

Visitor and Resident Acceptability Norms towards Wolf Management Actions

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Introduction

The management of wildlife, a publicly-owned resource in the United States, depends ultimately on public acceptance of management actions and policies. The lack of public acceptance has led to specific wildlife ballot initiatives in several states and more generally, stimulated long-term policy changes that have redefined the options available to managers. Widespread public involvement in wildlife management issues appears to be a product of changing demographics and the rise of politically-effective interest groups. These broad social changes have not been matched in wildlife management agencies, where a traditional reliance on only biological information and professional judgment still predominate. A paradigm for evaluating information about the publics' views of the acceptability of wildlife management policies is needed to help bridge the gap between changing public expectations and traditional professional (biological) judgment.

Norm theory offers one such paradigm for identifying publicly acceptable policies and helps explain why management actions are judged acceptable or unacceptable. Using the structural norm approach, a technique to represent social norms graphically, researchers have described the prevalence, range of tolerable conditions, intensity and crystallization (group agreement) for a wide range of natural resource topics. Although the technique has proven useful, crystallization is typically not visually presented. To overcome this limitation, this paper incorporates the Potential for Conflict

Index (PCI) into the structural norm methodology. The PCI provides a means to visually display group agreement and the other structural characteristics of norms.

The objectives of this study were to: (a) demonstrate the utility of combining the structural norm approach with the Potential for Conflict Index to collect and organize information about the publics' norms for managing wolves in the Grand Teton National Park (GRTE), (b) monitor changes in these norms across human-wolf interactions of varying severity, and (c) compare the norms reported by local residents and visitors to GRTE.

Methods

Gray wolves (*Canis lupus*) appeared in Grand Teton National Park northern boundary in October of 1998, two years after being reintroduced to Yellowstone National Park. Over 300 wolves are currently estimated to reside in the Greater Yellowstone Area (GYA). Human populations in the area have also increased in recent years. The population of Teton County, Wyoming, for example, increased 73% from 1990 to 2005. Park visitation for GRTE now averages 2.5 million visitors annually. In addition, unlike other national parks, grazing rights in the GRTE are protected, and livestock and wolf conflicts have increased. Livestock depredations by wolves within the Greater Yellowstone Area resulted in the deaths of approximately 150 cattle, sheep, and goats during 2003. Two thirds of these depredations occurred on public grazing al-

lotments and 34% on private property. The U.S. Fish and Wildlife Service responded to these depredations by killing 38 wolves in 2003.

To understand the acceptability of alternative management actions for addressing human-wolf conflict, we sampled local resident ($n = 604$, response rate = 51%) and park visitor ($n = 596$, response rate = 81%) populations during 2003. The local resident sample included individuals who live within a 100-mile radius of Jackson, Wyoming. Park visitors were initially surveyed on-site to collect basic information and addresses for the follow-up mail survey. A total of 1,200 mail surveys were used in our analyses. A telephone non-response check for the resident sample did not identify any statistical differences between respondents and non-respondents to the mail survey.

The survey described six different hypothetical situations depicting possible human-wolf encounters. Respondents evaluated the acceptability of several management options designed to remedy or prevent the conflict in the hypothetical situation (e.g., monitor the situation, frighten the wolves away, capture and relocate the wolves, destroy the wolves). Acceptance of management actions were coded on a 7-point Likert-type scale ranging from “highly unacceptable” (-3) to “highly acceptable” (+3).

Results

For all scenarios, park visitors rated “monitor the situation” more favorably than local residents ($t = 7.46$, $p \leq .001$). For those situations where wolves had not caused any loss of cattle or pets, local residents rated management options aimed at prevention of human-wolf interaction (i.e. trail closure or cattle removal from federal grazing allotments) as significantly less acceptable than park visitors ($t = 5.31$, $p \leq .001$). In scenarios where wolves caused loss of pets or cattle, local residents rated non-lethal management options (i.e., capture and relocate, or frighten the wolves away) significantly less acceptable than park visitors ($t = 2.67$, $p = .008$). In these latter scenarios, local residents rated “destroy the wolves involved” as acceptable, whereas park visitors rated this management option as unacceptable ($t = 12.32$, $p \leq .001$). As the

severity of human-wolf interaction scenarios increased, the potential for conflict index values increased substantially for both local residents and park visitors. These findings highlight the controversial nature of lethal management actions and suggest situations where agency caution should be exercised.