

Heeia and HIMB Mobile Tour:
September 23, 2009

How Science and Field Experience inform institutional and community efforts at ecosystem management.

Melissa Iwamoto Coordinated the Tour. George Atta was tour guide. Carlie Weiner was the main guide on Moku o; Lo'e and Hi'ilei Kawelo was the chief guide at He'eia

A little history as we head out of Waikiki and up Nu'uauu Valley. Point out that in the battle for the unification of the Hawaiian Islands while the battle of Nu'uauu Pali was the last battle, the key battle was fought on the slopes of Punchbowl (Puuowaina) where the Oahu and Maui forces were fortified. Kamehameha used a flanking movement coming from behind by Papakolea and cut off the Oahu and Maui forces. They fled up the Hill. Scott Derrickson pointed to one of the fortification walls near the intersection of Pali Highway and old Pali Road. Along the route the many embassies and churches were pointed out along with the Royal Mausoleum, Queen Emmas Summer Palace and King Kamehameha III's summer residence. The mostly introduced non-native forests leading to the Pali are pointed out. We make an impromptu stop at the Nuuanu Pali as this is the best place to see the Kaneohe Bay region ecosystem holistically. Also the historical final battle scene at the top of the Pali is felt along with a note that this is also the site of inspiration for Queen Liliuokalani's song Aloha O'e as she watched two people part.

Notes and comments emphasized:

Native Hawaiian knowledge is empirical. Interpretation of causes and relationship may vary between traditional knowledge and scientific knowledge but the foundation for both is empirical.

What is an ecosystem? What are its parameters Is it closed or open?

Coconut Island is home to the Hawaii Institute of Marine Biology – describe in detail
Heeia Fishpond is managed by Paepae o heeia – non-profit organization – describe

Heeia – Land of the Octopus

Moku o Loe – Loe's Island (banished sister and brother); some say the curve of a fish hook.

Both Moku o Lo'e and He'eia Fishpond are artificial, altered land forms

Fishpond 1200 - 1300 Anno Domini – kanaka maoli

Coconut Island 1930s – Christian Holmes

History:

Moku o Loe: First given to governor Abner Paki then to Bernice Pauahi Bishop
Christian Holmes & succession to UH

He'eia: Still Part of the Pauahi's legacy as KSBE

Yes, Coconut Island is the island on the opening scenes of Gilligan's Island and some people still refer to it by that name though no actual footage was believed to have been shot on island.

Ahupua'a system: political, social and natural resources
Mountains to the sea (out to the coral reef) - holistic
Life cycle
Man in nature

Science: Empirical (looking at the phenomenal world), quantitative (measurable), in vivo & in vitro, repeatable (verifiable), with controls, traditionally siloed though less so now with multi-disciplinary approaches.

Field observation: Empirical (looking at the phenomenal world), experiential, contextual - in vivo, holistic

These notes were reinforced by the guides on Coconut Island and He'eia Fishpond.

Additional notes from Moku o Loe:

Sharks are number 8 on the list of species that kill people; mosquitos are number one
There are two public access points on the island.

The high part of the island is the original island and the flats were filled by Christian Holmes.

Moku o Lo'e is the believed to be the only marine lab where one can step out of the lab and on to a living coral reef for experiments

Floating dolphin pens were pointed out.

Coconut Island is world renowned as a marine Lab.

We walked around the shark pen where a white tips and rays swam about.

Dr. Paul Jokiel is one of the world's best known coral reef scientists and his work was done on the Island.

The tour included tanks with ulua, octopus tanks, touch tanks and field sites.

Tube worms, corals and other filter feeders were noted in tanks and in the lagoons.

Invasive algae and cementious corals were described. The negative effect of the algae which forms a mat that prevents photosynthesis by zooxantillae and kills the coral were explained.

Work related to the Northwest Hawaiian Islands were described including the role of apex predators.

The dilemma of mangroves were noted in that they are an invasive species but often they are what is holding the island together against the erosive forces of the ocean.

Ocean stewardship was highlighted during the stops especially the effect of marine debris on birds and other species.

Lunch was at the house next to the swimming lagoon.

Additional notes from He'eia Fishpond:

An opening welcoming protocol was observed as we waited and were welcomed by Kawelo.

The 800 year history of the pond was highlighted along with its function to feed the people.

Legends of Moku o loe (Lo'e and her brothers and how they related to place names) were told by Kawalo.

The restoration work and impact of the Keopuka flood of the early 1960s were noted.

The basalt rocks used were those already in the water. Basalt was used for the exterior walls because they are strong and hard. Coral is used as fill between the walls and often cements together to create a solid wall. However, the coral fill between the exterior walls was bought and brought in from a quarry in Nanakuli because now it is illegal to harvest coral rock in Kaneohe Bay though that is what the poe kahiko did.

The role of mangroves and methods of their eradication were noted.

Paepae o He'eia's role and relationship to the landowner, Kamehameha Schools was explained.

The unique character of Hawaiian innovations to fishponds were highlighted; specifically its first as farming the ocean.

The science behind brackish water mixing, herbivore cultivation and seaweed and nutrient balances were highlighted.

The unique features of the sluice gates, the makaha, were explained along with Chinese modification that was adopted at the turn of the century; lengthening the makaha and adding a second sluice gate to trap the fish for easier harvesting.

The Fishpond's place and role in the ahupua'a system were explained.

On the return trip we took the route through H-3 to see the mauka headlands of the He'eia Ahupua'a that we had spent the day in. Ioleka'a and Haiku Valleys forms the headlands and the use of Haiku Valley by the Navy as a LORAN station for North Pacific radar system during the cold war until the 1970s were noted. The steep stairs of the famous "Stairway to Heaven" were pointed out at we round the bend in H3. The stairs lead to military bunkers at the top of the ridges. Our bus then headed toward the tunnels and back to Honolulu and Waikiki.