

William R. Supernaugh

## Interpreting Wildlife Management Policy to Meet Individual Park Needs

**W**hen the National Park Service (NPS) released its current *Management Policies* volume (NPS 1988), it recognized that parks needed flexibility to apply prescriptive management techniques to wildlife residing within park boundaries for all or a part of their life cycle. Despite continued references in the media and some professional journals, NPS does not rely wholly on the principle of “natural regulation” when contemplating the long-term management of park ecosystems (NPS 1988, chap. 4:6). While preferring to manage holistically—that is, at the ecosystem level—park managers must, of necessity, adopt single-species management programs in some instances.

For a better understanding of the manager's options with regard to prescriptive management of a species, the following review of some of the wildlife-related policy statements is presented. As a first screening, faunal components of park ecosystems are noted as being either native or exotic (non-native) species (NPS 1988, chap. 4:5). Within the former category, NPS sets forth policies applicable to managing both resident and migratory native species, even going so far as to discuss the need to vary management practices for species with relatively short migration patterns, such as elk, versus animals having long migration routes which may only include park-administered lands for a short period of time, such as whales or butterflies. Providing a

further breakdown of discretionary decision-making, NPS acknowledges that management of harvested species and their habitat may occur in those areas where Congress has specifically authorized hunting or trapping.

A second category within the management policies comprises non-native species, also called “alien” or “exotic” species. In general, NPS pursues opportunities to limit the establishment of species that were not a natural component of the ecological system characteristic of a particular unit of the National Park System. NPS policy allows different actions in response to non-native species that extend their range to parks (coyote and armadillo, for example), as opposed to zebra mussels, brown

### The National Park Service's Management Policy in the 21<sup>st</sup> Century

tree snakes, and European wild boars. There is even a provision for the introduction of new exotic species when they may control previously established ones (NPS 1988, chap. 4:12). Leaf, root, and stem-boring beetles that live on purple loosestrife are but one example of such introductions.

A third discrete emphasis of NPS's wildlife management policy is on the management of threatened and endangered wildlife (NPS 1988, chap. 4:11). Active management of such special-status species may be warranted under certain conditions, including but not limited to removal of targeted predator species, preconditioning of animals slated for introduction, and intense habitat manipulation to favor their success.

By now you should get the idea that wildlife management in the National Park System is not a single set of rules; rather, it constitutes broad guidelines designed to meet Service-wide objectives. Due to the diversity of areas (which now number over 370 sites; NPS 1997), their legislative history, their location within a larger ecosystem context, and the particular needs of a species or assemblage of species, park managers have a great deal of flexibility and discretion in designing wildlife programs. In 1991, NPS produced a guideline for natural resource management, *NPS-77*, which further amplifies the 1988 management policies with established or recommended

practices and procedures for many aspects of the program (NPS 1991). Among these are more detailed discussions of native animal management; endangered, threatened and rare species; hunting and trapping; and exotic species management. These sections are designed to assist park managers in the development of resource management plans and action plans for specific programs. Just as important, they discuss the external concerns of managing native animals across park boundaries.

By way of illustrating policy interpretation and application in real situations, let us examine several recent events that have occurred at Badlands National Park, located in the southwest corner of South Dakota. Our first case study involves controlling the migration and establishment of black-tailed prairie dog (*Cynomys ludovicianus*) colonies on private and national grassland prairie communities adjacent to the national park. Within South Dakota, the prairie dog is designated a pest species and active efforts are maintained by the state to eliminate colonies when range managers complain (SDDA 1994). For the park manager, the policy is relatively clear: a native species to the badlands, prairie dogs are an important—and according to some (Kotliar et al. in press; Miller et al. 1994), a keystone—species within prairie ecosystems. (A keystone species has a large overall effect on community or ecosystem structure or

### The National Park Service's Management Policy in the 21<sup>st</sup> Century

function, an effect disproportionately large relative to its abundance; see Power et al. 1996.) Seen as a competitor for scarce forage and a destroyer of rangeland, emotions run high when colonies expand outside the park boundary. The park has, on a case-by-case basis, prior to 1994, controlled colonies within one-half mile of private lands, using zinc phosphide, when requested to do so by adjacent land-owners. The *Management Policies* define an animal "pest" population as one which interferes with the purposes of the park (NPS 1988, chap. 4:13). While prairie dogs in and of themselves don't interfere with park purposes, they are a state-listed pest species and subject to control. The NPS policy statement goes on to say, "Native pests will be allowed to function unimpeded except where control is desirable ... to prevent outbreaks of the pest from spreading to ... other plant communities ... outside the park." The state, along with a private land-owner, may take steps to control a population beyond park boundaries only to have it recolonized by animals migrating out of a heavy density on park lands, creating a chronic problem for the land-owner. In such a case, and using the exemption cited above, NPS would conduct a biological assessment, and, if disparate densities between NPS lands and private lands outside the boundary exist, control measures may be initiated. Further complicating any such

action contemplated by NPS is the ongoing effort to reintroduce the endangered black-footed ferret onto park lands. While this may make control efforts more complex, the environmental impact statement for ferret management (USFWS 1994) did allow for the continuation of limited prairie dog removal even where the presence of ferrets was documented.

A second case study involves one of several species of native grasshoppers found within the prairie ecosystem. One, the migratory grasshopper (*Melanoplus sanguinipes*), is of economic interest as it is known to contribute significantly to crop and rangeland damage (APHIS 1997). Through emergency designation it has been declared a pest species in South Dakota in past years (SDDA 1997). In 1996 and 1997, populations increased dramatically, and agricultural land-owners adjacent to the south boundary of Badlands initiated a campaign to obtain funding for the Animal and Plant Health Inspection Service (APHIS) to conduct a pre-emptive aerial spray campaign on lands administered by NPS but held in trust for the Oglala Sioux Nation within the Pine Ridge Reservation. Using the same policy guidance as in the previous instance, APHIS was requested to initiate aerial spraying during the third instar of the species and at a time when visual counts with a sweep net were resulting in over 90 animals per sweep. A quarter-mile

## The National Park Service's Management Policy in the 21<sup>st</sup> Century

buffer zone was established within the park boundary adjacent to cropland.

I believe that the Servicewide policies pertaining to the management of wildlife species do provide viable options for prescriptive manipulation of populations and their habitats. Both prairie dogs and grasshoppers, by nature cyclical and migratory, influence vegetation within an ecological context across political and ownership boundaries. Solutions based upon research findings and founded on common understanding and compromise among

the several affected parties, using an integrated pest management (IPM) approach, can achieve results that meet each party's objectives without unacceptable long-term loss to park resources.

Parks do not exist in vacuums, but rather as islands among a sea of jurisdictional ownerships. Managing fragmented ecosystems with only part of the historic faunal component, policy must—and does—recognize the need to intervene at some definable threshold of tolerance.

### References

- APHIS [Animal and Plant Health Inspection Service]. 1997. *APHIS Environmental Assessment: Rangeland Grasshopper Cooperative Management Program for Western South Dakota*. N.p.: APHIS.
- Kotliar, N. B., B. W. Baker, A. D. Whicker, and G. Plumb. In press. Are prairie dogs a keystone species? *Journal of Environmental Management*.
- Miller, B. G., G. Ceballos, and R. Reading. 1994. The prairie dog and biotic diversity. *Conservation Biology* 8, 677-681.
- NPS [National Park Service]. 1988. *Management Policies*. Washington, D.C.: NPS.
- . 1991. *NPS-77 Natural Resource Management Guideline*. Washington, D.C.: NPS.
- . 1997. *The National Parks: Index 1997-1999*. Washington, D.C.: NPS.
- Power, M. E., D. Tillman, J. A. Estes, B. A. Menge, W. J. Bond, L. S. Mills, G. Daily, J. C. Castilla, J. Lubechenco, and R. T. Paine. 1996. Challenges in the quest for keystones. *BioScience* 466, 9-20.
- SDDA [South Dakota Department of Agriculture]. 1994. *Prairie Dog Management in South Dakota*. N.p.: SDDA.
- . 1997. *South Dakota Grasshopper Program Manual*. N.p.: SDDA.
- USFWS [U.S. Fish and Wildlife Service]. 1994. *Final Environmental Impact Statement, Black-footed Ferret Recovery, Conata Basin/Badlands, SD*. N.p.: USFWS.

**William R. Supernaugh**, Badlands National Park, P.O. Box 6, Interior, South Dakota 57750; william\_supernaugh@nps.gov

