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State of Hawai'i • Department of Land and Natural Resources

Fishponds of Hawai'i

Interest in restoring Hawai'i's ancient ponds has never been higher. According to a recent study, there are 488 fishponds in varying states of repair scattered throughout the six major islands. Initial rehabilitation efforts have focused on the 74 ponds on Moloka'i, where cultural preservation activities are important and economic development opportunities are badly needed. However, fishpond preservation projects are currently underway on O'ahu and Maui, as well.

On September 6, 1991, The Governor's Fishpond Restoration Workshop was held on Moloka'i. The recommendations of this workshop led to the formation of The Governor's Task Force on Moloka'i Fishpond Restoration in January, 1992. This body, which is composed of State, County and Federal officials, and persons from Moloka'i, will present recommendations to the Governor and the Legislature on rebuilding the old ponds. This is expected to occur in the early part of 1993.

The Task Force has held numerous meetings on Moloka'i, with members of the community providing valuable input. Two demonstration fishponds have been identified. Neighboring communities have indicated a strong desire to become involved in restoration efforts. Federal funding has been acquired to hire a consultant who will assess the community's attitude toward fishponds and satisfy various permit requirements for the two ponds.

The Chairperson of the Board of Land & Natural Resources chairs the Task Force, and the department's Aquaculture Development Program (ADP) will serve as staff. ADP will receive Revocable Permits for the demonstration ponds, and coordinate permit acquisition.

Anyone interested in rehabilitating an historic fishpond should contact the Aquaculture Development Program at 587-0030 and Historic Preservation Division at 587-0047.



Wall restoration at Huilua Fishpond, O'ahu.

For more information on Hawaiian fishponds, see:

- 1975 Apple, Russel A. and Kikuchi, William K. *Ancient Hawai'i Shore Zone Fishponds: An Evaluation of Survivors for Historical Preservation*. National Park Service. Honolulu, Hawai'i.
- 1989 DHM Inc. and Applied Research Group, Bishop Museum *Hawaiian Fishponds Study: Islands of O'ahu, Moloka'i and Hawai'i*. Prepared for the Hawaii Coastal Zone Management Program through the State Department of Land and Natural Resources. Honolulu, Hawai'i.
- 1990 *Hawaiian Fishpond Study: Islands of Hawai'i, Maui, Lana'i and Kaua'i*. Prepared for the Hawaii Coastal Zone Management Program through the State Department of Land and Natural Resources. Honolulu, Hawai'i.
- 1973 Kikuchi, William K. *Hawaiian Aquacultural System*. Ph.D. Dissertation, University of Arizona.
- 1992 Wyban, Carol Araki *Tide and Current: Fishponds of Hawai'i*. University of Hawaii Press. Honolulu, Hawai'i.

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The Honorable John Waihe'e
 Governor of Hawai'i



Unidentified fishpond –
Kane'ohe, O'ahu c.1900
Bishop Museum

Fish and other seafoods were the major source of protein in the Hawaiian's daily diet. Fish remains and fishing implements that have been recovered from archaeological excavations attest to the importance of fish, either harvested from the sea or from the pond. Likewise, fish were important in religious ceremonies, and fishing shrines are common features in the archaeological landscape of Hawai'i.

Loko is the general Hawaiian term for a pond and a fishpond is referred to as *loko i'a* (*i'a* is the general term for fish). There were six major types of Hawaiian fishpond. *Loko wai* was a fresh water pond. A good

lings (young fish) to enter the pond. Excellent representative examples of this type are He'eia Fishpond on Windward O'ahu, 'Ualapu'e Fishpond on Moloka'i, and Kaloko Fishpond on the island of Hawai'i. A *loko 'umeiki* was a fishtrap and was similar to *loko kuapā* in construction. The *loko 'umeiki* had several lanes that are walled on both sides and either led in or out of the pond. *Loko kuapā* and *loko 'umeiki* were found mostly on O'ahu and Moloka'i because their fringing reefs had shallow water and wave protected areas. On the south coast of the island of Moloka'i is an impressive concentration of *loko kuapā* and

Hawai'i island was given as the name of the pond there.

Archaeological and historical evidence suggests that Hawaiian fishponds were constructed probably as early as A.D. 1000, if not earlier, and continued to be built until the 1820s. Fishpond construction probably intensified beginning in the late 1500s and early 1600s when the Hawaiian sociopolitical system became more complex. It was probably during this time period that most of the large and more productive *loko kuapā*, *loko 'umeiki*, and *loko pu'uone* were built. Only the *ali'i* (persons of chiefly rank) would have had the power and control

people from Kamalo'o (known today as Kamalō) to Hālawā under the command of *konohiki*. A chief's pond usually had a keeper (*kia'i loko*) whose only responsibility was to tend the pond — cleaning, harvesting, and repair. The *kia'i loko* lived in a house at the edge of the pond.

For a number of reasons, the operation of fishponds declined throughout the islands by the early 1900s. Changing socioeconomic conditions, population declines and shifts, decline in growing irrigated taro, and easy access to other sources of protein are but a few of these reasons. Many fishponds fell into disrepair after abandon-

Fishpond on the island of Kaua'i. Not known to most people today was the presence of ten *loko wai* now buried under Fort DeRussy in Waikiki, O'ahu. A *loko i'a kalo* was a combination of a taro patch and fishpond. A *loko pu'uone* was a pond isolated from the sea either by a sand ridge, a lava flow, or a limestone formation. It contained either brackish water or a combination of brackish water and fresh water. Lālākea Fishpond in Waipi'o Valley on Hawai'i Island is such a pond.

A *loko kuapā* is a shore pond enclosed by a rock wall (*kuapā*) broken by a ditch (*'auwai*) or one or more sluice gates (*mākāhā*). The *mākāhā* was used to regulate the flow of water and it also allowed the finger-

are found along the rocky shores were also used and occasionally modified by the Hawaiians. A *kāheka* gets its water from high waves while a *hāpunapuna* is fed by springs. The rugged, irregular volcanic coastlines of Maui and Hawai'i are ideal for these types of ponds.

Fishponds were named after the chiefs who may have had direct or indirect association with the ponds, names of demigods, the land unit in which the pond is located, a legendary event, or names of the specific fish raised in the pond. Ka-nahā Pond on Maui was named after the chief Ka-nahā-o-ka-lani. Keko'ona Pond, a *loko pu'uone* in Hāna, Maui was supposedly named after a famous eel god. The land unit Kaloko on

Management of the pond was overseen by the *konohiki* (headman of the land unit), who recruited the people to construct and maintain a chief's pond. Now a harbor, Puko'o Pond on Moloka'i was a pond that was communally built in 1829 by the

Deforestation upslope of the coastline increased sedimentation inside the ponds. Non-native mangrove trees have choked other ponds. Several of the coastal ponds on O'ahu are now either filled or dredged as a result of increasing development.

Front Cover Photo: Ka-loko-'eli, literally meaning "the dug pond," is still in good condition despite the storm damage on the walls and accumulation of silt within the pond. Measuring about 30 acres, this *loko kuapā* is located in Ka-milo-loa, Moloka'i. The northern side of Lāna'i is in the background



He'eia, O'ahu c.1900
Alonzo Gartley,
Bishop Museum



Lokoaka Pond, Hilo
Hawai'i Island c.1910
Albert S. Baker,
Hawaiian Mission
Children's Society



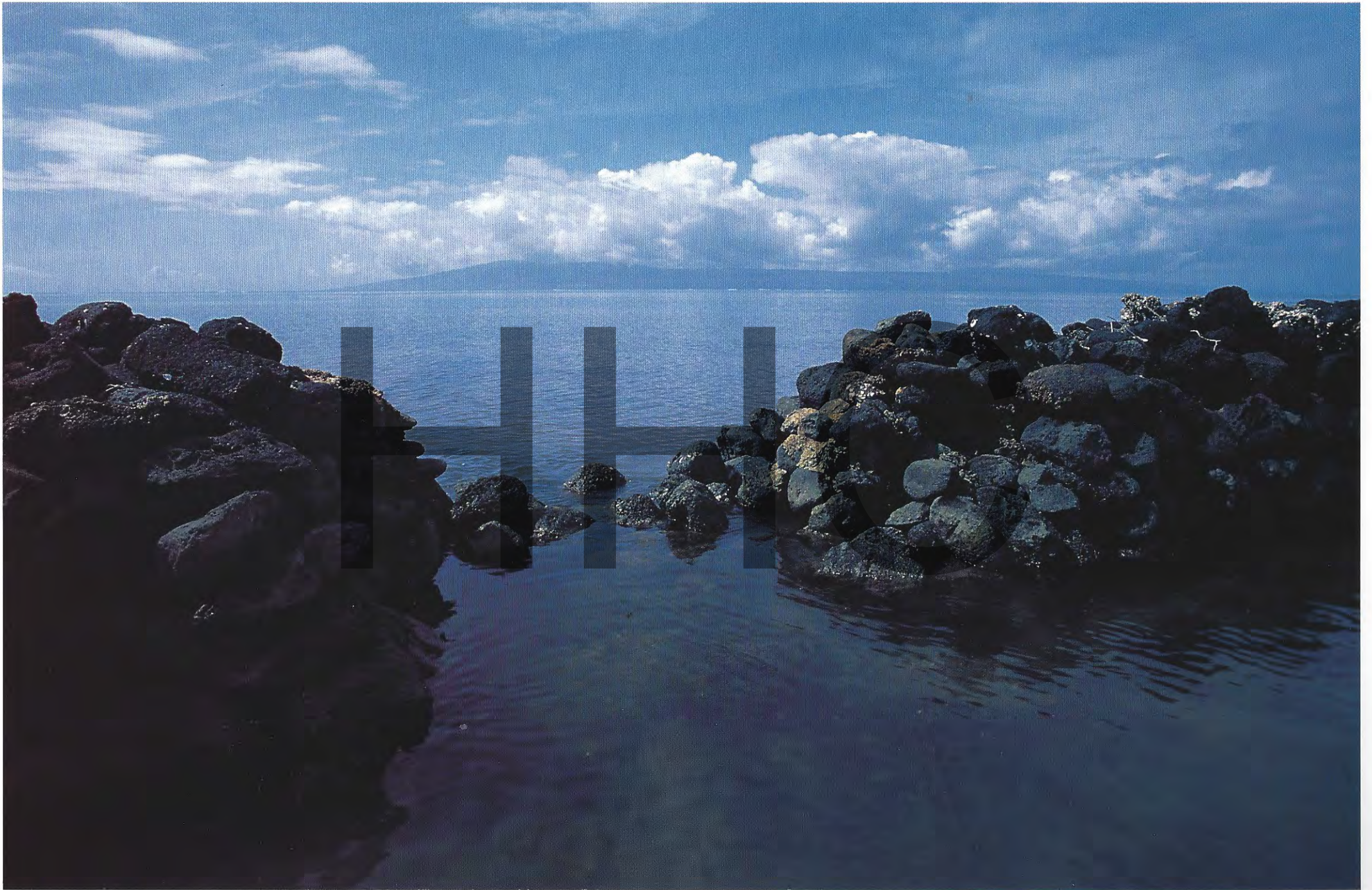
January



February



March



April



May



June



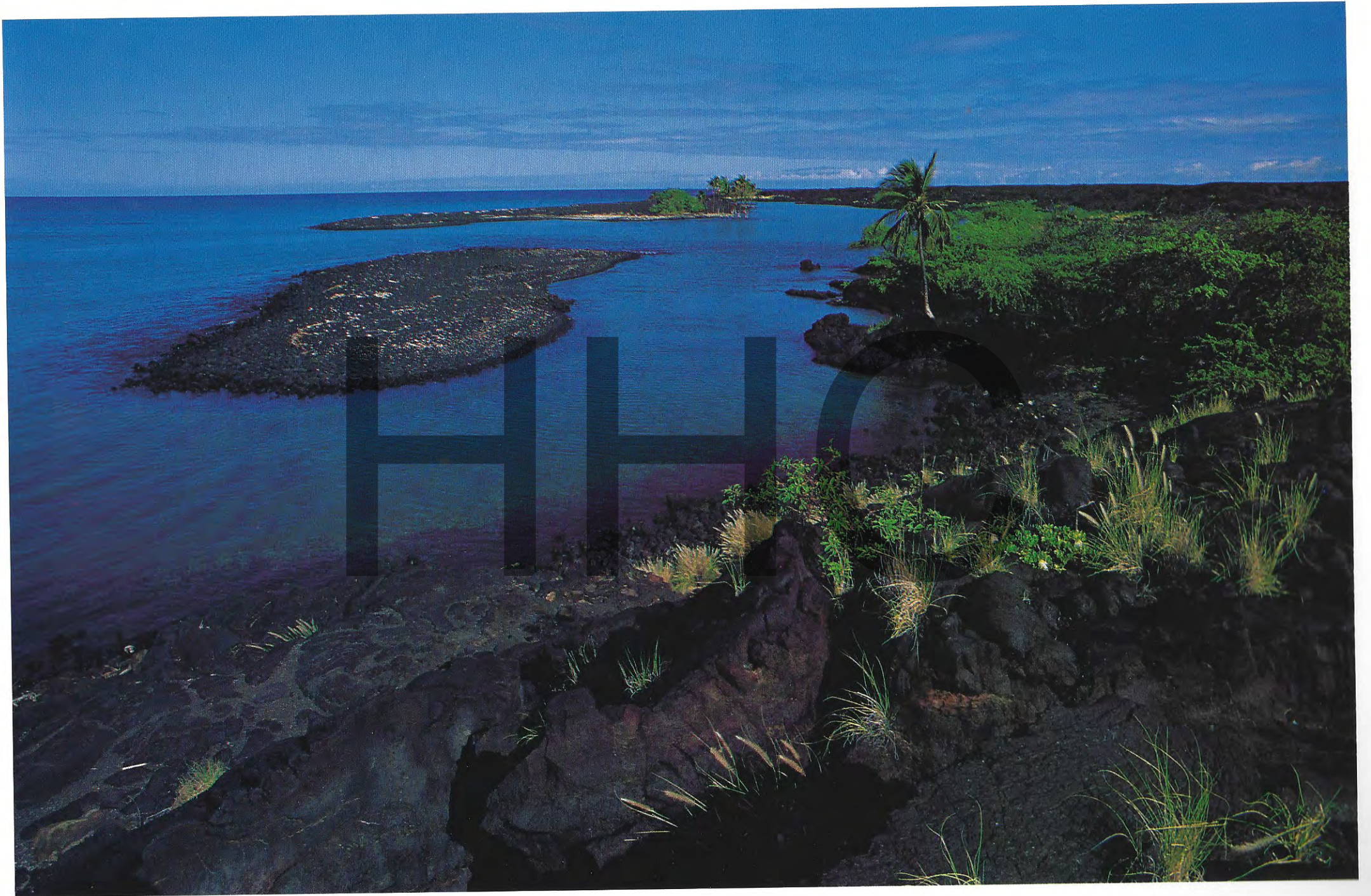
July



August



September



October



November



December