HAWAIIAN CONSERVATION VALUES AND PRACTICES

Since most Hawaiians have become disenfranchised from their 'aina and cultural heritage, they have not maintained the traditions, knowledge, and spiritual values that their ancestors had for nature.

Charles Kekuewa Pe'ape'a Makawalu Burrows

Until recently it had been assumed that the early Hawaiians and other Polynesian groups had a close and harmonious relationship with the 'aina (land) and therefore had a minimal impact upon their natural environment (Kelly 1975). Recent findings by Patrick Kirch (1982) showed that the prehistoric Hawaiians dramatically changed and altered Hawaiian ecosystems, particularly in coastal areas and lowland valleys. Evidence for this may be found by analyzing the relationship between excavated extinct bird bones and increasing numbers of the remains of Polynesian stowaway species in upper geological strata. Stowaway remains include land snail shells (Lamellaxis gracilis) and the bones of the Polynesian rat (Rattus exulans). The now-extinct birds may have numbered some 40 endemic species at the arrival of prehistoric Hawaiians 1,500 years ago. Kirch concurred with Storrs Olson and Helen James (1982) that the extinction of these birds (for example, flightless geese, flightless rails, and an eagle) was primarily due to alteration or destruction of lowland habitats rather than direct predation from the prehistoric Hawaiians (Kirch 1985).

Were the Hawaiians intentionally destructive of their environment, or were changes a natural progression as people used and managed their natural resources within the limitations of their knowledge and culture? Was the impact of prehistoric Polynesians on Hawai'i significantly greater than the impact of Western culture and technology with its introduced alien animal and plant species? What were the primal (prehistoric) Hawaiian values, beliefs and practices regarding conservation? Are these values and practices maintained by present Hawaiian communities and organizations? These are the questions that this essay will address.

PREHISTORIC HAWAIIAN CONSERVATION VALUES AND CONCEPTS

At the second Waiaha Conference on May 30, 1987, Hawaiians and other interested individuals representing various Hawaiian organizations gathered to identify and agree upon a common set of primal Hawaiian values and concepts that might be useful for contemporary Hawaiians (Sauer 1988). The Conference was sponsored by the Waiaha Foundation to discuss and respond
to several topics in *Ku Kanaka: Stand Tall, A Search for Hawaiian Values*, written by George S. Kanahele (1986).

To determine the values shared and practiced by prehistoric Hawaiians before the coming of Westerners is a difficult task, especially when one attempts to view them from the Hawaiian perspective. One can only assume what these values may have been, based upon the oral traditions transmitted through the chants and hula, the early writings of Hawaiian historians David Malo, Samuel Kamakau, and John Papa Pi, the Hawaiian proverbs, the observations of early Western explorers and missionaries, and evidence from Hawaiian archaeological research.

The Hawaiian culture, in a manner similar to biological systems, evolved and changed over a period of time. The values of the proto-Polynesians that developed into Hawaiian cultural values may not ever be fully known because these were modified as the population increased and different social and economic systems were instituted.

Although the Waiaha Conference participants did not discuss conservation values per se, these values were identified within the subject area discussions of religion, economics, science, and technology. The following were selected by this writer as conservation values and concepts believed to have been held by pre-contact Hawaiians; they may still be embedded in the thinking of some contemporary Hawaiians. They are: *Mana'o'i'o* (faith, respect for nature); *Kapu* (sacredness or the forbidden); *Noa* (the profane or that which is not kapu); *Ike* (knowledge); *'Aina* (the living earth); *Lokahi* (unity, balance, harmony); and *Malama* (caring).

In his book and in the proceedings of the Waiaha Conference, Kanahele offered some interesting comments and interpretations for each of these values (Kanahele 1986).

**Mana'o'i'o (Faith, Respect for Nature)**

Primal Hawaiians, as in most aboriginal societies, were religious in every aspect of their being. There was no distinct separation among nature, the spiritual world, and man. The Hawaiian gods, which were "countless" (Malo 1951), inhabited all things in the natural world, both animate and inanimate. They were omnipresent, and the power of the gods was expressed in the energizing or divine force called *mana*. Mana flowed through these entities and manifested itself in certain high chiefs or ali'i and in various forms of nature (Beckwith 1940). A commoner dared not cast his shadow upon a kapu chief and had to remain a certain distance away or be put to death (Malo 1951). Trees such as the *'ohi'a lehua* (*Metrosideros polymorpha*) and *koa* (*Acacia koa*) had mana; the mana was invoked and/or propitiated by canoe builders so that the tree could be used. Rocks of particular shapes and sizes represented different gods (for example, *Ku*ua, the stone god of fishermen), were used to attract fish, and were placed in a *ko'a* or fishing shrine. The primal Hawaiian respected and revered nature and his ali'i, whom he believed possessed mana. Ali'i were considered sacred and, as such, were kapu.

However, not all things in nature had the same degree of mana. Things which were considered of greater value, such as the feathers of the *'iwi* (*Vestiaria coccinea*) or the Hawai'i *mamo* (*Drepanis pacifica*), were sacred and kapu. Places such as Kualoa or Ka'ena Point were considered sacred in comparison to other areas of O'ahu. One can imagine the Hawaiian farmer clearing the land with slash and burn techniques in order to plant his more spiritual and higher-valued crops such as taro (*Colocasia esculenta*), bananas
(Musa sapientum x paradisiaca), and sweet potatoes (Ipomoea batatas). Undoubtedly, some native plants and things in the forest were not valued as highly and did not receive the same respect. As Kanahele emphasized, the primal Hawaiian respected nature but did not share the concept of "reverence for life" as practiced by Hindu or Buddhist religions. Early Hawaiians, however, built shrines and heiau (temples) where they rendered appropriate offerings and prayers to maintain the kapu system and their relationship with the gods.

**Kapu and Noa (Sacred and Profane)**

The kapu was a regulatory means of protecting the sanctity of the mana in man and nature and operated effectively to control the thinking and behavior of the early Hawaiians. It was also used as a conservation measure to protect the over-exploitation of natural resources. The kapu on fishing for 'opelu or mackerel (Decapterus spp.) and aku (bonito tuna, Katsuwonus pelamis) were in effect during the spawning seasons. Kamehameha I enacted a kapu on the cutting of sandalwood (Santalum spp.) after realizing the trees were being depleted and that his people were in need of food and care. The kapu or sanctity of an object, person, or command could be ended by no longer being forbidden. They then became noa (profane). All things became noa when Keopuolani (the kapu chiefess) and her son Liholiho (Kamehameha II) publicly ate together, thus defying the gods and breaking the kapu system.

**'Ike (Knowledge)**

The ancestral Hawaiians were keen observers of the natural world and were able to use their intimate knowledge of nature to sail on long-distance voyages and manage the natural resources of the sea and land for fishing, farming, and other uses. Young Hawaiians with obvious interest, capability, and (usually) ties to a family stressing medical lore were trained at an early age in the art of Hawaiian medicine; they had to be knowledgeable in the identification and preparation of medicinal herbs. The Hawaiian botanists knew not only the plants they brought with them from ancient Polynesia, but also many endemic plants that they encountered as they travelled from the seashore to inland areas at higher elevations. The bird catchers were equally knowledgeable about the identification and behavior of many native birds. Their shelters and artifacts can be found in remote valleys such as Anahulu Valley on O'ahu.

Special schools or halau were established in the arts, crafts, and sciences and were taught by various kahuna (professional experts) such as the kahuna lapa'au (medical doctor), kahuna ho'oulu (agricultural expert), or kahuna kilokilo (astrologer).

Knowledge or 'ike was important and held sacred. It was also considered powerful especially among the kahuna. 'Ike enabled the early Hawaiians not only to function and survive in their island environment, but to excel in their featherwork, canoe making, fishpond building, irrigation engineering, heiau construction, and agricultural farming practices—to name a few of their significant achievements.

**'Aina (The Living Earth)**

One often hears the saying aloha 'aina, meaning in literal translation, "love for the land." Its use has been popularized by the Protect Kaho'olawe 'Ohana movement and in historical accounts by John Wise and others in the
early 1900s when a publishing company was established in support of this political movement (Kanahele 1986). Aloha 'aina originally may not have had the same connotation as reverence for the earth and all living things but may have been used as a patriotic saying meaning "love for my country." Among Hawaiian activists today this may mean the return of lands, such as Kaho‘olawe, that were ceded to the State and Federal governments, as well as access to trails in coastal and mountain areas to permit traditional food and plant gathering and the exercise of Hawaiian religious beliefs in these places.

Kanahele made an interesting observation about the Hawaiian perception of 'aina as a "living thing" comparable to James Lovelock's "Gaia Hypothesis," which stated: "the Biosphere [ed. emphasis] is a self-regulating entity with the capacity to keep our planet healthy by controlling the chemical and physical environment." The Hawaiian interpretation for 'aina means "that which feeds and provides sustenance." Symbolically, this concept portrays the earth as a mother nursing her young. According to Hawaiian mythology as interpreted in The Kumulipo (creation chant), the cosmic gods Wakea and Papa gave birth to the 'aina and all of its evolutionary forms of life, including humans. The transcendental life force or mana from the gods causes the 'aina to be a living entity.

Lokahi (Unity, Balance, Harmony)

The Hawaiian concept of lokahi is equivalent to the modern ecological concept of homeostasis in an ecosystem. Biological systems are dynamic. They are in constant change, reacting and adapting to natural disturbances. Nature makes adjustments to these changes and brings the ecosystem back into a balanced relationship or equilibrium. Early Hawaiians considered themselves to be part of nature. Through their uses of and interactions with the natural environment, they were always striving to be in a harmonious relationship with what they perceived as their island world. This was exemplified by their religious practices of chanting, performing hula dances that depicted nature, and making offerings to the spiritual forces in nature in order to maintain the unity and equilibrium of man with the universe.

Malama (Caring)

Marion Kelly (1987) outlined four principles of malama (caring or stewardship) for the land. In the first principle, Kelly stated that everyone had the access and right to the resources in the ahupua'a (unit of land extending from mountain areas into the sea) in which they lived. The concept of land ownership was foreign to the primal Hawaiian psyche. The paramount chiefs or ali'i (kamehameha) controlled but did not "own" the land. The maka'aikana (common people) were free to move from ahupua'a to ahupua'a if they were dissatisfied with the ruling chief of the ahupua'a in which they lived.

The second principle dealt with caring for the land and sea by using the resources wisely and not over-exploiting them. There was an unwritten rule that one took only what was needed. A Hawaiian proverb expresses this as: "Hawai no ka ua i ka uuluia au - Rains always follow the forest." This means rains are attracted to the forest trees. Knowing this, the Hawaiians felled only the trees that were needed (Pukui 1983).

The third principle referred to sharing whatever one had with someone in need. Contemporary Hawaiians are taught by their kupuna ("elders") that
they should always open their homes, even to strangers or one’s enemies, and feed the visitors first if they are hungry.

The fourth principle advocated that everyone who ate food from the taro garden or fishpond was responsible for the maintenance and care of the land. It was the responsibility of the konohiki (land manager) of the ahupu'a to allocate the use of land for farming and to regulate the irrigation systems. He managed the work force, calling upon the maka'ainana to construct fishponds or taro terraces and to repair or maintain destroyed facilities. He was also the conservation manager in his enforcement of the kapu on certain species of fishes and plants throughout the seasons.

Archibald Menzies, surgeon and naturalist with Captain George Vancouver (1792-1794), provided excellent descriptions of conservation practices, such as field fallowing, planting sweet potatoes, bananas, and wauke (Broussonetia papyrifera) between breadfruit or ulu (Artocarpus altilis) trees, and mulching plants in the Kona area field system on Hawai'i Island (Tuggle 1979). He also noted the burning of pili grass (Heteropogon contortus) in fields on Kaua'i in order to encourage new growth (Kirch 1985).

EARLY HAWAIIAN IMPACT ON THE ENVIRONMENT

As the early Hawaiian population increased, the land use expanded from the coastal areas into the uplands, with more of the natural resources being exploited. By 1500 A.D. the Polynesian social system had become well established, with more distinct class differences between the ali'i and maka'ainana. Malo (1951) noted that much of the farming, fishing, and construction of temples and other structures was done primarily by the maka'ainana to supply their needs as well as those of the ali'i and their retinue.

Kelly (1975, 1987) argued that the changes in land ecosystems by the prehistoric Hawaiians were "relatively small, and that there is no evidence of any willful, irresponsible destruction of the environment committed by the pre-contact Hawaiians." However, contemporary critics and sympathizers of Hawaiian traditions generally agree that pre-contact Hawaiians did have an impact on their environment and changed it. This, according to Spoehr (1984), is a natural consequence of any group of people coming into virgin territory and using the natural resources for their subsistence. Human settlement impacts such as this have occurred with cultures worldwide.

However, the question being debated is how much impact and change did the prehistoric Hawaiians cause in their natural environment? Kirch (1982) contended that there were major changes in the biological diversity as well as physical land disturbances due to upland clearing and burning before the coming of Westerners. He has good supporting evidence for his conclusions from available archaeological and paleontological research in Hawai'i. He also acknowledged that Western agricultural technology and the introduction of alien species have caused progressively greater changes in island ecosystems.

T. Stell Newman (1972) wrote that there were minimal effects from sea exploitation on the Hawaiian marine ecosystem, but that Hawaiian farming practices resulted in dramatic changes in land ecosystems. He concluded that the Hawaiian and his culture were not separate from nature in Hawai'i but were part of it and were influenced by the Hawaiian ecosystem.
The early Hawaiians did make maximum and efficient use of their inshore fishing grounds and agricultural farming areas that extended up to 2,000 ft (600 m) in elevation. At the time of contact it was estimated that 10-15% of the island of Hawai'i, and much less of Kaua'i and O'ahu, were under cultivation, particularly in dryland areas (Tuggle 1979). By practicing their cultural values and implementing the knowledge and technology of a neolithic society, it can be argued that the prehistoric Hawaiians were good managers of their fishing and agricultural lands and used their natural resources wisely. They may not have been conscious of the destruction and changes in the native ecosystems that resulted in the extinction of many endemic plants and animals. Perhaps these were of less value to them, consequently did not have sufficient mana or sacredness, and were therefore less revered and were considered noa.

As one might expect, there were differences in the conservation values and working behavior among pre-contact Hawaiians. Malo (1951) stated that there were two different kinds of farmers:

Those who really made a business of it and worked until sunset were called ili-pilo (industrious farmers). Those who kept at it for only short time and did not do much at it were called ili-helo (unskilled farmers).

CONSERVATION BIOLOGY AND POST-CONTACT INFLUENCES

The conservation of natural areas and the preservation of endangered species are relatively new ideas that were formulated by Western ecologists. The plantation owners and others of Western tradition in the latter half of the 19th century were unaware of the significance and importance of biological conservation as opposed to farming conservation. For this reason, early post-contact market economy attitudes and practices caused great devastation to Hawai'i's fragile ecosystems (see Gill, this volume). Differences in conservation values and practices still exist today. Some segments of contemporary society are aware of the consequences of improper land use and poor management of urban and conservation areas. Some realize that over-exploitation may lead to worldwide depletion of natural resources, increasing environmental pollution problems, and the extinction of endangered species. There are examples of governmental policies and regulations for environmental protection and conservation. However, the enforcement of these policies and the education of the general public to these concerns have been lacking.

Continual and increasing conflicts occur between competing interest groups who use the land resources for their causes and benefits. Sport hunters would like to have more wild game in areas that are critical habitats for Endangered species. Private landowners believe that the best use of the land is in economic development. To accommodate all groups, government declares that the land and its natural resources should have multiple uses and that the economic and recreational needs must be in balance with environmental concerns. But multiple use does not usually result in the preservation of natural values. Hawai'i's natural undeveloped coastal areas are becoming scarce. Hawaiian forests are in danger. Some of these areas may not be able
to withstand the competing pressures and will cease to exist in their natural state.

CONTEMPORARY HAWAIIAN ORGANIZATIONS AND CONSERVATION EDUCATION CONCERNS

The large established Hawaiian organizations that serve the Hawaiian community for different political, social, economic, and educational purposes are government agencies such as the Office of Hawaiian Affairs (OHA), the Department of Hawaiian Home Lands (DHHL), and Ali`i Like; and private trust organizations such as Queen Lili`uokalani Trust/Children's Center and The Kamehameha Schools/Bishop Estate (KS/BE). Of these Hawaiian organizations, KS/BE controls the most private land and economic resources in the State of Hawai'i. The Department of Hawaiian Home Lands is next, with a smaller land holding in residential, industrial, and agricultural lands. Other smaller culturally and politically active Hawaiian organizations include the Hawaiian civic clubs, halau hula (hula "schools") groups, Congress of Hawaiians, Protect Kaho`olawe `Ohana, advocates for the Hawaiian Nation, and numerous Hawaiian societies.

A large percentage of Hawaiians have lost their land base, their political and economic powers, and their cultural identity. They have multiple health, social, and economic problems. Their immediate needs and goals are for personal and ethnic survival in a contemporary society. Conservation education has not been an important goal. Since most Hawaiians have become disenfranchised from their `aina and cultural heritage, they have not maintained the traditions, knowledge, and spiritual values which their ancestors had for nature. Most young Hawaiians have not experienced hiking into the forest and learning about Hawai'i's varied ecosystems. They, therefore, may not understand the need to protect the biological diversity that is unique to the Islands. Being alienated from the land creates resentment and feelings that one lacks "ownership" of what was once theirs. This may account in part for vandalism and disrespect for property and life that occurs. If there are any concerns for the `aina among young Hawaiians, they exist more commonly in terms of restoring traditional rights to gathering of plant products, hunting, and fishing.

Protect Kaho`olawe `Ohana

The Protect Kaho`olawe `Ohana has been the most politically active Hawaiian group, working to save the island of Kaho`olawe from further military damage to archaeological sites and land areas. They have an educational program to take Hawaiians and non-Hawaiians to the Island in order to develop their cultural and spiritual values regarding the `aina. They have encouraged the elimination of goats (Capra hircus) from the Island and the reforestation of the land with native plants. The `Ohana has also petitioned against the development of geothermal power on the island of Hawai'i, not only because of projected environmental damage, but more significantly because development is thought sacrilegious to the Hawaiian volcano goddess Pele and her believers.
Office of Hawaiian Affairs and
the Department of Hawaiian Home Lands

Historically, the Hawaiian community has not been a cohesive group. Hawaiian organizations have differed widely in their goals and strategies. They have not communicated effectively with one another, nor to the Hawaiian and part-Hawaiian population at large. The Office of Hawaiian Affairs was established by the State government to address these weaknesses. Its effectiveness has been limited because, as a government agency, it is subject to the control of the State Legislature and lacks independent economic resources to meet the needs of its constituency. Most Hawaiians and part-Hawaiians have become so well integrated and Westernized within Hawaiian society that they do not share concepts of community and place.

Education programs in conservation and management practices among prominent Hawaiian organizations have been limited. The Department of Hawaiian Home Lands does not have an explicit conservation policy concerning lands that are held in public trust, but the Department does conform to State land use and management policies such as the 1974 State Environmental Policy Act.

Hawaiian Home Lands has about 28,000 acres of forest land in Conservation District zones. In recent years, the Department has enlisted the services of The Nature Conservancy of Hawaii to inventory endemic plant species in selected areas on Maui and O'ahu. Personnel in the planning and land management divisions are conscious of the need to use good conservation practices and Hawaiian values regarding the environment. However, there is still a need for further field research and development of a written conservation policy for their lands.

Kamehameha Schools/Bishop Estate

The Kamehameha Schools/Bishop Estate is a major owner of forest land in the State of Hawaii. The KS/BE has more than 85,000 acres (34,400 ha) in forest conservation lands, more than half of which is located on the island of Hawaii. Since the 1900s, KS/BE has been engaged in forestry management and developing the commercial forest potential of its holdings. From 1958 to 1969, 100,000 trees were planted on 2,000 acres (810 ha), costing KS/BE over $125,000 (Thompson 1975).

In 1975 the Kilauea-Keauhou Forestry Center, encompassing 3,000 acres (1,210 ha) of the Kilauea Forest and some 2,500 acres (1,010 ha) on the Keauhou Ranch at 5,000 ft (1,520 m) elevation on the island of Hawaii, was established for the primary purpose of regenerating koa in disturbed forest used as pasture lands. A stated goal identifies this mission as "nothing less than to plan and utilize the koa forests located in these islands; to improve the cultural and economic lives of the citizens of Hawaii." Joining KS/BE (that funded and implemented the program) were consultants and representatives from the U.S. Forest Service Institute of Pacific Islands Forestry, the State Division of Forestry, the University of Hawaii, and the U.S. Fish and Wildlife Service.

Throughout the intervening years, increments of 50-acre (20-ha) plots have been bulldozed and planted in native koa. Between 1977 and 1986, 162,000 nursery-grown koa seedlings were planted on 650 acres (260 ha) of former native forest at Keauhou as well as elsewhere in Ka'u and in Honaunau. In 1984, an additional 1,000 acres (405 ha) at Keauhou Ranch was assigned for koa reforestation, and planting will continue annually to the year
Before entering the forest, students perform a "picking" chant, calling upon these ancestral spirits for permission to pick the plants. They then offer the first woven lei in honor of the spirits.

Not all halau hula groups or lei makers adhere to these conservation rituals, as is evident by what is worn as adornment on dancers in the major hula festivals. Some forest areas have received pressures on the palapalai (Microlepia trigosa), maile (Alyxia oliviformis), and the like (newly opened leaves, reddish in some species) of 'ohi'a lehua; and on beach vegetation such as kauna'oa (Cuscuta sandwicensis) and hinahina ku kakakai (Heliotropium anomalaum). As part of their educational program, Moanalua Gardens Foundation advisers instruct halau hula participants on how to pick the like of 'ohi'a lehua conservatively for their performances in the annual Prince Lot Festival.

RECOMMENDATIONS

Destruction and changes to Hawai'i's natural ecosystems have already occurred. Blame should not be placed on any one group, whether it be the prehistoric Hawaiians or the Westerners who followed after the arrival of Captain Cook in 1778. It was largely through ignorance that environmentally degrading practices occurred. However, today we know better. We dare not make the same mistakes. Citizens of Hawai'i, both Hawaiian and non-Hawaiian, must take the best in conservation values and knowledge from both cultures and apply them with diligence.

We must use the methodology and knowledge of Western science in ecology and environmental management to conserve our natural resources, reduce environmental pollution, and sustain endangered plant and animal species here in Hawai'i and elsewhere. We can use the Hawaiian conservation values such as 'ike, Lokahi, 'Aina, Malama, Mana, and Kapu to guide us in our decision-making when questions arise in economics, recreation, and land development that may have a bearing on critical biological habitats. It is essential for modern man to accept the ecologist's and the primal Hawaiian's views of nature and life: that man is neither apart from nor a conqueror of nature, but is one with nature and the divine force or mana that permeates the universe.

In recent years the Hawaiian renaissance movement has been reawakening Hawaiians to the power and richness of their culture. Hawaiian organizations in both the government and private sectors have established programs to accommodate the social, economic, educational, and cultural needs of Hawaiians. These agencies must also consider the conservation and preservation needs of critical ecosystems on the lands which they hold in trust. For example, the Kamehameha Schools/Bishop Estate should evaluate conservation lands under its stewardship for the biological and archaeological resource potential that they might have for scientific research and education. These lands can be set aside in perpetuity, similar to nature preserves administered by The Nature Conservancy of Hawaii, the National Park Service, and the Hawaii Department of Land and Natural Resources.

The cultural, ecological, and educational values that some areas possess may be greater than the economic value that may be derived through real estate or commercial development. Land that still retains remnants of the primal past is a priceless biological heritage to preserve and treasure. The
education of Hawaiian youth and decision-makers toward these conservation values and management must be emphasized at all levels of modern society and continually supported by Hawaiian organizations. This is their legacy.

**Important References**


