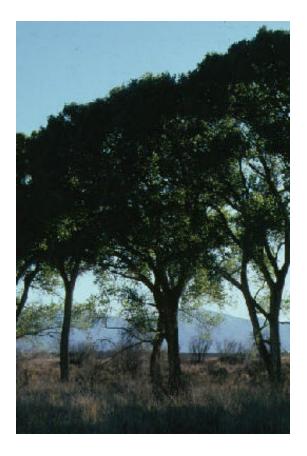# Factors that Promote and Constrain Bridging:

A Summary and Analysis of the Literature

Steven L. Yaffee, Julia M. Wondolleck, and
Steven Lippman

Ecosystem Management Initiative
School of Natural Resources and Environment
The University of Michigan

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Cover photo is of trees at the San Pedro River in Southeastern Arizona. © Steven L. Yaffee

The Upper San Pedro Program is a collaborative ecosystem management effort between the U.S. Bureau of Land Management, the Nature Conservancy, local government, private citizens & landowners to promote the long-term protection of the river system.

This report identifies and describes findings in the research literature on factors that facilitate successful collaborative efforts and those that impede collaboration. Most of this literature focuses on formal collaborative processes and does not address less formal types of "bridging." Where appropriate, the analysis draws on specific examples from two recent studies conducted at The University of Michigan which examined collaborative approaches to natural resource management. The first study, *Building Bridges Across Agency Boundaries*, was conducted for the USDA-Forest Service and examined 230 situations that were viewed as examples of successful public-private cooperative working arrangements involving Forest Service personnel (Wondolleck and Yaffee 1994). The second study, *Ecosystem Management in the United States: An Assessment of Current Experience*, examined 105 sites where ecosystem management approaches were being implemented (Yaffee et al. 1996; Frentz et al. 1995).

What is Interorganizational Collaboration?

Barbara Gray's well-known work on interorganizational collaboration provides a useful starting point for understanding bridging. Gray defines collaboration as "(1) the pooling of appreciations and/or tangible resources, e.g., information, money, labor, etc., (2) by two or more stakeholders, (3) to solve a set of problems which neither can solve individually" (Gray 1985, 912). Gray identifies two main purposes for collaboration: resolving existing conflicts and advancing shared visions, such as multi-stakeholder community redevelopment projects (Gray 1989, 7). Based on Gray's model, Selin and Chavez (1995, 190) define collaboration in the realm of resource management as "a joint decision-making approach to problem resolution where power is shared, and stakeholders take collective responsibility for their actions and subsequent outcomes from those actions."

Gray argues that three sets of circumstances warrant a collaborative approach to problem solving (Gray 1985, 912; 1989, 1). First, collaborative approaches are appropriate for "indivisible" problems that are larger than any one organization can resolve acting on its own. Second, such approaches are useful in situations where the effectiveness of traditional adversarial decision-making methods is limited. Finally, collaboration is appropriate given the existence of "turbulence" or turbulent conditions, under which "it is difficult for individual organizations to act unilaterally to solve problems without creating unwanted consequences for other parties and without encountering constraints imposed by others" (Gray 1989, 1).

Specifically, Gray identifies the following characteristics of situations in which collaboration offers advantages over traditional decision-making methods:

- The problems are ill-defined, or there is disagreement about how they should be defined;

- Several stakeholders have a vested interest in the problem and these stakeholders are interdependent;

- The stakeholders are not necessarily identified *a priori* or organized in any systematic way;

- There may be a disparity of power and/or resources for dealing with the problems among the stakeholders;

- Stakeholders may have different levels of expertise and different access to information about the problems;

- The problems are often characterized by technical complexity and scientific uncertainty;

- Differing perspectives on the problems often lead to adversarial relationships among the stakeholders;

- Incremental or unilateral efforts to deal with the problems typically produce less than satisfactory solutions;

- Existing processes for addressing the problems have proved insufficient and may even exacerbate problems (Gray 1989, 10).

Overall, collaboration and bridge-building represent useful strategies for managing natural resources in an era in which many management decisions are becoming increasingly complex, interrelated, and controversial. Selin and Chavez (1995, 194) observe that although collaboration is not a panacea, "environmental managers are also discovering that collaborative designs can be a powerful tool for resolving conflict and advancing a shared vision of how a resource should be managed."

What Facilitates Bridging?

The literature on interorganizational collaboration identifies a series of specific factors that tend to promote successful interorganizational collaboration and bridging activities. Some factors are specific to particular situations, although many, such as a sense of place, can be deliberately fostered to promote collaboration and bridging. Process-related factors, which address how collaborations are structured and conducted, also play a critical role in fostering successful outcomes. Finally, the broader institutional context in which situations take place can provide important support for collaborative efforts. Factors that promote bridging are listed in Table 1 and discussed in detail below.

Situation-Specific Factors

Many factors that facilitate successful collaboration and bridging are specific to the issue or situation at hand. The presence of the following situation-specific factors, as described in more detail below, enhances the likelihood of successful bridging: interdependence of stakeholders; shared or superordinate goals; sense of crisis; sense of place; personal relationships; trust and respect; and public interest/pressure. Although the occurrence of these factors will vary according to the situation, many of these factors can also be intentionally promoted through creative efforts.

Perceived Interdependence of Stakeholders

Collaborative problem solving requires stakeholders to recognize and accept that some "fundamental interdependence exists" among them, and situational characteristics that help different parties recognize their interdependence play an important part in promoting collaboration (Gray 1985, 921). Thus, situations in which power is shared among several parties are more amenable to collaborative problem solving. Impasses in traditional decisionmaking channels often increase stakeholders' recognition of their interdependence and can provide important opportunities for collaborative problem solving. Indeed many cooperative efforts evolve due to a recognition that nothing will happen without them. As discussed below, situations where a strong sense of place or a common problem help to foster a sense of interdependence in protecting that place or solving the problem. It is not enough that groups are interdependent; rather they must perceive this interdependence, and recognize that it creates a need for cooperative action.

TABLE 1: FACTORS THAT PROMOTE BRIDGING

<u>Situation-Specific Factors</u>

> Perceived interdependence of stakeholders
>
> Shared and superordinate goals
>
> Sense of crisis
>
> Sense of place
>
> Personal relationships
>
> Trust and respect
>
> Public interest/pressure

<u>Process-Related Factors</u>

> Use of an inclusive problem-solving process
>
> Information sharing and joint fact finding
>
> Process management/interpersonal skills
>
> Individual leadership and dedication
>
> Early small successes
>
> Sense of fairness, equity, and burden sharing

<u>Institutional Context</u>

> Opportunities for interaction
>
> Incentives
>
> Resources
>
> Technology

Shared and Superordinate Goals

Collaboration is natural when stakeholders recognize that they share a common vision or have common goals. For instance, Forest Service employees in the Tahoe National Forest and private groups are collaborating through cost-sharing agreements to advance their common goal of constructing a hiking trail around Lake Tahoe (Selin and Chavez 1995, 191). Shared goals can foster collaboration by providing groups with the sense that they have a "holy mission" (Bennis and Biederman, 1997, 204). However, in many cases, parties that can benefit by collaborating do not initially recognize their shared goals and may even be engaged in direct conflict. Through collaborative processes discussed further below, these groups can discover shared goals over time.

Sometimes to find shared goals, groups are forced to look for objectives above the current conflict. That is, what started as a battle over a specific proposed action evolved into a broader look at a community's future. Fostering cooperation by articulating such "superordinate goals," goals above the current conflict, is consistent with classic research on cooperation carried out in the 1950s (Sherif 1958). Researchers fostered conflict between different cabins at a summer camp, and then tried to assess the effectiveness of different ways to overcome the conflict. What worked the best was to introduce a goal superordinate to the existing conflicts. (For example, the camp's water system broke and the boys had to pull together to respond.) Gray describes a number of strategies by which parties in conflict can identify superordinate goals through "joint information searches," including group visioning processes to develop and evaluate future scenarios (Gray 1985, 926).

Sense of Crisis

As the camp example above illustrates, different parties often pull together in a crisis, and a sense of crisis can provide an important impetus to collaborative efforts. The results can be particularly powerful when a sense of crisis overlaps with a sense of place. Having a joint sense of a shared problem or threat to an area, often building on a feeling that an area or region was unique, sometimes motivates diverse individuals to overcome prior conflicts and work together. When faced with a common enemy such as an economic downturn or the degradation of a valued public resource, people often pull together, as was the case when a jet airport was proposed for New Jersey's Pinelands in the mid-1970s (Collins and Russell 1988, 1). A proposed water development project that would pump groundwater from the San Luis Valley in Colorado to urban areas along the Front Range brought a diverse group of stakeholders together to fight the project and protect the area's resources (Yaffee et al. 1996, 249). As one result of this, Valley residents formed the Partners for Wildlife Program and increased protected wetlands in the Valley by 12,000 acres in four years (Yaffee et al. 1996, 250). As another example, legislators and the public in Maine, New Hampshire, Vermont, and New York mobilized and gained Congressional funding to support the

Northern Forest Lands Council after a large corporation's New England lands were sold to a holding company that planned to market most of the lands for development (Yaffee et al. 1996, 215).

Sense of Place

A sense of place is also helpful to fostering a cooperative spirit. In discussing the concept of an environmental sense of place, Charles Foster notes that while we often think of place and space as synonymous, a sense of place is not purely a physical location (nor is it sometimes delimited by geography.) According to Foster, "places are considered to be physical locations imbued with human meaning constituting fields of genuine caring and concern. They display three primary characteristics: a landscape setting, a set of associated activities, and a significance to people. Thus, place involves both humans and nature, not the presence of one to the exclusion of the other" (Foster 1995, 2).

The importance of a sense of place to actions to protect it is well known. As Simonson has observed, "We vandalize, pollute and plunder what is separate from us; we revere, protect and cherish what we belong to" (Simonson 1989, 145). In the University of Michigan case studies, a strong identification with a geographic location, a biophysical feature, or a community or neighborhood provided the foundation on which many cooperative efforts were are built. For example, the Applegate Partnership, a collaborative effort involving industry, community groups, two federal agencies and environmental groups in south central Oregon, was built on a strong sense of identification with the Applegate River watershed (Yaffee et al. 1996, 87). One member of the Partnership noted, "abstraction is death for a partnership. But once you can sit down and talk about a definable piece of land, you can get beyond philosophy and things start to fall together" (Wondolleck and Yaffee, 1994, 1-4). Local watershed groups often enhance a shared sense of place among their members by taking field trips together or sponsoring community river cleanups.

Related to the idea of a sense of place, Gray (1985, 930-931) observes that "collaboration is positively enhanced by the physical proximity of the stakeholders," and that "local level initiatives can best capture the advantages associated with geography." Gray notes that collaboration among people from a local area makes it more likely that they will have shared values, norms, and language. In addition, when participants live in the same area, they likely interact with one another more frequently and are more likely to recognize their interdependence than participants in a collaboration who are widely dispersed (Gray 1985, 930). Further, when participants are from the same place, they often recognize that they will have to continue dealing with one another in the future. This situation is more likely to build trust and motivate parties to collaborate than a situation in which people are brought together for a limited amount of time and do not expect to interact in the future.

To take advantage of the benefits associated with localism and a sense of place, Foster (1990, 6) recommends that collaborators "start your region small even though your ambitions may be on a basin scale. Let it grow naturally from there."

Personal Relationships

Personal relationships play an extremely important role in fostering collaborative problem solving from the earliest stages. Preexisting personal relationships often provide seeds for collaborative efforts. For example, the Environmental Protection Agency and Amoco conducted a groundbreaking joint study of air emissions at Amoco's Yorktown facility that provided information on how EPA can regulate industry more cost-effectively. The idea for the joint study was formed during a chance meeting between two old college friends on an airplane: one now a senior EPA official and the other a senior executive at Amoco (Solomon 1993, A1). As another example, the Friends of the Columbia River Gorge built an extensive coalition of support for federal legislation to establish the Columbia River Gorge Scenic Area. Their success was largely due to building on an already-existing network of relationships between individuals with economic and political power in the Portland area. Mobilization of this preexisting network generated funds, activities, and influence that helped the group build political momentum leading to passage of Scenic Area legislation by the U.S. Congress (Sherk and Yaffee, 1988).

Personal relationships continue to play a key role in fostering success once a collaborative effort is underway. Rosabeth Moss Kanter, a Harvard Business School professor who studies collaborations and partnerships in private industry, notes that such arrangements "cannot be 'controlled' by formal systems but require a dense web of interpersonal connections and internal infrastructures that enhance learning" (Kanter 1994, 106). According to Kanter "Many strong interpersonal relationships help resolve small conflicts before they escalate." She quotes a European manager who has experience with a number of transatlantic business partnerships as saying, "There really is no good system for working out problems except through personal relationships" The idea is summarized by USFS District Ranger Su Rolle, a member of the Applegate Partnership in Oregon, who said "the partnership isn't as much about issues as it is about relationships" (Wondolleck and Yaffee 1994, 1-2).

When they can be used, pre-existing relationships can have a major impact in allowing collaborations to move forward. One manager of an ecosystem management project in a rural Southern area said that underlying his project's success was "the fact that I was a local boy, grew up here, knew lots of folks, and the fact that I didn't have a government uniform on, [which] made all the difference in the world" (Yaffee et al. 1996, 28). However, where pre-existing relationships do not already exist, they can be built over time. According to Kanter (1994, 105),

Active collaboration takes place when companies develop mechanisms -- structures, processes, and skills -- for bridging organizational and interpersonal differences and achieving real value from the partnership. Multiple ties at multiple levels ensure communication, coordination, and control. Deploying more rather than fewer people to relationship activities helps ensure that both partners' resources are tapped and that both companies' own needs and goals are represented.

Although this process may sound complicated, it often boils down to common sense and a true commitment to build trust among the parties. Kanter (1989, 158) notes, "the time spent chatting over coffee and donuts...before a meeting is not just 'filler' until the meeting begins, but a helpful adjunct to the process, a signal that people are willing to make gestures towards one another as people." A mayor contacted in the Building Bridges study praised local Forest Service employees for "Coming out one-on-one to talk to the villagers [which] created much more enthusiasm for the plan and helped to generate consensus (Wondolleck and Yaffee 1994, 48). Developing new relationships can help defuse future conflicts and promote future bridging. Successfully building bridges can generate a "spiral of rising trust" among participants that opens opportunities for additional cooperation or gains (Fox 1974).

While new relationships formed in collaborative efforts can blossom into committed partnerships or even real friendships, relationships do not have to be exceptionally deep to help promote bridging. Some collaborative efforts may rely on weak ties between parties. Granovetter (1973, 1378) argues that weak ties between individuals with little in common provide an important conduit for diffusing information across different groups that generally do not interact, and in this way weak ties are important for integrating a community. (Granovetter does not provide a formal definition of "weak ties," but leaves his discussion of them at "a rough, intuitive level." In effect, weak ties are links between people who interact infrequently and who do not have a close personal relationship.) Apply the weak tie concept at the individual level, people can expect to gain new information from people they do not know well: information that they are unlikely to receive in interactions with their everyday circle of work colleagues and friends (Granovetter 1973, 1360).

Trust and Respect

Overall, personalities and trust necessarily play a far greater role in collaborative problem solving than in more traditional decision-making methods. Kanter (1994, 100) notes that compared to the "rational" method underlying traditional decision-making, "Intercompany relationships are different. They seem to work best when they are more family-like and less rational. ...The best intercompany relationships are frequently messy and emotional, involving feelings like chemistry or trust."

These feelings are often built from personal relationships, but they also arise from mutual respect. Schrage (1990, 153) argues that "successful collaborations don't require friendship or even that the collaborators like one another very much. ...However, there must be a minimum threshold of mutual respect, tolerance, and trust for a collaboration to succeed." Kanter (1994, 105) writes that "People will take the time to understand and work through partnership differences to the extent that they feel valued and respected for what they bring to the relationship. She also notes that "respect that builds trust begins with an assumption of equality: all parties bring something valuable to the relationship and deserve to be heard" (Kanter 1994, 105). Kaplan and Kaplan (1982, 206) observe that "collaboration is most effective when the [participants'] areas of expertise complement each other, when the people involved have a desire to learn from each other, and finally, when they have respect for each other's potential contributions to the process."

Public Interest/Pressure

Public interest and support for a collaborative project can help foster success at bridging. Public support was cited by 59 percent of the Ecosystem Management study sites as an important facilitating factor (Yaffee et al. 1996, 28). In some cases, the public at large is an important player in the collaboration. For example, in regions where a large proportion of the land is privately owned, ecosystem restoration and protection efforts have only progressed with the support and participation of private landowners. One such example is provided by the Wildlife Habitat Improvement Group in southern Vermont, which relies on a voluntary consortium of private landowners to coordinate woodlands management across ownership boundaries in order to enhance wildlife habitat (Yaffee et al. 1996, 275-6). In other cases, widespread public support is less directly linked to the implementation of a collaborative effort, but provides incentives for key stakeholders to participate and provides a norm that rewards parties' willingness to collaborate. One Forest Service employee participating in a collaborative ecosystem management research project noted, "The whole nationwide attitude [towards the environment] has certainly been a help to us to move this project along. Ten years ago we would have been called 'ecofreaks' or something like that and now we're mainstream" (Frentz et al 1995, 5-7).

Process-Related Factors

It is important to recognize collaboration as an ongoing and evolving process rather than a particular outcome (Gray 1989, 15). As a result, process-related factors play a key role in fostering successful results, and questions of how to structure the process are worth considerable time, thought, and resources. Overall, effective process management is critical to successful outcomes of collaborative efforts or even for parties to agree to try to collaborate in the first place. Process-

related factors that facilitate successful bridge building, which are described in more detail below, include: use of an inclusive problem-solving process; information sharing and joint fact finding; process management/interpersonal skills; individual leadership and dedication; early, small successes; and efforts to promote a sense of fairness, equity, and burden-sharing.

Use of an Inclusive Problem-Solving Process

The process used plays a key role in facilitating effective collaboration. The literature on effective ways to structure a collaborative process is extensive (e.g., Carpenter and Kennedy 1988, Fisher and Ury 1981, Gray 1989, Susskind and Cruikshank 1987). Overall, effective collaborative processes have several basic characteristics. First, they involve all relevant stakeholders in a significant way from the outset. Second, they provide participants with joint ownership of the process and the outcome -- that is, participants are directly and jointly responsible for making and implementing the decisions that are reached. Third, participants jointly agree to a common definition of the problem or issue being addressed and work toward a mutually understood set of objectives.

Collaborative processes need to work deliberately through several stages of decision making. Gray (1989) identifies three overall stages: problem-setting, direction-setting, and implementation. The correct timing of each phase is important to the success of the collaborative effort. Gray (1985, 932) writes, "inability to achieve the appropriate conditions during each phase may be the best source of explanations to date for why collaborative efforts fail. For example, premature efforts to structure collaborations can render them ineffective because the appropriate mix of stakeholders has not been identified or because those participating have not yet agreed on a common direction."

Problem-setting. The problem-setting, or "pre-negotiation" phase (Susskind and Cruikshank 1987, 95) plays a critical role in formal, structured initiatives. According to Gray (1989, 57), "problem-setting requires identification of the stakeholders, mutual acknowledgment of the issues that join them, and building commitment to address these issues through face-to-face negotiations." The relevant stakeholders are identified and convinced to participate by a convenor. The party convening the group may be a participating stakeholder or a third party. Either way, to succeed in bringing the appropriate parties to the table, convenors need to have *convening power*, "the ability to induce stakeholders to participate. Convening power may derive from holding a formal office, from a long-standing reputation of trust with several stakeholders, or from experience and reputation as an unbiased expert on the problem" (Gray 1989, 71).

The problem-setting phase also involves participants reaching a common definition of the problem or issue to be addressed. Gray emphasizes that "it is important that parties know up front the scope of the effort to which they are proceeding, since differing expectations can derail the

proceedings." At times, reaching an appropriate problem definition will involve expanding the issues on the table to address the interests of a critical stakeholder. In other cases, the process of defining the problem should narrow the issue to make the collaboration more manageable and focused.

Direction-setting. During the direction-setting phase, participants build a shared understanding of their common interests or purposes that allow them to come to an agreement. First, participants establish ground rules to guide their interactions and agree to an agenda, which Gray (1989, 266-267) calls "an essential step in assuring that the parties accept responsibility for the process." Collaborations that involve a number of complex or time-consuming issues rely on separate subgroups that address specific issues and report back to the main group. During the direction-setting phase, the group usually engages in joint fact finding and information sharing, which is described in greater detail below. Participants then generate and evaluate multiple options. Options may be developed by participants, suggested by outside experts, or drafted by a facilitator or other third party. Fisher and Ury (1981) emphasize the importance of considering multiple options to encourage participants to recognize the tradeoffs inherent in the different options and to help generate a solution that promotes the interests of multiple parties.

Implementation. If participants reach an agreement in the direction-setting phase, the collaboration moves to the implementation phase. During the implementation phase, participants must gain support for the agreement from the constituencies they represent. This step is an important and challenging part of the process because constituents that did not participate in the collaborative process will not have developed the shared understandings that participants have, and thus may object to trade-offs and compromises their representative has made. To prevent this problem, Gray (1989, 267) recommends that "collaborative designs need to build in mechanisms for participants to confer with and gain the commitment of their constituents before any final agreements are reached." Participants must also gain support for the agreement from other external parties that may have a role in supporting or implementing the agreement, such as legislators. Finally, during the implementation phase, participants often establish structures to monitor implementation of the agreement, ensure compliance with the agreement, and facilitate ongoing interaction between participants.

Information Sharing and Joint Fact Finding

The process of joint fact finding discussed above merits its own consideration due to its importance in fostering successful collaboration. Effective collaborative processes provide participants with the opportunity to share information, conduct joint fact finding, and develop

shared understandings. Bennis and Biederman's (1997, 212) study of six collaborative efforts that the authors termed "Great Groups" found, "All Great Groups share information effectively."

Opportunities for joint fact finding play a particularly important role in collaborations involving natural resource management decisions because the decisions often are complex and involve scientific uncertainty or controversy. Despite the complexity of issues involved, some collaborative efforts have found it useful to conduct their own research rather than relying on outside experts. Kaplan and Kaplan (1982) argue strongly for research efforts that involve participants rather than just "the experts." They write "Maintaining the research process at the level of extreme specialization, where only a few can exchange insights, effectively puts a damper on collaboration. Conversely, by avoiding obscurity and complex research technology, it is easier to bring together the complementary expertise of the various pertinent parties" (1982, 206). They write that ideally this process is guided by a researcher who is "knowledgeable about where imperfections are tolerable in the research process and about how to create the instruments that will lead to meaningful responses" (1982, 206).

Simlarly, Krannich, Carroll, Daniels, and Walker (1994, 112) advocate a process they term "collaborative learning" for effectively involving stakeholders in complex natural resource conflicts and promoting collaborative sharing of information and ideas. According to Krannich et al., "Collaborative learning redefines the conflict or problem as a 'situation.' Rather than trying to find 'the solution,' parties are encouraged to development improvements over the status quo situation.

Results are measured as 'progress' rather than by some absolute standard of 'success.'" Krannich et al. (1994, 113-114) propose the following three-step process of collaborative learning. In the first step, parties emphasize "common understanding" of a situation, by exchanging information, discussing best- and worst-case futures, and using maps or other techniques to visually represent the situation. In the second step, participants brainstorm possible improvements to the status quo situation that would address specific interests and concerns. In the final stage, participants discuss and evaluate the suggestions for improvements. Kannich et al. (1994, 113) argue that following such a process "encourages people to learn actively, to think systemically, and to gain knowledge from one another about a particular problem situation."

Sharing information creates new knowledge that parties within a collaborative effort can use to improve decisionmaking (Inkpen, 1996, 124). Inkpen (1996, 124) notes that increasing the knowledge base is an important motivating factor for many business alliances and "many firms enter into alliances with specific learning objectives." Inkpen (1996, 137) argues further that, "alliances can be very powerful vehicles for the creation of new organizational knowledge."

In addition to improving decisionmaking, joint fact-finding can strengthen trust and communication among partners. Gray (1985, 926) notes, "Joint information search by the stakeholders contributes to the emergence of coincident values and mutually agreeable directions...." Specific types of information sharing are particularly useful for building bridges between collaborators. Kanter (1989, 163) argues that in addition to sharing information on the substantive issues under consideration, participants in collaborative efforts also share information about their organization: its perceived needs, norms, and decision-making processes. Kanter describes this information as "relationship knowledge," which will help collaborating partners understand each other better and thus manage their relationship better. In addition, in some successful partnerships where certain sensitive data could not be shared, the partners worked together to determine what information should be shared and what should be kept secret; these efforts helped build trust and understanding among the partners despite the need for secrecy and lack of full disclosure (Kanter 1989, 163).

Process Management/Interpersonal Skills

Process management skills are important. Collaboration and building bridges by definition involve interpersonal interactions, and many fledgling efforts die because of poor interpersonal dynamics. Having individuals who can mediate between conflicting positions and troublesome personalities is important to the development of cooperative efforts, yet few resource management professionals have been trained in "process literacy" (Carpenter and Kennedy 1988, 18). Indeed, many forestry professionals sought careers "in the woods" to avoid having to deal with other people. Having individuals trained in the management of complex multi-party processes organize and carry out cooperate efforts clearly facilitates on-the-ground success. In the Building Bridges and Ecosystem Management cases, sometimes facilitation was provided by agency project coordinators or line officers, or community leaders. At other times, nonpartisan, third party facilitators were asked to help out. Sometimes a third party "broker" may even initiate bridge building. For example, Partnerships in Parks is a nonprofit group with the mission of "seeding" partnerships in the National Park system (Selin and Chavez 1995, 191). Whether a multi-party collaboration is facilitated by one or more stakeholders or a third party, all stakeholders must perceive the facilitator as legitimate and fair for the facilitator to play an effective role (Gray 1985, 924). In addition, Gray notes that successful facilitators often understand and communicate a strong sense of mission or purpose underlying the collaboration they are facilitating and emphasize the necessity of evaluating the consequences of potential future actions (Gray 1985, 924).

Individual Leadership and Dedication

Collaborative efforts often form as a result of a single strong leader or interested party "whose energy and vision mobilizes others to participate" (Selin and Chavez 1995, 191). Further, once collaborative efforts are established, dedicated individuals often help to make them successful on the strength of their personalities and energies, sometimes at considerable personal cost. In the policy literature, these individuals have been called "fixers" (Bardach 1977). The organizational management literature refers to them as "maestros,"(Westrum 1994, 343-5) and highlights their importance to successful innovation. For example, one study commissioned by Texas Instruments found that of seventy new product introductions, those that succeeded were generally those that had a "volunteer champion" to lead them. Those without such a champion typically failed (Peters 1982). Collaborative efforts may place a premium on leaders with diplomacy as well as vision. O'Toole and Montjoy (1984, 499) note, "Where interdependence is reciprocal, a fixer will often need diplomatic skills to resolve conflict, clarify alternatives, or persuade some units to commit themselves in the face of uncertainty, and thus, simplify the search for a solution."

Bennis and Biederman (1997, 199-200) write in their study of successful collaborative efforts:

> Every Great Group has a strong leader. This is one of the paradoxes of creative collaboration. Great groups are made up of people with rare gifts working together as equals. Yet in virtually every one there is a person who acts as maestro, organizing the genius of the others. Within the group, the leader is often a good steward, keeping the others focused, eliminating distractions, keeping hope alive in the face of setbacks and stress.

This type of leadership can emerge naturally or be deliberately fostered in an organization. For example, the literature on business alliances recommends that organizatons charge specific individuals with the responsibility of taking a leadership role in managing their collaborative relationships:

> Companies seeking to build and sustain interorganizational alliances need to recognize and implement the roles of corporate "statesmen," "diplomats," and "peace observers" who not only seek out and build peace treaties and alliances (i.e., negotiate, design, and implement technical and procedural mechanisms for guarding against encroachment and agression by parties in the alliance), but also, on an ongoing basis, guard against misunderstandings, misinterpretations, and perceived or real betrayals that may lead to the disintegration of the relationship (Kumar and Van Dissel 1996, 296).

Kumar and Van Dissel (1997, 296) stress that this role requires ongoing and proactive effort, writing "The partners in the alliance need to recognize that peace is often fragile, and once the initial euphoria of reaching the treaty (alliance) has faded, the statesmen and diplomats (relationship/boundary managers) will need to be continuously vigilant in anticipating conflict and nuture the alliance by managing these risks proactively."

In the Ecosystem Management cases, project leaders, community leaders, agency field staff, landowners and elected officials all played a leadership role in various projects, and often kept projects alive despite a lack of resources, political support or agency direction. These individuals served as a source of motivation for change and fostered stakeholder trust and support for the goals of ecosystem management projects. They were not "superhuman." Rather, they put a lot of energy into moving the projects forward. According to one respondent, "It always boils down to key talented people [who] are willing to invest themselves over and beyond the call of duty"(Yaffee et al. 1996, 30).

Early Small Successes

Successful collaborative processes are often structured to provide participants with an early, small but tangible success. Kanter (1994, 103) writes that the most successful collaborative agreements between companies "incorporate a specific joint activity, a first-step venture or project. This project makes the relationship real in practice, helps the partners learn to work together, and provides a basis for measuring performance." Foster (1990, 6) recommends that regional collaborative efforts start with "issues that are visible, tangible, and most important, doable." Early small successes help build trust among participants and increase their confidence in each other and the process, thereby allowing the group to address more complex or controversial issues later. Successes also build support for the collaborative effort among the public and important external actors who can provide resources or otherwise aid the collaboration.

Sense of Fairness, Equity, and Burden Sharing

A process that stakeholders perceive as fair and unbiased is an essential factor to allow collaboration to take place. One resource manager contacted for the Ecosystem Management study recommended, "Be as open as possible about the process. Provide as much information about what's going on as possible" (Frentz et al. 1995, 8-5). Joint development of ground rules can help build a sense among participants that the process is fair. The perceived legitimacy and objectivity of the party facilitating the process also plays an important role in establishing a sense that the process is fair.

Particularly in cases involving concentrated costs and widely distributed benefits, such as the siting of hazardous waste facilities or the protection of endangered species on private lands, concern for equity and burden sharing can play an important role in promoting a sense of fairness and allowing collaborative problem solving to take place. Barry Rabe's (1994) analysis of the siting of hazardous waste facility siting in the United States and Canada found two dramatic success stories where Canadian communities voluntarily cooperated in the siting process and supported siting decisions. According to Rabe (1994, 158), the two cases "provide models for surmounting burden-sharing concerns." These models could potentially be applied not only to siting disputes but to other controversial policies that provide widely distributed benefits but concentrated costs.

According to Rabe, deliberate efforts to distribute the burden of hazardous waste management across society rather than concentrating the burden on one or two communities played a key role in the successful collaboration that occurred in the two cases. He notes that host communities were "reassured that a central part of the siting process involved special commitments to distribute the waste burden for waste management efforts more fairly...." (Rabe 1994, 80). These commitments included import restrictions that limit (and in some cases ban) the waste facilities from accepting waste generated in other provinces or outside Canada, creation of regional waste storage and transfer stations in other communities, and widespread implementation of waste reduction and recycling programs. The measures also promote the sense of ownership of a shared problem needing a solution. One local citizen noted that before participating in the siting process, "I had no idea that so much waste was generated in Alberta and that so much of it came from our own town, and our businesses and homes" (Rabe 1994, 74). Treating communities equitably encourages them to take responsibility for finding a solution rather than seeking to shift the burden to others.

Institutional Context

Beyond situational and process characteristics, the institutional context in which bridging takes place is important. Agencies and organizations can help facilitate successful collaborative problem solving by providing the right opportunities, incentives and resources for collaborative efforts. In addition, organizations interested in promoting bridge building may need to provide members with new skills and norms. The factors within an institutional context that promote collaboration and bridge building, which are discussed below, include: opportunities for interaction, incentives, resources, and technology.

Opportunities for Interaction

Organizational, political, and social arrangements that provide opportunities for interaction among members of different organizations help set the stage for collaborative problem solving.

Opportunities for interaction can range from formal mechanisms (e.g., an advisory committee that is formally chartered under the Federal Advisory Committee Act), to simple and informal ones (e.g., a federal or state land manager making an effort to eat lunch once a week at a diner which attracts a large number of local ranchers). The extent to which formal and informal opportunities to interact exist and are used effectively will determine possibilities for bridging to occur.

Wondolleck (1988, 200) attributed much of the conflict over forest planning to "a lack of opportunity for different groups to jointly determine where and how timber resources are available and with what consequences." Whether there are opportunities for interaction, and how seriously they are taken, is partly a function of public policies and programs. Local, state, regional, and federal land planning processes provide opportunities for cooperative interaction. In the Ecosystem Management study, agency programs such as the USFS's New Perspectives Program, the National Estuary Program administered by the EPA, and the North American Waterfowl Management Program administered by the FWS provided opportunities that allowed numerous projects to be started (Yaffee et al. 1996, 21).

While laws (such as the National Forest Management Act) essentially mandate collaborative approaches to natural resource management decisions, Gray observes that mandates to collaborate in themselves "will not generate conditions conducive to collaboration. However, coupled with other conditions (e.g., recognition of interdependence and balance of power), [a] mandate can provide a structural framework" for collaborative problem solving (Gray 1985, 929). In short, the opportunity for interaction is a necessary but not sufficient condition for successful bridging to occur.

Kanter (1994, 105-107) argues that the most productive private-sector partnerships achieve five levels of integration across organizations, each of which provides different opportunities for interaction. Although not all of these levels may be appropriate for each collaborative initiative, the five levels provide a useful tool for considering different types of interaction that may foster successful bridging. Kanter's first level of integration, *strategic integration,* involves contact among top leaders of the organization to discuss broad goals, new opportunities, or important changes in conditions. *Tactical integration* brings together middle managers to plan specific joint activities and identify ways to link their companies better and improve the transfer of information. *Operational integration* provides the right resources and information to allow people in both organizations to carry out their daily tasks effectively. *Interpersonal integration* creates a network of personal relationships between members of the two organizations. Finally, *cultural integration* provides people in both organizations with the skills and understanding necessary to bridge cultural differences between the organizations.

Incentives

Incentives play an important role in promoting collaboration and bridging. Gray (1989, 263) notes that "individual stakeholders must see a compelling reason to try collaboration." She argues that partnerships are not based on solely philanthropic motives and writes that "incentives [to participate] are heightened when parties see a direct opportunity to pursue their self-interest" (Gray 1989, 263). This argument is consistent with the classic literature on cooperation, which argues that reciprocal behavior is the basis for most cooperation: people help each other so that they can be helped in turn -- the "I'll scratch your back if you scratch mine" approach (Axlerod 1984). The potential for cooperation hence is dependent on an individual or group assessing their potential for advancing their self-interest and concluding that cooperation is in their best interest. This assessment is conducting in light of the incentive structure facing the individual. How can inducements to cooperate be structured in a way that makes it more likely that successful bridging will occur? Sometimes simply creating opportunities for interaction is enough; at other times, structuring incentives for action are needed.

Institutional/Programmatic Incentives. Institutional or programmatic structures can create appropriate incentives for individuals and groups to come together to cooperatively find solutions to common problems. In the Ecosystem Management study, agency policies and programs provided the incentive for the start-up of more than half the projects. These activities included matching grants and cost-share programs which have stimulated bridge building. The USFS Challenge Cost Share program, which matches private contributions for wildlife, fisheries, and recreation projects, has provided an incentive for USFS managers and private groups to collaborate and has led to a number of successful partnerships (Selin and Chavez 1995, 191). State programs have also provided assistance to collaborative projects. For instance, the Hawaii Department of Land and Natural Resources' Division of Forestry and Wildlife has established a Natural Areas Partnership program to provide matching funds for the management of private lands that are permanently dedicated to conservation.

In addition to project-related incentives such as matching funds, organizations can also promote employee participation in collaborative efforts through career-related incentives. Organizations can use performance reviews, public recognition, or letters of commendation to reward employees for their willingness to engage in collaborative efforts. Such actions not only increase internal incentives for collaborative problem solving, they also begin to develop organizational norms that support bridging, which are discussed in greater detail below.

Laws, political realities, financial necessities, and other factors also influence the incentive structures of potential participants in collaborative initiatives. For example, the Endangered Species Act has its most significant impact on behavior in creating a set of incentives that encourages

affected groups to respond. Many times, cooperative efforts for endangered species protection have been undertaken because of the fear of putative action under the ESA regulations. Actions taken towards the protection of salmon stocks, the marbled murrelet, the Coachella Valley fringe-toed lizard, and the whooping crane have occurred because stakeholders feared the potential chaos of regulatory actions (Yaffee and Wondolleck, 1994). They were cooperative, in that the stakeholders voluntarily committed to a process of dispute resolution that would protect the endangered species and their own interests, not the least of which was maintaining control over the direction of the situation. But they were also induced by a regulatory scheme that generated significant incentives for action. Absent the ESA, it is unlikely that a number of the cooperative efforts described in the Ecosystem Management study would have occurred.

Legitimacy. A collaborative effort's perceived legitimacy will influence whether or not participants feel an incentive to participate. An initiative's legitimacy stems in part from the perceived legitimacy of other participants and the legitimacy of the convenor, as discussed in the previous section (Gray 1985, 922-924). At times, it has been important that the initiators of a cooperative effort have not been government officials, or that the representatives of the government were long-standing members of the community. In the Ecosystem Management study, projects that were rooted in the local community were better received than those perceived as top-down agency directives or outsider initiatives (Yaffee et al. 1996, 28). Gaining support from local community leaders and hiring project personnel from within the community were both cited repeatedly as important contributing factors (Yaffee et al. 1996, 28).

Opportunity to Make a Difference. Knowing that agency and elected officials support the cooperative process and that they will be likely to follow through on agreements reached through it, is an important inducement for participation. The potential for "making a difference" or "having an impact" motivates stakeholders to be involved (Wondolleck and Yaffee 1994, 46). The converse -- spending a lot of individual time and energy, finding a reasonable course of action that all stakeholders can live with, yet seeing officials disregard it -- can make an existing situation much worse. This kind of support is also important within agencies. Employees of land management agencies noted the importance of having middle management support cooperate efforts, and the difficulties that lie in store for those who lack such support (Yaffee et al. 1996, 29).

Providing Preferable Alternatives. Parties have strong incentives to participate in a collaborative process that provides better alternatives than they could hope to achieve outside collaboration. As the previous discussion on interdependence implies, parties' alternatives to collaboration play a significant role in their willingness to work with other groups. A party must evaluate its "best alternative to a negotiated agreement" (BATNA) to determine whether it is in its interest to participate in a negotiation (Fisher and Ury 1981). Unfavorable alternatives to

collaboration provide parties with a strong incentive to participate and make the collaboration as success. In particular, the existence of stalemate can provide a powerful incentive to try collaboration. For example, a diverse set of parties, including farmers, environmental groups, state officials, and representatives of a large power company were able to work together to develop an acceptable compromise in a complex dispute over the construction of Grayrocks Dam on the Laramie River (Bacow and Wheeler 1984, 46-50). After first pursuing litigation, the parties involved eventually worked together to develop a solution because their interests would not be met by the protracted period of stalemate and uncertainty that would likely have resulted if they had not cooperated (Bacow and Wheeler 1984, 49). Impasses in traditional decision-making channels often promote collaboration by increasing dissatisfaction with the status quo (and as discussed earlier, by increasing stakeholders' recognition of their interdependence) (Gray 1985, 920).

Resources

Resource availability, including staffing, expertise, and funding, is also important to the success of many efforts. Both the Building Bridges and Ecosystem Management studies highlighted the availability of resources as significant factors explaining the success of on-the-ground efforts. Funding was cited as the most important resources-related factor facilitating progress (Yaffee et al. 1996, 29). It was the initial funding of many of these projects that got them off the ground by making it possible to hire personnel, acquire lands, collect data, or invest in the technology for ecosystem management activities. Several sites reported benefits from having an adequate number of staff members, the expertise and technical capability of field personnel, and the presence of full-time researchers and project managers whose responsibilities are to the project alone. In several cases, especially the National Estuary Programs supported by the EPA in cooperation with state agencies, separate project offices were established, which allowed staff, equipment, and expertise to be dedicated exclusively to the efforts.

Often large amounts of resources were not necessary. Rather, seed monies or a small amount of staffing helped to catalyze efforts that mobilized additional needed resources. For example, located within an hour's drive of more than 7.5 million people in southern California, the San Gorgonio Ranger District of the San Bernadino National Forest has expanded the resources it has available for recreation and public education by a cooperative arrangement with the San Gorgonio Volunteer Association (Wondolleck and Yaffee 1994, 26-4). This 120-member organization donated more than 9,000 person-hours of volunteer time to the District in 1992, and made more than 17,000 visitor contacts during volunteer wilderness patrols. Its volunteers also provided all of the staffing for the district's Barton Flats Visitor Center and conducted more than 100 interpretive programs, which together reached another 13,000 forest visitors. For its part, the USFS has invested time and

energy into cultivating and training the volunteers. Three USFS employees attend the SGVA Board's monthly meetings. They also train the volunteers for all activities they will perform for the Forest. Nevertheless, the value of the labor and good will generated by the relationship pays back the agency many-fold.

Providing resources can also play an important role in fostering success for symbolic reasons. By providing resources to a collaborative initiative, an organization can demonstrate the value it places on the initiative and a commitment to participate. Kanter (1994, 100) writes that in private sector partnerships, partners often invest resources in the collaborative effort "to demonstrate their respective stakes in the relationship and each other. They show tangible signs of long-term commitment by devoting financial and other resources to the relationship."

Technology

Access to certain technologies is playing an increasingly important role in facilitating collaborative decisionmaking. Geographic information systems (GIS) allow for the creation of a more comprehensive and integrated database for ecosystem-based analysis and management design. The use of GIS facilitates bridging in a number of ways. First, it facilitates information sharing among different organizations. For example, for the Ecosystem Management Plan Project for Northeast Chichagof Island in Alaska, GIS technology has greatly reduced the amount of time it takes for the Alaska Department of Fish and Game to get technical documents from the USFS. Before the use of GIS, transferring the technical documents took up to six weeks, greatly delaying planning and decision-making activities (Yaffee et al. 1996, 212). GIS also facilitates joint fact finding. A multi-stakeholder group can use GIS to visualize and evaluate different scenarios under consideration. Michael Schrage (1990, 153-155) argues that successful collaboration requires a "shared space" that partners can manipulate or "play with" to make their work more concrete. Examples of shared spaces include prototypes used by design teams of automotive engineers and scale models used in meetings between an architect and a client. GIS provides a powerful and flexible "shared space" that partners can use to build scenarios jointly without committing to changes on the ground or using many resources (i.e., "What if we tried this?").

Advances in communication and computer networking technologies also hold great promise for facilitating information-sharing and bridging. The Internet and other computer networking advances have increased opportunities to build "truly integrated regional biodiversity databases" that include information from many different organizations and that multiple parties can access (Davis, 1995, S-38). Through the California Environmental Resources Evaluation System (CERES), the California Resources Agency has made biodiversity information to anyone with access to the World Wide Web (California Resources Agency 1996). Other information-sharing initiatives are also

underway, and may facilitate collaborative research or decision-making by widely dispersed parties in the future.

What Factors Impede Effective Bridging?

Although many factors impede effective collaborative problem-solving, most authors and researchers have focused on factors that facilitate collaboration rather than identifying barriers to collaboration. The factors that impede collaboration and bridging that are identified in the literature appear to fall into four main categories, which are similar to the categories used in the previous section on facilitating factors: those that are situation-specific, those that are process-related, those that arise from the societal context underlying the issue in question, and those that arise from the institutional context. Some of these factors are easy to deal with, while others are intrinsically difficult. And some obstacles are simply the inverse of the facilitating factors described in the previous section. For example, if having resources available or good process skills are helpful to cooperative efforts, their absence is often problematic. Table 2 summarizes factors that constrain effective bridging, which are discussed in detail below.

Situation-Specific Factors

A number of factors that are specific to particular situations may impede effective bridging. These factors include: power imbalances; lack of communication, "chemistry," or trust; technical and scientific issues; public opposition; and fundamental differences that separate the stakeholders.

Power Imbalances

Significant power imbalances between stakeholders may pose a substantial obstacle to collaboration. Gray (1989, 250) observes that "parties will be understandably reluctant to collaborate if they are at a disadvantage to adequately represent their interest or if they believe their interest will be deemed secondary to more powerful ones." In such situations, the weaker party often feels better off letting a conflict or problem continue in the hopes that growing public awareness of the problem will shift the balance of power among the relevant stakeholders (Bingham 1986, 66). On the other hand, the stronger party often sees little need to compromise or otherwise involve the weaker party, which lacks the power to influence the course of events on its own. Overall, widespread power imbalances reduce parties' interdependence and recognition of each others' legitimacy to participate, and as a result, undermine the impetus for collaboration.

Lack of Communication, Chemistry, or Trust

Just as personal relationships play an important facilitating factor underlying successful bridging, lack of communication, interpersonal chemistry, or trust poses a significant barrier to bridging. Common reasons cited for the failure of strategic alliances in the private sector are "lack

TABLE 2: FACTORS THAT CONSTRAIN BRIDGING

Situational Factors

       Power imbalances

       Lack of communication, chemistry, or trust

       Technical and scientific issues

       Public opposition

       Fundamental differences that separate the stakeholders

Process-Related Factors

       Lack of focus on process

       Lack of process management or interpersonal skills

       Resistance to collaborative management styles

       Difficulty securing the involvement of all stakeholders

Societal Context

       Cultural norms

       Stereotypes and intergroup attitudes

       Polarization arising from traditional processes

       Opposition by public interest groups

       Politics

Institutional Context

       Conflicting agency goals and missions

       Organizational norms and culture

       Lack of top-level support for collaboration

       Resource constraints

       Government policies and procedures

       Differing decision-making authority among participants

       Inadequate opportunities for interaction

of trust" and "incompatible personal chemistry" (Lorange and Roos 1991, 26). Maintaining effective communication can be surprisingly difficult. Kanter (1994, 105) notes that to make partnerships work, "more communication than anyone anticipated is necessary." Gray (1989, 266) notes that, "Often signals are misinterpreted, and parties act in ways that are unwittingly affrontive to other stakeholders. It is important to catch and resolve these misunderstandings when they occur and to maintain a climate in which violations of trust work to the disadvantage of all parties." Overall, difficulties with communication or a lack of trust can make successful collaboration hard to achieve.

Technical and Scientific Issues

Technical factors inherent in collecting and sharing data have also stymied multi-party efforts. Differences in data collection methods and analytic techniques can make it difficult for groups to combine information in useful ways. For example, the Potlach Corporation and the USFS have been cooperating for several years on aspects of landscape management, but different ecological classification methods and inventory data sources have affected the effectiveness and efficiency of cooperation (Wall 1996). While the development of a common system is possible, though costly and difficult, managers often are not willing to change systems when they have considerable resources invested in one particular system. Besides, different systems reflect varying management priorities and goals. Agreement on a common system requires negotiation among the purposes to be served by the system, a negotiation which inherently requires compromise between user objectives.

Other difficulties arise from the technical and scientific character of public resource management choices. For example, Gray (1989, 253) observes that addressing the scientific and technical uncertainties underlying many environmental disputes involves making predictions about the future, a notoriously difficult undertaking. Participants' different perceptions of risk also hinder the joint assessment of scientific data as different parties will approach risk management differently and find different levels of risk acceptable (Gray 1989, 251-252). Thus, while there is a tendency for participants to look to experts for definitive scientific answers to resolve disputes, the main issues in dispute are often not scientific facts but values, such as what constitutes an acceptable degree of risk, and are difficult to resolve.

Public Opposition

Opposition by the public to the goals or methods of a collaborative project can pose barriers that make it difficult for an effort to succeed. Indeed, opposition by the public and landowners was cited as the top most obstacle facing projects in the Ecosystem Management study (Yaffee et al.

1996, 31). The compromises inherent in a collaborative approach often generate public opposition and criticism (Frentz et al. 1995, 7-2). Pervasive mistrust of governments and other large institutions fosters opposition to collaborative efforts that involve government agencies (Yaffee et al. 1996, 32). Previous incidents may also foster public opposition to new initiatives, even those that are more collaborative and open to participation. One participant in the Ecosystem Management study noted that "The public feels they've been duped a number of times [by the Forest Service] and that's why this ecosystem management effort that we're into right now has got such a challenge socially" (Yaffee et al. 1996, 32).

Fundamental Differences Separate the Stakeholders

One of the classic lessons of the dispute resolution literature is that fundamental differences between stakeholders present a significant barrier to bridging or collaborative problem solving. While negotiation and other collaborative processes can effectively address differences in interests, they are ill-suited to addressing fundamental differences in values (Moore 1988, 256). According to Gray (1989, 255-256), the following types of situations involving fundamental differences between stakeholders may impede collaboration:

- The conflict is rooted in basic ideological differences;

- Constitutional issues are involved or legal precedents are sought; or

- The issues are too threatening because of historical antagonism.

However, the relative number of cases in which stakeholders are separated by fundamental differences and do not share some common interests is far smaller than is generally assumed. Even in situations that appear to fall into the categories above, it is often worth an effort to try to identify common problems or interests among the stakeholders or superordinate goals that may not be immediately apparent. At times, groups can agree to disagree about certain issues, while still making progress on others. As noted above, appeals to a sense of place or a sense of crisis may help stakeholders look beyond the initial differences which appear to separate them.

Process-Related Factors

Given the importance of process to collaboration, ineffectively structuring or running a collaborative process greatly reduces its chances for success. The process-related factors which impede collaboration discussed below include: a lack of focus on process; a lack of process management or interpersonal skills; resistance to collaborative management styles; and difficulty securing the involvement of all relevant stakeholders.

Lack of Focus on Process

A failure to appreciate the importance of process-related questions and to spend enough time on process-related decisions is an important barrier to collaboration. Gray (1989, 265) observes that "convenors and negotiators frequently underestimate the critical role of process in ensuring successful collaboration." As a result, "process considerations are frequently overwhelmed by substantive ones." Further, Blahna and Yonts-Shephard (1989, 222) identify "the complex, technical planning process" adopted by the Forest Service and other public agencies as a significant barrier towards meaningful public involvement in these processes and their outcomes. These authors and others suggest that a lack of focus on process and a failure to utilize a process that fosters collaboration are common barriers to successful collaboration.

Lack of Process Management or Interpersonal Skills

The complexity of the human behavioral components of a cooperative effort suggest the need for effective process management, yet, as noted above, few resource managers were selected or trained with those skills in mind. Gray (1989, 166-176) describes a long list of tasks that mediators must perform to assist in collaborative problem solving processes, including such disparate tasks as establishing ground rules, managing data, creating a safe climate and displaying empathy. While bridging activities and relationships do not all need extensive third party mediation, most need one or more people to take a facilitative role, and there are many cases where the skills of the leaders of an effort at orchestrating effective processes were not up to the task. One USFS district ranger in the Building Bridges study commented that "Natural resource managers do not typically have public relations skills to the extent that some workers in the private sector do" (Wondolleck and Yaffee 1994, 56). A USFS public affairs officer seconded this comment: "One thing that limits our ability is having the trained persons in people-to-people relationships in the right places to do productive work with publics"(Wondolleck and Yaffee 1994, 56). Another USFS staff member noted that, "We have a lot of technically competent people but they would have done something else for a career if they were interested in people. They are not the best communicators in many instances."

Because many agency staff lack process management skills, they have exacerbated conflict while seeking to avoid it. For instance, Blahna and Yonts-Shepard (1989, 223) found that during the forest planning process, "most forests met the minimum legal requirements for public involvement by using the least confrontational methods possible. The input during most of the planning process was by written or one-way communication, and interactive public involvement was used only when it was safe to do so (i.e., during issue identification) or when planners were forced to do so by public controversy." Further, the two found that planners tended to bury controversial issues during the planning process rather than clearly identify them to the public. Ironically, these approaches tend to

exacerbate conflict rather than preventing or reducing it. For instance, Blahna and Yonts-Shepard (1989, 223) note, "By burying the issues during the planning process, the forests merely postponed having to deal with them until late in the planning process, when they were much more intense and difficult to mediate."

Resistance to Collaborative Management Styles

Many managers may be resistant to adopt the new roles and skills required to manage a collaborative process successfully. Collaborative processes may threaten managers' traditional views of their roles in their organization. In addition, collaborative processes may make managers' jobs more demanding and uncertain. Selin and Chavez (1995, 189) note, "Managers need new skills to move from the expert opinion role in traditional environmental management to an empowerment role as a mediator, catalyst, or broker in the new order. Managers comfortable with the hierarchical decisionmaking of public agencies are finding it difficult to cope with the lateral decisions needed to sustain effective collaboration." Kanter (1989, 142) observes, "Managers who are accustomed to acting decisively and presenting full-blown plans (in part to look good to their underlings) need to learn the patience that consensus building requires, and they need to learn to present half-formed ideas for discussion before making decisions….Because the [collaborative] process was far less amenable to packaging or control by any one player, managers accustomed to always having their homework done and their case flawlessly persuasive found that such behavior could be seen as manipulative, disingenuous, and counterproductive."

Difficulty Securing the Involvement of All Relevant Stakeholders

Difficulties identifying and involving all relevant stakeholders can lead to opposition from parties who feel excluded from the process. In some cases, it may be difficult to identify all the relevant stakeholders. Critical interest groups may be unorganized or internally divided, making it difficult to find a representative who can speak for the group in a collaborative problem solving initiative. In other cases, relevant stakeholders may prefer to remain outside the process and refuse to participate. Despite the difficulty involving all relevant stakeholders, not involving key stakeholders often prevents collaborative efforts from succeeding. One participant in the Ecosystem Management study noted, "You can collect data and do all the biological assessments you want, but unless you get the people to agree to a common vision, it could amount to nothing. (Frentz et al. 1995, 8-3).

Societal Context

The societal context within which policy decisions are made can present significant barriers to building bridges. These include attitudes held by individuals, groups, and agencies that often push people apart, rather than foster cooperation. Societal barriers to bridging discussed below include: cultural norms; stereotypes and intergroup attitudes; polarization arising from traditional decision-making processes; opposition by public interest groups; and politics.

Cultural Norms

Many sociologists argue that cultural norms in the United States emphasize individualism to a much greater extent than other countries. Jean Pasquero (1991, 42), a professor at the University of Quebec observes that in the United States, "the 'pioneering metaphor' of the individualistic entrepreneur is still a major obstacle to collaborative processes." Kanter (1994, 97) observes that "North American companies, more than others in the world, take a narrow, opportunistic view of relationships. ...American companies frequently neglect the political, cultural, organizational, and human aspects of the partnership." A study of U.S.-Japanese joint ventures found that Japanese firms seemed more willing to invest in collaborative efforts and that American firm's focus on the short-term bottom line often precluded them from recognizing the long-term benefits of collaboration (Inkpen 1996, 136-137).

Stereotypes and Intergroup Attitudes

Intergroup attitudes, such as the images of the timber industry held by environmentalists and vice versa, are often exaggerated or false, constraining effective communication that is the starting point for building bridges. Groups form identities and boundaries for a variety of sociological and psychological reasons, and these boundaries keep groups apart even when they share common interests. Individuals develop cognitive models that help them understand and act on their world, and these models are reinforced by other individuals with which they socialize (Kaplan and Kaplan 1982). As a result, a situation may be understood quite differently by different groups, making communication between them difficult, and joint action very difficult. As noted earlier, members of different disciplines have different biases, which influences their values and colors the way they act (Weiss 1989). Clark and Reading (1994, 359) note that experts "defend their disciplines and discount the opinions of 'outsiders.'" Kanter (1994, 105) warns that the tendency that arises to explain others' behavior using stereotypes, "denigrates individuals and therefore diminishes their incentive to bridge troubling differences. Stereotyping polarizes the partners, setting up us-versus-them dynamics that undermine the desire to collaborate."

Polarization Arising from Traditional Decisionmaking Processes

Traditional forms of decision-making reinforce group differences and make it more difficult for them to work collaboratively in the future. Adversarial decisionmaking processes promote strategic polarization in the ways that groups define themselves, emphasizing their differences. For example, a study of the spotted owl controversy in the Pacific Northwest found that individuals in the environmental community and timber industry held extremely polarized views of each other which far exceeded the real differences that separated them (Yaffee 1994, 179-80). These extreme views partly reflected the requirements of a political process that rewarded extreme positions, and partly that of intragroup socialization conducted in isolation from interaction with the other group: the us-them phenomenon. Such historical views make it difficult for groups to cooperate, even when it is clearly in both parties' interest to do so. As Selin and Chavez (1995, 193) note, "Organizations that have been bitter adversaries in the past often find it impossible to reach consensus on anything." In a case study involving the establishment of the Olympic National Park, Ben Twight found that historic conflicts between the Forest Service and the National Park Service prevented the Forest Service from adapting to new political realities surrounding the establishment of Olympic National Park and led the agency to lose jurisdiction over nearly one million acres of public forest land (Twight 1983).

Similarly, partnerships may be strained when members of the partnership are engaged in conflicts on other issues outside the partnership. One Forest Service employee participating in a collaborative initiative observed, "the region is swamped with federal old growth management conflicts which involve many of the same players participating here...it has made continued cooperation difficult when we were in conflict in a related and overlapping issue" (Wondolleck and Yaffee 1994, 61).

Opposition By Public Interest Groups

Some environmental groups oppose collaboration for both philosophical and tactical reasons. First, some environmental and other public interest groups distrust the perceived compromises inherent in a collaborative problem solving approach. Selin and Chavez (1995, 193) argue that "many of these organizations view compromise as a watering down of their mission. They often feel an obligation to set clear environmental objectives and pursue them with as much vigor and resolve as their opponent." Further, many environmental groups have adopted high-profile adversarial approaches such as litigation and direct action both to increase public awareness of an issue and to gain new members and satisfy existing members (Gray 1989, 248). Several national environmental groups have expressed concern or outright opposition to resolving environmental conflicts in local collaborative forums (see, e.g., McCloskey 1996).

Politics

A number of respondents in the Building Bridges study highlighted "politics" as an obstacle to progress in cooperative efforts. Political influences manifested themselves in several ways. At times, agencies were constrained from acting in ways that their staff and cooperators felt appropriate because of countervailing direction from elected officials. One non-federal individual noted, the USFS's "hands are often tied because of Congress. They are always answering to someone else"(Wondolleck and Yaffee 1994, 61). Political institutions also allow groups who are not satisfied with the direction set by a cooperative effort to "appeal" that direction in ways that can undermine the potential for a cooperative solution. In many places, political direction is needed to resolve on-the-ground priorities for resource management. Ongoing battles to influence that direction make it difficult for involved groups to attempt cooperative interactions. Such cooperation can be seen as co-opting their interests and undermining their strategic position in the political process (Hays 1988, 2).

Institutional Context

In addition to societal barriers, there are also several institutional factors that impede collaboration. Institutional barriers to collaboration and bridging discussed below include: conflicting agency goals and missions; problematic organizational norms and culture; lack of top-level support for collaboration; resource constraints; problematic government policies and procedures; differing decision-making authority among participants; and inadequate opportunities for interaction.

Conflicting Agency Goals and Missions

Many times, bridging is hindered by the different goals and missions of the potential participants. Organizations do have real differences between their goals and missions as defined by statute, tradition and political realities, and cooperative efforts highlight conflicts between these goals. For example, management of the water resources of south Florida involves numerous agencies with conflicting missions. The South Florida Water Management District is charged with supplying drinking and irrigation water and flood control to the public and commercial interests. The Florida Department of Environmental Regulation's mission is to ensure water quality and wetlands protection. Those conflicting missions have led to differences in assessing the priorities for various restoration activities. The DER argued that long-term monitoring of agricultural operations was essential, while the District pointed to studies that found no evidence of farming-induced aquifer pollution. Even after joint monitoring showed negligible amounts of herbicides and

pesticides in the East Everglades water, DER remained skeptical of the results (Abrams et al 1995, 243).

Sometimes these differences of objectives are inherent within one agency, and frustrate efforts to foster cooperation across the agency, as well as with others outside. In the Building Bridges study, many respondents cited the USFS's traditional emphasis on timber production as a key barrier to building cooperative linkages with outside groups. One university biologist commented that "the 'get out the cut' mentality made it difficult to maintain funding and continuity for a threatened species management program," risking the productive relationships with other groups and agencies that had already been established in a joint project (Wondolleck and Yaffee 1994, 57). A District Ranger noted that these traditional emphases create confusing messages for agency managers seeking to pursue ecological stewardship activities. They raise "internal barriers as to our proper role and mission" (Wondolleck and Yaffee 1994, 57).

Organizational Norms and Culture

Even when the formal objectives of organizations do not conflict, their informal norms of behavior, values, and traditions make it difficult for groups to cooperate. As Selin and Chavez (1995, 193) note, "The institutional culture within many agencies often hinders collaboration." For example, many resource managers are most familiar and comfortable using a "centralized, rational-comprehensive planning process [which] impedes collaboration with local interest groups" (Selin and Chavez 1995, 193). In the Building Bridges study, a number of respondents indicated that longstanding traditions and procedures impede some from making linkages. One USFS employee commented that "in the past making linkages just hasn't been a big priority" (Wondolleck and Yaffee 1994, 56). A state natural resources agency official that has been involved in cooperative projects with the USFS cited barriers stemming from what he calls the agency's "tradition of doing whatever they've wanted to do.... There are still the old-timers who think the public is a nuisance" (Wondolleck and Yaffee 1994, 56). When these traditions combine with the need for bureaucracies to support and maintain themselves, jurisdictional conflicts can occur. "Maintenance of turf wars that have been in existence for thirty years" was the way one respondent to the Ecosystem Management study described a pattern of interagency behavior that was a source of problems evident at many sites (Yaffee et al. 1996, 33).

Lack of Top-Level Support for Collaboration

In some cases, even when individuals within agencies pushed cooperative approaches forward, a lack of support for such efforts from upper levels of management hampered their efforts. As one USFS respondent to the Building Bridges study noted, "Nothing good will happen without

demonstrated commitment by USFS line officers. If the forest supervisor doesn't openly support a project, then it's very difficult to generate commitment down the line" (Wondolleck and Yaffee 1994, 58). Outside groups perceived many of these internal dynamics. One American Forestry Association representative argued that this lack of support stifles potential success: "The field folks want to be leaders in [cooperative initiatives] but if they don't see strong endorsements by the Chief and others, projects will get off to a real slow start" (Wondolleck and Yaffee 1994, 58).

Resource Constraints

Resource constraints were cited by respondents to both the Building Bridges and Ecosystem Management studies as major problems constraining cooperative efforts. A lack of time, money, or personnel was noted as an obstacle by more respondents in the Building Bridges study than any other obstacle (Wondolleck and Yaffee 1994, 54). It was the second most-often cited obstacle by both public and private managers in the Ecosystem Management study (Yaffee et al. 1996, 31). As one public affairs officer for the USFS noted, "Workloads are increasing and budgets and staffing are decreasing. Less time is available to devote towards building and maintaining relationships that lead to effective linkages" (Wondolleck and Yaffee 1994, 55). Funding constraints also prevent federal agencies from providing small things that help foster productive partnerships, such as funds for coffee and snacks at meetings or to cover travel expenses for partners that have to drive a long distance to meetings (Wondolleck and Yaffee 1994, 56).

While cooperative efforts can be seen by public resource managers as one way to cope with fiscal shortages (by leveraging shared resources across multiple stakeholders), ironically, they tend to be one of the first items cut when programs face budget shortages. The agencies often retreat to their core activities, and the time and effort needed to build relationships outward can be seen as nonessential. One District Ranger noted that budget constraints kept him from filling a Volunteer Coordinator/Public Affairs position (Wondolleck and Yaffee 1994, 55).

Funding shortages can also be barriers to many site-level activities, ranging from inventory work and ecological research to restoration and land acquisition. Financial shortages are seen as problematic for both public and private land management efforts. For example, Beatley's work on habitat conservation planning (1995, 65-68) highlights what he terms as "the immense problem of funding HCPs." Since ecological stewardship on private lands often involves minimizing development activities, significant costs can be involved in acquisition or the purchase of easements or development rights.

Even when funding is available, the way that governments account for and allocate funding tends to hamper cooperative efforts. Line item budgeting organized along traditional programmatic lines tends to make it difficult for projects that intentionally blurs those lines. The fact that many

cooperative efforts in resource management are exercises in interagency relations and creative federalism, involving relationships between local, state, and federal agencies, means that such efforts occur in "a regulatory 'no man's land,' in which no agency possesses clear responsibility for underwriting the process by funding or administrative support" (Porter and Salvesen 1995, 277). Lag times associated with the federal budget process and yearly budgeting also hinder federal agencies from planning or participating in collaborative efforts. One Forest Service employee observed, "Any additional projects can't be accomplished to a level of excellence needed to create long lasting partnerships when we have to wait each fiscal year to see if the funding has been approved and it isn't finalized until April. Our credibility is always at risk when the funding is late or not approved" (Wondolleck and Yaffee 1996, 55).

The problem of resource constraints is not limited to government agencies. Local citizen groups and other nonprofit organizations often face even greater constraints on the staff and resources they can devote to partnerships. In addition, members of the public participating in a collaborative effort may struggle to find the time to do the background reading and research that representatives from agencies and businesses can do as part of their jobs (with support of their organizations' other employees and resources).

Government Policies and Procedures

Beyond inflexibility in the budgeting process, a lack of flexibility in agency procedures for implementing agreements hampers cooperative efforts (Selin and Chavez 1995, 193). Even when procedures exist that allow groups to move forward, "red tape" makes it difficult for voluntary groups outside agencies to participate in cooperative efforts. One USFS district ranger respondent in the Building Bridges study summarized the situation as follows:

> Frequently these memorandums, agreements, cost-shares and contracts involve excessive paperwork, follow-up reports, and legal language and are often too difficult to understand. Many times the agreements themselves take too long to complete, complicate a simple project, cost too much in salaries to write, and in effect scare off our cooperators and partners from this level of involvement. We elevate process, rules and format over the needs of our partners and our agency. Time delays from process often erode the enthusiasm and decrease participation from groups that are ready to work with us now. Involving the public in our programs and management is often hampered by excessive detail and red tape (Wondolleck and Yaffee 1994, 59).

Specific government policies designed to regulate the interaction between government officials and the public have also been problematic. For example, the Federal Advisory Committee Act

(FACA) has been a significant barrier to communication and coordination between federal agencies and other stakeholders (Wondolleck and Yaffee 1994, Appendix D). FACA was designed to regulate the relationship between federal officials and others so that a narrow set of private interests could not exert undue influence on federal decision makers. Hence, advisory boards had to include a full set of stakeholders and be deemed official by a fairly elaborate chartering process. It was an important step forward in a time when people were concerned that regulatory agencies were "captured" by the groups that they regulated. Today's situation is much different. Power between a diverse range of groups is more likely to be shared and procedural safeguards ensure that decisionmaking is relatively open so that "capture" is less likely. At the same time, the procedural intervention prescribed by FACA tends to bog down legitimate exercises in multi-party decision making. Creative cooperative efforts such as those prevalent in the Applegate Partnership in Oregon have been hindered by a fear of FACA-inspired lawsuits.

The Freedom of Information Act (FOIA) can hinder information-sharing in initiatives sponsored by the federal government. FOIA constrains the ability of federal participants to protect the secrecy of information shared by participants in a bridging relationship. Organizations may be reluctant to share sensitive information that could be subject to a FOIA request. In addition, the Sherman Antitrust Act limits participation in collaborative efforts by private industry. The antitrust law was written to prevent unfair collusion between private industry that hurts consumers, but its provisions can also block positive cooperative agreements between members of an industry sector that meet public objectives.

Differing Decision-Making Authority Among Participants

Although participants in a collaborative process are supposed to have joint ownership over the process and outcome, they often lack the authority to commit their organization to a specific decision. This may be true even when participants are leaders or high-level managers of the organizations they are representing. One case study of a collaborative problem solving group noted, "Despite their desire to work together and create a visionary proposal, most members were constrained by their political orientations and the viewpoints of their associations. As leaders of their groups, they represented their groups' points of view, and were reluctant, in this public forum, to challenge or change these" (Roberts and Bradley 1991, 221). Kanter (1994, 107) observes that "because collaborative ventures often make new demands, managers involved in the relationship must be able to vary their own companies' procedures to make venture-specific decisions." However, few companies or organizations are willing to provide individuals with the leeway and flexibility necessary to participate fully in collaborative problem solving. As noted previously, within

the public sector statutes and existing regulations often constrain the flexibility of public employees within a collaborative process.

Inadequate Opportunities for Interaction

Finally, cooperation sometimes does not develop simply because of a limited set of opportunities and incentives for it to happen. We live in a society that is highly fragmented, with some of the traditional "boundary-spanning" institutions vastly weakened (Yaffee 1994, 309-312). When the incentives that encourage disparate groups to work together are strong enough, they are often able to work through some of their differences. Alternatively, externally-created opportunities, such as those provided by forest planning processes and the like, can create a forum in which cooperative interactions can develop. But at other times, conflicts persist or mutual gains remain unrealized because few opportunities exist for groups to attempt cooperative behavior or the incentives facing the individual groups push them away from each other. You cannot force people to cooperate. But you can create the conditions under which people who would benefit from cooperative interactions can find ways to realize those benefits.

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