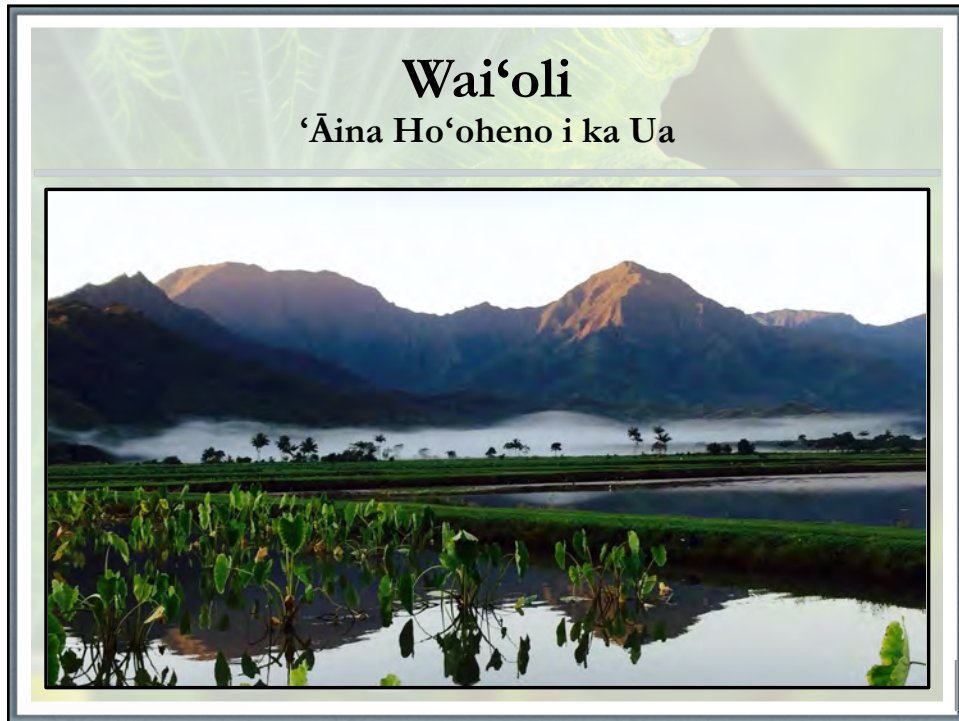




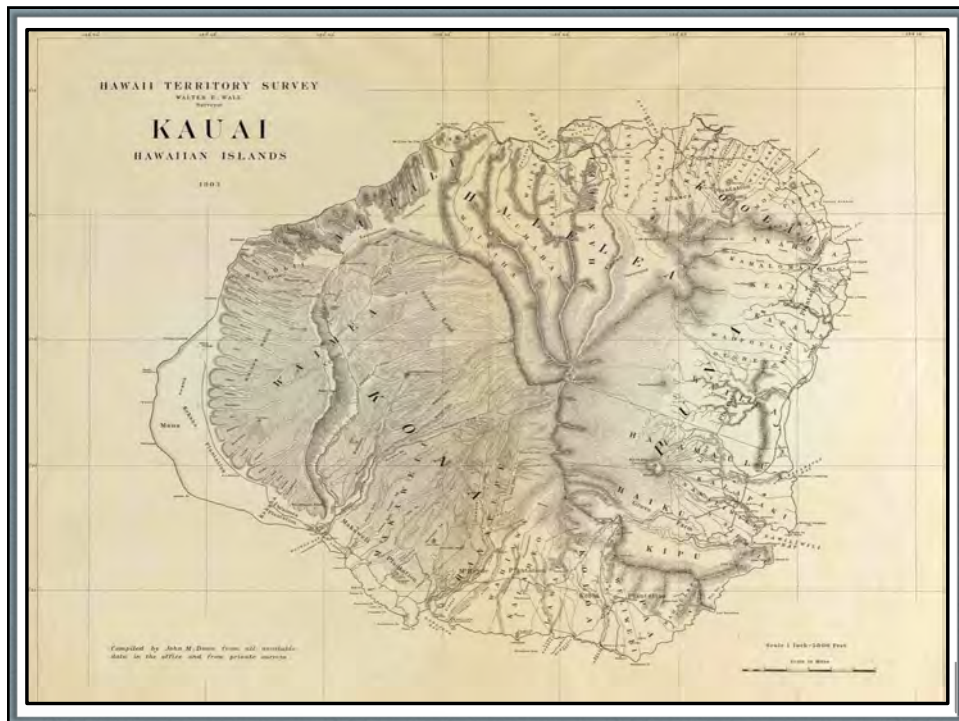
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4

Wai'oli, Halele'a, Kaua'i

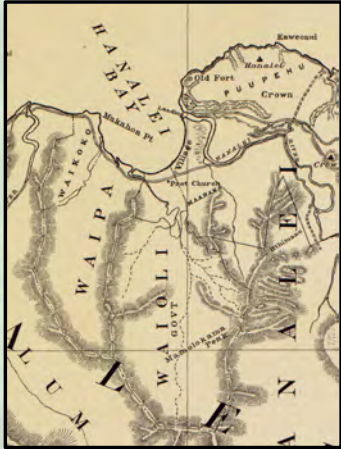




Photo taken in 1890-1892 from Kamookoleaka, looking out across the Wai'oli Lo'i Kalo Irrigation System.

Courtesy of Wai'oli Mission Collection, negative in possession of David Forbes, circa 1890-1892.

5

Mele Poetry

Hina na ohia o Kupokili,
 Hina i ka makani ka ohia
 kani leo lea iuka,
 E kani ana i ke puowai o
 Kaliko, [hoa,
 I na puowai ua Mamala-

Ua ku kaliki ia e Hihimani,
 I moe no Waioli i ke ana a ke Kēhau,



Huai ka mapuna a ka wai o Namalokama.
 Hoohanini ka omaka wai Ua o Kaliko,

keia ua'u ia olua. Ia oe e Waipa i ka wai halai o Waioli, weli na keia ia olua. Ia oe hoi e ka limu ka kanaka o Mauakepa,

Hoopuni Waioli i ke ana a ka ua kiu,
 Le'a ka apa i ka limu ka kanaka o Mauakepa."

Ma ka lae hale o Puupaoa,
 Hele ka ua hiki hale,
 Hoowalea i ke one ai a ke kinau,
 He kinau ai hale o Mahamoku,
 Ka ua hoopala ohia o Waioli,

➤ Wai'oli rests in the coolness of the Kēhau.

➤ My love to you Waipā sitting in the calm waters of Wai'oli.

➤ At the pandanus laden Pu'upaoa we see the rain that rattles upon the leaves, It enjoys the sands of Mahamoku, The 'ōhi'a softening rain of Wai'oli.

6

Mo'olelo History



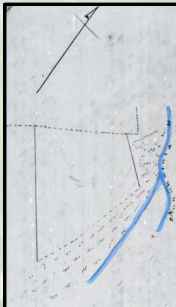
- “Eia na moo o Kauai; ... Kikiula ma Hanalei, nona ka muliwai o Waioli.”
- Here are the mo'ō of Kaua'i; ... Kīkī'ula at Hanalei, whose home is the river-valley of Wai'oli.

“Ka Moolelo Kaa No Keaomelemele” Ka Nupepa Kuokoa 25 April 1885

7

Hanalei Kalana

- The tributaries of Hanalei River – Kumuohia, Waiaula, Pahauniu, and Nukuhuluia – historically ran through the lo'i and today are still feeding into the Hui's 'auwai.
- **Kalana** is a traditional Native Hawaiian land division associated more with systematic biocultural resource management and community identity rather than governance.



8

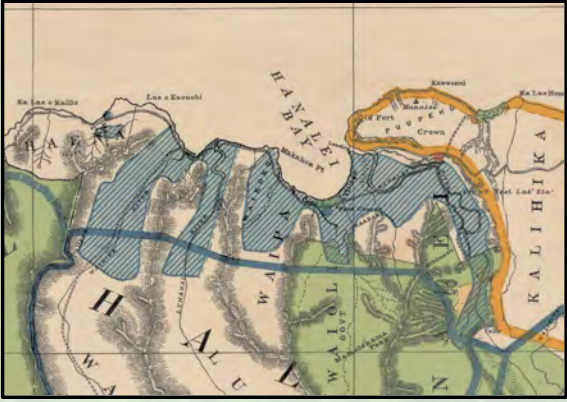
Mahi'ai o Wai'oli Farmers of Wai'oli

Ahahui Mahiai o Waioli, Kauai.
Ma ka la 30 o Okatoba iho nei, ako-
akoa kekahi poe kanaka ma na apana
o Hanalei me Anahola, ma ka hale pule
o Waioli, e hookumu i Ahahui Mahiai
no ia mau apana.
Ua kohoia o D. B. Mahoe, Esq., i
Kaukau Olelo, a o J. H. Wana, Esq.,
i Lunahoomalu no ia Aha.
Ua lawe ia mai i kumu kanawai i
mua o ka Aha, a ua hooponoponoia a
hooholoia, peneia :
Ka Nupepa Kuokoa, Nov. 16, 1861

➤ “On the 30th of this past October, certain peoples representing the districts of Hanalei and Anahola, gathered at Wai'oli Church to create a **Farming Association** for these districts. D.B. Mahoe Esq. was chosen as secretary, and J.H. Werner Esq. was chosen as Chair for this meeting. They presented a constitution before the body, and it was amended and passed.”

9

Hanalei Kalana Hanalei Bay Watershed




➤ For centuries, Kānaka Maoli have managed natural and cultural resources within the larger Hanalei Bay Watershed as a **single integrated system** to maximize the cultivation of traditional crops and lifeways and to distribute water resources.

➤ The Hanalei Kalana includes Hanalei Bay Watershed: Hanalei, Wai'oli, Waipā, and Waikoko, meeting at Mahamoku, “Hanalei Bay.”

10

Hanalei Kalana




- As a part of the Hanalei Kalana, Wai'oli Watershed shares stream resources with the ahupua'a of Waipā and Hanalei.
- The Wai'oli Muliwai (Estuary) is located within the Waipā Ahupua'a, a portion of the Wai'oli lo'i and 'auwai are located within the Hanalei Ahupua'a, and two ho'i from Wai'oli return water to Hanalei River, all eventually feeding Mahamoku. Hanalei tributaries also feed Wai'oli Stream & lo'i.

11

Overview of the Problem


Context:

- Hanalei and Wai'oli Valleys produce more than 70% of all kalo grown in Hawai'i.
- Massive flooding due to heavy rains in April 2018 and August 2018 (Hurricane Lane) devastated Wai'oli.



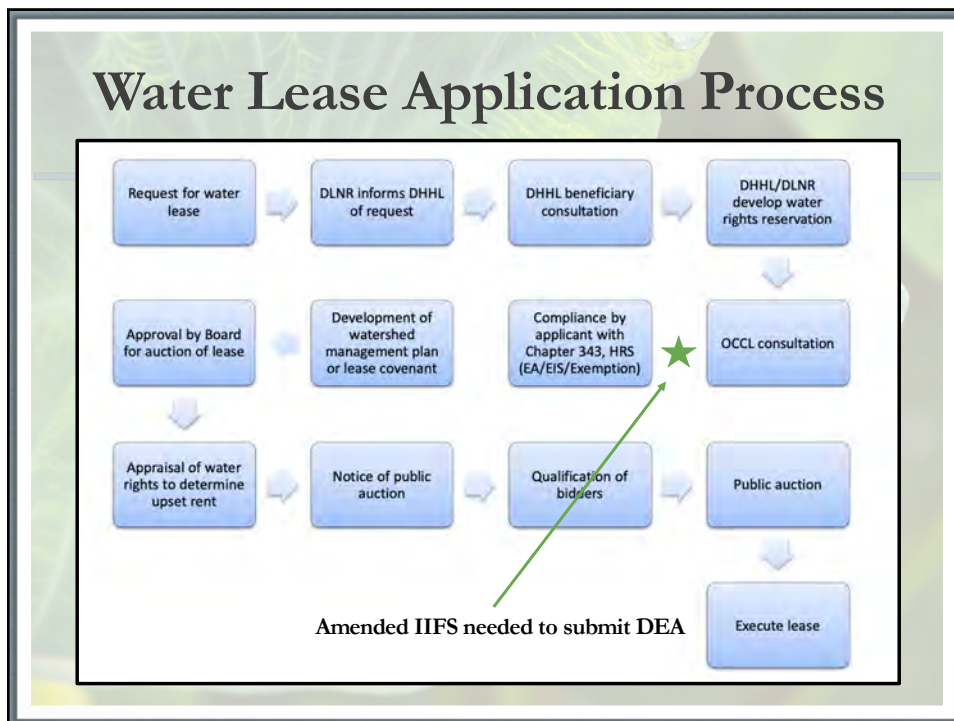
12

Overview of the Problem (cont.)



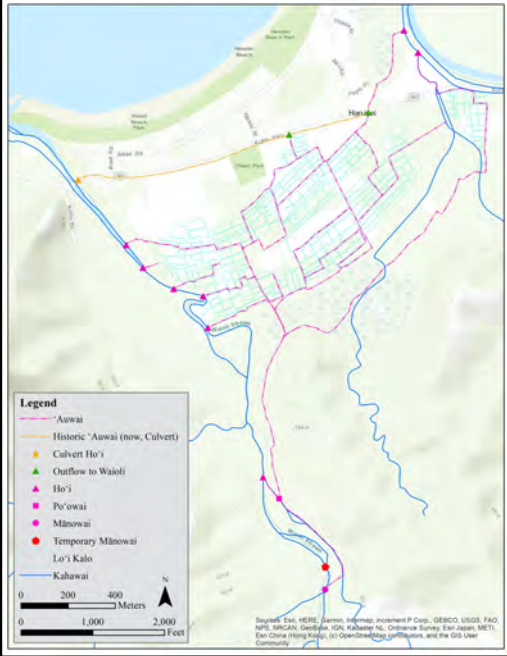
- Discovered that key kalo infrastructure was on State Conservation Land.
- Lo'i Kalo Irrigation System
 - Mānowai was blown out.
 - Po'owai and 'auwai were filled with silt and other debris; stream significantly altered.
- A numeric IIFS is necessary for the Hui to apply for a long-term water lease under HRS 171.

13



14

Wai‘oli Lo‘i Kalo Irrigation System



Legend

- ‘auwai
- Historic ‘auwai (now, Culvert)
- ▲ Culvert Ho‘i
- ▲ Outflow to Waikoi
- ▲ Ho‘i
- Po‘owai
- Mānowai
- Temporary Mānowai
- Lo‘i Kalo
- Kahawai

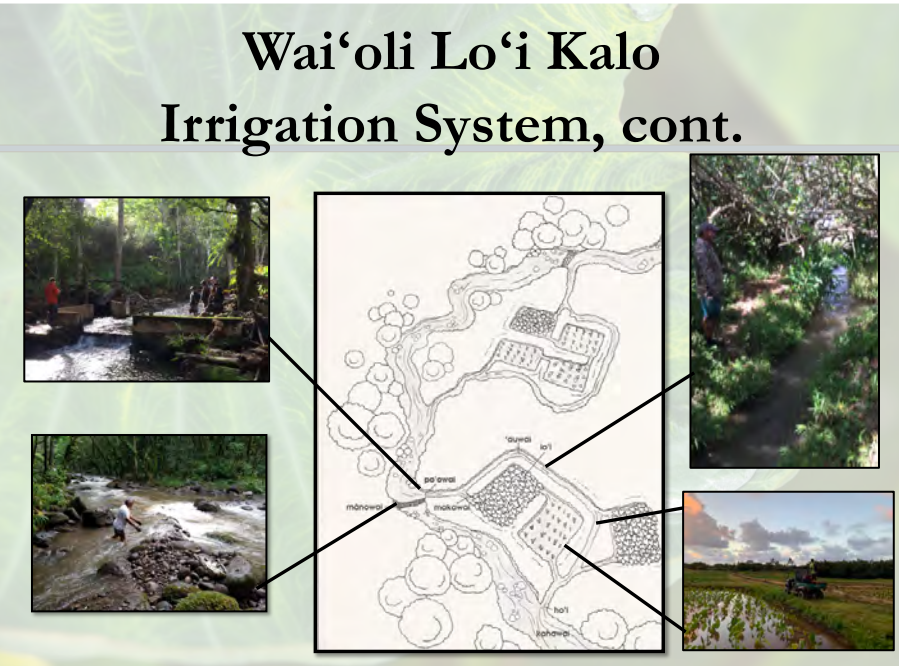
0 200 400 Meters
0 1,000 2,000 Feet

Source: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, Swire, SIRGAS, GeBCO, IGN, Kahawai, NCS, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), Swi OpenStreetMap contributors, and the GIS User Community

- **Mānowai:** a traditional, Native Hawaiian breakaway dam.
- **Po‘owai:** a water intake at the head of the ‘auwai.
- **‘auwai:** a traditional irrigation ditch.
- **Ho‘i:** returns water to stream.

15


Wai‘oli Lo‘i Kalo Irrigation System, cont.



The diagram shows a central area labeled 'Wai‘oli' with various components labeled: 'auwai, mānowai, po‘owai, ho‘i, and kahawai. Four photos are included: top-left shows a mānowai (breakaway dam) in a forest; bottom-left shows a po‘owai (water intake) in a stream; top-right shows a ho‘i (return channel) in a forest; bottom-right shows a kahawai (irrigation ditch) in a field.

16

Historic Mānowai



- 2016 Wai'oli farmer maintaining and repairing the mānowai, throwing stones so that more water can flow into the system.
- Light blue arrow shows historic flow of water diverted by the mānowai. Red lines indicate the location of the historic māno.

17

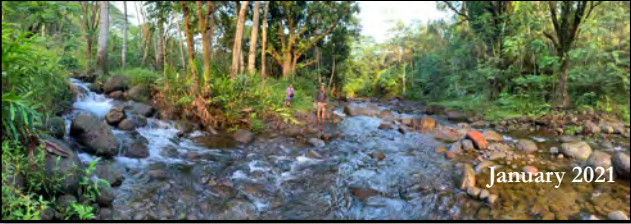
Repaired & Newly Damaged Mānowai



- After November 2020 Flood

18





Temporary Mānowai



- The temporary mānowai, further downstream, is in a less than ideal location.
- Flow of water from historic mānowai (left) into a branch of Wai'oli Stream that flows towards the po'owai.

19



Po'owai



- Water from the māno flows from the top of the photo. Water on the left goes into the 'auwai.
- Water on the right flows back to the main branch of Wai'oli Stream.
- August 2020 after maintenance/repair by Kaua'i County's contractor.
- After November 2020 and March 2021 floods.

20



Tributary to Wai'oli Stream January 2021



➤ A tributary from the Hanalei side contributes to Wai'oli Stream, near the first māno, but before the po'owai.

21

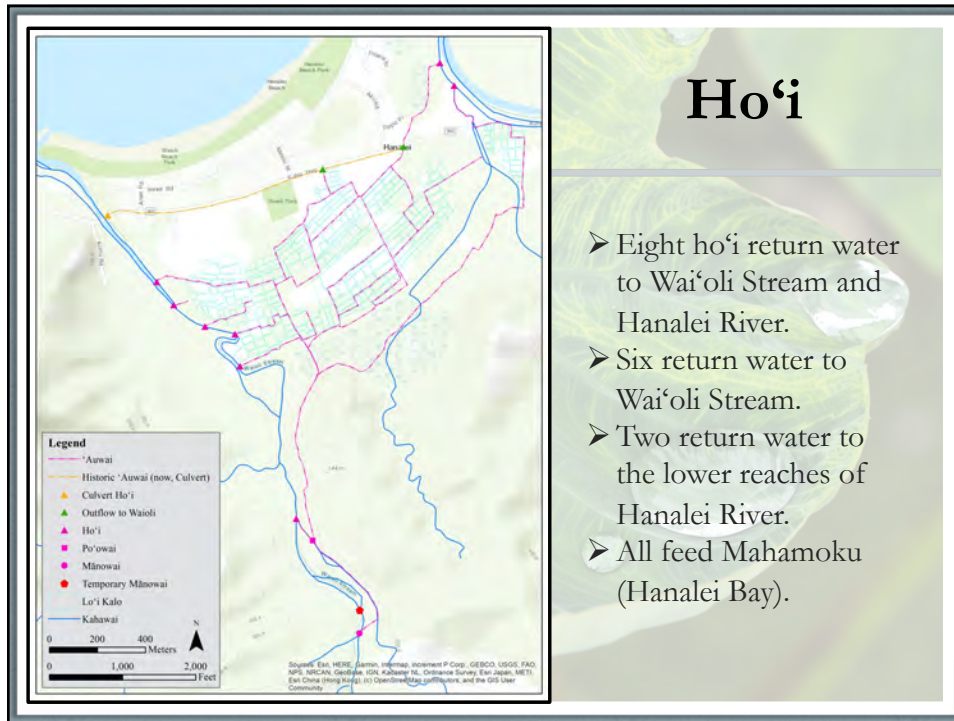
'Auwai



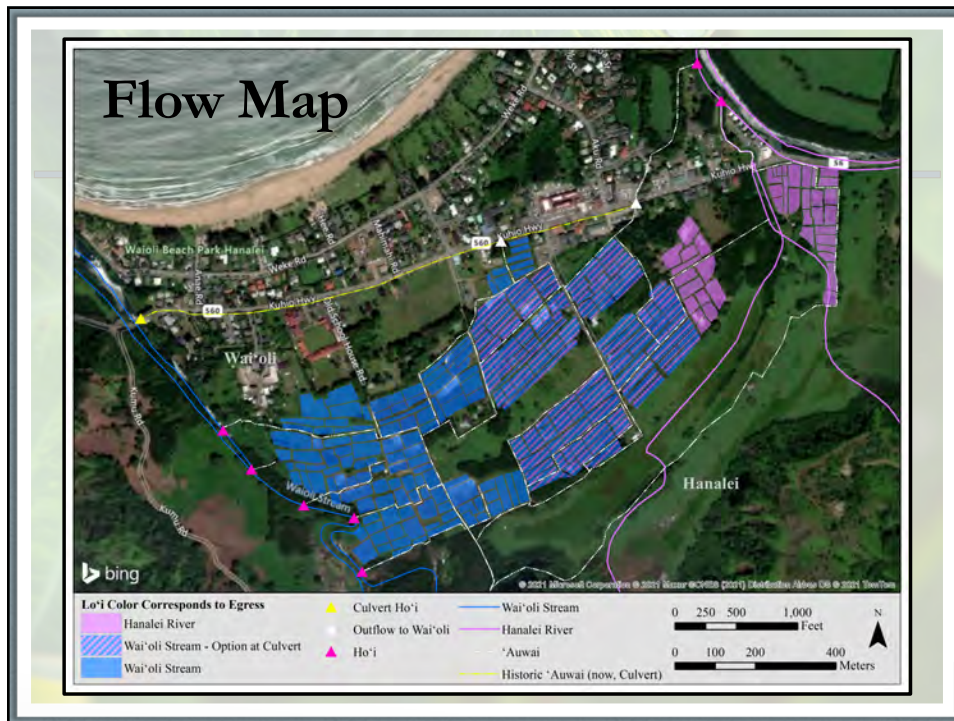
Feb 2020 Aug 2020

➤ Same stretch of 'auwai (further ma uka).

22




23



24

Wai‘oli Valley Taro Hui

- These small, family-run kalo farms formally organized as the **Wai‘oli Valley Taro Hui** in response to the April 2018 flooding.
- The farmers have collaborated informally for over a century to steward and maintain Wai‘oli Valley’s natural and cultural resources.
- The Hui is a 501(c)(3) nonprofit established for the purposes of education and community engagement to empower future generations with traditional knowledge.




Ahahui Mahini o Waioli, Kaula.
Ma ka ia 30 o Okatōka iho nei, akohoa kēkahi pōe kaula ma ma apana o Hanalei me Anahola, ma ka hale pule o Waioli, e hookele i Ahahui Mahini no ia mau apana.
Ua kohoia o D. B. Maboe, Esq., i Kaula Olole, a o J. H. Wana, Esq., i Lanihoomā ma ia Aha.
Ua lave ia mai i kumu kanawai i mua o ka Aha, a ua hooponoponoia a hoolohia, peneia :

25

Aloha ‘Āina ‘Oia‘i‘o

- For Kānaka Maoli, and for these farmers, the practice of **aloha ‘āina** is embodied in the traditional and customary cultural practice of kalo cultivation.
- This practice not only operationalizes the farmers’ kuleana to mālama ‘āina as a means of survival, but importantly, it actualizes their familial relationship and kuleana to Kānaka Maoli’s elder sibling: kalo.



26

Kuleana ‘Ohana



- Within the Hui, nearly all the farmers were raised growing kalo in Wai‘oli, learning the practice from their parents, grandparents, and, for some, their great grandparents.

- For example, kalo farming defines the Kaona ‘ohana, a practice that spans four generations. Uncle Shorty Kaona is 100% Native Hawaiian and continues to farm full-time on his ‘ohana’s kuleana land, as his ancestors have done since time immemorial.

27

Ma ka Hana ka ‘Ike Learning by Doing and Adapting

- The Hui relies and acts upon intergenerational knowledge passed down throughout Kaua‘i generally, and Wai‘oli Valley specifically.
- The farmers intimately understand the ‘āina in Wai‘oli, the movement of the earth, and the rhythm and patterns found in the natural environment.
- This informs and guides their ‘āina-based practices and processes of kalo cultivation in Wai‘oli.
- Sharing experiences, adapting to natural changes, and stewarding this ‘āina for generations, these farmers have practiced kilo (observation) and have learned ma ka hana ka ‘ike (the practice of learning by doing and adapting).



28

Ho‘olako Enough to Share with Others




- In Halele‘a, communities measure their wealth via **ho‘olako** – having enough to share with others.
- The Hui aims to ho‘olako and feed kama‘āina as a means to sustain and maintain a relationship-based economy with shared values of aloha ‘āina – aloha for each other and aloha for the land.
- Today, the Hui trades with and/or gifts kalo to members within their community.

29

Mālama ‘Āina

- This ancient Lo‘i Kalo Irrigation System is intimately interconnected and has changed very little over the last several centuries.
- For example, the farmers consistently restore the mānowai, clear the stream of debris, and fix the ‘auwai. This **monitoring and maintenance** is a vital part of their cultural practice. It is when families gather and share time, food, and fellowship.



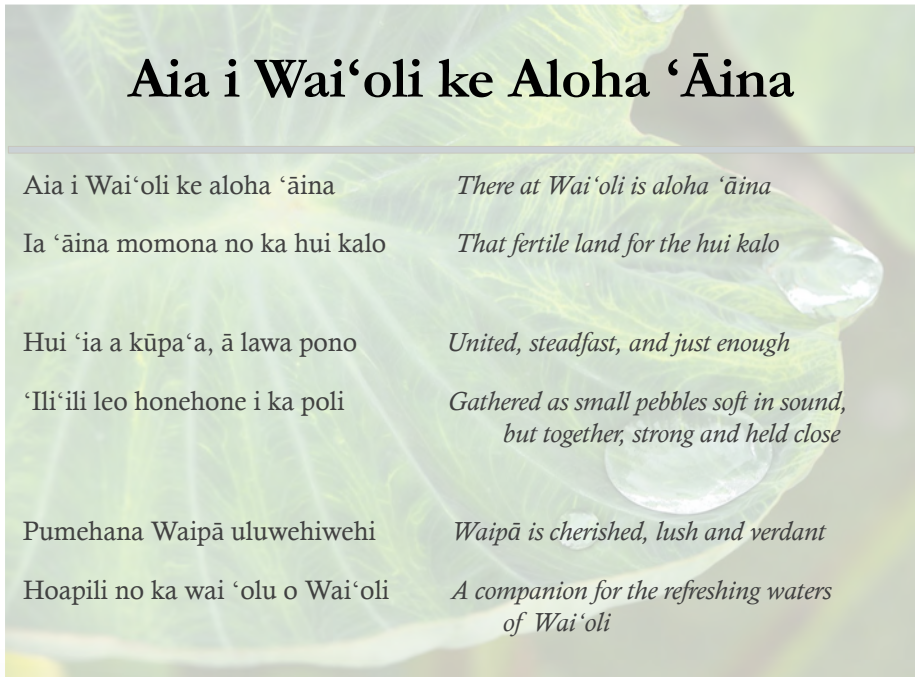
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31



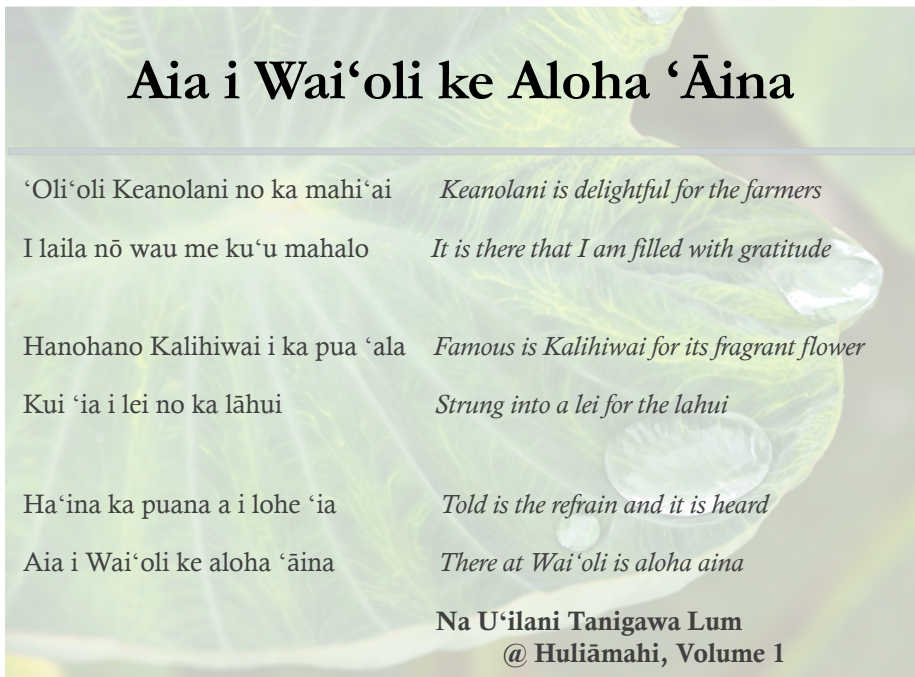
32



Aia i Wai'oli ke Aloha 'Āina

Aia i Wai'oli ke aloha 'āina	<i>There at Wai'oli is aloha 'āina</i>
Ia 'āina momona no ka hui kalo	<i>That fertile land for the hui kalo</i>
Hui 'ia a kūpa'a, ā lawa pono	<i>United, steadfast, and just enough</i>
'Ili'ili leo honehona i ka poli	<i>Gathered as small pebbles soft in sound, but together, strong and held close</i>
Pumehana Waipā uluwehiwehi	<i>Waipā is cherished, lush and verdant</i>
Hoapili no ka wai 'olu o Wai'oli	<i>A companion for the refreshing waters of Wai'oli</i>

33



Aia i Wai'oli ke Aloha 'Āina

'Oli'oli Keanolani no ka mahi'ai	<i>Keanolani is delightful for the farmers</i>
I laila nō wau me ku'u mahalo	<i>It is there that I am filled with gratitude</i>
Hanohano Kalihiwai i ka pua 'ala	<i>Famous is Kalihiwai for its fragrant flower</i>
Kui 'ia i lei no ka lāhui	<i>Strung into a lei for the lahui</i>
Ha'ina ka puana a i lohe 'ia	<i>Told is the refrain and it is heard</i>
Aia i Wai'oli ke aloha 'āina	<i>There at Wai'oli is aloha aina</i>

**Na U'ilani Tanigawa Lum
@ Huliāmahi, Volume 1**

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Mahalo piha!



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