

U.S. Fish & Wildlife Service

Keālia Pond

*National Wildlife
Refuge*



Keālia Pond NWR provides a vital wetland home for the endangered Hawaiian stilt and Hawaiian coot, and for migrating waterfowl and shorebirds.



Hawaiian coot and chicks
© Daniel Clark

About the Refuge

Unique Environment

The 700-acre Keālia Pond National Wildlife Refuge was established in 1992 to provide sanctuary for two endangered Hawaiian waterbirds, the Hawaiian coot (‘ālae ke‘oke‘o) and the Hawaiian stilt (ae‘o). It is one of the few natural wetlands remaining in the Hawaiian Islands, and the largest lowland wetland in Maui.

Keālia Pond is a significant foraging and nesting area for Hawai‘i’s endangered wetland birds and host to hundreds of migratory shorebirds and waterfowl during the winter months. The refuge also provides coastal beach strand habitat for native plant species and for the threatened Hawaiian green sea turtle (honu) and endangered hawksbill sea turtle (honu‘ea).

A System of Refuges

Keālia Pond NWR is part of the National Wildlife Refuge System, the world’s premier system of public lands and waters set aside to conserve America’s fish, wildlife, and plants.

Since President Theodore Roosevelt designated Florida’s Pelican Island as the first wildlife refuge in 1903, the System has grown to more than 150 million acres and over 550 refuges. Wildlife refuges are home to more than 700 species of birds, 220 species of mammals, 250 reptile and amphibian species, and more than 200 species of fish. Keālia Pond NWR is one of 59 refuges that have been established with a primary purpose of conserving threatened or endangered species.



This blue goose, designed by J.N. “Ding” Darling, has become the symbol of the National Wildlife Refuge System.

Wetland Oasis

Lowland Wetland

The Keālia Pond lowland wetlands are a sediment basin, shaped like a shallow bowl sitting at the bottom of a 56-square-mile watershed.

There are striking seasonal variations in the water levels of the pond. At the height of the rainy season, the pond is three to four feet deep; the water is cooler and less salty and swells to cover 400 acres, more than half of the refuge lands. In the dry days of spring and summer, less stream water flows into the pond, and the water becomes more shallow, warmer, and saltier.

Keālia slough



Throughout the year, the wetlands function as a sponge, absorbing and filtering excess nutrients, sediments, and pollutants from incoming water before it flows to the sea, resulting in healthy reef and shallow bay ecosystems. In the process, the pond stores nutrient-rich sediment, creating a rich habitat for invertebrates, the favorite food of resident and migratory birds.

Seasonal Changes

Seasonal water level changes in Keālia Pond NWR fit the needs of the birds, making it a great place to observe Hawai'i's endangered wetland birds and many migrating shorebirds and waterfowl.

Hawaiian coot and chick on nest

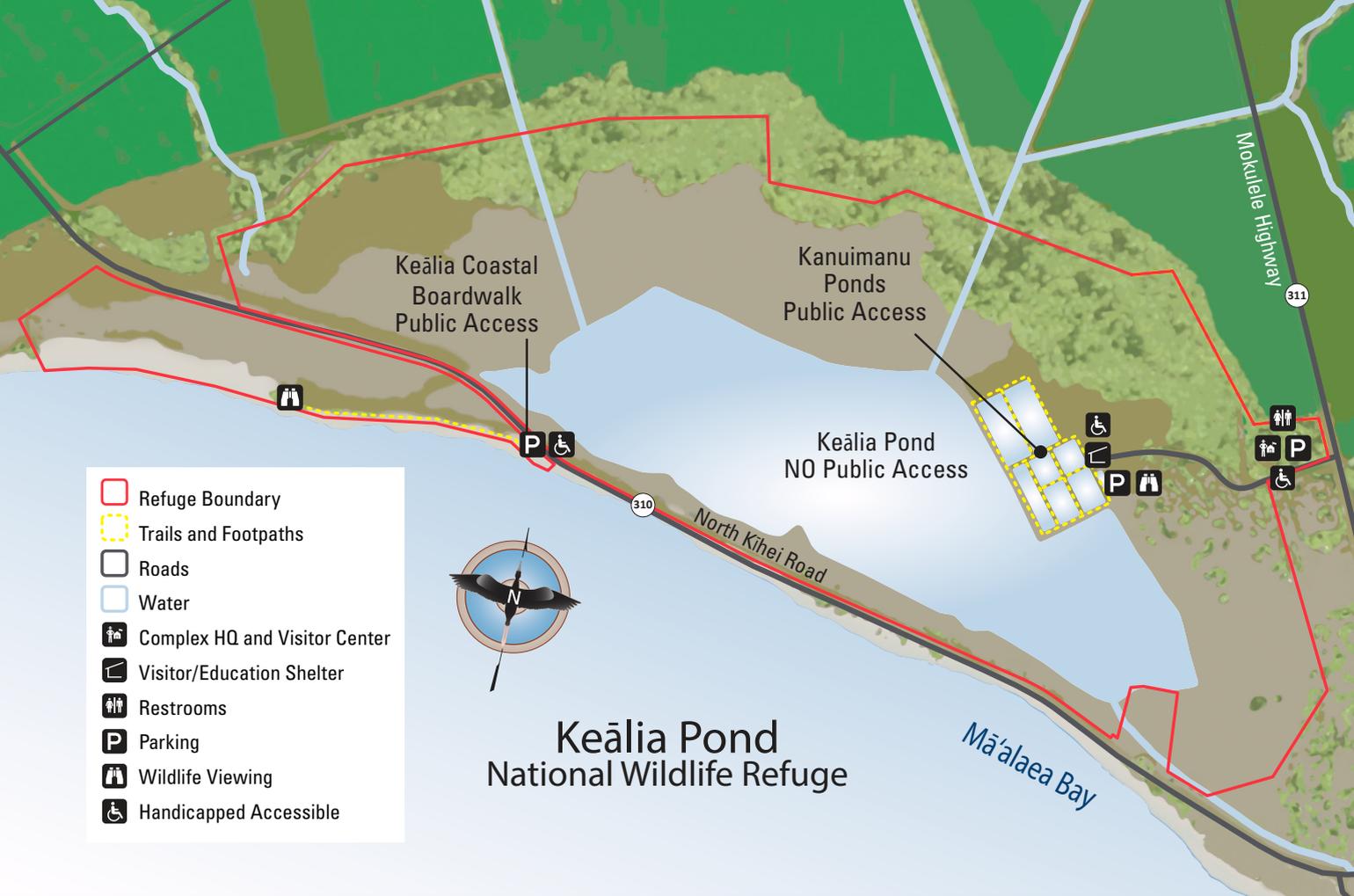


© LHG Creative Photography

Hawaiian coots (‘ālae ke‘oke‘o) build their nests in the wet season, between December and April. The high water makes it possible for them to build floating nests that provide protection from predators and allow their young to feed nearby on plants and invertebrates.

Hawaiian stilts (ae‘o), on the other hand, build their nests in the mudflats in the dry season between April and July so that their young chicks can safely feed in water three inches or less in depth. The young eat worms, larvae, and water bugs.

Migratory birds flock to Keālia Pond NWR from as far away as Alaska, Canada, and Asia. Most arrive between August and December, and they often stay through March. Migrant shorebirds probe the mudflats and shallow waters for food, while migrant waterfowl dive for their food in the deeper waters of the wetland ponds.



Wildlife Viewing



Enjoy wildlife observation and photography from dirt paths along the Kanuimanu Ponds near the Visitor Center and from the Keālia Coastal Boardwalk on North Kihei Road. Visitors can also walk from the Visitor Center to the paths at Kanuimanu Ponds. Ask Visitor Center staff for a bird list.

Prohibited Activities



Fishing, hunting, off-road vehicles, and camping are not allowed on the refuge. Federal and state laws protect endangered stilts, coots, ducks, green sea turtles, and hawksbill sea turtles. Please keep your distance.



Native Waterbirds Two endangered endemic waterbirds, the Hawaiian coot (‘ālae ke‘oke‘o, meaning “white forehead”) and the Hawaiian stilt (ae‘o, meaning “one standing tall”) live year round in the Keālia Pond wetlands. They arrived in Hawai‘i long ago, and have adapted to the unique wetland systems of the island chain.

Hawaiian stilts



© Norman Kaleomokuanali Choock

These two birds share the same habitat, but because they nest at different times and in different parts of the wetland environment, they can forage and nest without competing with each other.

The native black-crowned night heron (‘auku‘u) and two endemic Hawaiian birds—the endangered Hawaiian duck (koloa maoli) and the Hawaiian short-eared owl (pueo)—also live in and around Keālia Pond NWR, sharing the riches of the refuge habitats.

Hawaiian coot



© Bruce Fulton

Hawaiian duck



Brenda Zaun/USFWS

Black-crowned night heron



© Shihmei Barger

Long-Distance Visitors

Pacific golden plover



© Norman Kaleomokuanali Choock

Migratory waterfowl and shorebirds visit the refuge from autumn through spring. They breed in Alaska, Canada, and Siberia and travel over 2,000 miles across the ocean to winter in Maui and throughout the Hawaiian Islands. Some stop in Hawai‘i to feed and rest, then continue on to the south Pacific.

The sanderling (hunakai, or “sea foam”) is one of the smallest of the visiting shorebirds. The Pacific golden plover (kōlea, or “boaster”) travels non-stop from Alaska, navigating by the stars to return to the same territory each year. In spring, this normally solitary bird joins other plovers to return to Alaska. The ruddy turnstone (‘akekeke, or “talkative”) turns over stones and other marine debris to find its food, and the wandering tattler (‘ulili, a name that sounds like its call) is a sentinel, warning other birds when predators are near. You may also see migratory waterfowl like the Northern shoveler and the Northern pintail.

Sanderling



© Mark Faviell

If you would like to track refuge birds, please ask the Visitor Center staff for our refuge bird list.



Northern shovellers
© Peter Massas

Other Natives*Hawksbill turtle hatchlings*

Two of the several sea turtles that visit Maui waters may be seen on the refuge. Hawksbill sea turtles (honu'ea) are federally listed as endangered under the Endangered Species Act. They feed on sponges in the offshore reefs and nest in the coastal dune habitat of the refuge from June to September. During this time, the female crawls

onto the beach above the high-tide line, digs a pit, and deposits her eggs. After two months, the eggs hatch, and the hatchlings climb out of the sand and make their way to the ocean—almost always under cover of darkness.

Hawaiian green sea turtles (honu) live in the ocean near the Hawaiian islands, and are federally listed as threatened under the Endangered Species Act. Most of them breed in French Frigate Shoals. You may see them resting or sunning themselves in the coastal dunes area of the refuge, and on beaches throughout the Hawaiian Islands.

Green sea turtle

© Cheryl King



Little is known about the early native Hawaiian uses of Keālia Pond. In the dry season, the pond shrinks to half its winter size, leaving a crust of crystalline salt at its margins. The name Keālia means “salt encrusted,” and archaeologists tell us that the Hawaiian people gathered salt in this region for centuries.

The natural habitats in and around the wetlands slowly changed as Hawaiians grew taro and used trees to build canoes and as Euro-Americans used the land for crops and other commercial enterprises. In the 1870s, Dwight Baldwin and William Alexander came to Maui to grow sugarcane. At its height, their company planted more than 100,000 acres, diverting water from the West Maui Mountains and Haleakalā that normally helped fill the wetlands.

Early in the 20th century, Waihe'e Dairy used the Keālia Pond area as grazing land for their cattle.



Sugarcane field
 Courtesy of University
 of Chicago Library
 Special Collections

The first Maui airport was constructed near the refuge at Mā‘alaea Flats in 1929. During World War II, soldiers of the 2nd and 4th Marine Divisions used the Keālia and Kihei area as a training site, and remnants of a firing range and

airstrip are just outside the refuge boundary. The airport itself was eventually moved, first to Pu‘unēnē, a few miles north of the refuge, then to Kahului.

In the 1970s, commercial aquaculture ponds were built near the shore of Keālia Pond to raise catfish, tilapia, and apple snails. The man-made ponds were steep-sided and deep, ill-suited to meet the food and nesting needs of wetland birds. Now called Kanuimanu Ponds, they have been restored for wetland bird habitat.

In the 1960s, developers began building in the area surrounding the refuge, and today nearby Kihei is one of Hawai‘i’s busiest beach towns. Development presents ongoing challenges to the wetland habitat and the wildlife that depend on it.

Keālia Pond and Kihei, WWII



Courtesy of Maui Historical Society

Tilapia



© Wendy Cutler



Kihei. © Djof

Exotic Animals

Over the years, non-native animals have been brought to Hawai‘i for what seemed like good business reasons—but these animals have had negative effects on native wildlife.

The first cats and mongooses were both imported in the 19th century to eat the rats infesting sugarcane crops. Instead of controlling rats,

Mongoose



© J.N. Stuart

mongooses and cats eat ground-nesting birds and their eggs and young, as do the rats they came to eradicate.

Cattle egrets were brought to Hawai‘i from Florida in 1959 to help control insects on cattle ranches. The cows themselves were introduced;

Cattle egret



© J.N. Stuart

they ate native plants, and their droppings brought invasive plants into the wetlands. Cattle egrets eat nestlings and compete with native birds for food and nest sites.

A lot of work goes into keeping the refuge habitat healthy for birds. Refuge staff capture non-native predators, eliminate invasive plants, and monitor water levels carefully to mimic the natural cycle of the wetland and meet the needs of the waterbirds.

Volunteers removing California bulrush



Planned flooding is used to remove exotic plants from bird habitat and to maintain seasonal variability of the wetlands during a dry winter.

Exotic Plants

Indian marsh fleabane



Pickleweed



Many refuge plants are aggressive introduced species: Indian marsh fleabane, California bulrush, pickleweed, and others. Refuge staff and volunteers eliminate exotics and replant natives like saltgrass (‘aki‘aki) and sea purslane (ākulikuli).

Native plants are vital to our endangered birds. Coots build their nests with native kaluhā sedge, and stilts nest on or near ākulikuli. Folks from our community, other islands, the mainland, and throughout the world volunteer to help with native restoration projects year round, and we’re making good progress. Come and join us!

Begin your adventure at the Visitor Center, where you can learn more about the daily lives of Hawai‘i’s endangered wetland birds. As you sign in, you’ll learn where things are located on the refuge and about upcoming activities, current bird counts, and what’s new. We offer binoculars and bird identification and bingo cards to enhance your exploration of the wetlands.

Two walks offer access to the wetland and close-up views of wetland birds. From the Visitor Center, you can walk the path to the Kanuimanu Ponds’ dirt levees, which are flat and accommodate wheelchairs.

Keālia Coastal Boardwalk



The 2,200-foot Keālia Coastal Boardwalk on North Kīhei Road offers access to seasonal wetlands as they connect to the coastal dunes. Be sure to read the self-guided interpretive panels, and bring your camera and binoculars!



The refuge is open M-F from 7:30 a.m. to 4:00 p.m. It is closed on weekends and federal holidays.

The Visitor Center is open M-F from 8:00 a.m. to 3:30 p.m. It is closed on weekends and federal holidays.

The boardwalk is open seven days a week and on federal holidays from 6:30 a.m. to 7:00 p.m.

Admission is free.

For more information, contact:

Refuge Manager
Keālia Pond National Wildlife Refuge
Maui National Wildlife Refuge Complex
Milepost 6 Mokulele Highway (Highway 311)
P.O. Box 1042
Kīhei, Hawai`i 96753
808/875 1582
http://www.fws.gov/refuge/kealia_pond/

For the hearing impaired:

Hawai`i Relay Service
TTY 1 877/447 5990
Voice 1 808/643 8255
In-state callers use the 4 digit TTY 1-711

Federal Relay Service
TTY and Voice 1 800/877 8339

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