



Hā'ena Ahupua'a Snapshot

» LOCAL MEASURES OF MAUKA-TO-MAKAI HEALTH



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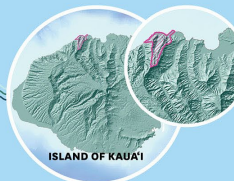
#LIMAHULI
#UPPERLIMAHULIPRESERVE

» A STATUS REPORT ON RIDGE-TO-REEF HEALTH

Hā'ena Ahupua'a Snapshot

» LOCAL MEASURE OF MAUKA-TO-MAKAI HEALTH

The Watershed Snapshot project is a status report on ridge-to-reef health. In consultation with the Hawai'i Conservation Alliance, communities across the State identified metrics that would best define the health of their area, including socio-economic and cultural variables. In 2016, available data from researchers and resource management organizations were compiled to inform the selected metrics. Results are housed as a public resource in an online library of all related watershed-related data, and can be found at hca.maps.arcgis.com. The information is compiled as a suite of communication tools to help inform, guide, and garner support for more effective mauka-to-makai management efforts. Visit www.hawaiiconservation.org/communitysnapshot for more information.



"THE KŪPUNA TELL US THERE IS LESS WATER IN THE STREAMS, AND THE SCIENTISTS TELL US THAT NOT ONLY IS THERE LESS RAINFALL, BUT THE SPREAD OF INVASIVE TREES MEANS THE FOREST HOLDS ONTO EVEN LESS WATER THAN THEY USED TO. WE NEED HEALTHY FORESTS TO ENSURE THAT HAWAII STILL HAS CLEAN, FLOWING WATER IN THE FUTURE."

— KEARINA WINTER, DIRECTOR
LIMAHULU GARDEN AND PRESERVE



"THE OLD HAWAIIANS WOULD SAY, 'HANA KA LIMA, 'AI KA WAIANA.' WE NEED TO WORK TO TAKE CARE OF THIS PLACE SO THAT WE CAN CONTINUE TO FEED OUR FAMILIES."

— TOM HARRIS/PHOTO, LIVING KŪPUNA

53% CORAL COVERAGE
(10%–50% DENSITY)



E HO'OMALU KĀKOU I KA 'ĀINA
(WE MUST PROTECT THE 'ĀINA)
— RACHEL MARUIKI, KŪPUNA (1913-1996)

COMMUNITY-BASED SUBSISTENCE FISHING AREA (DESIGNATION 2000)
RULES ADOPTED 2015 // MONITORING INITIATED 2015
INCLUDES THE FIRST NEAR-SHORE PU'UHOŌIA IN HAWAII*

- TOURISTS >> ~1,000,000/YEAR
- RESIDENTS >> 1,985 (2010)
- PREK-12 EDUCATION >> 600 (2015)
- VOLUNTEERS >> 131 (2015)
- MĀLAMA 'ĀINA CAREERS >> 18 (2016)





PURPOSE

INFORMATION

EMPOWER COMMUNITIES WITH NATURAL RESOURCE INFORMATION

EVALUATION

ASSESS THE IMPACT OF CURRENT MANAGEMENT EFFORTS

ACTION

CATALYZE ACTION, WHETHER TOP DOWN (POLICY)
OR BOTTOM UP (GRASSROOTS EFFORTS)

CO-MANAGEMENT

ENCOURAGE COLLABORATION BETWEEN GOVERNMENT AGENCIES,
NON-PROFITS AND COMMUNITIES FOR RESOURCE MANAGEMENT



COMMUNITY REPRESENTATIVES



KELII ALAPAI

NOA KA'AUMOANA

CARLOS ANDRADE

MAKA'ALA KA'AUMOANA

JACOB BOND

BEN NYBERG

MOKU CHANDLER

SHIMONA QUAZI

LAHELA CORREA

JOHN-CARL WATSON

MERLIN EDMONDS

CHIPPER WICHMAN

CHANDLER FOREREST

HAU'OLI WICHMAN

THOMAS HASHIMOTO

KAWIKA WINTER

WATERSHED SNAPSHOTS PROGRESS 2012-16



<< Honolua to
Napili, Maui



<< Waimea,
Hawai'i Island



<< Hā'ena, Kaua'i



<< Maunaloa Bay, O'ahu

2013

- 8 Community Consultations Statewide
- Watershed Boundary Maps, Scope of Communication Tools and Metrics Confirmed

2014

- Convening of Communities Statewide to Solicit Interest in Snapshot Participation
- Intellectual Property, Data Sharing Agreement, HCA ARC GIS Tool Demo Data Discussion, Communications 101

2015

- Site Planning Meeting on O'ahu and Moloka'i for 6 Volunteer Communities
- Maps with Available Data, Metrics Checklist, Site Plan Development, Additional 2-3 Metric Selection, Project Timeline, Metric Data Compilation

2016

- 3 Community Engagements
- Watershed Health Web Map and Snapshot Web Maps for each of the 3 sites
- Water Quality: Training, Consult, Collection, Supply Kits and Monitoring Plans
- Community Data Gathering: Community Involvement in Resource Management, Place Names, Local Knowledge
- Lessons Learned Workshop
- IUCN WCC Pavilion Event

Initial Statewide Consultation

HĀ'ENA & HANAIEI



HAU'ULA TO PUNALU'U



MAUNALUA BAY

DATE COMPLETED	COMMUNITY CONSULTED	# OF INVITEES	# OF ATTENDEES
08/01/13	Maunaloa	31	9
08/09/13	Nāpili to Honolulu	32	10
09/09/13	Hāhione	15	7
09/11/13	Hānalei	18	8
09/13/13	Kawela to Kākahai'a	18	11
09/17/13	Kā'ōpūhale to Kīho'e	30	8
09/18/13	Hau'ula to Punalu'u	15	8
10/11/13	Kīpahulu to Mō'ōlea	37	14
TOTALS		156	77
AVERAGES		20	10

KAWELA TO KAKAHAI'A



NĀPILI TO HONOLUA



KĪPAHULU TO MŌ'OLEA

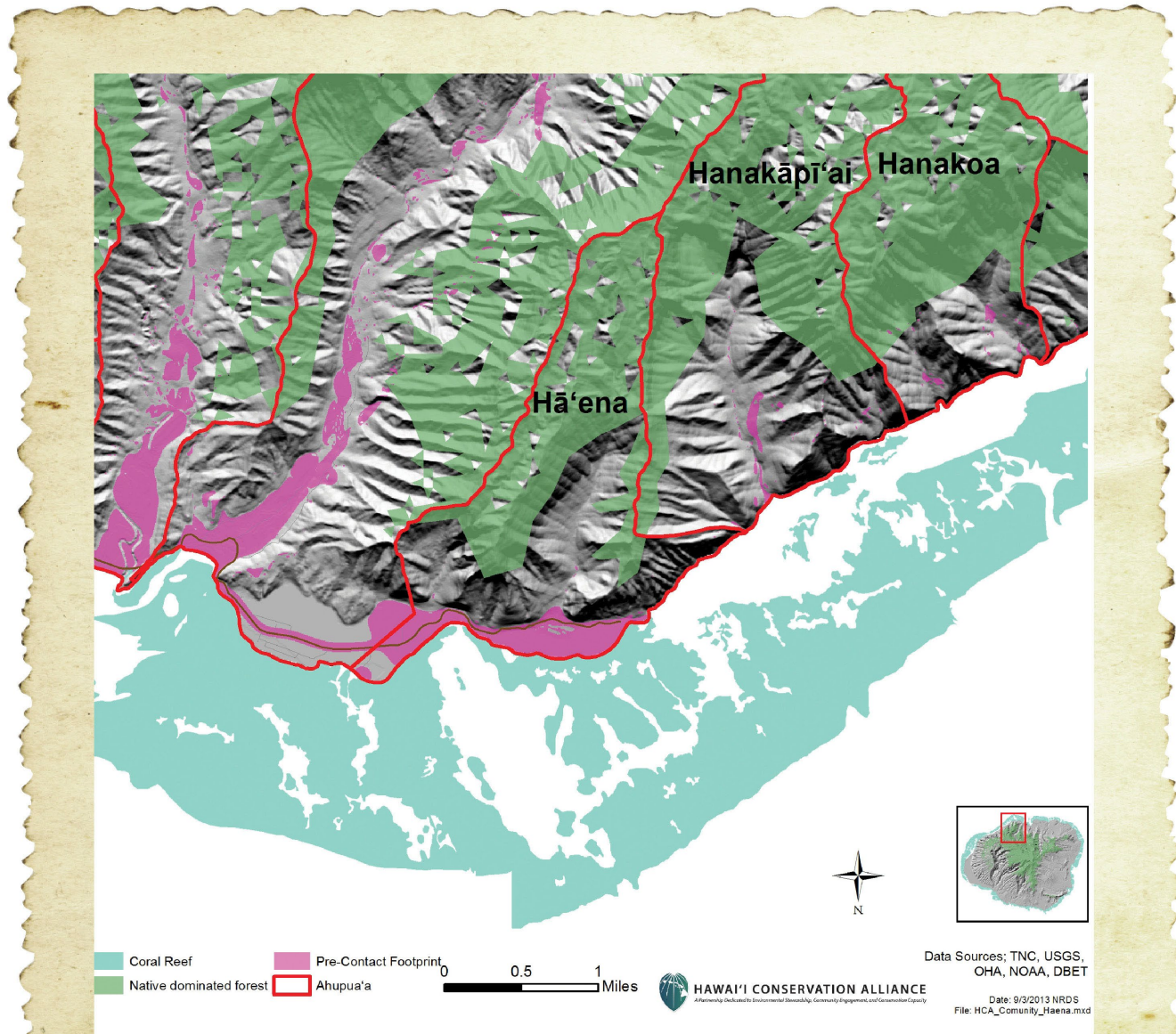


KA'ŌPŪHEHU TO KĪHO'E



SOURCES:
TNC, USGS,
DNR, NOAA, DMST
08/13, 09/13 NRS

» AHUPUA'A BOUNDARY



» HOW DO WE MEASURE THE HEALTH OF OUR WATERSHED?

SOCIO-CULTURAL
<p>Population Size and Growth (DBEDT)</p>
<p>Cultural (# of kūpuna, # families persist, presence of lo'i, traditional fishing)</p>
<p>Health/Diet (Prevalence of diabetes, heart disease, obesity, drug abuse; # of farmers/fish markets)</p>
<p>Community Involvement in Natural Resource Management (# of people, # of projects, # of organizations, # schools, etc)</p>

BIOPHYSICAL
<p>Rainfall (rain and stream gauges- NOAA-Weather)</p>
<p>Availability Of Fresh Water (# of water sources/household(or capita), Board of Water Supply)</p>
<p>Water Quality (Stream sediment, flow, pathogens)</p>
<p>Groundwater Recharge, Land Use (% Impermeable Surface, ratio of developed over natural)</p>
<p>Native Vegetation (% trees/plants cover, acres)</p>
<p>Key Bird Species (Presence, abundance, compare historic)</p>
<p>Target Food Fish (Biomass, Fishing Effort, Size Structure)</p>
<p>Ocean Habitat Quality (Coral: abundance & biodiversity; sand; rubble etc)</p>
<p>Marine Invertebrates & Algae (Indicators of water or habitat quality)</p>
<p>Freshwater: Food Fish & Key Invertebrates (see fish and invertebrate above)</p>

WATERSHED SNAPSHOTS PROGRESS 2012-16



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2016

WATER QUALITY TRAINING



MARCH 2016

HUI KŪ MAOLI OLA, KĀNE‘OHE

FACILITATED BY THE NATURE CONSERVANCY’S
DR. KIM FALINSKI AND MANUEL MEJIA

COMMUNITIES RECEIVED:

- SUPPORT IN DESIGNING A COLLECTION PLAN
- SUPPORT FOR FIRST SAMPLE COLLECTION
- WATER QUALITY STIPEND FOR START-UP KIT AND LAB ANALYSIS FEES
- QUAAP CERTIFIED TURBIDITY METER, AVAILABLE AT KUA’S LENDING LIBRARY

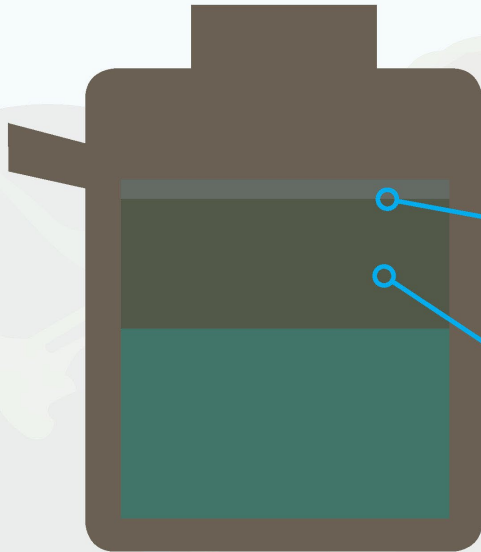


**WATERSHED
METRICS**



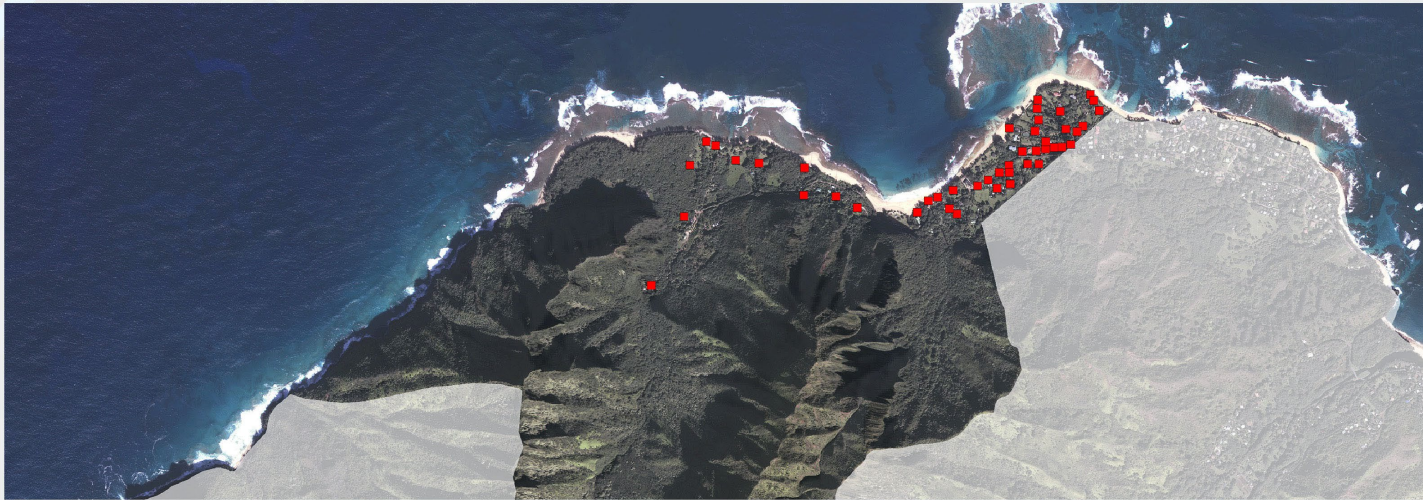
“The kūpuna tell us there is less water in the streams, and the scientists tell us that not only is there less rainfall, but the spread of invasive trees means the forest holds onto even less water than they used to. We need healthy forests to ensure that Hā‘ena still has clean, flowing water in the future.”

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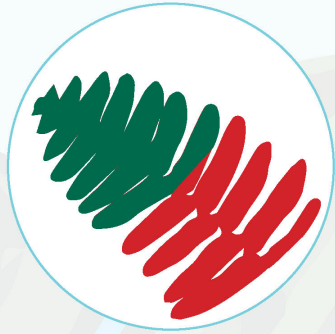


3 of 45 Cesspools are within 200 feet of a stream.

18 of 45 Cesspools are within 200 ft of the coastline.



DEPT. OF HEALTH, 2016



43%

NATIVE FOREST COVER

(USGS, 2011)



NATIVE PLANT DIVERSITY

TOTAL >> 275

FEDERALLY LISTED >> 43

PEPP >> 9

(NTBG SURVEYS, 2016)



NATIVE BIRD DIVERSITY

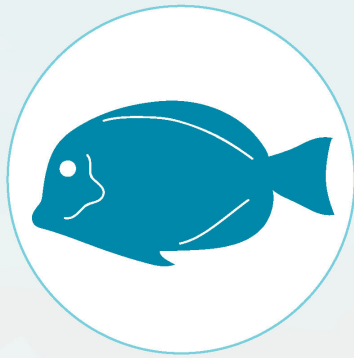
SEABIRDS >> 6

FOREST BIRDS >> 5

WATER FOWL >> 4

SHORE BIRDS >> 3

(NTBG SURVEYS, 2016)



COMMUNITY-BASED SUBSISTENCE FISHING AREA

DESIGNATION 2006

RULES ADOPTED 2015

MONITORING INITIATED 2016

INCLUDES THE FIRST NEAR-SHORE

PU'UHONUA IN HAWAI'I



VISITORS

~1,000,000/YEAR

(DIVISION OF STATE PARKS, DLNR, 2016)



RESIDENTS

1,985 (US CENSUS, 2010)



VOLUNTEERS

131 (2015)

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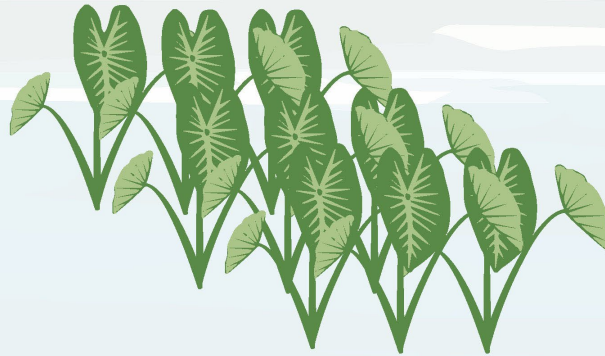
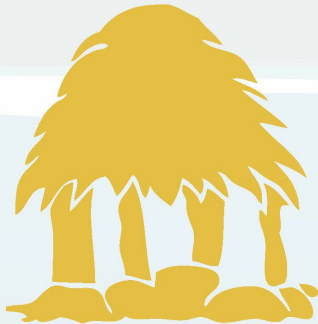


MĀLAMA 'ĀINA
CAREERS
18 (2016)

76 DOCUMENTED SACRED PLACES

WAHI PANA/KAPU

(LIMAHULI GARDEN AND PRESERVE)





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COMMUNICATION PRODUCTS

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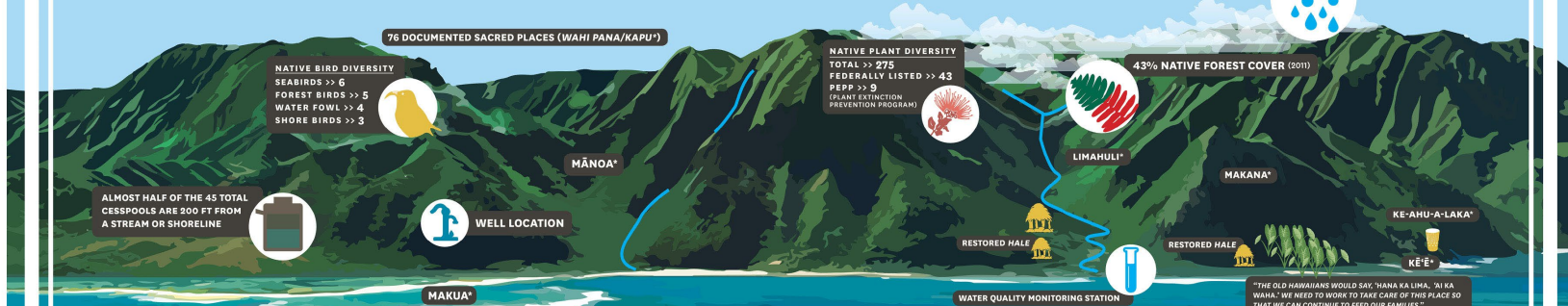
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ISLAND OF KAUAI

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(GRANT EXTINCTION PREVENTION PROGRAM)

43% NATIVE FOREST COVER (2011)

ALMOST HALF OF THE 45 TOTAL CESSPOOLS ARE 500 FT FROM A STREAM OR SHORELINE

WELL LOCATION

WATER QUALITY MONITORING STATION

RESTORED HALE

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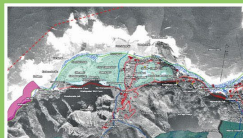
HĀ'ENA

Remote in nature, the *ahupua'a* of Hā'ena is the westernmost land in the *moku* (district) of Hale'alea on the northwest coast of Kaua'i. Hā'ena is comprised of two valleys, each with a stream – Mānoa and Limahuli. Limahuli stream drains through Limahuli Valley and into the ocean, providing an important freshwater input to Hā'ena's ocean environment. Traditionally, the watershed and offshore has been an important subsistence and cultural resource for native Hawaiians and local families. In 2015, Hā'ena became the first Community Based Subsistence Fishing Area to have rules adopted.



In March 2016, a water quality training with community members resulted in data collection from two sites. Communities received water quality kits and are in the process of developing monitoring plans for on-going data collection.

STATEWIDE WATERSHED HEALTH DATA



To access statewide, publicly available watershed-related data compiled from various agencies, visit the online Watershed Health Web Map at hca.maps.arcgis.com. Also available is the Hā'ena Web Map, which features data from the community snapshot metrics used for this project and additional requested data.

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2016

HAWAII CONSERVATION ALLIANCE
WWW.HAWAIICONSERVATION.ORG

HANALEI BAY, OAHU

Hā'ena Watershed Snapshot 2016



TARGET FOOD FISH

Community-Based Subsistence Fishing Area

Established 2006 // In 2016 became the first CBSFA to have rules adopted. // Monitoring Initiated 2016 // INCLUDES THE FIRST NEAR-SHORE PU'UOHUNA (REFUGE) IN HAWAII'

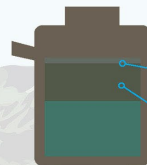
AVERAGE ANNUAL RAINFALL



"The kīpuna tell us there is less water in the streams, and the scientists tell us that not only is there less rainfall, but the spread of invasive trees means the forest holds onto even less water than they used to. We need healthy forests to ensure that Hā'ena still has clean, flowing water in the future."

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WATER QUALITY



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76 DOCUMENTED SACRED PLACES (WAHI PANA/KAPU)

RESIDENT AND VISITOR POPULATION (2010-15)



1,985 Resident Population

THE 1900 CENSUS RECORDED SEVEN HOUSEHOLDS IN HĀ'ENA, ALL OF WHICH WERE COMPRISED OF NATIVE HAWAIIANS. IN 2010, THE CENSUS RECORDED 332 RESIDENCES, 23% OF WHICH IDENTIFIED AS NATIVE HAWAIIAN AND 43% WERE LISTED AS SEASONAL/VACATION USE.



~1,000,000 visitors/year

COMMUNITY INVOLVEMENT (2010-15)



131 Volunteers

18 Mālama 'Āina Careers



NATIVE VEGETATION (2011)

Native Forest Cover 43%



WWW.CONSERVATIONCONNECTIONS.ORG



Hawai'i Conservation Alliance FOUNDATION

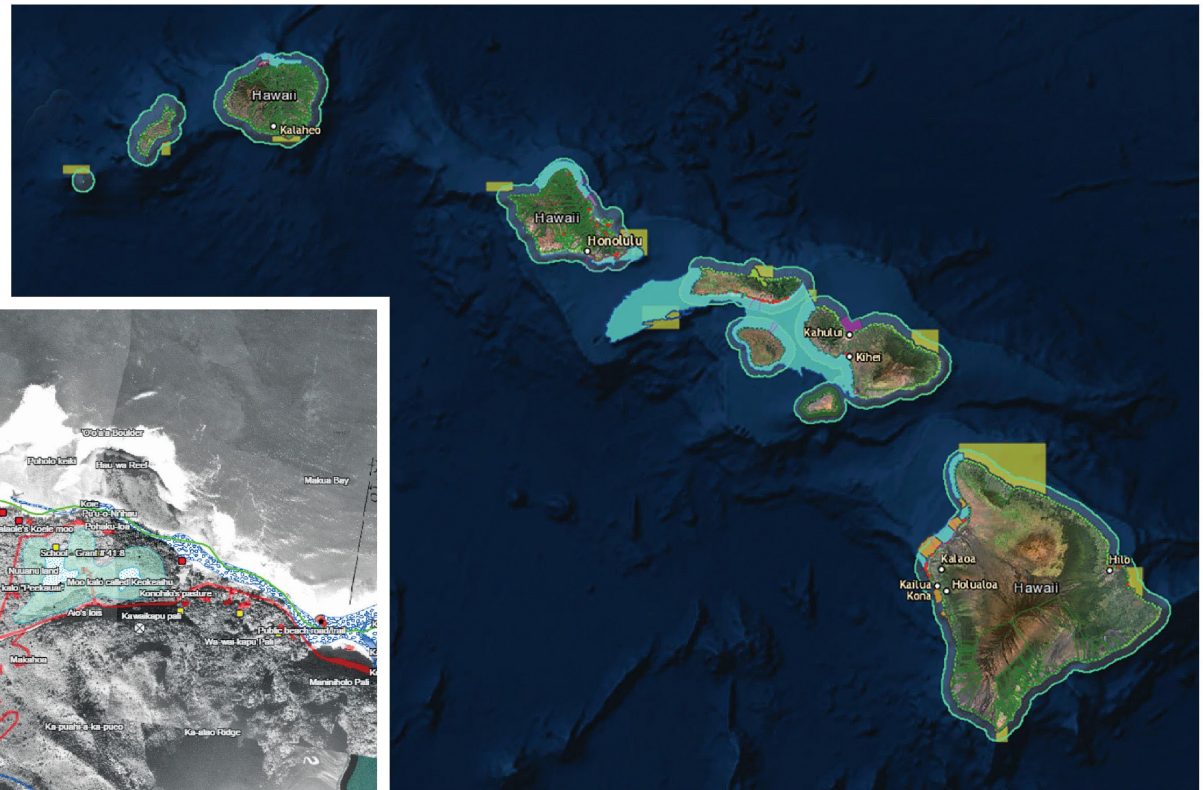


#HAWAIIANAWAIPONO



#UPPERLIMAHULIPRESERVE

STATEWIDE, PUBLICLY AVAILABLE
WATERSHED-RELATED DATA AVAILABLE AT:
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LESSONS LEARNED

- Holistic view of the complex interactions
- Unifier- links *mauka* to *makai* management stakeholders
- Make sure efforts are grounded in community priorities, and aligned with cultural values
- Wide community representation encourages wide participation, investment and support
- Engagement is critical for youth and community
- Sensitivity working with *kupuna* and other community leaders
- Recognize technical expertise and capacity needed

Effective ahupua'a management is a “3-legged stool” of different actors, requiring all three legs to be connected and working together in order to support the “weight” of watershed management.

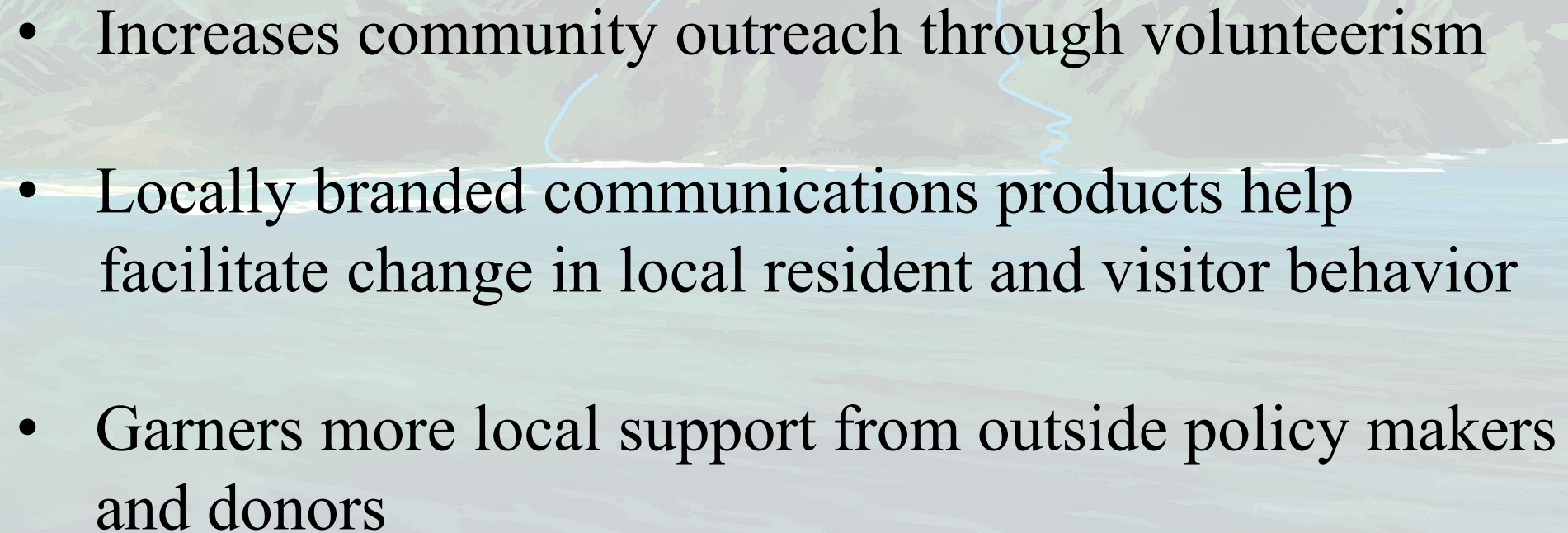
These “3 legs” of differing actors are:

1. **Community** (have the depth of knowledge and connection to place)
2. **Non-governmental organizations** (have supporting human and financial capacity)
3. **Government** (including academia; can be informed to change or create policy)

Utility of the Hā'ena ahupua'a Snapshot

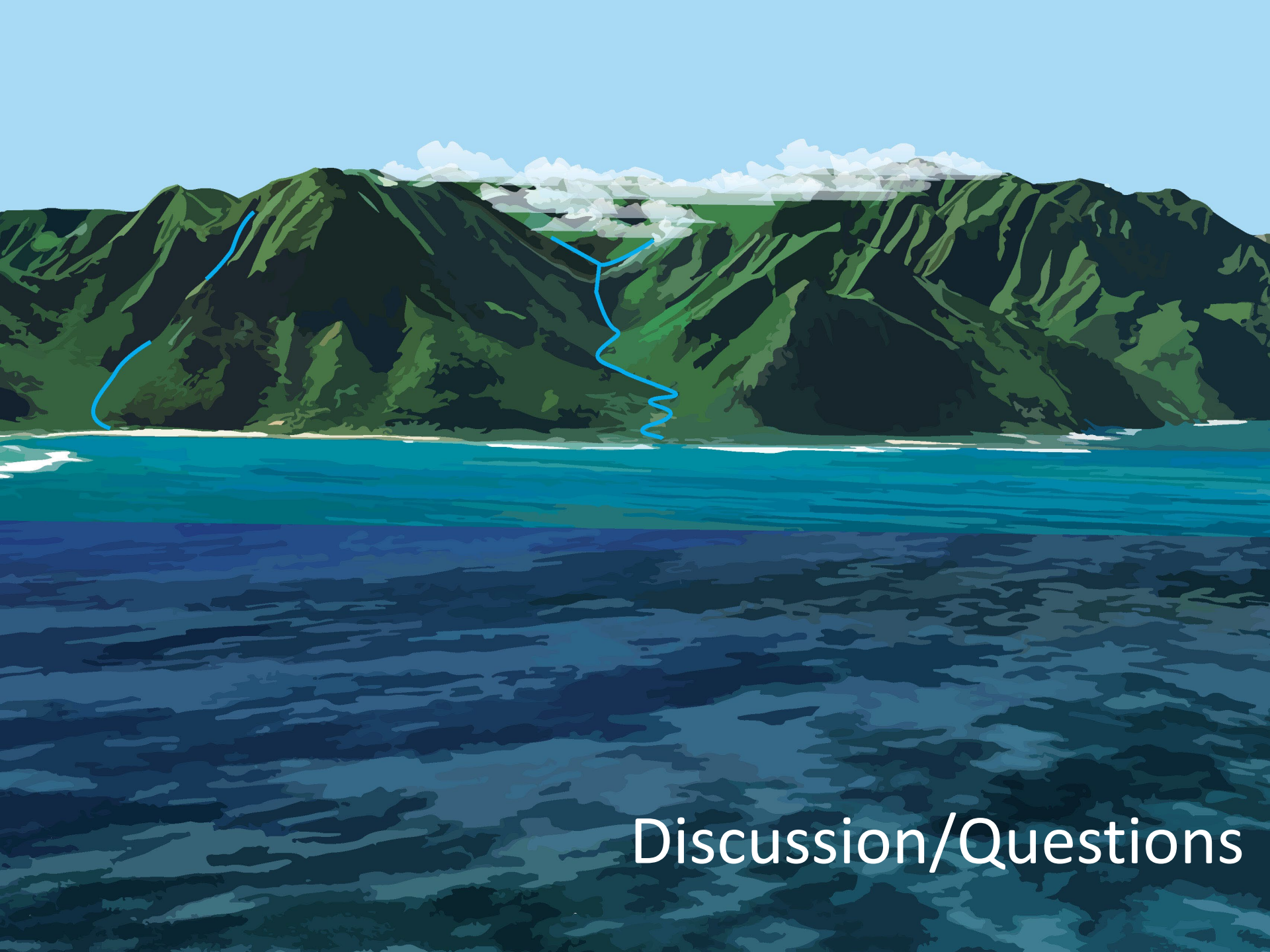
- Integration of traditional Native Hawaiian storytelling with modern storytelling (digital; social media)
- Helps to clarify roles and representation needed for communities to fully engage and participate in watershed management efforts.
- Encourages succession planning (transition of people, process) to encourage natural resource sustainability.

*People can see themselves as part of the solution
for improved local watershed management*

- 
- Increases community outreach through volunteerism
 - Locally branded communications products help facilitate change in local resident and visitor behavior
 - Garner more local support from outside policy makers and donors

NEXT STEPS

- “How to” Guide for Community Practitioners
- Highlighting our Hā‘ena as a model
- Leveraging our position
- Keeping the momentum
- On-going Outreach to volunteers, partners, donors



Discussion/Questions



Results Exercise

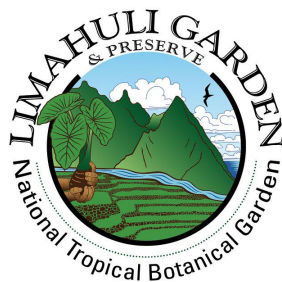
What do you think are the main results of the baseline assessment that will help your ahupua'a move forward with its management objectives?

1. Reflect on the information and data displayed on the poster and factsheet.
2. Using a sticky note, write one key take away, "aha", something new you learned, or value added gained as a result of this project.
3. Post it on the wall

M A H A L O



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