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Planning for broad-based environmental protection: A look back at the Chicago Wilderness *Biodiversity Recovery Plan*

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Abstract In 1994 a collaboration of environmental interests formed in the Chicago region, U.S.A. Composed of representatives of environmental organizations, government agencies, citizen and neighborhood groups, private interests, and university representatives, the consortium provides a forum for communication, advocacy, policy, and sharing ideas and knowledge about biodiversity issues and the various activities of each organization. The specific mission of the Chicago Wilderness Consortium is to protect, restore, and manage natural lands, plants, and animals in the Chicago region. Shortly after forming the Chicago Wilderness Consortium, the idea of creating a region-wide biodiversity recovery plan emerged, in order to provide a blueprint for how the consortium would accomplish its mission. Within a few years, the group began work on the Chicago Wilderness Biodiversity Recovery Plan, and it is now among the first regional biodiversity plans in the United States. While using collaborative planning processes to solve environmental problems is not unique, the Biodiversity Recovery Plan and the process through which it was created were innovative in the U.S. for having a broad and ambitious scope, extensive use of some kinds of data and analysis (particularly on natural communities), the large number of participants in the planning process (over 200), and the dispersed organizational structure in which the consortium operates. Another innovation was adoption of the plan by three regional planning commissions in three different states. The Chicago Wilderness Biodiversity Recovery Plan was one of the first major departures from traditional (single-medium based) environmental planning by a region in the United States. These innovations warrant research and reflection, 8 years after completion of the plan, and are the focus of this article.

Keywords Biodiversity · Biodiversity planning · Chicago wilderness · Collaborative planning · Environmental planning · Ecosystem management

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Introduction

Planning for biodiversity protection is often discussed but rarely practiced in the United States.[1] Although some states, regions, and municipalities have begun to practice environmental planning with biodiversity protection in mind (Sierra Nevada Ecosystem Project 1996; Bennett 1998; Environmental Law Institute 2003a; Environmental Law Institute 2003b; Pima County, Arizona Administrators Office 2006), few have actually developed consensus on biodiversity issues or have developed comprehensive biodiversity protection plans or strategies.

In June 1994 a group of environmental advocates, government agencies, citizen and neighborhood groups, private interests, and university representatives in the Chicago Region joined together with the purpose of coordinating biodiversity protection and recovery initiatives and establishing new communication networks among members. Shortly thereafter, the consortium known as Chicago Wilderness formed, and development of the Biodiversity Recovery Plan began (Rogner 2003). The group quickly grew from 34 members in 1994, to 98 in 1999, to 196 in 1996, to 206 today (Alario 2000; Krueger 2005; Chicago Wilderness Consortium 2006b; Moskovits et al. 2004). The consortium does not operate as an organization in the traditional sense;[2] rather, it is a network of various governmental and non-governmental organizations, and operates with very few staff, which are "hosted" at various originations such as The Nature Conservancy.[3] The participation of various member organizations is a critical part of the consortiums mission.

The initial members of Chicago Wilderness consortium recognized "that community awareness and involvement is invaluable to the success of good conservation work" (Stewart 2003). Therefore, the Chicago Wilderness Consortium utilizes collaborative planning processes in nearly all of its activities, including developing the Biodiversity Recovery Plan, a strategic plan, and many of its initiatives to implement the plan (Stewart 2003). Although collaborative planning is now widely accepted and is the basis of many plans and programs, the Chicago Wilderness Biodiversity Recovery Plan provides a good example of how a large coalition of interests comes together on a very broad (and somewhat nebulous) issue such as biodiversity protection. The use of a collaborative process in not only plan making but also in implementation is somewhat of a new twist.

While planning for biodiversity protection is an emerging area of concern for planners in many countries, it remains an undefined and fuzzy concept. In normal parlance, biodiversity is often referred to as the diversity of life on earth. However, when articulating a more precise meaning of term, a number of questions arise. People often characterize it as the quantifiable numbers of species or organisms located in a specific geographic area. However, this definition ignores the genetic material that makes up those species, the communities in which they live, and the natural processes that support them. It also ignores the dynamics of natural, gradual changes in species and natural environments. While

[1] A search for biodiversity plans in the United States yields few results, examples include: Chicago Region Biodiversity Council (1999), Clark (2000), Applied Ecological Services (2004), Miller and Klemens (2004). See also Beatley (2000).

[2] According to one interviewee, "Chicago Wilderness is not a legal organization—that was on purpose—we wanted to focus on coordination." Most of the work (and funding) is done through member organizations, "the annual operating budget is approximately $1.3 million—that comes from foundation, corporate, dues, and government sources. The main sources of funding are the U.S. Forest Service and the Fish and Wildlife Service, with additional funding from corporate, foundations, donations from members, and government."

[3] Chicago Wilderness hired its first executive director in 2006, whose office is at the Nature Conservancy office in Chicago.

biologists can point to more definite terms for describing biodiversity—such as by defining the distinction between natural communities and ecosystems, planners may struggle with finding meaning for the term that can be relevant for policy and planning purposes.

Conservation biologists have developed numerous ways to categorize and define the concept of biodiversity. The common method is to create categories of different types or levels of biodiversity—such as species diversity, genetic diversity, and landscape diversity—which together make up the whole of biological diversity. The categories in these definitions range from as few as three categories to complex schemes of many categories and sub-categories (Noss and Cooperrider 1994; Takacs 1996; Perlman and Adelson 1997; Stein et al. 2000). However, how the concept of biodiversity is defined in planning practice remains unclear. For example, in the United States, biodiversity plans have been defined as primarily being concerned with watersheds (Clark 2000), habitats and species (Pima County, Arizona, Administrators Office 2006), focal species (Miller and Klemens 2004), and natural areas and greenways (Applied Ecological Services 2004). Because the idea of planning for biodiversity is a new concept in the U.S., no standard definition for it has emerged. For example, should issues related to air quality, water quality, and toxic sites be included in biodiversity plans? Should the focus of biodiversity protection be on natural communities, parks and other managed areas, or endangered species? Should biodiversity plans only protect the most sensitive elements of biodiversity, or should they also integrate elements that are not in danger? In other words, how broad of a scope do biodiversity plans in the U.S. cover?

Because planning for biodiversity protection is an emerging concept in planning practice in the United States, relatively few plans address biodiversity. However, those that do seek to address biodiversity have generally followed collaborative planning models. While numerous models of collaborative environmental planning exist (Selin and Chavez 1995; Meadowcroft 1999; Leach and Pelkey 2001; Leach et al. 2002; Moore and Koontz 2003; Bidwell and Clare 2006), the practice is generally characterized by many diverse interests working together to resolve conflicts, develop a shared vision, and create solutions to problems (Koontz 2005). In collaborative planning, technical and bureaucratic experts do not solely control the process. Instead, citizens have a role in identifying problems and information needs, judging the quality and relevance of technical inputs, and making policy and planning decisions (Korfmacher and Koontz 2003). Collaboration between citizens, technical experts, government agencies, and others offers planners a wider range of expertise and opinions (Schwartz 2006); which might prove helpful in planning for biodiversity protection because of the need to address multiple environmental media and at different scales.

The concept of collaborative planning for biodiversity protection raises several questions, such as how is the broad concept of biodiversity defined in planning practice? How does the composition of the collaborative planning team impact the resulting biodiversity plan? How have planners strategically implemented broad-based biodiversity plans? These questions are addressed in the context of the Chicago Wilderness Biodiversity Recovery Plan in the remainder of this paper.

Methodology

This research analyzes the case of the Chicago Wilderness Biodiversity Recovery Plan (Chicago Region Biodiversity Council 1999) as a collaborative process. Because of the

nature of the concept of biodiversity, I pay particular attention to how the concept of biodiversity has been defined by the plan's goals and use of data and analysis; and because of large number of participants in the planning process, I pay particular attention to how various interests were involved in planning.

Data comes from a literature review of documents related to the plan and the Chicago Wilderness consortium, an analysis of the types of data contained in the plan, and interviews with half of the members of the core planning committee.[4] The interviews were in-depth and exploratory and yielded extensive qualitative information.[5]

In order to gather data about the content of plans, I developed a database of 249 types of information commonly included in environmental plans,[6] and audited the plan against it. A second researcher performed the same procedure to check for reliability. This resulted in a listing of the types of data contained in the plan, divided into the following categories: geology, general environmental/ecosystem, species/animals/vegetation, water, natural hazards, land use/development, demographic, agriculture, open space/parks/natural areas, climate, sites/facilities/brownfields, and air quality.

In the remainder of this paper, I present the story of the Chicago Wilderness Biodiversity Recovery Plan and planning process. Next, I interpret and comment on the results of the analysis. Finally, I offer some conclusions.

[4] All of the interviews were conducted under assurance that the participants remain anonymous.

[5] While the interviews were exploratory in nature, they generally followed the following questions: (history and background questions) (1) Purpose of the Plan? (2) What was the impetus of the plan? (3) Describe how the planning process worked, generally? (professional expertise questions) (4) What were the ways in which people participated in the planning process (citizen committee, watershed committees, public hearings, city departments...)? (5) How was citizen participation used in the planning process? (6) How did citizen participation inform the development of the goals and objectives? (7) What types of professionals and experts participated in the planning process? (8) How were those individuals involved? (9) Was a type of expert or professional left out of the planning process? Why? (use of information questions) (10) What were the main types of scientific data used to create the plan and decide on the goals of the plan? (11) What were the main sources of the data used in the plan? (12) Was any new data collected for the plan, or was only currently existing data used? (13) What type(s) of analysis were used in creating the plan? (14) Were any types of scientific data not used in the planning process, that should have been? Why were they not included? (15) Who decided what types of analysis and data were included in the plan? How did they decide to use these analysis? (16) What were the constraints to using technical data in the planning process? (goals and objectives questions) (17) How were the goals of the plan developed (describe the process)? (18) If the goals of the plan were categorized into a few main groups (water, education, research, habitat, species, natural processes...), what are those groups? Was there a process for determining the groups? (19) What was the connection between the goals of the plan and the analysis? In other words, how was the analysis used to create the goals of the plan? (20) Where any important goals left out of the plan? (21) If you could choose one primary environmental focus of the plan (ecosystems, species, water, air, etc.), what is it? Second? Third? (implementation questions) (22) What agency is responsible for implementing the plan? (23)What is the professional background of the main persons responsible for implementing the plan? (24) What have been the main priorities for implementing the plan? (25) What are the major parts/initiatives that have been accomplished to implement the plan? (26) What have been the major impediments to implementation of the plan? (27) How successful or unsuccessful has implementation been? Are people still using the plan? Are they using it as expected? (28) In retrospect, how might have the plan or planning process been improved?

[6] This list was derived from glossaries from 43 environmental, natural resources, and watershed plans from throughout the U.S., a review of eleven plans from Illinois, a dictionary of natural resources management (Dunster and Dunster 1996), a literature review, and a coding scheme from a study of U.S. Federal Endangered Species Act Recovery Plans (Society for Conservation Biology, 1999). The list was reviewed by a biology professor, a planning professor, and a fisheries and wildlife professor (and subsequently revised).

The Chicago wilderness story

Background of Chicago wilderness

Chicago Wilderness is a consortium of over 200 organizations in the Chicago region. All of the member organizations have a common interest in biodiversity issues, although their precise focus varies widely—including issues such as natural communities, single species, and planning and development. The area covered by the consortiums activities was originally defined largely by county boundaries, which included the metropolitan Chicago area, parts of Northwest Indiana, and parts of Southeast Wisconsin. However, the boundaries were changed in 2007 to more closely align with natural boundaries, the expanding urban–rural interface, and the Green Infrastructure Vision mapping project, which is a strategic region-wide map that depicts where natural areas could be restored, extended, or expanded.[7] The new area is considerably larger than the original boarder, "encompass[ing] an area more than twice as large as the original. About the size of the state of Maryland, the new Chicago Wilderness extends beyond the collar counties in Illinois, stretches north to the outskirts of Milwaukee, reaches halfway across northern Indiana, and even takes in a tiny bit of southwestern Michigan" (Trigg 2007).

The original boundary of Chicago Wilderness was home to over 81,000 ha of protected land in the urban and suburban areas (Wang and Moskovits 2001). It is also home to some of the best remaining examples of globally, regionally, and locally significant natural communities, including eastern tallgrass prairie, oak savanna, open oak woodland, and prairie wetland (Wang and Moskovits 2001).

The initial idea for a consortium of environmental interests came from a staff person at a local environmental advocacy organization, who began to approach people and other organizations with the idea of forming the consortium. The initial membership of the consortium originated from those conversations, and included people and organizations involved in biodiversity or natural community conservation in the Chicago region, such as public land managers, government agencies, and nongovernmental organizations. While the initial members of the coalition were from a variety of agencies and organizations, they had a common interest in biodiversity and natural communities. The need for coordination was clear to everybody who joined, as one interviewee said, "almost immediately, the idea ran on its own merits, so nobody had to go out and sell the idea. People thought it was such a good idea that everybody wanted to join in. We got a lot of members immediately."

Chicago Wilderness was not originally formed to create a regional biodiversity plan. The initial impetus for the group was the perceived need for better coordination and communication among organizations working to protect biodiversity in the region. At an early meeting of the newly formed group, the idea of creating a region-wide biodiversity recovery plan emerged, and the plan was one of the first projects that the group decided to undertake. Initial funding for development of the plan was provided by grants from the U.S. Environmental Protection Agency, and additional funding came from the Illinois Department of Natural Resources, the U.S. Forest Service, and the U.S. Fish and Wildlife Service. Matching funds were provided by the Illinois chapter of the Natural Conservancy, the Northeastern Illinois Planning Commission, and the Brookfield Zoo.

The need for creation of a regional biodiversity plan was based on the perceived need for a broad perspective to biodiversity protection and recovery, and for better coordination

[7] The Green Infrastructure Vision, if followed, would protect and restore nearly two million acres of land (Beatley 2004, p. 122).

between various governmental and nongovernmental groups. According to one interviewee, "there was a need for a regional plan because prior to the Chicago Wilderness plan, there was never a broad perspective. Efforts to protect the environment were only focused at specific developments, with little consideration about how those efforts fit into the broader perspective of the region."

Planning process

After an initial group of about three people formed to work on the plan, they took the lead in forming several committees. The initial participants asked a few people to join in, and those people asked others. Thus, the process for enlisting participants in the planning process was informal and based on word-of-mouth and the professional knowledge of participants. The planning process consisted of a core group of about a dozen biologists and planners on the recovery plan task force (or central task force). The people on the core group were experts in their respective fields, as one interviewee said, "the biologists were really experts—well-known people."

Four teams (science, land management, education and communications, and policy and strategy) involved additional people in the planning process and provided background studies that addressed specific issues. While the role of the central committee was to oversee, coordinate, and draft the plan, the role of the four teams was to study and report on specific issues, not necessarily to determine the goals or strategies contained in the plan. As one interviewee said, "there were a number of meetings of the committees—different committees for different species and issues (reptiles, birds, invertebrates, prairie, forest...). The committees studied the status of the elements, but the goals came out of earlier committee meetings." The four teams later provided the basis for much of the work to implement the plan.

The consortium worked through a diffused organizational structure (and continues to do so). The consortium relies on its member organizations for the majority of its work, and only has a few employees, which primarily deal with administrative and organizational issues. The organizational structure of the Chicago Wilderness consortium is shown in Fig. 1.

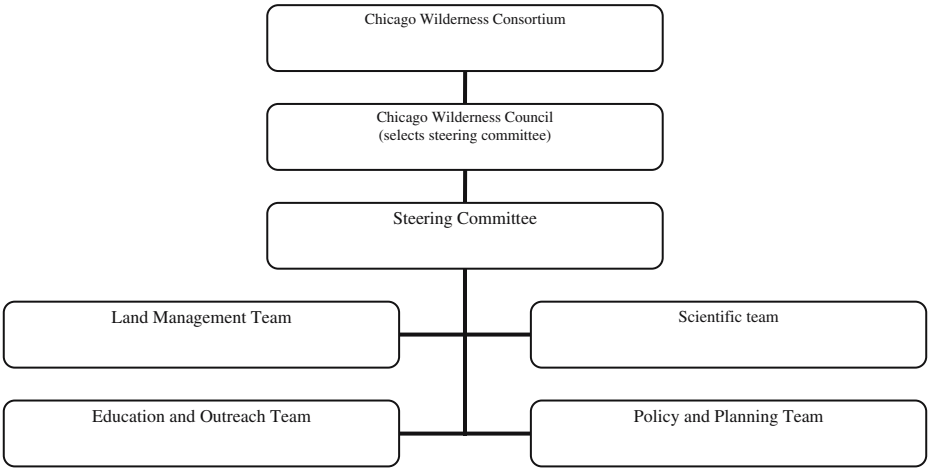

Fig. 1 Organization structure of the Chicago Wilderness consortium. Source: Alario, M. (2000) Urban and Ecological Planning in Chicago: Science, Policy, and Dissent. *Journal of Environmental Planning and Management* **43**, 489–504

The central task force was responsible for coordinating the efforts of the committees and the entire planning process. The central task force played an important role in decision-making and planning. According to one interviewee, "it was the core group that went through the process and made the decisions." Another interviewee said, "the people drafting the plan were the core drafting committee participants. After the initial plan was complete, it was sent to other members and agencies for comment and review."

The initial goals of the plan were developed prior to the analysis. As one interviewee said, "the goals focused on what was needed in each ecological problem area. The biologists knew the problems initially—they already had a sense of the problems. After they decided on the goals, they wrote the technical analysis."

Therefore, the process for the inclusion of goals in the plan involved three main steps. First, the central committee decided on initial goals for the plan. Second, the technical committees completed analyses for their respective areas. Third, after the analyses were complete, some of the goals were altered to reflect the findings. As one interviewee noted, "after the core group decided on the goals, the goals drove the analysis. But the analysis also altered the goals." Another interviewee noted that there was no need to complete an analysis of environmental issues prior to defining the goals of the plan because the core committee was composed of respected experts in their fields, and so they already knew the environmental issues in the region.

Because the central committee played a prominent role in developing the initial goals (which drove both the analysis and the final strategies), the composition of the central committee was important for the inclusion of goals in the plan. Figure 2 shows a diagram of the planning process, and indicates that all four inputs discussed here (core committee, initial goals, technical committee, and analysis) contributed to the final goals of the plan. However, the initial goals, technical committee, and the analysis were all initially drawn from the core committee.

Participation and collaboration in the planning process

Professional expertise was used in the planning process through the core planning committee, the four technical committees, and various workshops. While the main drafting of the plan was completed by experts, some degree of citizen participation was included in the planning process. Workshops were held for various sections of the plan, and citizen input was welcomed and encouraged at the workshops. However, most of the attendees at

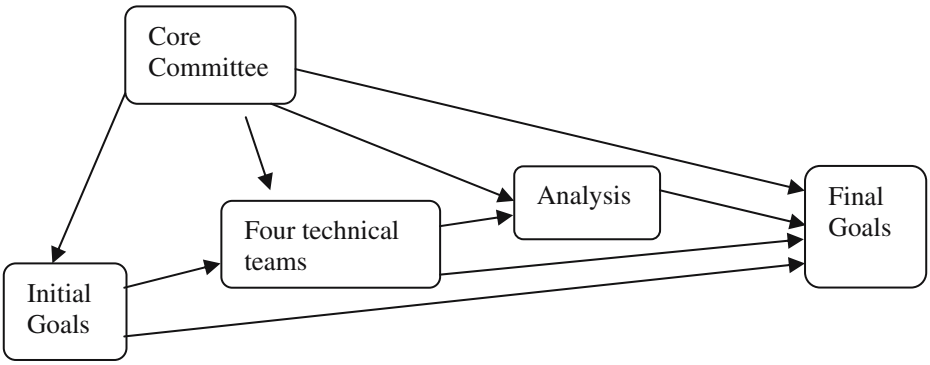

Fig. 2 Relationship between experts, analysis, and goals in the Chicago wilderness biodiversity recovery planning process

the workshops were associated with member organizations. As one interviewee put it, "It was mainly people from member organizations. [There was] no real citizen participation until the very end when NIPC [Northeastern Illinois Planning Commission] held public hearings." Thus, the plan primarily represents the goals of natural science, planning, and other experts—with little input from the public and other interests. This opened up the plan to criticisms about a lack of citizen participation in the planning process.

The plan lists people who served as editors or writers for one or more chapters or major segments of the plan, including representatives from the Nature Conservancy, Northeastern Illinois Planning Commission (a regional planning agency), U.S. Environmental Protection Agency, Brookfield Zoo, Openlands Project (an open space advocacy organization), Chicago Botanic Garden, Lake County Forest Preserve District, National Audubon Society, Dupage County Forest Preserve District, and the McHenry County Conservation District.

Data used in the plan

Data on natural communities were of the main types of information used in the technical analysis sections of the plan. Much of this data came from the Nature Conservancy. Natural areas inventory sites and natural heritage data from the Illinois Department of Natural Resources was a major type of data included in the plan. Another main type of data used in the plan was species level data from various sources.

The people participating in the planning process were a key determinant of the type of data used in the plan because they were the source of much of the data. As one interviewee noted, "we really relied on the working knowledge of all of the participants. For example, the [representatives from the] forest preserves had good working knowledge about important sites."

All of the interviewees listed some types of data that they believed was missing from the planning process. Interviewees indicated that missing data was primarily due to a lack of available data, and perhaps also due to a lack of representation by other types of expertise in the planning process. For example, one interviewee noted, "they [data] were left out unintentionally. There was good information available on a lot of species, like snails. We could not cover all of the animal groups—but we certainly covered all of the communities. Particularly the species groups that are not studied by conservationists were the ones that were left out." Another interviewee indicated that data about soils and hydrology were missing from the technical analysis, and "the relationship between people and natural systems was an important missing part of the plan." Other interviewees indicated that data for Lake Michigan was an important missing part of the plan.

Availability of data was a key determinant of the types of data included in the plan, "we had to rely a lot on expert opinion," instead of actual data, "there was not a lot of data available in a lot of areas, such as habitat quality. We relied on professional experts, but it could have been quantified [if data were available]." This again points to the importance of the composition of the planning team as not only the user and compiler of information but also as the source of it.

While the inclusion of water issues was a point of considerable discussion early in the planning process, because of the collaborative nature of the process, the final plan did eventually include hydrology issues—particularly in its coverage of wetland communities. As one interviewee noted, "in the process, streams got lobbied in. However, Lake Michigan was left out, even though there were proponents of including Lake Michigan." Some people felt that the plan originally had a bias toward terrestrial issues over aquatic issues, but the planning process helped to provide more balance, "originally there was bias built into

Chicago Wilderness for terrestrial versus aquatic communities and species. However, that got balanced out at the end. The Nature Conservancy's data about communities was terrestrial-based, so a big focus was on terrestrial communities."

The findings from the analysis of the types of data included in the plan are presented in Table 1. While any comprehensive list of different types of data would miss something, Table 1 shows the main focus of the data contained in the plan. The percentages in the third column show how much focus the plan placed on each category of data, expressed as a percentage of the number of possible types of data.[8]

Clearly, not all of the 249 types of data contained in the analysis were relevant in the Chicago region; however, the list contained many basic types of data, such as human population, soil characteristics, location of existing parks, and current land use, which are normally considered background information in any plan (see similar discussion in Korfmacher and Koontz 2003). When viewed as a general guideline for the focus of information in the plan, the data do reveal some interesting findings. For example, the plan did not include any of the air quality data contained in the analysis. However, the Chicago metropolitan area is not in attainment with U.S. Federal Clean Air Act National Ambient Air Quality Standards. Further, the plan lists several areas in which air quality impacts biodiversity.[9] Some of the interviewees noted a lack of hydrologists and water experts on the planning committee, and that lack of a stand-alone section on water issues was a point of contention throughout the planning process. The data reveals that some basic types of water data (not connected to natural communities) were not included in the plan. Conversely, the interviewees noted that experts in terrestrial biology and natural communities had a strong presence throughout the planning process; and geology, general environmental and ecosystem data—all mainly terrestrial-based information—rank among the types of data with the highest rates of use. Finally, some of the interviewees noted a lack of a human dimension in the plan and a lack of general citizen participation throughout the planning process. The data above reveal that land use, demographic, and other types of social data ranked near the bottom of the list of commonly used types of data.

This however, is not meant to be construed as criticism of the Biodiversity Recovery Plan. The plan was intended to focus on natural communities—and this data shows that it did exactly what it what it was intended to do. As the earlier discussion points out, the term biodiversity is a very broad issue, and planners can focus on any number of issues, such as

[8] Because of the wide variation of the number of possible types of data, ranging from six types of climate data to 74 types of species, animals, and plants data, it was necessary to show this data as the percentage of each category of data. For example the first column shows that the plan used 49% of all of the possible types of species, animals, and plants data included in the analysis.

[9] For example "[goal 8(a)] Enhance human health through improved air and water quality as well as protection from flooding by restoring and maintaining the ecological integrity of natural communities" (page 8), "State agencies need to craft air quality regulations that foster the expanded use of prescribed burns" (page 10), "Increasing nitrogen deposition from airborne sources is an important research issue" (page 27), "Pannes are of high biological importance because they harbor some narrowly endemic species. While the panne reptile and amphibian assemblage is presently stable, its species are of conservation concern due to their rarity. Sensitive species include Fowler's toad, northern cricket frog, and Blanding's turtle. These species are affected by human disturbance, including collection, air pollution, and invasion by alien plants, mainly purple loosestrife" (page 59), "Excess nutrients in a system are often a stress to the plants adapted to that system. Many native plants do not compete well against invasive plants at higher nutrient levels. Excess nutrients enter communities through agricultural run-off, urban and suburban run-off, and air pollution. In this region, excess nutrient loading particularly threatens the prairies, marshes, bogs, and floodplain forests. Airborne pollutants, such as nitrogen and even carbon dioxide, can also contribute to excess nutrient loading, and are potential problems in the future" (page 65).

Table 1 Data used in Chicago wilderness biodiversity recovery plan

Category of data	Number of types of data in category	Usage in plan as percentage of total data in category (%)
Geology	13	62
General environment, ecosystem	14	57
Species, animals, vegetation	74	49
Water	56	39
Natural hazards	11	36
Land use, development	27	30
Demographic	17	29
Agriculture	8	25
Open space, parks, natural areas	11	18
Climate	6	17
Brownfield sites, industrial facilities	7	0
Air quality	8	0

single species, habitat connectivity, genetic diversity, watersheds, natural processes, or natural community recovery and protection. This analysis shows that the Chicago Wilderness Biodiversity Recovery Plan focused its efforts on natural communities from the initial formation of the consortium, the composition of the planning team, the stated goals in the plan, as well as the types of data used in the planning process.

Points of conflict throughout the planning process

One problem with soliciting input from experts and various interests concerned jurisdictional boundaries. Throughout the planning process, some people viewed the plan as a Chicago initiative instead of as a regional process. As one interviewee said, "We had a hard time getting Wisconsin to participate because they had their own plan... At first we had a hard time getting Indiana to participate because they were tired of having people from Illinois telling them what to do." Related to the problem of soliciting participation from people outside Chicago was the name of the plan. As one interviewee put it, "there was a lot of difficulty pulling in people from Indiana and Wisconsin. In fact, there was a discussion that the name of the plan—Chicago Wilderness—was too focused on Chicago, and not the entire region. Much of the participation in the plan from Indiana and Wisconsin was marginal. I am not sure if they are using it."

During the planning process, there was disagreement among some of the participants in deciding which natural communities to focus protection and restoration efforts on. As one interviewee describes the discussion, "the big tension in drafting the plan was the decision whether to focus on protecting the most sensitive communities or to protect all types of communities, even if they are not in danger of being wiped off the earth. Most of the people participating knew how difficult it is to preserve habitats—so do we emphasize the most rare, or do we weave in the concept that every habitat is important? Chicago Wilderness went with protecting only the most rare communities. I believe that it should have been the other choice" (see also Alario 2000; Moskovits et al. 2004).

One problem with the goal-setting stage of the planning process occurred during the visioning process in the final set of workshops. The visioning process is a commonly used planning tool that helps set long-term goals and objectives. However, in the context of the Biodiversity Recovery Plan, the tool did not work as well as organizers had hoped. The four basic steps in the visioning process are: profiling the community, analyzing trends, creating a vision, and developing an action plan. These steps require data and analysis about existing conditions (Oregon Chapter of the American Planning Association 1993).[10] As one interviewee explained, "we tried to do some visioning in the final set of workshops. That proved to be a very difficult conversation. We did not have the knowledge or data to determine how much to protect through visioning." Related to this, interviewees noted that a lack of citizen participation throughout the planning process brought up concerns that the process was not a true collaboration—it was more of an expert (or stakeholder) collaboration.

Discussion

Collaboration and fostering broad support

The focus on natural communities helped develop a shared problem frame throughout the planning process. Having a narrower focus on natural communities (as opposed to focusing on vaguely defined biodiversity) also helped to develop the professional nature of the collaborative process—because all of the interests involved from the beginning of the inception of the coalition had interests in biodiversity and natural communities. This is perhaps an important point in planning for biodiversity protection. Because the issue of biodiversity is very broad and ill-defined, deciding on the strategic focus of efforts (in this case, natural communities) helps frame the planning process. Without a specific focus in which to frame the broad issue of biodiversity protection, planning efforts run the risk of trying to cover "everything under the sun," becoming too broad for specific implementation.

Although the planning process in the Biodiversity Recovery Plan included many different interests, the influence of biologists on the core planning committee was most dominant.[11] From its inception, Chicago Wilderness narrowed the broad concept of

[10] Even with data about environmental conditions, visioning might still have been a difficult process in the context of the Biodiversity Recovery Plan because of uncertainty of the data and differences in time frames. "It is axiomatic that conservation decisions must be made without full and complete biological knowledge. This problem is apparent with HCPs [habitat conservation plans] as well and is particularly troubling given the magnitude of policy decisions about endangered species and the speed with which they are made. A basic contradiction exists between the time frames of land users, such as developers, who want relatively quick answers, and the time frame of scientists and wildlife biologists who may need several years of study to adequately understand the biology of even a single species" (Beatley 1995: 61).

[11] Innes and Booher (Innes and Booher 1999) provide a framework for evaluating collaborative planning, based on the theory of communicative rationality as developed by Habermas and ideas about the nature of complex systems from the natural sciences. Under this framework, some of the potential outcomes of consensus building are building social, intellectual, and political capital, high quality agreements, and innovative strategies. In order to meet those evaluation standards, planning processes must meet several criteria: (1) the dialogue must include representatives of all relevant interests, (2) it is driven by a practical purpose and task shared by the group, (3) it is self organizing, (4) it is engaging to participants as they learn and interact, (5) it encourages challenges to assumptions and the status quo and fosters creativity, (6) it incorporates many kinds of high quality information, and (7) it seeks consensus only after discussions have fully explored issues and interests and significant effort has been made to find creative responses to differences.(Connick and Innes 2001; see also Booher 2004). However, as many theorists have pointed out, any real-world planning process would fail to meet all of these criteria perfectly (Alexander 2001).

biodiversity to focus on natural communities. While many people worked on the plan, the process did not include many organizations with widely dissenting views. Despite the plans' eventual adoption by three public regional planning agencies, major sectors that might have had widely dissenting viewpoints such as home builders and business interests were not well-represented in the process.[12] Conflict surrounded issues relating to natural communities—such restoration versus preservation of communities, the exclusion of Lake Michigan from the plan, and which types of communities to protect—not broader issues such as property rights, economic development, or the need to protect biodiversity in an urbanized area. In other words, throughout the planning process, all of those involved agreed on the basic idea of urban biodiversity protection, reversing the trend of habitat loss, and promoting conservation. Although the Habermasian doctrine of communicative action dictates that the process be free from power inequalities, in practice (and in this case), inequalities in power are often staged from the beginning (Foley and Lauria 2000; Abram 2000; Huxley 2000).

One of the fundamental divergent processes of collaboration is managing conflicts. According to March, "organizational structures focus conflict along some lines of cleavage rather than others" (March 1994: 119). In the context of planning for biodiversity protection, the way that the concept of biodiversity is structured focused conflicts along certain environmental issues (such as natural communities) rather than others (such as water quality, air quality, or green buildings). The Biodiversity Recovery Plan focused conflict along the lines of planning for natural communities and biodiversity issues. Because Chicago Wilderness members all have an interest in biodiversity and natural communities, conflict among widely divergent interests (outside of those broad areas) was minimized.

Recruiting people and organizations to become involved in the planning process was undertaken through a word-of-mouth process, which helped build social capital, trust, and shared viewpoints because the participants came to the planning process through their normal professional networks.[13] One of the key obstacles to effective collaboration is when conflict is rooted in basic ideological differences (Selin and Chavez 1995).[14] As some interviewees noted, the members of Chicago Wilderness have not looked past their normal professional circles in creating or implementing the plan. The deliberate decision to focus on natural communities and the subsequent choice of which experts would write the plan—particularly the members of the core planning group—had important implications for the resulting plan and the agencies and individuals that would eventually work to implement it.

As with any planning process, the focus of goals, data, and analysis in the plan focused conflict in some areas and minimized or eliminated conflict in others, which in turn drove the focus of intellectual capital. From the beginning, the plan and the coalition had a focus on natural communities. The decision to divide analysis into different natural community

[12] The business community later became more involved in Chicago Wilderness through the Chicago Wilderness Corporate Council. According to the Chicago Wilderness web site, "The Chicago Wilderness Corporate Council recognizes that the business community has a profound influence on the ecological health and biological diversity of the Chicago region through its people, land development practices, management practices, political activity and philanthropy. By joining the Corporate Council, businesses are making a commitment to improving our local environment" http://www.chicagowilderness.org/coalition/ccouncil/index.cfm (accessed April 17, 2007).

[13] According to one interviewee, "maybe in our recruitment we may have overlooked some people and overlooked the people who are not in our normal sights and circles of professionals. Maybe we should have gotten more people from universities and a larger group."

[14] Selin and Chavez list six obstacles to effective collaboration: (1) conflict is rooted in basic ideological differences, (2) one stakeholder has the power to take unilateral action, (3) constitutional issues are at stake or legal precedents are sought, (4) past interventions have been unsuccessful, (5) issues are too threatening because of historical antagonism, and (6) legitimate convener can't be found (Selin and Chavez 1995).

types resulted in conflict about issues such as communities and landscape-level natural resources protection issues, rather than about other environmental media or on finer-scale issues, as would have perhaps occurred had biodiversity been defined differently.

Campbell argues that the concept of holistic sustainability is "vulnerable to the same criticism of vague idealism made 30 years ago against comprehensive planning" (Campbell 1996). The same criticism can be said of biodiversity planning. The Chicago Wilderness Consortium avoided vagueness by explicitly focusing on natural communities.

Implementation

The collaborative nature of the planning process resulted in agreement on the nature of the problem of biodiversity loss in the Chicago region. However, agreement on the plan's strategies did not necessarily lead to each individual consortium member (or member organization) implementing the plan as written.

Many of the ideas about how to protect biodiversity focus on broad issues as well as finer-scale issues (Wilson 1988; Grumbine 1990; Noss and Cooperrider 1994; Reaka-Kudla et al. 1997; Gunningham and Young 1997; Peck 1998; Adams et al. 2002; Nagle and Ruhl 2002). While the Biodiversity Recovery Plan focuses primarily on broad issues, implementation has followed a more site-specific and localized approach. A major part of implementation has focused on specific management or restoration projects, such as restoring a stream bank or prairie at a specific site, developing educational programs for prescribed burns, and studying the relationship between fungi and prairie restoration. Likewise, much of the literature criticizing broad-based approaches to biodiversity conservation focus on its departure from specific and concrete implementation strategies (Baydack et al. 1999; Theobald et al. 2000; Rolfe 2001; Faith and Walker 2002). See Table 2 for an example of how Chicago Wilderness attained more specificity over time. The long-term objectives (in the first column) relate to proposals from the Biodiversity Recovery Plan, and the other objectives and steps were later added to strategically implement the plan.

While the issues presented in the Biodiversity Recovery Plan were perhaps too broad for strategic implementation,[15] the process eventually did lead to more strategically defined goals,[16] a common understanding of broad environmental problems in the region, and the

[15] As Kingdon notes, "There are great political stakes in problem definition. Some are helped and others are hurt, depending on how problems get defined" (Kingdon 1995: 110). As Stone says, "problem definition is never simply a matter of defining goals and measuring our distance from them. It is rather the strategic representation of situations. Problem definition is a matter of representation because every description of a situation is a portrayal from only one of many points of view. Problem definition is strategic because groups, individuals, and government agencies deliberately and consciously fashion portrayals so as to promote their favored course of action" (Stone 1988: 133). (See also (MacRae 1993; Baumgartner and Jones 1993). As Yaffe and Wondolleck note, "the way problems are defined has a huge effect on their solutions. Is the problem 'where should we site new landfills?' or 'how do we deal with municipal solid waster?' Is it 'how can we get rid of grizzly bears that prey on livestock?' or 'how can we protect livestock and enhance grizzly habitat while reducing conflict among ranchers and wildlife interests?' The first pair of questions close off debate by focusing on specific solutions; the others provide a starting point for creative problem solving" (Yaffe and Wondolleck 2000).

[16] In order to solve the problem of the Biodiversity Recovery Plan being too global and broad in scope to implement, the strategic plan was created by several members and staff. The strategic plan details very specific actions which are intended to implement the themes and long-term objectives of the Biodiversity Recovery Plan. The strategic plan includes rough dates for when the short-term objectives will be completed through statements such as "by 2006, the consortium will have an agreed to action plan for work involving Lake Michigan and the coastal zone" (Chicago Wilderness Consortium 2005b). The planning process for the strategic plan worked through a less collaborative planning process (with few people and organizations involved) than the Chicago Wilderness Biodiversity Recovery Plan.

Table 2 Excerpt from Chicago wilderness project pipeline

Long term objective	Theme	Short term objective	Lead	Step
The Chicago Wilderness consortium and its partners conserve the region's biodiversity by knowing and understanding the status and trends of biodiversity; soil, water, and air quality; and the biological, social, and economic factors that affect these resources	Share information among CW members	Within three months of information becoming available, CW members will know and understand the information and its relevance to CW's mission.	CW staff	Create an on-going communications plan to disseminate results
		By 2008, Chicago Wilderness members who want to participate will freely share data to further conservation.	Natural Resources Management Team & Science Team	
People in the region understand and value the importance of biodiversity, which is reflected in individual and institutional behaviors and decisions.	Identify and understand audiences, sectors, and issues	By mid-2006, CW members will agree to the highest priority target audiences and identify groups within those target audiences that do understand the importance of biodiversity (e.g., developers that are building conservation developments)	Education Team	Ask each team to identify their target audiences
				Get agreement among CW membership
				Compile info about each target audience including issues, challenges, and mechanisms (incorporate end users in the process)
		By 2007, CW members will agree on, develop, and/or refine messages for each high priority target audience. These will be integrated into longer-term communication efforts and education programs	Coordinating Group & Executive Council	Compile current information and share knowledge bases; identify and fill information gaps
				Develop a set of global messages and a set for each audience
				Integrate messages into appropriate communications

Source: Chicago Wilderness Consortium (2005) Chicago Wilderness Project Pipeline

social, intellectual, and political capital gained through the collaboration of many groups. The Chicago Wilderness consortium, therefore, followed a model of first defining broad regional goals (with a few specific actions) in the Biodiversity Recovery Plan, which were later used as a basis for many other documents and programs. These constitute some of the second- and third-order effects of the planning process, including:

(1) A strategic plan (Chicago Wilderness Consortium 2005b), based on the *Biodiversity Recovery Plan*, provides a strategic framework for the consortium's work for the next 10–15 years.
(2) A project pipeline spreadsheet (Chicago Wilderness Consortium 2005a), based on the *Biodiversity Recovery Plan*, provides a list of specific actions that will be and have been taken to implement that plan for the next 5 years.
(3) Various research reports such as *The State of Our Chicago Wilderness* (Chicago Wilderness Consortium 2006a), *Atlas of Biodiversity* Sullivan (n.d.), and papers published in the *Chicago Wilderness Journal*, and *Chicago Wilderness Magazine*.
(4) Various educational tools for citizens, municipalities, and children, such as *Sustainable Development Principles* (Chicago Wilderness Consortium n.d.b), *Enjoying Chicago Wilderness with your Family* (Pollock 2000), *Protecting Nature in your Community* (Northeastern Illinois Planning Commission 2000), *Conservation Design Resource Manual (*Northeastern Illinois Planning Commission and Chicago Wilderness 2003*)*, and *The Biodiversity Kit for Educators* (Chicago Wilderness Consortium n.d.a).

Despite its focus on the issue of natural communities, some people raised concerns that the plan was perhaps too broad. As one interviewee put it, "It is very broad...perhaps we should have focused the scope or prioritized, but being so broad helped establish the partnerships, so there is a trade-off." However, the broadness and comprehensiveness of the plan has been seen as an innovation by many (Beatley 2004).

The Chicago Wilderness Consortium published its first progress report in April 2006 (Chicago Wilderness 2006b). At nearly 170 pages, the report was a very comprehensive analysis of the progress being made to implement the goals of the recovery plan. In it, the health of the region's ecosystems received low grades—mostly poor and fair, based on a poor–fair–good–excellent grading system. In addition to a rating of the overall health of natural communities, the report specified indicators that demonstrate the health of natural communities and effectiveness of recent recovery efforts. The report found that "overall, the region's natural communities and animal assemblages remain in a declining or threatened state of health" (Chicago Wilderness 2006b, 10). The report indicates that exceptions to the declining state of ecosystem health can be found in sites that are actively being managed. However, most of the natural areas in the region are unmanaged or under-managed, thus offsetting positive gains from managed sites.

While Chicago Wilderness had previously published lists of site-specific, research, and other projects completed to implement the plan, the 2006 progress report focused on how those relatively smaller-scale actions fit into the broader framework of natural community protection outlined in the plan. As discussed above, the consortium has focused implementation efforts at a much smaller scale than the goals outlined in the plan; however, through the implementation report card it has also provided an indication of how the specific actions undertaken by member organizations worked together toward the regional vision for biodiversity protection. This exercise is another innovation of the Chicago Wilderness consortium.

Conclusion

The Biodiversity Recovery Plan was a significant departure from the single-media environmental planning focus in the U.S. and represents several innovations. The plan was created by a diverse consortium of interests with one common goal (protecting biodiversity, focusing on natural communities), it garnered the support and eventual adoption of government agencies, and it took a broad-based approach to planning for a large geographic area. From this analysis I offer several insights.

First, the broad nature of the concept of biodiversity required the planning team to focus on a narrower theme of natural communities—both in the use of data and the goals of the plan. The choice of specific issues to focus on was established from the initial conception of the Chicago Wilderness Consortium. Had that initial decision to focus on natural communities been different, and had, in response, the composition of the core group been different—such as by including many hydrologists, developers, or local government employees—the focus of plan would probably have been very different, although the all-encompassing nature of *biodiversity* ensures that it would still be considered a "biodiversity plan" (Takacs 1996).

Second, the broad nature of the plan (its subject, geographic area, and consortium) resulted in goals that were difficult to define strategically for implementation. When moving toward implementation, and through the strategic planning process and project pipeline, implementation became more akin to traditional, single-media based projects. However, when viewed in the whole package that constitutes the Chicago Wilderness consortium, including the magazine, journal, conferences and congresses, the strategic plan, and implementation by individual members of the consortium, those individual, often single-media-focused efforts were grounded in more holistic conceptions of biodiversity and natural community protection as specified in the plan.

Finally, the Chicago Wilderness Consortium is composed of hundreds of organizations, which are charged with implementing the plan; whereas Chicago Wilderness staff mainly deal with organizational and administrative issues. This structure differs from other environmental planning processes—even many other collaborative processes such as watershed plans.[17] The organizational structure has allowed many different organizations to define the plan for their own purposes and on their own terms, while still falling within the broad framework of biodiversity protection goals contained in the plan. While the coalition narrowed the all-encompassing concept of biodiversity down to a focus on natural communities, the plan remained broad enough to garner support from many different groups, including its eventual adoption by three regional planning agencies in three different states. Use of the concept of biodiversity allowed many individuals and organizations, who had previously not worked together or viewed their individual interests as fitting into a regional planning framework, to rally around the same cause.

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[17] While many watershed plans have a similar structure as the Biodiversity Recovery Plan (see Moore and Koontz 2003 for a discussion of watershed plans), the Biodiversity Recovery Plan differs because it relies on the efforts of many different organizations for implementation—each with their own (very different) agendas and goals.

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