
5-2013

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Publication Info

Published in *Legacy*, Volume 17, Issue 1, 2013, pages 26-28.

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Going Polynesian in Hawai'i: Natural and Cultural Landscapes of the Big Island

By J. Christopher Gillam

The Hawaiian Islands may be best known for historic Pearl Harbor and Waikiki Beach on O'ahu, but the early story, mo'olelo, of the islands begins with its geologic and natural wonders and the ancient Polynesians that occupied them beginning around A.D. 800-1,000 (Anderson and Sinoto 2002; Tuggle and Spriggs 2000)—many centuries before Europeans began crossing the world's



Fig. 1: Two types of basalt lava flows, 'A'a (rough) and Pāhoehoe (smooth). (Photo by Christopher Gillam)

oceans. In April, the 2013 Society for American Archaeology's (SAA) annual conference was held in Honolulu, O'ahu, offering a rare opportunity to learn firsthand about Hawaiian natural history, geology, and Polynesian culture.

In the week ahead of the conference, I trekked across the Big Island of Hawai'i, with my ohana (family) in tow, to explore its magnificent natural and cultural landscapes. The natural beauty of the island is spectacular, but in both developed and some rural areas you can be overwhelmed by non-native plants and animals. Songbirds and butterflies from around the globe pleasantly flutter by and mongoose zip across lawns and roads, the latter brought to control mice and rats that are themselves historic additions. Feral goats and donkeys are often seen clamoring about the lowland lava fields and midland forests. Urban and suburban areas are awash with invasive plant species—trees, shrubs, and

flowers—your perennial favorites are surely there.

From an economic perspective, only koa is considered a high-valued native wood, prized mainly for musical instruments and fine furnishings. In rural areas, the economic benefits of non-native tree farming in the mid-20th century radically changed the landscape, with species of fast-growing eucalyptus and pine for construction timbers and many edible-fruit trees, e.g. guava, mango, tangerine, papaya, and macadamia (Little and Skolmen 1989). The invasive species are predominantly in the low- and mid-elevation lands (below 3,000-foot or 900-meters amsl), the same areas most suitable for human habitation in the past and present.



Fig. 2: The Pu'ukoholā Heiau, built by Kamehameha I in 1790, is one of the last temples constructed before European influence changed Hawaiian traditional life and religion. (Photo by Christopher Gillam)

In broader context, the introduction of invasive plant and animal species is nothing new to Hawai'i. The introduction of beneficial species dates back to the arrival of the first Polynesian inhabitants over a millennium ago (Little and Skolmen 1989; Tuggle and Spriggs 2000).



Fig. 3: Dry-stone construction using basalt boulders provided the foundation of traditional Hawaiian architecture, the house wall foundations at Lapakahi State Park. (Photo by Christopher Gillam)

Chickens, boar, and dogs are the most notable introductions from the animal kingdom. Coconut palm, banana, sweet potato (a late arrival, indirectly from the Americas, ca. A.D. 1,400), taro, sugarcane, and bottle gourd are a few notable plants, though not an exhaustive list. In addition, native Hawaiians were accomplished at aquaculture, building waterway control systems with sluice gates for artificial fish ponds and tidal fish traps at settlements along the shore. By the time Capt. James Cook voyaged to the archipelago in 1778, the natural landscape of the lowlands had already been transformed into a cultural one by nearly a millennium of human occupation.

The cultural landscapes of ancient Hawai'i dotted its coastlines and extended inland from the sea to its highland volcanic peaks in governed districts known as, Ahupua'a (James 1995). Hawaiian society was stratified, with the Ali'i (chiefs) on top, followed by Kahuna Nui (priests), Koa (warriors), Kahuna (skilled workers, e.g. Kahuna Ho'okele, a navigator), and Kama'āina (common folk). Most of the remnant cultural landscape today consists of dry-stone architecture, temple platforms and other structures made of



Fig. 4: Ki'i, wooden deity statues, stand guard over the mausoleum at Pu'uhonua o Hōnaunau National Historic Park. (Photo by Christopher Gillam)

water-worn basalt boulders, lying along the coast on smooth basalt lava flows, or Pāhoehoe (Fig. 1), adjacent to natural bays, coves, and beaches suitable for landing their sailing canoes. Heiau were temple platforms built to honor the gods and housed religious ceremonies related to warfare, human sacrifice, farming, fishing, ocean-going, and the practice of medicine (Fig. 2). Kuapā were stone walls used to create artificial ponds, or Loko, in lowlands to farm fish and enclose tidal fish traps. Stone walls were also used to define Ali'i canoe landing sites, create harbor-like coves, house walls, and terraces for agriculture to support daily life (Fig. 3). Thick walls (ca. 17 feet or five meters)

were also used at some religious sites to separate Heiau and royal courtyards from more common areas of such sites. Also at royal sites, Hōlua stone slides for wood sledding competitions often extended for several hundred feet (ca. 50 meters) from the land

into the sea. Ahu were large rock cairns that served communal needs and often marked the boundary between formal

Ahupua'a districts on the landscape. Ala, native trails, also criss-crossed the landscape often paralleling the shore and/or extending inland within and between Ahupua'a, with some improved trails in areas of rough basalt, or 'A'ā, lava flows.

Many significant sites are well preserved and open to the public as national and state parks. Two excellent national parks are located just a few minutes' drive from the popular destination town of Kailua-Kona. These include the royal grounds and warrior



Fig. 5: A green sea turtle waits for the tide to return in a large tidal pool that also served as natural fish trap at Pu'uhonua o Hōnaunau, thus the old adage, "when the tide is out, the table is set." (Photo by Chris Gillam)

refuge of Pu'uhonua o Hōnaunau, to the south, and the fishing village and ponds of Kaloko-Honokōhau, to the north. Pu'uhonua o Hōnaunau is quite spectacular with many temple and dwelling reconstructions and Ki'i wooden statues that stand guard over a royal mausoleum (Fig. 4). Where the lava flow meets the surf, you can

observe tropical fish, sea urchins, and the occasional green sea turtle that get trapped in the natural cavities that form tidal pools (Fig. 5). The fishing village of Kaloko-Honokōhau is just a few miles north of Kailua-Kona and features a Heiau temple, large fish traps, petroglyphs, large fishponds with operating Mākāhā (sluice gate water management systems), Hōlua slide, Ala (native trails), and incredible beaches that are off the beaten path and dotted with green sea turtles sunning along the shore (Fig. 6).

While most of these magnificent sites are protected as national and state parks, some have witnessed extensive development. The most notable one that I encountered was Keauhou, the 1960's Keauhou Beach Hotel was built in the middle of this now National Register of Historic Places (NRHP) site. The Keauhou site has three Heiau, numerous rock walls and house platforms, a royal pond, cavern,



Fig. 6: Native Hawaiian architecture extended into the sea, the 'Ai'ōpio fish traps and seawall of the fishing village at Kaloko-Honokōhau National Historic Park. (Photo by Christopher Gillam)

petroglyphs, canoe landing, tidal wall, and other features. The hotel was closed in October 2012 and will be demolished for the creation of an educational center by the Kamehameha Schools' (KS) charitable trust (Fig. 7). Unfortunately, other nearby ruins not on the NRHP register have also been developed or destroyed due to the popularity of the adjacent Kahalu'u Bay Beach Park, one of the best places on the Big Island to snorkel.

From an ideological perspective, the most intriguing sites may be those featuring petroglyphs, or Ki'i Pohaku, that are common on the ancient Pāhoehoe and



Fig. 7: The 1960's Keauhou Beach Hotel, soon to be demolished, temporarily dominates the NRHP site of Keahou at Kahalu'u Bay; a Heiau platform is at right near the shore. (Photo by Christopher Gillam)



Fig. 9: Abstract dots, circles, rectangles and clusters of these forms dominate the petroglyphs at Pu'u Loa on the ancient Puna coastal trail of Hawai'i Volcanoes National Park. (Photo by Christopher Gillam)

'A'a lava fields, on large boulders, and on cavern walls. These sites are typically found near the coast, adjacent to and between settlements, on the dry, exposed lands of the islands (Cox 1970). Although the age of these sites and meanings are difficult to determine, there is quite a lot of variation between and within sites that suggests a long tradition of abstract

forms also occur, but are few in comparison to the more abstract forms (Fig. 10).

While at first the quest for Polynesian Hawai'i seemed a bit daunting on the modern landscape, thanks to responsible land and cultural resource management efforts in recent

decades, many aspects of ancient Hawaiian life can still be experienced firsthand today. The national and state parks of the Big Island of Hawai'i are particularly spectacular and can be experienced over a few short days, but take your time if you have the chance, and you'll gain more than just some rays on the beach (not that there's anything wrong with that!). If traveling with children, I highly recommend participating in the National Park Service's Junior

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Fig. 8: Ki'i Pohaku, native Hawaiian petroglyphs, are common features on the landscape; thousands of stick figures representing birdmen, warriors, families, and so on, dominate the art at Puakō Petroglyphs State Park. (Photo by Christopher Gillam)

art. For example, at the magnificent Puakō Petroglyphs State Park, over 3,000 petroglyphs occur on Pāhoehoe and 'A'a lava flows. Most of these are considered to be an "early" form featuring linear stick figures (Fig. 8). Similar petroglyphs occur at Kaloko-Honokōhau. At Volcanoes National Park, the Pu'u Loa petroglyphs on the Puna native trail (ala) are dominated by dots, circles, rectangles and clusters of these forms (Fig. 9). Poho, the dots or circular depressions, are believed to have commemorated the birth and/or life of individuals. Stick figures and other

Ranger Program, "Mahalo nui loa" to all of the rangers and kahunas that shared their knowledge with us during our stay! Aloha nui loa!

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Fig. 10: Stick figures and other forms also occur at Pu'u Loa, demonstrating the long and dynamic tradition of abstract art on the islands. (Photo by Christopher Gillam)