

Embracing Humane Values in National Park Management

Every year, tens of millions of Americans, and millions of non-Americans, visit units of the National Park Service (NPS). It is, without question, the best-known of the federal land management agencies, overseeing the operations of Yellowstone, Yosemite, Grand Canyon, and other parks recognized across the world. The agency's popularity is not just measured in terms of visitation, but also emulation. Nations throughout the world, embracing the American model of parks, have reproduced it, creating systems of parks for the purpose of preserving wildlife and allowing their citizens to enjoy these natural wonders.

The NPS, by barring in most units the taking of wildlife by sport hunters and trappers and by prohibiting (in general) the consumptive commercial extraction of resources from parks by mining, timber, and other interests, provides an explicit and implicit lesson to visitors in the value of a preservation ethic. The effects of climate and predation, the cycles of scarcity and abundance, and the other daily workings of intact ecological systems determine the fate of wildlife and wildlife populations, not intrusive human activities.

While the ideal of preservation and the priority placed on the working of natural processes are guiding principles for the NPS, the reality of human impacts complicates the management of parks. Humans have extirpated species from areas before the lands were designated as parks, robbing the present units of their complete composition of species and disrupting the balance of relationships

fine-tuned through the workings of evolution. In some units, humans have unthinkingly augmented species diversity, introducing exotics that harm native populations of plants and animals. Businesses have opened commercial operations on the periphery of parks, with the effects of these operations being felt within the boundaries of parks. And Congress has drawn park boundaries that do not conform to ecological boundaries, shortchanging and thereby short-circuiting the ebb and flow of natural processes.

The examples of harmful human impacts are as diverse and as numerous as are the units of the NPS. Parks in Hawaii confront the problems caused by feral pigs, damaging vegetative communities and the animals that depend upon them. Yellowstone National Park, the second largest unit in the contiguous 48 states, grapples with its insufficient size to accommodate the opportunistic movements of

bison. Small units in the East face interruptions of ungulate populations, which cause visible impacts on the understory offorests.

How can the NPS maintain fidelity to principles of hands-off management, but maintain protection of parks in biological communities adversely affected by human activities? The ideal of hands-off management is a goal for the NPS, but it is not a reality. For political, practical, and ethical reasons, the NPS actively manages wildlife every day.

Scientists working for the NPS can provide important insights about resolving management conflicts. But science does not give us answers: it gives us options. Decisions, grounded in scientific understanding, are guided by value judgments.

The NPS must continue to strive to maintain the workings of ecological systems and to protect species. But it must also strive to maintain humane standards for the treatment of animals. Wild animals are not just cogs in an ecological machine. Society has placed value on the protection of individual animals from human-caused harm. The NPS response to management imperatives requires a greater attentiveness to a humane ethic.

Below, we discuss a number of specific areas of NPS action where we believe application of humane policies is both ethically mandated and politically judicious.

Management of Exotic Species

Biological communities are dy-

namic. With or without human interference, species' ranges spread and shrink. Plants and animals colonize suitable habitat, spread, diminish, and disappear, depending on deterministic and random factors. Human activity has, of course, accelerated colonization as well as extirpation, and introduced species can have dramatic effects on local ecosystems (U.S. Congress, Office of Technology Assessment 1993). Nevertheless, a policy that views exotic species as uniformly unwelcome in national parks flouts biological and political realities, and invites conflict with humane ethics and with animal protection groups.

When Europeans colonized North America, they brought with them an enormous symbiotic biological community. From the Old World came domestic animals—cows, pigs, sheep, goats, dogs, and cats; commensals—brown rats, house mice, and a host of insects; disease organisms; crop plants; and a rich opportunistic flora that was already adapted to Old World agricultural practice (Crosby 1986). This community is here to stay, and, although the NPS may successfully exclude or eliminate some of the more dependent, conspicuous, rare, or slowly reproducing species from the national parks, it is an uphill battle. The national parks are not museum exhibits frozen in time, and they cannot be managed as such. Stasis is not a property of ecological systems.

Although firmly embedded in the culture, thinking, and policies of the

NPS (National Park Service 1988), the preference for native species over exotic species does not play a prominent role in shaping the public's views of animals. In our experience, the public understands the importance of protecting endangered and threatened species; values clean air, clean water, and a healthy landscape; values wilderness (and the national parks) for symbolic, aesthetic, and spiritual reasons; and values animals of many species for their own sake. We do not think these values will change readily, and NPS attempts to "educate" the public to support policies that devalue exotic species will meet with significant resistance and political backlash if these policies conflict with well-established public values. The backlash may worsen if the NPS tries to cloak value-driven policies as science-driven.

Management of exotic species may conflict with an animal welfare ethic in two ways. Most obviously, exotic species management may involve intruding on, harming, or killing wild animals. Within the context of a broad animal welfare ethic, such action can only be justified if it eases the suffering of the animals being managed, or if it is absolutely necessary for the protection of other wildlife or the systems that support wildlife. Another unacceptable aspect of management or (especially) elimination of exotic species from national parks is that it encourages the stigmatization of certain species. In its zeal to sell an eradication program to itself and to the public, the NPS may characterize

native species as desirable and "good," while exotic species are portrayed as undesirable, destructive, and "bad." From an animal welfare perspective, however, there are no bad animals, and any value system that demonizes animals is fundamentally destructive, especially if it emanates from a source that has as much public credibility as the NPS. All animals are worthy at least of our sympathy as creatures trying to survive and reproduce in whatever habitat they find themselves.

We elaborate in the context of two current species management controversies.

Wild horses. Evolved in North America, driven to extinction in the late Pleistocene by factors that may be at least partly anthropogenic, and reintroduced to the continent four or more centuries ago, wild horses (*Equus caballus*) exercise a strong hold on the American imagination (Berger 1986; Kirkpatrick 1994). As wildlife, they are extraordinarily adaptable, intensely and complexly social, and beautiful to look at. Moreover, North America is full of people who breed, ride, train, and are otherwise intimately involved with horses, and who possess deep personal feelings for these animals.

Recently, three East Coast national seashores have been grappling with management of wild horses: Assateague Island, Cape Lookout, and Cumberland Island. In each case, NPS resource managers have expressed concern that their resident wild horses are harming barrier is-

land ecosystems, principally through heavy grazing and trampling of dune grasses and marsh grasses (Assateague Island National Seashore 1995; Cape Lookout National Seashore 1996; Cumberland Island National Seashore 1996).

The wild horses of Assateague Island are arguably the most visible and best known in the country. In approaching its wild horse management problem, the park carried out or contracted for extensive research on horse impacts and on humane management techniques before beginning a management plan (Assateague Island National Seashore 1995; Kirkpatrick 1995). The approach chosen is both technologically innovative and extremely respectful of the welfare and social integrity of the horses. Since 1995, the park has been using a n immunocontraceptive vaccine (porcine zona pellucida, or PZP) to stop horse population growth and slowly reduce population size. The vaccine is remotely delivered, and thus no handling of the animals is required. The contraception program has been accompanied by an aggressive interpretive program designed to inform and reassure seashore visitors and the neighboring public (Kirkpatrick 1995). By any measure of public acceptability, this program has been a success: media attention has been almost uniformly positive, and the draft environmental assessment received only a handful of comment letters, all but one of which were supportive (Kirkpatrick 1995; M.A. Koenings, letter dated March 6,

1995).

The Cape Lookout program has been considerably more controversial. Cape Lookout has had to deal with an additional issue: equine infectious anemia (EIA) has been present among the park's horses, and the Veterinary Division of the North Carolina Department of Agriculture strongly urged the NPS to develop an EIA-free herd (Cape Lookout National Seashore 1996). Even before the EIA issue was raised, however, the park's plan evoked a strong negative response within significant segments of the public, especially among local horse breeders and the animal welfare community. Documentation of horse impacts on island ecological processes was, in our view, less than compelling. Moreover, the environmental assessment's preferred alternative called for the removal of more than half of the horses from the island, raising concerns that the viability of the herd would be threatened, and that the horses who would be removed might come to harm during handling or disposition. The controversy attracted significant media coverage, as well as the unfriendly attention of public officials outside the NPS.

Cumberland Island National Seashore is still developing its program, but the experience of Assateague Island and Cape Lookout is clear: if the NPS wants to actively manage wild horses, the justification must be clear and scientifically and ethically defensible, and the welfare of the animals must assume the high-

est priority.

Olympic mountain goats. Controversy exists over whether mountain goats (*Oreamnos americanus*) are native to Olympic National Park. A hiking club released a small group of goats into the park in the 1920s, but several historical accounts describe goat sightings on the Olympic peninsula prior to that release. Other accounts do not yield goat sightings (Moorhead and Stevens 1982; Lyman 1988; Houston et al. 1994). Suffice it to say that reasonable people may disagree about whether mountain goats are native to the national park.

Beginning in the 1970s, NPS and other scientists began collecting data at Olympic National Park on mountain goat population biology and the impact of the goats on plant communities (Houston et al. 1994; Olympic National Park 1995). Additionally, the NPS live-trapped and removed approximately 400 goats from Olympic between 1981 and 1989. In 1995, the park released a draft EIS whose preferred alternative was to shoot all the goats remaining in the park, on the grounds that they were exotic and posed a threat to rare endemic plants and to fragile alpine plant communities (Olympic National Park 1995).

Again, fierce controversy followed. The park office was flooded with hostile phone calls, and one poll conducted in 1995 (by Elway Research, Inc., Seattle) indicated that 73% of Washington voters opposed the extermination of the park's goats,

which were traditional favorites of visitors. Officials of the Washington Department of Natural Resources expressed concern with the plan. The question of the mountain goats' exotic status remained undecided in the minds of many. We believe, in addition, that the NPS overstated its case for goat impacts. Twenty years of research demonstrated that goats damaged individual plants, through grazing or wallowing, but only in local areas and at low levels (Houston et al. 1994). The NPS research yielded no evidence that mountain goats affected population levels of any rare or endemic plants, and much of the research was carried out when goat populations were much higher than existed at the time of the release of the environmental impact statement (EIS).

The mountain goat controversy has not yet been definitively resolved. In our view, however, it has already damaged the image of the NPS, at least regionally. A proposed NPS action, based on a fairly narrowly held set of values, clashed with widely held public values of humaneness and the intrinsic value of wildlife, producing a reaction from the public that ranged from confused to appalled. Olympic's attempts to link the goat extirpation effort to endangered species protection—a rationale that the public might have accepted—proved to be based on scientific claims that were largely hollow, further undermining the NPS's credibility and authority.

Management of Native "Overflow" Species

Perhaps the NPS's greatest challenge for the 21st century will be managing relations with the human communities that border the national parks. One aspect of the challenge will be defending the ecological integrity of parks against the intrusive impacts of disruptive human activities: mining, logging, livestock grazing, residential development, and uncontrolled recreational use. In this effort, the animal welfare community will lend its full support to the NPS. Creation of buffer zones to protect the parks from such intrusion should be a major objective for all national park advocates.

Another aspect of this challenge will prove more problematic for animal welfare advocates. Wildlife will continue to move out of the national parks and, unless efforts to buffer parks are highly and uniformly successful, will increasingly cause conflicts with neighbors. Short of building wildlife-proof fences around national parks, which will not generally be either desirable or practical, the NPS will be forced (if only for political reasons) to confront questions of controlling wildlife populations that originate within park boundaries. Rarely, however, will there be clear NPS policy justifications for controlling native wildlife populations within park boundaries. And unless such actions are very strongly justified, they are likely to be viewed dimly by the public and by the animal protection community.

In our view, reductions of native wildlife populations should be limited in scope and duration and unambiguously justified with clear policy and good science. All alternatives to population control within parks should be explored and exhausted, and non-lethal population reduction methods (such as immunocontraception) should be favored over lethal means if at all possible.

White-tailed deer at Gettysburg National Military Park. A white-tailed deer population at Gettysburg National Military Park and Eisenhower National Historic Site, Pennsylvania, reached high densities by the late 1980s (Storm et al. 1989). NPS management believed this deer population was altering historic woodlot appearance and inflicting intolerable crop damage to fields farmed by private lessees (who are also park neighbors), thus interfering with the parks' missions of historic interpretation. The NPS initiated extensive research into the biology of the resident deer population, culminating in an EIS process (Storm et al. 1989; Fairweather and Cavanaugh 1990; Vecellio et al. 1994; Gettysburg National Military Park 1995). The EIS yielded a preferred alternative of dramatic lethal reduction of the deer population through NPS-employed sharpshooters, and that program was implemented in 1995.

Although the research effort was thorough, the policy justification for massive deer reduction at Gettysburg and Eisenhower was and is, in our view, extremely weak. Rather than

developing a comprehensive plan to improve the appearance of the battlefield and an integrated pest management strategy to protect crops—including restoration of historic fence lines and drainages, selective logging of woodlots, temporary barriers to locally exclude deer from woodlots, repellents to protect historic orchards from deer—the NPS focused the EIS entirely on methods of deer population reduction, virtually guaranteeing the outcome from the outset.

The deer killing program has resulted in ongoing controversy with neighbors and animal protection groups, for safety and humane reasons. While initial results suggest that Gettysburg is succeeding in its immediate objective of reducing the crop damage being experienced by its leaseholders, it is not at all clear that the parks' fundamental mission of historical interpretation will be served by the deer kill.

Yellowstone bison. Like the wild horse, the American bison (*Bison bison*) is an American wildlife icon. More than any other animal, it symbolizes all that is both heroic and shameful in the conquest and settlement of the American West. The ambiguity of its symbolism is reflected in the animal itself: huge, capable of astonishing feats of strength and agility, awesome when assembled in numbers that can darken a landscape, but, conspicuous and placid, pathetically vulnerable to the human propensity for destruction.

Probably because of swelling numbers, grooming of snowmobile

trails, and adaptive learning, bison regularly have been straying over the boundaries of Yellowstone National Park in varying numbers since the late 1980's (Meagher 1989). This overflow has antagonized some park neighbors, most notably ranchers who have expressed concern that the bison might transmit brucellosis to their cattle (a threat that we have in the past argued is greatly exaggerated, e.g., Schubert et al. 1994; see also Meyer and Meagher 1995). With strong encouragement from the animal protection community, the NPS has refused to control bison numbers within Yellowstone, lacking a clear policy justification for doing so.

Unfortunately for the bison, however, the state of Montana has had no such compunctions. Under a variety of interim management plans, hunters and state officials from first the Division of Fish, Wildlife, and Parks and then the Department of Livestock have shot bison by the hundreds as they grazed outside park boundaries. Although clothed as a brucellosis-control effort, in our view the rules governing the killing have not been linked logically to risk of disease transmission. (For example, bulls as well as cows have been aggressively shot, despite general agreement that there is no plausible mechanism by which bison bulls may transmit brucellosis to cattle.)

More recently, the Montana shooting campaign has been augmented (at least for now) with a joint Montana-NPS effort to trap, test, and slaughter brucellosis-positive bison

both inside and outside Yellowstone, while tolerating their presence in some relatively remote national forest lands adjacent to the park (Yellowstone National Park 1996). While superficially more convincing as a brucellosis-control program, the unreliability of the brucellosis test employed, the predictions of models, and the presence of the disease vector in other wildlife species (most notably elk, *Cervus elaphus*) in and near the park suggest that the effort is not credible (Peterson et al. 1991; Meyer and Meagher 1995). In the face of this evidence, we now believe the bison removals are functioning primarily as *de facto* population control, rather than disease control.

We continue to be strongly opposed to active control of bison populations within Yellowstone, especially any kind of lethal control. We also continue to seek greater tolerance of bison outside the park, especially on federally owned lands. However, we do acknowledge that the public will not tolerate indefinitely the spread of bison into agricultural lands and developed areas. Brucellosis aside, bison are, after all, physically intimidating creatures with little respect for fences or other conventional obstacles.

Thus, population control of some sort outside Yellowstone may prove necessary at some point, possibly soon. In this case, we encourage the park to take the lead in exploring non-lethal, non-invasive population control techniques such as immuno-contraception.

Shooting bison is gruesome and callous, and resonates deeply with our national recollection of the most shameful sides of western expansion. Likewise, treating bison as livestock is at least as inhumane as shooting, and also sullies our national self-image as a frontier nation. Consequently, in our view, neither of these practices will ever gain broad public acceptance. As it continues to protect Yellowstone and grapple with the management of its bison, the NPS will serve its mission well if its policies assure bison the respect and humane treatment they deserve.

Conclusion

The National Park Service is perhaps the U.S. government's foremost communicator of ethical views of wildlife to the public. Consequently, it bears a heavy responsibility to examine carefully the values on which it bases its own programs and policies. This responsibility is practical as well as moral; high expectations on the part of the public can lead to deep cynicism and powerful political backlash when the NPS abandons the moral high ground.

But if the NPS embraces humane values in the broad sense—compassion for individual animals, and care for the biological communities in which they thrive—it will receive the strong support of the animal welfare community and of the public. This support will, in turn, keep our national parks secure, and their wildlife safe for future generations to enjoy.

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