

Socio-Ecosystems and Urban Habitats

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Abstract—The Millennium Ecosystem Assessment (MA)—a United Nations effort to assess the health of major global ecosystems—reported that over the past 50 years, humans have changed ecosystems more rapidly and extensively than in any comparable time in history. Around two thirds of the ecosystems services (anything from fresh water to air) are being degraded or used unsustainably. Since 1994, the Chicago Wilderness coalition—a public-private alliance of well over 120 organizations—has pursued a concerted policy to restore and manage the ecosystems that surround Chicago (the third largest city in the United States) in an effort to contain the impact that urban pressures may have on their health. With time, this ecological restoration project proved to be both an institutional learning and adaptation management process for protecting socio-ecosystems.

Introduction

Urban systems and ecosystems are perceived and studied as worlds apart. The slow but steady realization of restoring and managing socio-ecosystems increasingly renders the separation of these types of systems unworkable from both analytic and practical points of view. The ecological restoration project in the greater Chicago metropolitan area has been an instructive player in what, from the sociological perspective, represents an institutional learning and policy adapting process. This research (1) studies socio-ecosystems and the process of their ecological restoration in Chicago, (2) traces the institutional learning process of the Chicago Wilderness Coalition throughout its ecological restoration efforts, and (3) examines the precedents of the Chicago Wilderness Coalition and the lessons learned that may apply to similar socio-ecosystem restoration efforts.

Why and What Socio-Ecosystems?

Ecological restoration consists of rebuilding threatened ecosystems where they have deteriorated or already ceased to exist. It involves recovering the basic structure and essential functions of a given ecosystem disturbed or altered by invading forces. It is furthermore conceived as a science-based

approach to environmental management, which includes removal of invasive plants, reintroduction of native flora, controlled fires, brush cutting, and many other tactics. As environmental social scientists can attest, however, this description has more to do with fiction than with science. The reality for ecological systems is that the “big structures” and “large” historical processes have introduced socio-ecological dynamics ignored by this ecological approach. Urbanization, industrialization, and nation-state formation (Tilly 1984) as well as economic, technological, and scientific developments have left “no ecosystem behind.” These large social structural changes of the nineteenth to the early twentieth century are also a good starting point to trace the transformation of today’s social ecological systems or socio-ecosystems (Cronon 1991). More to the point, as the Chicago Wilderness experience shows, these natural ecosystems have become socio-ecosystems in yet another sense; they are fields of socio-political and scientific agreement, negotiation, contestation, dissent, and conflict. All indicators point to the fact that Chicago’s ecological restorationists came well equipped to manage natural ecosystems only to be surprised by the realities of socio-ecosystems. They soon learned that notwithstanding the sound scientific and managerial parameters of ecological restoration, socio-ecosystems demanded yet another ingredient: scientific analysis had to be coupled with public input and deliberation. With time, the restoration project in Chicago has constituted itself into a telling story of institutional learning and adaptive management processes whose lessons may be of value to other socio-ecosystem restoration projects. This is good news, and constitutes the environmental sociological parameters of this case study.

Ecological restoration efforts, as well as their threatening disturbance by modernization processes, have a long history in Chicago. Yet the empirical reference of this analysis dates back to the formation of what is known as the Chicago Wilderness Coalition in 1994, a public/private coalition that introduced a coordinated and systematic effort to the projects throughout the Forest Preserves of six counties in Chicago’s greater metropolitan area. They targeted the vast system of forest preserves set up decades before that had been conceived as urban/wilderness geographic overlaps. This is one of the great legacies of the Progressive Era and a gift to this city. Already in the early 1900s, 98,000 acres (39,695 ha) had become legally protected, a number that has grown to this date to 200,000 acres (80,937 ha) of forested land. It is important to stress the fact that these preserves were not conceived as city parks, but as wild land preserves with a conservation mission. The idea was certainly ahead of its time. Only in the 1990s did a coalition of initially 34 public and private organizations begin thinking specifically about what was to be conserved, and planned restoration projects accordingly (Barnes 1996). By then, most native fauna and flora had succumbed, due to surrounding urbanization and

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to ecological succession involving mass invasions of species such as European buckthorn and garlic mustard. There was forest, but it did not much resemble the pre-settlement habitat.

The ecosystem restoration program led by the Chicago Wilderness Coalition rapidly grew into more than 50 project sites and well over 100 organizations. The coalition initially included the Illinois Department of Natural Resources, the Field Museum, Brookfield Zoo, the Nature Conservancy, Sierra Club, and the U.S. Fish and Wildlife Service, to mention only a few. Under programs such as the North Branch Prairie Project and the Volunteer Stewardship Network, sites have been restored to prairie and savanna to re-create the natural conditions of pre-settlement times, prior to 1830. The goals of the project are various: (1) to document the natural biodiversity of the region, (2) to manage and even stop continued loss of critical habitats, (3) to restore natural communities on public and private lands, (4) to educate the public about the globally rare natural resources of the region, and (5) to promote conservation for future generations in this urban area (Alario 2000a,b; Mendelson and others 1993). Yet, restoring the original ecological integrity of natural units is not a goal that seems to be accepted at face value. There were, after all, other alternatives, including maintaining the viability of those existing ecosystems. By 1996, ecosystem restoration sites had become sites of contention, which led to an imposed moratorium in various counties including Cook County where Chicago is located (see A Chronology of Significant Events). The working concept of ecosystems applied by restorationists—a unit that identifies the interaction between biotic and non-biotic communities—had fallen short in classifying all the structural units of the socio-ecosystem community, including some key social actors and dynamics of social systems.

Socio-Ecosystems: Coupling Institutional Learning and Adaptive Management

Despite the good intentions of all involved in the Chicago Wilderness Coalition early on, the restoration project was mired by disagreements and dissent. My contention is that experts and volunteers were well prepared to restore ecosystems, but were taken by surprise by the dynamics of socio-ecosystems. It seems that working on socio-ecosystems is as much about technical intervention as it is a learning process of negotiation, deliberation, and even managerial adaptation to the “up to the minute” input. We are well advised to learn from the Chicago experience.

In the fall of 1996, after nearby residents threatened court action, all restoration activities in Cook County were halted by the Chicago City Council. Some groups, including environmentalists, were widely known to oppose restoration projects because of the extent of woodland and tree eradication that was necessary to bring back native prairie. Some who lived near restoration sites were troubled by the amount of herbicides volunteers needed to apply in order to eradicate nonnative plants. Animal advocates worried about the destruction of habitats of currently existing fauna. And finally, others opposed restoration on ecological and aesthetic

grounds because restoration would threaten the integrity of existing forests. They also feared the uncertainties with the outcome of restoration projects. After all, restoration benefits are in the future and forest depletion is immediate. Both sides represented credible ecological positions and appealed to similar feelings. Both expressed a protective attitude and a high esteem for nature. Both were concerned about sustainability, though perhaps with somewhat different understandings of what is to be sustained (Alario 2000a; Alario and Brün 2001; Freudenburg and Alario 1999).

In brief, the restoration of socio-ecosystems can be counted as the single most important lesson in the institutional learning and adaptive management processes that ensued with the growth and development of the Chicago Wilderness Coalition.

The lessons from this case study became important not just in principle, but also in practice. Indeed, the following moves of the Chicago restorationists have become a much slower program of restoration, with projects under enhanced local control. This may be exasperating for some, yet the main point stands; the institutional learning and adaptive management process about the structural components and dynamics of socio-ecosystems have left more room for decisions to change over time, even differ by locality, but proceed after the whole project was threatened with paralysis. And as the popular saying goes, “the proof is in the pudding.” After years of socio-ecological work, people can see and stroll through the restored sites enhanced by both ecological and aesthetic values. Perhaps this experience can be reproduced and perhaps this is a model that can be applied to other socio-ecosystem restoration projects. Admittedly, this is a guess that has to be tested against the realities of each project. In any case, there is room for more research to prove the extent of its applicability.

A Chronology of Significant Events

Phase I:

- 1962–1970: Individuals begin independent work on restoration.
- Mid-1970s: Restoration activities are loosely organized.
- 1983: Illinois Chapter of the Nature Conservancy establishes a Volunteer Stewardship Network (VSN).
- 1985: Minor controversy arises regarding deer culling on Forest Preserve lands. Restoration continues.
- 1993: (1) Meeting of Illinois Biodiversity Leaders; (2) Forest Preserve District of Cook County receives \$1.8 millions from the USDA Forest Service; (3) FPD of DuPage institutes a Natural Areas Management Plan. Initial budget is 11.6 million; and (4) 19,165 acre Mid-ewan National Tallgrass Prairie is created at former Joliet Arsenal site.
- 1994: Formation the Chicago Wilderness project with 34 public-private groups.
- 1995: VSN assumes coordination role of 5,000 volunteers.

Phase II:

- 1996: (1) Public announcement of Chicago Wilderness partnership (\$1.3 million, FY 1997); (2) Cook County Board President imposes moratorium on restoration

projects in all Forest Preserve Districts; (3) FPD of DuPage County introduces moratorium on tree cutting; and (4) First public hearing on Cook counties restoration held in Chicago.

- 1997: (1) Moratorium partially lifted. Volunteers resumed work under supervision of District personnel; (2) Restoration resumes in all sites, following County Board approved Land Management Plan.
- 1998: Debate over restoration guidelines is re-ignited.

Phase III:

- 1999: Northeast Illinois Planning Commission, the planning agency for the six-county metropolitan area, becomes the first metropolitan agency in the nation to do so, adopts a Biodiversity Recovery Plan, as recommended by the CWC.
- 2000–2005: CWC constitutes itself as a major environmental player in the region, made up of about 170 public/private organizations. Restoration activities continue.

Discussion and Conclusion

In problem solving as in conflict resolution, finding a solution or decision may be the ultimate goal, but many steps precede it, and these steps could often be characterized as experimental. The idea is not new. In the 1920s, John Dewey argued for the necessity of adopting a social experimental method in matters that concern public policy, which we are wise to apply to the restoration of socio-ecosystems. He insisted that, “policies and proposals for social action be treated as working hypotheses, not as programs to be rigidly adhered to and executed” (Dewey 1927). The key to successful social experimental design is to have a clear conception of desired consequences and of available resources. Given all prior knowledge, however, Dewey concluded that policies must be flexible and responsive to observed consequences. In spite of differences in protocol between scientific experiment and public policymaking, there are two shared features: outcomes are unsure, and both are learning processes that inform us for the next set of experiments or policies (Dewey 1927). With regard to policymaking, Kai Lee (1993) has insightfully argued that to the extent to which Dewey was right on target, it is important to ensure the participation of both concerned citizens and citizens with expertise in the formulation of policies. Dewey’s observations seem to match the policy transformation undergone by the Chicago Wilderness Coalition many decades later.

Although there is a considerable time gap between Dewey’s time and ours, combining his insights and our observations may prove relevant if we wish for some form of institutional learning and adaptive management. Chicago restorationists entered the scene with the best intentions: (1) to set controlled fires and rescue the forest preserves, (2) to restore ecosystems, and more ambitiously, (3) to create a biodiversity inventory of the region and to sensitize and educate the public about this natural wealth. These are all laudable goals, no doubt, so again, what happened? Against this background, an obvious place to start is to emphasize the analytic inaccuracy and practical mistakes that are carried out by planning to manage, not socio-ecosystems, but “natural” ecosystems. This oversight is unfortunate. We cannot wish away the determining factor of social actors or the impact of social systems dynamics any more than we can wish away the laws of gravity. Any institutional learning in this regard is good news. As in the case of today’s discussion, whether for purposes of restoring or managing, any continued effort to ignore the complexities of socio-ecosystems we do at our peril and the peril of those social and ecological communities that cannot represent themselves.

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