E Aloha, E Mālama, E Kia‘i ‘Āina

Native Hawaiian Natural Resource Management

Dr. Mehana Blaich Vaughan, NREM

I Ka Wa Ma
Mua,
I Ka Wa Ma
Hope

Key Points

- ‘Ohana CONNECTED

People = Resources

- DIVERSE

In Depth Knowledge of Place (Names)

- INTEGRATED

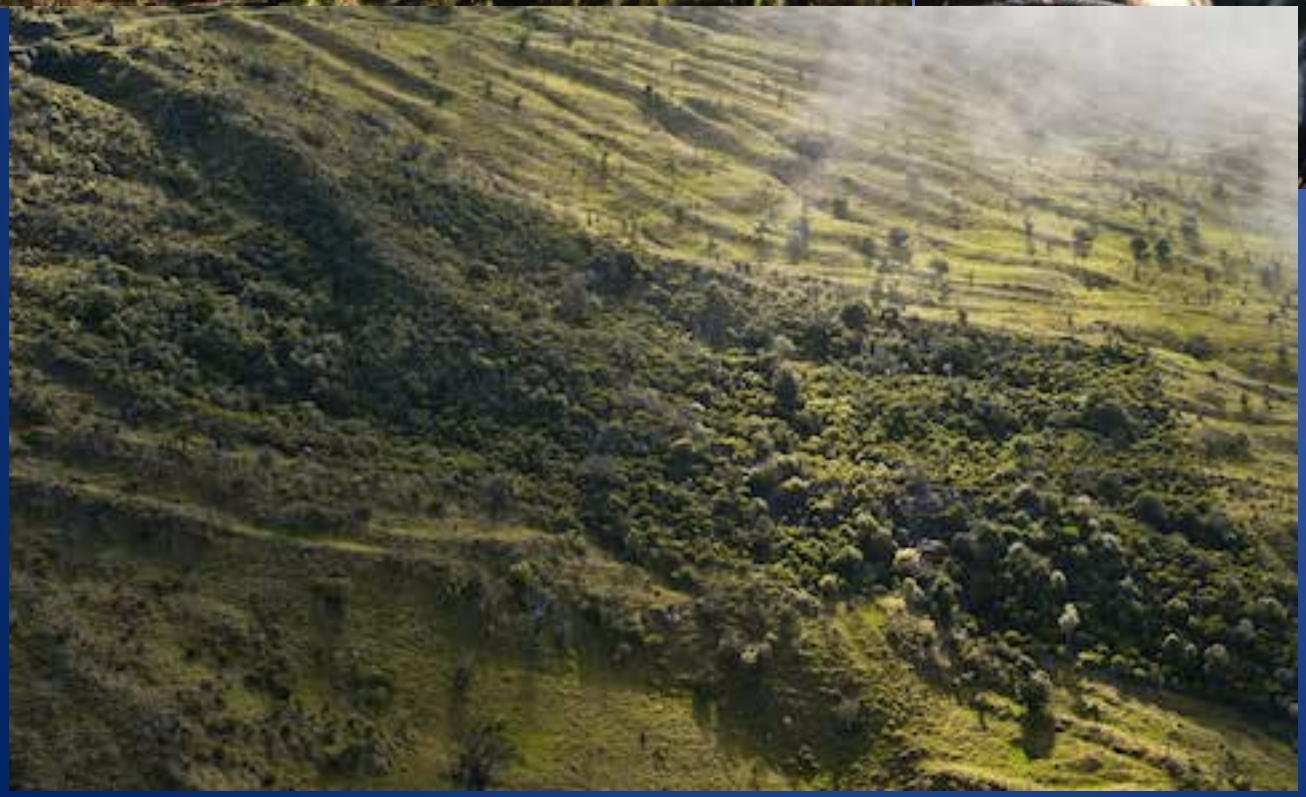
Ma uka - ma kai

Ecological and Social

- ADAPTIVE Best Practices

Trial and Error over Time

How are Hawai‘i Communities Integrating Traditional “Best Practices” of Hawaiian Resource Management in Contemporary Times?



Nā Pali Coast ‘Ohana

Model Systems

Dry Land Agricultural Systems

Fish Ponds – Loko I‘a

Community Based Fisheries

LEARNING THROUGH RESTORATION

Consider This…

- Maintaining Natural Balance (Low Impact)

Vs.

- Cultivating Abundance (Engineering)

Culitivation of Abundance

Today‘s Population

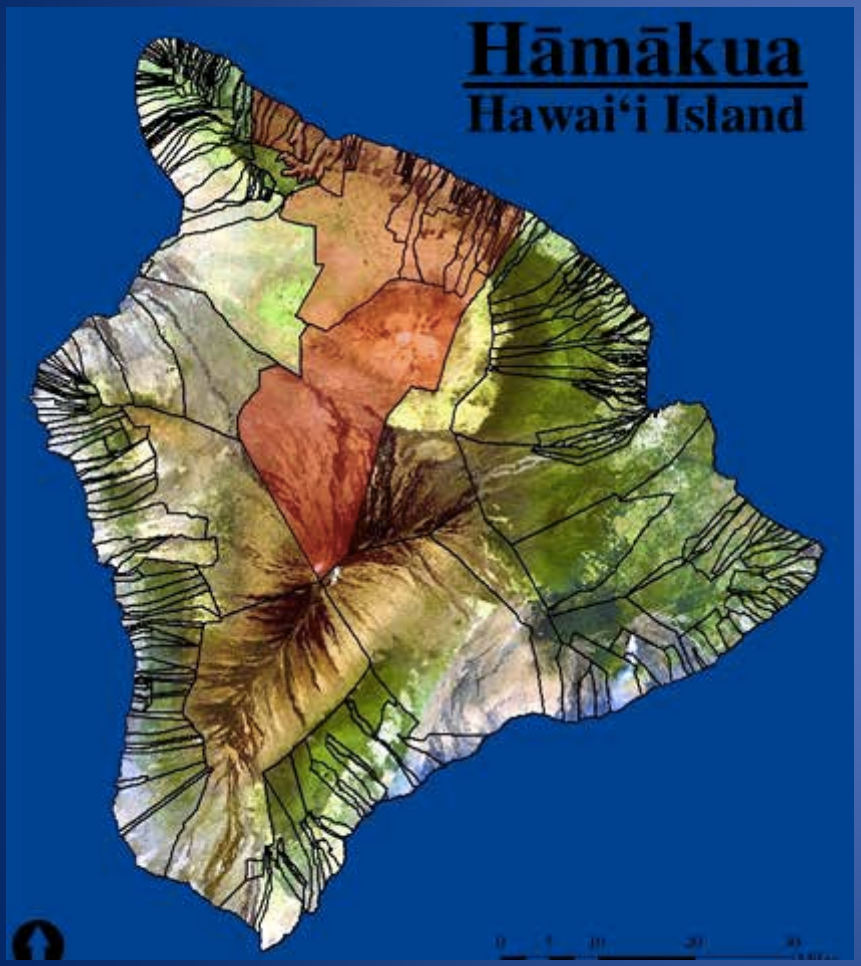
Taro Lo‘i

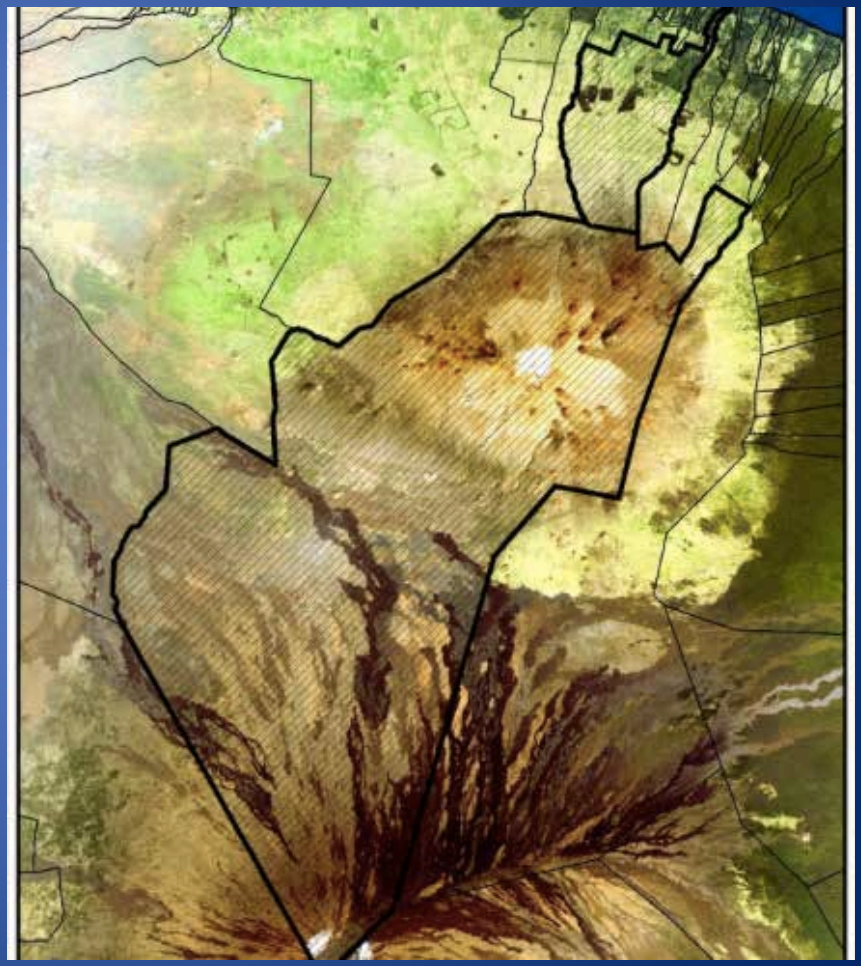
Hanalei River valley & irrigated taro wetland system

Irrigation as main source of nutrients

Palmer et al. 2009

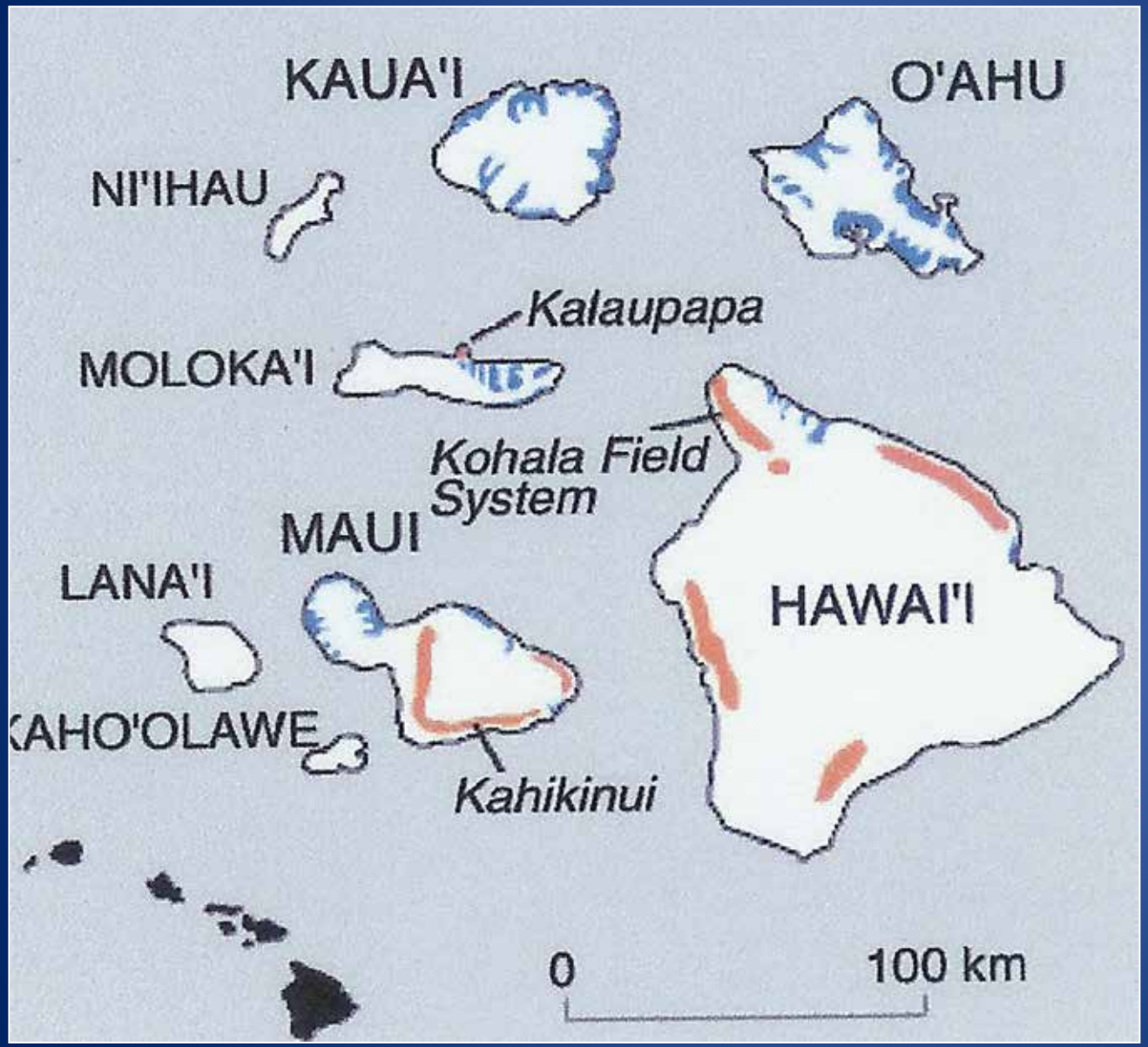
Leeward Kohala dryland agricultural system. Field walls run parallel to contours over an area of 60 km². (Vitousek et al. 2004)


Hāmākua
Hawai'i Island



- How did dry land (rain fed) agricultural systems work with resource limitations and challenging climatic conditions to cultivate abundance?
  - What were limiting conditions
  - How were they addressed

Intensive Agricultural Systems



Rainfed

And

Dryland

agricultural systems across the Hawaiian archipelago.

(Vitousek et al. 2004)

Loko I‘a Fishponds


© Photography by
TED KANEMITSU

Restoration (‘Āina and People)

- *Loko kuapā*: seashore ponds with stone walls built on reef

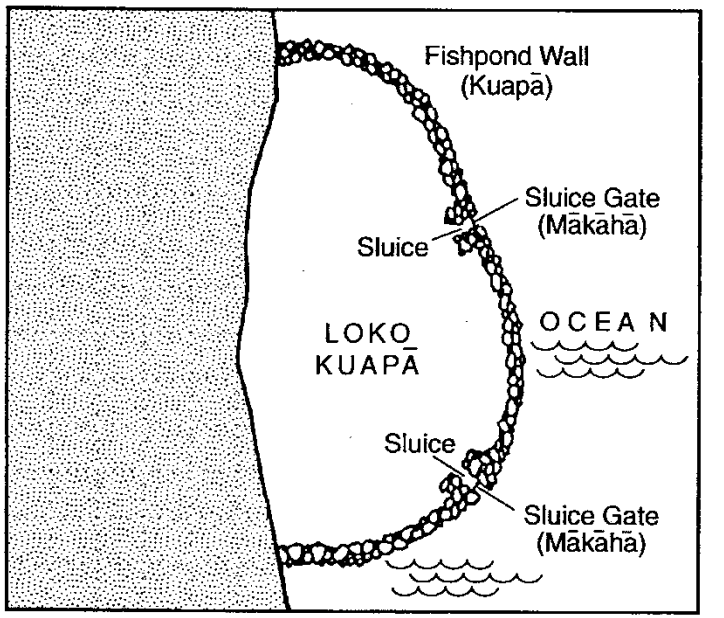


Figure 5: Loko kuapā. (Modified Kikuchi, 1976)

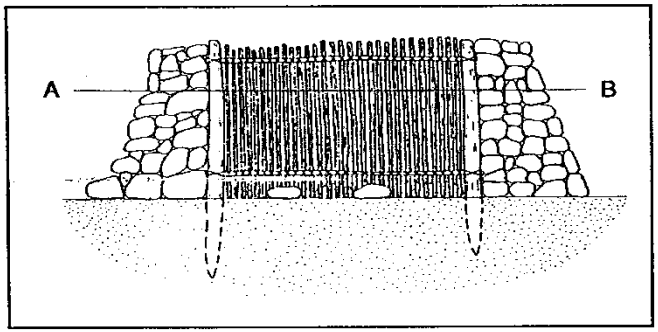


Figure 8: Side view of a mākāhā. Line A-B indicates water level. (Summers, 1964))

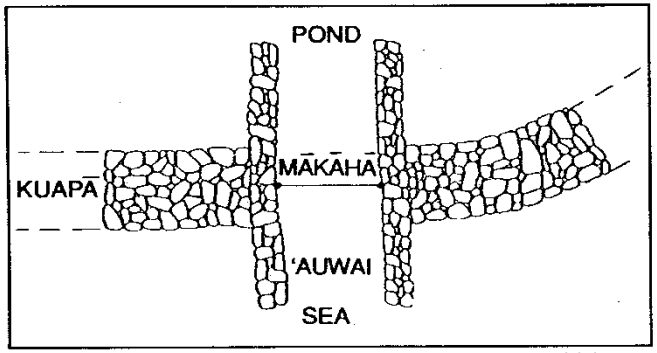


Figure 9: Top view of 'auwai o ka mākāhā. (Summers, 1964)

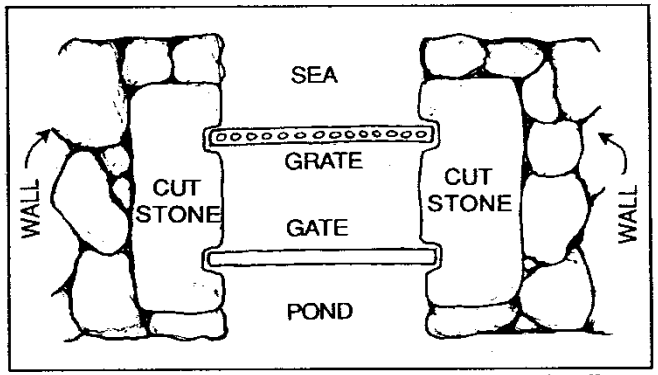


Figure 10: Drawing of typical mākāhā area in fishpond wall. (Modified from Kelly, 1975)

Fishpond at Kaloko-Honokōhau National Historic Park, Hawai‘i.

Types of Fishponds

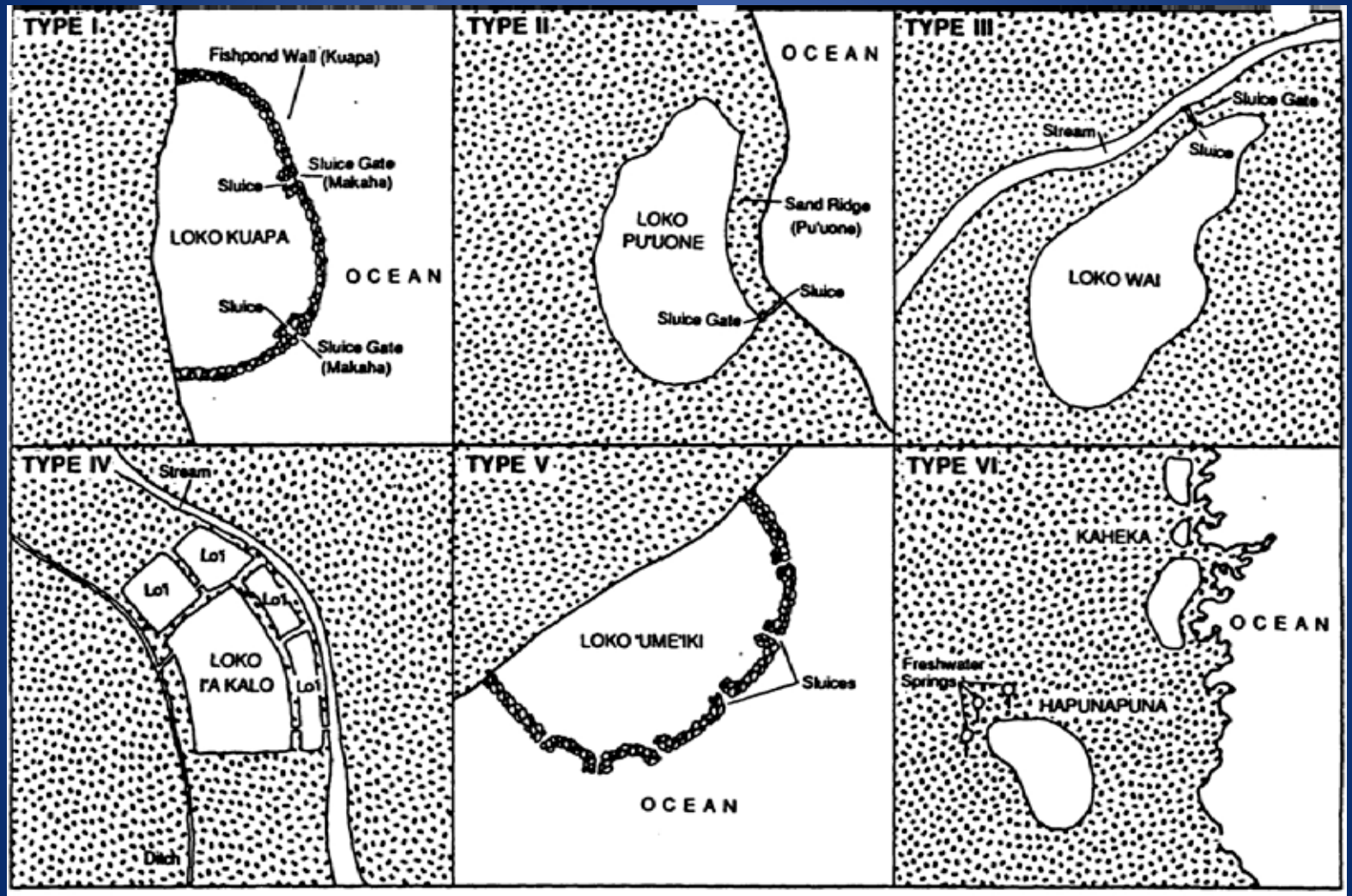
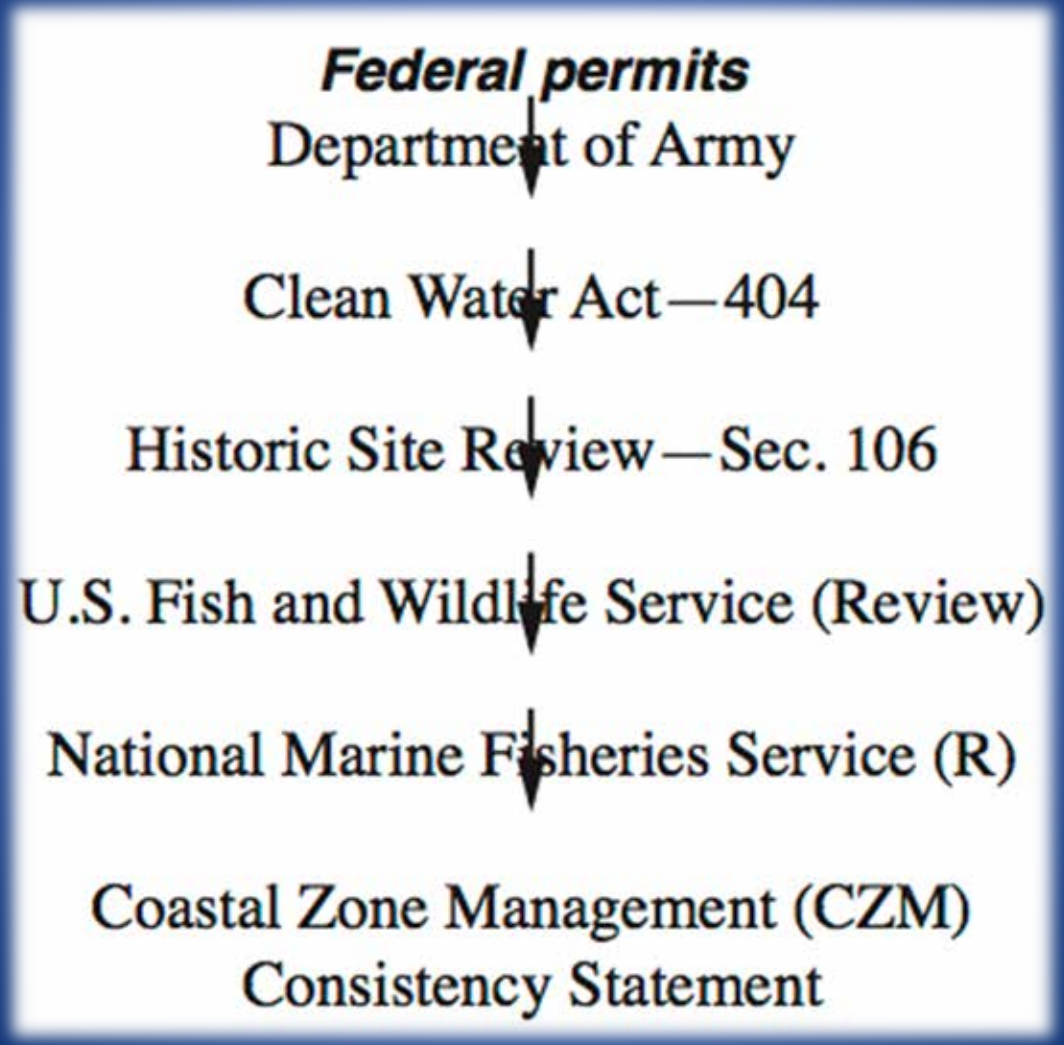
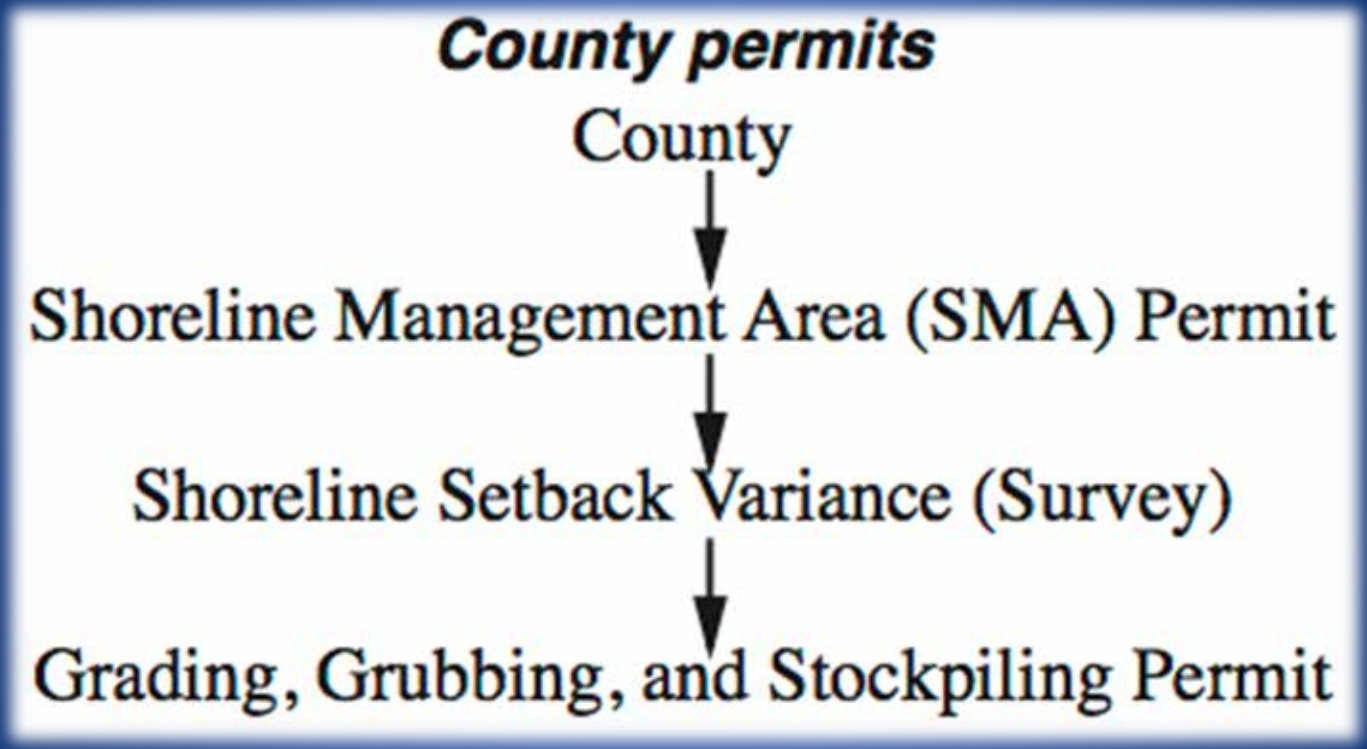


FIGURE 4: Six main types of Hawaiian Fishponds. (Apple and Kikuchi 1975)

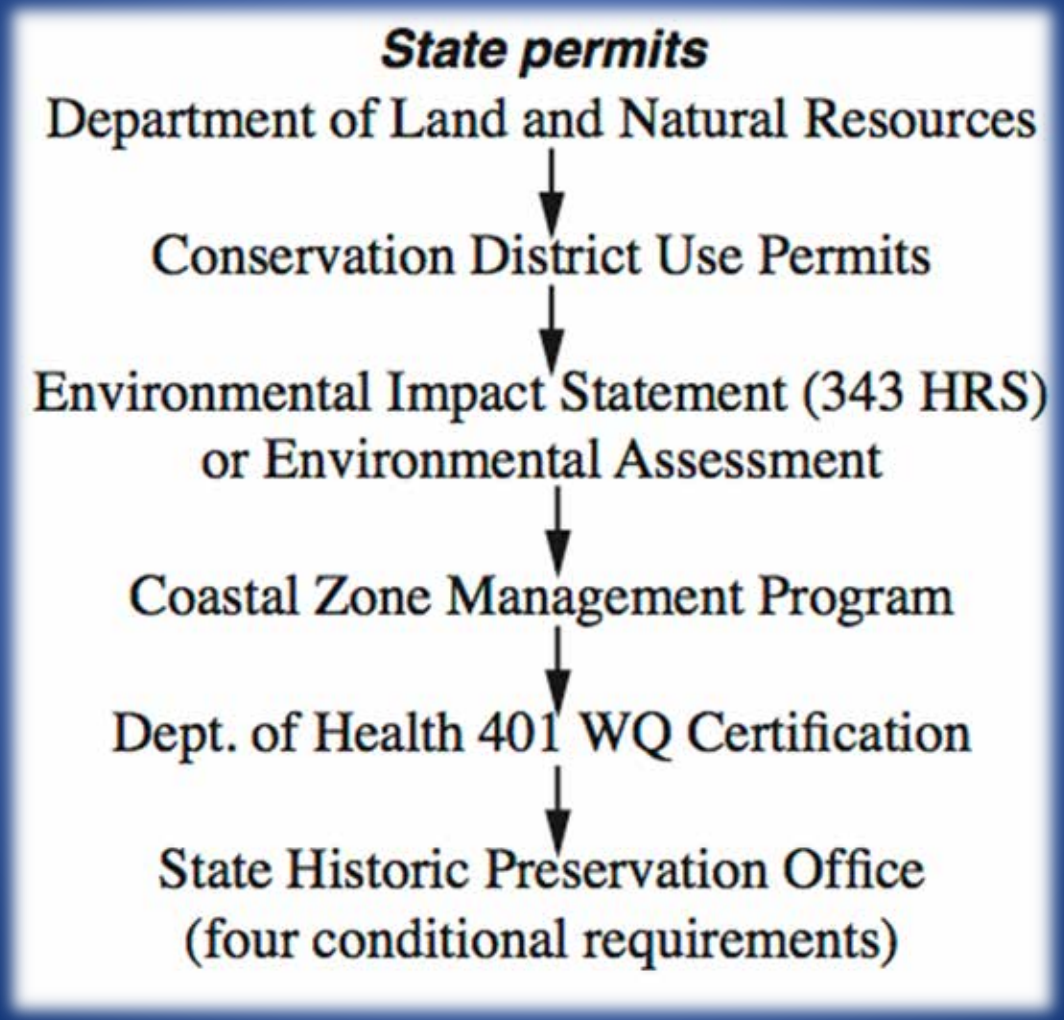
Fishpond Permit Requirements



Fishpond Permit Requirements

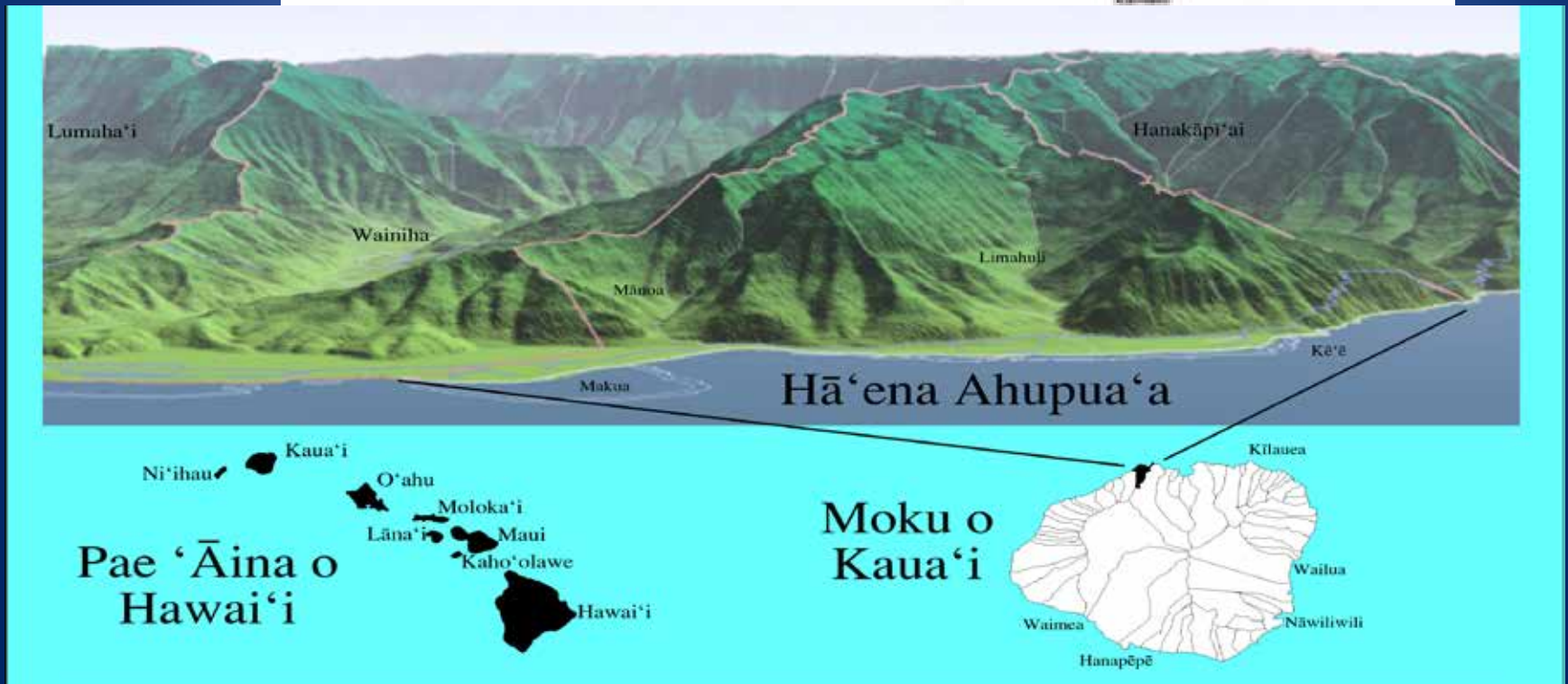


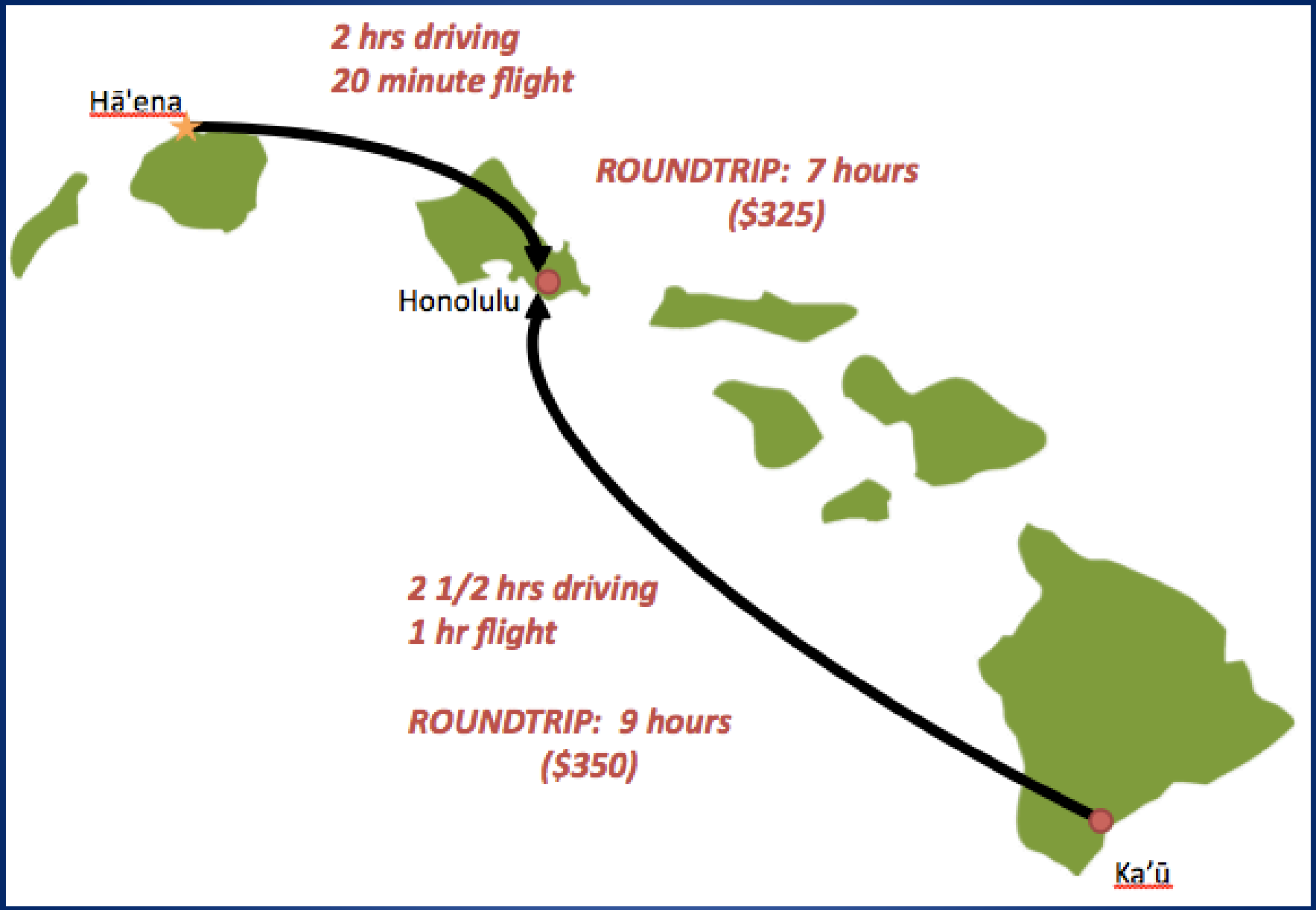
Fishpond Permit Requirements

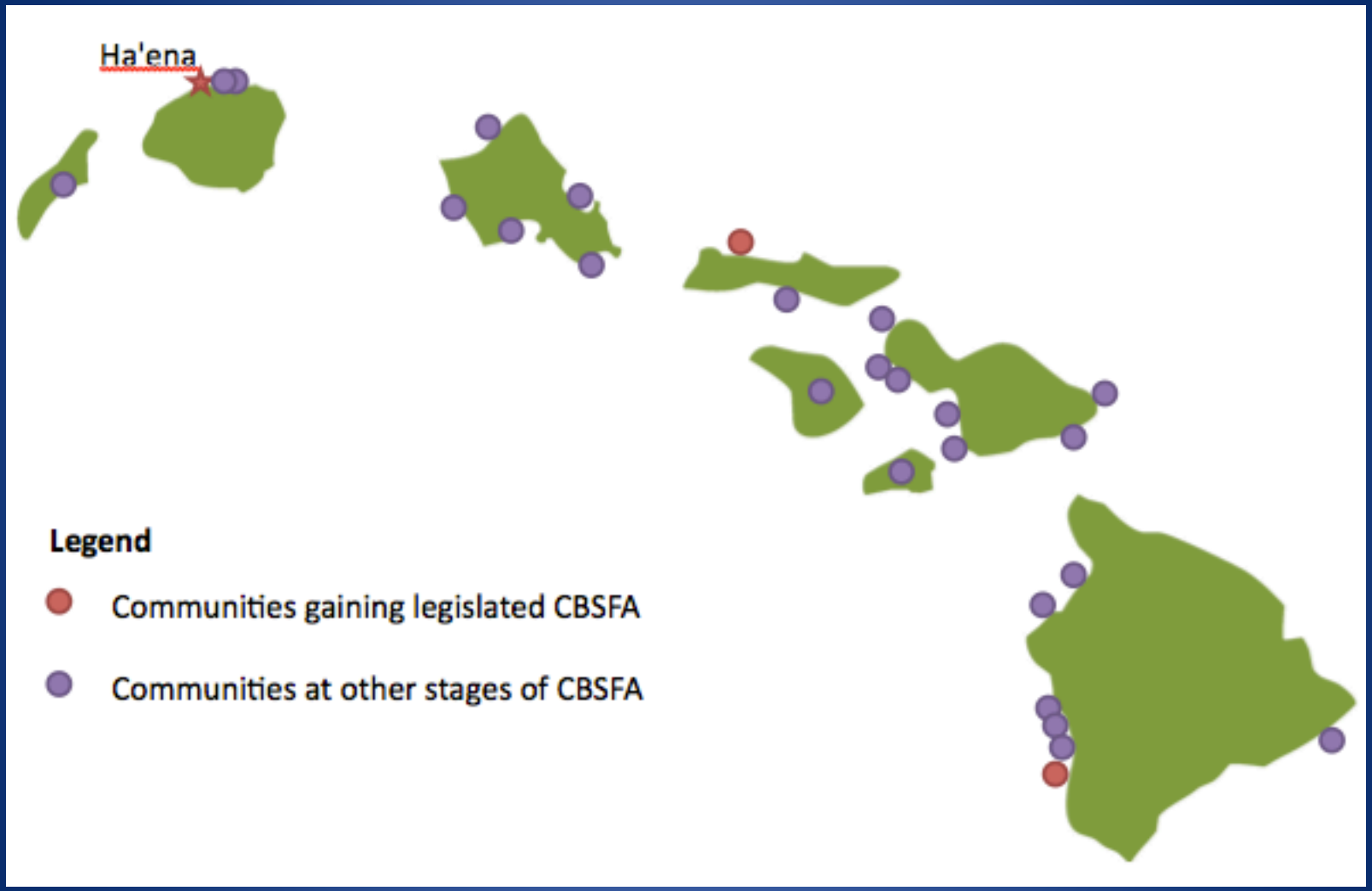


new statewide efforts to streamline fishpond permitting


NEAR SHORE FISHERIES
©Winston Welborn


Lumaha'i
Hanakāpi'ai
Wainiha
Limahuli
Mānioa
Kē'e
Makua
Hā'ena Ahupua'a
Ni'ihau
Kaua'i
O'ahu
Moloka'i
Lāna'i
Maui
Kaho'olawe
Hawai'i
Pae 'Āina o Hawai'i
Moku o Kaua'i
Kīlauea
Wailua
Waimea
Nāwiliwili
Hanapēpē


2 hrs driving
20 minute flight
Hā'ena
ROUNDTRIP: 7 hours
($325)
Honolulu
2 1/2 hrs driving
1 hr flight
ROUNDTRIP: 9 hours
($350)
Ka'ū


Ha'ena
Legend
Communities gaining legislated CBSFA
Communities at other stages of CBSFA

Community Based Subsistence Fishing Areas (CBSFAs)

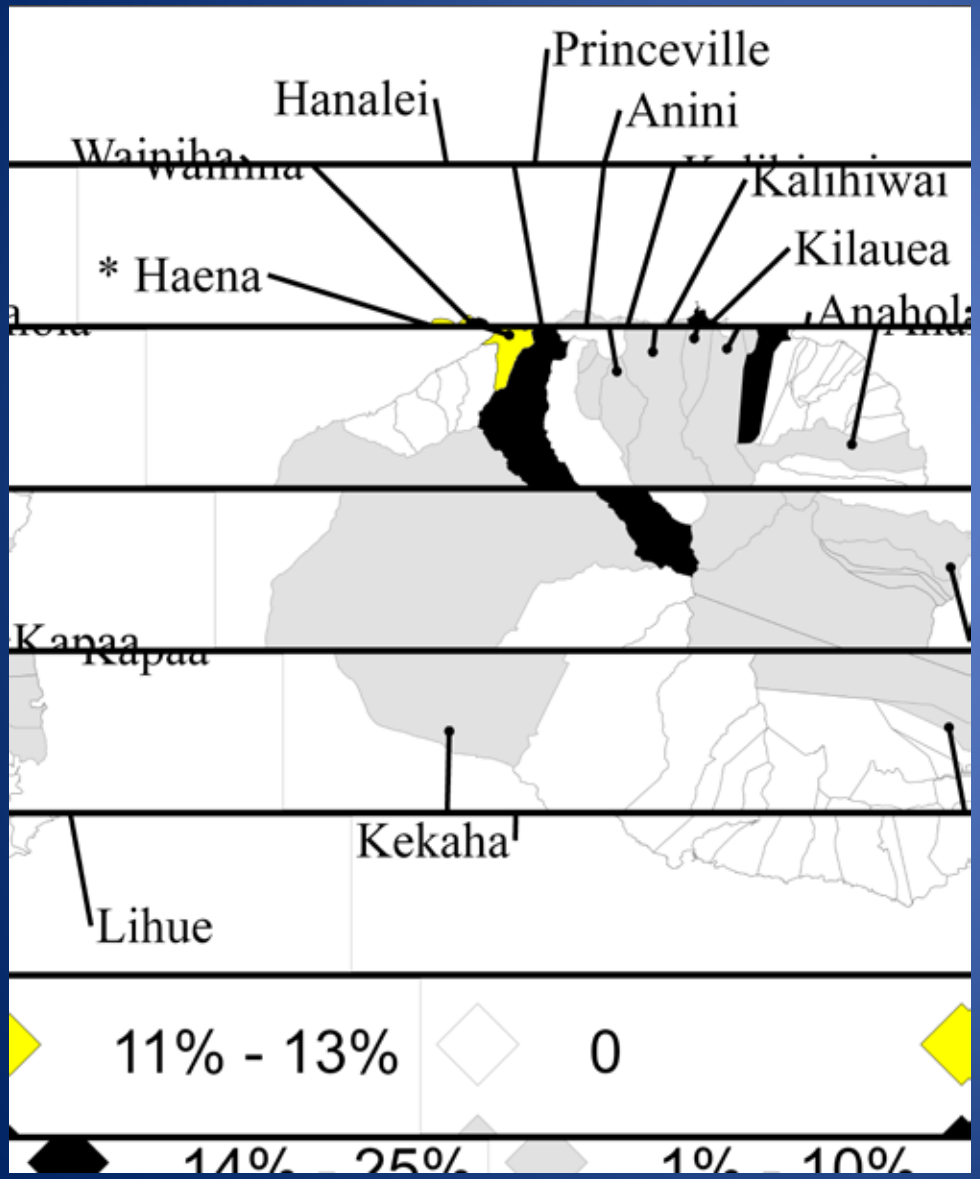
1994: For "protecting fishing practices customarily exercised for purposes of Native Hawaiian subsistence, culture and religion" (HRS 188, Act 271, 1994).

2006: Hā‘ena residents to work with State to develop and enforce traditional regulations for the coast of Hā‘ena.
(S.B. 2501, 23rd Leg., Reg. Sess. (HI 2006).

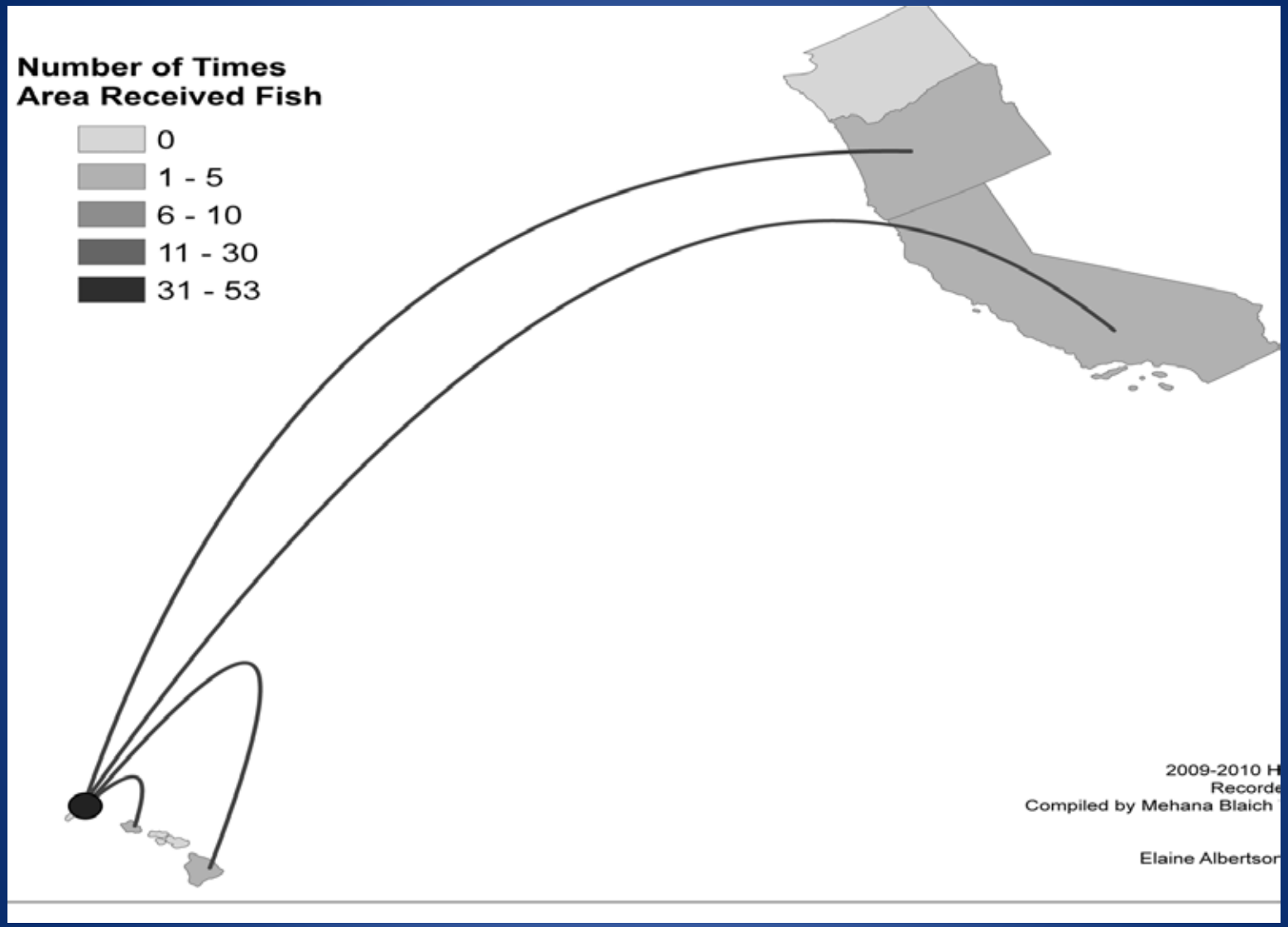
What is the contemporary significance of subsistence catch and sharing?

Vaughan, M, and Vitousek, P. (2012). Mahele: Sustaining Communities Through Small-Scale Inshore Fishery Catch and Sharing Networks. Pacific Science, In Press.

Ongoing Community of Harvest



New Geographic Scale


Number of Times
Area Received Fish
0
1 - 5
6 - 10
11 - 30
31 - 53
2009-2010 H
Recorde
Compiled by Mehana Blaich
Elaine Albertson

Cultural Perpetuation - SHARING
SELF RELIANCE à Community Resilience

SUBSISTENCE à ABUNDANCE

Reciprocal Exchange–>
Shared Abundance

Photo credits, left to right: Michael Holden, dominiq18, joyosity

What Are Some Traditional Hawaiian Fisheries Management Practices?

Harvest according to reproductive cycles

In February,

- *'Ama'ama* peak spawning begins in December and ends in February. Harvesting is *kapu*.
- *Aholehole* males mature. Peak spawning begins in February and lasts several months.
- *Kumu* peak spawning begins in February and lasts several months.

Harvest other species with care.

'Ama'ama

Aholehole

Kumu

Harvest according to moon cycles

Protection of Key Spawning and Feeding Areas

Take Only What You Need

- No Spear Guns
- No Lay Net
- Harvest He‘e (Octopus) by Stick not Spear

Limiting Access / RESPONSIBILTY

Reserve Easy Areas for Elders and Keiki

Take Care Before You Take

(Launch Boats from the Area)

- Rotating Harvests (Resting Areas)
- Feeding Koʻa
- Take only what you need

Easily Integrated into State Law

- Take only what you need
- Harvest according to reproductive cycles
- Protect key spawning and reproductive areas

Need Changes in State System

- Mountain to Sea Management (erosion, fresh water)
- Rest and Rotation

Outside of Law / Rules

- Respect Fish
- Give back before you take
- Reserve easy areas for elders and keiki
- Share your catch and feed others

MAHALO EVALUATION