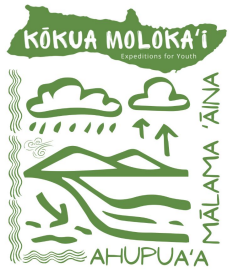


# Why Watersheds?







### **Watershed Definition:**

**A land division from ridge to ridge, including the waters that flow into the valley, stream, or river. A drainage basin from the ridge to the ocean.**

# **Watersheds**

The Hawaiian Islands are volcanic islands that have been weathered and shaped by rain and wind erosion over time. Moloka'i is estimated to be around 1,300,000 years old. Over time, the geology of the land has developed ridges and valleys. **Watersheds** start at the top of the mountain and end at the sea and can include several different types of habitats at different elevations.

# The Ahupua'a System

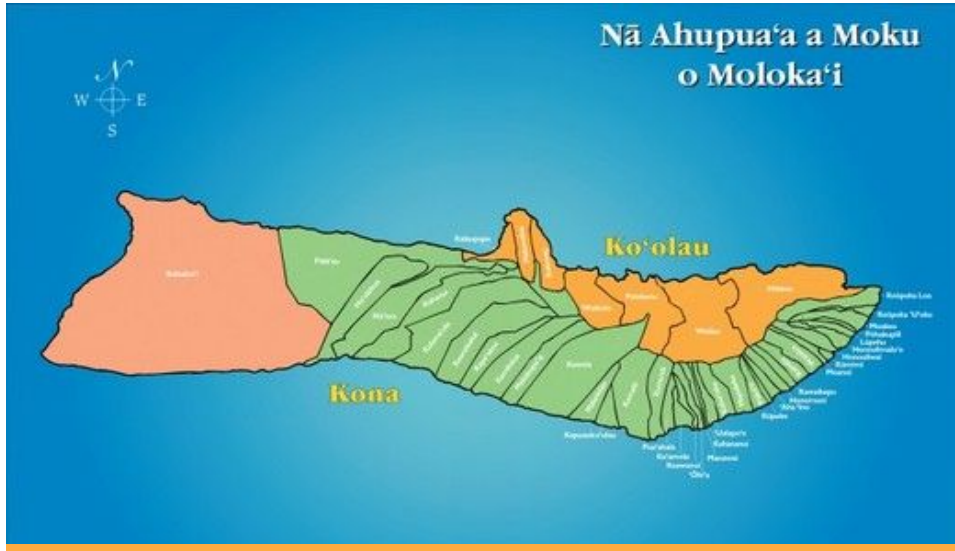
In ancient Hawai'i the traditional land use system was broken into separate ahupua'a's that resemble the current watersheds. The ahupua'a system was an advanced system of caring for the land in an area from the ridge of the mountain to the coastal area where edible crops were grown and most families lived. Many ahupua'a's had specialty products such as: pa'akai (salt), i'a (fish), kalo, u'ala, hala, makaloa, and niu (coconut).

## Each Ahupua'a...

- is a land division from mauka to makai
- had an Ali'i or chief
- had a Konohiki or manager
- had Maka'ainana or common people
- traded with other areas for goods they needed
- had different growing areas for food and fish cultivation
- included both land and marine resources

# The Ahupua'a of Moloka'i

The map of the ahupua'a on Moloka'i demonstrates that the sizes of the land divisions vary due to the size of the watershed area. In the dryer areas of the island the ahupua'a's were much larger.



Why are ahupua'a's so much larger in drier areas?



# Watershed boundary lines

Each watershed on Moloka'i runs from mauka to makai and has a variety of elevations. This is an image from a GIS map that shows the watersheds with place name labels.



# Why do we study watersheds today?

We study watersheds to learn:

- about rainfall and aquifer recharge
- about the habitats of plant and animal species
- how to protect public health by protecting our clean water sources
- about cultural practices
- how to reduce sediment runoff
- about ridge to reef connections



# Watershed Protection



Thinking in terms of keeping the watershed healthy helps humans in Hawai'i care for the land. We can see the connections between human activities on the land and how they affect the ocean and the reefs.

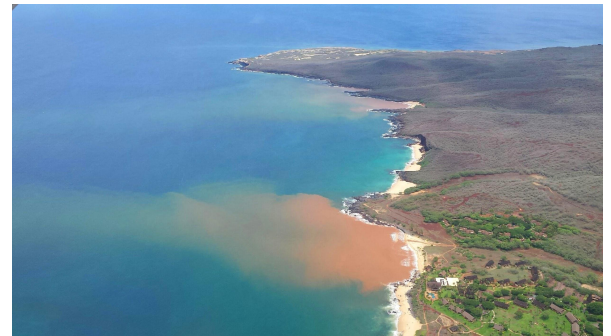


To protect watersheds we must preserve the native forest at the top of the mountains on all the Hawaiian islands. Watershed protection sometimes includes fencing to keep animals like deer and pigs from eating the forest and causing additional erosion.

# The East Moloka'i Watershed Partnership

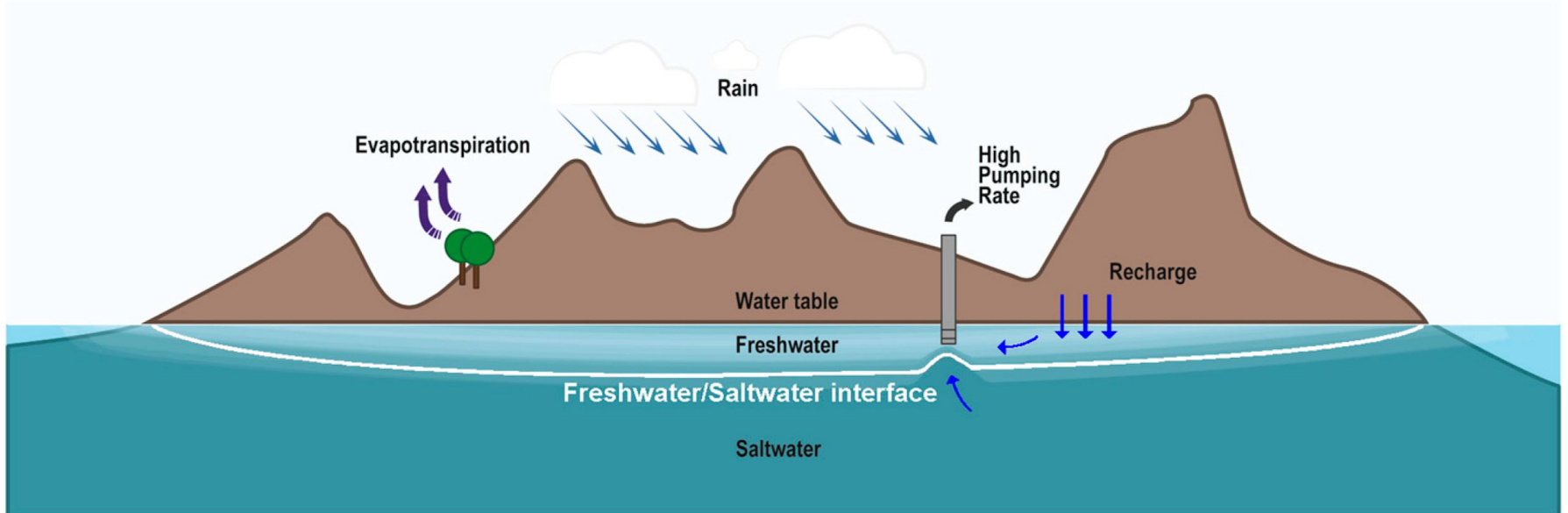
The East Moloka'i Watershed Partnership (EMWP) is an effort led by the Nature Conservancy and the Department of Land and Natural Resources to partner with landowners and smaller organizations to protect Moloka'i's watershed. Together, EMWP manages problems on the south slopes of the island in order to fence and protect the remaining native forests at the tops of the mountain slopes.

EMWP understands that soil washes down to the ocean and clogs fishponds and wetlands, kills corals which need sunlight to grow, and feeds invasive algae that smothers the reef. Fencing the native forests helps protect the area from hooved animals. The fenced areas with plants hold the soil and absorb more rainwater, helping Moloka'i to recharge its aquifer.



# Protecting our watersheds protects our freshwater

Scientists have found that the forests at the upper parts of our watersheds help collect rainwater and mist droplets from clouds to recharge the **aquifer**. An **aquifer** is a natural underground water reservoir where the rock and sand beneath an island are saturated with freshwater.



The rainwater is filtered through the rock of the island and collects within the aquifer.



- What will you think about when you look up to the mountain tops?
- Will you think of the importance of protecting our watersheds?
- Will you think of the rainfall collected by the forests?
- Will you think of ways to protect our watersheds and forests?

**A steward of the land understands that taking care of our watersheds protects our coasts, oceans, freshwater and reefs.**

# Sources

Ahupua'a Art - <http://www.waimoku.com/>

Maui Now, Maui News, Moloka'i Forests To Be Protected From Wildfires and Erosion, 11/28/2020,  
<https://mauinow.com/2020/11/28/molokai-forests-to-be-protected-from-wildfires-and-erosion/>

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