Environmental Education in US National Parks:
The Park Service Interpretive Division and
Park Partner Institutes

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Abstract: Desire to experience and learn about nature is one of the most powerful motivations drawing people to visit the national parks of the United States. From early in its history the National Park Service has conducted interpretive programs to deepen visitor understanding and appreciation of the many historic and natural treasures it is entrusted to preserve.

As budget restrictions, growing visitor numbers, and ever widening areas of interest have overwhelmed the ability of the National Park Service to satisfy all visitor educational needs, a “park partner” system has evolved. The system allows non-profit educational institutes to provide in-depth and innovative educational programs in areas such as natural history, recreation, science education, archeology, and human history.

While a wide variety of information on these educational services is available, relatively few academic reviews and research papers have been published about education in parks, possibly because most of these institutes were formed only within the last twenty years. This paper is the result of research on interpretive programs and park partner institutes conducted over the last two years in the course of planning and conducting educational study tours with Japanese university students to six US national parks, five educational institutes, and twelve museums or visitor centers.

Key words: environmental education, nature education, national parks, park partners, interpretation, ecotourism

Introduction
Of the millions of visitors who come to US national parks each year from around the country and the world, a large percentage leave impressed not only by the scenic beauty, wild animals, and historic sites, but by the educational programs designed to help them appreciate and understand these things. A great deal has been published on the scientific and historical contents of the parks. Some books are also available on history and techniques of interpretation — the name given to the type of environmental education carried out by park rangers (Mills, Tilden, Regnier). However, very little information on education carried out by non-profit
educational organizations operating in parks (park partners) is available. This may be because many of these institutes were founded only within the last twenty years or so, and it may also be because environmental education in the US is growing and changing so quickly that researchers on education have not been able to keep track.

Educational and interpretive activities carried out by the National Park Service and by park partner institutes are some of the most dynamic and inspiring environmental education opportunities available in the US today. This paper is an attempt to demonstrate how interpretation developed within the park service, and how it has grown through the activity of park partners to satisfy a wide variety of educational needs. These include education for recreation, education for beneficial coexistence of humans and animals, education for scientific research, nature education for public schools, and education for professionals and teachers.

**Brief History of US National Parks**

The world's first national park was created in the watershed of the Yellowstone River in 1872, by a US congress concerned that the geological wonders of this high volcanic plateau in northwestern Wyoming not suffer the fate of commercialization already clearly evident at Niagara Falls. The history of the national park system is a story of men and women of vision who recognized the value of natural areas to rejuvenate, educate, and inspire those who visited them. One such visionary was Frederic Law Olmsted, the architect of Central Park in New York City, who not only fought against commercial exploitation as designer of the Niagara Reservation, but who also wrote a report on Yosemite in 1865 considered to be the first to recommend managed protection of public lands for the benefit of the population (Olmsted, Strong). Though Yellowstone was the first National Park, Yosemite had been ceded by the federal government to the State of California for preservation as a public park eight years earlier.

The great champion of Yosemite and father of American conservation, John Muir, worked tirelessly to have more of the area around Yosemite Valley set aside and to have the entire area taken over by the federal government as a National Park. Through Yosemite, Muir guided such visitors as Ralph Waldo Emerson—who's writing on the virtues of nature and wonders of Yosemite inspired the nation—and Theodore Roosevelt, America's first conservationist president, who founded the National Forest Service and preserved huge tracts of land during his term in office (Strong). A competent amateur geologist and naturalist, Muir inspired those he guided with his boundless enthusiasm for learning about the natural world. One hundred years ago, Muir visited each of the five national parks which had been created and wrote about them in *Our National Parks* (Muir, 1901). Describing Yellowstone he said, "its geographical position, reviving climate, and wonderful scenery combine to make it a grand health, pleasure and study resort—a gathering-place for travelers from all the world." Muir's use of "study resort" to describe Yellowstone is evidence that the education of visitors was considered important from the very beginning of national park history.
History and Methods of Interpretation

Freeman Tilden was a journalist who visited many US parks in the 1950s and wrote about educational programs offered in those parks. According to Tilden, what we now call interpretation is a type of education first practiced at Lake Tahoe by Mr. and Mrs. C. M. Goethe who had observed a similar teaching style in the Swiss Alps. They were asked to come to Yosemite in 1919 by Stephen T. Mather, the first director of the National Park Service, and were joined there in conducting nature education by Dr. Harold Bryant and Dr. Loye H. Miller in 1920 (Tilden).

However, interpretive techniques were pioneered by many teachers and guides for a variety of purposes from much earlier. One was Enos Mills, a Colorado mountain guide whose teaching activities and writings on nature study could perhaps more accurately be called the foundations of interpretation. Between 1879 and his death in 1922, Mills led parties through the Rocky Mountains, in the area that he eventually helped to establish as Rocky Mountain National Park. In Mills' writings, one is struck by his great love for nature and his understanding of how people can be guided to find higher truths as they become acquainted with the natural world. His philosophy was that the nature guide did not need to be filled with facts and lecture on them, but rather should find ways to get people to open themselves to the world; a world with which they instinctively know themselves to be a part. Mills founded the Trail School—one of the earliest institutions of environmental education. In 1917, two graduates of the school, Esther and Elizabeth Burnell, were licensed to conduct interpretive tours in Rocky Mountain National Park. (Regnier)

Park Service Interpretive Division

From early in the existence of the park service, park rangers have been organized into three groups: those responsible for administration, those who conduct law enforcement, and those who educate visitors through interpretation. The park service has a comprehensive program of research, development, training, and evaluation for its interpretive division. The essence of interpretation as practiced by the park service is encapsulated in Tilden's 1957 book Interpreting Our Heritage. Tilden defines interpretation as "an educational activity which aims to reveal meanings and relationships through the use of original objects, by firsthand experience, and by illustrative media, rather than simply to communicate factual information." He goes on to say that "interpretation is the revelation of a larger truth that lies behind any statement of fact" and that "interpretation should capitalize mere curiosity for the enrichment of the human mind and spirit."

Tilden's six principles of interpretation are taught to all ranger interpreters and are the basis of the huge body of knowledge in natural and historical education that the park service has developed over the years.

Tilden's Principles of Interpretation

I. Any interpretation that does not somehow relate what is being displayed or described to something within the personality or experience of the visitor will be sterile.

II. Information, as such, is not interpretation. Interpretation is revelation based on information. But they are entirely different things. However, all interpretation contains information.
III. Interpretation is an art, which combines many arts, whether the materials presented are scientific, historical, or architectural. Any art is in some degree teachable.

IV. The chief aim of interpretation is not instruction, but provocation.

V. Interpretation should aim to present a whole rather than a part, and must address itself to the whole man rather than any phase.

VI. Interpretation addressed to children (say, up to the age of twelve) should not be a dilution of the presentation to adults, but should follow a fundamentally different approach. To be at its best it will require a separate program (Tilden).

Today, interpretive programs at national parks include slide shows and talks at visitor centers; campfire programs; ranger-led nature hikes; and programs at historical sites, often conducted by interpreters in period costumes. Many other programs are offered to match the specific character of a park, for example spelunking in Mammoth Cave or a paleontology demonstration in Dinosaur National Monument. Many interpretive activities are led by seasonal staff and park service volunteers.

Park Partner Educational Institutions

While the park service does its best to provide for visitor educational needs, it became apparent early in the history of national parks that volunteer organizations would be necessary to provide for all of the diverse needs and interests of park visitors. The earliest cooperative institution in a national park was probably the Yosemite Museum Association, established in 1906. Since that time a great many non-profit and volunteer-staffed organizations have been founded to conduct education and conservation related activities in the parks. Organizations such as the Yosemite Association, the Canyonlands Natural History Association, and the Yellowstone Association operate bookstores in the visitor centers of their respective parks. Many of the associations have an affiliated institute which conducts educational programs. Compared with the broad, general purpose educational mandate of the park service interpretive division, these institutes can provide more in-depth and specialized courses of instruction. Classes range from a few hours to a one-year residential program (the PREE program at Teton Science School). Park partners, as they are called, have a professional organization known as the APPL (Association of Partners for Public Lands).

The growth in the number and diversity of park partners within the last twenty years has been very rapid. For example, since the closing of Fort Cronkite north of San Francisco in 1973 and the conversion of the Marin Headlands to a national park in the 1980s, old military buildings in the Rodeo Valley have been given over to park partners. In just this one small corner of one of the national parks making up the Golden Gate National Recreation Area, there are seven non-profit institutions: the Marine Mammal Center, the Golden Gate Hostel, the Golden Gate Observatory, the Headlands Institute, the Headlands Center for the Arts, the Pacific Environment and Resources Center, and the YMCA Point Bonita Outdoor and Conference Center. Each of these park partners has a unique reason for existence, and yet every one has an environmental education program. The remainder of this
paper will describe a few of the educational missions carried out by some of these types of institutions, with examples being drawn from the curricula of park partner educational institutes in the Golden Gate National Recreation Area, Grand Teton National Park, and Yellowstone National Park.

Animal-Human Interaction: The Marine Mammal Center

The mission of the Marine Mammal Center (MMC), founded in 1975 in the Marin Headlands, is to rescue, rehabilitate, and release sick, injured, and orphaned seals, sea lions, dolphins, porpoises, whales, and sea otters along a 1600-kilometer stretch of the California coast. Injuries to the animals are often caused by interactions with humans: collisions with boats, gunshot wounds, and the effects of oil spills and pollution. The 800 volunteers of this non-profit organization treat as many as 800 animals per year and their research activities provide valuable information on animal injuries, diseases, treatments, and rehabilitation techniques.

The MMC's education program is a central part of its activities. Visitors to the Marin facility are guided by volunteer docents who teach about the animals being treated using bones, pelts, and other display items. More in-depth programs including tours of the facility, ecological beach walks, and programs in the classroom are available to school groups and others who make arrangements in advance.

Another MMC facility on Pier 39 in San Francisco provides information and education on a very startling example of wild animals sharing urban space with humans. In 1989, sea lions took over unused parts of a boat dock at the end of this popular tourist area adjacent to Fisherman's Wharf. The number of sea lions hauling out and resting or sunning themselves on these docks has increased steadily, with 300 or more often visible to visitors at one time. The MMC advises San Francisco city officials on the situation, conducts research at the site, and is taking advantage of this excellent opportunity to educate members of the general public on the ecology of sea lions. The center has established a gift shop and interpretive center overlooking the docks, and volunteers and instructors provide information to the public and hold interpretive programs there. As modification of human activities has led to the recovery of various animal populations and has caused their numbers to increase in urban areas, programs such as this show how humans and animals can coexist to mutual benefit.

Field Biology Research: The Point Reyes Bird Observatory

The Point Reyes Bird Observatory (PRBO) is an example of a field biology research institute which conducts educational programs. Founded in 1965, the observatory's main mission is to "conserve birds and the environment using science to understand and find solutions to problems threatening wildlife populations and ecosystems." It does this by capturing, banding, and recording data on birds at field stations up and down the west coast of North and South America as well as islands in the Pacific. While its mission is ornithological research, education on birds and their habitats is a major area of emphasis. At PRBO, education is in two types.
general public, there are programs on basic ornithology and conservation biology, including drop-in and group visits to the Palomarin field station; in-class programs where a teacher from PRBO visits local schools; curriculum materials and resources which are given to area teachers; monthly bird walks; opportunities for volunteers to help with banding; bird monitoring methods workshops; and slide presentations and talks. These programs educate the general public as to how human activities can negatively affect bird habitats and what can be done to reverse this trend. The second type of education conducted by the PRBO is professional education for research scientists. PRBO coordinates various internships for ornithologists, both at its own research stations and in cooperation with other research and conservation organizations.

Environmental Education for the Public Schools: The Yosemite National Institutes

With more than 4 million visitors per year, Yosemite is one of the most popular national parks. The many park partners active in Yosemite offer a variety of educational programs. The two institutes specializing in educating park visitors are the Yosemite Association, which offers short courses to adults, and the Yosemite Institute, which leads programs for public school teachers and students. The Yosemite Institute is part of a larger organization, the Yosemite National Institutes (YNI), which also includes the Headlands Institute near San Francisco and the Olympic Park Institute in Washington state. Working together with educators in California’s public schools, YNI has designed some of the best environmental education programs available. The YNI mission statement is as follows:

Our Mission: Yosemite National Institutes (YNI) is a private, non-profit organization dedicated to providing educational adventures in Nature's Classroom to inspire a personal connection to the natural world and responsible actions to sustain it.

Our History and Philosophy: The Yosemite Institute was founded in 1971 in response to: the beginning of a local and national environmental consciousness; a growing demand from teachers interested in utilizing parks as classrooms, but unable to manage the logistics of providing high-quality programs for their students; and the National Park Service's interest in encouraging private partnerships to help expand its educational and interpretive mission.

...Today our three diverse campuses welcome over 32,000 people annually through a wide array of programs. YNI serves more than 500 public and private schools (grades K-12) with our core residential field-science programs. In addition, we offer adult and family field seminars, Elderhostel programs, youth leadership and teacher training programs, and conference and retreat services.

Our instruction is hands-on, science-based and conducted in an advocacy-free atmosphere. We strive to instill an emotional and intellectual connection with nature, which in turn encourages environmental stewardship. Throughout the YNI experience, our students are encouraged and supported by dedicated and knowledgeable instructors who exhibit an enthusiasm for learning and a caring for the individual, to which students readily respond.

Students of all ages gain more than just scientific knowledge. They are engaged in challenging activities that teach about interdependence, leadership, critical thinking, diversity, culture,
adaptation, history, language skills and civic participation to name a few! Surrounded by a bounty of natural and cultural resources, lessons take on an immediacy that just can't be found in textbooks or television. In short, we make learning fun! (Yosemite Institute)

The Yosemite Institute curriculum goes beyond traditional nature education programs and interpretation to develop a new standard in environmental education. According to the education director of the Headlands Institute, curricula developed by the institute incorporate results of recent research in cognition and education, for example Howard Gardner's Theory of Multiple Intelligences. The YNI Core Educational Framework (Yosemite Institute) is an excellent document which consists of a mission statement as shown above and three broad themes: development of a sense of place; developing an understanding of the interconnections between places, human cultures, and life forms; and fostering of stewardship in learning how our decisions effect our environment. The framework goes on to specify instructional strategies, course organization, learning goals, and evaluation. Standards for teaching methods include statements such as: "Program teaching must be interactive and cooperative"; "Our teaching must model safe and positive outdoor experiences"; "Our teaching must be designed to encourage critical thinking and creativity"; and "Our teaching will include time for personal reflection." Because teachers who bring students to YNI programs are themselves introduced to this framework for environmental education, the total value of these programs is greater than just the experience had by students visiting and learning about a beautiful natural area.

YNI makes a significant contribution to improving environment-related education throughout the California school system.

A Graduate-Level Residency Program in Environmental Education: The Teton Science School

Institutions such as YNI require qualified instructors, and programs for training such environmental educators are increasingly becoming available. The Professional Residency in Environmental Education (PREE) program at the Teton Science School (TSS) in Grand Teton National Park, Wyoming, is one of the leading graduate level environmental education programs in the US and is perhaps the only one located inside of a national park. The 16-18 students who matriculate to the program each year earn graduate credit for the courses they take at TSS from Utah State University and can complete their master's degree at the university or one of the other schools with which TSS has a partnership arrangement: University of Montana; University of Wyoming, or Prescott College.

While living and studying at TSS, program residents become an integral part of all of its many educational activities: hosting and instructing elementary, middle, and high school students; curating the Murie Museum collection of specimens; participating in research; and helping to guide and teach Elderhostel and other adult short courses. The flexibility, adaptability, and inclusiveness of the curriculum at educational institutions like the Teton Science School give the resident educators a work experience which they could not likely receive while enrolled in a traditional graduate school. PREE graduates are in high
demand as instructors by many of the institutes described in this paper, as well as other similar environmental education institutions.

Innovation in Educational and Recreational Programs: The Yellowstone Association Institute

Until 1998 the professional association for park partners was called the Conference of National Park Cooperating Associations. This organization has been reorganized as the Association of Partners for Public Lands in order to include the many organizations doing similar work in National Forests, State Parks, and other public lands. Organizations such as the Yellowstone Association and the Yosemite Association are able to support educational, scientific, and historical programs for park visitors because they gather members whose membership fees and charitable contributions may be applied directly to visitor needs within the park in which they operate. They allow members to participate in the life of the park.

One of the oldest and largest of the park partners is the Yellowstone Association. It was founded in 1933 to conduct educational, scientific, and historical programs for the park. The educational institute of the Yellowstone Association—the Yellowstone Association Institute—was begun in 1976 and has quickly grown into one of the largest institutes active in a national park. The Institute organizes a wide variety of educational and recreational programs. Classes for wildlife observation, study of specific animals such as wolf and bear, short courses in backpacking, snowshoeing, or horseback riding, as well as specific programs for school children or families, are similar to those offered at many of the institutes in other parks. However, the curriculum has not stopped changing at Yellowstone or any of the other institutes. Innovation in content, teaching style, and organization continues to be the watchword at all of the park partners.

According to Pam Gonz, Program Director at the Yellowstone Association Institute, a program begun in the winter of 1999 is interesting because it is a cooperative arrangement between the non-profit Institute and Amfac Parks and Resorts which is the concession in charge of transportation and accommodation in Yellowstone. Visitors who join the program will be led through a course on cross country skiing, snowshoeing, and observation of wildlife and thermal features by a YAI instructor, and will travel in snow coaches and stay in lodges provided by Amfac. The program is a cooperative venture between a private non-profit and a private for-profit organization taking place on public land and it therefore marks an increase in complexity and interdependence of these organization as they work to satisfy visitor interests.

Conclusion

From their beginning national parks were seen as a place to rejuvenate, educate, and inspire visitors. The form of education that developed in these parks was interactive, hands-on, and experiential; allowing people to make connections with the greater web of life stretching out around them. Inspired by the early educational pioneers, others have created programs which spread the web of inspiration and understanding further. The growth in number and diversity of environmental education programs seems to
be accelerating. Even organizations which have another central purpose—such as rescuing injured animals or conducting field biology research—nevertheless see education as an important part of their mission. And the education itself is not static. From the basic precepts of interpretation has come a body of thinking on environmental education which is as well developed in its pedagogical approach, methods, and techniques as education in any other field (see the YNI Core Educational Framework). Indeed the experiential and inspirational essence of environmental education has a great deal to offer education in a wide variety of fields. Further probing of methods which have come to us from interpretation, environmental education, and the activities of park partner institutes will be an exciting area of educational research for years to come.

References


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