



RESTORING THE WONDERS OF WAIPA AHUPUA'A

UH Sea Grant Extension Agent: Dr. Adam Asquith

The Issue

Ancient Hawaiians organized their society around divisions of land known as *ahupua'a*. These land divisions usually extended from mountain summits down through fertile valleys and across the outer edges of coastal reefs to the sea.

Employing an ecological land management system, Hawaiian communities took advantage of the entire breadth of *ahupua'a* resources, which ideally consisted of forested uplands, waterfalls, streams, wetlands, coastal lowlands and coastal fishponds. In this way, Hawaiians used their natural resources sustainably and conserved the land for future generations. Today, this concept continues to sustain a local community.

Nestled just above Hanalei Bay on the north shore of the Island of Kaua'i, the 1,400-acre Waipā Ahupua'a remains one of the few unobstructed and complete *ahupua'a* in all Hawai'i. Managed by the Hawaiian Farmers of Hanalei and the Waipā Foundation, the lands are home to the Waipā Ahupua'a Learning Center; a grass roots effort whose mission is to provide hands-on educational experiences and opportunities in the stewardship of natural and cultural resources within the *ahupua'a*.

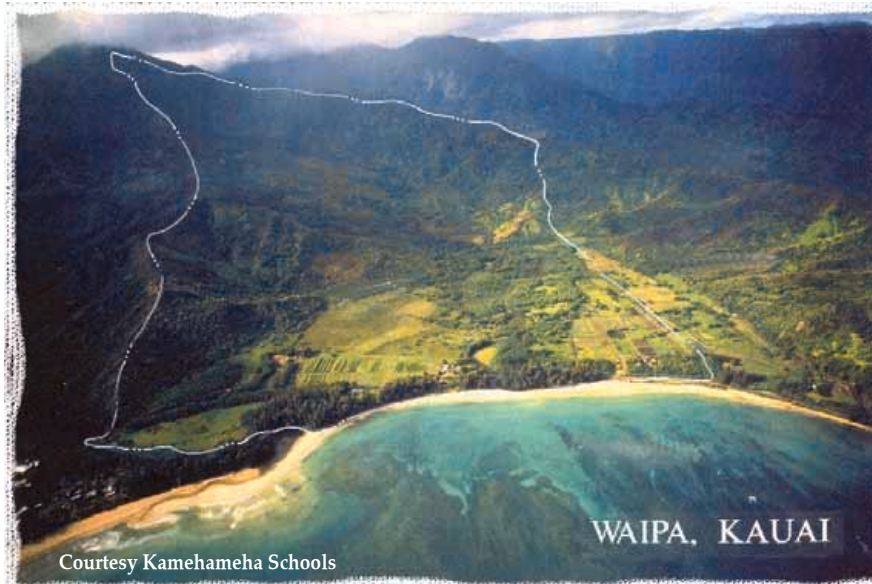
Located one mile north of Hanalei, the Waipā Ahupua'a is an ideal setting for a variety of outdoor learning experiences. Magnificent mountain ridges shelter the fertile Waipā Valley, while the Waipā Stream flows through the valley to meet Hanalei Bay. This richly endowed land is an ideal environment for hands-on teaching and learning about Hawaiian culture, science, math, social studies, conservation and leadership skills.

2002 Sea Grant Funding

\$33,076; \$2,800 match

Impacts/Economic Benefits

Kamehameha Schools helps fund many of the educational programs at Waipā. "We want to create community partner-



ships where we can have children learning directly from the land," says Neil Hannahs, Director of Land Assets for Kamehameha Schools.

For students on field trips to the Waipā Ahupua'a Learning Center, Hanalei Bay provides a close-up look at diverse coral reef-building plants and animals, and the

communities that depend on them for survival. Here, University of Hawai'i (UH) Sea Grant College Program Extension Agent Adam Asquith introduces students to marine science basics using Hanalei Bay and the surrounding area as a living laboratory.

Four excursions tailored to meet curriculum-content standards for grade clusters K-3, 4-5, 6-8 and 9-12 are offered: Marine Science, Geology of the Waipā Ahupua'a, Water Cycle and Stream Ecology, and Organic Gardening and Native Plant Propagation.

Marine Science

While on the beach at Hanalei, students discuss principles of oceanography and how they influence the weather and environment of Hawai'i (salinity, temperature, wind, currents, productivity, food chains, etc.). Using saltwater tanks on the beach, students explore coral reef diversity. Students discuss human use and impacts on the ocean while learning the concepts of community resource management and sustainable harvest and use.

Geology of the Waipā Ahupua'a

Students also explore the Waipā Ahupua'a as a place, how it arose as part of the Island of Kaua'i, its formation and the processes involved, and how its physical features determine life cycles in the watershed. Students examine the dynamics of coastal processes, weathering, soil formation and deposition, and stream hydrology. By hiking through different areas, students learn how living organisms interact with the physical geology to form the ecosystem of the *ahupua'a*.



Water Cycle and Stream Ecology

Students learn about the hydrologic cycle by discovering the sources and connections of water in the Waipā Ahupua'a. Exploring the area on foot, students follow water from the ocean, to springs and flowing streams. Students examine water as an energy and nutrient source for life in the *ahupua'a*. Stream life and ecology are examined using streamside tanks.

Organic Gardening and Native Plant Propagation

Students learn about soil composition and how to build and maintain a healthy garden ecosystem. They till and plant garden beds, build a compost pile and work in the native plant nursery. They discuss and observe natural means of pest control and learn about the difference between endemic, indigenous and introduced plants. The ecological and cultural importance of the preservation and cultivation of native plants is emphasized.

"We're building an *ahupua'a* system and at the same time we're building a community," says Asquith.

Students Educated

In the first half of fiscal year 2002-2003 Waipā staff provided services to over 200 students from kindergarten through college

with contact time varying from three hours to 300 hours. More than 12 different schools and youth organizations have participated.

Significant Partnerships

- Hanalei Heritage River Hui
- U.S. Fish & Wildlife Service
- University of Hawai'i Curriculum Research and Development Group
- Kamehameha Schools
- Waipā Foundation
- The Nature Conservancy
- A&B Properties Kaua'i
- Kaua'i Invasive Species Committee
- Nāwiliwili Bay Watershed Council
- State Department of Land and Natural Resources Division of Aquatic Resources
- Kaua'i Public Radio
- Kaua'i Community College, Rural Development Project
- Hawai'i Army National Guard

Outreach Highlights

A radio program *Kaua'i Kai and Wai* has been produced twice monthly for the past two years, and currently airs once a month on Kaua'i's public radio station, KKCR. In partnership with the State Division of Aquatic Resources, this radio program promotes understanding and conservation of the island's freshwater and marine resources. It provides educational information and discussion, access to experts on the topics, and answers to questions called in by the public.



Rice mill



Adam Asquith serves as the University of Hawai'i Sea Grant College Program Kaua'i Extension Specialist. He provides extension assistance to communities and organizations throughout Kaua'i on coastal and watershed conservation and management issues. His primary focus is on partner-based watershed management, which includes such activities as educational field trips at Waipā, training community volunteers in stream fish and water quality monitoring, riparian restoration and upland forest management.

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