

## REASONED ACTION AND LETHAL MANAGEMENT OF DEER IN CUYAHOGA VALLEY NATIONAL PARK

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Traditionally resource management was a profession focused on administering natural resources. However, over the past 30 years, managing humans has emerged as a significant component of the job. For example, introducing a new policy or management plan necessitates informing and educating the public and seeking public input. Management actions that achieve desired effects by managers but are not relevant to the public are unlikely to garner long-term support (Manfredo 1992). For this reason, identifying public beliefs and attitudes concerning management actions is a critical step in the management process. The more managers know about the factors underlying public support for or opposition to policies or issues, the more likely their ability to develop effective messages or other types of interactions to influence public response.

A case regarding lethal management of deer (*Odocoileus virginianus*) in Cuyahoga Valley National Park, Ohio, epitomizes challenges managers face when

planning and managing for abundant deer populations in the context of intense public scrutiny. Fulton et al. (2004) uses the theory of reasoned action to help understand attitudes and beliefs about lethal control of deer. The outcome is significant because lethal control is the most broadly used management tool for reducing deer populations; moreover, even relatively small minority opposition to lethal control can lead to significant social conflict and protracted decision making concerning the use of lethal control. (Fulton et al. 2004).

The theory of reasoned action addresses human behavior that deals with the relationships among beliefs, attitudes, intentions, and behavior. Various investigators have used the theory to predict and explain why people have or have not engaged in a wide variety of behaviors, including smoking, signing up for a treatment program, using contraceptives, wearing seat belts or safety helmets, voting, exercising regularly, and choosing a career. The theory rests on the assumption that humans are reasoning animals who systematically use or process the information available to them. The theory suggests that underlying beliefs ultimately determine one's behavior. Therefore, changing behavior is viewed primarily as a matter of changing the underlying cognitive structure (Manfredo 1992).

In the case of lethal management of deer at Cuyahoga Valley National Park, investigators used a mail-back survey to collect data from Ohio residents in the surrounding nine-county area of the park. The survey addressed attitudes toward two potential management actions: (1) no action and (2) reduction of the deer population through lethal control. Investigators assessed attitudes toward these two alternatives by asking respondents questions that measured the level of acceptability with respect to each action (table 1).

From the returned surveys and follow-up phone calls to nonrespondents, investigators defined two groups of residents: "near" (<10 km or 6.2 mi from the park) and "far" (>10 km from the park). According to the study,

*See "Information Crossfile" in right column on page 50*

**Table 1. Beliefs about “no action” and “lethal control” of deer in Cuyahoga Valley National Park**

<b>Taking no action would</b>	<b>A lethal control program would</b>
• lead to too many car collisions with deer	• reduce the risk of deer-vehicle collisions
• lead to too much damage from deer to shrubs, crops, and gardens	• reduce damage by deer to shrubs, crops, and gardens
• increase the risk of disease associated with deer such as Lyme disease	• reduce the risk of diseases associated with deer such as Lyme disease
• increase the damage done by deer to native plant species	• reduce the damage done by deer to native plant species
• decrease the diversity of plants and animals	• help maintain the diversity of plants and animals
• maintain a healthy deer population	• maintain a healthy deer population
• cause unnecessary pain and suffering to deer	• cause unnecessary pain and suffering to deer
• conflict with the purpose of a national park	• conflict with the purpose of a national park
• maintain opportunities to see deer	• decrease opportunities of seeing deer
• upset local residents and visitors	• upset local residents and visitors

respondents indicated that lethal control of deer was acceptable (approximately 71% for near, approximately 62% for far) and taking no action to reduce deer populations was unacceptable (approximately 75% for near, approximately 72% for far). That “near” residents were more supportive of lethal control suggests that increased experience with abundant deer populations encourages support of more invasive control techniques such as lethal control.

Data from this study indicate that if certain management reasons are present, more respondents feel lethal control is acceptable. For example, preventing severe consequences for humans (e.g., spread of disease or deer-vehicle collisions) or the natural environment (e.g., maintain a healthy deer herd and ecosystem) make lethal control more acceptable than preventing negative aesthetic impacts (e.g., maintain natural beauty of Cuyahoga Valley National Park) or personal property damage (e.g., damage by deer to shrubs, crops, or gardens on private property). Hence, according to this study, if the scientific information supporting these reasons can be clearly communicated to the public, approximately half of the public generally opposed to lethal control of deer would find it acceptable.

## **References**

- Manfredo, M. J., editor. 1992. *Influencing human behavior: Theory and applications in recreation, tourism, and natural resource management*. Champaign, Illinois, Sagamore Publishing.
- Fulton, D. C., K. Skerl, E. M. Shank, and D. W. Lime. 2004. Beliefs and attitudes toward lethal management of deer in Cuyahoga Valley National Park. *Wildlife Society Bulletin* 32(4):1166–1176.