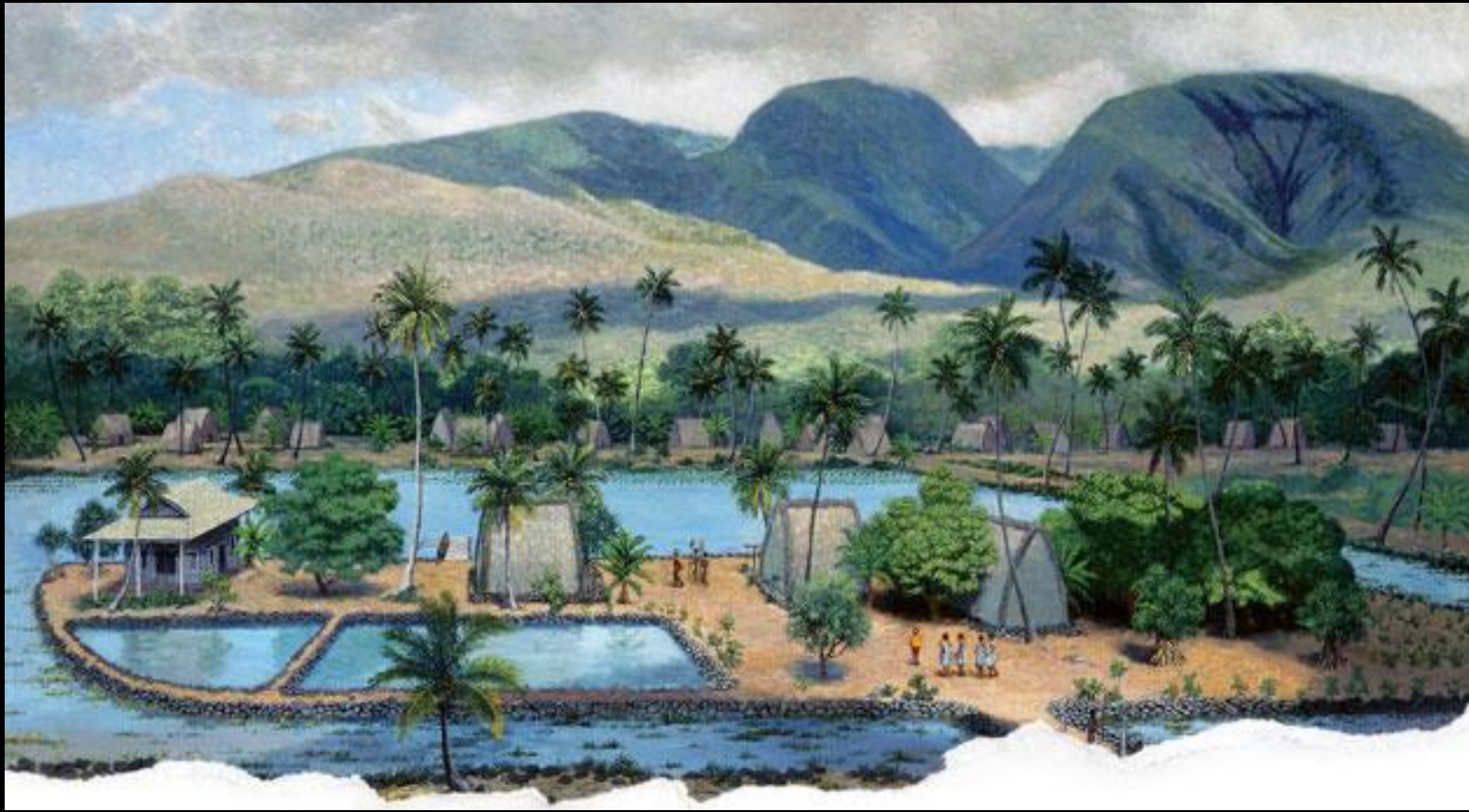
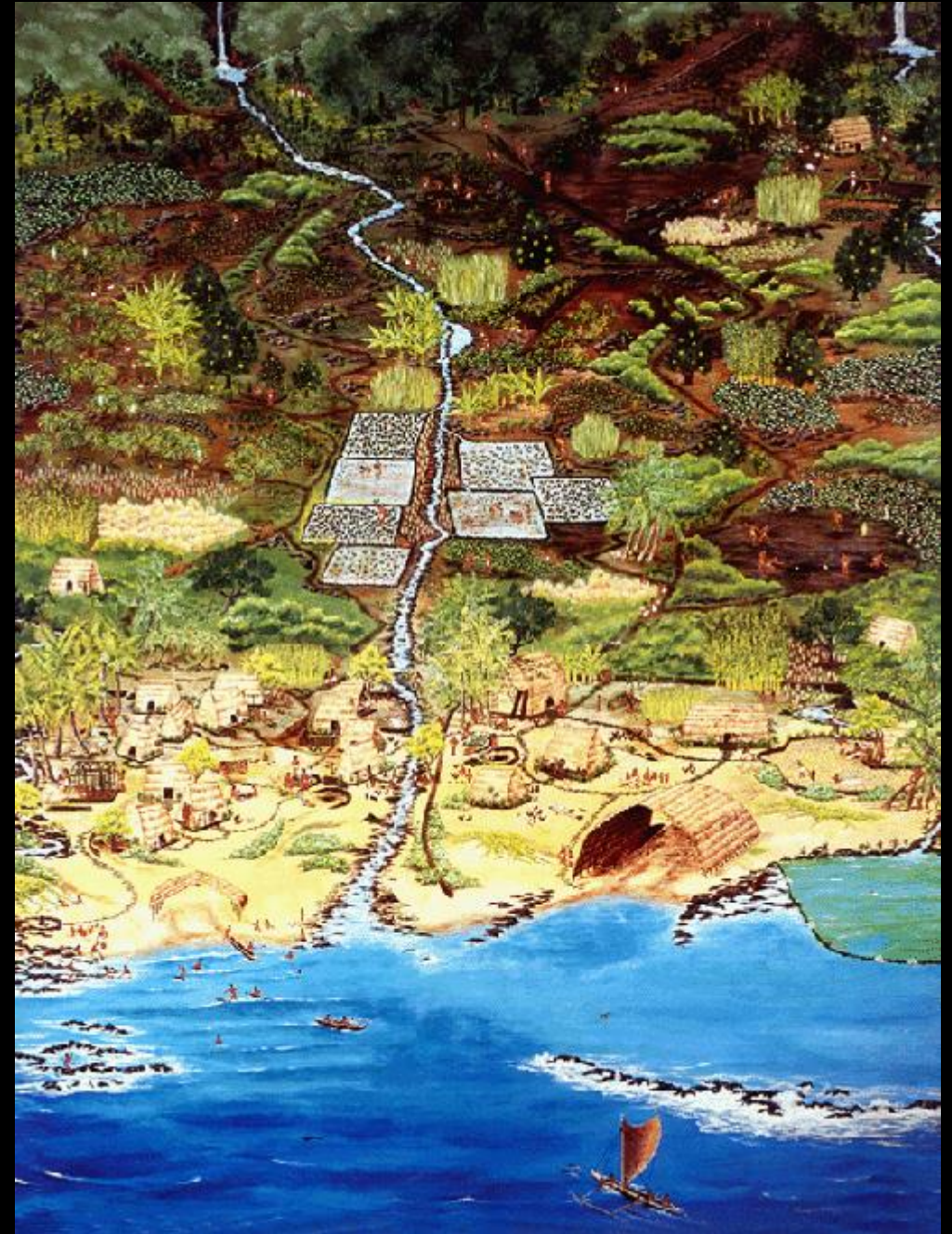


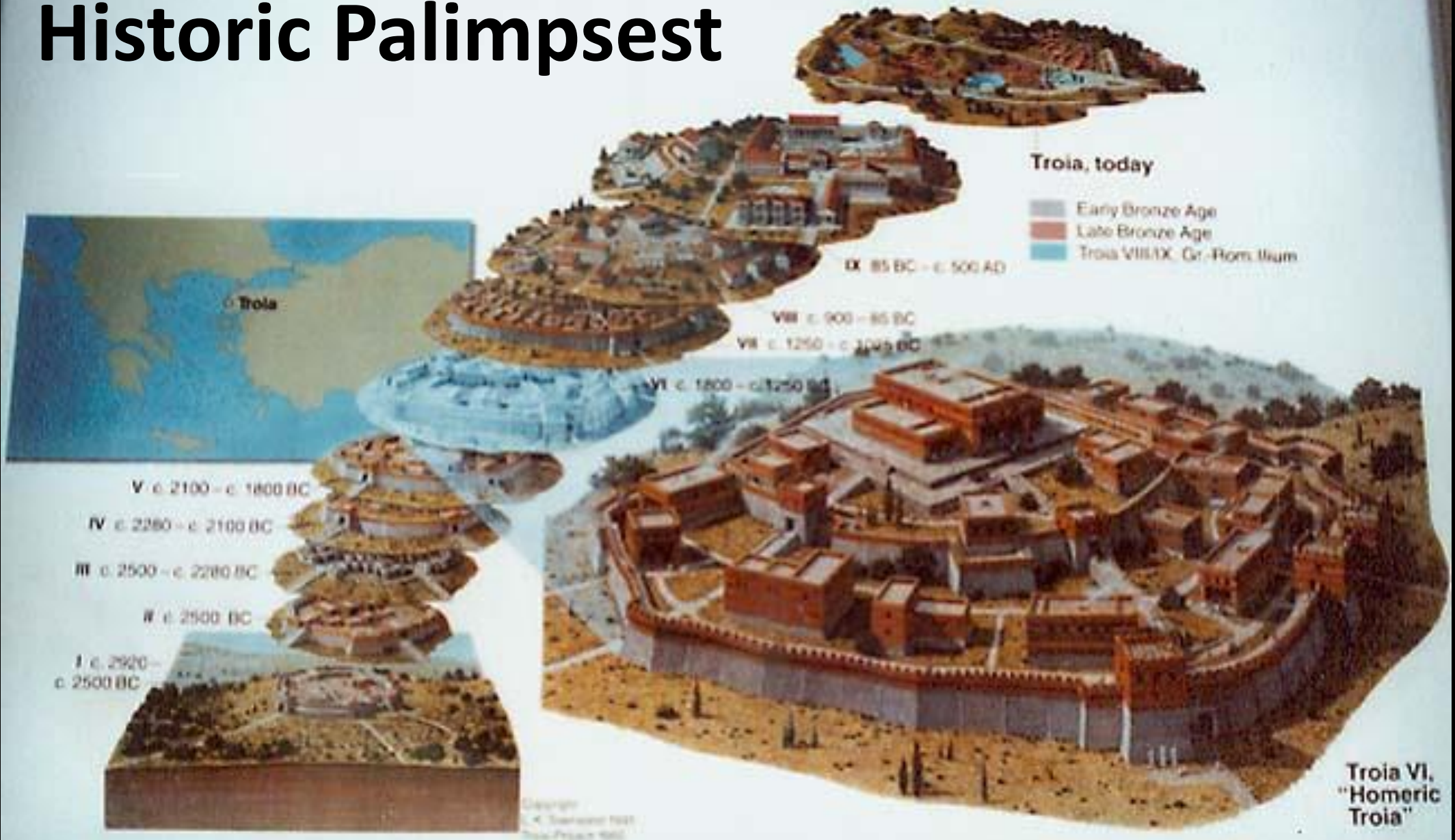
Lahaina is a Cultural Landscape



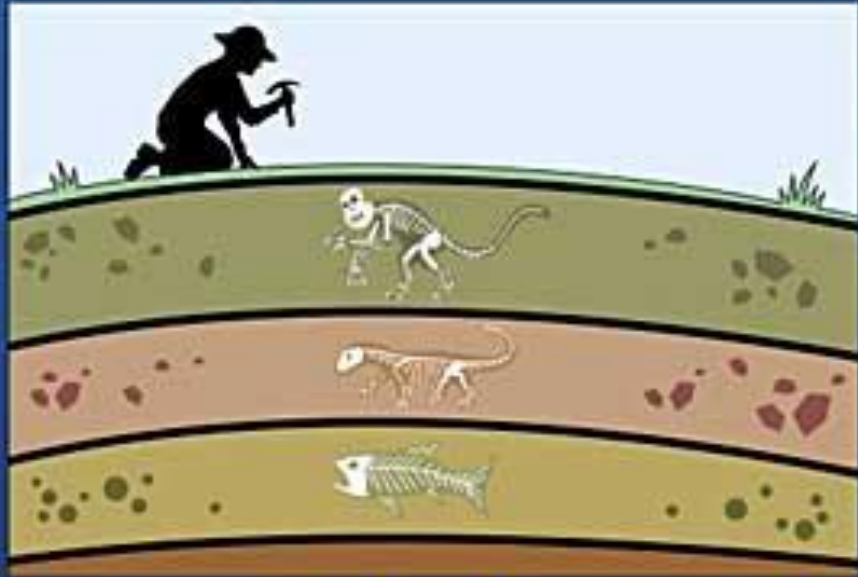
A Cultural Landscape consists of *material culture* including artifacts, biofacts (ecofacts), architecture (features), sites and the relationship between sites.



Historic Palimpsest



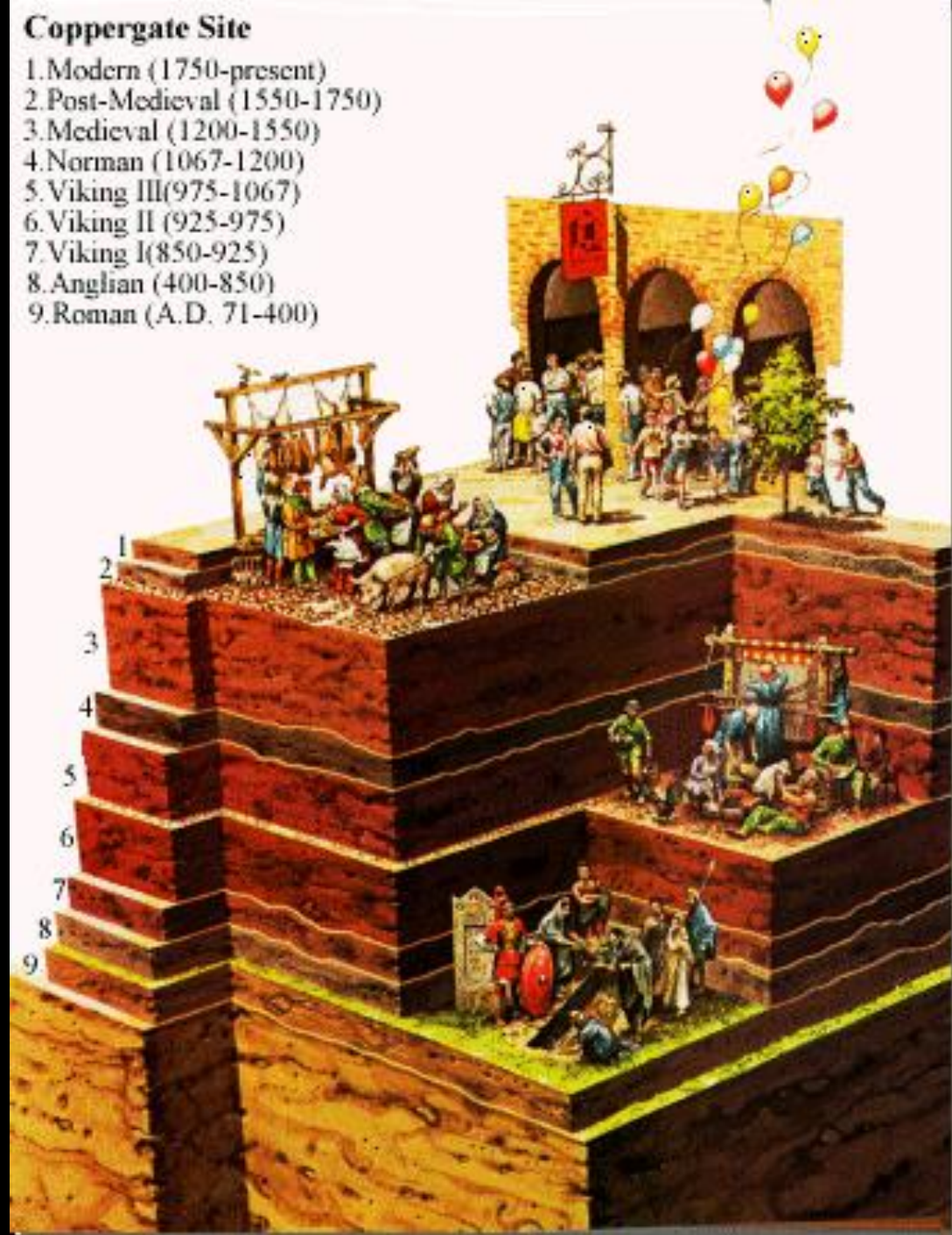
Over Time



...so the deeper we dig,
the farther back in time we see

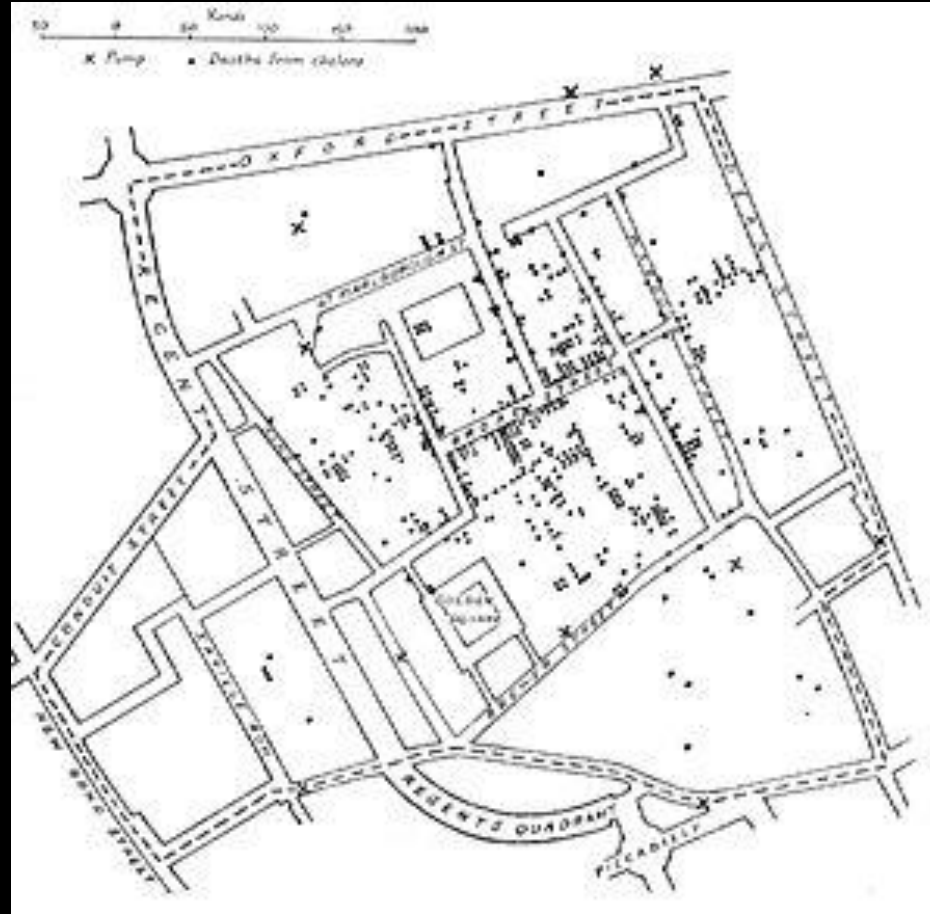
Coppergate Site

1. Modern (1750-present)
2. Post-Medieval (1550-1750)
3. Medieval (1200-1550)
4. Norman (1067-1200)
5. Viking III (975-1067)
6. Viking II (925-975)
7. Viking I (850-925)
8. Anglian (400-850)
9. Roman (A.D. 71-400)



Across Space

The analysis of spatial relationships **both within sites and between sites**



Map by Dr. John Snow of London, showing clusters of cholera cases in the 1854 Broad Street cholera outbreak. This was one of the first uses of map-based spatial analysis.

Etic and Emic

Employing a *holistic approach*
to better understand the
cultural landscape



Applying ● Cultural Lens
Emic Approach



Wahi Pana & Wahi Kapu
Sacred & Tabu Cultural Landscapes

Mo`o

Half- dragon and half-woman, mo`o are associated with flowing water and reside in numerous fresh and brackish ponds on Maui and throughout the archipelago.

There are three mo`o associated with the wetlands of Lāhainā – Kalama`ula, Kihawahine and Mokuhinia.



WEST MAUI KARST SYSTEM

A karst is a subterranean landscape created when a soluble form of rock, such as limestone, comes in contact with slightly acidic water. This dissolution is characterized by sinkholes, caves and drainage systems. **Traditional place names in Lāhainā , such as *Waine`e* (Flowing Waters) to the South and *Kahoma* (Thin or Hollow) to the North, provide important clues as to what lies both above and below.**

According to Pukui *et al.*, Lāhainā means cruel or merciless sun. This area averages 13” of rainfall per year. *In spite of the meager precipitation, this area was once known as the “Venice of the Pacific.”*

When the first explorers arrived in Lāhainā, they encountered a very different landscape than today.

The series of spring-fed, fresh water canals that once flowed through the village of Lāhainā have long since dried up and its fabulous wetlands are buried under layers of 20th century cultural fill.



Malu'ulu o Lele Park – virtually undisturbed for nearly a century – is the site of *Moku`ula*, the manmade island home of the ali`i (ruling class). For centuries *Moku'ula* was a political and sacred center, constructed in the center of a series of naturally occurring fresh water ponds known as *Loko o Mokuhinia*.

At Moku`ula, the Chiefess *Kala`aiheana*, was born to the High Chief *Pi`ilani* – the *Pi`ilani`ōhana* (family line) had for centuries been tied to the powerful *Mo`o Akua*. As a result of this blood tie, at the time of her death, the sacred rite of deification was performed and

***Kala`aiheana* became a *Mo`o Akua* – the goddess known as *Kihawahine*, and to this day is the guardian for the sacred Loko o**

***Mokuhinia* and *Moku`ula*.** She was and is worshiped by many, perhaps most notably by Kamehameha I who carried her image throughout the islands in his quest to unite the Hawaiian Kingdom.

KALUA`EHU: The Pit of the Redhead

“In the center was the sacred island of Moku`ula...It was surrounded by the fishpond Mokuhinia, the “pit of Kiha” ***Kalua o Kiha*** was in turn enveloped by ***Kalua`ehu***, the chiefly region of Lahaina....

Kalua`ehu was bordered on the north by ***Pāuhaumanamana Stream***, the present Dickinson Street, and on the south by ***Kaua`ula stream***... *Kalua`ehu* extended to the *Wao Akua*, the divine forest of *Mauna Ke`eke`ehia*, and the valleys of *Kaua`ula* and *Launiupoko*. (1998: pg. 5).



The dusty red soil on slopes above Lāhainā, once covered in heavily-irrigated, verdant fields of sugar cane, is known as Oxisol.

The Lahaina Series Oxisol is acidic. Rainwater traveling down from the West Maui Mountains to *Kalua`ehu* percolates down through the acidic soils above and then enters into a series of lava tubes that carry it to the alluvial plain far below.

When the increasingly acidic groundwater comes into contact with the soluble rock, e.g., limestone, it dissolves it forming a complex network of solutional passageways that function as a natural drainage system.

According to the 1995 Bishop Museum Phase I Final Report,

“Initial documentation has shown the pondfield system in Kalua`ehu to have been a very dynamic system – the fertility of Lahaina in leeward West Maui depended on it” (Klieger and Lebo, 1995, Pg. 8).

In Moku`ula: Maui's Sacred Island, P. Christiaan Klieger writes about a supernatural encounter:

“The most famous spectacle was in 1838 when Auhea Miriam Kekāuluohi, soon to be appointed *kuhina nui* with the death of Kīna`u, was nearly tossed into the black waters of Mokuhinia by the giant lizard [mo`o, Kihawahine]. *The chiefess had been canoeing across the waters on her way to church at Waine`e* (1998, pg. 50, emphasis added).

KALUA O KIHA: The Pit of Kihawahine

Much of the water that supplied Loko o Mokuhinia and the rest of the Lāhainā wetlands was primarily supplied by a network of springs bubbling out of a series of subterranean solutional caves or sinkholes; the most famous being ***Kalua o Kiha – the watery grotto residence or “pit” of the Mo`o Kihawahine that purportedly lies directly under Moku`ula island***

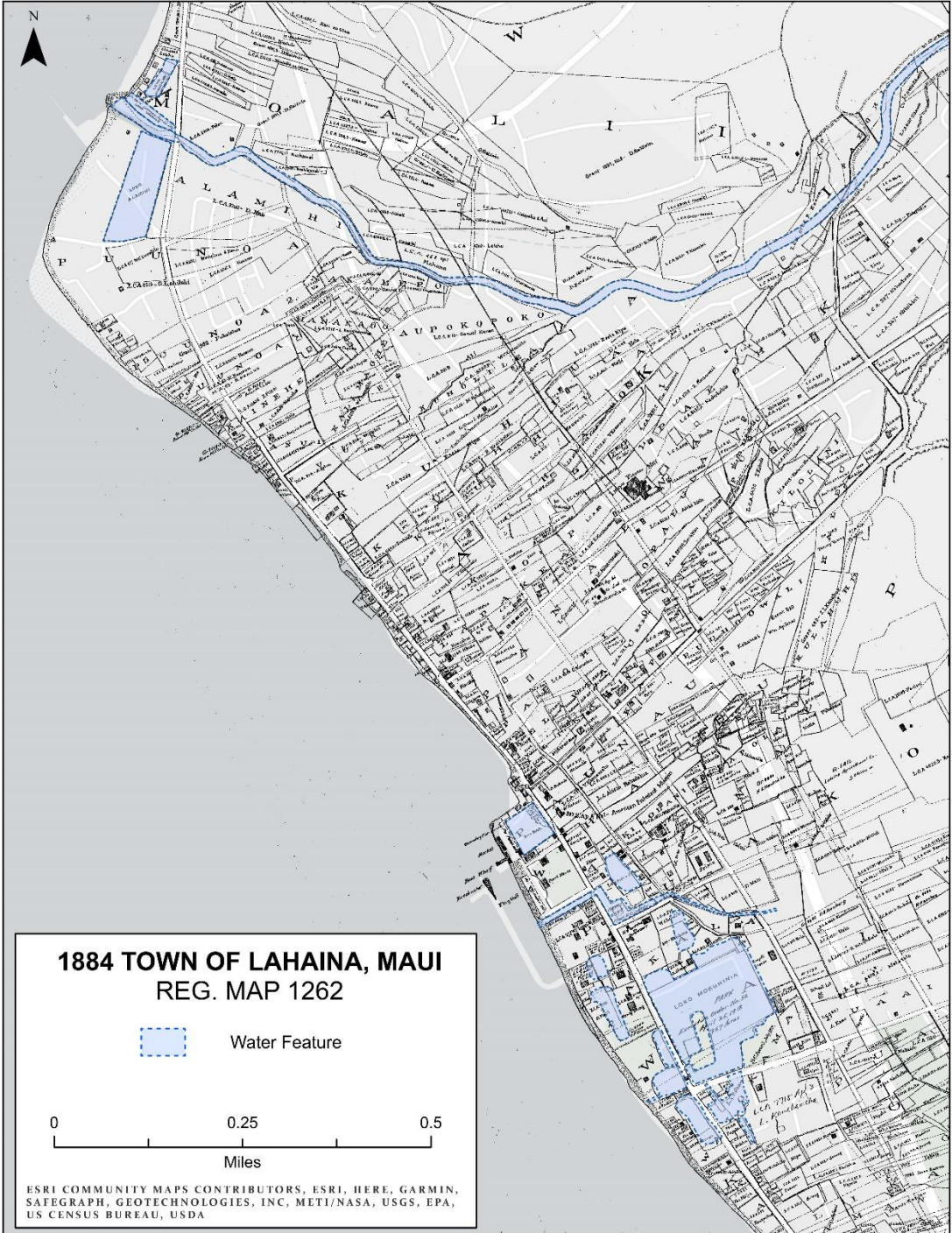


Shortly after the first European contact, whaling ships and other interested parties began arriving from as far away as Nantucket and the “**Venice of the Pacific**” soon became known as “**Rotten Row**” due to its numerous bars and raucous patrons. When the whaling industry subsided and a new extractive industry took hold – **industrial plantations.**


Waters were diverted from the mountains above Lāhainā, in the service of sugar production, and the Mokuhinia ponds and wetlands slowly became a stagnant breeding ground for newly introduced mosquitoes.

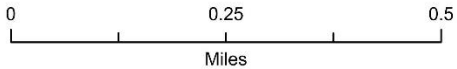
Archaeological investigations conducted by Bishop Museum in 1993 confirm the existence of Moku'ula, the royal residences and mausoleum, and Mokuhinia, a large spring fed natural wetland containing *lo`i kalo* (taro patches) and *loko `i`a* (fishponds).

Carbon dating of organic materials recovered by Bishop Museum archaeologists in 1993, has revealed some of the earliest evidence of human habitation in Hawai`i ca. 700 AD.



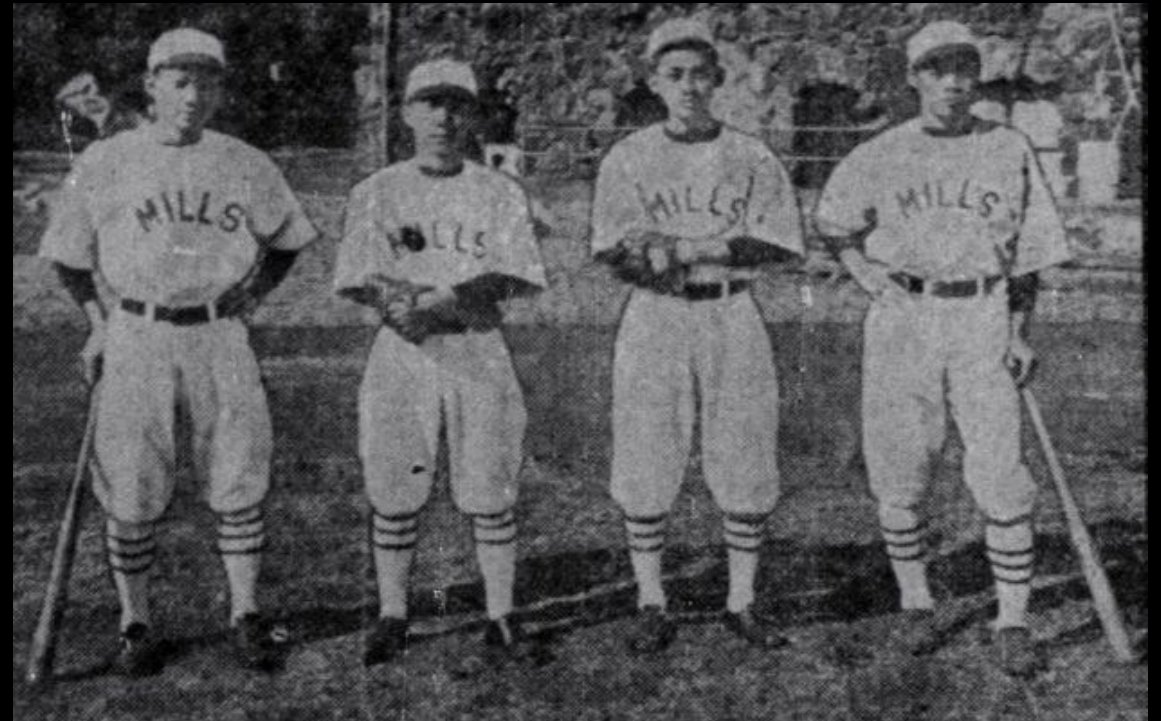
1884 TOWN OF LAHAINA, MAUI
REG. MAP 1262


 Water Feature



ESRI COMMUNITY MAPS CONTRIBUTORS, ESRI, HERE, GARMIN,
SAFEGRAPH, GEOTECHNOLOGIES, INC, METI/NASA, USGS, EPA,
US CENSUS BUREAU, USDA

In 1917, plantation managers had the site backfilled and this once most sacred site became a much-championed baseball diamond for plantation workers hosting its first game in 1918.





**Salt patches indicating
subterranean openings
into the active karst system
below the 20th century fill**

The effect of the karst system on the park was described in the 1995 Bishop Museum Phase I Final Report:

“The seepage of sea and/or spring water was a continuing problem at Malu`ulu o Lele Park – it killed the grass.

In 1928, the road overseer for the Lahaina District wrote to his supervisors that an excavation of 35 x 42 x 1 feet was made on the makai side of the park. This pit was then filled with cane crushing, followed by topsoil and grass (D. Kaumau to S.E. Kalama, 1928)...

Presently the area will not support grass. Salt crystals may often be seen on the surface” (pg. 115).

COVER OF THE MAUI NEWS: AUGUST 15, 2010



“Peering into Hawaiian History:

LAHAINA - Five months after breaking ground with their trowels, archaeologists have unearthed some historical treasures at Moku'ula. Over the summer, the team excavated an edge of the sacred island that was buried almost 100 years ago...

Archaeologist Janet Six said she was pleased to find much of the historic site still intact. *“You can see the water and the pond...”*



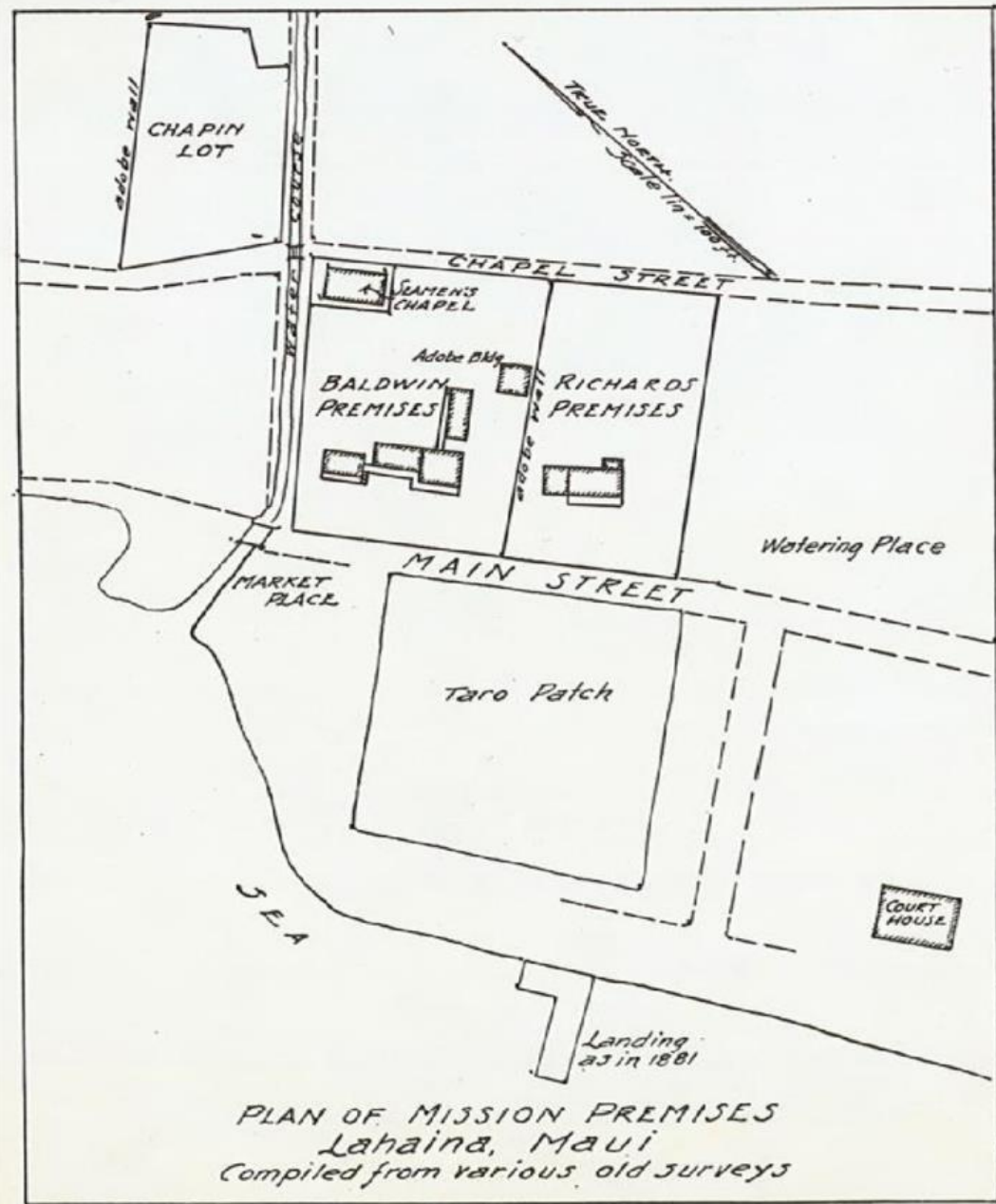
LĀHAINĀ IN 1897 - THE WAAL DOCUMENT:

An important primary resource, the Waal document, is located at the Bailey House Museum. The 167-page, unpublished document was authored by a Danish immigrant named Arthur Waal arrived in Lāhainā in 1897. Waal would eventually serve as the Postmaster for Lāhainā. The following images and excerpts are taken from Waal's unpublished historic notes and musings...

WATER, WATER, EVERYWHERE

According to Waal:

“There was no hotel in Lahaina, only a few rooming houses. One of them was managed by Mrs. Matt McCann, the wife of the proprietor of the Lahaina Saloon. I rented one of her small cottages near the fence. It was a comfortable room with old furniture. For the first time, I **slept in a four-poster bed with old *mosquito netting***. A practical long Lshaped veranda with a part of it facing the Court Yard where steamers could be seen at anchor. Strange, the house and the two cottages had only one toilet. That was very inconvenient, especially you had that in mind and found it occupied. What I also notice the wastewater from the kitchen and the bathroom was ***emptied into a large pond of stagnant water will refuse and manure from a nearby stable. It certainly must have been a fine breeding place for mosquitos and rats.***”



PLAN OF MISSION PREMISES
 Lahaina, Maui
 Compiled from various old surveys

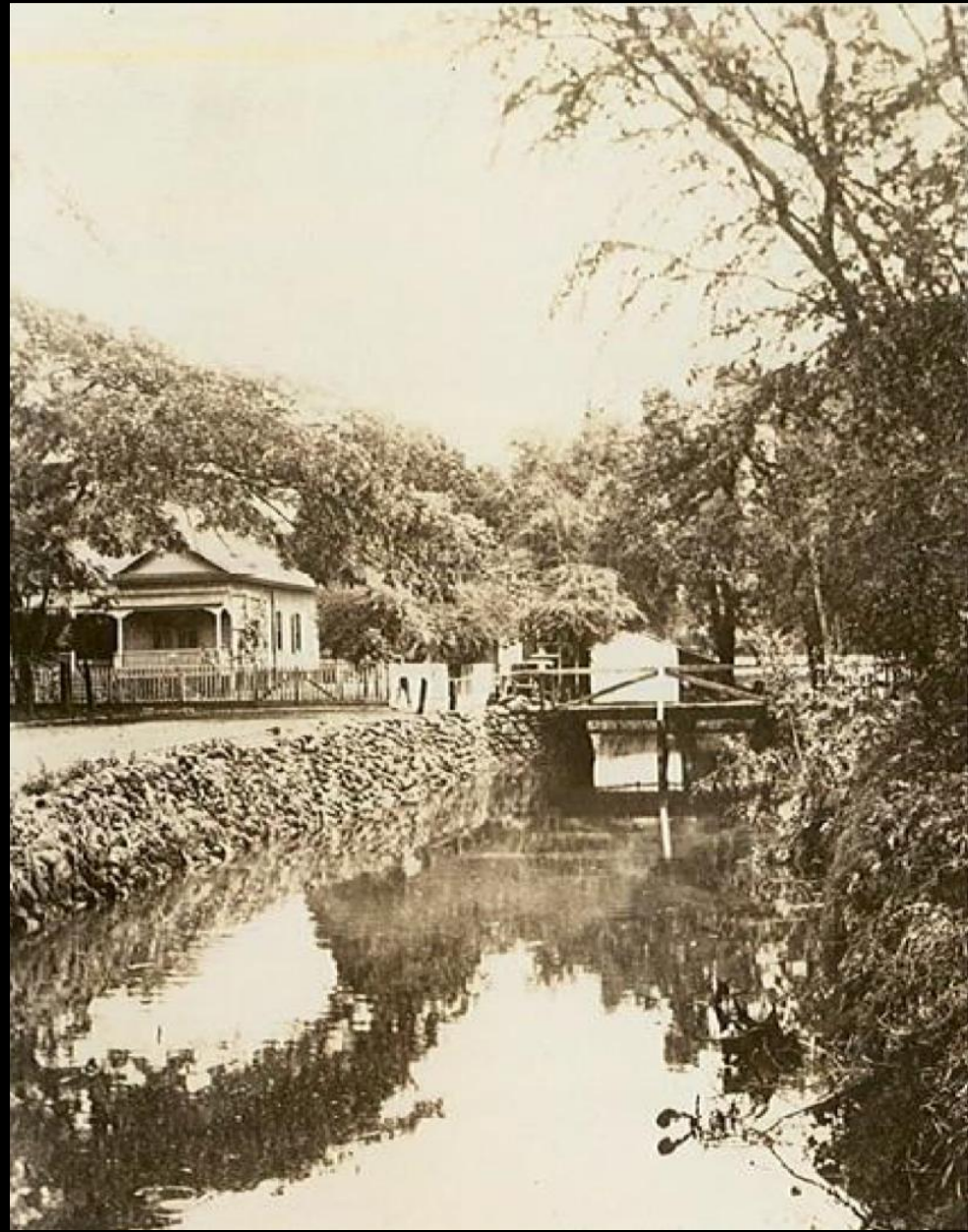
“On April 20 [1897] – Mr. Forsyth called on me at my cottage on the McCann’s premises and looking at the large pond of stagnant water, he said “Arthur this water comes down from *a stream during the rainy season and into a stone reservoir*. During the whaling days this reservoir was built by the sailors from the whaling ships, and two hand pumps were kept busy all day to fill the casks... We could not locate such a reservoir as the pond was covered up with debris and water.”

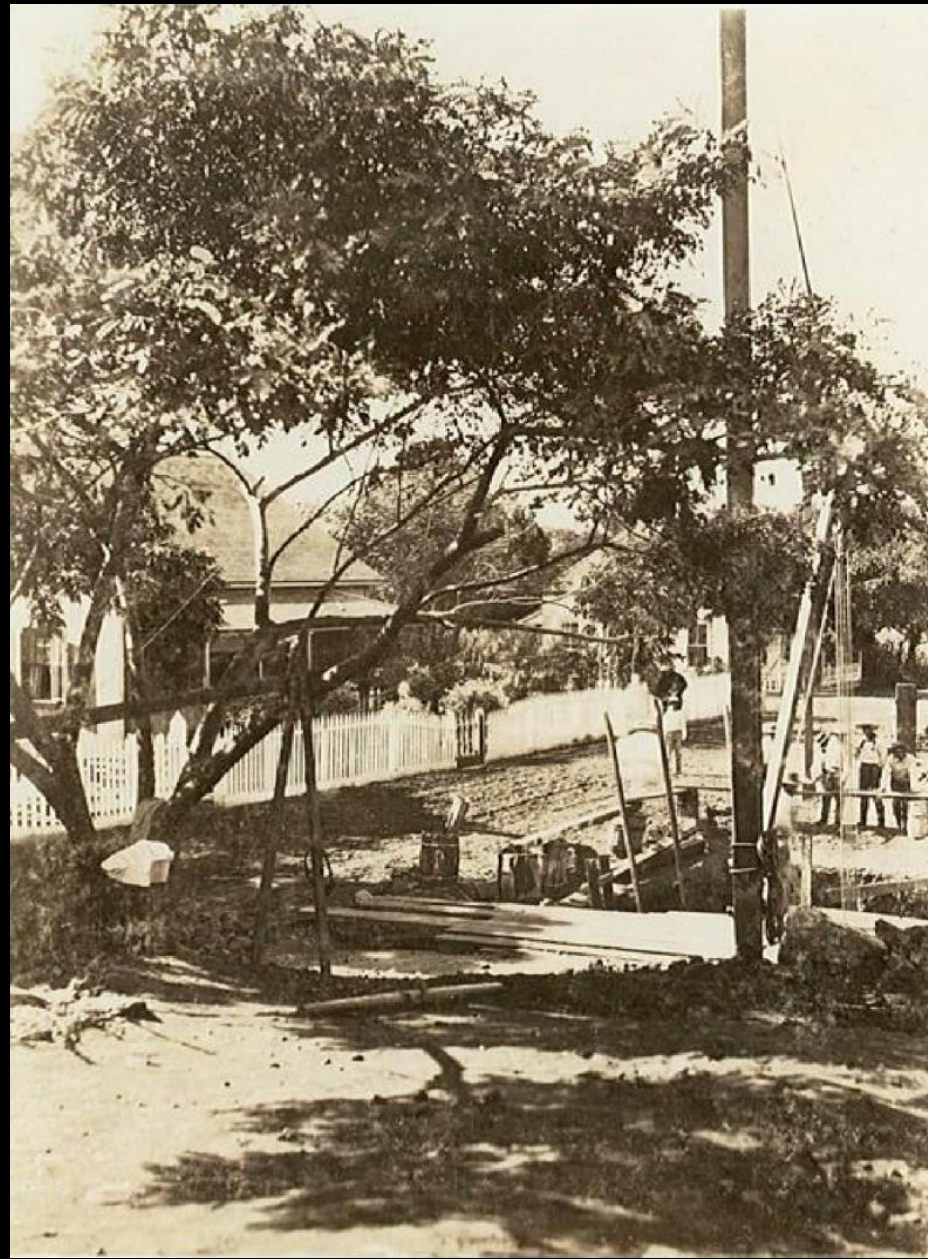
“THE OLDETS BANYAN TREE IN HAWAII

This photograph was taken in 1898, and it was then 25 years old. This now famous tree was planted in Lahaina, Maui, on April 24-1873, by William Owen Smith, Sheriff of Maui, Lanai and Molokai. Only very old timer will remember the OLD WELL seen on the right [left] of the banyan tree”



The following two photos and descriptions speak to the abundance of ground water in the West Maui karst system in the late-19th early-20th Century





In 1897, thirteen years after the 1884 map was rendered, Lāhainā Postmaster Waal continues to provide insight into how “wet” Lāhainā used to be.

“Through the main business section of town, instead of paved side-walks there were old fashion boardwalks. ***Drainage of any kind was lacking***”

Twelve years later, in September 1905, the Postmaster Waal noted the following in his diary:
“SIDE WALKS The Lahaina road board removed the old Board-Walks on Main [Front] streets ...

Fast forward 12 more years and the Lāhainā wetlands would be completely backfilled by Howell Engineering Company under the direction of the Pioneer Mill sugar plantation in 1917 (Maui News, December 22, 1916).

“In 1823 Governor Hoapili and wife [Keōpūolani] lived in this two story coral block building on the road (Mill) next to Wainee Church...

When I visited it in 1898 the old homestead was occupied by some Hawaiians. The home was pretty well presences and was one of the old land marks [sic] still standing” (Waal, pg. 51).



Hoapili's House on the edge of Loko o Mokuhina

“Burials and Leina

In death and beyond, Native Hawaiians consecrated special areas as their resting places and recognized special points to enter into the next life. ***"Mai kaula'i wale i ka iwi o na kupuna / Do not dry out the bones of the ancestors."*** ***Do not discuss your ancestors too freely with strangers, for it is like exposing their bones for all to see.***

In *The Polynesian Kinship System of Ka`u*, kūpuna and historian Mary Kawena-Pukui, recounts how in pre-contact Hawai`i, ***if your ohana's `amakua was a mo`o, after death, na iwi (the bones) should be placed directly into the puna wai or the “heart of the spring”*** feeding the pond associated with your ohana's `amakua.

This statement provides an important, and perhaps previously overlooked, clue as what may lie in the pond and springs surrounding Moku`ula Island.

According to the Bishop Museum Phase I Final Report

In the 1830s-1840s, Moku`ula became the private residence of King Kamehameha III and his court, and a *piko* or umbilicus for the Hawaiian Kingdom.

A tomb for his beloved mother, sister, children, and other royal family members existed on the island from 1837 to 1884” (Lebo and Kleiger: pgs. 1213, *emphasis added*)



Kamehameha III & Royal Family

According to Kamakau:

“Kalamainu`u, Laniwahine, Hauwahine, Kanekua`ana and Kihawahine, and the myriads (*kini a me ka lehu*) of interchangeable body forms (*kino lau*) of the mo`o (water spirits) used to be worshipped constantly. Persons would be transfigured to become such a strange being (*kino `e`epa*), ***but it was not done by merely being buried along a stream or river or beside a spring or have their bones thrown into the water. If they were not related to the mo`o...they had no rightful place, kuleana, in the kino lau of the mo`o.*** *Akua mo`o* were kept for...the health and welfare of the people and to bring them fish (1991b: 82, from Bishop Museum Phase I Final Report pg. 27, *emphasis added*).

Just to the north of Loko o Mokuhinia is another large loko known as Alamihi. Once fed by the Kahoma Stream, this area underwent extensive excavation in the 1970s in conjunction with the Kahoma Stream Flood Project.

In 1974 a large burial mound was noted in a Bishop Museum Survey. **Subsequent investigations conducted in 1978, by Hal Hammatt uncovered over 90 previously unknown, pre-contact human internments immediately adjacent to the pond.**

According to the Bishop Museum Phase I Final Report:

“This area at the mouth of a major stream [Kahoma] in Lahaina is particularly interesting in that it is perhaps of similar origin and may be culturally analogous to the structure and function of the Mokuhinia wetlands... (Lebo and Kleiger, pg. 123).

Kamehameha III Elementary School was constructed directly on top of what was known as Pākālā.

According to the Bishop Museum Phase I Final Report:

“Beach front acreage of Pākālā, in Kalua`ehu, Lahaina was a choice neighborhood inhabited by the royal court and *kaukau ali`i* (lesser chiefs) in the early days of the nineteenth century. It was located just north of Moku`ula, Hale Piula and Loko o Mokuhinia... Here were houses of the *kapu* women and powerful chiefs of the Maui and Hawai`i dynasties once again united and amplified through the marriage of Keōpūolani and Kamehameha...” (pg. 78) .

During the remodeling of the a bathroom at the school in 2000 , **10 *in situ* burials were located, along with numerous disturbed graves and a habitation site. The earliest finds date from the 16th century**

We believe the natural karst system feeding the wetlands of Kalua`ehu became a cultural portal into the realm of the supernatural – a physical location and metaphysical conduit where, after death, ali`i would enter the watery underworld and commune with their *ka iwi o na kupuna* (ancestors) and `amakua, Kihawahine



Subterranean Parking Garage 505 Front Street taken 11/1/2023

ESCS Committee

From: Janet Six <Janet.Six@co.maui.hi.us>
Sent: Thursday, November 2, 2023 8:04 AM
To: ESCS Committee
Subject: J6 PowerPoint Pres.
Attachments: Circular Systems pres.pptx

Aloha kakou,

Attached is the PowerPoint presentation I will be showing this morning.
Malama pono,
J6

Janet Six, PhD
Principal Archaeologist for the County of Maui