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PRESERVATION

By the late nineteenth century Americans began to think seriously about setting aside areas of land to protect them from commercial development. Proponents of preservation believed that certain places should be shielded from human exploitation and devoted to less intrusive human ends—recreational, aesthetic, and spiritual—or protected simply as a gesture of respect for the landscape itself. Preservation became an early focal point of a set of concerns that later fell under the rubric of environmentalism. Preservation later came to overlap and compete with related philosophies such as conservationism (sometimes called resourcism) and restorationism.

The idea of preservation gives rise to two philosophical questions: First, what does it actually mean to preserve something? Second, what should be preserved? The historical and contemporary debates over preservation center on these questions.

EARLY PRESERVATION: 1800s TO 1960s

Early gestures at environmental preservation focused as much on the preservation of heritage (or the preservation of origins)—whether of the nation or the human species—as they did on preserving particular physical places. The American transcendentalist Henry David Thoreau (1817–1862) worried that the preservation of wildness

Avalanche Peak, at Yellowstone. *Avalanche Peak is a part of the Absaroka Mountain Range, on the eastern border of Yellowstone National Park. The peak is one of the most popular sites for hiking in the park. Although popular for recreational activities, national parks are concerned first and foremost with preservation and conservation. Yellowstone was established in 1872, when the main focus of preservation in the United States was on wilderness areas.* NPS. PHOTO BY BOB GREENBURG.

(often misquoted as "wilderness") was necessary to offset the looming development of America; he wrote, "in Wildness is the preservation of the world" (Callicott and Nelson 1998, p. 37). Concerned mainly with protecting the remaining wild places or wilderness areas in the United States, John Muir (1838–1914) was also a leading nineteenth-century preservationist. Muir grounded his preservation efforts in a variety of arguments: heritage ("going to the mountains is going home"), a wide-range of instrumental values (from watershed protection to mental therapy for "tired, nerve-shaken, over-civilized" urbanites), and even deeper intrinsic value ("This Sierra Reserve... is worth the most thoughtful care... for its own sake") (Callicott and Nelson 1998, pp. 48–62).

Muir's commitment to a specific place—Yosemite's Hetch Hetchy Valley—pitted him against the utilitarian-motivated U.S. Forest Service chief, Gifford Pinchot (1865–1946). Pinchot proposed damming the Tuolumne River to provide cheap water and electricity to the burgeoning human population of San Francisco (a proposal that was considered conservationist at the time), whereas Muir proposed preserving the valley from this human encroachment. This famous philosophical and political battle sharply and dramatically delineated the distinction between conservation and preservation. This distinction still divides the American environmental movement as well as environmental philosophy and serves as the touchstone of American natural resource education today.

From 1919 until his death, the American ecologist, forester and environmentalist Aldo Leopold (1887–1948) wrote extensively on the importance of wilderness preservation. His early writings focused almost exclusively on the recreational value of such areas, whereas his later writings reflected on the value of preservation to science as a criterion of ecological normality and a measure of "land health."

From the late 1800s to the 1960s, preservation efforts focused largely on setting aside large landscapes and ecosystems such as national parks and wilderness areas in the national forests. The desire for preservation appears to be correlated with our success at fulfilling our

Manifest Destiny (the belief that the United States was destined to expand from the Atlantic to the Pacific seaboards) and a growing sense that we had conquered enough, that it was time to set some areas aside for the preservation of our human and national heritage. The preservation of specific places was codified in the U.S. Wilderness Act of 1964, which sought to establish "a National Wilderness Preservation System" (Callicott and Nelson 1998, pp. 120–130). This characterization is echoed in contemporary discussions of preservation. The philosopher G. Stanley Kane, for example, defines *preservation* as "setting aside areas that still remain undisturbed and protecting them against human encroachment," and he defines *restoration* as "bringing degraded areas back to something resembling an unspoiled condition" (Kane 2000, p. 221). Early preservationist philosophy was manifested in the creation of environmental groups such as the Sierra Club in 1892, the Wilderness Society in 1935, and the Nature Conservancy in 1950.

PRESERVATION SINCE THE 1960S

Although philosopher-scientists such as Leopold and Victor Shelford (1877–1968) had urged the preservation of representative ecosystems, their concerns were not translated into public preservation policy, which was motivated by the aesthetic appreciation of monumental scenery (as served by the national park system) and the desire to provide outdoor recreation (as served by the national wilderness preservation system). Beginning in the late 1960s, however, preservationist concern shifted from scenic landscapes suitable for recreation to the preservation of species of plants and animals. As early as 1920, scientists began noticing with alarm the loss of species—what later became known as the loss of biological diversity or biodiversity. The biologist Francis Sumner, for example, wrote in 1920 of the "importance of saving from destruction the greatest possible number of living species of animals and plants, and saving them, so far as possible, in their natural habitats and in their natural relations to one another" (Nelson and Callicott 2008, p. 32). In the 1970s and 1980s, the biologist Edward O. Wilson became the most prominent proponent of the preservation of biodiversity. In 1985 biologists such as Michael Soulé, Reed Noss, and David Ehrenfeld founded the Society for Conservation Biology as a "mission-driven" effort to preserve Earth's biological diversity.

Environmentalists began to see that biodiversity preservation was a more urgent concern than was the preservation of heritage landscapes. The concern for the preservation of biodiversity was codified in 1973 in the U.S. Endangered Species Act (ESA), which implicitly attributes intrinsic value to, and confers legal rights on, species, subspecies, and distinct population segments, protecting them from the "consequence of economic growth and development untempered by adequate concern and conservation" (Endangered Species Act of 1973, Sec. 2(a)(1), p. 3). The ESA is one of the most powerful conservation laws in the world, shaping much of contemporary discourse about preservation; it has, therefore, become the focus of much antienvironmental critique. In fact, environmentalists themselves sometimes criticize the ESA for its overemphasis on various species and its implicit indifference to the fate of entire ecosystems.

Since the 1960s preservationists have come to focus on four main areas of concern:

species;

ecosystems, which include biota and abiota (the nonliving parts of an ecoystem) with an emphasis on the preservation of the functions or processes performed or the services provided by the ecosystem (e.g., nitrogen cycle, carbon budget, water filtration);

community, which emphasizes the preservation of certain end states of biota (e.g., wilderness, grassland, wetland);

genetic diversity.

Contemporary preservation efforts have been buoyed by scientific advances such as the ability to readily quantify and understand DNA and the realization that in the face of environmental change, it is genetic diversity (i.e., heterozygosity, allelic diversity, inbreeding coefficient, and population subdivision and structure) that promotes a species' or population's chances for survival. For example, in addition to the preservation of species, the ESA, in later amendments, allows for the preservation of distinct population segments (DPS). Although the ESA does not precisely define a DPS, most scientists use the term to refer to a population representing an important component in the evolutionary legacy of the species (U.S. Fish and Wildlife Service 1996). Conservation geneticists, however, have suggested that DPSs become more definite when defined in terms of genetic diversity and future evolutionary potential, or what are sometimes called evolutionarily significant units. There are, however, limits to scientists' understanding of the relationship between population viability and genetic diversity. Moreover, efforts to champion the preservation of species in more precisely quantifiable terms still entail normative decisions—such as what constitutes "significant" in the evolutionarily significant unit.

CRITIQUE OF PRESERVATION

There are significant disagreements among philosophers about the meaning and goals of preservation. What does

it mean to preserve something? Why would you want to preserve something? It might be tempting to think that all these various foci of preservation all really converge on the same thing, that a focus on preserving scenic landscapes would result in preserving biodiversity, and further that the end result of restoration would be the same as that of preservation. There is reason to think, however, that this is simply not true, that different foci would lead to different actions on the ground with different end states. For example, the philosopher Sahotra Sarkar has pointed out that

> biodiversity conservation ... cannot be identical with wilderness preservation.... [They] differ not only with respect to their explicit and implicit long-term objectives, but also with respect to their justifications, their immediate targets and obstacles, and the strategies that are likely to achieve these targets.... [Sometimes] the tasks of biodiversity conservation and wilderness preservation converge, but at least as often they do not. (Nelson and Callicott 2008, p. 231)

There is also a growing scientific literature indicating that actions that maximize the conservation of a species are not necessarily those that maximize the preservation of overall biodiversity, much less scenic or recreationally suitable landscapes. For example, scientists have growing doubts about the value of umbrella species—large "charismatic" species with large home ranges, the preservation of which was once assumed to preserve many other smaller, less "popular" species that might also exist in the critical habitat of the umbrella species.

One standard criticism suggests that preservation upholds interests of nature over the interests of humans. This criticism has been pressed most sharply by scholars and activists from the developing world. In 1989 the Indian scholar Ramachandra Guha (Callicott and Nelson 1998) pointed out that certain preservation tendencies (most notably wilderness preservation) have been ethnocentric and therefore not easily transferable to other contexts around the world without grave human consequences. Similarly, the protected-areas scholar David Harmon, echoing the views of the environmentalist Norman Meyers, suggests "that the whole notion of 'setting aside' has in fact done great damage to the conservation movement around the world" given the lack of attention that has been paid to varying ecologies in various parts of the world and the "top-down" fashion in which such environmentalism is perceived (Callicott and Nelson 1998, p. 228).

Defenders of preservation sometimes concede that they are choosing nature over humans. Philip Cafaro and Monish Verma, for example, argue that when human needs "conflict with measures that are necessary to preserve species, we believe they should be met in ways that preserve wild nature" (Rothenberg and Ulvaeus 2001, p. 60). Other preservationists deny the conflict between nature and humans. The wilderness advocate Dave Foreman, for example, suggests that these criticisms of preservation emanate from "Third World jingoism" and "chronic anti-Americanism" and that preservation "need not conflict with the needs and rights of the downtrodden" (Nelson and Callicott 2008, pp. 399–400).

Another more conceptual criticism suggests that preservation either creates or perpetuates a mentality that alienates humans from nature, whereby humans are despoilers of nature, chronic ecological malefactors. In this view the measure of successful preservation, then, is the degree to which human intervention is absent. This conceptual alienation opens up the door for the misanthropy and elitism that we have sometimes seen in the environmental movement The book *Defending the Earth: A Dialogue between Murray Bookchin and Dave Foreman* (Bookchin and Foreman 2001) nicely captures the tension between advocates and opponents of this viewpoint.

Others have taken exception to preservation strategies that attempt to reconcile the dualism between humans and nature; these critics view such strategies as preventing preservation efforts in areas that are moderately or heavily affected by humans. Referring to a concern about the ways in which preservation (in this case, of the Arctic National Wildlife Refuge in Alaska) can divert attention from other, equally important environmental issues (such as the agrarian landscape), the writer Wendell Berry confesses that he "made a sort of vow ... [to not] support any more efforts of wilderness preservation that were unrelated to efforts to preserve economic landscapes and their human economies.... We can[not] preserve either wilderness or wilderness areas if we can't preserve the economic landscapes and the people who use them" (Berry 2008, p. 601). William Cronon likewise laments the need to ignore and even erase the rich legacy of erstwhile human settlement in the Apostle Islands of Wisconsin in order to create a "proper" Apostle Islands wilderness area (Nelson and Callicott 2008).

BEYOND PRESERVATION

Instead of a focus on the preservation of either processes (e.g., evolutionary) or end states (e.g., wilderness areas or biodiversity reserves), some have suggested that the goal should be preservation (or conservation or restoration) of an appropriate human relationship with nature. In this approach preservation implies the implementation of virtues such as humility, respect, attentiveness, and care. On this view the problem of preservation is the problem of figuring out how humans ought to relate to nature. Some have suggested that preservation is much more a

gesture of respect than it is a desire to preserve a state or process. For example, the philosopher Andrew Light writes that the value of restoration lies "in the revitalization of the human relationship with nature" (Kane 2000, p. 95).

SEE ALSO *Biodiversity; Conservation; Endangered Species Act; Environmental Activism; Environmental Aesthetics; Environmental Law; Guha, Ramachandra; Hetch Hetchy; Leopold, Aldo; Muir, John; Nature Conservancy; Pinchot, Gifford; Sierra Club; Society for Conservation Biology; Thoreau, Henry David; Utilitarianism; Wilderness; Wilderness Act of 1964; Wilson, Edward O.*

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