

**For Information Only:**  
Summary of Current Statewide Fieldwork Activities in the  
Stream Protection and Management Branch

Item C-1

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Stream Protection and Management Branch



COMMISSION ON WATER RESOURCE MANAGEMENT

Ke Kahuwai Pono  
"The trustee who oversees the rightful sharing of water."

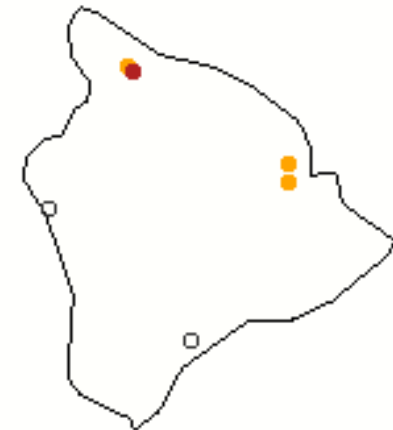


# NOT Fieldwork Associated with USGS Stations

## USGS Cooperative Agreement

- approved by Commission
- renewed annually (in August)
- largest single CWRM expense
- pays for:
  - equipment & maintenance
  - fieldwork & measurements
  - quality control/assurance
  - data hosting

Sunday, May 14, 2023 19:30ET



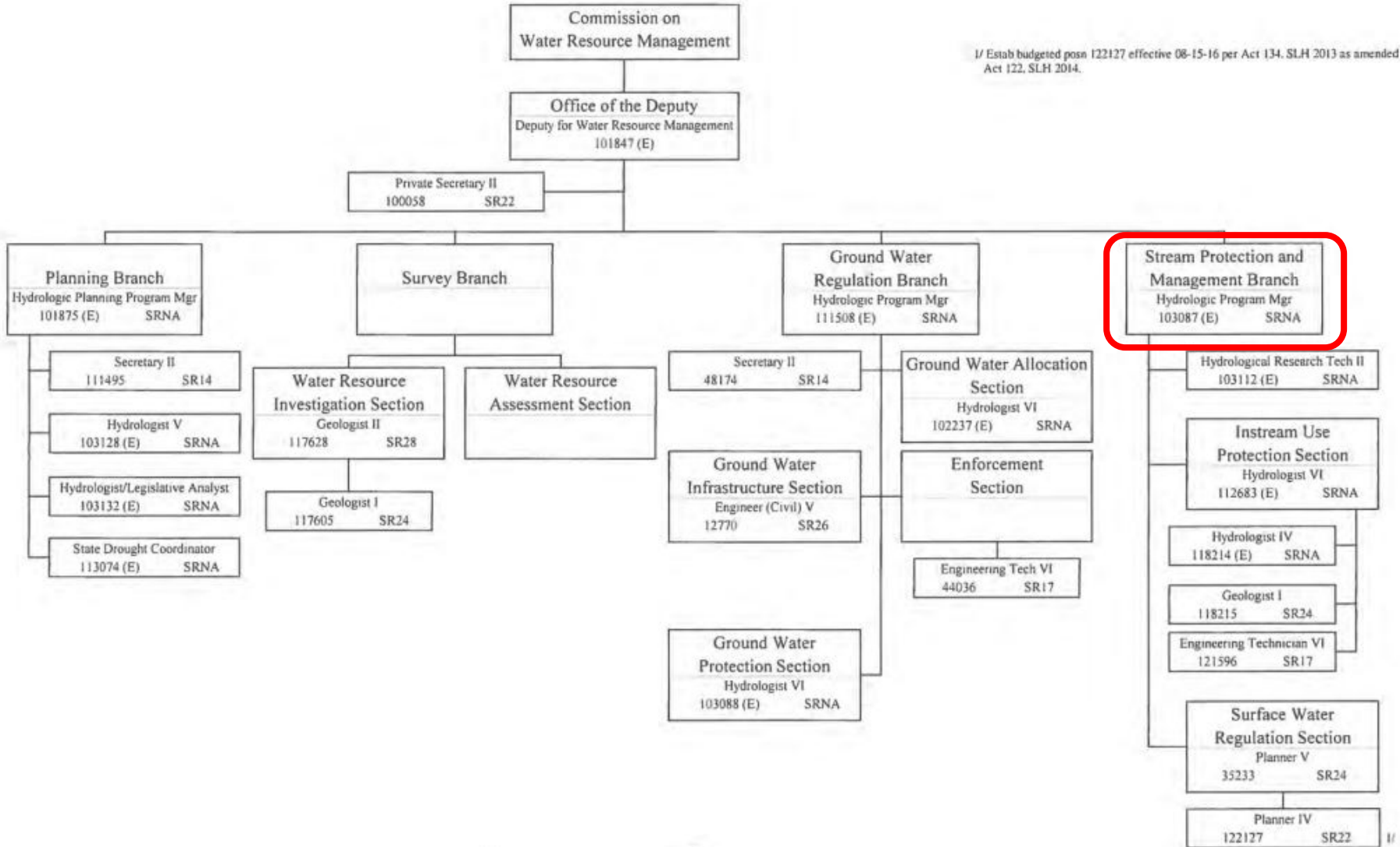
## Stations kept/added to USGS Agreement

- natural flow stations with long-term records to track climate change impacts on watersheds
- natural flow stations in streams with instream & non-instream uses
- regulated flow stations in large streams for IIFS monitoring

# SPAM Branch

State of Hawaii  
 Department of Land and Natural Resources  
 Commission on Water Resource Management  
 Position Organization Chart

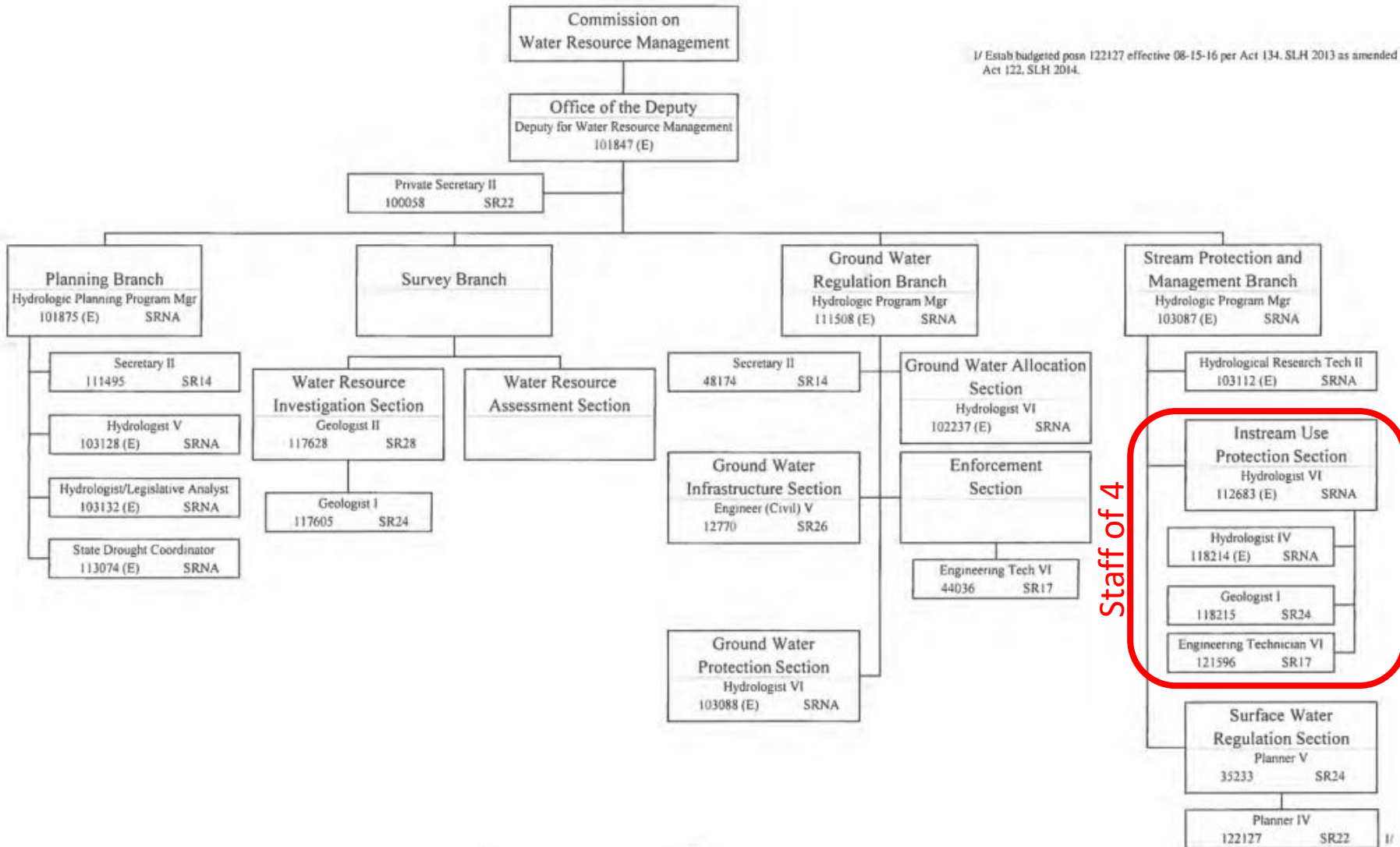
1/ Estab budgeted posn 122127 effective 08-15-16 per Act 134, SLH 2013 as amended by Act 122, SLH 2014.



# SPAM Branch: Instream Use Protection Section

State of Hawaii  
 Department of Land and Natural Resources  
 Commission on Water Resource Management  
 Position Organization Chart

1/ Etab budgeted posn 122127 effective 08-15-16 per Act 134, SLH 2013 as amended by Act 122, SLH 2014.

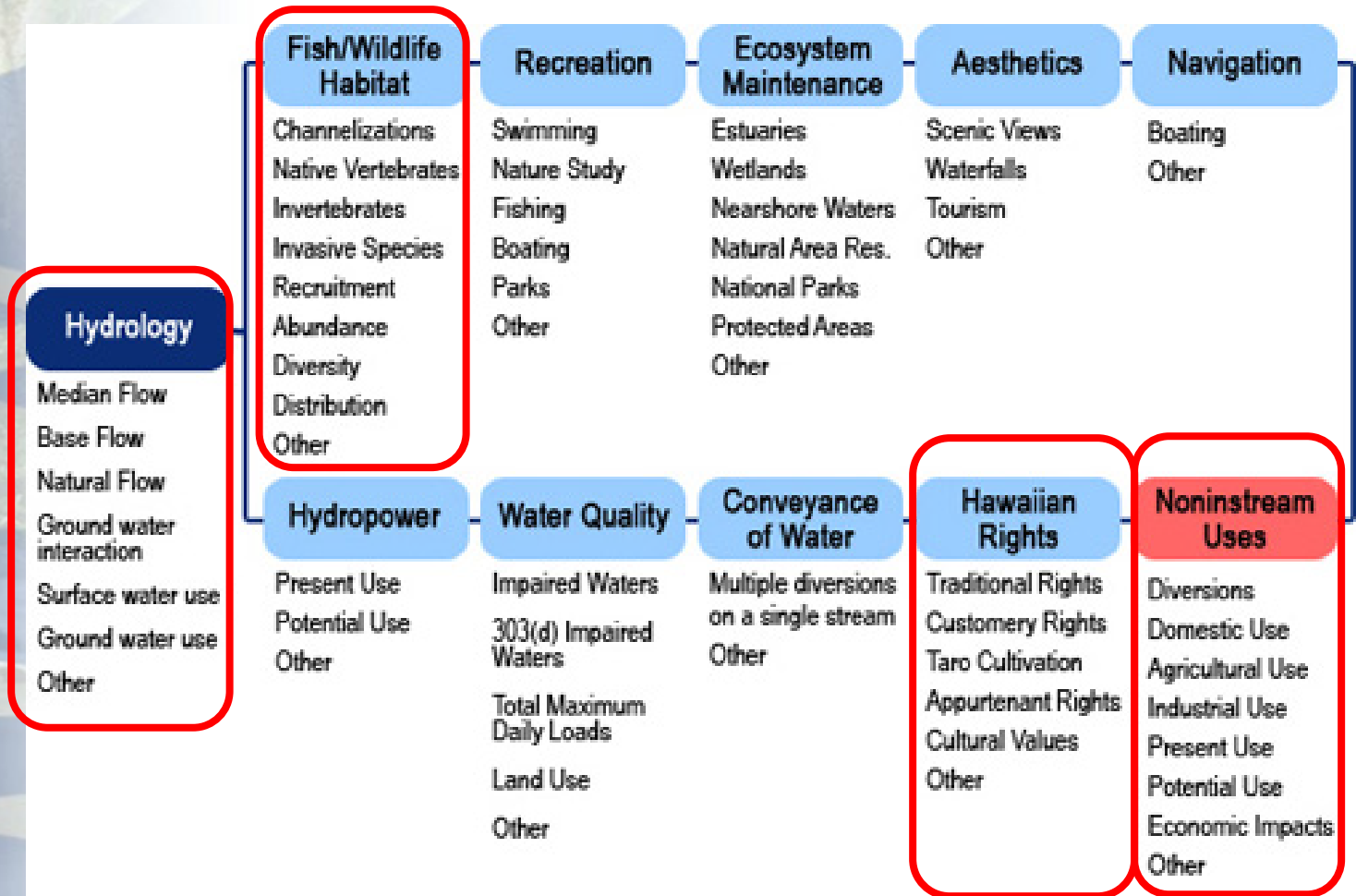


Staff of 4

# Instream Uses Summary



# Instream Uses Summary



# Overview

## Four Areas of Fieldwork Focus:

### 1. hydrologic data collection:

- continuous and non-continuous monitoring of stream and ditch flows
- seepage runs

### 2. biological data collection

- population estimates of aquatic biota
- quantification of habitat and use
- fieldwork following Commission action

### 3. stream diversion verification

### 4. investigations/site visits/response to complaints

- meeting diversion operators following Commission action
- gathering with community in the field

# Non-Continuous Stations





# Continuous Monitoring Stations



# Real-Time Monitoring Stations



# Measuring Flow



# Assisting Other Operators



# Current Hydrological Data Program

## 1. Continuous data collection:

- Kaua'i: 12 sites
- O'ahu: 3 sites
- Moloka'i: 4 sites
- West Maui: 12 sites
- East Maui: 16 sites
- Hawai'i: 3 sites

## 2. Non-continuous data collection

- Kaua'i: 7 sites
- O'ahu: 0 sites
- Moloka'i: 0 sites
- West Maui: 4 sites
- East Maui: 16 sites
- Hawai'i: 5 sites

# Current Hydrological Data Program

## 1. Continuous data collection:

-Kaua'i: 12 sites

-O'ahu: 3 sites

-Moloka'i: 4 sites

-West Maui: 12 sites

-East Maui: 16 sites

-Hawai'i: 3 sites

includes natural and regulated streamflow, IIFS monitoring, ditch flow monitoring

## 2. Non-continuous data collection

-Kaua'i: 7 sites

-O'ahu: 0 sites

-Moloka'i: 0 sites

-West Maui: 4 sites

-East Maui: 16 sites

-Hawai'i: 5 sites

includes partial-record stations, ditches, IIFS monitoring

# Current Hydrological Data Program

## 1. Continuous data collection:

- Kaua'i: 12 sites
- O'ahu: 3 sites
- Moloka'i: 4 sites
- West Maui: 12 sites
- East Maui: 16 sites
- Hawai'i: 3 sites

## 2. Non-continuous data collection

- Kaua'i: 7 sites
- O'ahu: 0 sites
- Moloka'i: 1 site
- West Maui: 4 sites
- East Maui: 16 sites
- Hawai'i: 5 sites

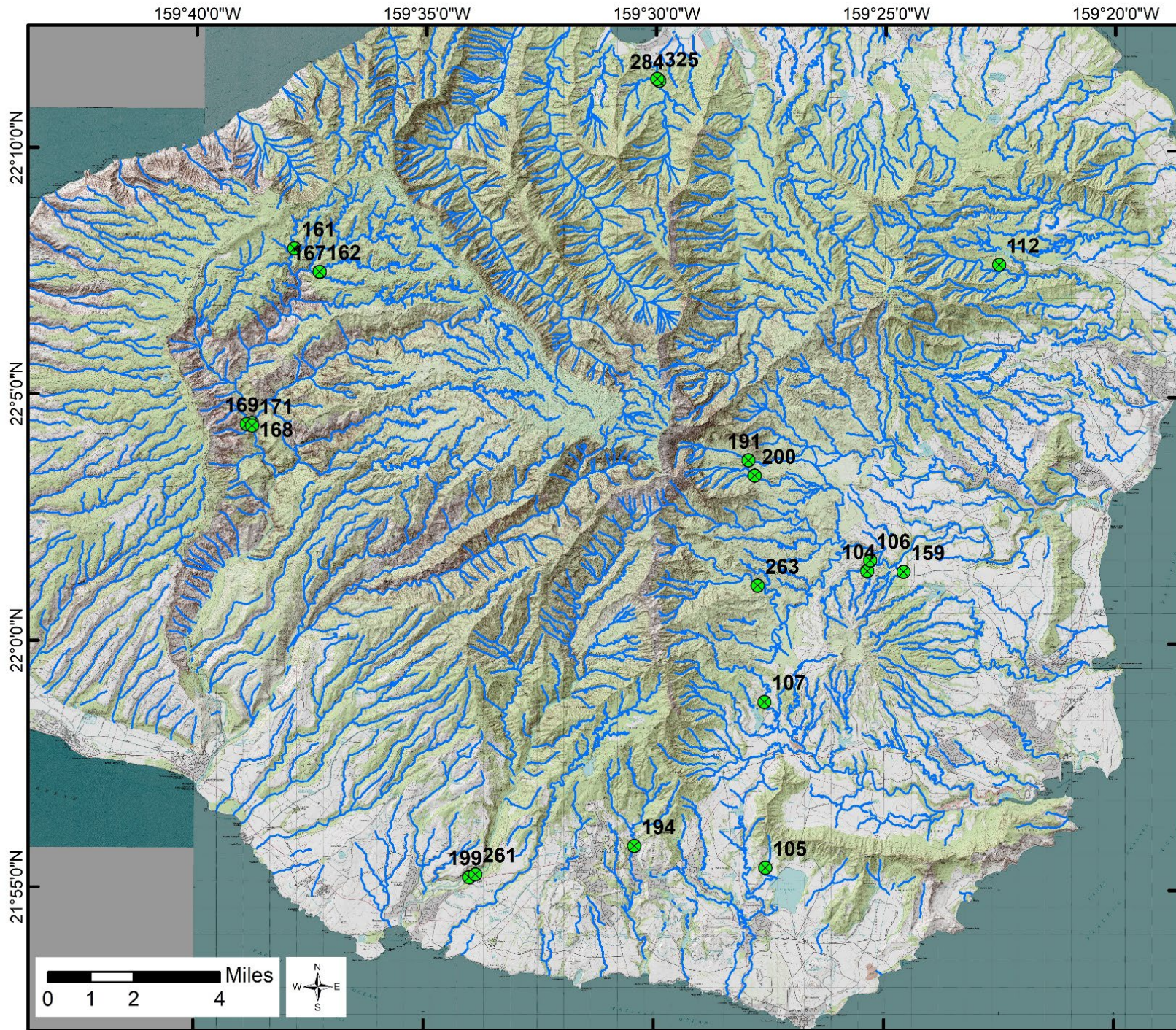
## Regularly scheduled field days:

- Kaua'i: 5 days
- O'ahu: 2 days
- Moloka'i: 2 days
- West Maui: 4 days
- East Maui: 4 days
- Hawai'i: 1 day

18 field days X 4x per year = 72 days

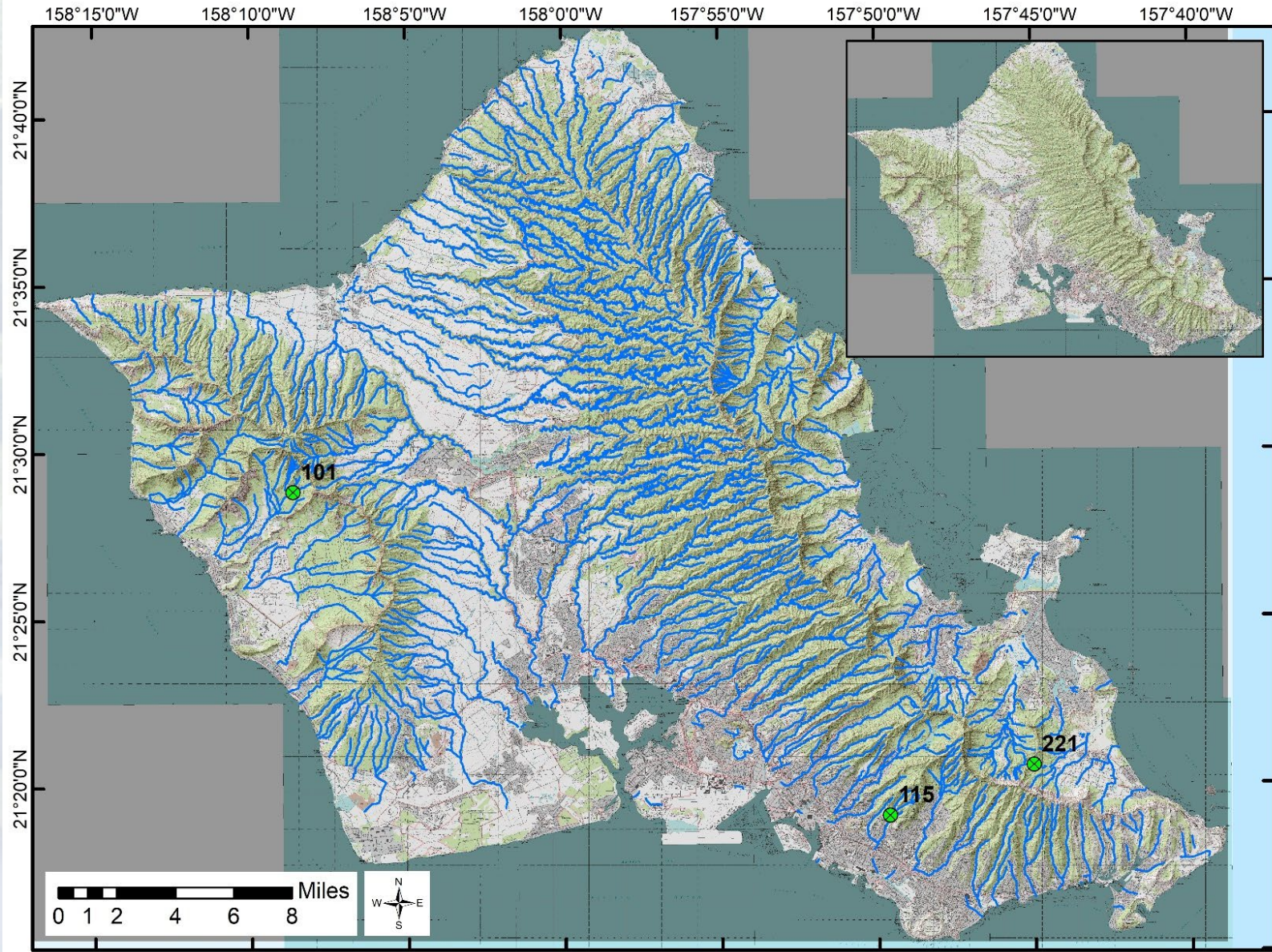
- 72 office days to process data
- 144 days out of 262 work days per year
- Does not include repair/maintenance
- Does not include measurements that are part of "hydrologic studies"
- Does not include biological surveys
- Does not include other site visits/investigations/data collection

# Kaua'i

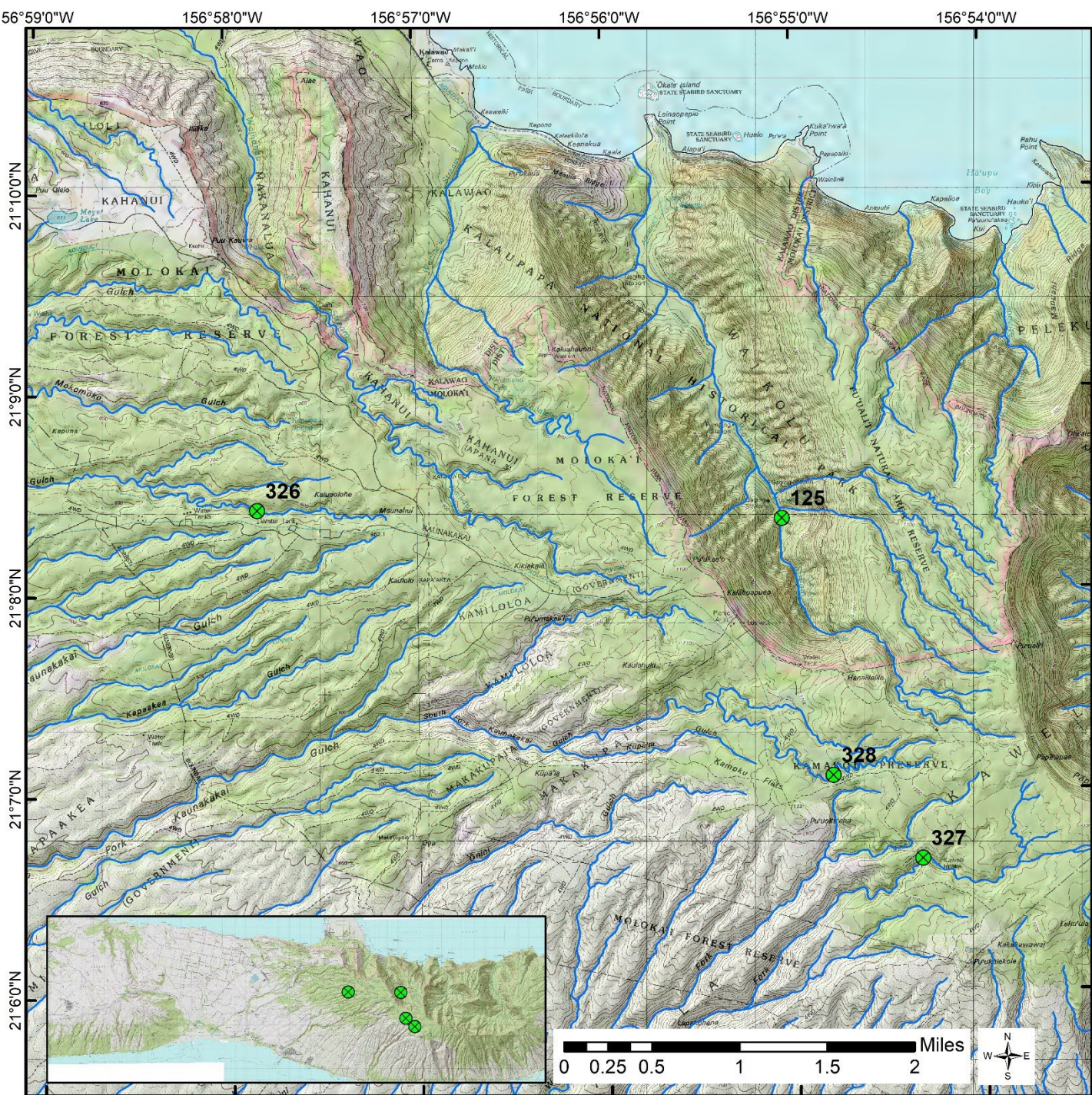




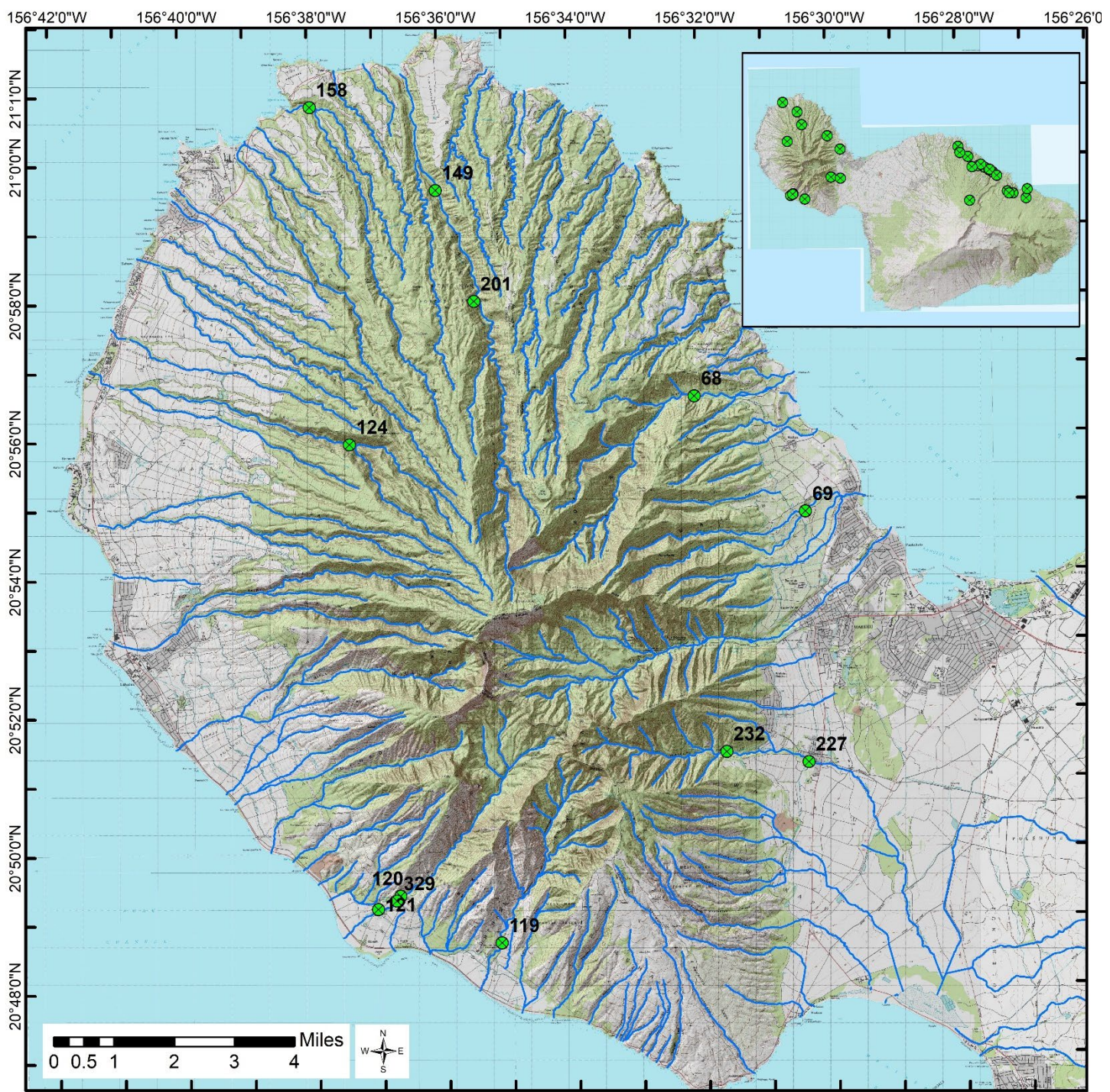
# O'ahu



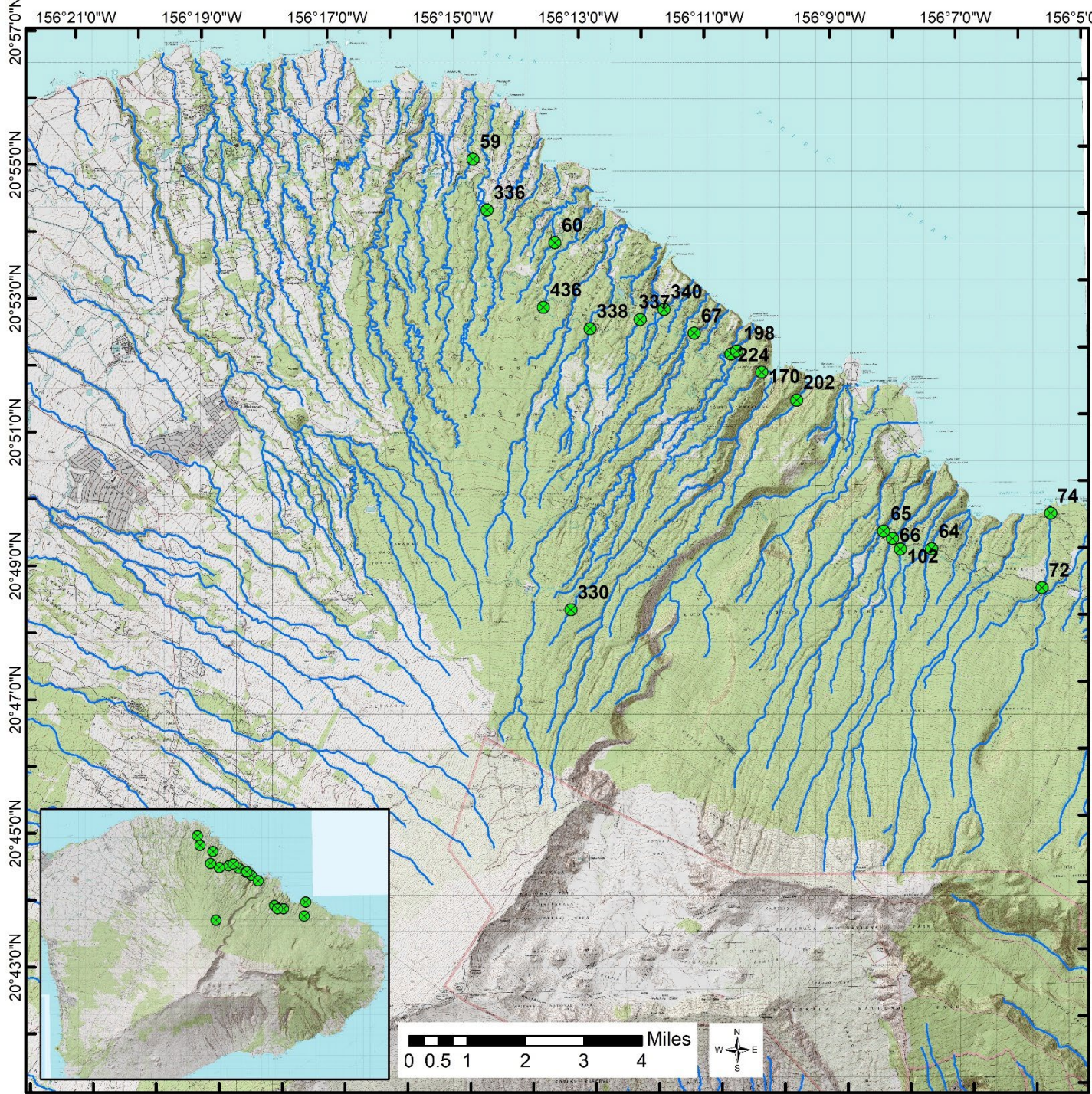
# Molokai



# West Maui



# East Maui





# Data Availability

Instream Flow Assessment Reports  
Compilation Reports  
Website

**Low-Flow Characteristics and Surface Water Availability in East Maui, Hawai'i**

June 2022 PR-2022-01




**Hawai'i**  
Department of Land and Natural Resources  
Division of Water Resource Management

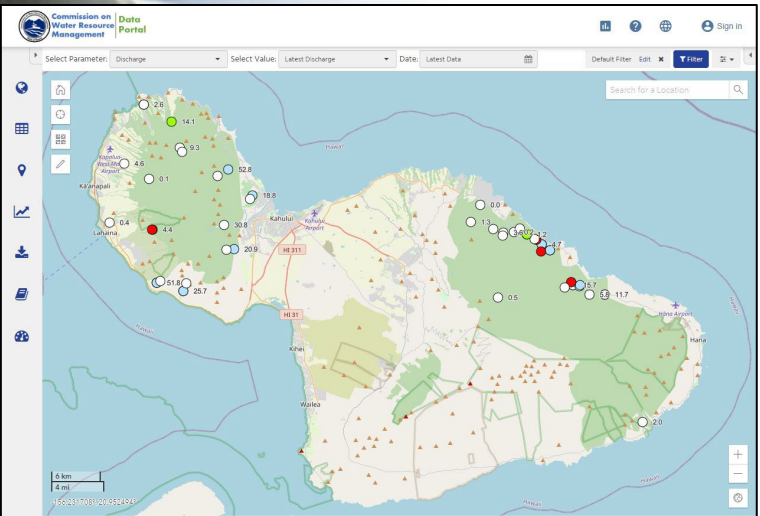



**Instream Flow Standard Assessment Report**  
**Island of Maui**  
**Hydrologic Unit 6014**  
**Honokohau**

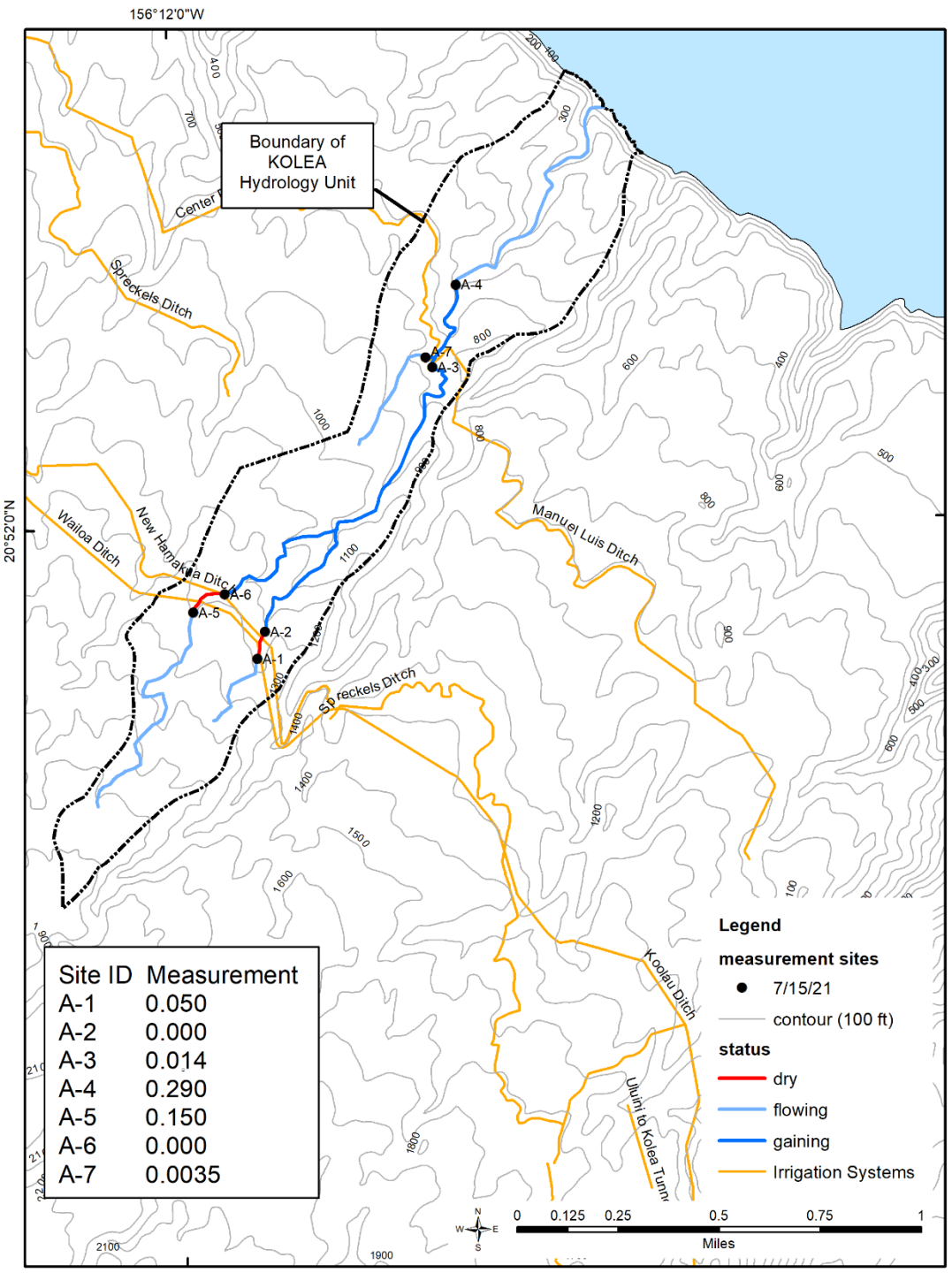
November 2019 PR-2019-03



**State of Hawaii**  
Department of Land and Natural Resources  
Commission on Water Resource Management



# Seepage Runs



# Constraints on Hydrological Data Collection

1. Staff of four
  - Two-person team can get to 3-7 sites in one day
  - staff spend long days traveling to neighbor islands
  - Each field day requires 1-2 office days to process data
2. Limited number of days staff can travel
  - back-to-back travel/field days are difficult
3. Limited budget for travel/equipment



# Biota Surveys

## Questions:

1. What is the current size and distribution of aquatic populations
  - Especially post-restoration relative to pre-restoration
2. What factors affect population dynamics:
  - Antecedent hydrology
  - Predation/competition with non-native species
  - Habitat quality
  - Recruitment to estuaries

# Biota Surveys





# Biota Surveys

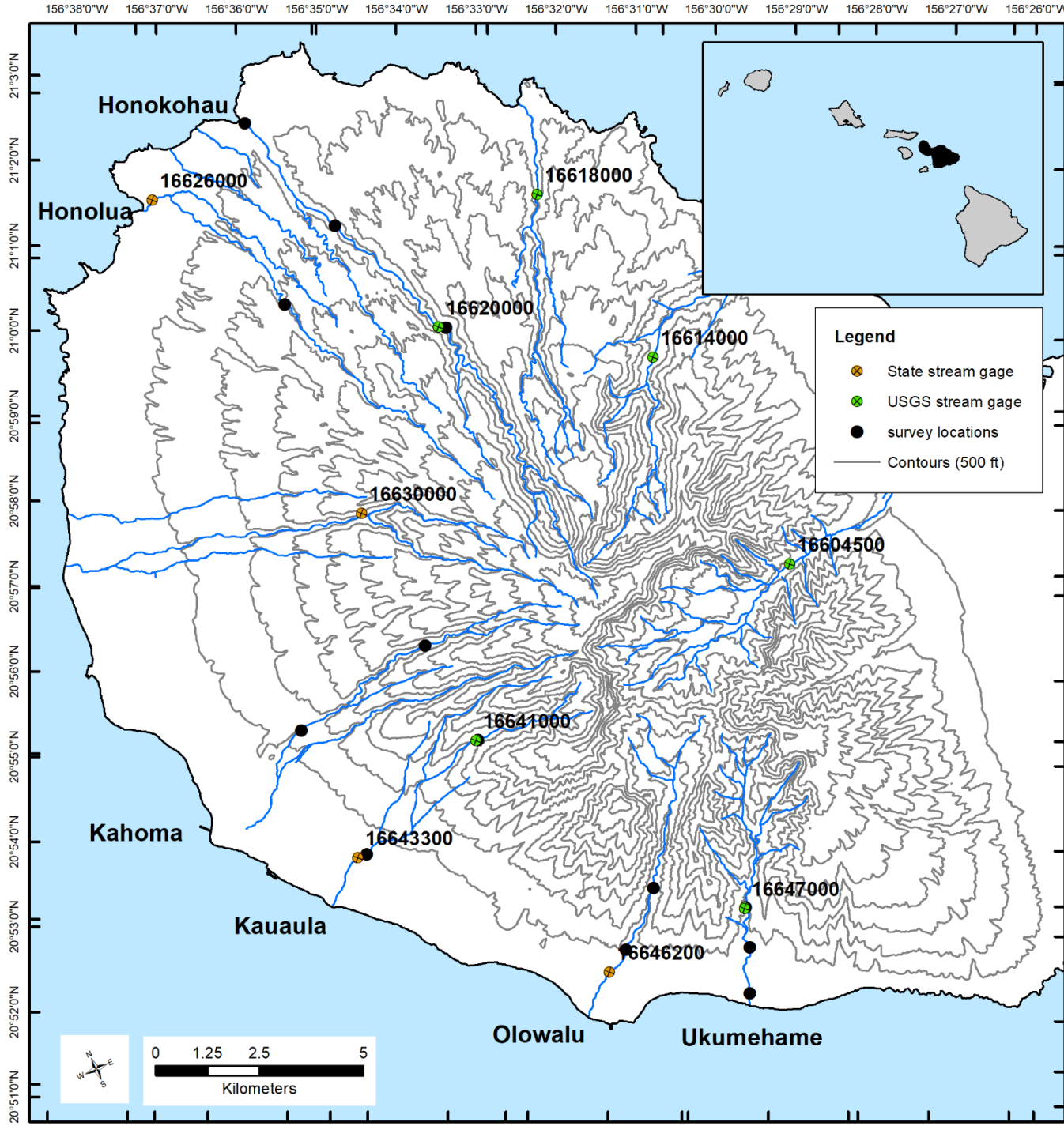
West Maui

2017

2019

2021

2023





# Biota Surveys

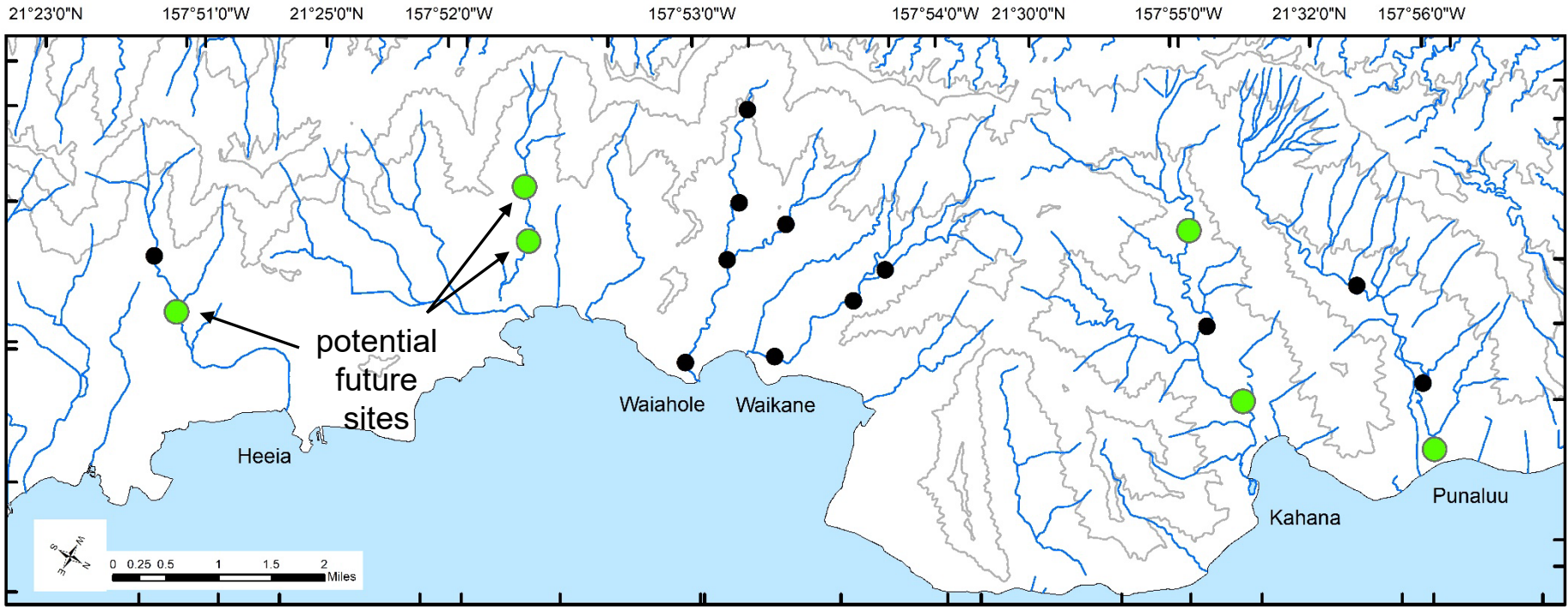
2023 O'ahu Surveys  
Ko'olaupoko

elevation targets

10 ft (mouth)  
80 ft (lower-mid)  
200 ft (upper-mid)  
400 ft (high)

surveys completed

2x  
4x  
5x  
1x





'o'opu alamoo (male)  
(*Lentipes concolour*)

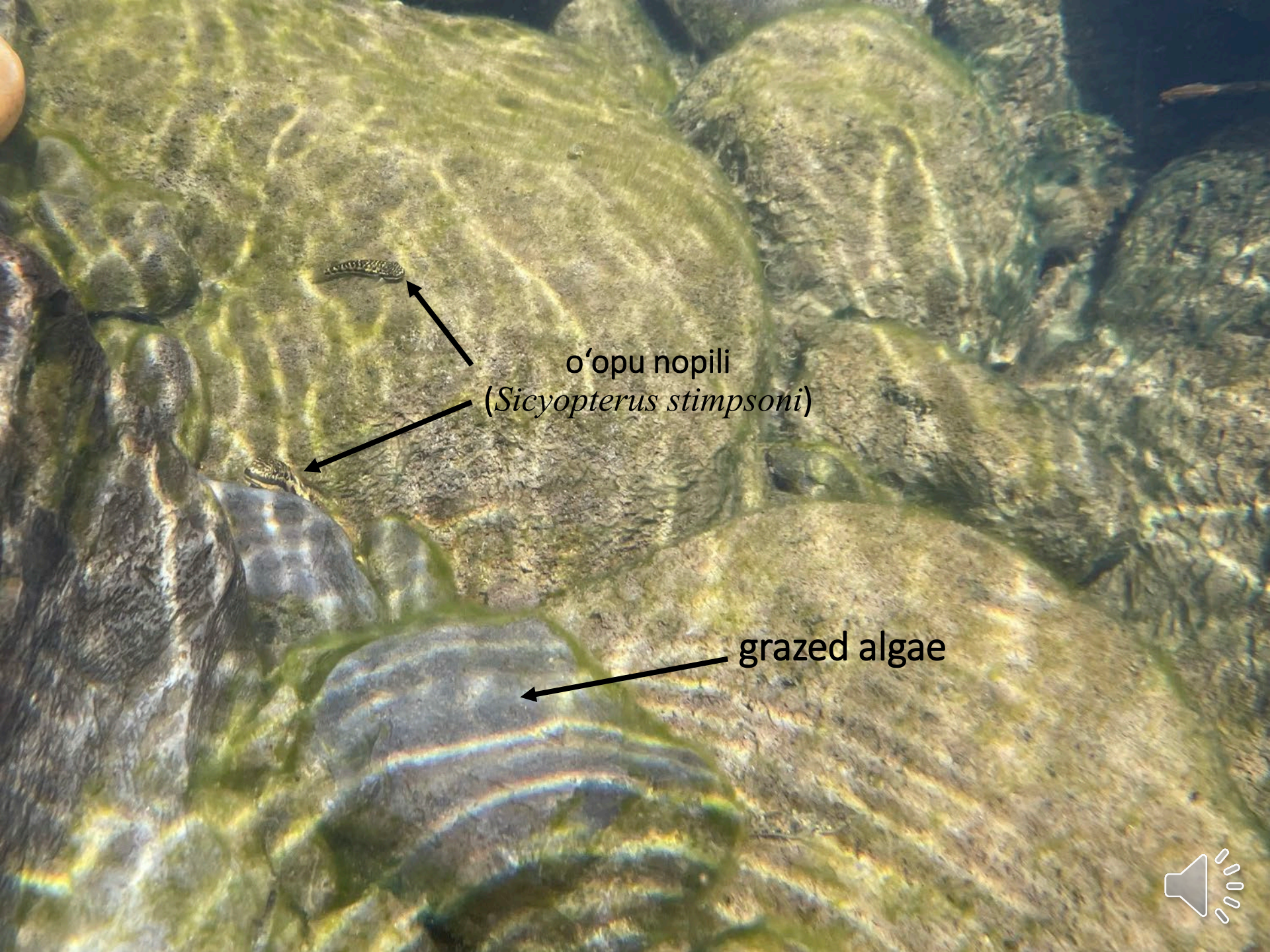
'o'opu nopili (female)  
(*Sicyopterus stimpsoni*)

'o'opu nopili (male)  
(*Sicyopterus stimpsoni*)

'o'opu nākea  
(*Awaous stamineus*)



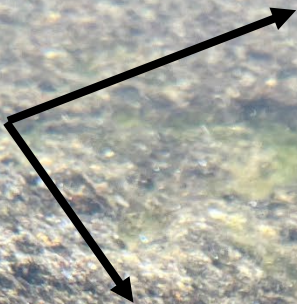




o'opu nopili  
(*Sicyopterus stimpsoni*)

grazed algae

híhíwai  
(*Neritina granosa*)



'o'opu nākea  
(*Awaous stamineus*)



'o'opu nopili  
(*Sicyopterus stimpsoni*)



# Diversion Verification

1. Tied to Commission Action: abandonment



# Diversion Verification

## 2. Tied to instream flow standard development



# Diversion Verification

## 3. Tied to water use reporting



# Overview of Staff Time

## Staff fieldwork

1. hydrologic data collection: 60% (+ data analysis)
2. biological data collection 20% (+ data analysis)
3. stream diversion verification 5%
4. investigations/site visits/response to complaints 5%

+ administrative, interagency, or stakeholder meetings 10%

## Also responsible for:

1. Maintaining surface water geodatabase (i.e., streams, diversions, ditches, meters/gages)
2. Maintaining surface water use database
3. Responding to requests for information

## Not responsible for:

Permits, violations, requests for determination