

ENVIRONMENTAL EDUCATION IN HAWAII: HISTORY AND OVERVIEW

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ABSTRACT

Environmental education in Hawai'i has been pragmatic throughout its history but insufficient to the task of stimulating enough concern about irreplaceable native ecosystems. Developments since 1970 that have set the stage for a more positive future include: the continuing activities of the Moanalua Gardens Foundation and other private conservation groups; an infusion of money from the John D. and Catherine T. MacArthur Foundation, which led to production of curriculum materials by the 'Ōhi'a Project and to stimulation of other agencies and organizations; increased efforts by the Hawaii Department of Education and the Department of Land and Natural Resources; and formation of a statewide environmental education organization to enhance communication and competence among environmental educators. More specific targeting of decision makers affecting the rapidly changing face of Hawai'i and increased emphasis on teaching environmental ethics and critical thinking skills to adults and children are needed in the future. The complexities, urgencies, and scale of many of Hawai'i's environmental problems make environmental education a critical component of informed problem solving.

IN THE BEGINNING

Environmental education in Hawai'i began with the first Polynesian colonizers, who, like most aboriginal peoples, had numerous natural gods. The power of the gods was expressed in divine force called *mana*, which was manifested in various forms of nature as well as in people. Some things and places in nature and society had greater *mana* than others and were treated with much respect (Burrows 1989). The people valued nature but did not revere all life. Before the arrival of continental humans, Hawaiians cleared large areas under 1,500 ft (455 m) elevation of native vegetation. Agriculture and villages needed for expanding populations replaced native species. A number of flightless birds, other animals, and plants were driven to extinction in the process (Olson and James 1982; Cuddihy and Stone 1990). Natural resources, including those of the sea

(probably less affected), were needed for subsistence by the Polynesians (Dye and Steadman 1990). Environmental education was less than perfect if judged in terms of effective stewardship of natural resources (Stone and Machlis 1989) and preservation of biological diversity.

EARLY EUROPEAN EMPHASES

With the arrival of the European ships, trade in agricultural products (such as pigs, bananas, and taro; firewood for whaling ships; sandalwood for the Orient; *pulu* or tree fern "hairs" for use in mattresses and pillows; and wild cattle, goats, and sheep) began to produce widespread effects on large expanses of native forest. The "Great Mahele" of 1848 and later land reform laws gave foreigners the right to own land and allowed Hawaiians to sell their interests. Clearing of forests continued to move upslope, and land ownership was soon concentrated in the hands of non-Hawaiian planters and business people. Agricultural crops such as sugar cane, pineapple, and coffee (*Saccharum officinarum*, *Ananas comosus*, *Coffea arabica*) began to become important, and commercial logging and ranching became firmly established after land ownership changed in the mid-19th century (Cuddihy and Stone 1990). Economic exploitation (rather than mere subsistence) of the land was foremost in the minds of the new immigrants; native Hawaiians were caught in the momentous changes of the times. Technology for affecting the environment improved. Little, if any, thought was given to conservation, much less to environmental education (Gill 1989).

WATERSHED WORRIES

In the last few decades of the 19th century, hundreds of thousands of dollars were spent on water projects in Hawai'i. Effects of logging, clearing, ranching, and foraging by ungulates became apparent to the sugar industry, and forest loss was assumed to be responsible for reduced runoff. Hawaiian forests were viewed as watersheds rather than commercial forests by the late 1920s, and water was believed to be the most important forest product (Judd 1918, 1927). A government forest reserve system was considered essential to preserving forests and watersheds as early as 1904 (Hall 1904). Big business, at least and at last, saw the value of conservation when loss of water resources threatened the economy; people drinking salty and brackish water also became more environmentally aware for a time. Watershed degradation was alleviated temporarily by establishment of forest reserves and a professional forestry program, construction of ditches, planting of alien trees, removal of ungulates from many areas, and development of new technologies. The approach to environmental education was strongly utilitarian.

DON'T WORRY, BE HAPPY

In the 1940s and 50s, conservation organizations began to focus on native wildlife and natural resource conservation (Gagné and Gill 1989).

Introductions of additional game species to Hawai'i and the change in emphasis from watershed protection to multiple use and sustained yield hunting were points of conflict among conservation organizations, hunters, and public and private landowners. In 1970, a group of outdoor educators formed the Citizens Committee for Environmental Education, and this soon became the Environmental Education Association. The organization dissolved about a year later, partly because people seemed to feel that Hawai'i was "Paradise" and lacked real U.S. Mainland problems such as air and water pollution. Attempts by community groups to integrate environmental education into the Hawaii Department of Education curriculum about this time were unsuccessful, probably because there was not overriding concern about the environment, because mainland models did not work (Gill 1989), and because of other priorities for existing dollars.

Several initiatives of the 1970s bore fruit, including the High School Hikers Program of the Hawaii Chapter of the Sierra Club, a Compendium of Critical Field Sites for teachers, and the Hawaii Nature Study Program developed by the University of Hawaii (Gagné and Gill 1989). Some concerned teachers also began to teach environmental education in the classroom and field. An Outdoor Education Center for 6th graders was established on Hawai'i Island by the Department of Education in 1976. The National Park Service interpretation programs at Hawaii Volcanoes National Park on Hawaii Island and Haleakala National Park on Maui educated visitors in biological, geological, and cultural themes.

LATE-BREAKING DEVELOPMENTS

In 1978, a State constitutional requirement was passed to teach environmental education in the public schools. By 1981, the Office of Instructional Services of the Hawaii Department of Education had developed *Environmental Education: K-12 Curriculum Guide*, including annotated lists of journals and magazines, agencies and organizations, and definitions of terms concerned with environmental education. Despite the legal requirement and the guide, little occurred in the schools, probably for the same reasons noted for previous inaction. Establishment of an Environmental Information Office in the Department of Education, opening of the Hawaii Nature Center on O'ahu, an increased emphasis on environmental education at Moanalua Gardens on O'ahu, and preparation of environmental education materials by more government agencies, including the Hawaii Department of Land and Natural Resources, were other landmarks in the late 70s and 80s.

Most recent emphases on environmental education can be traced to several initiatives based on a growing realization of real threats to the Hawaiian environment. Probably the most important of these is the gift of more than \$3.5 million to Hawai'i from the John D. and Catherine T. MacArthur Foundation in Chicago. The grant allows a diverse approach to preserving biological diversity in Hawai'i, including environmental education (Tangley 1988). Grants for land acquisition, research, and advocacy group support have also helped make people aware of conservation problems in Hawaii.

The 'Ōhi'a Project

Money given to the Bernice P. Bishop Museum (\$765,500) specifically for environmental education has allowed curriculum materials to be produced for Hawai'i's children in elementary grades K through 8. Suggested activities in natural areas, audiovisual tools, training, testing of materials by teachers, and review of materials by authorities are part of the curriculum development program, named the 'Ōhi'a Project for Hawai'i's most common native tree. Key concepts within five major topics (geology, geography, plants and animals, humans and the environment, global interactions) are designed to integrate with existing elementary school curricula. In the first phase of the project, about 1,300 (25%) of Hawai'i's teachers were targeted (D. King, pers. comm.). Final copies of materials for grades K through 8 have now been produced.

Accelerated Activities

Many agencies and organizations have increased their efforts in environmental education in the past few years. Reasons for this undoubtedly include the stimulation of MacArthur money, the growing number of conflicts between development and environmental needs, the realization of the importance of environmental education in addressing Hawai'i's environmental problems wisely, mutual stimulation and synergistic efforts, and the high profile of global problems. Earth Day 1990 also increased awareness.

Examples of educational initiatives in the past few years are numerous and worth mentioning to increase awareness and publicize positive approaches. They include: annual Hawaii Department of Education training camps in environmental education; *Greenprint*, the National Audubon Society's bimonthly newsletter; *A Teacher's Guide to the Endangered Birds of Hawai'i* and a video on Hawai'i's birds, prepared by the Hawaii Department of Land and Natural Resources; *Resource*, a quarterly newsletter produced by the Hawaii Department of Land and Natural Resources; *Preserving Hawai'i's Natural Treasures: Hawai'i's Natural Area Reserves System*, produced by the Department of Land and Natural Resources; *Hiking Softly in Hawai'i*, by the Hawai'i Chapter of the Sierra Club; *Kilauea Pointers*, by the U.S. Fish and Wildlife Service; *Recycle*, the newsletter of the Recycling Association of Hawaii; "Interpret Hawai'i" programs at community colleges on several islands; the Visitor Industry Training and Education Center (VITEC) on Maui; a conservation education workshop held at Hawaii Volcanoes National Park in 1988; "Science in Hawai'i" and "It's Science, Isn't It?" videos produced by the Hawaii Department of Education; *Conservation Biology in Hawai'i*, edited by National Park Service personnel; *Islands in a Far Sea*, published by the Sierra Club; *Extinctions in Paradise: Protecting Our Hawaiian Species*, by the Natural Resources Defense Council; *Hawai'i: the Islands of Life*, by The Nature Conservancy of Hawaii; "Puppets on the Path," an environmental education group; "We All Need the Forest," an 'Ōhi'a Project video; Conservation Council of Hawaii and Sierra Club newsletters; 1990 and 1991 environmental education workshops on Hawai'i Island, Kaua'i, and O'ahu; educator training sponsored by the National Park Service for Thailand and South Pacific Islands personnel; recruitment of an Environmental Education Specialist by the Hawaii Division of Forestry and

Wildlife; plans to establish Department of Education outdoor education centers on Kaua'i, windward O'ahu, and Maui; attempts to make the Hawaii Department of Education Environmental Education Specialist in Honolulu a permanent position; and the excellent video produced by National Geographic Society entitled "Hawaii: Strangers in Paradise."

Professional People

Large numbers of people are involved in educating others about the environment in some way, shape, or form in Hawai'i. Some may not even realize that they are involved. Environmental education at its best involves stimulating the appreciation and concern of others and instilling in them an environmental ethic. Hawai'i's environmental problems are often urgent and usually complex, so the job of environmental education has to be done effectively. Time and money for education are limited, and environmental educators often need help. Networking, training, and materials are essential.

The Hawaii Environmental Education Association was formed in 1989 to help improve communication and effectiveness. Consisting of a statewide (four islands at present) Board of Directors, officers, and island chapters, the Association seeks to improve environmental education. It does not take positions on environmental issues. The emphasis is on accomplishing effective environmental education in Hawai'i and helping environmental educators toward that end. Hawaii Environmental Education Association is incorporated, has nonprofit status, and held its first annual statewide conference on O'ahu in June 1991. Projects include a statewide catalog of programs available to educators (including information on subject, target audience, contacts, cost, location); a growing island-by-island mailing list of those who consider themselves environmental educators; planned workshops entitled "The Art of Environmental Education through Art" (Hawai'i Island) and "Earth-wise -- the Art of Environmental Education" (on Kaua'i). Island chapters of the Hawaii Environmental Education Association meet at one- or two-month intervals to share information, often at different sites. Some chapters plan educational projects such as training, others create and participate in programs, and others just share information about educational activities. The emphasis is on meeting the needs of the educators on each island -- as they define them. The Board of Directors meets every two months to share information on progress on each island, discuss organizational progress, problems, and direction, and plan for statewide meetings. Some island groups meet before work or on weekends to more readily accommodate school teachers as well as other educators. As the accomplishments of the organization have increased and been publicized, participation has also increased; for example, over 250 people attended the 1991 statewide conference.

CONCLUSIONS

An estimated \$25 million was spent in conservation in Hawai'i in 1988, of which about \$1 million was spent on environmental education (Gagné 1988). Although environmental education in Hawai'i has a long way to go in

influencing the apathetic, the prognosis is hopeful. However, strategies are needed to reach urban and rural residents, visitors, and adults as well as children. Insufficient environmental education in Hawai'i's schools leads to lack of concern of adult decision-makers, but that catch-22 situation is changing with the influence of the 'Ōhi'a Project and other recent educational efforts (Hawkins, this volume). Environmental ethics, critical thinking, and practice in dealing with complex problems with many "right" answers are needed in educating young and old alike in good citizenship.

Visitors and the visitor industry seem especially difficult to educate about Hawai'i's natural values and threats to them. "Ecotourism" does not seem to be the emerging strategy in Hawai'i that it is in other areas of the world. All decision-makers also need to be targeted specifically -- politicians, business persons, realtors, and others who are actively and rapidly changing the face of Hawai'i without full understandings of environmental losses. Media representatives influence great numbers of people, yet often they lack in-depth information, continuity, and real involvement. To be effective in the conservation of Hawai'i's rapidly diminishing natural resources, environmental educators (and that includes many of us) must do a better job of educating others about the environment, significant threats to it, and about the values of environment to all of us. Environmental education in Hawai'i today is needed more than ever to provide appreciation and concern about the world in which we live and the decisions we make about it.

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