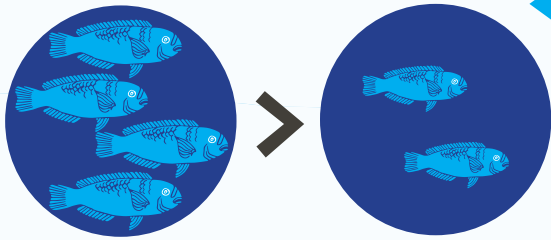


# Hau'ula to Punalu'u Watershed Snapshot 2016



## TARGET FOOD FISH

The numbers of near shore reef fish such as *Uhu* have decreased over the years likely due to a combination of factors including a loss of coral habitat, over harvesting of fish, and decreased water quality from pollution such as sediment runoff from land - NOAA FISHERIES, PACIFIC ISLANDS REGIONAL OFFICE

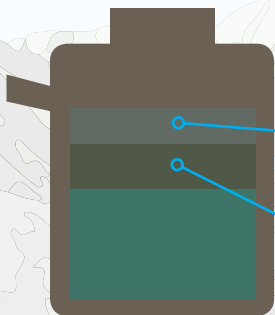
## AVERAGE ANNUAL RAINFALL



"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 Hau'ula still has clean, flowing water in the future."

- KAWIKA WINTER, PH.D.  
NATIONAL TROPICAL  
BOTANICAL GARDEN

## WATER QUALITY



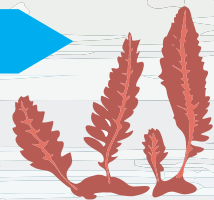
121 of 698 Cesspools are within 200 feet of a stream.

201 of 698 Cesspools are within 200 ft of the coastline.

## MARINE INVERTEBRATES AND ALGAE

"The oceans needs to drink. The zone where the wai (freshwater) from the land meets the kai (ocean water) is where the limu grows, and is the nursery for marine and stream life. We need good quality water flowing from mauka so that the ocean can be full of food."

- UNCLE HENRY CHANG WO, LIMU EXPERT, 1941 - 2015



5,439

## RESIDENT POPULATION (2010)

HAU'ULA'S POPULATION IN 2010 WAS 4,275 AND PUNALU'U WAS 1,164  
LAND AREA FOR HAU'ULA IS 1.2 SQ MI AND FOR PUNALU'U IS 2.1 SQ MI

## COMMUNITY INVOLVEMENT (2010-15)



13 Natural Resource Management Projects

2,650 Volunteers



## NATIVE VEGETATION (2011)

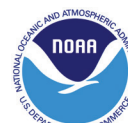
Native Forest Cover 27%



WWW.CONSERVATIONCONNECTIONS.ORG



Hawaii Conservation Alliance  
FOUNDATION



WWW.HAULACOMMUNITYASSOCIATION.NET

# » LOCAL MEASURES OF *AHUPUA*'A HEALTH

The Watershed Snapshot is a status report on the health of our *ahupua*'a, or watershed. In consultation with the Hawai'i Conservation Alliance, communities across the state identified metrics that would best define the health of their *ahupua*'a. Available data from resource management organizations was compiled to inform the selected metrics, and communities also collected socio-economic, and local *kūpuna* (elder) knowledge. An online library of all available watershed related data has been created as a public resource and can be found by visiting [hca.maps.arcgis.com](http://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](http://www.hawaiiconservation.org/communitysnapshot) for more information.

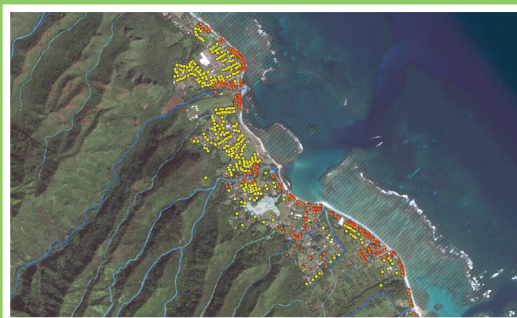
## HAU'ULA TO PUNALU'U

Located on the northeast coast of O'ahu in the Ko'olauloa *moku* (district) are the rural communities of Hau'ula and Punalu'u. Hau'ula and Punalu'u are small, coastal communities with fertile landscape fronted by sandy beaches and adjacent fringing reef. Five streams in Hau'ula and two streams in Punalu'u support natural wetlands and inland ponds. In the 1800s the lowlands contained a patchwork of lo'i, later rice fields and then sugarcane. In the 1900s land was subdivided into lots. Hau'ula is the first in the State to be NOAA Certified Storm and Tsunami Ready (2012, 2015).



In March 2016, a water quality training with community members resulted in data collection from three 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](http://hca.maps.arcgis.com). Also available is the Hau'ula to Punalu'u Web Map, which features data from the community snapshot metrics used for this project and additional requested data.

# » WATERSHED SNAPSHOT PROGRESS 2012-16



<< Honolulu to Napili, Maui

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

2013



<< Waimea, Hawai'i Island

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

2014



<< Hā'ena, Kaua'i

- 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

2015



<< Maunaloa Bay, O'ahu

- 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

2016