notes, in a five-year period between 1949 and 1955, several congressional and presidential study commissions and committees all recommended greater centralization and integration of federal water resources planning and development. Most recommended the creation of an agency in the Executive Office of the President to oversee coordination and integration, supplemented with river basin committees.

11. A water historian may disagree with both assertions, because most river basin commissions had citizen advisory committees, some of which were quite active in thwarting major water projects (McCrea 1980), and the Soil Conservation Service actively engaged in soil erosion and flood control "treatments" of small watersheds since the early 1940s (Holmes 1972). In neither instance, however, were citizens or small watersheds defining aspects of an era until recently.

12. It is important not to attribute too much power to the president to guide and control river basin development. As Holmes (1972) argues, Congress was largely hostile to the efforts of the president to control the activities of the federal water agencies. "The Corps planning work was set up so that Congress made decisions regarding not only general policies of water resources development, but also the choice, timing, and extent of Federal investment in individual projects. . . . [Congress] . . . considered the President's attempts to subordinate its planning activities to coordinated executive branch plans and policies to be usurpations of congressional power" (Holmes 1972, 21).

13. As Holmes (1979, 278) noted, "Some contemporary observers considered that the proposed Council would only be another version of Interagency Committee on Water Resources (ICWR), the national interagency committee device of the fifties. They asserted that such committees had proven incapable, because of interagency logrolling, of developing water policies and plans responsive to contemporary problems and majority political demands."

14. Others have summarized partnership processes as follows. The processes entail stakeholder identification and involvement, leading to consensus on goals and an identification of actions to be taken to reach them, followed by assignment of responsibilities among agencies and organizations, producing implementation to be accompanied by monitoring and evaluation (see, e.g., Goldfarb 1994; U.S. EPA 1991, 2; 1995, 1–4). A more detailed set of process prescriptions for statewide oversight and coordination (U.S. EPA 1995) included the establishment of basin management plans using rotating five-year cycles for the completion of planning, modeling, permitting, and monitoring among all the watersheds within a state.

15. Case studies can be found in Nakamura and Born 1993; U.S. EPA 1995; Kenney 1997; Gregg et al. 1998; Heathcote 1998; Hinchcliffe et al. 1998; Milon, Kiker, and Lee 1998; Reimold 1998; Bolte et al. 1999; Kraft et al. 1999; Sabatier and Quinn 1999; Tucker et al. 1999; Kenney 2000; Weber 2003; Koontz et al. 2004. Leach and Pelkey (2001) reviewed the literature on watershed partnerships, noting that most studies involved one or a few cases and, from the studies, culled 210 "lessons learned." Grouped into twenty-one themes, the lessons range from funding to adequate scientific and technical information to use of consensus rules (Leach and Pelkey 2001).

16. In a study of national estuary programs by Lubell and colleagues (2002), 60 percent of participants were government officials. In the watershed partnership study by Leach and Sabatier (2005), 57 percent of participants were government officials.

17. Holmes (1972, 13) states: "Multipurpose projects involving public power operations were hailed as 'experiments in democracy,' combining regional economic growth with widespread distribution of benefits among the people."

18. The Water Resources Council and the river basin commissions did not directly and actively engage environmental values; rather, the federal agencies active in both organizations began addressing environmental values because of the National Environmental Protection Act (NEPA). For example, the effects of the NEPA on the Army Corps of Engineers included more public participation, such as well-publicized hearings beginning at pre-planning stages. Also, the corps committed to giving equal weight to environmental values, along with economic and technical factors, and selected those projects that were not merely economically justified but were the best solution to the problem at hand (Holmes 1979, 117).