Characterizing Hawaii’s Integrated Marine-Associated Inland Waters and Coastal Aquatic Ecosystems by Acquiring Baseline Data for Estuaries, Salt Marshes and Tidal Flats and Adjacent Coral Reefs and Seagrass Beds to Improve Management Practices Across Diverse Aquatic Habitats

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wetlands: transitional areas between open water and dry land
Ruppia maritima
Bristle-Thighed Curlew flipping mats of *Ruppia* on Molokai
HAMAKUA MARSH
STATE OF HAWAII WILDLIFE SANCTUARY

AE'O
Hawaiian Stilt
Standing 16” high on its bright pink legs the stilt is the tallest shorebird.

'ALAE'ULA
Hawaiian Moorhen
This legendary bird brought fire to the people of Hawaii and its red beak is the symbol of the firebird.

'ALAE KEOKEO
Hawaiian Coot
Sporting red eyes and orange beak this bird's nest is built to float on water.

AUKUU
Black-Crowed Night Heron
This powerful bird can have a wingspan of up to five feet.

ENDANGERED BIRDS NEED YOUR KOKUA TO SURVIVE

These birds are on a diet, please don't tempt them.

A waterfowl management program to protect endangered native Hawaiian waterbirds. For more information go to hamakua.org
*Ruppia* is present in some wetlands and absent in others. Why?
Potential Impacts of Invasive Fishes on *Ruppia* in Hawaii

Objective: Test the impact of Tilapia on growth and survival of *Ruppia* using 2 size classes of the fish.
Results

Control

Day 0

Day 6

Large Tilapia

Day 0

Day 6

Small Tilapia

Day 0

Day 6
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- 1 graduate student
- 1 undergraduate
- Travel funds
Managed by multiple agencies

- USFWS
- USNPS
- Military
- DLNR: DOFAW & DAR
- City & County
- Private lands
Managed for multiple values

- Flood protection
- Endangered water-bird habitat
- Shoreline erosion
- Cultural
Specific Aim 1

• Collect baseline ecological data to describe and characterize Hawaiian estuarine wetlands and the adjacent intertidal and shallow subtidal habitats
Specific Aim 2

• Compare the ecological conditions found in estuaries with coastal wetlands and their adjacent near shore marine habitats across the MHI that are managed using a broad range of goals, practices, strategies and resources