



# **Wetlands of Hawai'i: looking back, looking forward**

**Hawai'i Conservation Conference**

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**Natural Resources Conservation Service**



# Outline:

- **Trends: Large & Small Losses**
  - **NWI mapping**
  - **Classification issues**
  - **Opportunities to further the science and determine effects of wetland policies**
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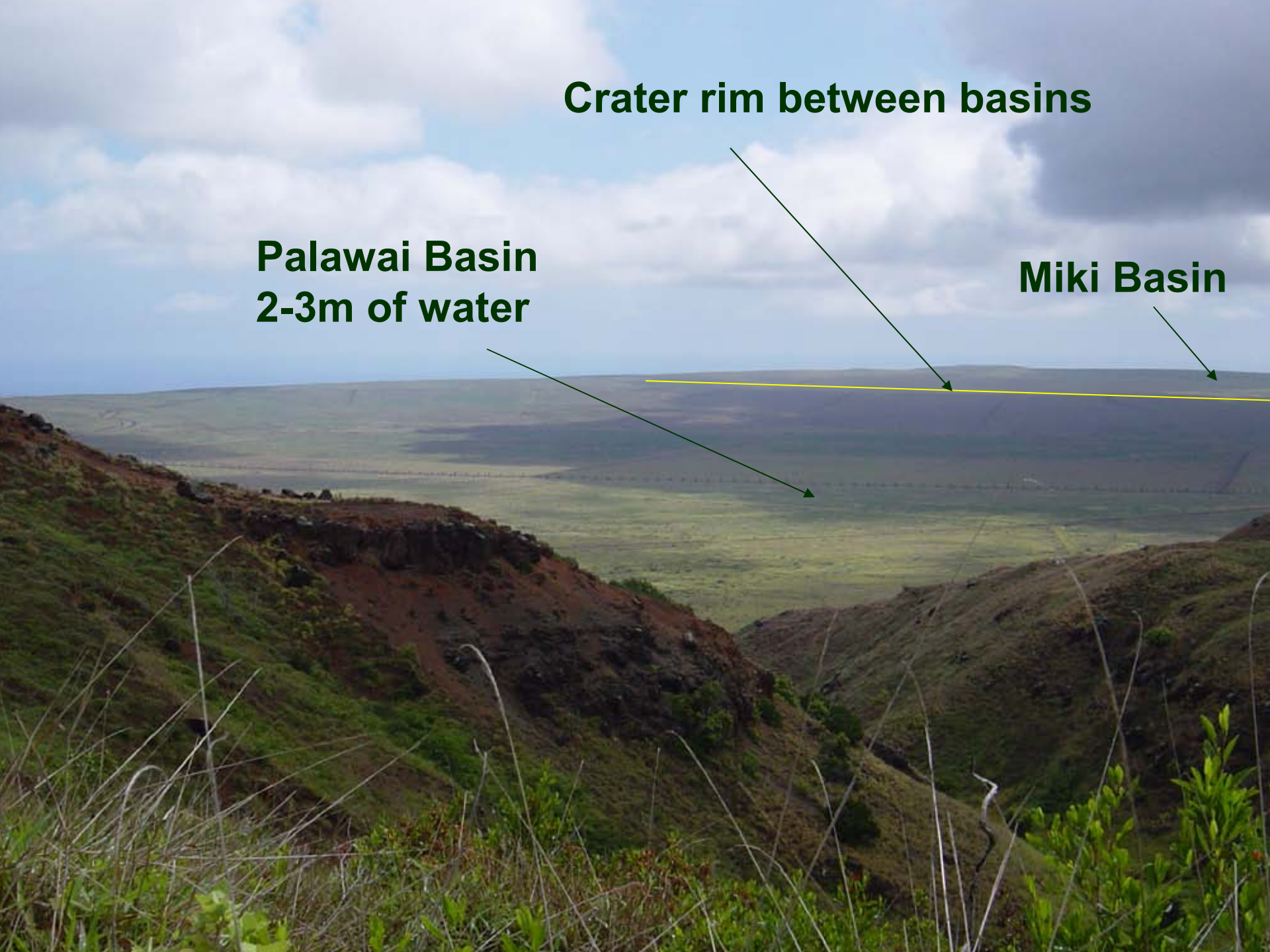
# Trends

- **Little known in Hawai'i**
  - **Not part of the National NWI trend analysis; Estimated in 1990 = 31% loss of coastal wetlands (Kosaka)**
  - **Most NWI data are over 30 years old - not reliable**
  - **Historical Maps and manuscripts useful as indicators – large losses**
  - **Analyses of developing areas also useful – small, incremental losses**

**Crater rim between basins**

**Palawai Basin  
2-3m of water**

**Miki Basin**



**Lana'i's craters**

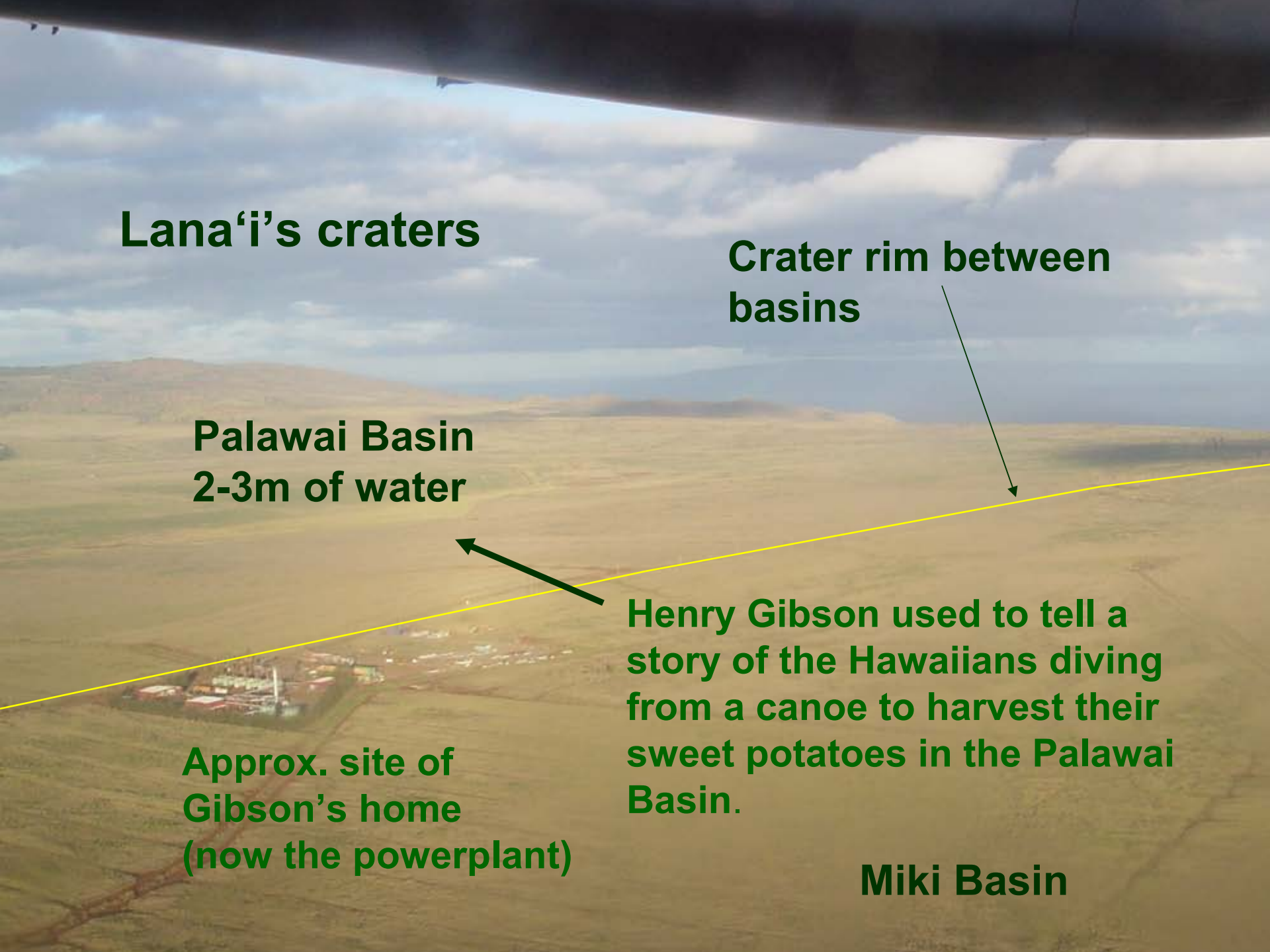
**Crater rim between basins**

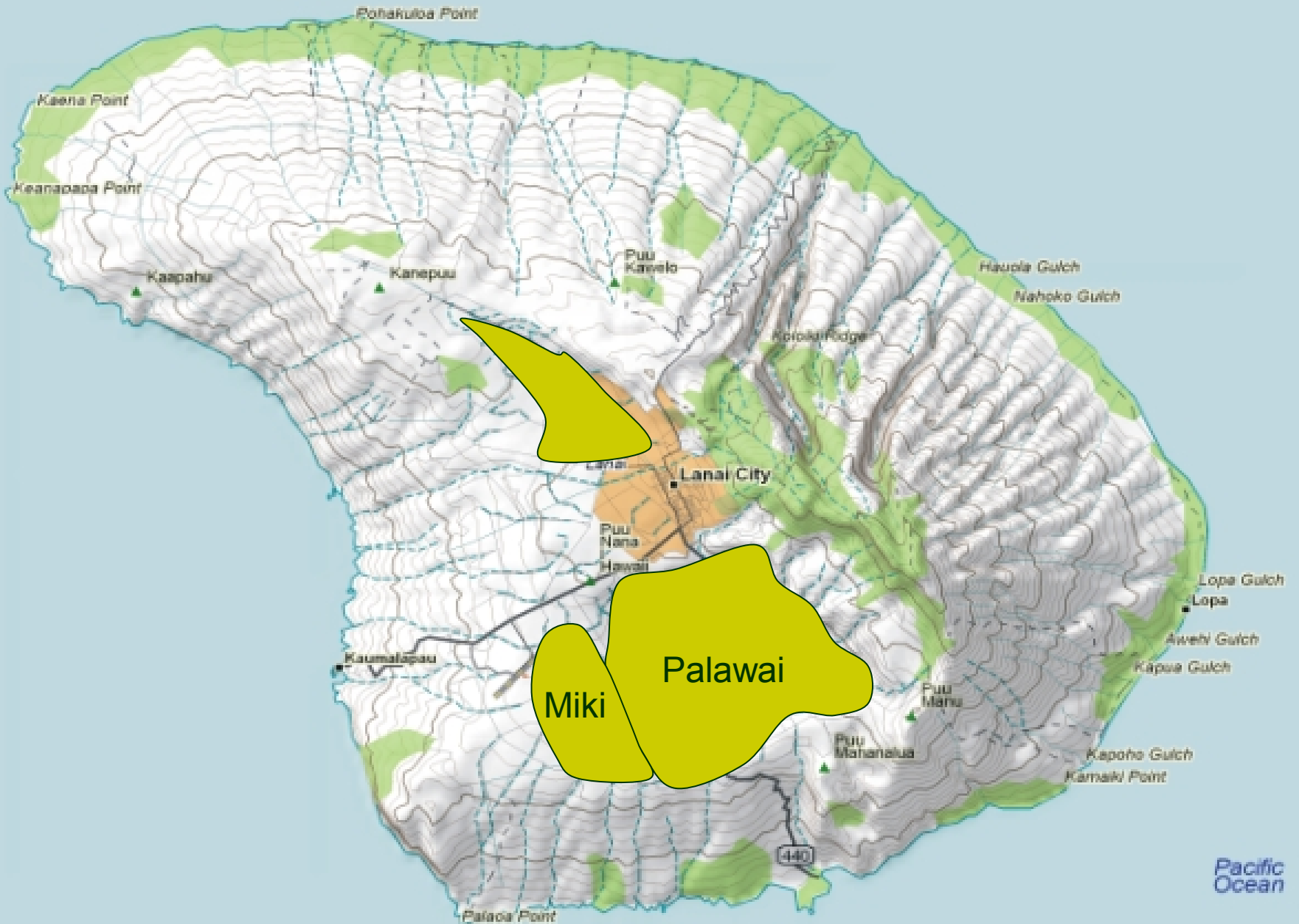
**Palawai Basin  
2-3m of water**

**Henry Gibson used to tell a story of the Hawaiians diving from a canoe to harvest their sweet potatoes in the Palawai Basin.**

**Approx. site of  
Gibson's home  
(now the powerplant)**

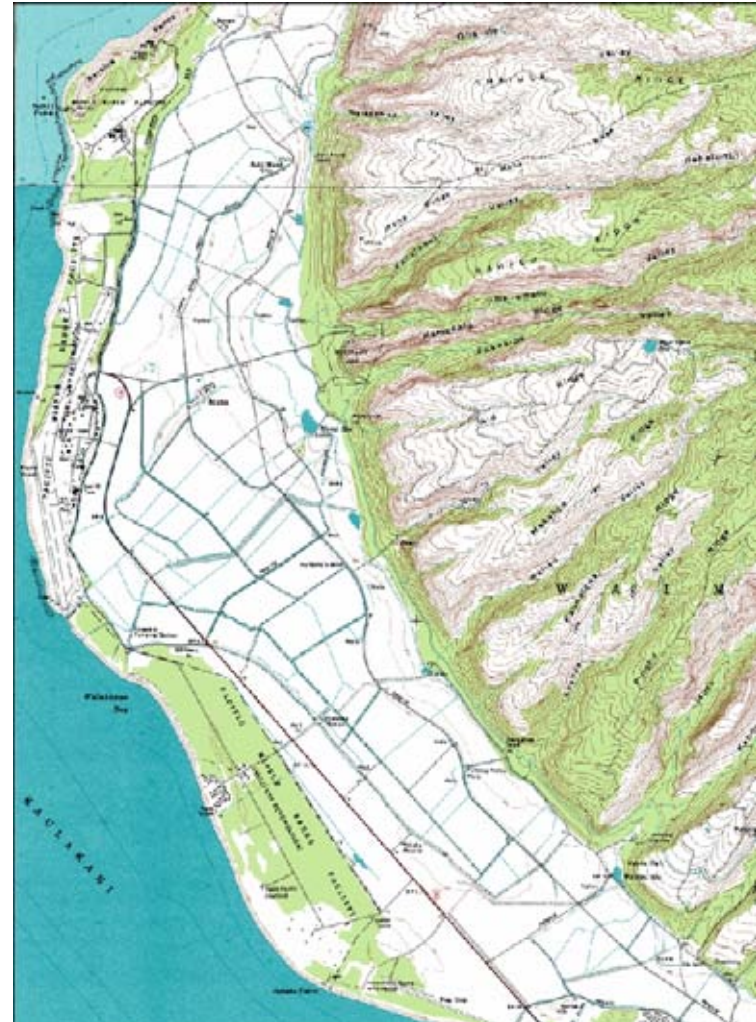
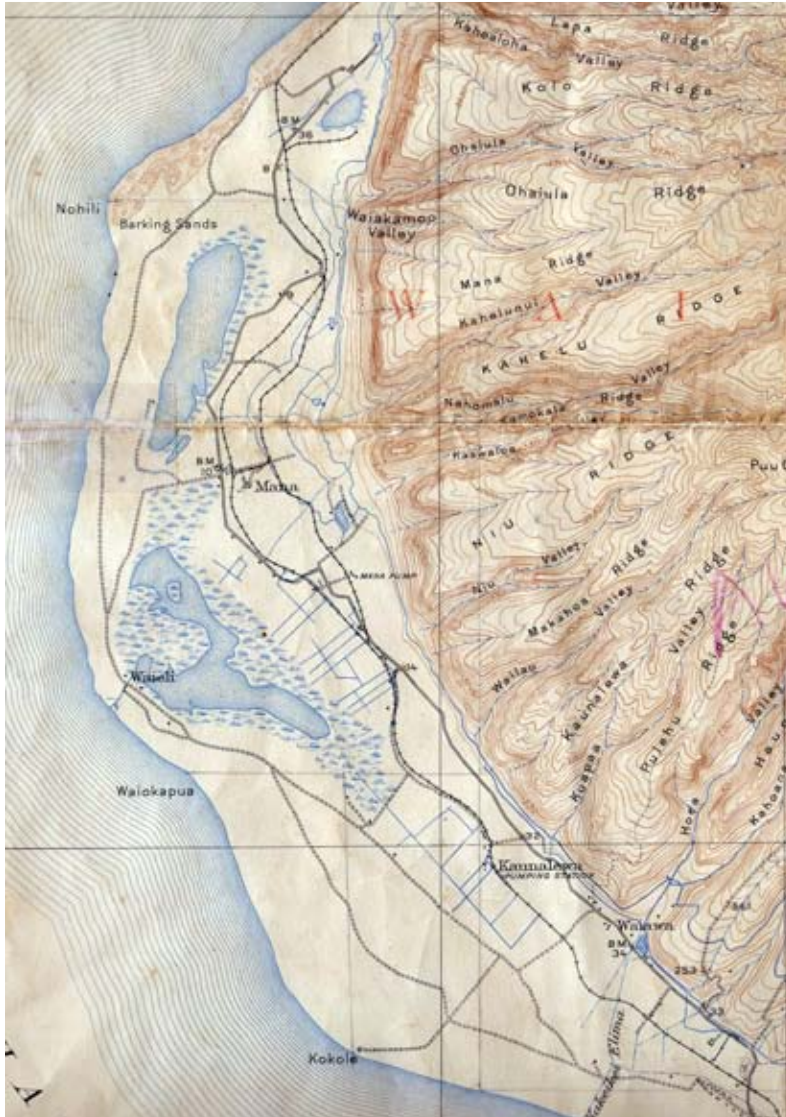
**Miki Basin**



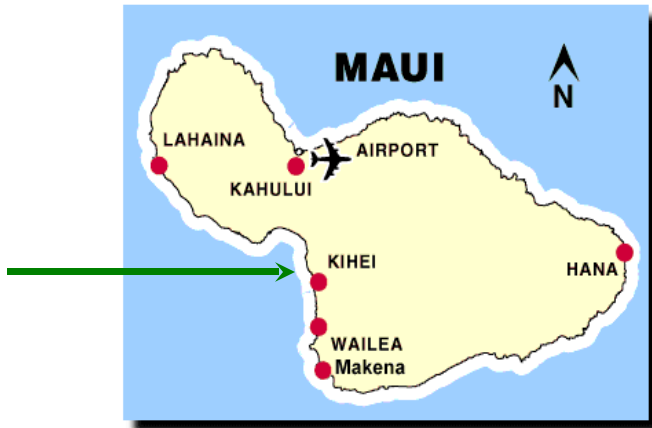


# Mana Plains, Kaua'i

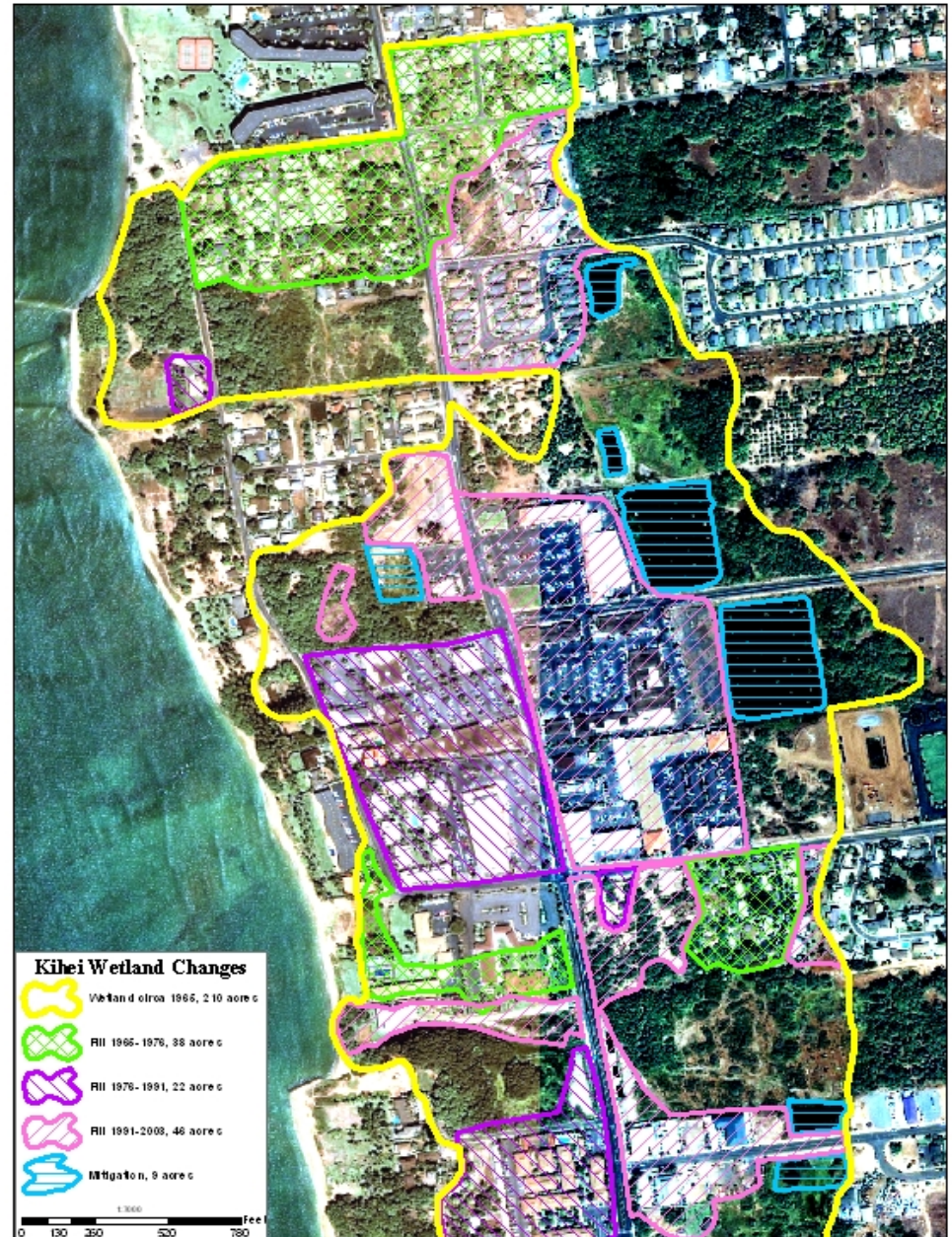
- 1910 – 1980s
- 200 of 1600 acres of wetlands left



# Kihei, Maui



- 1965-2003
- Small, incremental losses (legal)
- Mitigation lessons



# National Wetlands Inventory

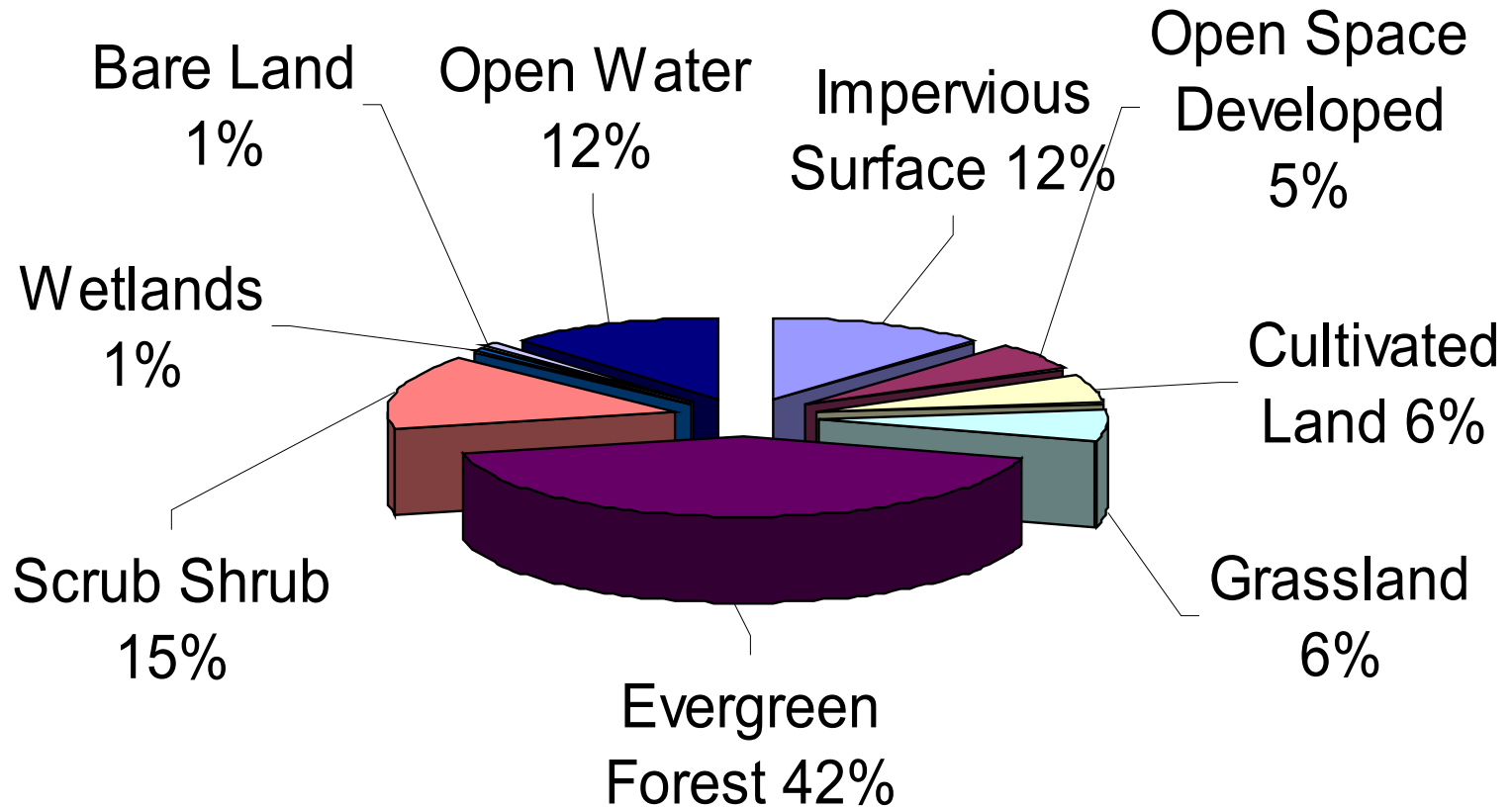
- 1977-78, B/W photos, Linear, few shapes, very few days field testing
- 2002-2006 *O'ahu only*—2005 Earth Data Imagery Best
- 2008 – Beginning for Kaua'i
- 2008 – New Draft Documents-mapping naming conventions

# USFWS National Wetlands Inventory Comparison 1978 vs. 2006

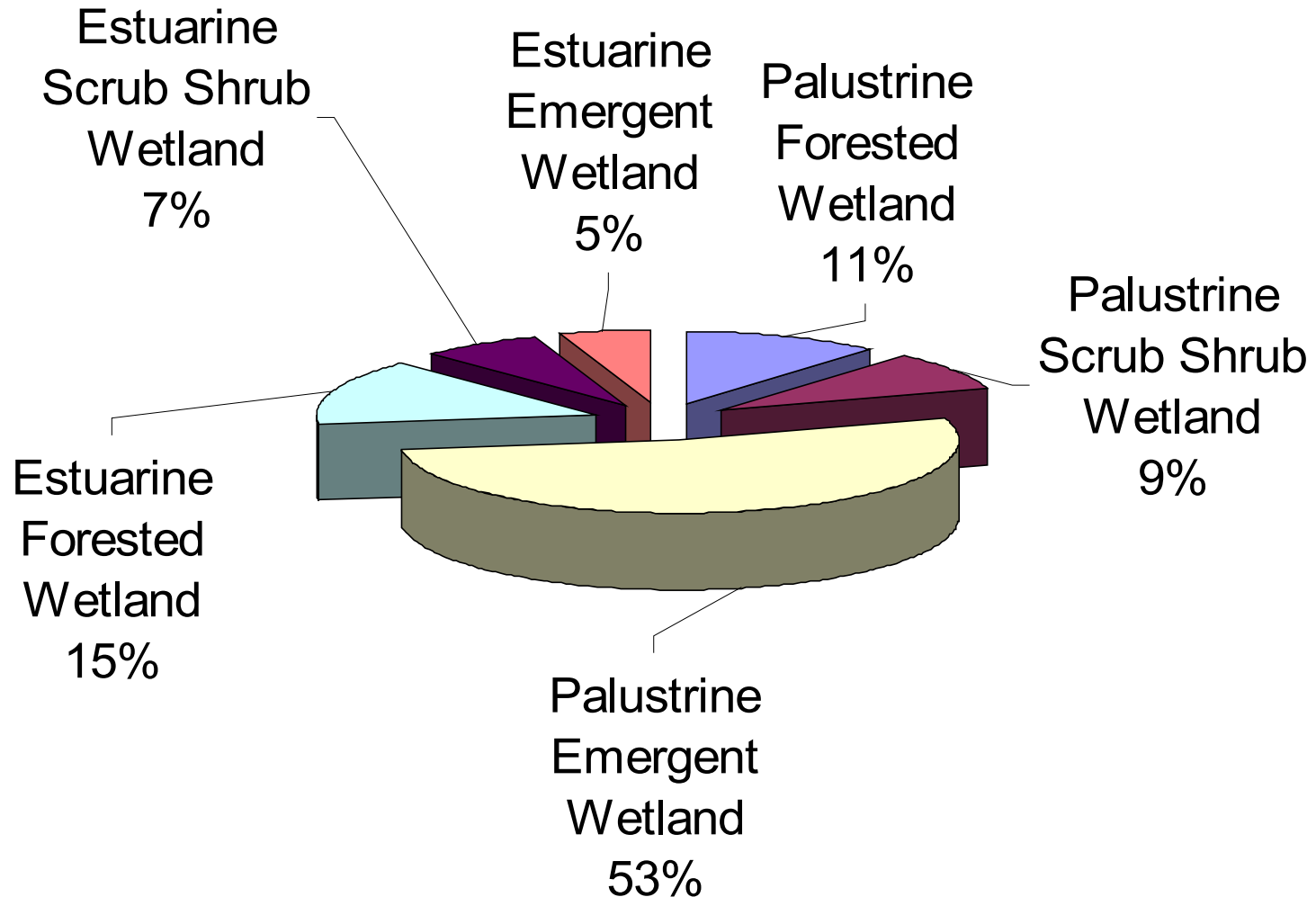


# C-CAP Land Cover - Oahu

(Source: NOAA CCAP & NWI)



## C-CAP Land Cover, Oahu, % Wetland Type (Source: NWI 2006)



# Oahu's Hanging Bogs





# Classification Issues



- **Classification Schemes = Useful:**
  - **Determining mitigation “in-kind”**
  - **Restoration and Management planning**
  - **Trend analyses**
- **Protocol: Revisit**
  - **Additive—each word counts**
  - **Data & research needed**

# Wetland Analysis Protocol for HI

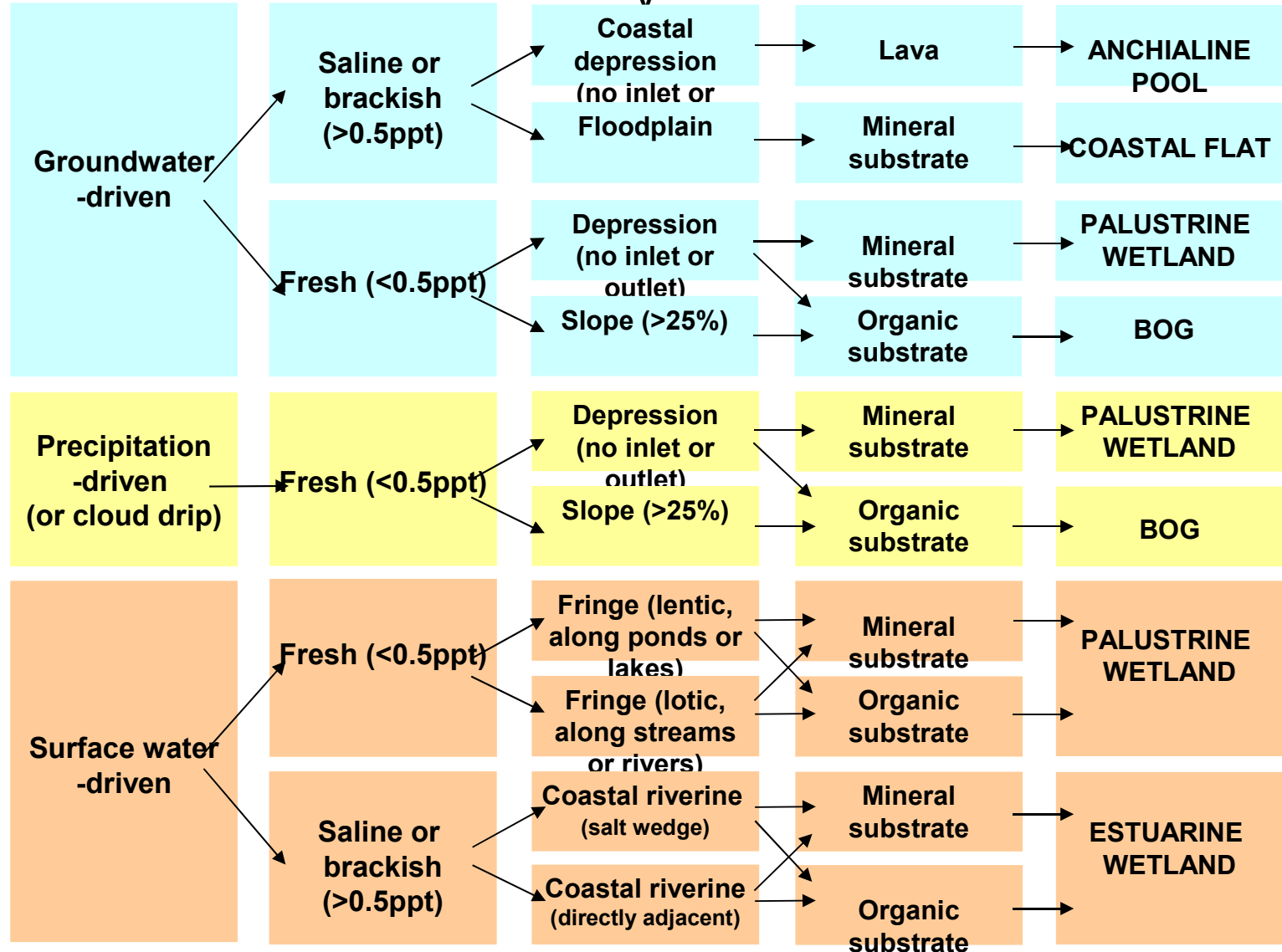
## 1. Hydrology

## 2. Salinity

## 3. Geomorpholog v

## 4. Substrate

## 5. Wetland Type



# Opportunities: Wetland Science Research

1. Wetland Trends & Future Modeling
2. Functions/Values: “Services”
  - Tie to classification, modeling, restoration techniques, effects of practices
  - Tie to wetland health – how well they function
3. Delineation: Corps of Engineers leading new Regional Supplement for Pacific Islands



# More Opportunities: Wetland Policy Research

1. Effect of regulatory policy on wetlands: CWA 404 “isolated” calls; Swampbuster definition of “production”
2. Effect of nonregulatory actions: Restoration success/failure – incentives programs

# Mahalo!

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