Sightseeing vs Biophilia at the Grand Canyon

Stephen J. Pyne recently wrote a short but perceptive book, *How the Canyon Became Grand*,[1] in which he explores some of the meanings that people of many different origins have given to the Grand Canyon. He indicates that it was human expectation, bound up in the cultures of those who visited it, or lived there, that determined what aspects of that part of the world would impress them, and that suggested the names they gave it. Members of Coronado's expedition saw the canyon in 1540, and like many visitors, greatly underestimated its size and that of the river. They gave it no name other than to call it a "barranca," a ravine. "Grand Canyon" was the accepted name of the erosional feature only after the mid-19th century. Its status as a national park, bestowed by the U.S. Congress in 1919, is in large part the result of the meaning connoted by the word "Grand."

The impact of the canyon's form, color, monumentality, and unusual beauty is so overwhelming that only after a while do visitors begin to notice the life that is all around them. The air in the canyon is full of birds. White-throated swifts zoom after insects, red-tailed hawks soar near the cliffs looking for small mammals, and ravens play, squawking and doing midair somersaults. In the rocks at the edge of the chasm, begging ground squirrels make themselves known. A low forest of twisted pines and junipers frames the rim. One can often see deer, or more seldom be surprised by a bobcat crossing the road with a rabbit in its jaws, or spot a mountain lion in the dusk.

Topography on a grand scale and wildlife are two aspects of the national park experience, and among the reasons why national parks were created in the United States. The purpose of national parks, according to an act of Congress in 1916, "is to conserve the scenery and

[1]Stephen J. Pyne, *How the Canyon Became Grand: A Short History* (New York: Viking, 1998).

the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."[2] Many historians and commentators on the national parks have noted that this sentence contains two purposes, "to conserve" and "to provide for enjoyment" by the public, which were likely to come into conflict with each other, and indeed have done so.[3] Few, however, have noted that "scenery" and "wildlife" imply two distinct attitudes of visitors: "sightseeing," the enjoyment of spectacular landscapes, and "biophilia" the appreciation of life within natural ecosystems.

The first part of the statement of purpose directs that four things characteristic of national parks be conserved: scenery, natural objects, historic objects, and wildlife. In the early days of the designation of parks, the first two received the greatest emphasis. There were 13 national parks in 1916. All were places primarily noted for monumental scenery except Mesa Verde, where "historic objects," the ancient cliff dwellings, were the main interest. It is notable that the first proposal for a national park advocated the preservation of animals, vegetation, and native people. In 1832, the artist George Catlin proposed that an area on the Great Plains be preserved as "a nation's park, containing man and beast, in all the wild and freshness of their nature's beauty….What a beautiful and thrilling specimen for America to hold up to the view of her refined citizens and the world, in future ages!"[4] Catlin's suggestion was resisted as far as the Great Plains were concerned, and steps to create a national park there only came a century later, after the land had been plowed and the bison had almost disappeared. It is striking that Catlin, many of whose paintings were of Indians, considered the Native Americans as appropriate dwellers in a national park. Grand Canyon was part of the homelands of several tribes, and was and still is the home of the Havasupai. But relations between the Havasu people and the administrators of the national park were often painful for both.

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[2]U.S. National Park Service Act, 1916, *The Statutes at Large of the United States of America from December 1915 to March 1917* (Washington, DC: Government Printing Office, 1917), Vol. 39, Part 1, p. 535, quoted in Carolyn Merchant, ed., *Major Problems in American Environmental History* (Lexington, MA: D.C. Heath, 1993), p. 394.

[3]Alfred Runte, "National Parks and National Park Service," in Richard C. Davis, ed., *Encyclopedia of American Forest and Conservation History*, 2 vols. (New York: Macmillan, 1983), pp. 464-67.

[4]George Catlin, *Letters and Notes on the Manners, Customs, and Condition of the American Indians*, 2 vols. reprint (Minneapolis: Ross and Haines, 1965), I, pp. 261-62.

Tribal ancestors traditionally hunted and gathered in a large area of the canyon, but officials sometimes treated the Havasupai as interlopers and tried to move them out of places like Grand Canyon Village and to limit them to their tiny reservation of 519 acres tucked away in a tributary canyon.[5]

The first national park, Yellowstone, had its own Grand Canyon, along with waterfalls and geysers. Its herds of megafauna were also something to see, but by themselves perhaps could not have generated the railroad tourism desired by its promoters and the congressional designation that came in 1872. The primary purpose of parks then was to save the crown jewels of America's natural scenery. Yosemite was designated a park for its waterfalls and granite domes, and Sequoia and General Grant for trees, biological phenomena indeed, but so large and old that they were considered to be awe-inspiring features of the landscape. These early parks were created before the science of ecology, with its concepts such as the ecosystem, had received wide recognition, so backers of the parks in those days had only a general desire to protect nature, along with a wish to encourage people to visit the areas. Mount Rainier, Crater Lake, Rocky Mountain, Mount Lassen: the theme was evidently great scenery, and no feature of the American earth fit it better than the Grand Canyon.

John Wesley Powell, who led expeditions by boat down the Colorado River through the canyon in 1869 and 1871-72, urged that the Grand Canyon be made a national park because of its grandeur and geological interest. When John Muir saw the Grand Canyon in 1896, he repeated the call for park status because of its superlative scenery.[6] President Theodore Roosevelt first visited seven years later, and voiced similar thoughts:

> Leave it as it is. You cannot improve on it. The ages have been at work on it, and man can only mar it. What you can do is to keep it for your children, your children's children, and for all who come after you, as the one great sight which every American…should see.[7]

Roosevelt gave the canyon all the protection he could. Congress was sensitive to mining companies who sought bonanzas, ranchers who feared curtailment of grazing rights, and timber concerns that wanted access to forests. Since chances of passage for a national park bill

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[5]Stephen Hirst, *Life in a Narrow Place* (New York: David McKay, 1976).
[6]John Muir, "The Wild Parks and Forest Reservations of the West," *Atlantic Monthly*, 81, January, 1898, p. 28.
[7]New York *Sun*, May 7, 1903.

seemed slight, he took an unprecedented action, invoking the Antiquities Act to proclaim Grand Canyon National Monument in 1908. The area included was the section regarded as most scenic, with narrow strips of land along the rims that avoided impinging too far on commercial timber and grazing interests. There was opposition, however, and a suit challenging the proclamation on the grounds that the Antiquities Act did not authorize making national monuments of large natural features went to the Supreme Court, which eventually ruled in the president's favor.[8]

Arizona became a state in 1912, and local pride and hope for a bigger tourist industry strengthened the movement to create a national park. The first director of the National Park Service (NPS), Stephen T. Mather, supported making the Grand Canyon a park, and his close associate and eventual successor, Horace M. Albright, worked with Representative Carl Hayden and Senator Henry F. Ashurst, both of Arizona, to get a bill through Congress which was signed by President Wilson on February 26, 1919.[9] The area included was almost the same as the monument; the intent was clearly to protect the scenic and geological features of the canyon itself, and only a small slice of neighboring forests and wildlife.

Another purpose of national parks, however — the protection of wildlife, and what would come to be recognized as assuring that ecosystems would continue to function as whole systems — was beginning to be recognized. John C. Merriam, head of the Carnegie Institution, urged that national parks be regarded as laboratories where natural processes could be observed and studied.[10] Scientists, in seeing the Grand Canyon as a treasure trove of evidence for the evolution of life on Earth as well as its present ecological interactions offered a reason for the preservation of the Grand Canyon in that it contributes to understanding the origin and nature of the living community. Vernon Bailey, chief naturalist of the U.S. Biological Survey, argued that the boundaries of national parks, including Grand Canyon, had been

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[8]Douglas Hillman Strong, "The Man Who 'Owned' Grand Canyon," *American West*, 6, September, 1969, p. 36. In its 1920 decision, the Supreme Court ruled that as one of the greatest examples of erosion in the world, the Grand Canyon was clearly an object of unusual scientific interest and therefore could be set aside by proclamation under the Antiquities Act of 1906.

[9]C. Gregory Crampton, *Land of Living Rock: The Grand Canyon and the High Plateaus of Arizona, Utah, and Nevada* (New York: Alfred A. Knopf, 1972), p. 206.

[10]Barbara J. Morehouse, *A Place Called Grand Canyon: Contested Geographies* (Tucson: University of Arizona Press, 1996), p. 66.

located without sufficient attention to the need to provide wildlife with habitat during all seasons of the year.[11] The area included, he maintained, should be large enough to sustain a viable population of animals under natural conditions. In 1929 he recommended an expansion of Grand Canyon National Park, a suggestion that was lost in inter-agency disputes.

The idea of an expanded park did not die, but the argument in favor of it that would prevail was the old idea of monumental scenery: the existing national park embraced only 105 miles of the canyon's total length of 277 miles. In 1932 Congress authorized Boulder Dam, later called Hoover Dam, which created Lake Mead, a reservoir extending into the lower Grand Canyon and drowning some famous rapids.

Glen Canyon Dam, above the Canyon, authorized as a storage and power facility, was completed in 1964. Plans to build two additional dams in the Grand Canyon itself, Marble Canyon Dam and Bridge Canyon (Hualpai) Dam, caused acrimony between conservationists and developers, between Upper and Lower Basin states, and between California and Arizona, from the time of the completion of Hoover Dam to 1968, when Congress authorized the Central Arizona Project and placed a moratorium on dams within the Grand Canyon. The decision against the dams resulted mostly from political compromise,[12] but also from public opposition aroused by environmentalist groups such as the Sierra Club under its activist director, David Brower, which placed ads in newspapers with slogans such as, "Now only you can save Grand Canyon from being flooded…for profit."[13]

The idea of a national park embracing the entire Grand Canyon, except for the portions within Indian reservations, gained the support of Senator Barry Goldwater of Arizona, the NPS, and environmentalists. A bill to enlarge the national park and expand the Havasupai reservation was signed into law in 1975. It almost doubled the size of the park, to 1,892 square miles. But the idea that the national park was intended to protect scenery was implicit in the fact that the new boundaries mostly ran along the rims, putting the interior of the canyon within the national park and leaving areas above the rims, with their wildlife habitats, in other jurisdictions. A new national monument to

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[11]*Ibid.*, pp. 55-62.

[12]Byron Eugene Pearson, *People Above Scenery: The Struggle Over the Grand Canyon Dams, 1963-1968*, Ph.D. Dissertation, Department of History, University of Arizona, 1998. In process of publication by the University of Arizona Press.

[13]Roderick Nash, *Grand Canyon of the Living Colorado* (New York, Ballantine Books, 1970), pp. 132-33.

include some of these areas was proposed by Secretary of the Interior Bruce Babbitt, former governor of Arizona, and proclaimed by President Clinton in 2000.

Grand Canyon has provided a great amount of evidence for the understanding of living communities. Even without the scenic monumentality of the canyon, there would be enough biological interest to justify designation as a national park. In 1889 C. Hart Merriam, Chief of the U.S. Biological Survey, studied the distribution of plants and animals in the Grand Canyon region. Within a range of 10,000 feet elevation from the Colorado River at canyon bottom to the top of the San Francisco Peaks he distinguished seven "life zones," that is, "areas inhabited by definite assemblages of animals and plants."[14] Merriam's ideas represented a step toward the concept of the ecosystem.[15] When he wrote, "The Grand Canyon of the Colorado is a world in itself, and a great fund of knowledge is in store for the philosophic biologist whose privilege it is to study exhaustively the problems there presented,"[16] he aptly described himself.

The purpose of national parks was to some extent redefined as a result of a crisis of wildlife management that occurred in the Kaibab Forest north of the Grand Canyon in the early 20th century. The theory of game management then was that "good" species such as deer should be protected, but that predators including wolves and mountain lions should be exterminated. James T. "Uncle Jim" Owens was appointed warden by the Forest Service. In the 12 years preceding the establishment of the national park, he killed 532 mountain lions. Among those who used his services as a guide were the writer Zane Grey, Buffalo Jones, and Theodore Roosevelt, who came to hunt lions in the game reserve he, as president, had created. The policy of destroying predators continued until 1931.[17] As a result, lions and bobcats were greatly reduced in number, wolves were extirpated, and coyotes continued to flourish. The Kaibab herd of mule deer, spared

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[14]Keir Brooks Sterling, *Last of the Naturalists: The Career of C. Hart Merriam* (New York, Arno Press, 1974), p. 294.

[15]Clinton Hart Merriam and Leohard Stejneger, "Results of a Biological Survey of the San Francisco Mountain Region and Desert of the Little Colorado, Arizona," *North American Fauna,* 3, 1890, U.S. Department of Agriculture, Division of Ornithology and Mammalogy Washington, Government Printing Office.

[16]Joseph Wood Krutch, *Grand Canyon: Today and All Its Yesterdays* (New York: Doubleday and the American Museum of Natural History, 1962), p. 12.

[17]Robert Wallace, *The Grand Canyon* (New York: Time-Life Books, 1972), p. 56.

from most predation, increased from 4,000 in 1906 to 100,000 in 1924. They ate every green thing they could reach, and the forest took on the appearance of a clipped city park. The Forest Service inaugurated limited hunting, fawns were captured and transplanted, and there was a disastrous attempt to drive deer across the canyon by trail to the South Rim, all to little avail.[18] During the severe winter of 1924-25, thousands of deer died of starvation. Game managers such as Aldo Leopold, who had worked at Grand Canyon, were convinced by the tragedy in the Kaibab Forest that "predators are members of the community,"[19] and that overpopulation was more dangerous to deer, and to the land, than any predator. Subsequently, Park Service policy came to be the restoration of a functioning ecosystem by protection of all native species including predators, herbivores and plants and allowing their natural interactions. Some later parks, such as Everglades and the rainforest sections of Olympic National Park, were designated because of their biological interest. Unfortunately, most parks, even the expanded Grand Canyon National Park after 1975, are too small to protect all important members of the ecosystem, especially larger animals.

The NPS adopted the "Leopold Report"[20] in 1963, changing its wildlife management policies to protect interactive complexes of species. The plan advocated that large national parks be managed as "original ecosystems."[21] Where parks were not large enough to encompass entire ecosystems, the surrounding areas would be managed as peripheral zones with the parks as core areas, similar to a plan for biosphere reserves then being discussed by United Nations agencies.

Certain species in the Grand Canyon area have received study and protection. The Kaibab squirrel is limited to the ponderosa pine forest on the Kaibab Plateau north of the Canyon. Due to its narrow range and small population, it is listed as an endangered species.

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[18]J. Donald Hughes, *In the House of Stone and Light: A Human History of the Grand Canyon* (Grand Canyon, AZ: Grand Canyon Natural History Association, 1978), p. 90.

[19]Aldo Leopold, *A Sand County Almanac and Sketches Here and There* (London: Oxford University Press, (1949) 1970), p. 211.

[20]Named for A. Starker Leopold, a son of Aldo Leopold, zoologist at the University of California at Berkeley, and chairman of the National Park Service Advisory Board on Wildlife Management.

[21]George Sessions, "Ecocentrism, Wilderness, and Global Ecosystem Protection," in Max Oelschlager, ed., *The Wilderness Condition: Essays on Environment and Civilization* (San Francisco: Sierra Club Books, 1992), p. 93.

Restoration of species formerly present in the Grand Canyon region has been tried with varying degrees of success. The California condor, the largest flying land bird, once flourished in the canyon, but the last known individual there was shot in 1881. By 1985, only nine condors existed in the wild, in California. All were captured and placed in zoos along with birds previously captured, for breeding purposes. The program raised the captive population to 71. In 1996 six were released in the Vermillion Cliffs 30 miles north of the Grand Canyon, and now are often observed soaring above the Canyon or perching near the rim.[22]

John Muir once compared the Grand Canyon to a sight seen on another planet. There is, though Muir did not know it, a canyon many times larger on Mars. Larger, but is it really grander? In my eleven summers as a ranger-naturalist in Grand Canyon National Park, I gradually came to appreciate that the Canyon, with its forests and its river flowing through stillness and whitewater, is a living ecosystem, full of life from top to bottom. Away from crowds, I could hear life constantly in the earth, in the trees, and in the wind. People who visit the Canyon should learn that it may be a place as awesome as Mars, but that it is not as dead.

Ecological interpretation and management of national parks has gained in recent years in the U.S. There is popular recognition of the value of places like the Grand Canyon and the need to preserve them. The parks have been spared from the more extreme pressures of development that would surely have overwhelmed them before now if they had not been set aside, in view of the terrifying numbers of visitors that besiege them every year — some five million annually come to the rim of the Grand Canyon. But how many of these people gain even a small degree of understanding of the living Grand Canyon? It is even unclear whether the ecosystem can maintain integrity in the face of an increase in human activity that seems certain to continue. A plan approved in 1999, but now in trouble in the courts, would create one of the largest tourist complexes in Arizona in the forest south of the park and construct a light rail system for transit to viewpoints. This would be a technological fix that would yield a profit to concessionaires and do little to increase visitors' ecological awareness. In the decades-long competition between two purposes of the national parks, to conserve ecological integrity and to enjoy the scenery, sightseeing seems the clear winner.

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[22]Zoological Society of San Diego, Website, 1999.