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Jerry Freilich

Olympic National Park

Phillip Cafaro

Colorado State University - Fort Collins

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When It's Better Not to Manage NPS Resources

Jerry Freilich, Olympic National Park, 600 East Park Avenue, Port Angeles, WA 98362; jerry_freilich@nps.gov

Philip Cafaro, Department of Philosophy, Colorado State University, Fort Collins, CO 80523; cafaro@lamar.colostate.edu

From the very beginning, one of the main reasons for establishing national parks was to provide natural places for humans to recreate and enjoy the outdoors free of human influences. Such thinking has gradually evolved as people moved from fear of nature to enjoying the benefits nature could provide (Wilson 1984). Thoreau, writing in the 19th century, wrote about living a good life close to wild nature. And when John Muir and Teddy Roosevelt camped at Yosemite National Park in 1903, both men shared their appreciation of the virtues of outdoor life and the benefits of spending time in wild places. But for the entire history of the national parks, those who would leave nature natural have long been at odds with those who seek to “manage” or improve upon it.

Current National Park Service (NPS) policy strongly emphasizes the word “natural,” as in this quote from the 2006 NPS *Management Policies*:

4.1 General Management Concepts

[The Service will] try to maintain all the components and processes of naturally evolving park ecosystems, including the natural abundance, diversity, . . . etc. . . . [N]atural change will be recognized as an integral part of the functioning of natural systems. By preserving these components and processes in their natural condition, the Service will prevent resource degradation and therefore avoid any subsequent need for resource restoration. . . . The Service will not intervene in natural biological or physical processes, except . . . to restore natural ecosystem functioning that has been disrupted by past or ongoing human activities. . . .

We believe that this means preserving the full complement of native flora and fauna, and allowing these species to live their lives without interference from humans. It also means preserving unruly, unpredictable processes such as fires, floods, and insect outbreaks that have shaped park landscapes and, over the eons, helped create wild species themselves.

Since its inception, the “leave nature alone” philosophy has had strong advocates within the Park Service and among its friends. In the 1920s, for example, George Wright (NPS scientist), Joseph Grinnell (Zoology professor at the University of California–Berkeley), and Charles C. Adams (at the College of Forestry, Syracuse, New York) argued that national parks should be ruled chiefly by natural processes. Although Wright felt that active management might be needed in “combating the harmful effects of human influence,” Wright and Grinnell argued forcefully against fencing the bison for display, feeding the bears, and killing predators in Yellowstone (Pritchard 1999).

But for just as long, another faction within NPS has argued for compromises in order to accommodate visitors, encourage economic development, or improve on nature. Yellowstone Superintendent (and later NPS Director) Horace Albright overruled Wright

and Grinnell, arguing that visitors' desires to see animals up close could only be ensured by management or direct human intervention. Albright is famously shown in photographs of the time, demonstrating to visitors how to feed the bears. Albright supported the Bison Ranch at Yellowstone, a fenced corral (where the animals could be viewed comfortably and reliably), and presided over the wholesale slaughter of predators well into the 1930s (Pritchard 1999).

Although it could have been accomplished with less harm to wildlife and lighter ecological impacts, some development of visitor facilities (roads, campsites, even hotels) was necessary to accommodate visitors to the national parks. In the early days of the national parks (up until, say, the 1940s) these efforts and the numbers of visitors were small enough to have negligible impact on park resources (Sax 1980). But we contend that the collective impact of building, manipulation, and "management" have seriously compromised NPS's primary mission: to preserve wild nature *as* wild nature. In any case, the history of the parks provides convincing evidence that philosophical differences of opinion among rangers, naturalists, scientists, and public visitors are as old as the Park Service itself (Sellars 1997; Pritchard 1999). When to manage, what to manage, and how to decide these questions have proven difficult questions throughout NPS history.

It is a fact of life that administrators and moneyed interests will often have the upper hand in an argument with staff or scientists. But in the end, neither administrators nor scientists can claim a moral high ground. While NPS has long professed adherence to scientific principles, an abundance of grievous errors have been made by managers *and scientists* responsible for national park resources. Whether due to lack of scientific understanding, a desire to encourage visitors, or simply an idea insufficiently thought through, the list of erroneous and regrettable management actions is long and well-documented.

A resource management "Hall of Shame" includes the benighted effort to rid parks of predatory animals, an effort that continued for decades. It includes numerous examples where animals were fenced, displayed in pens, or fed by park staff for public amusement. It includes the unseemly dismissal of the Craighead brothers when scientific discourse lost out to power politics over how to wean grizzlies from a routine of long-time human feeding.

Finally, the Hall should reserve a special place for NPS fire policy; probably the most ecologically damaging of all these policies. For much of the 20th century, NPS followed a policy of absolute fire suppression: putting out fires anywhere it could reach, as quickly as possible. As early as the 1960s, research began to show that this was bad for forests and particular species, yet policies changed very slowly. We now know that fire is vital to the continued health of forests, prairies, seasonal wetlands and other ecosystems in many national parks and are trying, timidly in many places, to restore it to its rightful ecological role.

Acknowledging that people make mistakes, we should not take the arrogant position that those errors are now past and that we manage today through a clearer lens or with greater wisdom. Past NPS managers who made even the most grievous mistakes were neither fools nor cranks of the time but were typically well-intentioned, mainstream thinkers. As we move forward, park managers should adopt a minimalist posture towards management, place humility (rather than pride) as the highest goal, and take the advice of Hippocrates (*Epidemics*, Book 1, Section 11) who counseled doctors to "at least, do no harm."

Because we so often err and the effects of our errors can be long lasting and dire, simply doing nothing probably commits the least harm in the long run. This then is our suggestion to managers: do as little as you can get away with. If possible, do nothing.

This approach will of course frustrate many managers' desire to act, to "do something" for nature. But we believe it has the best chance of fulfilling the Park Service's primary mission: to preserve wild nature. And in the long run, the manager who does nothing will be proven right time and again.

However, human nature and institutional imperatives being what they are, we doubt many managers will take us up on this suggestion. So as an alternative, we propose the following checklist or matrix, to be used in evaluating whether or not to engage in management projects (Table 1).

A few examples of good resource management projects will suggest how this matrix might be applied.

One particularly excellent recent management project is the reintroduction of wolves to Yellowstone National Park. In this project, a relatively small amount of money was used to obtain and release the wolves. After reintroduction, the animals re-established themselves

Table 1. A matrix for deciding whether to undertake resource management projects.

A Good Project:	A Poor Project:
<ul style="list-style-type: none">• Runs itself (becomes self-sustaining)	<ul style="list-style-type: none">• Requires constant work (never-ending fight)
<ul style="list-style-type: none">• Re-establishes natural control	<ul style="list-style-type: none">• Depends on continued human actions
<ul style="list-style-type: none">• Requires least input of energy and/or cash	<ul style="list-style-type: none">• Requires constant and continuing input of dollars and/or energy
<ul style="list-style-type: none">• Manages people rather than nature	<ul style="list-style-type: none">• Tries to manage nature rather than people
<ul style="list-style-type: none">• Leads to stable biodiversity of native species (but not necessarily highest biodiversity—e.g., exotics or weedy species)	<ul style="list-style-type: none">• Results in community structure and species composition vacillating strongly when the project ends, with unpredictable outcome
<ul style="list-style-type: none">• Serves ecosystem needs in objective, non-anthropocentric ways	<ul style="list-style-type: none">• Primarily serves human needs (anthropocentric)
<ul style="list-style-type: none">• Is likely to be successful over the long term	<ul style="list-style-type: none">• Is unlikely to last longer than the funding
<ul style="list-style-type: none">• Supports top-down control (e.g., restoring top predators)	<ul style="list-style-type: none">• Tries to substitute for top-down control (e.g., shooting ungulates)
<ul style="list-style-type: none">• Restores larger areas (umbrella/keystone effects)	<ul style="list-style-type: none">• Is small-scale and intensive, pertaining only to specific sites
<ul style="list-style-type: none">• Is fail-safe (Hippocrates: "Do No Harm")	<ul style="list-style-type: none">• Has collateral impacts that are uncertain, hard to estimate, or not adequately considered

with a torrent of associated results up and down the food chain. Predator-prey cycles were restored, vegetation patterns changed significantly, and visitors flocked to the park to witness the new, big dog in town. The project can be monitored long-term but requires no input of additional resources. It affected the entire park and perhaps even the surrounding ecosystem.

Contrast this with the Park Service's proposal to control overpopulation of elk in Rocky Mountain National Park by bringing in sharpshooters or licensed hunters to shoot them. The original problem (too many elk) is a function of people feeding them (outside of the national park boundary) and the absence of natural predators. Rather than working with local governments to prohibit this practice ("managing people") or reintroducing predators, NPS proposes to manage the wildlife ("managing nature") with hunting. But this human intervention will need to be repeated year after year, in perpetuity. It will also create a large new class of people (hunters) with a vested interest in continuing such intensive management. From just about any angle, this proposed project fails the test of good management. Reintroducing top predators (wolves) is politically charged, but the result would be infinitely better.

Another excellent project is the planned removal of the two hydropower dams on the Elwha River in Olympic National Park. When accomplished, this project will restore five species of salmon to 70 miles of river from which they've been excluded for more than 90 years. Once re-established in the river, the salmon will again provide marine nutrients to upland forests. Widespread ecological benefits will accompany the restoration of sediment transport and large woody debris dynamics. Although this project will be quite costly (\$185 million), it will restore natural regulation and will require little action from managers once the dams are removed.

Of course, most projects are neither black nor white, but some shade of gray. Such is the case of Exotic Plant Management Teams (EPMTs) now working in many national parks. These teams attempt to control exotic weeds before they spread and become uncontrollable. Considered in terms of the checklist, the EPMTs fight a constant battle requiring continuous input of funds and effort. They may win against one species or perhaps several, but the war is never-ending and unlikely to succeed in the long run (Cousens and Mortimer 1995). When the funding stops, the weeds resume their march. Mechanical removal can be used in some cases, but others rely on chemical applications with undesirable environmental impacts. If new methods were found to effectively control exotic plants when they were at very small population sizes, EPMTs would get a higher score from our matrix. As they stand, we rate them lower than the previous "excellent" examples.

For many NPS managers, projects have seemed a way of restoring a *status quo* or returning the parks to a previous condition. Unfortunately, many issues now facing the Park Service will be due to rapid changes in that *status quo*. Global climate change, in particular, will inevitably confound efforts to do "what is right." As Dave Graber (2003) said, "there may well be an unhappy trade-off between permitting ecosystems their own—albeit anthropogenically altered—destiny, or engaging in aggressive, intrusive intervention in an attempt to direct ecological trajectory."

Graber's words are particularly apt, given that even the best management today cannot set things back to a previous, unimpacted, pristine condition. With climate change forcing systems into new and unknown trajectories, how can we even guess which direction we should be heading? Or to put it even more succinctly, "If we don't know where we're going, why be in a hurry to get there?"

We maintain that doing nothing is a valuable and under-utilized management tool. Doing nothing saves money and avoids confounding global trends with our own efforts. It allows us to document change occurring in these relatively unimpacted parks, and whatever happens is likely to happen anyway, regardless of our efforts! This documentation of what's happening in unimpacted systems may prove to be unimaginably valuable, yet another gift of our national parks to all Americans.

We are essentially pessimistic that people, serving their own agendas, will do the right thing for nature. Time and again, human efforts have proven wrong-headed, fallacious, short-sighted, or unwise. In the long history of the Park Service some people were right (like George Wright) ... and we see them as wise today. But others with more power or more money had fallacious opinions, unwarranted assumptions, and untenable philosophies, and had their way. We are unconvinced that any part of that formula is different today.

In the long run, you could do a lot worse than to do nothing. But if management is clearly needed, a ranking matrix (ours or another) should be used carefully and conservatively to rate projects before they're attempted.

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