

ORIGINAL ARTICLE

Review of Environmental Education in the US National Parks Service according to Social Transition : A Case Study on Two Pacific Northwest National Parks

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Abstract

National park, as a natural park, has a dual purpose, to promote both protection and enjoyment. The educational activities of the national park can be partly understood as one of the appropriate means to balance its double purposes. This study provides a review of environmental education in the US National Parks according to social transition. Taking historical perspective and case studies, environmental education has played roles in helping the balance between preservation and enjoyment. Since the environmental movement, environmental education goals, particularly understanding the natural processes observable at national parks, has become more a part of the interpretation and education missions of the parks. Also non-governmental and non-profit partners have played important educational-based roles in support of both the National Parks Service and environmental education goals. The two different models also differ in the public's perception of them. Federal employees are resented in some rural areas in the U.S., but the general population automatically attributes authority, friendliness, and national-interestness to NPS Rangers. This may in turn limit how strongly such staff could serve as strong advocates for the environment. On the other hand, the non-profit may be seen by some as strongly liberally biased and associated with urban wealth. It is also not as universally recognized as the NPS. It can, however, go far to develop new partnerships and undertake public relations. Non-profits vary greatly in quality, also affecting public perception.

Key words : National park, Environmental education, Non-profit partner, Interpretation

1. Introduction

The first U.S. National Park, Yellowstone, was established in 1872. But it was some decades later, several other national parks were designated, and the National Parks Service was established to administer the natural parks. The enabling legislation, signed by President Woodrow Wilson in 1916, states that the purpose of the National Park Service is "to conserve the scenery and 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" (Foresta, 1984). Thus the National Park Service(NPS) has a dual purpose, to promote both protection and enjoyment. These purposes can conflict, but the language suggests that 'enjoyment' should be conducted in ways that does not contradict the preservation purpose. The educational activities of the NPS can be partly understood as one of the

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appropriate means to balance its double purposes.

This study provides a review of environmental education in the U.S. National Parks according to social transition, particularly in the natural area parks, and particularly with reference to environmental educational aims served by the various educational strands pursued by the NPS. The NPS includes 397 units, which may be historical sites or parks, battlefields and military parks, and so on. Of the total, 58 are national parks, 18 are preserves, 18 are recreation areas, 10 are seashores, 4 are lakeshores and 2 are reserves (NPS, 2012). Although education happening on the remaining 224 historical, cultural, or military units might touch on nature, science or the environment, this study is concerned primarily with those units focused on nature.

2. Materials and Method

2.1. Review of Early Environmental Education in the US National Parks

To understand the form and roles of education in the U.S. National Parks today, some historical perspective is helpful. Education and related activities have been part of the national parks from the beginning. The end of 19th Century, John Muir, whose nature preservation movement led to the formation of the first national parks, served as a guide in Yosemite as did many others. He had a different ideology from Gifford Pinchot who was a leader of conservation movement. Pinchot defined conservation as a means of managing the nation's natural resources for long-term sustainable commercial use. But Muir valued nature for its spiritual and transcendental qualities. Enos Mills, who was a collaborator with Muir and played the central role in the establishment of Rocky Mountain National Park, wrote prolifically about natural history and strongly promoted interpretation (Malitz, 2005). In the early years of the NPS interpretation was infused with the language of

preservationist. Interpretation may have helped consolidate public support for the protection of land in national parks. As early as the 1920's it was distinguished from academic instruction in terms of its aims. The aims of interpretation were to inspire enthusiasm for and understanding of nature in visitors, regardless of the visitor's place in society, and to make presentations engrossing (Mackintosh, 2000). Interpretation was to be in-person and personalized. The interpreter thus needed a deep knowledge and familiarity of the site and strong communications skills to carry this out.

Regardless of the role of interpretation in fulfilling the dual mission of the NPS, some perceived it to lack clear foundations. This was noted by Freeman Tilden in 1942, and he provided such foundations in his book classic *Interpreting our Heritage* (1957). He describes "interpretation" can create a kind of "understanding" that would indeed lead people to "protect" (Ham, 2009). In roughly the mid 1970's critics argued that the original vision of interpretation had become confused with entertainment. It was possible to call for a stronger educational emphasis in such programs (Mackintosh, 2000). Such criticism, while sparking greater professionalization of interpretation, may also have made room for a stronger presence of the contemporaneously emerging environmental education field.

Indeed, in the early 1970's the NPS developed a stronger environmental education emphasis, in keeping with the strong national desire to address environmental problems. The NPS formed an Environmental Education Task Force in 1970 which reviewed existing efforts and recommended stronger environmental emphases and tools. The Division of Environmental Projects at the NPS Harpers Ferry Center helped produce communications materials for NSP units. Three interrelated programs were developed with guidance from the National Education Association, a consultant, and the task force as well as NSP staff. The core was

called the National Environmental Education Development (NEED) program. It aimed to develop the integrated curriculum anchored by week-long residential experiences for 5th or 6th-graders. Younger and older students would have short excursions or class activities, but the 5th or 6th graders would visit the parks. Environmental Study Areas (ESAs) were to be areas near schools for on-going educational experiences. And National Environmental Education Landmarks (NEEL) areas were non-Park area, set up by local constituencies, and notable not for sheer physical characters, but by virtue of the education programs conducted on them. NEELs would be registered nationally and would serve as a way local efforts could be carried forward. All of these efforts were funded by the private park-support National Parks Foundation, and but capitalized on scores of NPS resources (Evison, 1970).

After this early efflorescence of enthusiasm, in the 1980's, with a U.S. political atmosphere disfavoring government services, parks began finding ways to out-source some environmental education. For example, it might be delegated to school districts or to non-profits which grew to meet the need. Around 1990 the U.S. experienced a renewed flush of concern about the environment, as noted for instance in the magnitude of the 20th celebration of Earth Day. Simultaneously on the international scene important goals were set for the integration of environment and development, in the World Conservation Strategy. This was soon to be followed up by the 1992 UNCED conference (the "Earth Summit" in Rio) and the Convention on Biodiversity initiated there. Subsequent governmental and non-governmental actions gained momentum. National parks systems proliferated in many new countries. Environmental education thinkers at that time argued that education in national parks should focus on the many values of high-functioning ecosystems in parks and preserves, stressing human dependence on these, as well as on

(Henning, 1990). Such thinking led to an increased emphasis on environmental education in the overall mission of education in the National Parks, not only on appreciation of specific features or support for the institution of national parks. In 1995 the NPS adopted a unified planning system for interpretation and education to help parks identify objectives and audiences related to management goals and appropriate services. The role of education in the NPS was again revisited in 2002 under the National Leadership Council, and a report was issued in June 2003 reflecting new and traditional thinking about the NPS education mission (NPS, 2003). A broad conception of education was promoted: "all kinds of learning opportunities for people of all ages including formal and informal programs, life-long learning, publications, exhibits, films, the internet, public outreach and research." Guiding principles included place-based, learner-centered, and celebration of diversity.

2.2. Private non-profit partnerships serving education needs of the NPS

The NPS has always had partners in its pursuit of education. In fact, during its original formation in 1917, the NPS was unable to obtain funding for its "Educational Division," despite the need and the presence of an eager leader, and a distinguished panel comprising the National Parks Education Committee. Instead, a non-governmental organization, the National Parks Association (NPA; later the National Parks and Conservation Association) coalesced and took on the job of using education to increase public support for the parks (Miles, 2004). Funded partly by the personal monies of the first NPS director, the NPA's first objective was "to interpret and popularize natural science by using the conspicuous scenery and the plant and animal exhibits of the national parks" (Miles, 1995). The NPA played this role and worked closely with the NPS, always insistent that parks be managed principally for education and inspiration.

Eventually this private but well-connected effort, together with the perceived need for education within the NPS, led to the creation of the Branch of Research and Education, in 1930. Education was to continue as an important but secondary mission in the NPS - secondary compared to the tasks of expanding, managing and protecting the park resources. Later, recreation also emerged as a sometimes competing goal to education (Miles, 1995). One private education partner to NPS could spawn another. In the later 1950's NPA provided a proving ground for the first effort to put high school and college students in the parks working as volunteers with staff and researchers. This highly popular program later became its own organization, the Student Conservation Association, founded by the same young woman, Elizabeth Cushman Titus, who had envisioned youth working in and learning in the parks (Miles, 1995).

2.3. Environmental Education in the National Parks today

Today the NPS defines "interpretation" as "providing each visitor find an opportunity to personally connect with a place." The educational dimensions are revealed by interpretation's goal: "to increase each visitor's enjoyment and understanding of the parks, and to allow visitors to care about the parks on their own terms" (<http://www.nps.gov/learn>). NPS Interpretive Rangers are employed giving on-site talks, presentations, and preparing curricula and other educational media to accomplish this task.

In addition to interpretation, educational efforts of the NPS take many other forms, serve other functions, and encompass a wider range of partnerships. In the past, public education was fairly centralized in the NPS bureaucracy at both the national level and at individual units. At the national level of NPS, the position of Associate Director of Interpretation and Education answers to the Deputy Director of Operations, directly under the Director of the NPS.

Typically, "Interpretation and Education" is a category of employees at individual units. These positions persist, but educational functions have been dispersed through the organization at both national and local levels. Most notably, a national Associate Director of Natural Resources Stewardship and Science, and a corresponding unit-level employee category, have taken on greater roles as educators and in public relations and interaction around resource management. In addition, the other main Deputy Director at the national office - Communications and Community Assistance - has purview over areas such as Partnerships and Civic Engagement, Communications, Latino Outreach, and Youth Programs, each having its own Assistant Director or other national-level officer (<http://www.nps.gov/news/upload/NPS-Org-Chart-Feb-2012.pdf>). The NPS also has an active Social Science program, including a Visitor Studies Program which answers questions about the effectiveness of educational efforts, the experience and impacts of visitors and the relations to surrounding and regional communities. This infusion of education-related activities and functions across much of the NPS reflects the pervasive need to cultivate positive relations with the broad US public and with populations near individual units.

Types of educational services reflect the various functions are the following types:

- ✓ Interpretive services, including staff positions and on-site or off-site programs such as campground evening talks, visitor center staffing, and wilderness ranger work.
- ✓ General web page for "Explore Nature" which features various themes such as biodiversity, climate change, geology, water, and environmental quality using a science emphasis.
- ✓ Curricula for classroom teachers to adopt. These curricula are professionally developed, align with subject-area national learning standards, and are geared to the special learning opportunities of the

given park.

- ✓ Teacher-Ranger-Teacher program which engages teachers (typically middle or high school science teachers) in on-site education and interpretation.
- ✓ University sponsored research projects in which students in higher education participate as assistants.
- ✓ Institutes and field schools. Nineteen nonprofit organizations that cooperate with NPS units to provide a variety of educational opportunities, often drawing experts in the area as well as the nonprofits' own staffs.
- ✓ Activities associated with the NPS Natural Resource Challenge. The NRC, initiated in 1999 and funded by U.S. Congress since then, attempts to develop the new scientific knowledge needed to protect park resources for the next 100 years. Included are efforts such as Inventory and Monitoring (I&M) of plant and animal populations, results of which "help parks set priorities and communicate complex information about a park's condition to the public in a clear and simple way"(<http://nature.nps.gov/challenge/2011/>).
- ✓ The Planning, Environment and Public Comment web site also deals with park resources but in an issue or site-specific manner. The web site simply comments a suite of tools including public meetings and other kinds of interactions. Park planners engage the public through consultation and cooperation as specific designs or issues are addressed. Public involvement and education are integral to both the process and the product of park planning, so that visitors and especially surrounding communities have their needs registered and addressed, reducing conflict and fostering investment and buy-in.
- ✓ Externally funded special programs such as the Parks As Resources for Knowledge in Science (PARKS) Program, that funded unique science-focused initiatives in 36 national parks, and also focused on stewardship and sense of connection to place.

As this list demonstrates, education still includes interpretation and curricular activities, though these may be conducted by non- NPS staff at some units. In addition to a wide range of activities that fit under familiar formal or nonformal educational settings, many other park functions now are conducted in ways that engage the public in learning both about and for the basic dual purposes of the parks system. Varied partnerships are utilized.

Education in the Parks today is configured in diverse ways, and units exercise considerable autonomy regarding how educational missions are defined and accomplished.

The practices at different units may be quite different, even among similar types of units, depending on use of centralized NPS interpretive planning services (such as the construction of new visitors' centers, coordinated by professional staff at the Harper's Ferry or Denver NPS facilities), regional emphases, and park-specific goals, budgets, audiences, and partnerships. Although there are some common programs present at many units, there is no single system of education, much less environmental education, across NPS units. Rather, decisions, relationships, curriculum goals and development and delivery are left to different parks' administrations. The same is true for how delivery of education is configured administratively. One general theme is that each unit uses its unique assets, highlighting them for the public. This relative unit independence makes sense, providing professional autonomy for staff and utilization of local assets and partnerships, but it does not ensure that NPS education efforts contribute to broader environmental education goals. To the extent this latter happens depends on the professional skills and goals of interpretive and educational staffs. While no data were found to quantify this, it seems that these staff do bring environmental education goals to their work, and employ specific parks' ecological and cultural features to embed these goals

(together with other goals) in site-specific programming.

3. Results and Discussion

A more focused look at education in two Pacific Northwest mountainous National Parks will provide more concrete illustration of the above general points. In particular it will illustrate the independence individual NPS units exercise in carrying out their educational roles, differing kinds of relations with non-park partners, what sort of environmental education is provided to what audiences.

3.1. Mount Rainier National Park

Mount Rainier National Park, established in 1899 as the 5th U.S. National Park, is a 95,660 hectare park within a two to three hour drive of the major population centers on Puget Sound (Seattle, Tacoma, Olympia and suburban areas, encompassing roughly 3 million inhabitants). MORA is its NPS acronym. Its major feature is the 4,392 m heavily glaciated volcanic cone of Mt. Rainier, a major icon and dominant visual element of the region. The park also features extensive sub-alpine zones, montane forests, some lower elevation forests, and the headwaters of six major rivers. In 1988, 97% of the park lands were designated Wilderness, and 2.7% is a National Historic Landmark District. There are four visitor's centers, including one at the end of a popular road reaching to over 1,524 m at Paradise. Despite heavy snowfall, the road to Paradise is kept open all year. The park is accessible by roads from most directions. It offers 418km of maintained trails, and climbing routes of varying degrees of high difficulty. About 1.5 to 2 million people visit the park each year, including some 10,000 who attempt to climb the mountain (<http://www.nps.gov/mora/faqs.htm>).

MORA illustrates the theme of dispersed educational functions. In addition to education and youth outreach, Natural Resources staffs including rangers

and scientists are involved in outreach. For example, rangers coordinate with local fire departments to educate communities on safety themes such as lahars and other volcano hazards. Separately, one staff position is tasked with overseeing volunteers in the park and community outreach, including providing speakers, and so forth. Thirdly, a park planner for the immediate region is very involved in outreach, for example with the Nisqually and other Indian tribes, and working with efforts outside park boundaries such a conversion of old railroad rights of way to trails, and connecting the surrounding community to the park in other ways.

The Interpretation and Educational Ranger staff at MORA manages all youth programs. This includes day programs during the school year, summer programs, as well as staffing the visitor's center. These programs reflect four themes central to the Park's mission:

- ✓ Physical processes such as volcanism, glaciers and watersheds
- ✓ Ecosystems including lower elevation forests, subalpine systems, and winter ecology
- ✓ Cultural connections - history is not a strong aspect of the park, but mountaineering provides some human tie-ins
- ✓ Stewardship including such topical issues as climate change impacts on the park

These themes are the major stories the park has to tell. MORA educational staff have taken these contents and translated them into 12 curricular programs that are aligned with Washington State Essential Academic Learning Requirements (educational objectives). Teachers can access these on the park website or consult a MORA Ranger and figure out the best grade and subject fit, and schedule a visit.

The "Where the River Begins" curriculum gives a more concrete sense of how environmental education weaves together these themes. Pre-trip activities

introduce the idea of life-zones, illustrated by lowland forests to alpine tundra. Glaciers, glacial landscapes and glacial rivers are introduced, and basic questions about land management are discussed. On-site activity options include study of the river, studies of old or young forests, a unit on moisture pathways in the forest and trees, and activities that may be completed at Paradise, including a silent solo sit on either the trail or a bench. Activity sheets for each of these units prompt students to make observations and record their responses to questions leading them toward an understanding of basic concepts. Optional teacher-led post-trip activities are suggested. Due to the short itinerary of any given class's visit, a partial but hopefully internally coherent portion of the concepts offered by the curriculum can be covered. The curriculum is written to be adapted to a variety of grade levels, and is keyed to concepts easily illustrated at the park. As a consequence, it would be at most supplemental to a classroom-based curriculum that is more comprehensive in scope and sequence. Such a curriculum, however, is not typical of the Washington State school systems. Thus, how well students are able to integrate their Mount Rainier experiences into a larger set of environmental education learning is left to chance.

MORA Rangers come to participating classrooms once before the field trip to cover preparatory material and set student learning expectations. No post-trip visit occurs, and evaluation has consisted of a teacher interview. The staffs serve between 2,500 and 3,000 students per year with these programs. Physical geography affects the programming delivered. Despite the proximity to major population centers, actual time in the field is very limited. Many groups want to take the road all the way to Paradise because that is where the most stunning natural beauty is found, and because lower elevation forests are more easily accessed. This adds time to the trip. In the last few

years school districts have reduced their school bus fleets and/or driver staff, so field trip departure and return times have to fit between bus runs at the start and end of the school day. These factors combine to leave an effective instructional window of 1.5 to 2.5 hours.

At MORA the staff and other costs of most of these youth education and outreach programs are budgeted out of the unit's own budget. In retaining much of its education and interpretation staff and duties within its own park budget, MORA administration represents a more traditional (indeed once typical) model for provision of environmental education. Nonetheless, the education that the park can provide has been limited by the lack of a residential facility. Such a facility could greatly increase the time students have in contact with staff and Park-ecological features. Due to the Wilderness / Historic District designations, however, no new facility may be created within the park. Thus, recently MORA has become partners with the University of Washington to renovate the latter's unused 100-year-old "Pack Forest" residential forestry school campus. About 64 km from Paradise in the park, it includes buildings constructed by the Civilian Conservation Corps in the 1930's. A director has been hired by the University of Washington and will be stationed at the facility. Private funding will be sought, and the center will be run by the two institutions jointly. Presently further study is being conducted. This move may make Mt. Rainier more of a hybrid model with a close partner but still a strong education staff of its own, and more options for programming

3.2. North Cascades National Park Complex

The North Cascades National Park Complex (NOCA), created in 1968, includes three units totaling 267,901 hectare: the North Cascades National Park proper which is divided into northern and southern units by

the Ross Lake National Recreation Area, and the Lake Chelan National Recreation Area. The park is dominated by spectacular and rugged mountainous terrain and ecosystems ranging from large river systems, old growth forests, montane and subalpine areas, and bare rock and ice ridges and summits. U.S. Highway 20 follows the Skagit River through the Ross Lake NRA, crossing the crest of the Cascades Mountains to the east of the park. Ross Lake, Diablo Lake and Gorge Lakes are formed behind dams built in the Skagit River gorge within the Ross Lake NRA. These lakes allow motorized and human powered watercraft. The most mountainous portion of the highway is closed from about November through late April by snow. The Lake Chelan NRA adjoining the southern park unit to its south includes the only year-round settlement within the complex, the town of Stehekin. Stehekin is isolated from direct road access at the upper end of 88 km long glacially-carved Lake Chelan. The Chelan NRA and parts of the southern unit lie hydrologically east of the Cascades Crest.

Nearly 93% of the land in these three areas was designated as the Stephen Mather Wilderness in 1988 as part of the Washington National Parks Wilderness Act. The northern boundary of the park borders on British Columbia, where adjoining lands are in Provincial Park status. Lands surrounding the Park within the US are National Forest Wildernesses except for the highway corridor. Altogether these total some 2 million acres of protected lands along the northern Cascades cordillera. The NOCA landscape proper includes valleys as low as 184m above sea level, to mountain peaks up to 2,806 m above. Mountain sub-groups are divided by narrow valleys, and contain over 300 glaciers. The park complex is further from large population centers than Mount Rainier (a 3 hour drive from Seattle), and less is accessible by road. Between 300,000 and 700,000 people traverse the park every year by motor vehicle,

while only about 20,000 use the Park proper, by venturing into its wilderness (http://www.nationalparked.com/US/North_Cascades/Visitation_History.php).

The park includes hundreds of miles of trails and many high routes and rugged mountaineering challenges. Two visitor centers serve the public, one on the North Cascades Highway, and one at Stehekin. There are two privately run resorts within the NRA's and a handful of NPS campgrounds. Like MORA, NOCA illustrates the theme of dispersed educational functions. In the last few years education and interpretation work has been spread out across the different NOCA divisions. The NOCA 2011-2016 Strategic Plan (NPS n.d.) does not have a section for education per se, although it is implicit in its goals of resource management and inspiring stewardship and engagement particularly. The resource management division staff was expanded from 2 to about 20 positions under a previous superintendent. Now resource protection personnel help handle education. Rangers handle wilderness education such as Leave no Trace training. Community outreach is spread over many different areas such as the Planning Public Comment Site. The traditional Education and Interpretation staff is at half what it was only recently, losing 3 of 6 professional educator positions in 5 years. Previously the Rangers did 50 to 75 outreach events per year, plus serving many classrooms that came to the main visitor's center and developing 10 or more curricula and program and publication offerings. The interpretive content was in-depth; today park visitors seem satisfied with the attention-grabbing fact.

In comparison to other parks who have maintained their education budgets and high-level career education and media personnel, NOCA has not. Education expenditures represent the smallest proportion by division of the Park's Congressionally appropriated base budget (NPS, 2012). There have been new initiatives, such as the Pathways for Youth, intended as a ladder of opportunities to recruit young people

into NPS careers. Also new scientific collaborations, for example with NASA, NOAA and climate scientists, put interns and scientist out in the park, as part of efforts to inventory, monitor and adapt to climate change, and communicate about it.

The underlying factor the shift from the classic interpretive and educational ranger division at NOCA is the presence of a key non-profit environmental education partner, the North Cascades Institute(NCI). In NOCA's recent "foundations" document (NPS, 2012), access to "authentic resources for education" and "resources for science" are placed together with "partnerships" in addressing education. All three paragraphs refer to NCI and /or the Environmental Learning Center (ELC) which it operates on Lake Diablo. NCI was founded in 1986, a period characterized by government agencies contracting out a wide variety of functions in the U.S. under President Reagan. The same trend of budget cutbacks continued under subsequent Republican administrations, and the presence of NCI made it easy for the local NOCA administration to direct limited resources in non-educational directions. The ELC is on NPS land, but was paid for by hydro-electric dam re-licensing environmental mitigation money from Seattle City Light which leases it to NCI and provides some funding. Opened in 2005, the ELC is operated by NCI.

Whereas traditional NPS interpretation focused on connecting people personally to the natural features of the place, as well as secondarily on ensuring support for the parks mission, non-profit partners may bring a stronger environmental education focus to education offerings. This is generally the case with NCI, whose programs mirror the NOCA strategic plans including maintaining a strong emphasis on connecting to place.

The North Cascades Institute now handles the majority of education, particularly youth programs, for NOCA. Its programs are varied and touch a wide

range of audiences, complementing the traditional interpretation done by the NPS staff. NCI has 47 professional staff, and is governed by a 15 member Board of Directors. Its budget for 2012 is about US\$ 3.1 million. The organization has won several significant awards and is regarded as one of the leading organizations of its type in the U.S.(NCI, 2012).

NCI's programs for youth, mainly based out of the Environmental Learning Center(ELC) on Lake Diabl include:

- ✓ Mountain School, a 3 to 5 day residential program, largely serving elementary, but also some middle school and high school students. Just over 2,000 participants are provided a fine-tuned program on ecosystems, natural history, connection to the place and group bonding.
- ✓ North Cascades Wild, an 8 to 12 day canoe program on Ross Lake emphasizing leadership, conservation and service. It targets demographics that have few opportunities to live and learn in a backcountry, environmentally-oriented setting.
- ✓ Cascades Climate Challenge: A 20 day intensive program for high school students that engages them with climate scientists studying effects on the NC ecosystems. A leadership component requires participants to carry out a climate change related project in their home community afterwards.
- ✓ Neighborhood programs in down-valley towns: field trips, stewardship and citizen science for all ages.
- ✓ Additional programs target families and/or adults, and include some citizen science or stewardship activities:
- ✓ Programs based at the ELC or other field locations provide revenue streams from paying adult or family clientele. These include Base Camp, Family Getaways (activities for children provided), Field excursions on natural history topics taught by regional experts, Backcountry Adventures, Teacher workshops and the 'Sourdough' Speaker series,

named for the mountain just behind the ELC—a mountain with notable PNW literary connections.

- ✓ In partnership with Western Washington University NCI runs a Masters degree course in Education program in environmental education, providing an intensively coached year-long residency at the ELC and awarding a Certificate in Leadership and Nonprofit Administration
- ✓ Cascades Butterfly Project, Carnivore Connectivity Project, Northwest Naturalist Certificate, water quality monitoring, plant and animal phenology partnership with the NPS and the National Forest Service.
- ✓ Eagle Watchers and Mountain Stewards: trains adults to provide education about eagles, salmon and mountain ecosystems.

The content of NCI's education programs encompasses field natural history, ecological systems concepts, participation in field science, arts and literary themes, stewardship, and support for young citizen activists. While it does not provide any single program covering the full scope and sequence of traditional environmental education, it is freer to interpret the educational mission in the National Park as being to "conserve and restore Northwest environments" by connecting people to nature through direct experience (NCI, 2012).

A look at the curriculum of one of its core programs, the elementary level Mountain School, provides one example of its environmental education offerings. The first of three days builds understanding of the abiotic environment, introducing concepts including watersheds, climate, and mountain geomorphology through physical models, maps, site visits, discussion and other methods. Also the students are given sensory awareness activities and helped to find a sense of connection to the place. The second day focuses on the living environment, introducing food webs, forest food chains, wild

animals of the area, and nutrient cycles. These are conveyed through simulations, trail walks with observation and questioning, simple investigations, having the children teach each other small bits of information they have been taught, a microscope lab, and relating the cycles to cycling of food in their urban home systems. The final day is focused on reflection, connections to the home environment, the arts, and community-building. Other elements of Mountain School are fun and feeling comfortable outdoors. Throughout, the experience is given an air of exceptionality, and anecdotally is remembered fondly (NCI, 2009).

4. Conclusion

Taking a broad historical perspective, education for, in and about U.S. National Parks has been present since the formation of the Service, and has played roles in helping the Service balance its preservation and enjoyment mandates. The NPS continues to be heavily involved in education of many sorts. One longstanding aim is to foster a sense of wonder and value about specific Park features. Since the environmental movement, environmental education goals, particularly understanding the natural processes observable at National Parks, has become more a part of the interpretation and education missions of the parks. Also since the start, non-governmental partners have played important educational-based roles in support of both the NPS and, more recently, environmental education goals. Individual Park unit administrations exercise autonomy in deciding educational emphases, goals and means. Since the 1980's education budgets of many but not all national parks have been reduced and more of the education work has shifted to non-NPS entities such as non-profit organizations. Also in the last decade education has become a more dispersed and varied function within parks, with

resource management divisions, for example, playing greater roles in public contact.

The examples of Mount Rainier NP and North Cascades NP in Washington State illustrate somewhat divergent pathways through these longer trends. Mount Rainier, serving large numbers of visitors, has retained a relatively greater share of its education and interpretation budget and staff, although several other divisions help educate in various public contact roles. The North Cascades unit has out-sourced its education to an outstanding non-profit partner to a much greater degree, as well as redistributing education functions into its varied other divisions.

There are some likely advantages and disadvantages to each course. The more "traditional" route has the great strength of allowing long education careers. This develops practitioners who have truly extensive and intensive knowledge of the site and its assets, as well as huge skill sets for varied audiences, media, and contexts. They develop outstanding materials, and understand the units relations to its context in a way few others can. One disadvantage may be fewer new ideas, however that may be counterbalanced by continued professional development, as well as rotation through different units, as typical. Another disadvantage may be simply that fewer people are involved in education delivery, limiting the perspectives and kinds of expertise the park can make available. This may have implications particularly for outreach to less frequently contacted demographics.

The non-profit partner model on the other hand provides such diversity and flexibility, however at a cost to depth of expertise and authority. Staff turnover, particularly of front-line public-contact staff, at NCI is very high compared to the traditional model. Thus program quality depends on supervision of several beginners by rather few older hands, and on a somewhat simpler curriculum. This is not uniformly the case, however, as experts are employed to teach adult classes, for example. But staff with 20

or more years' service in the organization are restricted to administrative roles. Younger staff may go on to excellent careers, but increasingly these will not be education focused careers in the NPS. The non-profit partner model brings more resources (money, people, partnership), and greater flexibility and ability to generate and take new opportunities. It operates without the sometimes cumbersome national bureaucracy, but it is not without constraints. Its Board of Directors may, or may not, provide sufficient vision and boldness to pursue strong environmental education goals. Managing poor Board member choices may be challenging.

The two different models also differ in the public's perception of them. Federal employees are resented in some rural areas in the U.S., but the general population automatically attributes authority, friendliness, and national-interestedness to NPS Rangers. This may in turn limit how strongly such staff could serve as strong advocates for the environment. On the other hand, the non-profit may be seen by some as strongly liberally biased and associated with urban wealth. It is also not as universally recognized as the NPS. It can, however, go far to develop new partnerships and undertake public relations. Non-profits vary greatly in quality, also affecting public perception.

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