

## Comanagement of wildlife corridors: the case for citizen participation in the Algonquin to Adirondack proposal

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### Abstract

The debate between top-down and bottom-up planning has recently re-emerged in environmental management. Many commentators agree on the merits of comanagement, in which affected citizens and professional managers share responsibility for planning. Nevertheless, the manifold advantages of comanagement have not always been fully appreciated in environmental planning. For example, a group representing NGOs and academic institutions recently proposed an ecological corridor linking Algonquin Provincial Park in southern Ontario to the Adirondack Park in northern New York. This corridor, known as A2A, was designed to encourage the migration of wolves and other wildlife between the parks. Much of the land in A2A is private property. A survey of households, randomly scattered throughout the United States portion of the corridor, revealed that affected landowners had little knowledge of the proposal and no contact with its advocates. Many respondents were farmers who utilized land for livelihood. Other landowners enjoyed property for a variety of recreational purposes. Regardless of use, survey participants placed high value on the importance of conserving biological diversity. They also expressed great distrust toward restrictions that might be placed on their activities. In general, respondents felt very unsure about A2A, and they were uncertain about personal involvement in the planning process. Certain landowners indicated a willingness to have their land be included in an ecological corridor, despite not knowing about it before the survey was administered. These results suggest that A2A proponents have little to lose and much to gain by disseminating information locally and by embracing comanagement for further formulation of this plan.

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Citizen participation has been a contentious issue in the field of planning since the 1950s, when planners adopted a technical approach that attempted to make comprehensive decisions about complex issues. This approach is often referred to as the comprehensive and/or rational model. Expert planners gather relevant scientific information in order to evaluate problems, formulate goals, articulate quantitative objectives, and weigh alternatives to determine one that works best (Altshuler, 1965; Margerum, 1997). In effect, planning is performed by a small but specialized sector of society for the benefit of the greater good.

The theory behind rational-comprehensive planning was that it utilized centralized decision-making and technology, thereby preventing human greed and a subsequent unequal

distribution of resources (Gorz, 1980). In relation to environmental management, it was argued that an authoritarian body was necessary to provide a structure which would inhibit the exploitation of natural resources, at one time called the 'tragedy of the commons' (Hardin, 1968; Ophuls, 1977). Professional planners would be able to anticipate future issues, and they could look at the broad picture, not just immediate concerns. In this way, planners would save time, energy, and resources by anticipating some problems before they arise (Wang et al., 2000).

Since the late 1960s, however, the rational model has been under substantial criticism for various reasons. Its emphasis on a centralized authority has a tendency to cause discontent and impedes necessary cooperation between citizens and planning authorities (Arnstein, 1969). A shortage of communication also leads to conflicts between the community and managers (Trakolis, 2001). Without knowledge of what the public thinks, planners might not be

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aware of citizen support or opposition. Also, planners are rarely the persons to experience the effects of a problem directly, so their understanding is necessarily limited to what they can measure. Finally, as practiced, most planning is not totally and completely centralized. Managers dealing with any particular problem do not know how all stakeholders will perceive and perform their roles. Therefore, plans might not be realistic enough for implementation (Wang et al., 2000; Burby, 2003).

In response to these shortcomings, alternative planning models were developed, including Lindbloom's incrementalism, Etzioni's mixed scanning, Friedman's transactive planning, Dorcey's conception of planning as bargaining, and Forester's approach of communicative rationality (Lane, 2001). Although these alternative models took somewhat different approaches, they shared mutual themes regarding substantial stakeholder participation, decentralization, and the development of shared solutions. For instance, incrementalism forms policies in small, remedial stages by special interests, each of which changes existing policy to satisfy its own needs. Stability is one of the fundamental principles associated with incrementalism (Lindbloom, 1959; Johnson, 1978).

A common basis of these new models was the realization that planning is political as well as technical. These models focused on the creation of avenues for citizen participation in planning. Incorporating the concerns of stakeholders was thought to enhance planning both by softening public opposition and by bringing useful knowledge into the decision-making process. In a recent review of the literature, these models have been collectively referred to as cooperative management or comanagement (Lane, 2001), or what is termed more popularly, 'bottom-up' planning. Although comanagement is not purely bottom-up, and stakeholders are not necessarily the same as resident citizens, the variations of this style of planning are sufficiently different from the rational-comprehensive model that they can be treated together as one group.

Bottom-up planning incorporates more democratic ideology than 'top-down' planning, because the public is considered instrumental to the process. Residents of an affected area, for example, possess knowledge about local conditions and understand cultural values in ways that professional planners lack. As local knowledge is incorporated into and reflected by plans, the quality of these plans increases. Conversely, community participation creates more responsible citizens and makes the decision-making process more credible. Public support greatly increases the chances that plans will be implemented, since involving the public early in the decision-making process prevents ignorance-caused conflicts. More generally, it has been argued that stakeholder participation is necessary in order to achieve sustainable development (Lahdelma et al., 2000; Chenoweth et al., 2002; Burby, 2003).

The experience of creating Yellowstone National Park in 1872 might be considered analogous to rational

comprehensive planning. This park was established to protect waterfalls, hot springs, geysers, and other curiosities from private ownership, and to promote tourism by railroads (Nash, 2001). While some early conservationists were concerned about European descendents who settled on the edges of the park (Roosevelt, 1905), recent commentators have argued that the park was established with little consideration of indigenous peoples (Keller and Turek, 1998). Likewise, the creation of the Adirondack Park overlooked residents of the region, both in the late 1800s, when the park was initially established, and in the 1970s, when private lands remaining in the park were subject to stringent land-use controls (Jacoby, 2001; Harris and Jarvis, 2004).

In contrast, comanagement seeks to incorporate both the need for environmental protection and indigenous rights. Proposals to incorporate the perspectives of indigenous populations when creating national parks were advanced as early as the 1970s (Dasmann, 1975). A focus on active citizen participation integrates conservation with the social and economic concerns of a region. Trakolis (2001), for example, found that residents of Vikos-Aoos National Park in Greece preferred being part of the decision-making process within the park. This approach increases the capacity of managers to understand if plans are publicly acceptable and to implement techniques that simultaneously achieve conservation and socio-economic goals.

Which approach is more effective for the creation of ecological reserves: the rational comprehensive model, or an approach that is more decentralized and participation-based? Conservation biologists concerned about biodiversity have, in recent years, advocated a strategy that establishes minimum viable populations for rare species and then curtails human activity within a defined geographical area, in order to maintain these populations (Sarkar, 2001). A recent anthology includes several chapters that document how top-down approaches to implement this strategy have been unacceptable to many people who live in developing countries. Drawing upon examples from India, Nepal, Africa, and Brazil, contributors to this anthology advocate an integration of concern for biodiversity with sustainable living by indigenous people. In their opinion, minimum viable populations can persist without creating reserves that exclude people (Diegues, 2001; Parajuli, 2001; Sarkar, 2001; Weston, 2001).

The remainder of this paper proceeds from the assumption that planning for ecological preservation will be more successful, in the long run, if it accommodates citizen concerns and relies on voluntary cooperation rather than focusing on enforced protection of biological habitat. Although this assumption will not be shared by many conservation biologists concerned about the magnitude of the biodiversity crisis, this article postulates that environmental managers must establish good relations with local residents in order to insure the acceptance of parks and other areas of environmental protection. Landscape-scale strategies encompass large parcels of land; the cooperation of

many private landowners may be needed. This article examines whether residents of a proposed reserve have been consulted as planning to establish it has proceeded. The plan is for a large ecological corridor to connect two major parks in eastern North America.

### **1. Conservation strategy: environmental planning of a core/corridor system**

Habitat loss and habitat fragmentation are among the most important threats to biological diversity, and a growing concern for the protection of diversity has given rise to consideration of the most effective means for maintaining and improving biological habitat. Habitat fragmentation has been increasing as urban settlements enlarge, encroaching on natural lands that once surrounded them. In many areas of the world, only islands of nature remain in a sea of human development (Dobson et al., 1999). Fragmentation has led to the development of a patchwork of natural and human landscapes.

A finite number of large natural areas remain, and conservation biologists believe that these core areas, where human influence is limited and populations of other species are allowed to unfold on their own, are essential to any land management strategy. Core areas maintain the natural qualities of a landscape and/or provide locations for the restoration of habitat that has been previously damaged by human activities. Conservation of biodiversity, ecological integrity, and subjective wilderness values are all priorities in core areas. Core areas also allow biological and other scientific research on land subjected to the least amount of anthropogenic disturbances (Noss et al., 1999).

If large enough, the interior reaches of most core areas provide enough distance from obtrusive human access for species that are extremely sensitive to human activity; however, the outer periphery of some cores also serve as a place where humans can experience nature in a relatively non-degraded state, usually as low-impact recreationists (Grumbine, 1992). Often, these buffer areas prevent the invasion of non-native species.

Unfortunately, core areas have become fragmented, and animals have become geographically isolated, unable to move from one area to another, which leads to an increase in inbreeding and a decline in genetic diversity. One way to decrease the effects of this fragmentation is to create inter-connectivity zones, or wildlife corridors, which link one core area to another. A corridor is defined as a pathway of movement and exchange (Dobson et al., 1999). Corridors provide a safe zone for wildlife to migrate seasonally and/or travel daily. For example, corridors can allow wildlife to move from their birthing grounds to their adult home range. In addition, with climate change due to global warming now underway, corridors may be able to provide pathways for long-term migration of flora and fauna. Finally, corridors can permit the dispersal of genes, thereby reducing inbred populations (Noss, 1992; Dobson et al., 1999).

For a wildlife corridor to be effective, the land must be of sufficient quality and isolation to allow for regular movement of animals without bringing them into threatening situations. For example, corridors should contain few roads to help minimize mortality caused by vehicles. In addition, sufficient food, water, and cover should be available. Because some species have heightened sensitivity to humans, and because travel requirements vary from species to species, the size of the corridor must be determined by taking into account the specific species intended for its use. While site planning for suburban subdivisions envision wildlife corridors of a few hundred feet (e.g. Arendt, 1998), zones that connect significant cores need to be many miles wide, particularly for large carnivores requiring habitat patches, called 'stepping stones,' within corridors longer than normal dispersal distances (Noss et al., 1997).

The idea for a total ecological reserve system, including both cores and corridors, was developed primarily by Reed Noss, who proposed a connected network of reserves across southern Ohio in the early 1980s (Noss, 1983). Along with Larry Harris, Noss went on to define the elements for a statewide reserve system in Florida, which has helped guide state acquisition of land under its Conservation and Recreation Lands program (Noss and Harris, 1986). Other examples of a total ecological reserve system include the Yellowstone to Yukon conservation corridor and the Green Infrastructure Strategy in Maryland (Trombulak, 2001). No comprehensive ecological reserve system has yet been developed in northeastern North America, although a biological corridor has been proposed to connect the Adirondack Park in upstate New York to the Algonquin Provincial Park in Ontario, Canada. This proposed corridor, and the effectiveness of comanagement to implement it, are the focus of the research reported below.

### **2. Case study: Algonquin to Adirondack wildlife corridor**

The Adirondack Park and the Algonquin Provincial Park are two of the largest core areas in eastern North America. Both parks are home to a myriad of species (Medeiros, 1992); nevertheless, for these species to prosper, they should have the opportunity to range outside the boundaries of their respective parks. Connecting the two parks with a wildlife corridor would create an ecological reserve system that will increase both habitat available for animals and biodiversity within each park. Such a corridor has been dubbed the Frontenac Link or Adirondack to Algonquin wildlife corridor (A2A). A specific, detailed plan of implementation has not yet been fully developed; however, this ecological reserve would consist of two buffered cores linked by a wildlife corridor created from land that is already owned by various government agencies, as well as from private property.

A2A was initially envisioned in the early 1990s by the Wildlands Project in Vermont. The corridor was originally proposed to facilitate the specific migration of wolves from Algonquin Park, where they are common, to the Adirondack Park, where they might also flourish given the opportunity (Trombulak, 2001). A corridor designed to meet requirements for movement of the wolf was also thought to be very likely suitable for migration of many other species, including lynx and moose, as well as smaller mammals, birds, and invertebrates (Wydeven et al., 1998). A2A has already received support and resources in Ontario through the Canadian Parks and Wilderness Society (CPAWS), Ottawa Valley chapter (Langlois, 2003).

A strip of land was carefully identified as a priority conservation corridor because it contained the most favorable conditions for possible movement of large carnivores choosing to roam. Several characteristics that migrating wolves prefer, including low human population density, low road and traffic density, adequate food resources, and proximity to water, were compiled into Geographic Information Systems (GIS) maps. These maps, adjusted to depict satisfying levels of the aforementioned criteria, were used in a path analysis to delineate a corridor most suitable for wolf migration (Quinby et al., 1999, 2000). The amount of land in the designated corridor was thought to be sufficient to provide a complete link without creating bottlenecks that would hinder migration. The biggest obstacle, in terms of ecological conditions, is the St Lawrence River, a wide waterway that remains unfrozen during the winter.

If A2A is to be successful, many parcels of private land from a variety of landowners on both the Canadian and United States sides of the St Lawrence River must somehow be restricted from incompatible development. Possible approaches include acquisition of fee, acquisition of less-than-fee (e.g. conservation easements), deed restrictions or covenants, lease arrangements, donations, and non-prescriptive voluntary measures. All of these mechanisms presume some willingness on the part of designated property owners. Expropriation by eminent domain has not been discussed. The support and involvement of private landowners is therefore critical, indeed a requirement, to make A2A a reality; without landowner participation, the amount of land necessary to provide an adequate corridor will be difficult to procure.

The purposes of the present study were threefold. First, the research determined knowledge and opinion of resident landowners in the United States portion of A2A. Second, the study ascertained the willingness of these landowners to participate in the implementation of the proposed plan by having their property become part of A2A. Finally, the study contributes to the on-going discussion on the relative merits of a 'bottom-up' style of planning. Cooperation between planners and landowners is vital for creating a wildlife corridor in this region. Our hypothesis was that A2A had been developed to date with little input from local residents.

### 3. Methods

The research was conducted using a structured questionnaire that was individually administered during personal interviews. The four-page survey consisted of both forced-choice and open-ended questions addressing such topics as current knowledge of the A2A proposal, current use of land, preferred level of involvement in A2A planning, attitudes towards protection of ecological and cultural areas, and personal willingness to become involved with A2A. Landowners who lived within the proposed A2A area were determined using the GIS maps developed by the Wildlands Project (Quinby et al., 1999). The area included parts of the towns of Hammond, Fowler, Pitcarin, Alexandria Bay, Theresa, Rossie, and Antwerp, all located in the St Lawrence River Valley of northern New York. These towns are comprised of active and abandoned agricultural lands, wetlands, and forest. The area is sparsely populated, although small clusters of people live in hamlets throughout. Fort Drum, a military base own by the US Department of Army, was excluded from the survey, because it is uninhabited.

Homes within the corridor were visited to administer the survey. One member from each selected household was asked to fill out the questionnaire, provided the person was a landowner above the age of 18. Non-land owners, such as renters, were advised that they could not participate in the research. As the questionnaire was filled out, any comments made by the respondent were also recorded.

Of the households visited, 47 (65%) completed the survey, representing 4045 ha (9995 acres), or 8.5%, of the 47,400 ha (117,120 acres) of land within the proposed A2A corridor on the United States side of the St Lawrence River. Though the sample size is small, the amount of representation compares favorably with other recent research, such as Paudel and Thrapa (2001), in which 2.8% of households, representing 1% of the total land area, were surveyed in a study of farming practices in Nepal. Moreover, it is important to keep in mind that the A2A proposal is still in an early stage of development. A public opinion survey at this point in time can help to define and direct the planning effort. Consistent with the theory of comanagement, the rudimentary questionnaire was designed to provide information so necessary adjustments in policy could be made. While not intended to be comprehensive in scope, the survey was nonetheless detailed enough to provide useful feedback at this stage in the planning process.

Households were visited at various times during November of 2002, including mornings, afternoons, and evenings on both weekdays and weekends. It is important to emphasize that households were not randomly selected. High-density areas, such as town centers and villages, were avoided. Also, houses on small lots were not approached. Finally, non-resident landowners were not sampled; according to property tax records for this area, roughly half of the parcels are listed with non-residents. On the other hand,

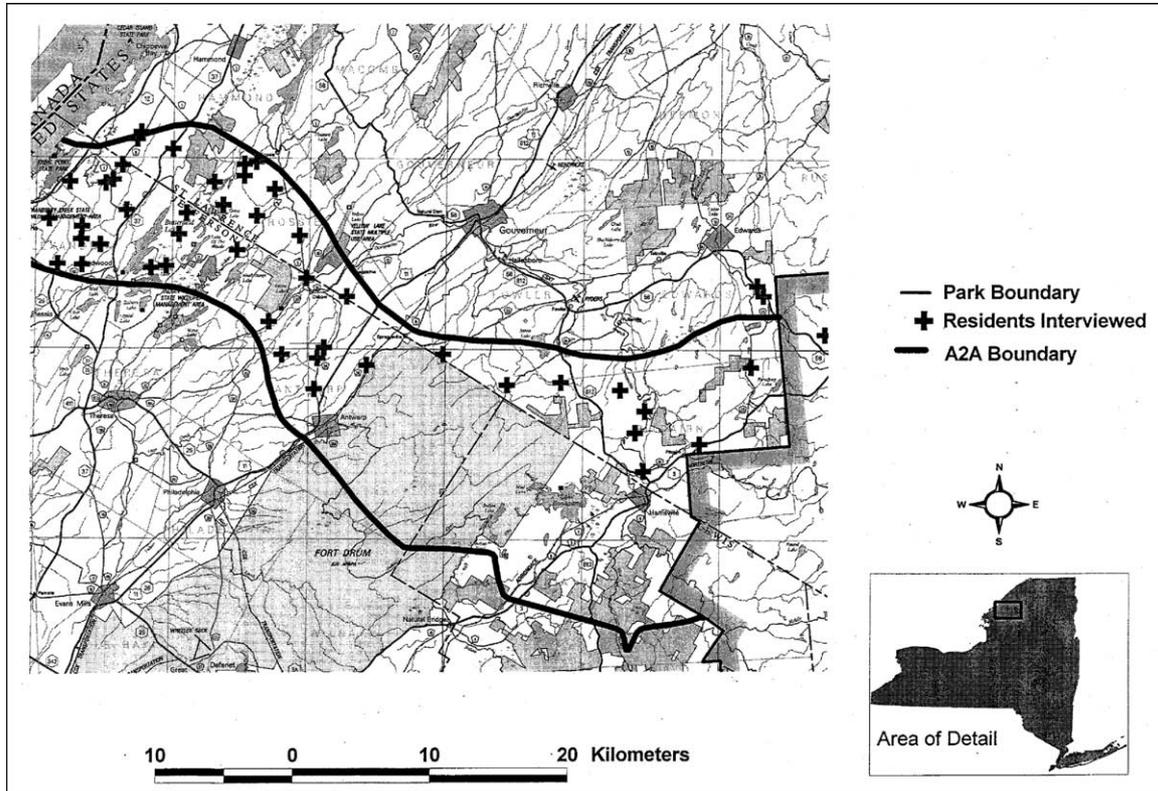


Fig. 1. Map of A2A corridor showing households participating in the survey.

residences surrounded by a large amount of property were targeted in an effort to interview people who would have the most land affected by the A2A proposal. In addition, some effort was made to achieve a uniform distribution across the sampling area (Fig. 1). No households are located in the southeastern portion of Fig. 1, since Fort Drum is there, as well as a large amount of public land owned by the State of New York. Overall, about 35% of the land is under the jurisdiction of various governmental agencies.

Once the information was collected, the results were tabulated and graphed using Microsoft Excel. For the purpose of analysis, respondents were subdivided into two categories based on the amount of land they owned: small landowners, owning 40.47 ha (100 acres) or less, and large landowners, with more than 40.47 ha (100 acres). It was hypothesized that the greatest difference of opinion would be between smaller landowners, who probably do not use their land for their livelihood, and larger landowners, who more likely farmed or utilized their land in other ways as a source of income. Note that three respondents did not indicate size of land holding.

#### 4. Results and discussion

Although the area is rural, the land is not unused; on the contrary, it is enjoyed and utilized by its residents in multiple ways. When landowners were asked which

activities they undertook on their property, 92% indicated using their land for some form of recreational or economic benefit. Hunting (64%) accounted for the most prevalent activity (Table 1). Fifty-eight percent of the large landowners and 70% of the small landowners hunt on their land. Seventy-one percent of the large landowners also farm their property. Dairy farming is the primary agricultural activity, although some land is also utilized for the production of hay, timber, pulp, and maple syrup. Other land uses include several other forms of active and passive recreation, specifically, snowmobiling (39%), bird watching (30%), hiking (30%), and fishing (18%). With the exception of farming, large and small landowners did not appear to differ in relation to any of these land uses.

Since farming and hunting are the most prevalent activities, careful consideration should be given to how these activities would be affected if the area becomes a wildlife corridor. Agriculture should be of specific concern because it is the livelihood of many residents. Although restrictions on farming activities have not been proposed, anything that might be interpreted as impeding agriculture, either directly or indirectly, would need to be broached sensitively.

Hunting might actually improve with the creation of a wildlife corridor, because it would lead to an increase in the quantity and variety of wildlife traveling through the area. Residents should be able to continue to enjoy this particular use of their land. Likewise, bird watching is apt to be

Table 1  
Land uses of property owners in the A2A corridor

	Small property owners n=20 40.47 ha (100 acres) or less		Large property owners n=24 over 40.47 ha (100 acres)		All property owners n=47	
	%	#	%	#	%	#
Hunting	70	14	58	14	64	29
Farming	20	4	71	17	43	22
Snowmobiling	45	9	33	8	39	17
Bird-watching	25	5	33	8	30	13
Hiking	25	5	33	8	30	13
Fishing	20	4	17	4	18	8
Other	0	0	21	5	11	5

enhanced by opportunities to pursue a greater diversity of species. While bird watching and hunting would benefit from the A2A, snowmobilers and hikers are unlikely to be unaffected one way or another, unless specific restrictions were placed on their activities.

Since the goal of any ecological corridor is the protection of nature, landowners were asked how they felt about habitat protection in a general way. What was their opinion about the preservation of biological habitat in comparison, for example, to cultural and historical preservation? Support for all these activities was strong, as over 80% of respondents declared that protection of both biological habitat and cultural/historical settings was important. Support for biological habitat (80.8%) was essentially the same as for cultural/historical settings (80.4%). The raw data are depicted in Fig. 2, which illustrates the likert scaling for forced-choice questions utilized in the questionnaire.

Because the area is economically depressed, the prospect that A2A could have some economic benefit

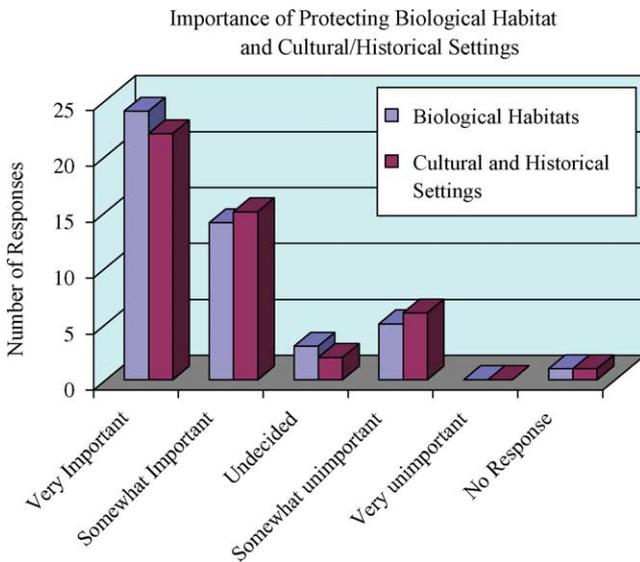
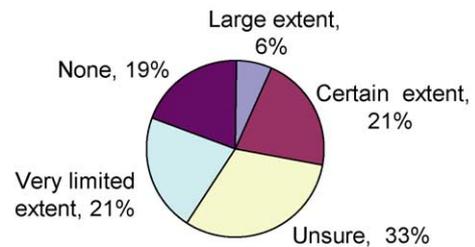


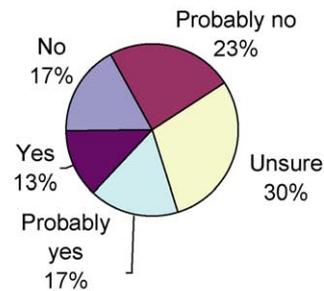
Fig. 2. Responses regarding the importance of protecting biological habitats and cultural /historical settings.

through ecotourism was considered. This notion has been advanced by A2A proponents interviewed in the *Adirondack Explorer*, a monthly newspaper that reports on issues in the Adirondack region (Kanze, 2002). Would the designation of A2A improve the local economy by attracting to the area visitors who want to view wildlife in a natural setting? Many residents were unsure that any economic benefit would be derived from A2A (Fig. 3). Often tourism was not looked upon in a favorable light. One resident, for example, responded negatively by saying, ‘that is the real problem, its mostly outsiders coming in.’ Another survey participant thought tourism would not increase because, ‘everyone who comes up already has places where they go,’ implying that recreational facilities along the St Lawrence River and Adirondack Park are already amply available and vastly underutilized. Anti-tourism sentiment

The Potential of A2A to Improve the Local Economy



Personal Involvement with A2A Planning



Community Involvement with A2A Planning

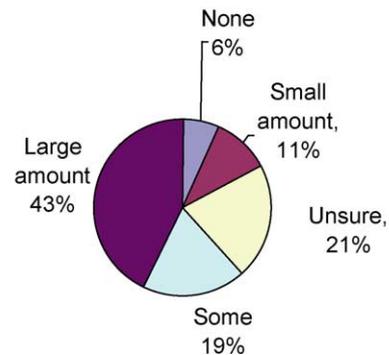


Fig. 3. Responses regarding potential improvement in the local economy, as well as responses regarding both personal and community involvement in A2A planning.

was expressed by one resident who said ‘all they think about is tourism and they forget about us.’ These data strongly suggest that advocates of A2A cannot expect to gain local acceptance of the proposal by appealing to possible economic benefits of ecotourism. Residents do not believe, or do not care, that enhanced tourism will potentially bring more money into the area.

Tables 2 and 3 demonstrate that there was little difference between large and small landowners and between farmers and non-farmers with respect to their feelings about protecting biological habitat, preserving cultural and historical settings, and improving the local economy through the establishment of A2A. Of particular interest is the support for the protection of biological habitat among farmers. It is unlikely that these individuals would label themselves ‘environmentalists’ or even ‘conservationists,’ but their willingness to say that land should be protected for other species is surprisingly high (81%) and not much different than nonfarmers (88%).

A number of questions were intended to determine the level of awareness about A2A, as well as resident perceptions about personal and community participation in planning. When asked, ‘Are you aware of plans to form an ecological corridor between Algonquin Provincial Park in Ontario, and the Adirondack Park in New York, known as the A2A plan?’ only 17% responded affirmatively, while 83% had no prior knowledge of this proposal. Most of the residents who had known about A2A got their information from the *Adirondack Explorer*.

When residents were asked if they were aware that their property lies within the proposed A2A corridor, 34% responded yes, while the remainder responded no or unsure. Since only 17% of residents had prior knowledge of A2A, it follows that 34% could not have been aware that their property fell within its boundaries before the questionnaire

Table 2  
Mean responses of small and large property owners

	Small property owners 40.47 ha (100 acres) or less	Large property owners over 40.47 ha (100 acres)	All property owners
Importance of protecting biological habitats <sup>a</sup>	1.55 (n=20)	1.82 (n=23)	1.72 (n=46)
Importance of protecting cultural and historical settings <sup>b</sup>	1.80 (n=20)	1.87 (n=23)	1.80 (n=46)
Can the A2A improve the local economy <sup>c</sup>	2.95 (n=20)	3.46 (n=24)	3.23 (n=47)
Proportion of property used for farming	20.0%	70.8%	46.8%

<sup>a</sup> Scaled from 1 (very important) to 5 (very unimportant).  
<sup>b</sup> Scaled from 1 (very important) to 5 (very unimportant).  
<sup>c</sup> Scaled from 1 (yes, by a very large amount) to 5 (no, not at all).

Table 3  
Mean responses of farmers and non-farmers

	Non-farming property owners	Farming property owners	All property owners
Importance of protecting biological habitats <sup>a</sup>	1.60 (n=25)	1.90 (n=21)	1.72 (n=46)
Importance of protecting cultural and historical settings <sup>b</sup>	1.96 (n=25)	1.76 (n=21)	1.84 (n=46)
Can the A2A improve the local economy <sup>c</sup>	3.08 (n=25)	3.36 (n=22)	3.25 (n=47)

<sup>a</sup> Scaled from 1 (very important) to 5 (very unimportant).  
<sup>b</sup> Scaled from 1(very important) to 5 (very unimportant).  
<sup>c</sup> Scaled from 1 (yes, by a very large amount) to 5 (no, not at all).

was administered. In other words, half of those who knew their land fell within the proposed corridor only did so because they were willing to participate in the survey. Many respondents even commented, when asked if they were aware that their land was within A2A, ‘I am now.’ These results indicate that planning for this wildlife corridor has been, to date, without citizen participation. The idea clearly did not originate as a grassroots movement. So far, it appears to be a technical exercise undertaken by academics and non-governmental organizations without the knowledge of most residents who live in the area. While A2A has been in early planning stages for several years, local property owners have not yet been engaged. Because landowner cooperation will augment success of the corridor, local residents should now be involved in planning activities.

The questionnaire also inquired about whether residents would like to be personally involved in planning A2A, and whether they would like to have their community as a whole engaged in the project. Only 30% responded that they would like to participate in the planning, while 40% would not and 30% were unsure (Fig. 3). This question certainly elicited a large amount of reluctance. However, when asked about overall community involvement, 43% wanted a large amount, 19% wanted some, and only 17% wanted to see a small amount or none (Fig. 3). Residents favor the concept of local participation in planning, but they were not willing to commit themselves personally to that effort. In other words, landowners support bottom-up planning in theory, but they are not willing to invest their own time and energy. One possible explanation for this incongruity draws upon the lack of awareness. If most respondents were unaware of the A2A proposal, why would they invest themselves in its planning? Alternatively, respondents may not have expressed interest because they did not favor A2A; by indicating a willingness to participate in planning, they feared they would be endorsing the proposal. A third explanation is more practical. The amount of personal involvement one resident could devote ‘depended on how

much time I have to offer,' which could have been an unspoken sentiment among other respondents as well.

When inquired about different possibilities for participation, survey respondents varied equally among a range of possibilities. Almost half wanted to see informational meetings (49%), general opinion surveys (43%), and individual consultations between project proponents and affected landowners (45%). In addition, about a third of the survey participants indicated a desire for press releases announcing progress of the project (32%).

Beyond personal involvement in A2A planning, the questionnaire solicited willingness of landowners to directly participate in A2A through sale and/or contributions of their own property, in fee or less-than-fee, or through some voluntary restriction, such as a covenant or deed restriction. Cooperation in this way is crucial for the success of the project. It is ultimately up to residents whether or not they will allow their land to become part of an ecological corridor. Overall, respondents were also apprehensive about this kind of participation. Only 24% were willing to have their land become part of A2A, while 57% were not and 19% were undecided. Parcel size did not have an effect on this response.

Some respondents anticipated vacating their land anyway, so a desire to contribute land did not particularly reflect an endorsement of the proposed corridor. In fact, of the survey participants who were willing to have their land become part of A2A, over one-third (36%) did not favor an A2A corridor. For residents who were willing to have their land become part of the corridor, most (55%) were unsure about how they would like to have this possibility accomplished. For respondents who knew how they wanted to contribute their land, two preferred selling their property, two opted for selling development rights, and one each chose deed restriction and donation of conservation easement.

The findings reported here reinforce the results of a previous study in the same area (Harris, 1994). That study examined public response to a proposal by the United States Fish and Wildlife Services (USFWS) to create a national wildlife refuge in the region. This proposal was eventually withdrawn in the face of stiff public opposition. The research found that residents were not receptive to the refuge proposal, even though most supported preservation of biological habitats, and many engaged numerous activities to protect and propagate wildlife. Respondents in the current study expressed similar sentiments. 'Farmers are the best caretakers of the land,' said one. 'It's a corridor already,' stated another. 'Everyone wants to keep it as natural as possible, because everyone hunts,' indicated a third. 'I want the wildlife back, but I do not want any group to bring it back, I want each person in the community to bring it back,' said yet another. Residents in this part of upstate New York think they remain suitable stewards who are looking out for the natural qualities of their land without the imposition and expense of a government program.

A general uneasiness about government should not be under-estimated by non-governmental organizations with a long history of lobbying and collaborating with governmental agencies. Especially for an organization like CPAWS, with its strong environmentalist perspective, feelings about private property on the United States side of the St Lawrence River are apt to be under-appreciated. A majority of survey participants who responded to an open-ended question about personal plans for the future of their land did not want restrictions placed on them. Typical was one landowner who was 'very much in doubt of government interference.' Some respondents specifically expressed concern about restrictions that would hinder agriculture. Landowners, particularly large ones, wished to retain their opportunity to farm, exercise the right to sell property, and maintain the option to pass along land to descendants.

## 5. Conclusion

When asked at the end of the survey about their overall support for the A2A corridor, 28% of the respondents favored the plan and only 24% opposed it. Since only 17% of the survey participants were aware of A2A before the interview began, it was not surprising that just under half (49%) were undecided about how they felt. The actual ramifications of the proposal were unknown; the implications of a wildlife corridor were unclear. Respondents were therefore hesitant when answering this question. It was, in fact, rather remarkable that so few were opposed, or on the other hand, that so many were in support, given the air of distrust toward any land restriction, especially among people who had previously resisted external efforts to protect wildlife habitat and who were learning for the first time that their land was once again included within the boundaries of a similar plan. Small landowners felt marginally more positively about A2A than large ones (Table 4), but this difference was negligible.

Some landowners, both large and small, are currently willing to contribute land and/or easements for A2A, and these individuals represent a critical nucleus of support for the proposal. Ironically, most of them had not heard about A2A before participating in the survey (73%). Nevertheless, about two-thirds of them (64%) favored the corridor after completing the interview, and about half of them (45%) wanted to be personally involved in the planning process. Proponents should align themselves with such supporters, understand better local concerns, develop an educational program that is sensitive to these concerns, provide useful information on a practical level, and build upon this base.

If more property owners are not ultimately interested in contributing their land, can this wildlife corridor be established? Probably not. These results suggest that landowners should now be informed about the concept of ecological corridors, the ideas behind A2A, and specific options for advancing the effort. Thus far, A2A planning in

Table 4  
Overall expressions of support for the A2A proposal

	Small property owners <i>n</i> =20 40.47 ha (100 acres) or less		Large property owners <i>n</i> =24 over 40.47 ha (100 acres)		All property owners <i>n</i> =47	
	%	#	%	#	%	#
Strongly favor	15	3	4	1	9	4
Favor	25	5	17	4	19	9
Undecided	40	8	58	14	49	23
Opposed	15	3	13	3	15	7
Strongly opposed	5	1	8	2	9	4

the United States would appear to be top-down. Have proponents of A2A focused too much on wildlife benefits, while failing to acknowledge sufficiently the people who live there? Planning should now incorporate greater citizen participation, consistent with a recent trend in environmental planning (Lane, 2001). A continuation of the planning process without consulting landowners is destined to produce hard feelings between all parties involved.

Residents participating in this survey have a vested interest in keeping their land natural. In fact, most of their land-use activities depend on keeping the area undeveloped. Hunting, hiking, bird-watching, and fishing are all better experiences if undertaken in a healthy natural world. In addition, survey participants expressed very strong support for the protection of biological habitat. However, they do not support authoritative restrictions, whether by a government agency or a conservation organization. Advocates should be careful to ensure that their proposals are not perceived in this way.

Respondents made it clear that they want some form of community involvement in the project. This finding parallels the results of a similar study in which over four-fifths of the residents in a national park wanted local communities to be engaged in the decision-making process (Trakolis, 2001). CPAWS has already initiated a cooperative program based on private land stewardship in Ontario. At this stage in the planning process, more effort is required to reach out to local citizens in northern New York and to assist them in forming A2A. The vast majority of landowners are completely unaware of plans being made for their land. It is time for A2A proponents to conduct opinion surveys, hold public meetings, or meet with residents on an individual basis in order to incorporate them in the planning process. Advocates need to establish contact and create relationships with local citizens. Not only should landowners be informed about the proposal, they should voice concerns regarding it. In other words, they should help to shape it. After all, without involvement of residents, the project faces a very uncertain future.

The potential of individual stewardship has not been sufficiently explored with the United States portion of A2A.

The land may already be facilitating wildlife migration without an organized program of preservation and/or regulation. Studies of wildlife movement in the area have not been undertaken to date. Are large carnivores already passing through the region? Field research needs to be conducted to answer this question. If answers turn out positively, then private stewardship may be the key to maintaining an ecological corridor. The rates of human population growth and housing construction are stagnant or slightly declining in this area. Quite possibly, the landscape qualities that were so attractive to A2A advocates are the same ones that keep or draw suitable stewards to live in this part of New York.

While concerns for biodiversity and the theory behind ecological reserve systems have been widely endorsed by conservation biologists, planning has heretofore remained controversial. Assuming that comanagement offers significant prospects for success over the rational comprehensive model, community outreach must be both timely and efficacious. This article illustrates how survey research can contribute by soliciting public opinion to help refine goals and strategies. As both an international effort and the first of its kind in northeastern North America, the success of A2A has broad implications for similar endeavors elsewhere. If corridor proposals are to be implemented effectively, communication between residents and project designers should be improved. Interaction between proponents and landowners should come as early as possible in environmental planning.

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