BWS Watershed Program

Amy Tsuneyoshi

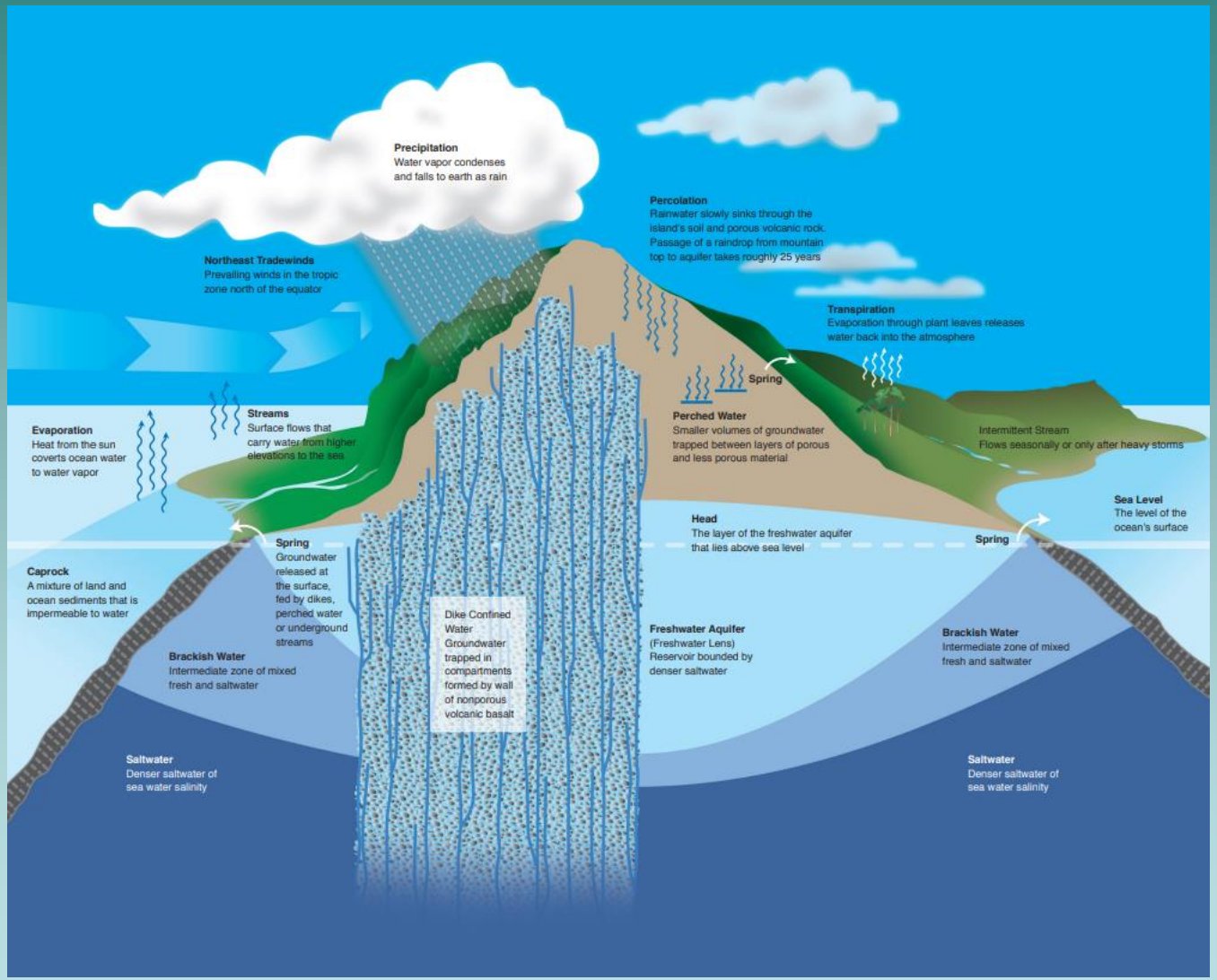
HWWA conference

October 16, 2025

WATER FOR LIFE

Safe, dependable, and affordable water now and into the future

Board of Water Supply
City and County of Honolulu



Background

2002 BWS Watershed Program created

2004 Honolulu Department of Human Resources adopts Watershed Resource Specialist series

2012 BWS Priority Watersheds

2013 Hired 2nd Watershed Resource Specialist
Initiated Watershed Funding MOAs

2021 Hired 2 more Watershed Resource Specialists (total of 4)

BWS Priority Watersheds

PURPOSE:

Prioritize watersheds from a water supply perspective

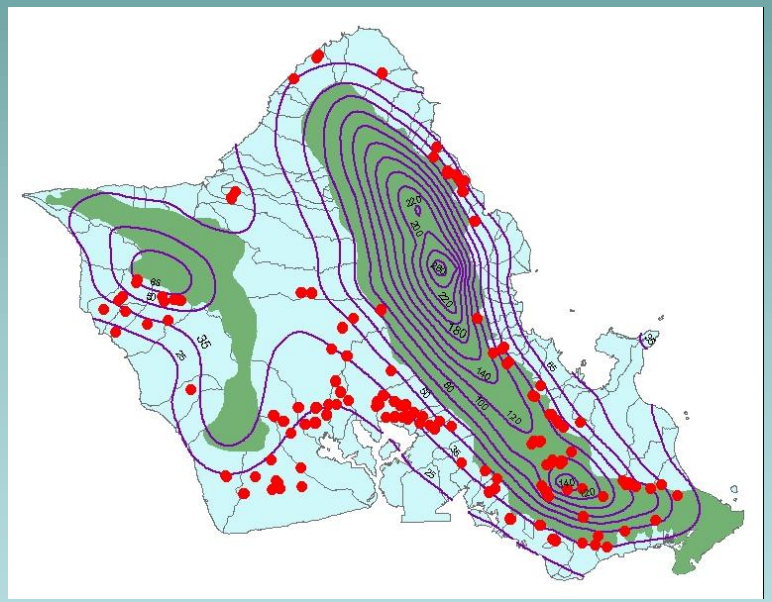
Focus funding and implementation efforts

BWS Priority Watersheds

METHOD: Identify INPUTS and OUTPUTS

Groundwater Recharge (INPUT)

- General soil/rock/vegetation type (ability to capture water for recharge)
- Rainfall (potential amount for recharge)



Production (OUTPUT)

- Production amount compared with Sustainable Yield
- Chloride concentrations

BWS Priority Watersheds

Potentially High Recharge Watersheds – Koolau	Potentially High Production / High Chloride Watersheds – Koolau
Waimea	**Waikele**
Kawainui (North)	**Waiawa**
Kawaiiki	Kapakahi
Opaeula	**Waimalu**
Helemano	**Kalauao**
Poamoho	Aiea
Kaukonahua	**Halawa**
Waikele	**Moanalua**
Waiawa	Kalihi
Waimalu	Kapalama
Kalauao	**Nuuanu**
Halawa	**Makiki**
Moanalua	**Manoa-Palolo**
Nuuanu	Ala Wai
Makiki	Waialaenui
Manoa-Palolo	Wailupe
Malaekahana	Kuliouou
Kahawainui	**Punaluu**
Wailele	
Koloa	
Kaipapau	
Maakua	
Waipuhi	
Kaluanui	
Punaluu	
Kahana	
Waikane	
Waiahole	
Kaalaea	
Waihee	
Kahaluu	
Kawainui (South)	

Potentially High Recharge Watersheds – Waianae	Potentially High Production / High Chloride Watersheds – Waianae
Kaupuni	**Makaha**
Makaha	Kamaileunu
Keaau	**Kaupuni**
Makua	Makaiwa
Kawaihapai	Kaloi
Pahole	Honouliuli
Makaleha	
Waialua	
Kaukonahua	

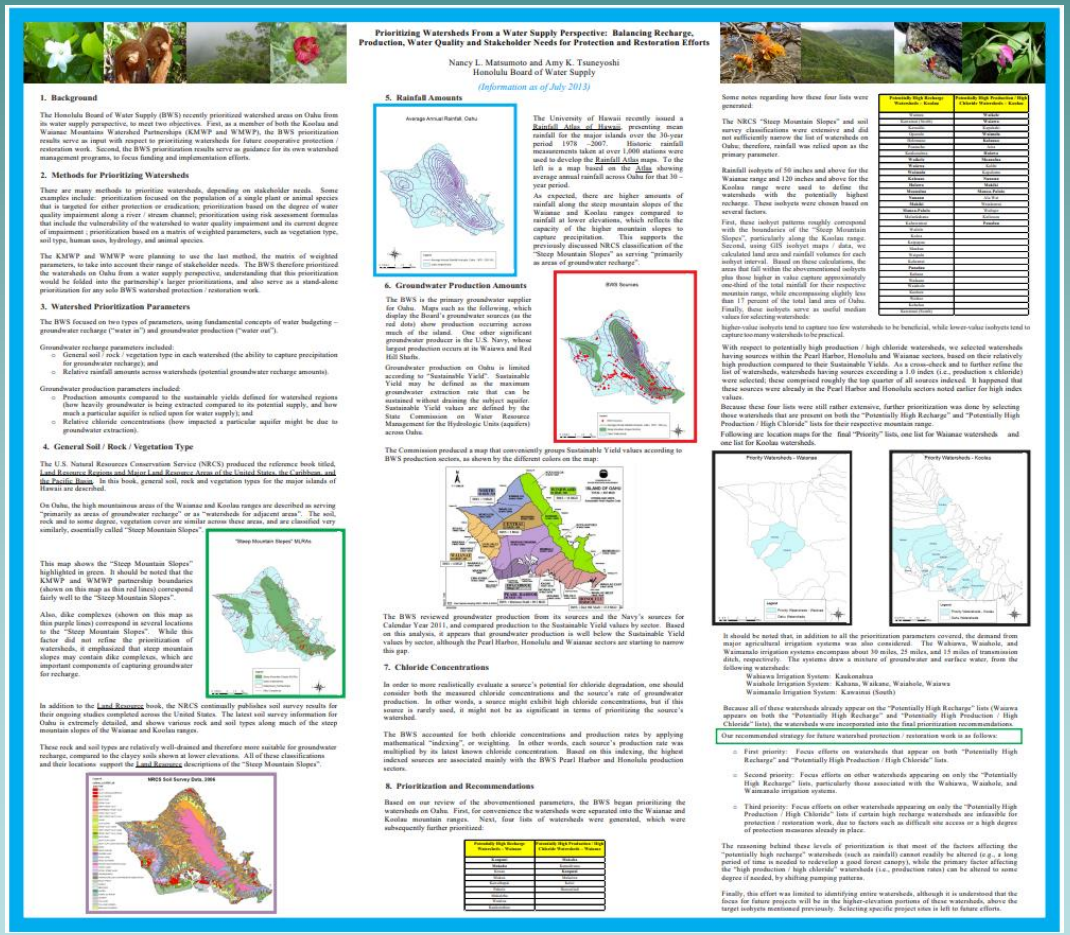
BWS Priority Watersheds

Priority Watersheds (Waiʻanae)	Priority Watersheds (Koʻolau)
Kaupuni (Waiʻanae Kai)	Waikele (Kipapa)
Mākaha	Waiawa
	Waimalu
	Kalauao (ʻAiea)
	Hālawa
	Moanalua
	Nuʻuanu
	Makiki
	Mānoa-Pālolo
	Punaluʻu

BWS Priority Watersheds

Link to the poster

https://www.boardofwatersupply.com/watershedstudies



Prioritizing Watersheds From a Water Supply Perspective: Balancing Recharge, Production, Water Quality and Stakeholder Needs for Protection and Restoration Efforts

Nancy L. Matsumoto and Amy K. Tsuneyoshi
Honolulu Board of Water Supply

(Information as of July 2013)

1. Background

2. Methods for Prioritizing Watersheds

3. Watershed Prioritization Parameters

4. General Soil / Rock / Vegetation Type

5. Rainfall Amounts

6. Groundwater Production Amounts

7. Chloride Concentrations

8. Prioritization and Recommendations

BWS Watershed Funding

Initiated in FY14

BWS Funding Memoranda of Agreements (MOA)

Government to Government agreements

5-year terms

BWS Watershed Funding

Projects are discussed with measurable deliverables

Proposals are submitted annually for BWS approval in the next FY budget

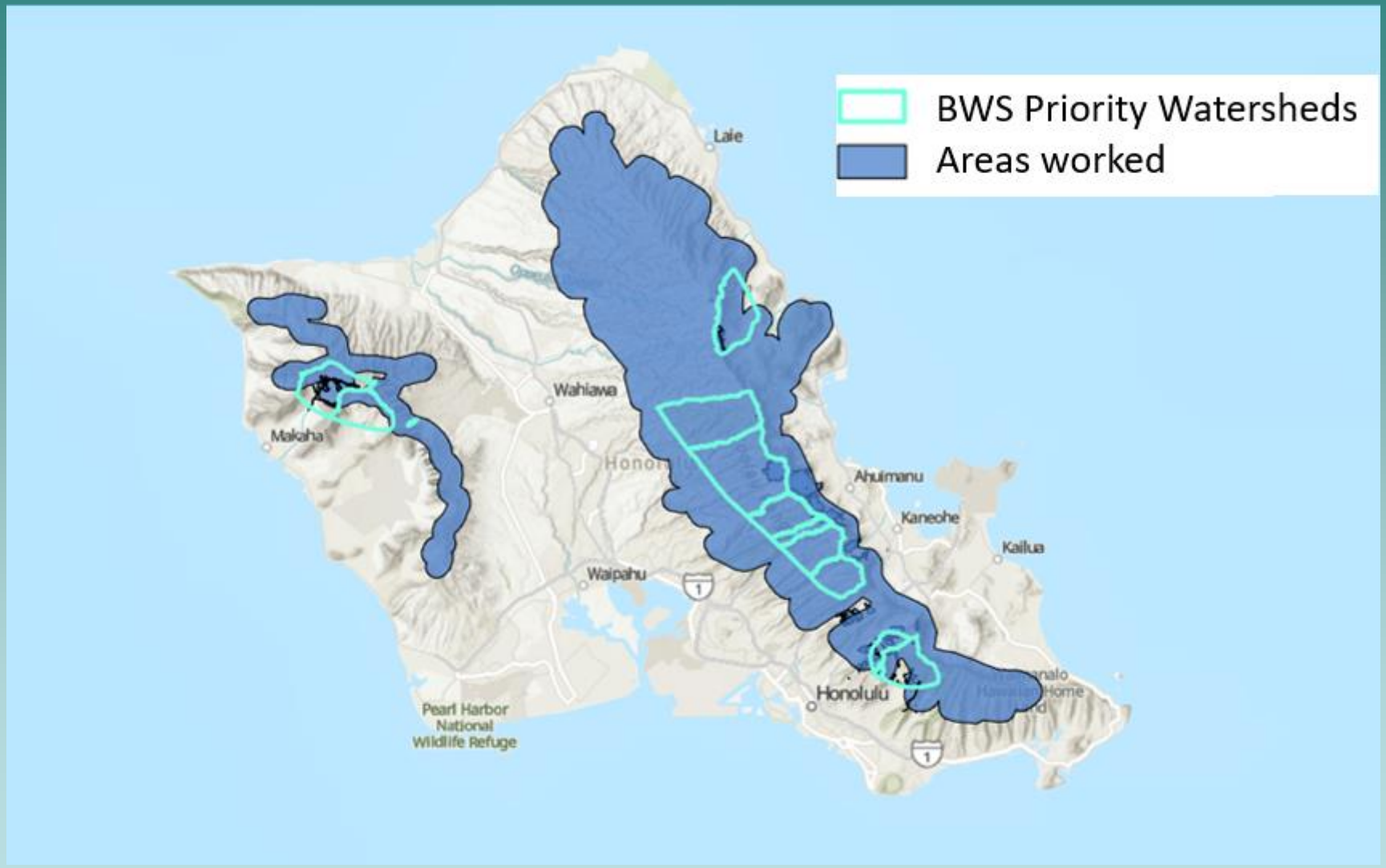
Projects are awarded (subject to available funding) and typically accomplished within 1 year

Reports are submitted per project/FY funding

Watershed Funding FY14 to FY26

FY14	$40,000
FY15	$230,000
FY16	$237,721
FY17	$504,018
FY18	$505,840
FY19	$672,075
FY20	$801,615

FY21	$914,128
FY22	$855,089
FY23	$1,021,276
FY24	$1,084,646
FY25	$1,272,781
FY26	$1,426,778


BWS Priority Watersheds
Areas worked
Laie
Wahiawa
Makaha
Ahuimanu
Kaneohe
Kailua
Waipahu
Honolulu
Pearl Harbor
National
Wildlife Refuge

Benefits to BWS

Watershed protection and natural resource management activities help to:

- improve the forest's ability to capture and retain rainfall
- reduce erosion and sedimentation
- improves ground water recharge.

Benefits to BWS

BWS funding can be used to match additional funding (State/Federal) to increase watershed management activities.

Increased outreach about the importance of watershed protection and ground water recharge to school groups and the public by our partners.

O‘ahu Invasive Species Committee

BWS was founding member

Formed in 2001

Funding MOA expires 2028

OISC
O'AHU INVASIVE SPECIES COMMITTEE

Photos courtesy of OISC

Department of Land and Natural Resources (DLNR) Division of Forestry and Wildlife (DOFAW)

Funding MOA expires 2028

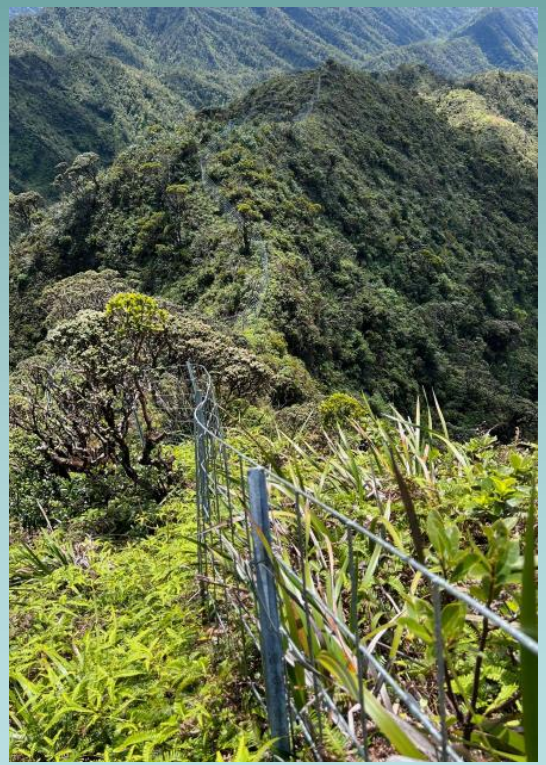
Photos courtesy of DLNR/WMWP

Ko‘olau Mountains Watershed Partnership

BWS was a founding member

Formed in 1999

Funding MOA expires 2030



Photos courtesy of KMWP

Wai‘anae Mountains Watershed Partnership

BWS was a founding member

Formed in 2010

Funding MOA expires 2030

Photos courtesy of WMWP

‘A‘ohe Hana Nui ke Alu ‘ia.

No task is too big when done together by all.

- Mary Kawena Pukui

Wai‘anae Mountains Watershed Partnership

- Yumi Kam
- WMWP Program Manager

WMWP is a voluntary partnership between major landowners and stakeholders in the Waianae Mountains. The partnership was formed on April 22, 2010 with 7 original partners signing a Memorandum of Understanding.

Partners:

- Department of Land and Natural Resources
- Gill Ewa Lands
- Honolulu Board of Water Supply
- Kaʻala Farms Inc.
- Kaʻala Ranch
- MAʻO Organic Farm
- Oahu Army Natural Resources Program
- Navy Region Hawaii

Associate Partners:

- Malama Learning Center
- Oahu Invasive Species Committee
- Oahu Plant Extinction Prevention Program
- US Fish and Wildlife

47,121 acres of mauka conservation land in the Waiʻanae Mountains

WMWP is a project under the University of Hawaii on behalf of the College of Natural Sciences for the Pacific Cooperative Studies Unit

Wai‘anae Mountains Watershed Partnership

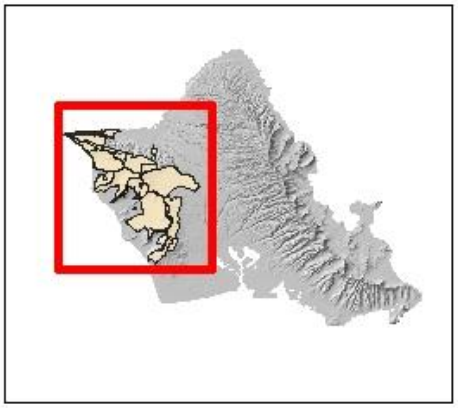
Legend

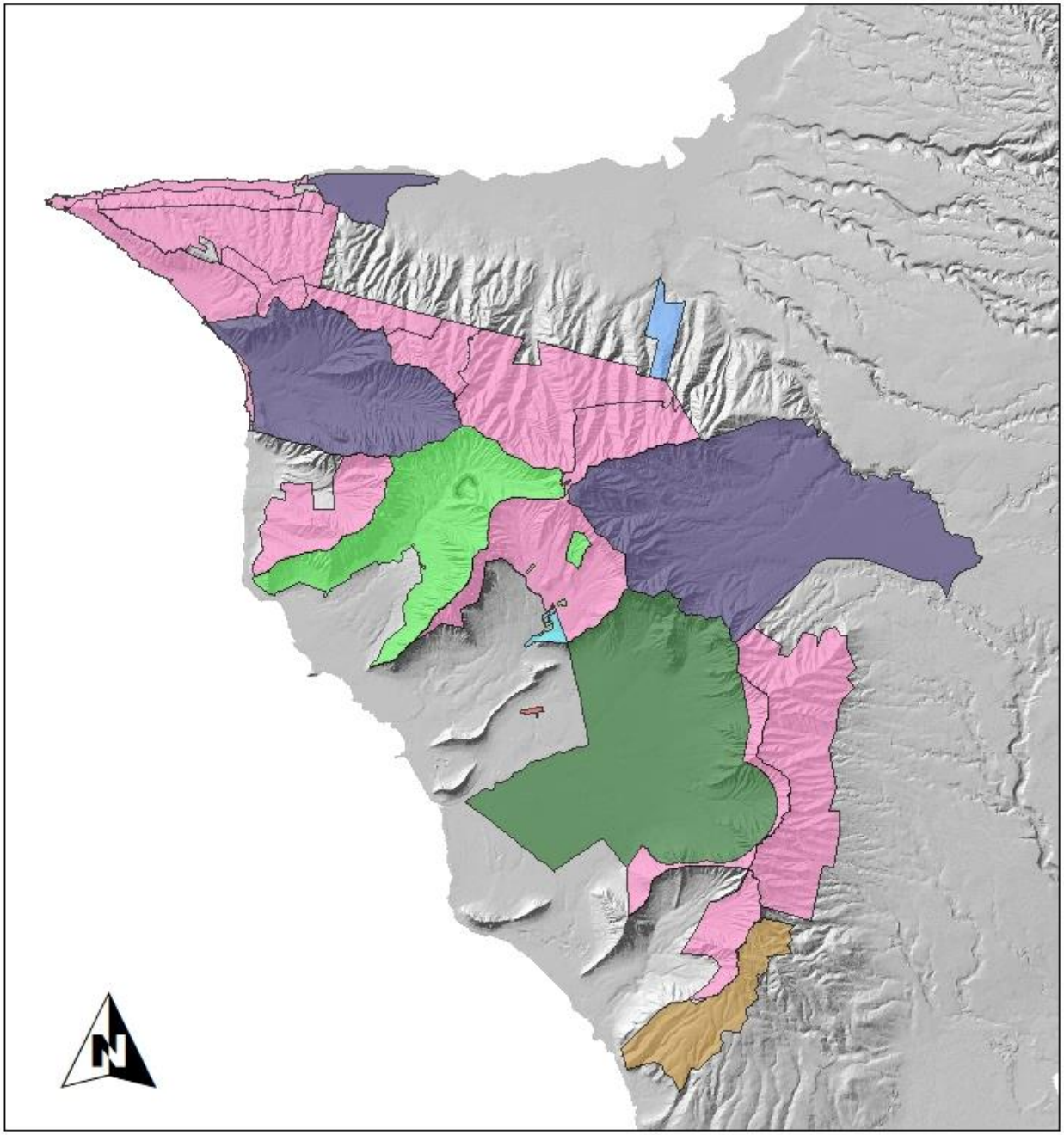
WMWP

Landowners

- Army
- County (HBWS)
- Gill Ewa Lands
- Kaala Farms
- Kaala Ranch
- Mao Organic Farms
- Navy
- State (DLNR)

0 2.5 5 Miles



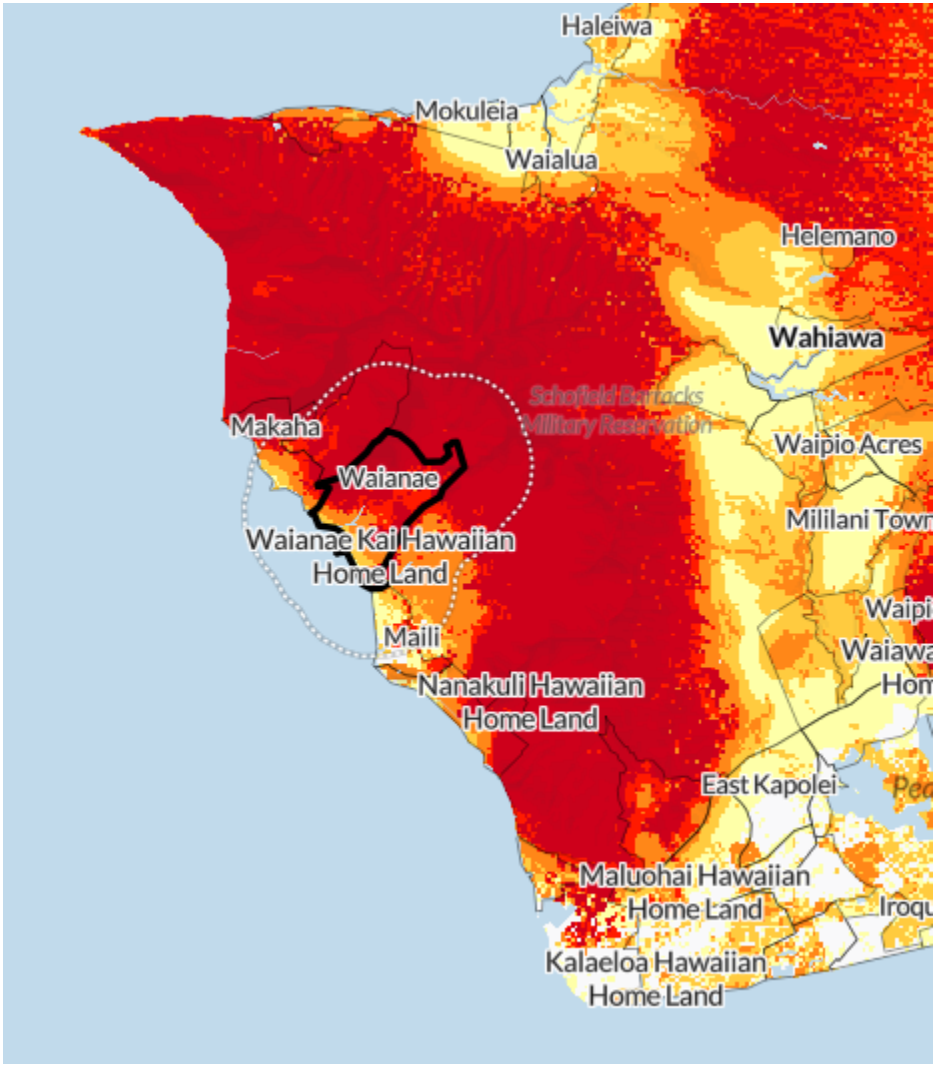


Waianae Kai Forest Reserve – Wildfire Fuel Load Reduction, Vegetative Fire Break Installation, Native Plant Restoration

Homes in Waianae have, on average, greater risk than 100% of communities in the US.

Wildfirerisk.org

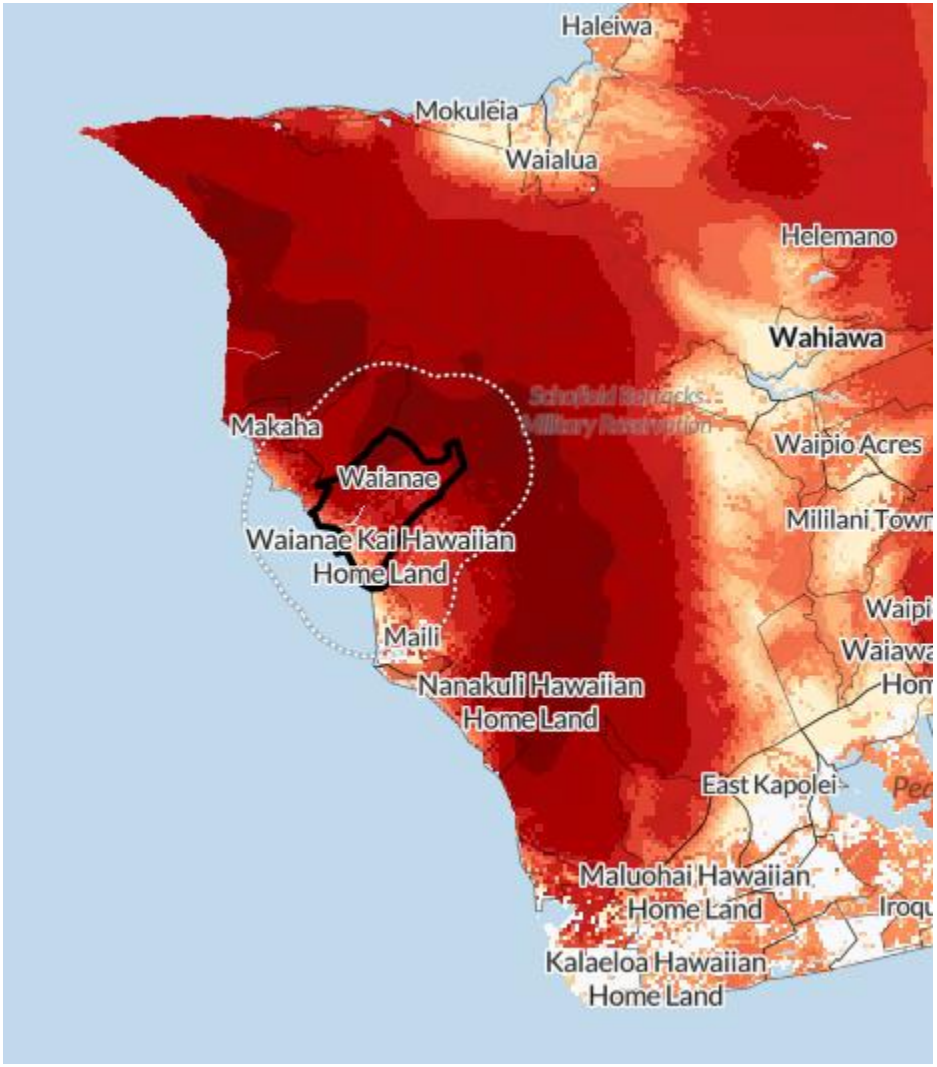
Risk to homes measures the relative consequence of wildfire to residential structures everywhere on the landscape, whether a home actually exists there or not.



Waianae has, on average, greater wildfire likelihood than 100% of communities in the US.

Wildfirerisk.org

Wildfire likelihood is the probability of wildfire burning in any given year.



Waianae Kai Forest Reserve – Wildfire Fuel Load Reduction, Vegetative Fire Break Installation, Native Plant Restoration

Nurseries and Propagation

Makaha Valley – Fuel Load Reduction, Fire Break Installation

Makaha Valley
Weed Control, Ecosystem Restoration, Erosion Management









2026
Hawai'i State
Teacher of the Year
David Adler
Nānāhuli-Wai'anae
Josette "Kaleo" Akim Hanohano
Castle-Kahuku
Jessica Canyon
Farrington-Kaiser-Kalani
Susan Chew
Hāna-Lahainaluna-Lāna'i-Moloka'i
Claire Ann "Kalaunuola" Domingo
Public Charter Schools
Steve Hanks
Honoka'a-Kealakehe-Kohala-Konawaena
Judith "Elise" Hannigan
Ka'u-Kea'au-Pāhoa
Christopher Justo
Leilehua-Mililani-Waialua
Jodi Kadoyama
Pearl City-Waipahu
Emily Mendoza
Aiea-Moanalua-Radford
Kristel Pigao
Baldwin-Kekaulike-Kalani'ōhiali'i-Maui
Dawn Spurrell-Robinson
Hilo-Waiākea
Courtney Suma
Campbell-Kapolei
Kris Tajima
Kaimuki-McKinley-Roosevelt
Kathleen Trifonovitch
Kailua-Kalāheo
Natsumi Yamasato
Kapa'a-Kaua'i-Waimea


FOREST SERVICE
US
DEPARTMENT OF AGRICULTURE
O'ahu
Army
Natural
Resources
Program
U.S.
FISH & WILDLIFE
SERVICE
DEPARTMENT OF THE INTERIOR
Board of Water Supply
FORESTRY AND WILDLIFE
HAWAII
UNIVERSITY OF HAWAI'I
UA MAU KE EA O KA 'ĀINA I KA PONO
1907
Pacific Cooperative Studies Unit
PCSU
MAKAMAKA'ĀINANA
1973
University of Hawai'i at Mānoa
Mālama
Learning
Center
KAPŪ KAKĪ
LAMINELLA SANGUINEA
VOTE FOR LAMINELLA SANGUINEA AS THE OFFICIAL OAHU SNAIL
ALASKA