



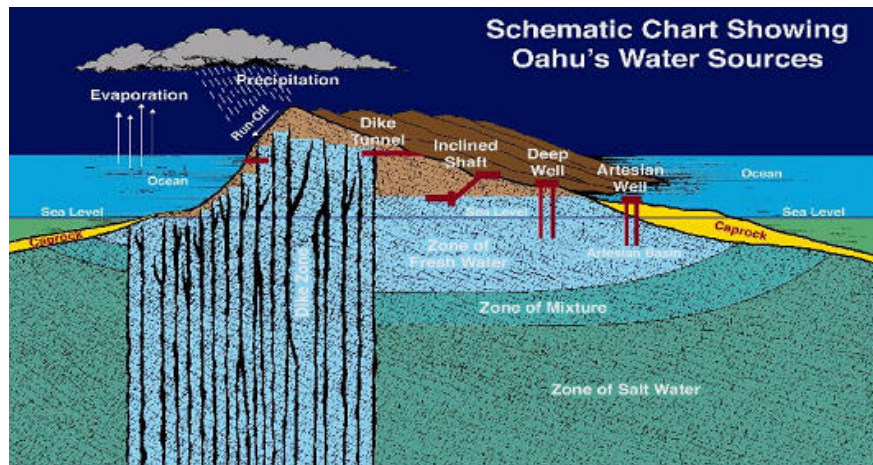
Oahu's Water Cycle and You

Water is our most essential resource. It is an ever-present part of our daily lives and the world we live in. But where do we get our water from and what can you do to help protect this precious resource?

Where does our water come from?

Unlike other islands, on Oahu we rely solely on water from underground sources. These groundwater sources are dependent on three essential natural elements:

1. **Northeast tradewinds** drive clouds, moisturized by evaporation from ocean waters, inland.
2. **High mountain ranges** capture and force the moisture-laden clouds to higher elevations, resulting in condensation and rainfall on watershed areas.
3. **Our island's geological landscape** serves as a natural filtering and



underground storage system of water. As rainwater slowly percolates into the earth, water is naturally filtered by our volcanic soil and stored by dike rock compartments, which overflow and fill the aquifer. Our island's aquifer is an underground, natural, freshwater reservoir from which the BWS eventually extracts your water. It takes approximately 25 years for rain water to percolate to these underground aquifers and make its way to your tap!

How do watersheds help the water cycle?

Rainfall is only one part of the water cycle. We also need healthy watersheds, areas of land enclosed by mountain ridges, to catch and collect the rainfall to replenish ground water supplies. Oahu has two primary watersheds: one in the Koolau Mountains and another on the crest of the Waianae Range. A healthy watershed has a multi plant canopy, which means it has a tree layer, a shrub layer and a ground cover level. Together the vegetation in these layers acts like a giant sponge, allowing water to drip slowly underground and into our streams. If the forest is degraded, rain will fall onto bare earth causing erosion, and the rainwater will run off the surface instead of seeping into the ground to replenish our aquifers.

What threatens our watersheds?

Foreign plants and animals brought to Oahu threaten our Hawaiian rain forests by destroying or competing with native plants and animals. Non-native and invasive plants, including miconia, Christmas berry and strawberry guava have displaced native forest plants and kill understory growth. Pigs, goats and sheep eat and uproot native plants, creating soil erosion and space for foreign plants to grow. Introduced birds like the bulbul compete for food and harbor diseases that have reduced or completely destroyed native bird and insect populations.

What can you do to help?

You can help to protect and restore our Hawaiian rain forests and watersheds by participating in projects that remove invasive plants and animals, joining community watershed partnerships, and by educating others of the importance of watersheds. For more information on how you can join the effort to protect our watersheds and forests, please visit www.boardofwatersupply.com or call the BWS at 748-5000.