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BEYOND CITIZEN TASK FORCES: THE FUTURE OF COMMUNITY-BASED DEER MANAGEMENT

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ABSTRACT: Public involvement in decision-making associated with wildlife management has progressed considerably over the past two decades. Wildlife managers became more inquisitive about both traditional and emerging stakeholders during the 1980s, a period when studies of key stakeholder groups became increasingly common. During the 1990s, public involvement in white-tailed deer (*Odocoileus virginianus*) management decisions shifted towards an emphasis on citizen task forces and similar transactional approaches, and a growing diversity of stakeholders contributed to making deer management decisions. This evolution continues, as communities are now sharing the cost and responsibility for deer management with state and local government agencies under a variety of co-management scenarios. We highlight a case study from Cayuga Heights, New York, where a community-based approach for setting management goals for an overabundant deer herd is currently being implemented. The community scale is appropriate because the impacts of deer are typically recognized by citizens at the local level, and the need for management becomes an issue in local communities. In addition, management actions can be perceived most readily by stakeholders at the community level. Experience is showing that outcomes of co-management at the community level are perceived as more appropriate, efficient, and equitable than traditional wildlife management approaches. Although co-management requires substantial time and effort, this strategy may result in greater stakeholder investment in and satisfaction with deer management.

KEY WORDS: community-based management, citizen task forces, co-management, deer, *Odocoileus virginianus*, stakeholders

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INTRODUCTION

The incidence of acute wildlife problems that are location specific are increasing, and communities have expectations for solutions tailored to their unique situations. Public expectations for wildlife agencies now include dealing with an array of wildlife impacts. These trends in wildlife management are contributing to a growing preference for community-based management (Decker and Chase 1997). In response to these trends, proactive agencies are engaging local communities in resolving their own wildlife-related problems, and in the process, are educating citizens about the benefits of wildlife and specific methods for wildlife damage management.

There is no single, best approach for involving communities in wildlife management decisions. The techniques used by wildlife agencies have evolved, and Chase et al. (in press) provided a helpful typology of the most common methods. Wildlife managers are using many approaches—ranging from education and information exchange to delegation of management responsibility—tailored to each community's needs and reflecting the manager's own expertise. Some approaches are agency-centered, while others are more community-centered. Looking ahead, the profession can expect continued evolution of public participation in wildlife issues and involvement of key stakeholders in wildlife management activities.

Stakeholder involvement in wildlife management undoubtedly will take many forms. We believe that the concept of "co-management" provides an excellent framework for helping communities resolve wildlife conflicts (Schusler 1999). This term has been used interchangeably with cooperative management,

collaborative management, joint management, participatory management, and multi-stakeholder management (Berkes and Henley 1997). Recently the concept of co-management has appeared more frequently in reference to wildlife management (Decker and Chase 1997; Kruse et al. 1998; Pearse and Wilson 1999).

For this discussion, an appropriate working definition for co-management is that adopted by the World Conservation Congress (IUCN 1997:43):

[Co-management is] a partnership in which government agencies, local communities and resource users, non-governmental organizations and other stakeholders negotiate, as appropriate to each context, the authority and responsibility for the management of a specific area or set of resources.

This definition emphasizes that co-management is a partnership between multiple stakeholders in which the specific arrangements for sharing responsibility are negotiated. Consequently, co-management includes a sharing of authority and responsibility (Chase et al. in press). Such a process may include partners from local government, groups of landowners, neighborhood associations, non-governmental organizations, private enterprise, or a special committee or task force. The process might be officially requested by a government agency, or emerge from grassroots citizen interests.

BENEFITS FROM CO-MANAGEMENT

Often the primary benefits sought by stakeholders involved in co-management include more appropriate, efficient, and equitable solutions (Pinkerton 1989:5). Additionally, participants gain information that contributes to a better understanding of resource management

systems. Decker et al. (in press) provided a detailed list of co-management benefits; those specifically related to wildlife damage situations include: (1) science and local knowledge are brought to the management process (Drolet et al. 1987; Pinkerton 1989; Borrini-Feyerabend 1996; McCay and Jentoft 1996); (2) management addressing community concerns is replacing centralized government regulations (Jentoft and Kristoffersen 1989); (3) greater efficiency results from improved coordination between interdependent stakeholders (Jentoft 1985); (4) transaction costs are reduced by providing a process for conflict resolution (Jentoft and Kristoffersen 1989; Pinkerton 1989); (5) participants have increased understanding and knowledge of other positions' views (Borrini-Feyerabend 1996); (6) compliance with regulations is improved because those who experience the regulations helped formulate them (Jentoft 1985; Jentoft and Kristoffersen 1989; Borrini-Feyerabend 1996; Warner 1997); (7) solutions are more equitable as multiple stakeholders address difficult decisions (Jentoft 1985; Pinkerton 1989); and (8) management is more legitimate because a diversity of stakeholders are involved in decision-making (McCay and Jentoft 1996).

STATE AGENCY EXPERIENCES WITH THE CO-MANAGEMENT OF OVER-ABUNDANT DEER

The New Jersey Division of Fish, Game and Wildlife's Community-Based Deer Management Program was developed to address increasing deer-human conflicts in suburban communities (Lund 1997). Since the program's adoption, more than 20 communities have requested information or assistance with local deer conflicts. The sharing of management responsibilities is clearly defined. While the Division provides technical assistance in the development, implementation, and evaluation of control programs, all costs associated with the application of alternative deer management options are borne by the cooperating entity. The Division has developed guidelines for alternative control options, maximum deer densities, and additional conditions (such as discouraging the supplemental feeding of deer) to which cooperators must agree. The Division primarily acts as a resource for technical information. A community must decide if a majority of residents believe that a deer problem exists and whether to proceed with a deer control plan (Lund 1997).

The New York State Department of Environmental Conservation (NYSDEC) has also gathered experience and knowledge concerning the co-management of deer. A closely evaluated, pioneering experiment for suburban deer management has continued for several years in Monroe County, New York (Curtis et al. 1993; Curtis and Hauber 1997). During Fall 1991, NYSDEC staff initiated the resolution of a long-standing deer controversy with a modification of the Citizen Task Force (CTF) process used elsewhere in the state. Personnel from NYSDEC and Cornell Cooperative Extension organized an 11-member CTF representing various stakeholder groups in Monroe County (Curtis et al. 1993). This was the first time the task-force approach was used in a suburban situation with intense deer-management conflicts in New York. CTF members were charged with two tasks: set a deer population objective for their unit, and

recommend management strategies to achieve this goal. The CTF reached consensus that the population objective should be 8 to 10 deer/km² in areas with quality deer habitat.

An already-established working group comprised of local government and wildlife agency decision-makers accepted implementation of the CTF recommendations. Monroe County legislators approved the CTF recommendations and amended their firearms law to allow the shooting of deer in the park during the proposed culling effort. Irondequoit Town Council members also approved the CTF recommendations, and amended the town firearms law to allow deer to be killed for selective culling and research purposes. Town and county funding supported the deer culling program. NYSDEC authorized state permits for deer culling, provided law enforcement assistance, and collected biological data from deer that were eventually removed from Durand Eastman Park and adjacent town-owned property in Monroe County. NYSDEC also approved permits for an immunocontraception study on free-ranging deer in parts of the community. Local political pressure resulted in the New York State Legislature providing nearly \$250,000 to support the deer fertility-control project. Multiple agencies shared decision-making, management, and ultimately funding responsibilities to implement this deer management program.

A GRASS-ROOTS APPROACH—THE CAYUGA HEIGHTS CASE STUDY

Responding to community requests for assistance, NYSDEC embraced another deer co-management effort in the Village of Cayuga Heights near Ithaca, New York (Chase et al. 1999). Village residents were concerned about deer damage to property and the risk of deer-related vehicle accidents. Cayuga Heights is a relatively affluent, 4.7-square kilometer (1.8 sq. mile) community of 3,600 residents that borders the City of Ithaca and Cornell University. A group of citizens conducted a petition drive to document concerns about deer in the village during 1997. In response, the Village Trustees appointed a citizen's Deer Advisory Committee in summer 1998 to study the deer situation (Chase et al. 1999).

Working with a Cornell Cooperative Extension facilitator, the Cayuga Heights Deer Advisory Committee gathered information to educate community residents about the deer situation and potential management options. As a first step, a human dimensions survey was conducted during November and December 1998. Most respondents—over two-thirds—had personally experienced problems with deer, and more than half worried about deer-related conflicts (Chase et al. 1999). Interestingly, a full third of respondents (34%) said that they did not enjoy deer and regarded them as a nuisance. Four out of five (81%) Cayuga Heights respondents preferred a decrease in deer numbers (Chase et al. 1999).

The Deer Advisory Committee also gathered information from other communities in New York and nearby states with similar deer problems. A summary of this information, along with results from the Cayuga Heights survey, were presented at a public meeting in October 1999, and a second informal questionnaire was provided to participants. Results from this second

questionnaire confirmed the community desire for fewer deer and associated conflicts. The Deer Advisory Committee made a formal report to the Village Trustees and requested a portion of the funding needed for a deer management feasibility study. The goal of this project was to estimate deer abundance and movement patterns, so that the cost and probable success of various management options could be critically evaluated. The funding request was approved by the trustees, and NYSDEC issued the necessary permits for capture and marking of deer in the village. This research is also being sponsored by the Cornell University Agricultural Experiment Station and the New York Cooperative Fish and Wildlife Research Unit. Thus, several agencies and a local municipality have supported this co-management experiment. After the deer biological data become available, they will need to be integrated with the human dimensions information. Following careful analysis and consideration, the community must still make a difficult deer management decision.

KEY FACTORS CONTRIBUTING TO CO-MANAGEMENT IN CAYUGA HEIGHTS

One of the primary factors contributing to the implementation of co-management in Cayuga Heights was the human dimensions survey. This survey indicated overwhelming (98%) support for community involvement in deer management decisions, and allowed citizens to voice their opinions about specific deer management issues. Results also confirmed the perceptions of several Deer Advisory Committee members, as most residents (>80%) indicated their tolerance for deer damage had been exceeded. These data provided the necessary justification to gain political support for additional biological research and potential management action. However, the survey also indicated there was no clear consensus on how to manage deer in the community, and there was little support for killing deer. Thus, there was a clear management dilemma: reduce deer numbers and associated impacts, but don't kill deer in the process.

A second key factor was the professional facilitation provided by Cornell Cooperative Extension staff. Two types of facilitation roles were identified. Process facilitation was provided by a county-based extension educator, and included meeting organization and development of community leadership. A second form of facilitation was providing technical advice concerning deer management options and relative costs. Technical guidance was provided by Cornell Cooperative Extension faculty in cooperation with NYSDEC regional wildlife managers. Both types of professional assistance were needed to help Deer Advisory Committee members make informed decisions about deer management options in their community.

Another important factor was the unique composition of stakeholders serving on the Cayuga Heights Deer Advisory Committee. Most members were well-educated professionals and active community leaders. Several members had science backgrounds and understood data analyses and problem solving. A crucial step in the process occurred after about a year of meetings, as a decision was made to broaden stakeholder interests on the committee. The initial committee chair did not support

this change, and thought the process was moving too slowly. After the first chair resigned, another person who favored greater community involvement was selected to lead the Deer Advisory Committee. New members were added who represented both animal welfare and hunting interests (although no hunting is permitted in Cayuga Heights). This move was critical for gaining political support from both the Village Trustees and NYSDEC wildlife managers. The modified Deer Advisory Committee was perceived to be more representative and "fair."

An important benefit of the co-management process in Cayuga Heights was community education about deer biology and management. The Deer Advisory Committee viewed this as one of their primary roles, and they encouraged residents to make informed decisions about deer management. Committee members organized and implemented a public education meeting that was attended by about 120 residents interested in learning more about deer. Deer-related articles were submitted to, and published in, the local newspaper. In addition, the Deer Advisory Committee supported development of a web site where residents could learn more about protecting plants from deer damage, and report sightings of tagged deer as part of the management feasibility study. It is anticipated that a more involved and informed citizenry will make the most appropriate deer management decisions.

CO-MANAGEMENT CHALLENGES

Although the Cayuga Heights experience with co-management has been viewed favorably by both participants and NYSDEC staff, the process has included several challenges and limitations. The process has been very time-consuming for all involved, and particularly for Deer Advisory Committee members. Most of these citizens have been meeting regularly for more than two years and have contributed countless hours of volunteer time. In addition, much professional time and expertise was "donated" to the community by Cornell Cooperative Extension, Cornell's Human Dimensions Research Unit, and NYSDEC. The Village of Cayuga Heights was located near the Cornell campus, and the Advisory Committee could take advantage of the nearby wildlife management and human dimensions expertise. Consequently, it is unclear if this process could be replicable elsewhere, and if another community could afford to hire the necessary professional expertise.

The political realities of co-management can be frustrating at times, especially for biologists or managers who would like "good science" to prevail in management decisions. If local tax dollars are to be spent on wildlife management, elected officials will often control the outcome of the process. In Cayuga Heights, the Mayor and Village Trustees should have been involved earlier in the decision-making process to build political support for management and cost-sharing. The initial request from the Deer Advisory Committee to fund a management feasibility study was denied by the Village Trustees. Committee members then contacted others in the community with similar interests to broaden their political base and gain approval for the study. If this feasibility study ultimately shows that lethal control of deer is the only practical means for resolving conflicts at the

community scale, the Mayor has indicated that there is currently little political support for killing deer. Consequently, management of the herd will be difficult despite overwhelming community support for reducing deer conflicts.

Issues of scale, deer behavior, and access to deer on private lands will also influence the suitability of different management approaches. The Village of Cayuga Heights is only 4.7 square kilometers (1.8 sq. miles) in area, and if deer frequently move in and out of the community, the scale may be too small to have measurable reductions in deer numbers and impacts. Neighboring communities may need to become involved with deer management and agree to support the Cayuga Heights plan for deer damage control. These neighboring communities are carefully watching the deer management process as it unfolds to determine if they should become involved.

Ultimately, any management action will require access to deer on private lands, as there is no large park or other public land area in the village where deer could be captured. New York environmental conservation law prohibits the discharge of a bow or firearm (including a dart rifle for research), within 155 m (500 feet) of a home without the landowner's permission. Given the housing density in Cayuga Heights, a circle with a 155 m radius often includes portions of 20 to 30 homes. Only one of those homeowners would need to object to firearms discharge to eliminate a potential site for dart-gun capture of deer or the possible administration of contraceptive vaccines.

Despite these limitations, landowners in Cayuga Heights have been very receptive to the deer management feasibility study. More than 20 homeowners have volunteered access to their property, and nearly 50 deer were collared and ear-tagged during a month of capture attempts with Clover traps and rocket nets during January and February 2000. NYSDEC has determined that the discharge requirements do not apply to these deer capture methods. Even though it is possible to gain access to deer on private property in the community for tagging and release, it remains uncertain if those same landowners would be willing to provide access for capture and removal, or trapping and euthanization of deer. Most residents were opposed to lethal control methods (Chase et al. 1999), and elected officials may be unwilling to complete the NYSDEC permit process that would be required to capture and kill deer. Some community members have indicated they would challenge any attempt to kill or remove deer from Cayuga Heights.

SUMMARY

Greater community involvement in deer management is viewed by some agency professionals as risky and difficult. However, the trend is clearly moving from input and consent (Curtis and Hauber 1997) toward true collaboration—really working together meaningfully with other agencies and stakeholders. Co-management is a model where stakeholders are involved in most aspects of the process, and share costs and responsibility for deer management actions. This move toward greater community involvement is an uncertain step for some

agencies, but a natural next step in the evolution of citizen participation for others (Decker et al. in press).

A limited number of options are available to wildlife agencies to address suburban deer management concerns. The primary challenge for deer managers will be to integrate effective deer management techniques with community goals and values. The co-management process may break down barriers to deer management by building trust between citizen groups and wildlife agencies.

Each deer management situation should be viewed within an adaptive management framework, and the lessons learned in one community should be evaluated for applicability to others. Stakeholders often perceive their local situation and management context to be unique; however, deer management concerns are often similar between communities. In the Northeast, usually three primary issues—deer-vehicle accidents, damage to landscape plants, and/or Lyme disease—are the driving factors for community-based deer management. Although the relative degree of importance for these issues will vary between municipalities, management success can be measured in terms of impact reductions associated with these three issues.

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