



Collaboration for community-based wildlife management

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Abstract. Perhaps as remarkable as the general upsurge in public interest in wildlife over the last 30 years is the trend toward greater community-based wildlife management since the late 1980s. This paper discusses the challenges and opportunities at the local, community scale of collaboration for wildlife management. We explain how collaborative activity between the professional wildlife manager and community stakeholders can lead to improved identification of human-wildlife interactions and better understanding of wildlife-related impacts that are of primary management concern in the community. Community-based collaborative decision making can also effectively result in the specification of management actions that are acceptable to a community. Furthermore, agency-community collaboration can lead to co-management that goes beyond stakeholder input or involvement in decision making about management objectives and actions, and includes appropriate sharing of responsibility for implementation and evaluation. A growing role for the wildlife agency in such situations is facilitating the development of local capacity by filling information and process needs so that individuals and groups in a community can participate effectively in collaborative efforts appropriate to the necessary level of agency-community engagement. This opportunity for the wildlife profession promises to be rewarding and have lasting positive influence on communities for the benefit of wildlife management. However, most agencies cannot address every issue at a community level. Public wildlife managers need guidelines for judgment about when to engage in community-based wildlife management. They need to assess various risks associated with not engaging in a particular issue and to prioritize the potential situations where various degrees of community engagement may be desirable. This paper highlights these intriguing challenges and opportunities associated with community-based wildlife management.

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Introduction

Living with wildlife in suburban and peri-urban situations is a source of joy for some people and a cause of dread for others. People with such divergent perspectives may live in the same community and even be next-door neighbors. The subjects of their disparate feelings may be the same individual animals that share the neighborhood backyards. When called upon to aid a community in such situations, wildlife managers are hard-pressed to identify a common set of acceptable management objectives and related actions. The model that describes a wildlife manager serving as an “expert” who knows what’s best for a community is typically ineffective in these kinds of situations (Decker and Chase, 1997).

Allowing human development to encroach on wildlife habitat, creating favorable habitat for particular species, configuring our communities and transportation systems without regard to wildlife, and allowing habituation of some species to people have all contributed to the growing incidence of human-wildlife interactions. How people interpret the effects of these interactions depends largely on their value-orientations. These are multi-faceted and complex, and the hierarchy of values held by people are reflected in how they respond to human-wildlife interactions (Fishbein and Manfredo, 1992; Bright *et al.*, 2000). Thus, the effects of particular people-wildlife interactions are evaluated by people based on all relevant values affected (e.g., personal or family health and safety, economic well being), not simply their value-orientation with respect to wildlife *per se*. If an interaction has a positive effect, and is considered important, then the result is a positive impact from the human-wildlife interaction. If an interaction is perceived as having a negative effect, and that effect is considered non-trivial, then the result is a negative impact (Riley *et al.*, 2002). An often perplexing question is this—why does the same human-wildlife interaction have different effects for different observers? The answer lies in how the event is evaluated with respect to the individuals’ value-orientations. Revealing these values and dealing with them forthrightly are essential aspects of collaboration for community-based wildlife management.

Deliberation and social learning promote collaboration

Values are the root of both controversy and collaboration in wildlife management. Consequently, discovering common purpose, grounded in mutually recognized values, is necessary for successful collaboration for community-based wildlife management. Without common purpose, community wildlife issues are arenas for controversy and intractable conflict, not catalysts for collaboration. This process of discovering common purpose can be facilitated through deliberation and social learning (Schusler *et al.*, 2003).

Deliberation includes any process to communicate, raise and collectively consider issues, increase understanding, and arrive at substantive decisions (NRC, 1996). Public deliberation can lead to social learning that enhances the knowledge available for community-based management. Scientific knowledge is necessary but not sufficient for sound wildlife management. Determining management goals also requires knowledge that reflects public values, providing purpose and guidance for policy and action (Korten, 1981; Reich, 1985; Yankelovich, 1991). When deliberation enables social learning, individuals and groups

evolve in their understanding of issues, relevant facts, problems and opportunities, areas of agreement and disagreement and—perhaps most importantly—their own values and those of others (Yankelovich, 1991; NRC, 1996; Matthews, 1999). These all contribute to the identification of common purpose, which provides guidance for community-based management.

Wildlife managers can initiate and foster stakeholder processes that encourage deliberation and social learning among segments of the community, ensuring awareness and understanding of various perspectives about values and desired impacts, the bases for development of management objectives and strategies (Wondolleck and Yaffee, 2000). Specifically, deliberative stakeholder engagement processes that include a democratic structure, open communication, diverse participation, multiple sources of knowledge, extended engagement, unrestrained thinking, constructive conflict, and facilitation contribute to common purpose and can ensure effective collaboration (Schusler *et al.*, 2003).

Furthermore, in addition to stakeholders learning about and from one another, communication can be enriched by biological and social information pertinent to the wildlife issue of concern. Thus, by playing the roles of facilitator and educator, wildlife managers can lead a community through an iterative learning process of analysis and deliberation (NRC, 1996) toward identification of common goals, which can promote collaborative, community-based wildlife management (Raik *et al.*, 2003).

A matter of scale

Collaboration can occur at several scales in wildlife management. Terms such as coalitions and partnerships are often used to describe particular agreements and initiatives that represent cooperation and collaboration between government agencies and organized wildlife interest groups at state, multi-state and national levels. Here, however, we are focusing on a different scale of collaboration—that which occurs at the community level (Schusler *et al.*, 2000). Collaborations among agencies, locally focused organizations, and groups of stakeholders at a township or municipal level are developing and urgently needed in suburban wildlife management across the country (Chase *et al.*, 2000; Raik *et al.*, 2003). These collaborative efforts are referred to as community-based management and take several specific forms.

The variety of models for community-based management in suburban areas was revealed in a recent study supported by the Northeast Wildlife Damage Management Research and Outreach Cooperative and New York State Department of Environmental Conservation. As part of the inquiry, experiences of 10 veteran white-tailed deer (*Odocoileus virginianus*) managers in the northeast were described and analyzed as case studies. This analysis revealed that the 10 cases reflected six different models of community-based suburban deer management (Raik *et al.*, 2003):

- Community Vote
- Environmental Impact Statement (EIS)/Public Consultation
- Agency Partnership
- Homeowners' Association

- Citizen Action
- Citizen-Agency Partnership

These models of community-based suburban deer management differ with respect to who makes decisions and how decisions are made (Table 1). In some cases, a single model is reflected in more than one case (e.g., the Community Vote model is reflected in both the Bedford, MA and Monhegan, ME cases). Clearly, collaboration can occur in many specific forms to achieve community-based suburban wildlife management.

A matter of degree

Perhaps the form of collaboration that requires the greatest degree of sustained engagement of community and wildlife agencies is co-management. Co-management in community-based wildlife management is distinguished largely by the extent of shared responsibility among professional wildlife managers and stakeholders in a community. It goes beyond public input in decision making, and represents a significant degree of local community “ownership” for and involvement in wildlife management. Stakeholders participating in co-management can be engaged in all phases of management ranging from data collection to identification of impacts to deliberation over management objectives. Co-management can also have stakeholders deeply involved in reviewing potential management actions to meet objectives, evaluating the consequences of alternative actions, deciding on the most acceptable set of actions for the community (perhaps employing processes for broad community input), implementing the actions or a subset thereof (perhaps paying a third party to provide the service), monitoring action implementation (and community reaction to it), and then evaluating the results of management on desired and unwanted impacts from wildlife (Decker *et al.*, 2000; Schusler *et al.*, 2000).

Co-management of wildlife is being attempted to varying degrees in many suburban communities (Lund, 1997; Pearse and Wilson, 1999; Chase *et al.*, 2000). Most wildlife agencies focused historically on rural areas and consumptive recreational uses of wildlife, but the situation has changed markedly over the last 10–20 years. Nevertheless, co-management is far from a common model in wildlife management. The profession is still accumulating the experience needed to develop guidelines for practice in community-based co-management. Progress is being made. Individual wildlife managers and, more broadly, wildlife agencies are steadily gaining the wisdom and confidence to engage in co-management.

One insight is emerging from the accumulating experience of managers—an essential ingredient for successful co-management (and most other forms of community-based management) is well informed community stakeholders with the capacity to understand the ecological, social, economic and legal aspects of the management issue (Raik *et al.*, 2003). This capacity includes elements such as knowledge, working relationships, leadership, credibility, and common purpose (Raik *et al.*, 2003; Decker *et al.*, 2004). These dimensions played a role in all 10 cases we reviewed, but were more or less important depending on the community-based management model adopted. For instance, working relationships were especially important in the “Agency Partnership” and “Homeowners’ Association” models, where several individuals representing government, land owners, and non-governmental

Table 1. A comparison of models of community-based suburban wildlife management*

Model type	Examples location	Who makes decision about firearms discharge?	Who makes decision about lethal control of deer?	How are deer management decisions made?
Community vote	Bedford	Town residents	State wildlife agency and Town residents	By popular vote at Town Meeting.
	Monhegan Island	Town residents	State wildlife agency and Town residents	By popular vote at Town Meeting.
EIS/Public consultation	Gettysburg National Military Park	Federal land manager	Federal land manager	EIS process, plus other forms of citizen participation with local and national stakeholders.
Agency partnership	Montgomery County	Director, Montgomery County Parks	State wildlife agency and county parks administrators	By park director, with input from a multi-agency Deer Management Work Group (county, state, and federal stakeholders).
Homeowners' Association	Mumford Cove	Homeowners' association and individual homeowners	State wildlife agency and homeowners' association	By vote of the governing board of a homeowners' association.
	Governor's Land	Homeowners' association and individual homeowners	State wildlife agency and homeowners' association	By vote of the governing board of a homeowners' association.
Citizen action	Irondequoit	Homeowner's association	State wildlife agency and city, town, and county governments	By approval of county legislature, considering recommendations from a Citizen Task Force and in coordination with city and town officials.
	North Haven	Town government	State wildlife agency and Village Board	By vote of a village board, with consideration of recommendations made by a Citizen Task Force.
	Cayuga Heights	Village Trustees	State wildlife agency and Village Trustees	By vote of Village Trustees, with consideration of recommendations made by a village Deer Committee.
Citizen-Agency Partnership	Union County Parks	Board of Freeholders	State wildlife agency and Board of Freeholders	By vote of Board of Freeholders, with consideration of task force recommendations.

*This table was adapted from Raik *et al.* (2003).

organizations had to come to decisions collaboratively (Raik *et al.*, 2003; Decker *et al.*, 2004).

Opportunities for leadership by wildlife professionals

One opportunity co-management represents is improving stakeholders' knowledge of the biological and ecological considerations in wildlife management. Biologically trained professional wildlife managers can have a lasting impact by bringing relevant technical and scientific analysis into stakeholder deliberations. Working with a community to elucidate their particular wildlife issue affords the manager/biologist the opportunity to:

1. Explain the behavioral ecology and biological needs of the referent species (e.g., predator-prey relationships, habitat requirements);
2. Explain how wildlife are responding to human land-use changes, habitat changes, structures, and transportation systems associated with suburban development;
3. Articulate wildlife and human ecology so the interplay is evident to stakeholders;
4. Explain the biological limits and capacities that influence wildlife and any attempts to manage wildlife; and
5. describe human attitudinal and behavioral traits with respect to wildlife, especially factors affecting tolerance of problems (e.g., wildlife acceptance capacity).

These are only a subset of possible topics stakeholders need to be aware of and hopefully understand at a general level if they are to be effective participants in co-management.

Many stakeholders who would not normally attend to such information gain interest when confronted with a problem they want addressed, especially if they also want to be active in seeking a solution. Wildlife professionals can seize this opportunity to positively influence the quality of information brought to bear on the situation at hand.

Importantly, the general understanding (content and process) achieved among stakeholders in a community can have lasting effects. Wildlife issues usually require sustained attention. This means continuous reapplication of biological and human dimensions knowledge. Furthermore, a deer problem this year might be followed by a Canada goose (*Branta canadensis*) problem next year and a black bear (*Ursus americanus*) problem the year after. Therefore, the initial investment of wildlife agencies and communities may pay dividends if communities face wildlife issues on an on-going basis. This condition is likely, arguing for a favorable long-term cost-benefit ratio in many cases. But the "venture capital" is not always available from either agencies or the community.

Wildlife agencies have limited capacities, too!

This leads to facing a sobering reality—most wildlife agencies cannot deal with every wildlife issue at a community level. The community demand may exist, the opportunities for positive interactions with stakeholders may be tempting, and the agency's desire to respond may be great, yet the capacity for state wildlife agencies to deal with the growing

number of community-based wildlife management issues is already exceeded in many states and fast approaching this end in others. Consequently, although we stress the opportunity for leadership by wildlife professionals in community-based wildlife management, there is a less appealing side of the coin. If community needs are not met by a public wildlife agency, another entity may fill the vacuum and their agenda may not be in the broad public interest. This situation could lead to counterproductive agency-community confrontation on wildlife issues. One solution is for the wildlife management agency to collaborate with an educational institution whose mission is to serve the public interest. Just as a wildlife agency might partner with a local parks agency or police department in the implementation of management actions, wildlife professionals can partner with community development educators in the facilitation and educational aspects of collaborative decision-making. Local educational entities, such as cooperative extension associations or regional planning commissions, share a commitment to help community residents and citizen groups understand and make informed decisions around diverse issues affecting their community. Cooperative extension, in particular, emphasizes linking research-based knowledge and local experience, as well as developing local leadership and capacity. Educators can contribute skills and experience in deliberative processes and educational strategies that complement wildlife managers' own technical expertise (e.g., Curtis *et al.*, 2000).

The reality of wildlife management today is often this—most agencies cannot deal with every issue at a community level. The promise of developing co-management arrangements where communities take on significant and perhaps most of the responsibility is attractive, but the up-front costs are too steep to handle every situation with a co-management approach. Public wildlife managers need some aids for judging which community wildlife issues demand attention and when it is imperative to engage in community-based wildlife management. They need to be able to assess various risks associated with not engaging in a particular issue and to prioritize the potential situations where various degrees of community engagement may be desirable.

Guidelines for determining where and at what intensity to engage in collaborative, community-based wildlife management have not yet been developed. However, some questions that might be helpful for wildlife managers to consider until such guidelines are available include the following:

1. Have the wildlife agency and the community effectively engaged in community-based wildlife management previously, indicating that the community may have the capacity to assume more responsibility for the process than would otherwise be expected?
2. Does the community have a history of producing local leadership to ensure progress in resolving other kinds of public issues (i.e., not necessarily wildlife issues)?
3. Does potential exist to partner with community-development educators (e.g., cooperative extension educators) in the community to share in the facilitation and educational aspects of collaborative decision making?
4. Does engagement with a particular community present the possibility to be a model for adjacent or nearby communities experiencing similar wildlife issues, and therefore serve as a "demonstration area" that could promote learning and accelerate progress across a broader set of communities?

5. Is the situation already too polarized to represent a real opportunity for collaboration or is formal dispute resolution needed as an intervention?
6. What is the political significance of the situation; i.e., is agency performance in the specific case vital to maintaining credibility with elected officials and stakeholders at a larger scale?
7. What is the nature of impacts being experienced by the community? Where on a hierarchy of *nuisance* → *economic cost* → *income loss* → *risk of disease* → *risk of personal injury* does the community's wildlife issue sit?
8. What is the conservation significance of the situation? Does lack of active intervention or participation by the agency risk erosion of public trust status of the wildlife resources in question?

Conclusion

Perhaps as remarkable as the general increase in public interest in wildlife over the last three decades is the recent trend toward greater community-based wildlife management, particularly in suburban environments. This phenomenon presents challenges and opportunities at the local scale for collaborative wildlife management. Collaborative activity between the professional wildlife manager and community stakeholders (individuals and groups) can lead to improved identification of human-wildlife interactions and better understanding of key impacts of wildlife that are of primary management concern in the community. Community-based, collaborative decision making can also effectively result in the specification of management actions that are acceptable to a community overall.

In some cases, collaboration can lead to co-management, in which a wildlife agency and a community move beyond stakeholder input or involvement in decision making about management objectives and actions to the appropriate sharing of implementation and evaluation responsibility. The possibility for a new role, and we believe an emerging responsibility, for the wildlife agency in such situations is in facilitating the development of local capacity. This role involves filling a community's needs for information and deliberation process assistance such that the community has the capacity to participate effectively in collaborative efforts appropriate to the level of agency-community engagement that seems necessary. This is an exciting, growing leadership opportunity for the wildlife profession, one that promises to be rewarding and have lasting positive influence on communities for the benefit of wildlife management.

Perhaps we need a new premise for community-based wildlife management, one reflecting the changing management environment, the evolving wildlife profession, and the developing relationships between agencies and their stakeholders at the community level. Is the following an appropriate premise for community-based, collaborative wildlife management in the 21st century?

Wildlife management is not an agency exercising authority over, steadfastly retaining control of, or even taking sole responsibility for wildlife resources, but instead *wildlife management is wisely managing the sharing of responsibility for wildlife conservation with stakeholders.*

To achieve this goal will require commitment to construct the future of wildlife management where enlightened agencies:

- De-emphasize, but don't abrogate "authority."
- De-emphasize, but don't delegate all "control."
- Emphasize and share wildlife management "responsibility."
- Adopt leadership for stakeholder engagement (deliberation and learning) to assure informed community participation.

Our general knowledge of human behavior and specific human dimensions studies can help us conceptualize collaboration, but how does a wildlife manager working with stakeholders in a community put this knowledge to work? Insights from the experiences of wildlife management veterans help a great deal. Based on our observations and studies of suburban wildlife situations, we believe that in many situations collaboration between professional biologists/managers and stakeholders in a particular community is a key to success in suburban wildlife management.

Why is collaboration with stakeholders, involving people likely to hold diverse and perhaps conflicting views, a way to address seemingly intractable wildlife conflicts that exist in a community? Because well-guided collaboration can lead to diverse views being discussed, underlying values surfaced, potential common ground and common purpose discovered, and possibilities for compromise and progress created (Reich, 1985; Mathews, 1999; NRC, 1996). Managers working independently with diverse stakeholders will quickly find themselves in the middle, caught between conflicting views. However, managers facilitating deliberation, learning and, ultimately, collaborating among stakeholders have improved chances of identifying management objectives and developing actions that will be acceptable to communities of stakeholders. The extent to which wildlife professionals gain proficiency in this sphere may determine the degree of leadership we wield in suburban wildlife management in the future.

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