TRADITIONAL HAWAIIAN SUSTENANCE

STATE OF HAWAI'I ♦ DEPARTMENT OF LAND AND NATURAL RESOURCES ♦ PROTECTING OUR PAST

2012

TRADITIONAL HAWAIIAN SUSTENANCE

The earliest Polynesian voyagers to arrive in these islands brought with them nutritious foods essential to their well being such as taro and breadfruit, which were to become staples for many people. Other plants they brought included yam, banana, ti, arrowroot, ʻawa, and sugar cane. They also carried with them animals such as pigs, chickens and dogs. These items greatly expanded upon the food sources already to be found in Hawaiʻi, such as sweet potato, ferns, berries, birds, and abundant sea life. Scholars still debate whether coconut first came with the earliest Polynesians, or found its own way to the islands prior to human occupation. While used for food in Hawaiʻi, the coconut also had many other, even more important, uses. Using every part of the tree, Hawaiians fabricated food containers, drums, fans, children's toys, thatching, and tools. Also, sennit, the coarse rope made from the fibers of the husk served as the lashings on outrigger canoes.

Through farming, fishing, hunting, and gathering, Hawaiians procured a diversity of foods. They constructed, planted and irrigated taro fields; cultivated crops such as yams, sweet potato, and breadfruit; hunted birds and pigs; gathered vines, ferns, herbs and medicinal plants; practiced both net and deep sea fishing; harvested *opai* and *oʻopu* from the streams, picked seaweed, and collected shellfish.

Fishponds, Keawanui, East Molokaʻi

Their main sources of protein were fish, squid, limpet, crab and other seafood, chicken, and birds. The main leafy vegetables were *luau* (taro tops), and edible plants such as tree fern and fan palm. They ate bananas, coconuts, mountain apples and sugar cane. Seasonings came from *kukui* nut, seaweed, *hoio* fern and salt. They preserved food with salt and most foods were eaten fresh. They ate dogs and the male *ali'i* (royalty) enjoyed pig and turtle. It was *kapu* (taboo) for women to eat certain foods, including bananas, coconuts, pork, turtle and several types of fish.

The initial Hawaiian settlements expanded progressively and an elaborate resource base was developed which successfully sustained a population that numbered at least several hundreds of thousands by the late eighteenth century. This was accomplished by instituting an ever more complex religious, political social order based on a *kapu* system, and *ahupua'a* management which involved fishing, farming and aquaculture. Large areas, many covering hundreds of acres, were devoted to wetland agriculture, which were supported by complex irrigation systems that transported water from streams to the *lo'i*. Also the most sophisticated fishponds in the world were developed with their use of *mākaha* (gates) to replenish the ponds' stock of fish. In the extensive, terraced upland field systems, such as those at Kōloa on Kaua'i, Kula on Maui, and Kona on the island of Hawai'i, Hawaiians developed methods to retain soil and moisture, in order to cultivate such staples as breadfruit, yam, and sweet potato. In some of the drier areas of the islands, the latter served as the primary source of carbohydrates, rather than taro. In addition, evidence remains in today's forested areas of transported landscapes of *kī*, *hala*, *'awa*, and *mai'a*, identifying areas formerly cultivated by Hawaiians. These required less attention and provided sources of sustenance, especially when other crops failed.

These means of food production were accomplished through the transmitting and absorbing of *kūpuna* (elders') knowledge and experimentation. The Hawaiian food production systems were innovative and solution driven, developed within the context of a community instilled with a spirit of cooperation to accomplish large scale projects.

Many examples of the achievements of the past remain with us today, with a number being revitalized and placed back into production. Some lie hidden in the *kuahiwi* (upland forest) or buried under hundreds of years of accumulated sediment. However, many are visible to numerous residents as they drive to work, or can be seen in a short walk from a public thoroughfare. Others are clearly visible during an inter-island plane ride.

Our hope is that these ancient sites will survive and continue to be restored to once again bring people together to provide sustenance, both physical and spiritual, to their communities. They bring hope, admiration, and pride to all.

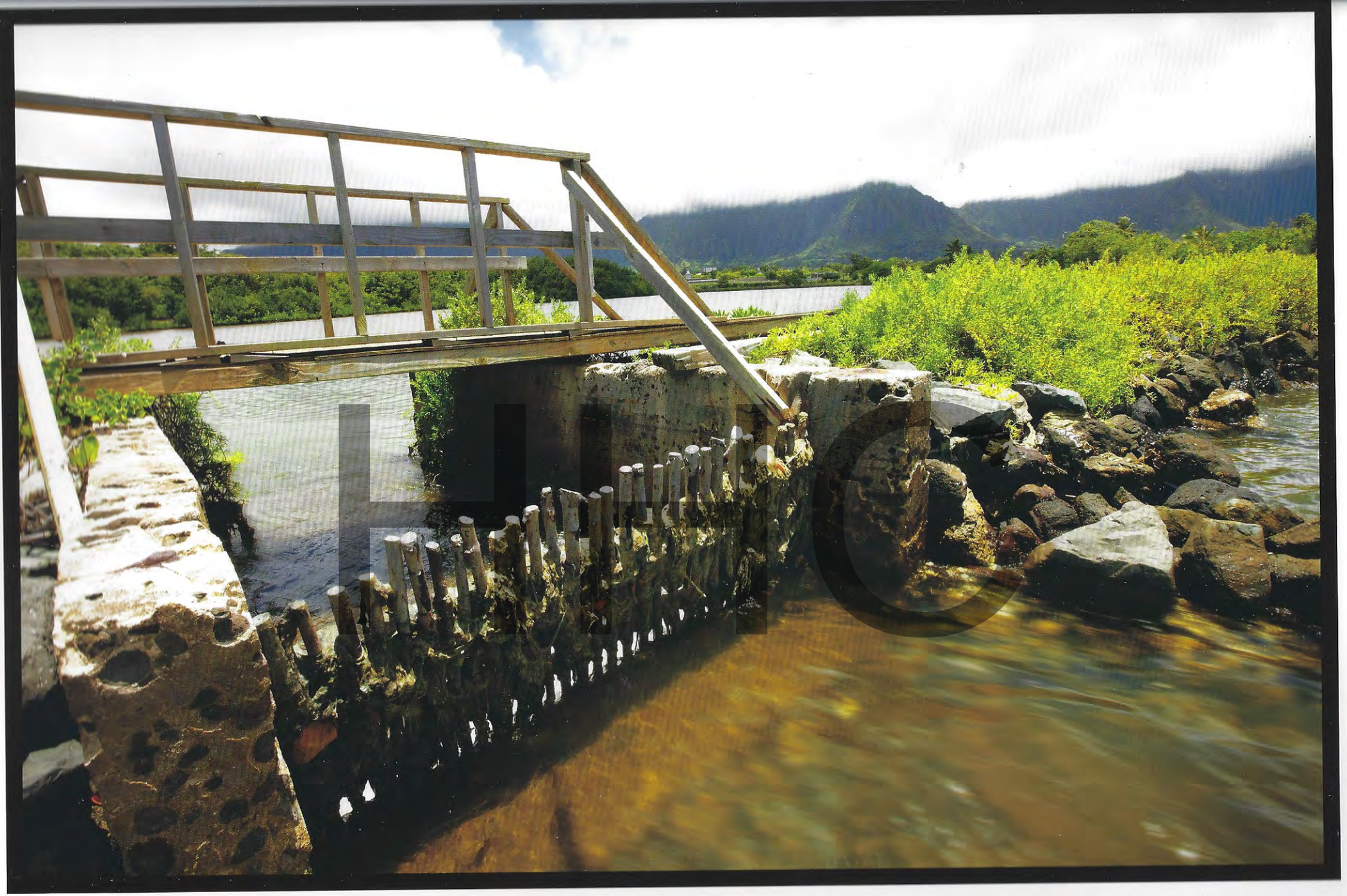
Royal Coconut Grove of Kapuaiwa, Kalamaula, Moloka'i

Lo'i at Wailuanui, East Maui

Cover: Shoreline Ponds, 'Āhihi-Kīna'u, Maui
Stone partitions constructed in these natural features created holding ponds for fish, which were trapped inside.

JANUARY

***'Uala* Mound, Greenwell Botanical Gardens, North Kona, Island of Hawai'i**
The *'uala* – a staple crop is growing in one of the favored traditional manners – a rock mound. The *pōhaku* (stones) facilitate harvesting and help to retain moisture. These mounds survive in unmodified areas throughout dry, leeward environments, where *'uala*, with its shorter growing period, was more abundant than *kalo* (taro).



FEBRUARY

Waikalualoko Fishpond, Kane'ohe O'ahu
This *mākaha* or fishpond gate, was reconstructed in the traditional manner with a wooden grate designed to control the movement of larger fish and predators. Fishponds once lined the edges of Kane'ohe Bay and along the windward O'ahu coast. Those at He'eia and Kualoa are still active, while Waikalualoko fishpond is presently being maintained and restored. All serve as educational resources.

MARCH

Kaneiolouma Complex, Poʻipu Kōloa, Kauaʻi
This large basalt boulder was made smooth and concave through careful shaping to form a *pōhaku poho* (stone bowl). The complex is within the once intensively cultivated Kōloa Field System which once covered hundreds of acres of lava terrain irrigated through *'auwai* (irrigation canals) fed by Waikomo Stream.

APRIL

***Lo'i Kalo*, Ke'anae Peninsula, Maui**
One of the prime *lo'i kalo* (taro fields) areas of east Maui, Ke'anae's present *lo'i* boundaries match perfectly with the configuration of the *kuleana* awards map dating to the 1880s. A single *'auwai* enters the center of the peninsula

MAY

Remnant of a *Kī* Grove, upland Waimānalo, O'ahu
Hawaiians purposefully planted the upland forest areas of all islands with groves of *kī* and other plants which supplied reliable and easily maintained alternative food sources in times of need. The baked root of the *kī* was a food staple and the plant had many other important uses, including wrapping food.

MASAKO CORDRAY

JUNE

Kula Field System, Kula, Maui
Located on Haleakalā's broad slope, this *'āina kula* (open midland area) was used for habitation and farming since at least the 15th century. The flowering sweet potato vines are gone, replaced by historic ranching activities, but hundreds of walls and terraces remain. Stone mounds dot the landscape, some sheltering *iwi kūpuna* (burials) that continues to nourish the land.

JULY

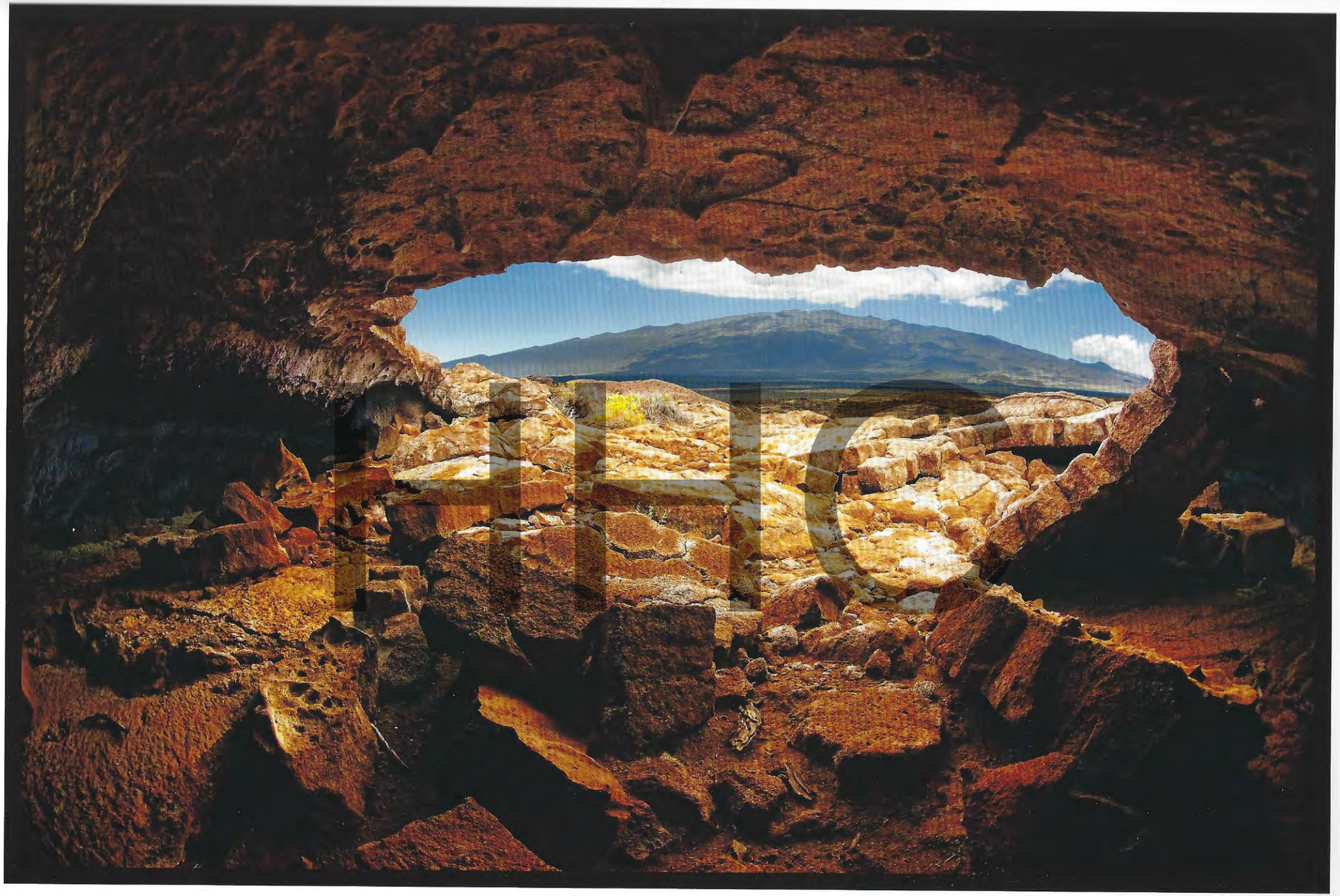
Kūpeke Fishpond, Kūpeke ahupua'a, Moloka'i
Of the many fishponds lining the south shore of Moloka'i, this is one of the best preserved. Kūpeke fishpond is a *kuapā* type pond defined by a seawall of stone and sediment. The wall is 2500 feet long and encloses 34 acres. There are a number of even larger ponds along this coast.

AUGUST

Salt Beds, Hanapēpē, Kaua'i
Hawaiian families continue the traditional practice of salt making, which dates back to pre-contact times at this location. Beds, constructed by shaping the mud of the flats, are filled with the high-saline waters from the *waipuna* (wells) next to the salt bed. As the water evaporates, the salt precipitates and is collected. The salt with its distinctive red color is naturally mixed with the clay soil. The salt is not sold but given as gifts from the *'ohana*.

SEPTEMBER

***Lo'i Kalo*, Hanalei, Kaua'i**
Kalo (taro) was the staple of the traditional diet and the plant is spiritually linked to creation. Nowhere else in Polynesia did *kalo* cultivation reach the degree of sophistication as it did in Hawai'i. Complex field design and water delivery systems are witness to the great community effort involved. Hanalei today remains the largest supplier of *kalo* in Hawai'i.



OCTOBER

Bird Hunter's Pit, Pōhakuloa (Mauna Ke'a in the background), Island of Hawai'i.
The rugged and barren *pāhoehoe* landscape between Hualālai, Mauna Loa and Mauna Ke'a were the breeding ground for a number of species of birds, prized by ancient Hawaiians for food and feathers. Open pits cover this landscape, as *kia manu* (bird hunters) deliberately collapsed voids in the lava, creating nesting areas to increase the habitat and sustain the population of these birds.

NOVEMBER

Alakoko, or Alekoko, Fishpond, Niumalu, Kaua'i (the storied round peak of Mount Hā'upu in the background)
This large fishpond was built in a bend or oxbow of the Hulē'ia River with the construction of a 2,700 foot long earthen wall with boulder facings. According to legend, the Menehune built this fishpond in one night.

DECEMBER

Hala Grove, Uplands of Luluku, Kane'ohe, O'ahu
Thick groves of *hala (Pandanaceae)* grow on many windward slopes. These groves thrive on ridge tops and often have an understory of *Kī*. Many are remnants of traditional deliberate plantings, called transported landscapes. The flower and fruit of these trees were an available source of food and medicine. This grove is visible from Likelike Highway.