

Sebastian Lambert Hawai'i Island
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Kawanui: The Great Jumping Off Place

By Sabastian Lambert

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Kawanui: The Great Jumping Off Place

Across the globe the weather is changing, rivers and streams are going dry, and plant, animal, and insect species are being reduced to extinction. The Hawaiian Islands will not experience climate change as severe as most other places in the world because of the mediating effects of their location in the middle of the Pacific Ocean. Even so, these islands are experiencing changes in the environment and the negative impact of human activity. The ecosystems of Hawai‘i have experienced destruction and alteration, especially in the last two centuries. One such ecosystem is the dry/leeward forest that once covered the lower elevations of the west side of Hawai‘i Island from the district of South Kona to Kohala. Kawanui is a *wahi pana* (cherished place) that was once part of this forest.

Before European contact all land in Hawai‘i was divided into *ahupua‘a*. These were sections of land that extended from the mountains to the sea and provided all that was needed for the survival of a community, including food, water, medicine, and building materials. Kawanui, the home of horticulturalist Nancy Redfeather and agricultural historian Gerry Herbert, is a one acre piece of land that lies within the *ahupua‘a* of Kawanui II. Kawanui means “the great jumping off place.” The story of this place is in the name. On the coast of Kawanui I and II are narrow cliffs that extend into the ocean and between them deep inlets.¹ It was on these cliffs that the ancient Hawaiians practiced the sport of *lelekawa*. The players would leap from these cliffs into the water and whoever made the smallest splash would win. There were other Kawanuis in these islands where this sport was played, but there is another story that makes this place unique. It is believed that in ancient Hawai‘i both Kawanui I and II

¹ Kawanui historical and place name information is from Uncle Billy Paris 1998. Uncle Billy knew the names of every cliff and inlet of Kawanui and he could list them from North to South. He said each name had their own story and history.

were where the deceased leaped into the spirit world up in the heavens. Lono, the Hawaiian god of fertility and agriculture, was also of great spiritual significance in the area. The annual four month Makahiki Festival that honored this god, was held in the neighboring Kealahou *ahupua'a*. The physical and spiritual significance of this land may have made the area unique to other places, but the story of Kawanui is in a way the story of the whole Kona coast.

Before the coming of the Polynesians, this dryland forest extended all the way down to the coastal zone at an elevation of 300 feet. It was a mixed forest, endemic tree species including the *lama* (*diospyros sandwecinsis*), *koai'a* (*Acacia koaia*), *'ōhi'a lehua* (*Metrosideros polymorpha*), and *loulou* (*Pritchardia spp*). The forest plants and trees stabilized the soil and absorbed the moisture coming from the Pacific Ocean. The land gave birth to little streams that flowed to the coast. One such stream was Kawanui Stream that flowed through the middle of the present Kawanui property 500 to 1,000 years ago. In the tenth century A.D., Polynesians settled on the coast, the dryland forest receded into the upper elevations, and agriculture replaced it.

Kawanui was once a part of the Kona Field System. This was one of the most productive systems of agriculture in the world, that flourished in Kona in the 1600s and 1700s. This field system was divided into three main sections. The Kula or coastal zone was not extensively cultivated and was mainly where the Hawaiians had their homes. From 500 to 1,000 feet elevation in the Kalu-Ulu zone, groves of *'ulu* (*Artocarpus altilis*) or breadfruit, ground covers of *'uala* (*Ipomoea batatas*) or sweet potato, and patches of the *wauke* (*Broussonetia papyrifera*) or paper mulberry were grown, leaving not one piece of Earth unproductive. The *'Āpa'a* zone from the elevations of 1,000 to 3,000 feet, where the weather was wetter, was extensively cultivated by Hawaiian families. Staple crops included *kalo* (*Colocasia esculenta*) or taro and *pia* (*Tacca leontopetaloides*) or Polynesian arrowroot. Famine food included the *uhi* (*Dioscorea alata*) or Hawaiian yam and the *mai'a* (*Musa spp*) or banana. Plants like *kō* (*Saccharum*

officinarum) or sugarcane, *kī* (*Cordyline fruticosa*) or ti leaf, *‘awapuhi* (*zingiber zerumbet*) or ginger, and *‘ōlena* (*curcuma longa*) or turmeric were grown for medicine. Kawanui, at an elevation of 1,500 feet, was one of the *māla ‘ai* (family food gardens) of this zone. Above this were the remains of an intact dryland forest, where wood, medicinal plants, and cloth were all obtained. The Hawaiian villagers used this *‘āina* (land) to teach their children such skills as farming, medicine, and weaving. The ancient Hawaiians had a deep respect for the *‘āina* (land) and the harvesting of forest trees was regulated. This only slowed the destruction of the dryland forest, it did not stop it.

Over the last 200 years, both the importance and physical landscape of Kawanui has changed more than ever. Following the Great Mahele of 1848, a constitution that established private ownership of all land in Hawai‘i, Kawanui was no longer under the community ownership of Hawaiian families. Through cattle ranching, the invasion of exotic flora and fauna, and changing weather, this land was altered to a great extent. One hundred years ago *manakō* (*Mangifera indica*) or mango trees were planted and *hua waina* (*Vitis*) or grape arbors established on the land immediately to the west of Kawanui. All but one ancient tree had fallen from a storm when Nancy and Gerry made their home here in 1998.

Kawanui looked nothing like a native dry/leeward forest. It was overgrown with California grass (*Melica California*)², *wilelaiki* (*Schinus terebinthifolius*) or Christmas berry, and *kuawa* (*Psidium guajava*) or guava. Not one native plant species grew here. The only Polynesian introduced plant was the *mai‘a* (*Musa spp*) or banana. Two Hawaiian dry stack rock walls defined the south and west property boundaries. Neighbors had disposed of their loose rocks on this land, but beneath these rock piles was an ancient stream bed and a foot of fertile topsoil. This land was in a drought, the result of the unusual El Nino weather

² Hawaiian name could not be found.

pattern in the Pacific. Despite these dry conditions, this land had the potential to support a diversity of life.

Since this time, there has been many changes to Kawanui. All the California grass (*Melica californica*), *wilelaiki* (*Schinus terebinthifolius*) or Christmas berry, and *kuawa* (*Psidium guajava*) or guava were bulldozed and turned into compost. A house, barn, and nursery were built. The rock piles were turned into dry stack rock walls. The environment fluctuated between very dry and very wet; the El Nino and La Nina weather patterns going through their cycles every three to seven years. The coqui frog (*eleutherodactylus coqui*)³ came to Kawanui in 1999 and a number of insects disappeared, including the jumping spider (*Salticidae*)⁴, the praying mantis (*Mantodea*)⁵, and the *hope'ō* (*Vespula vulgaris*) or house wasp. In 2011, a flood gushed through the property, destroying the east and west rock walls, washing away a decade's worth of compost, depositing a lot of glass and plastic, and introducing many weeds. Fungal diseases of the soil followed and it took two years to rebuild the health of this land. Today, Kawanui grows native, Polynesian introduced, and exotic plant species, including many varieties of food, medicine, and orchard crops.

Hawai'i has 11 of the 13 microclimates in the world and the potential to grow a great variety of plants, but most people in Hawai'i do not grow their own food anymore. Kawanui is an example of what can be grown in these islands. The endemic *'ōhi'a lehua* (*Metrosideros polymorpha*), 20 year old *lama* (*Diospyros sandwicensis*), *hale pepe* (*Pleomele hawaiiensis*), and *moa* (*Psilotum nudum*) and the indigenous *'ilima* (*Sida fallax*) are all plant species that grew in the dry/leeward forest. The Polynesian introduced *kalo* (*Colocasia esculenta*) or taro, *'uala* (*Ipomoea batatas*) or sweet potato, *kī* (*Cordyline fruticosa*) or ti leaf, *kō* (*Saccharum officinarum*) or sugarcane, *'awapuhi* (*Zingiber zerumbet*) or ginger, *'ōlena* (*Curcuma longa*) or turmeric, *mai'a* (*Musa*

^{3,4,5} Hawaiian name could not be found.

spp) or banana, *niu* (*Cocos nucifera*) or coconut, *‘ulu* (*Artocarpus altilis*) or breadfruit, and *uhi* (*Dioscorea alata*) or Hawaiian yam are all plants that were grown in the Kona Field System and that grow here today. Mixed in with this native and Polynesian flora are plant species from around the world. These include *hala kahiki* (*Ananas comosus*) or pineapple, *hua waina* (*Vitis*) or grape vines, *akala* (*Rubus idaeus*) or raspberry, broccoli (*Brassica oleracea* var. *italica*)⁶, *‘ōhi‘a lomi* (*Solanum lycopersicum*) or tomato, *lekuke* (*Lactuca sativa*) or lettuce, *pea* (*Persea Americana*) or avocado, *manakō* (*Mangifera indica*) or mango, *‘alani* (*citrus x sinensis*) or orange, cacao (*Theobroma cacao*)⁷, macadamia nut (*Macadamia integrifolia*)⁸, *kope* (*Coffea*) or coffee, *kinamona* (*Cinnamomum zeylanicum*) or cinnamon, cardamom (*Elettaria cardamomum*)⁹, cloves (*Syzygium aromaticum*)¹⁰, and *pepa* (*Piper nigrum*) or black pepper. These species provide an abundance of fruits, vegetables, nuts, and spices and add to the biodiversity of Kawanui.

Every year, invasive species from around the world arrive in the Hawaiian Islands through the horticultural industry, shipping, and to a lesser extent tourism. These plant, animal, and insect species multiply rapidly and can quickly spread to large areas, causing devastation to Hawai‘i’s ecosystems and making it increasingly difficult to grow food locally. But because of Kawanui’s rich soil microbiology and biodiversity, insect populations remain in balance and the animals do little damage to the land. The balance of this landscape is threatened by more aggressive insect species, particularly the little fire ant (LFA). This ant species is one of the top ten worst invasive species in the world. The LFA is a cloned species with a very painful bite that forms massive super colonies. The LFA has spread to Hawai‘i, devastating

^{6,7,8,9,10}, Hawaiian name could not be found.

agriculture and quality of life, creating an imbalance in and perturbing people from entering invaded areas. Nancy Redfeather takes extra care not to introduce the LFA to Kawanui, quarantining and testing all organic matter that is brought in from other areas. Invasive species are not the only thing that threatens the survival of the native and Polynesian introduced species.

The future of Kawanui over the next 50 years will be shaped by the people who live here, the invasion of exotic species, human activity, and climate change. If this land falls into other hands and ceases to be cared for, weeds will take over, aggressive and devastating insects like the LFA will establish themselves, and most of the plants and trees will complete their lifecycles. It is likely that the only trees remaining will be the *manakō* (*Mangifera indica*) or mango, the *lama* (*Diospyros sandwecinsis*), and the *‘ōhi‘a lehua* (*Metrosideros polymorpha*). On the contrary, if this land is tended and cared for, life here will continue to thrive. New plants and trees will be planted and the organic matter in the soil will increase considerably, sequestering CO₂ and absorbing moisture in the air. The weather will fluctuate between longer droughts and more rain effecting the flora and fauna, especially the insect species that live here. This little ecosystem will be shaped by which species has the advantage in the environment to such things as temperature, food source, water source, and shelter. The effects of climate change on the insects will depend on the particular species. Insect species will rather proliferate, adapt, or disappear. Kawanui risks losing many insects in the future, including its *meli* (*Apis*) or bees, *pulelehua* (*Rhopalocera*) or butterflies, *pulelehua* (*Heterocera*) or moths, and other pollinators that are essential to the survival of native plants.

There are many things that I can do to preserve native Hawaiian species. I can create my own little ecosystem of native plants around my house. I can build a soil high in organic matter and rich in microbiology and grow native species in their desired environment. I can practice companion planting, growing species that are beneficial

to each other. I can prevent invasive plants, animals, and insects that are harmful to native species from entering my yard by pulling weeds, fencing in native species, and quarantining and testing soil from other areas. I can also use biological controls and develop an environment of biodiversity and balance. In order for Hawai‘i to preserve its native species there must be unity. People who live here need to be responsible in caring for the ‘āina (land), preserving native species, and improving the diminishing quality of life in Hawai‘i. Developing your own ecosystem is a responsible way to help the environment both locally and globally.

Kawanui is a place where I can experience a healthy and balanced ecosystem. It is a place where I can get my hands in the soil, work in nature, and pursue my passion for farming. I am given an example of biodynamics, biodiversity, and horticulture. This land teaches me how to nurture the ‘āina (land), create a healthy and balanced landscape, and help the environment.

Kawanui means a lot to Nancy Redfeather. Since she was a child, she has loved nature and longed to have a small plot of land to experiment with a diversity of plants and trees. She lived in Kailua Kona, Hawai‘i for 20 years from 1978 to 1998. Not happy with the rocky, dry landscape she decided to find a piece of land up *mauka* (inland) where there was fertile soil and a wetter environment. In 1998 Nancy and her husband Gerry bought this 1.2-acre plot of land where she could live and garden. “It was that same year, 1998, that I decided to leave my profession of teaching and dedicate the rest of my life to horticulture and horticulture education,” she shared. The gentle breezes, the dry Winters, the wet Summers, and the potential to grow such a diversity of plants are all things she loves about this place. “This land sustains us, feeds us, provides us with medicines and beauty, and the partnership we have developed with the ‘āina has strengthened our partnership with the natural world.”¹¹ Over the last

¹¹ Nancy Redfeather

20 years she has planted, composted, and refined systems enjoying each day. “Kawanui, the great jumping off place, has become a springboard for my life and my work in the world, and I am a better human being for knowing and loving her.”¹²

¹² Nancy Redfeather

Appendix I

Past Photos



View of Kawanui from the road before Nancy and Gerry moved in



Kawanui after the land was cleared



The beginning of the Kawanui garden



Gardens are established



May 2011: A flood rages through Kawanui



The flood reaches Nancy and Gerry's doorstep

Appendix II

Present Photos



Looking up at Kawanui



'Ulu (Artocarpus altilis) or breadfruit



Kī (Cordyline fruticosa) or ti leaf



Kalo (Colocasia esculenta) or taro



Niu (Cocos nucifera) or coconut



Mai'a (Musa spp) or banana



'Ōhi'a lehua (*Metrosideros polymorpha*)



Hale pepe (Pleomele hawaiiensis)

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