# Urban & Community Forestry Program


**Heather McMillen, PhD**
**Forester, ISA Certified Arborist**

**Brayden Aki**
**GIS Technician**


KAULUNANI


www.Kaulunani.org
@Kaulunani
Heather.l.mcmillen@hawaii.gov

Support all of Hawaii's communities to cultivate wellbeing and resilience through planting, caring for and growing relationships with the trees and forests that we live with and that are crucial to the ecosystems on which we rely.

# MISSION
# Urban & Community Forestry Program

KAULUNANI

www.Kaulunani.org

@Kaulunani

Heather.l.mcmillen@hawaii.gov

# What is an Urban Forest?

https://cities4forests.com/lg-urban-forests/what-is-an-urban-forest/

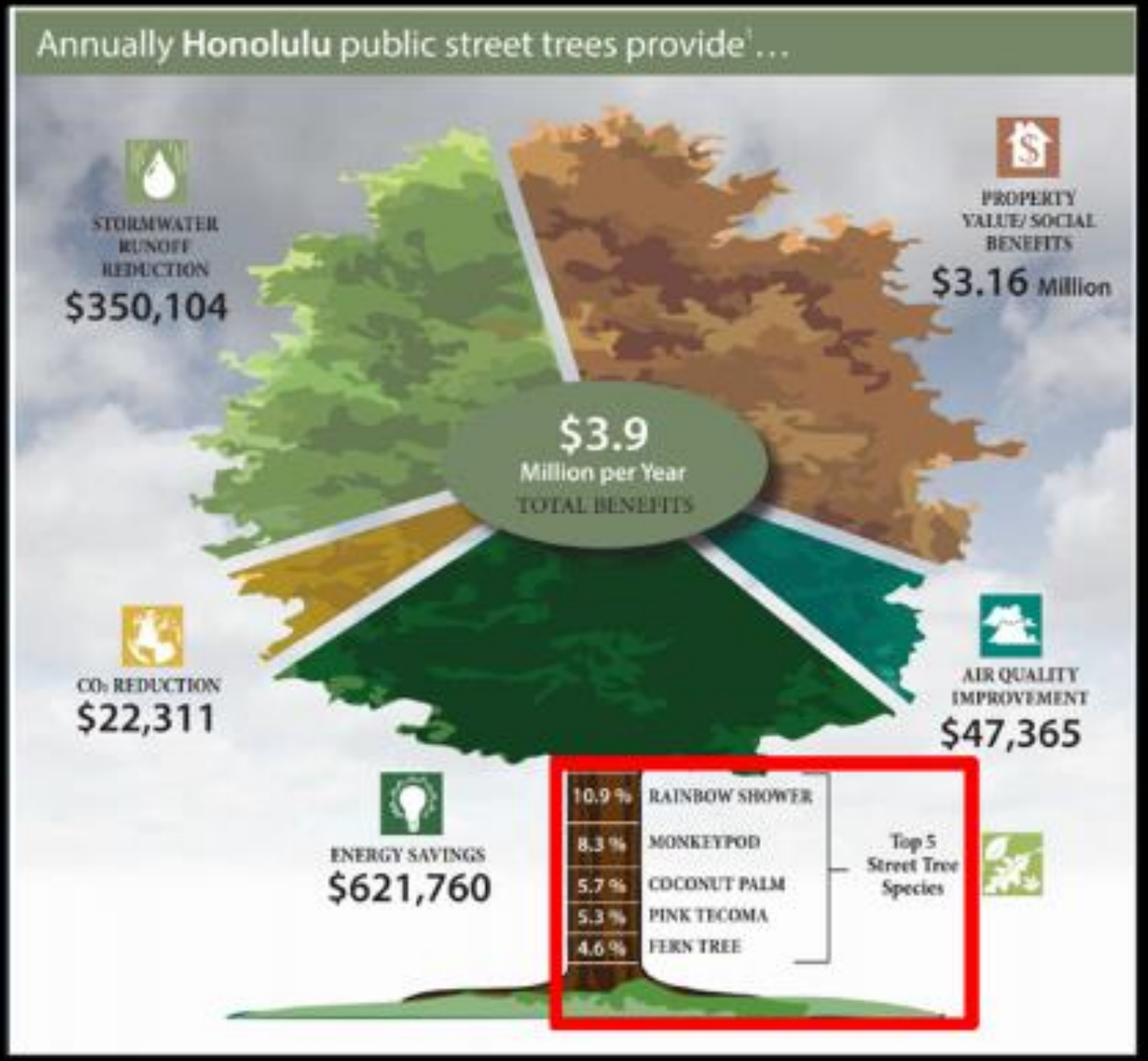
# Urban and Community Forestry in Hawai‘i

Photos: Hālau ‘Ōhi‘a, DLNR, Elyse Butler

# Trees are Infrastructure

$1 paid to maintain trees

$3 return on investment




Center for Urban Forest Research. 2007. City of Honolulu, Hawai'i Municipal Forest Analysis

# TREES IMPROVE

HUMAN HEALTH

ECONOMIC DEVELOPMENT

WATER QUALITY

AIR QUALITY

PUBLIC SAFETY

EQUITY

TRANSPORTATION

EDUCATION

CITY PLANNING

SMART CITIES TECH

URBAN WOOD REUSE

RESILIENCE

https://www.vibrantcitieslab.com/

# Hawaii's Tree Canopy Viewer

- Statewide, all land-use types
- Canopy data
  - Raster 1-meter resolution
  - MAXAR VIVID & LiDAR Imagery 2013-2020
  - Available for download
- Socio-demographic and health data

# Hawaii's Tree Canopy Viewer

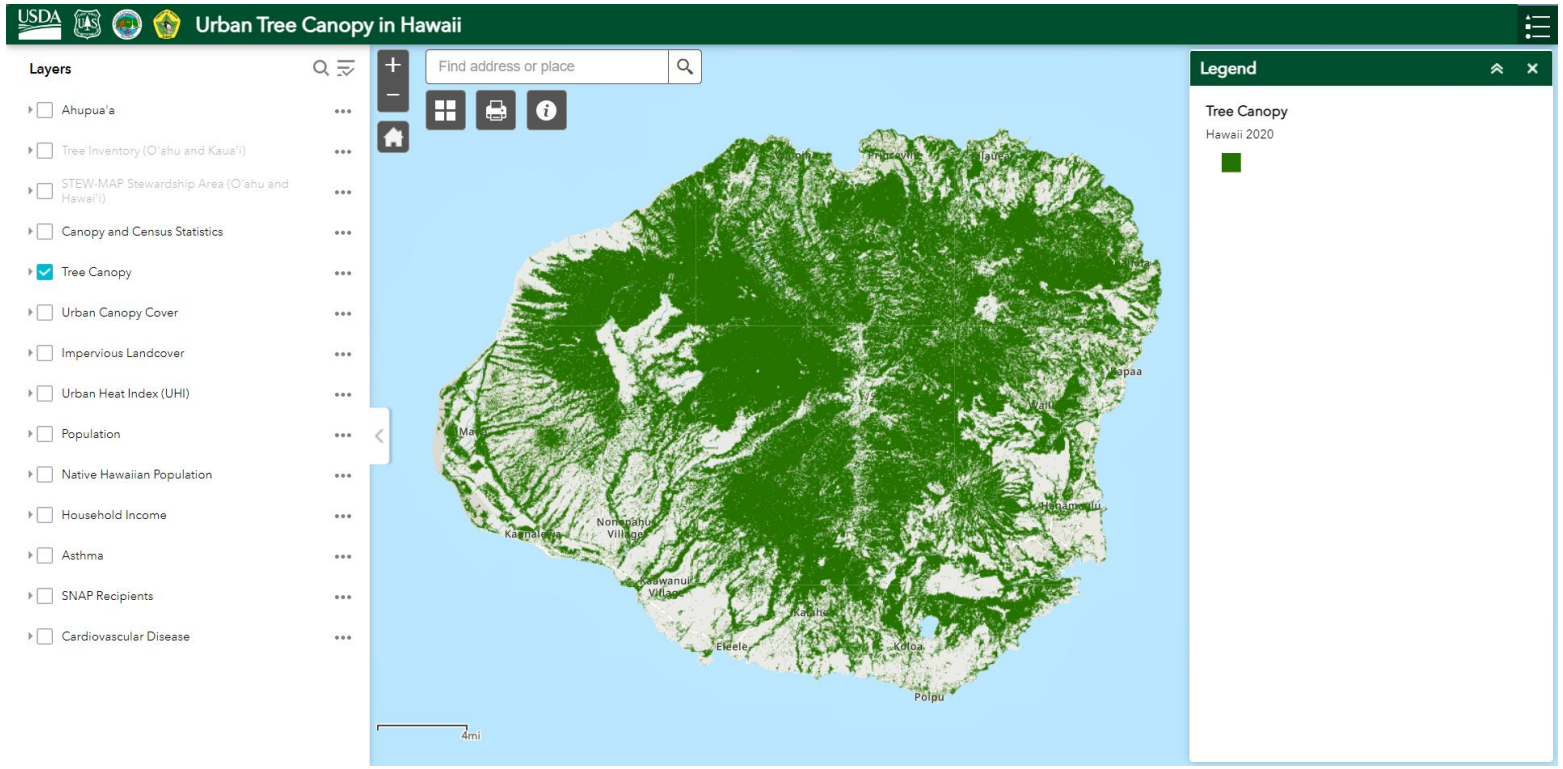
- Statewide, all land-use types
- Canopy data
  - Raster 1-meter resolution
  - MAXAR VIVID & LiDAR Imagery 2013-2020
  - Available for download
- Socio-demographic and health data

# Hawaii's Tree Canopy Viewer Layers

- Tree Canopy Raster
- Urban Canopy Cover
- Urban Heat Index
- Impervious Landcover
- Ahupua‘a
- Population
- Native Hawaiian Population

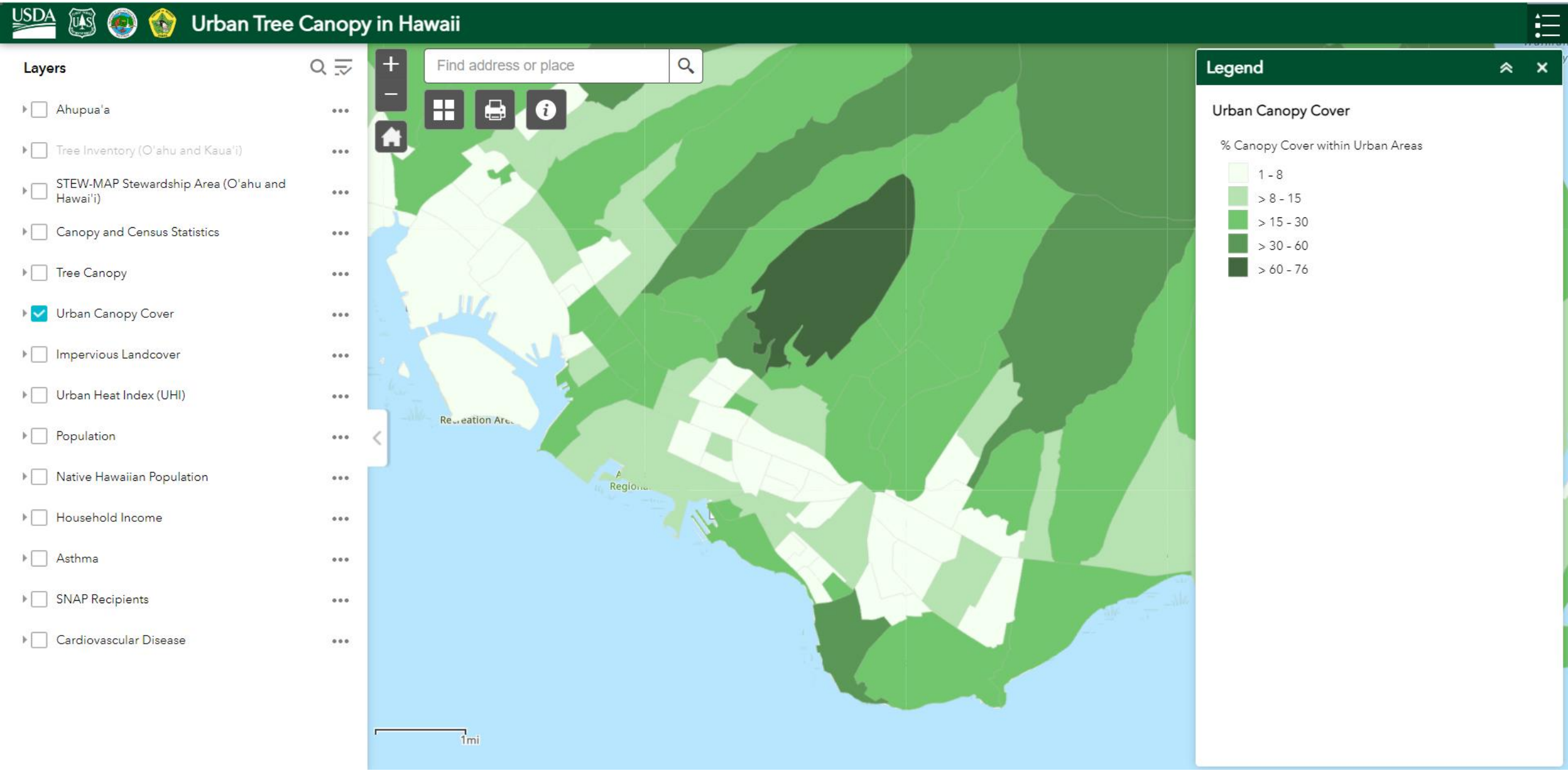
- Median Household Income
- SNAP Recipients
- Asthma Incidence
- Cardiovascular Disease Incidence
- Citizen Forester Tree Inventory (limited)
- Stewardship Areas (limited)

# What can the Tree Canopy Viewer Do?

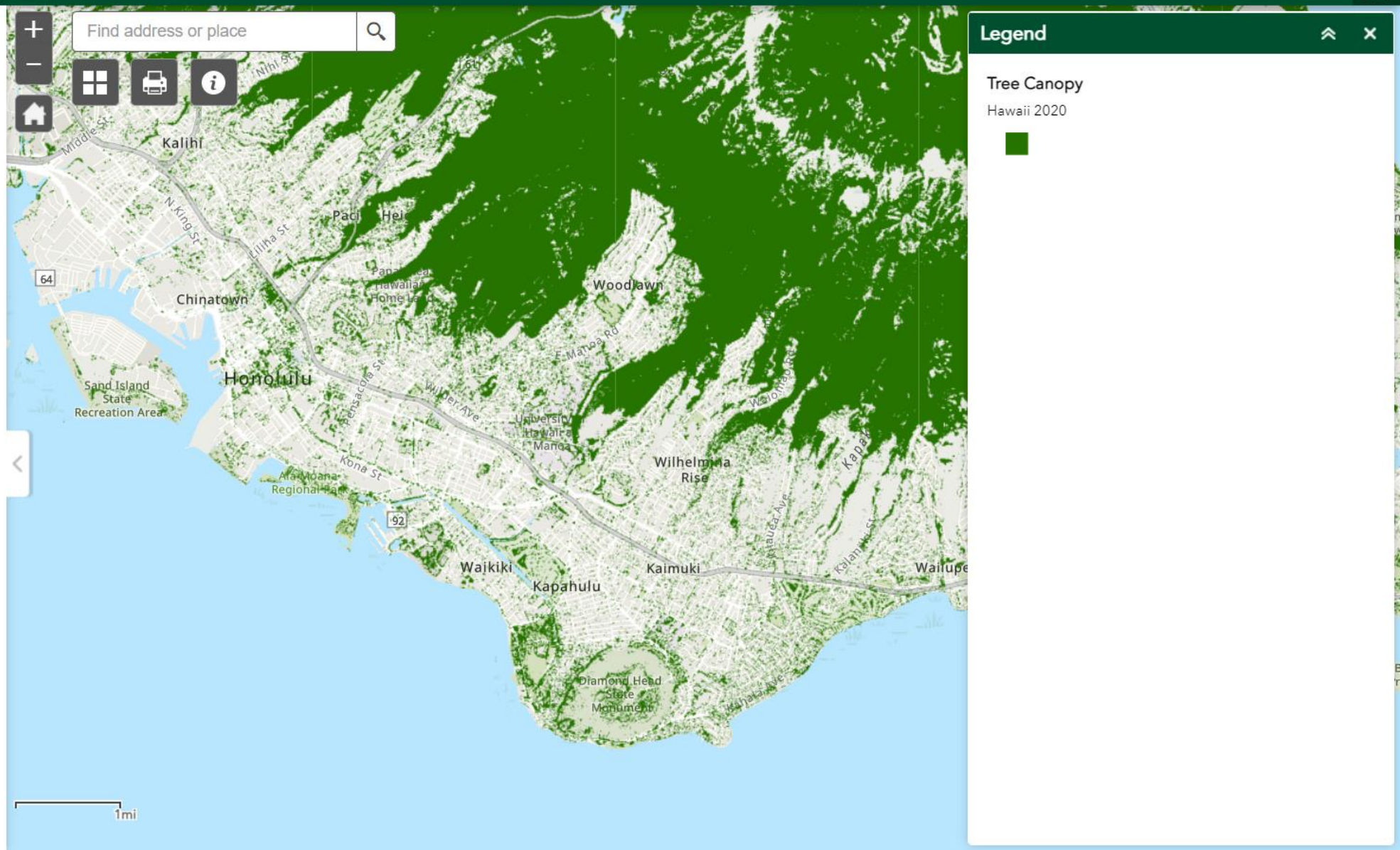



- Visualize location and extent of canopy
- Inform prioritization of tree projects
  - Maximizes benefits that trees provide
  - Pathway to equitable benefits

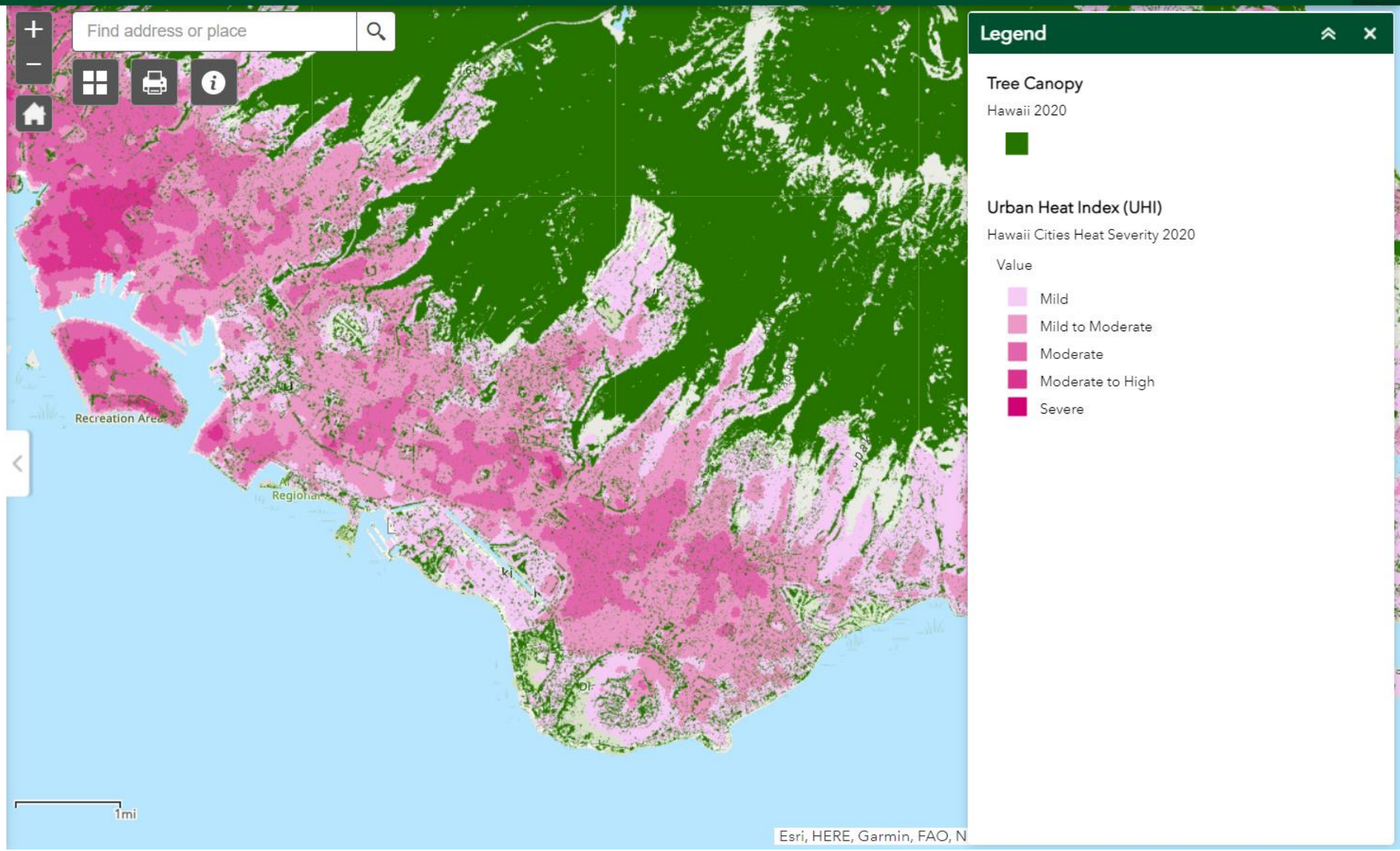
# Urban Tree Canopy in Hawaii



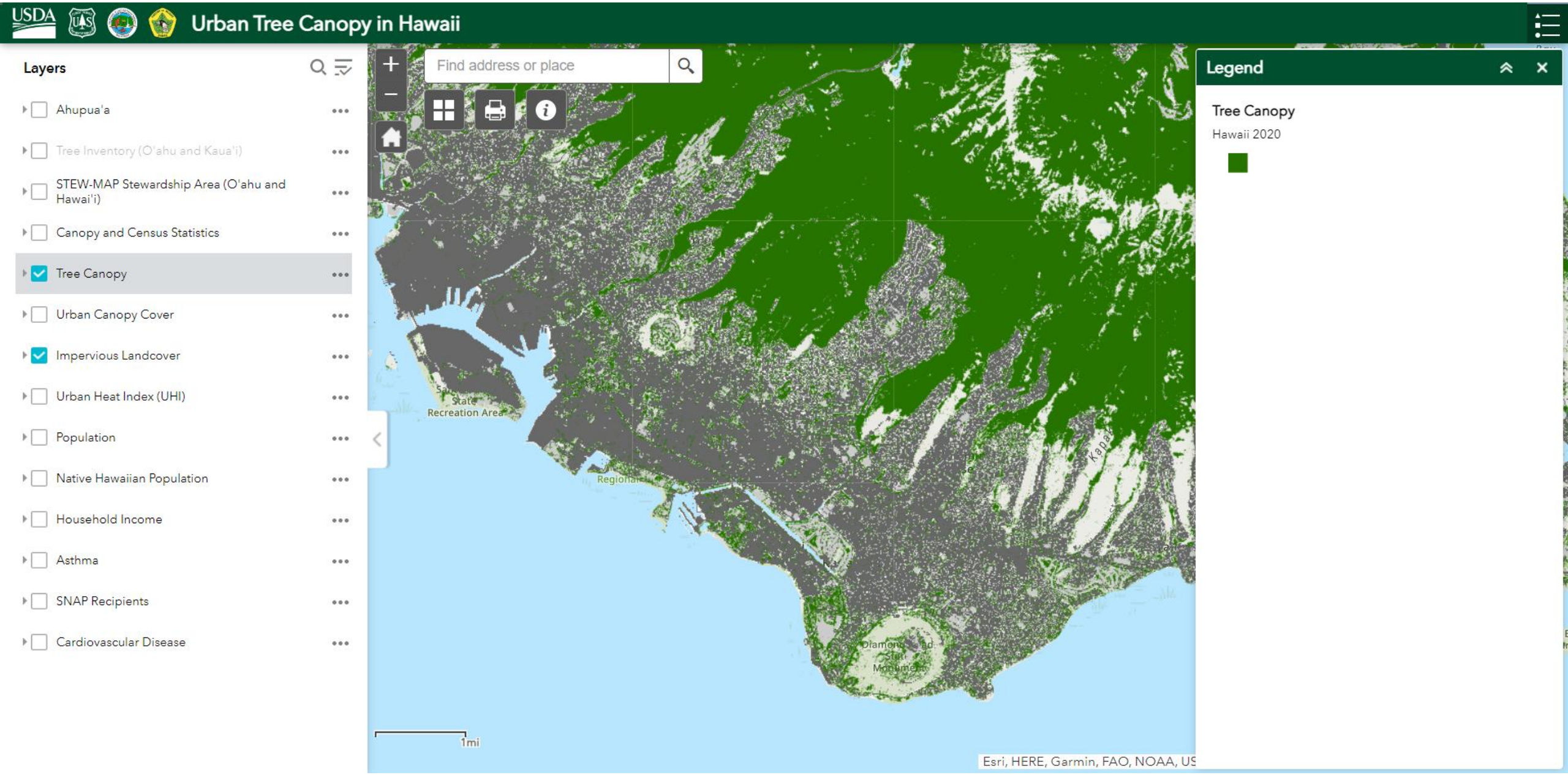
# Urban Tree Canopy in Hawaii



# Urban Tree Canopy in Hawaii



# Urban Tree Canopy in Hawaii

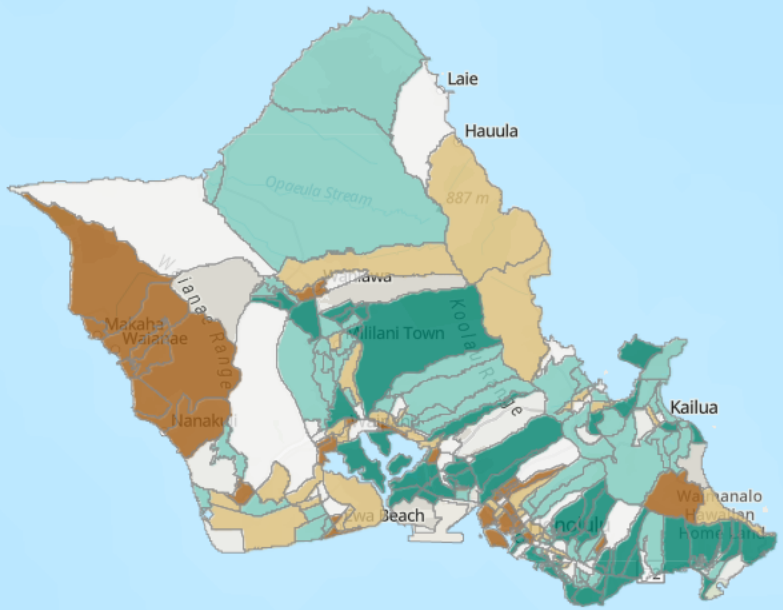


# Urban Tree Canopy in Hawaii

**Layers**

- [ ] Ahupua'a
- [ ] Tree Inventory (O'ahu and Kaua'i)
- [ ] STEW-MAP Stewardship Area (O'ahu and Hawai'i)
- [x] Canopy and Census Statistics
- [ ] Tree Canopy
- [ ] Urban Canopy Cover
- [ ] Impervious Landcover
- [ ] Urban Heat Index (UHI)
- [ ] Population
- [ ] Native Hawaiian Population
- [ ] Household Income
- [ ] Asthma
- [x] SNAP Recipients
- [ ] Cardiovascular Disease

Find address or place




10mi

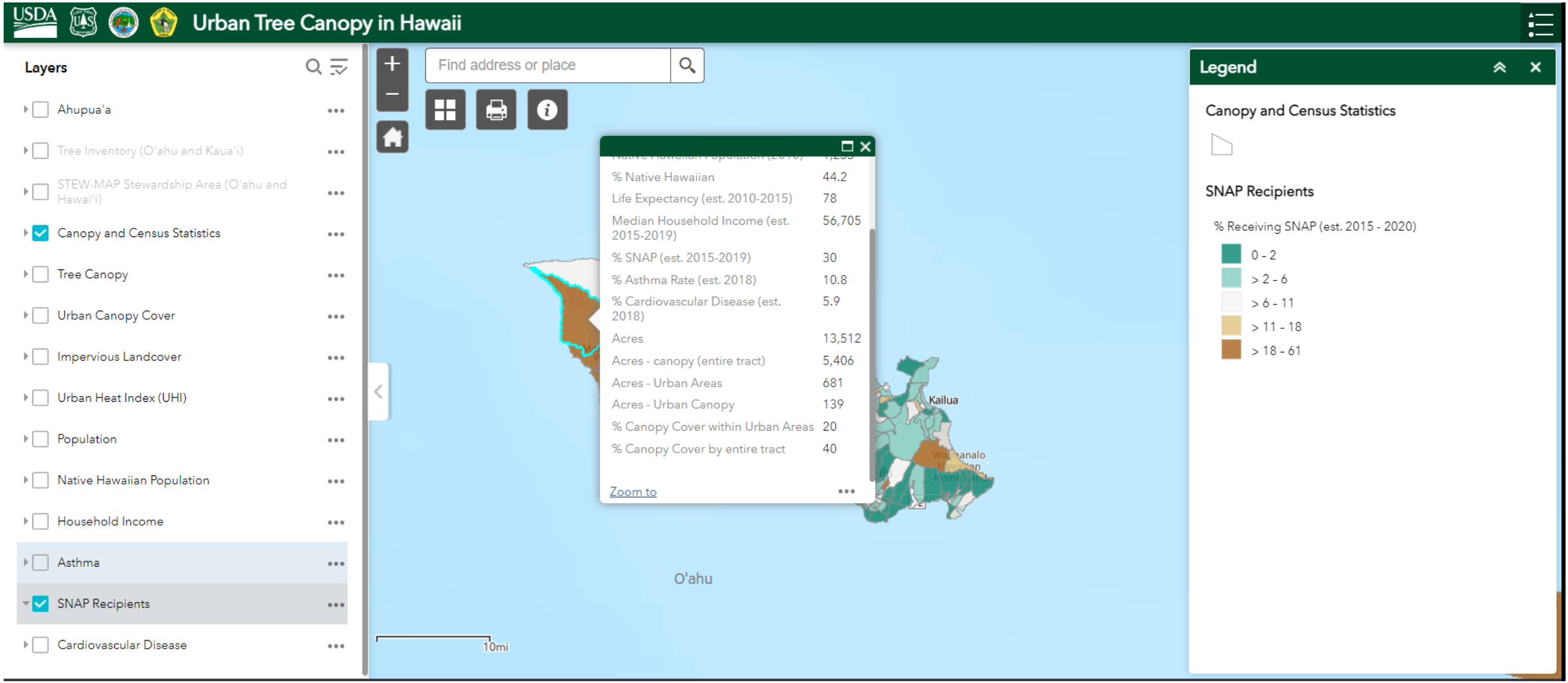
**Legend**

Canopy and Census Statistics

SNAP Recipients

% Receiving SNAP (est. 2015 - 2020)

- 0 - 2
- > 2 - 6
- > 6 - 11
- > 11 - 18
- > 18 - 61


Urban Tree Canopy in Hawaii
Layers
Ahupua'a
Tree Inventory (O'ahu and Kaua'i)
STEW-MAP Stewardship Area (O'ahu and Hawai'i)
Canopy and Census Statistics
Tree Canopy
Urban Canopy Cover
Impervious Landcover
Urban Heat Index (UHI)
Population
Native Hawaiian Population
Household Income
Asthma
SNAP Recipients
Cardiovascular Disease
Find address or place
% Native Hawaiian 44.2
Life Expectancy (est. 2010-2015) 78
Median Household Income (est. 2015-2019) 56,705
% SNAP (est. 2015-2019) 30
% Asthma Rate (est. 2018) 10.8
% Cardiovascular Disease (est. 2018) 5.9
Acres 13,512
Acres - canopy (entire tract) 5,406
Acres - Urban Areas 681
Acres - Urban Canopy 139
% Canopy Cover within Urban Areas 20
% Canopy Cover by entire tract 40
Zoom to
Kailua
O'ahu
10mi
Legend
Canopy and Census Statistics
SNAP Recipients
% Receiving SNAP (est. 2015 - 2020)
0 - 2
> 2 - 6
> 6 - 11
> 11 - 18
> 18 - 61

# 3-30-300

## URBAN CANOPY TARGET

**3** Trees (of a decent size) visible from every home.

**30** Percent tree canopy cover in neighborhood.

**300** Meters from nearest park or green space.

Konijnendijk van den Bosch, C. (2021). Promoting health and wellbeing through urban forests – Introducing the 3-30-300 rule.

Cecil Konijnendijk

NATURE BASED SOLUTIONS INSTITUTE

# HONOLULU

## URBAN CANOPY TARGET

**35%** by **2035**

City & County of Honolulu. (2018). Resolution 18-55.

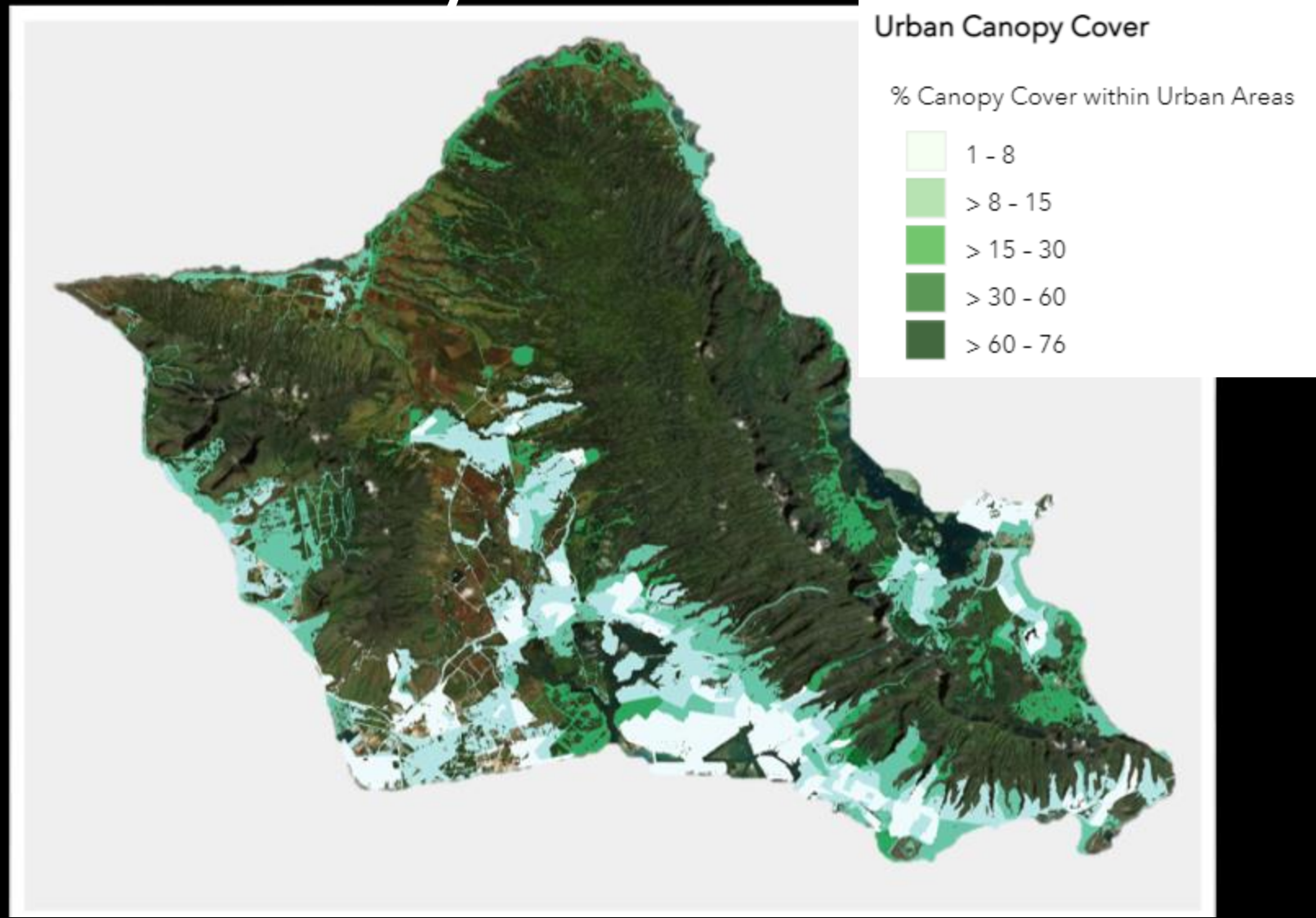
# URBAN CANOPY COVERAGE

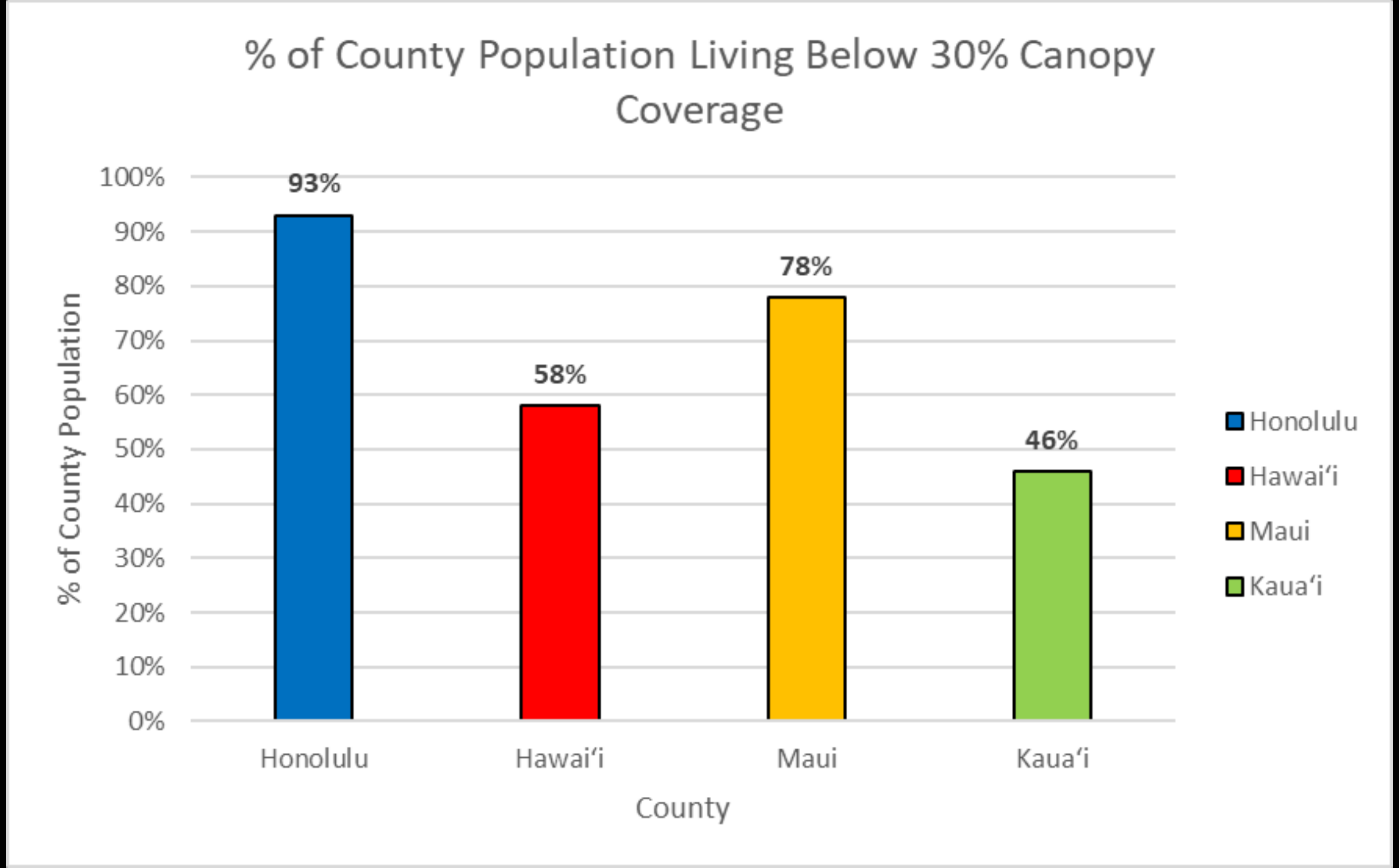
**84%**
HAWAIʻI RESIDENTS

**<30%**
**URBAN CANOPY**
COVERAGE

# Who lives with less than 30% urban canopy coverage in Honolulu County?

- 92% of census tracts
- 946,125 people
- 93% residents

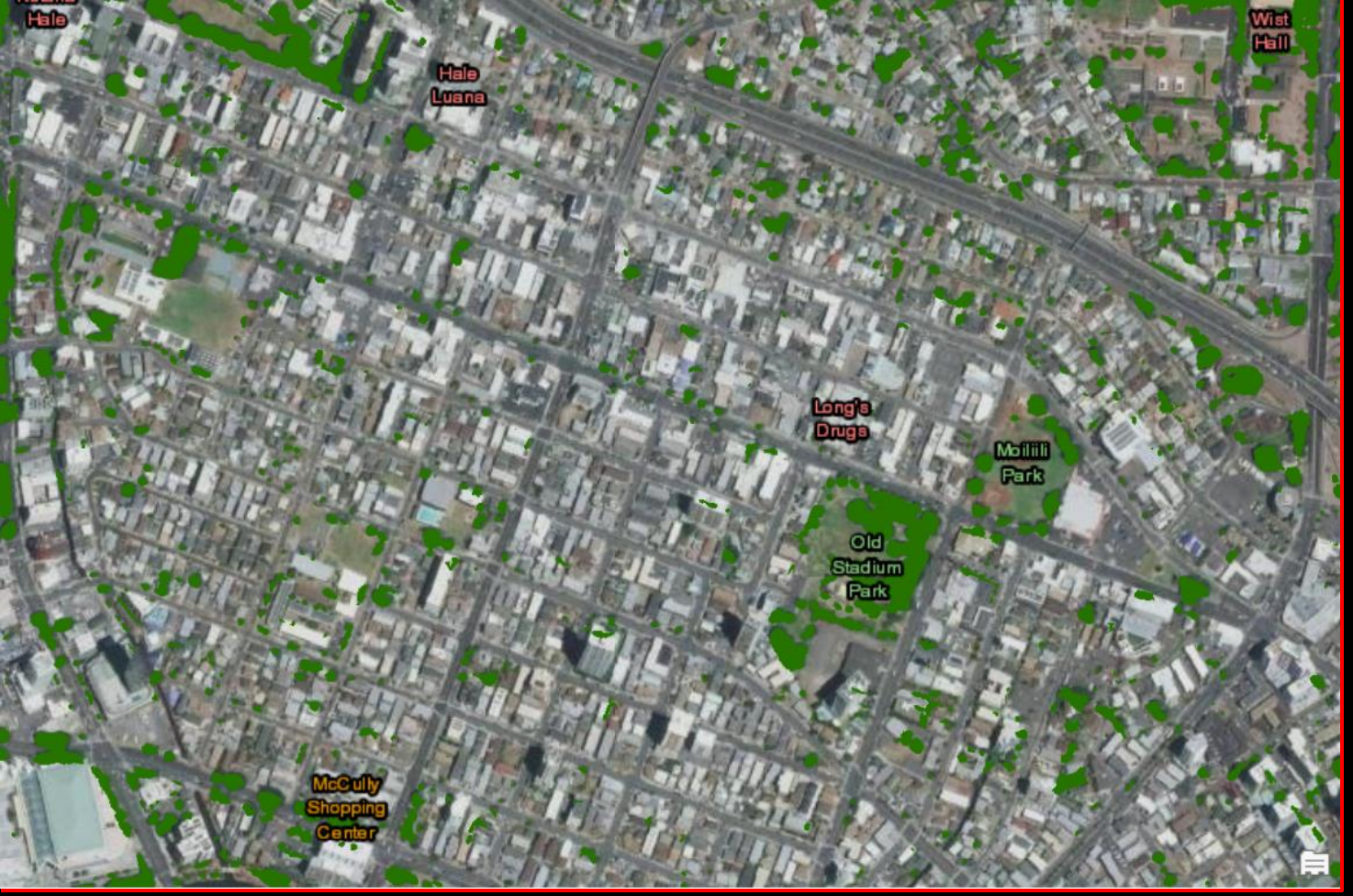



% of County Population Living Below 30% Canopy Coverage
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
% of County Population
93%
58%
78%
46%
Honolulu
Hawai‘i
Maui
Kaua‘i
County
Honolulu
Hawai‘i
Maui
Kaua‘i

# URBAN CANOPY COVERAGE

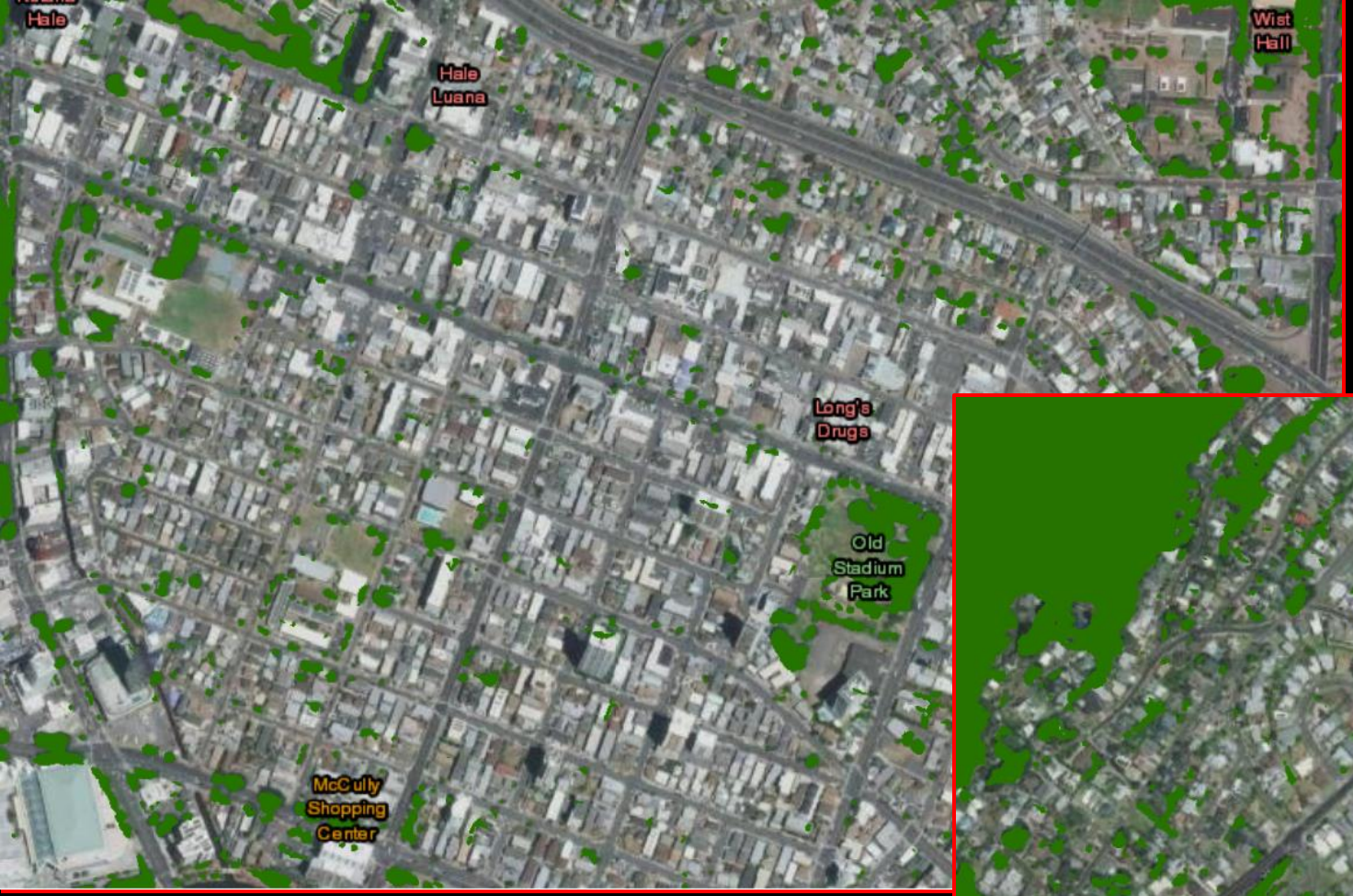
**70%**
**HI PUBLIC SCHOOLS**

**<30%**
**URBAN CANOPY COVERAGE**

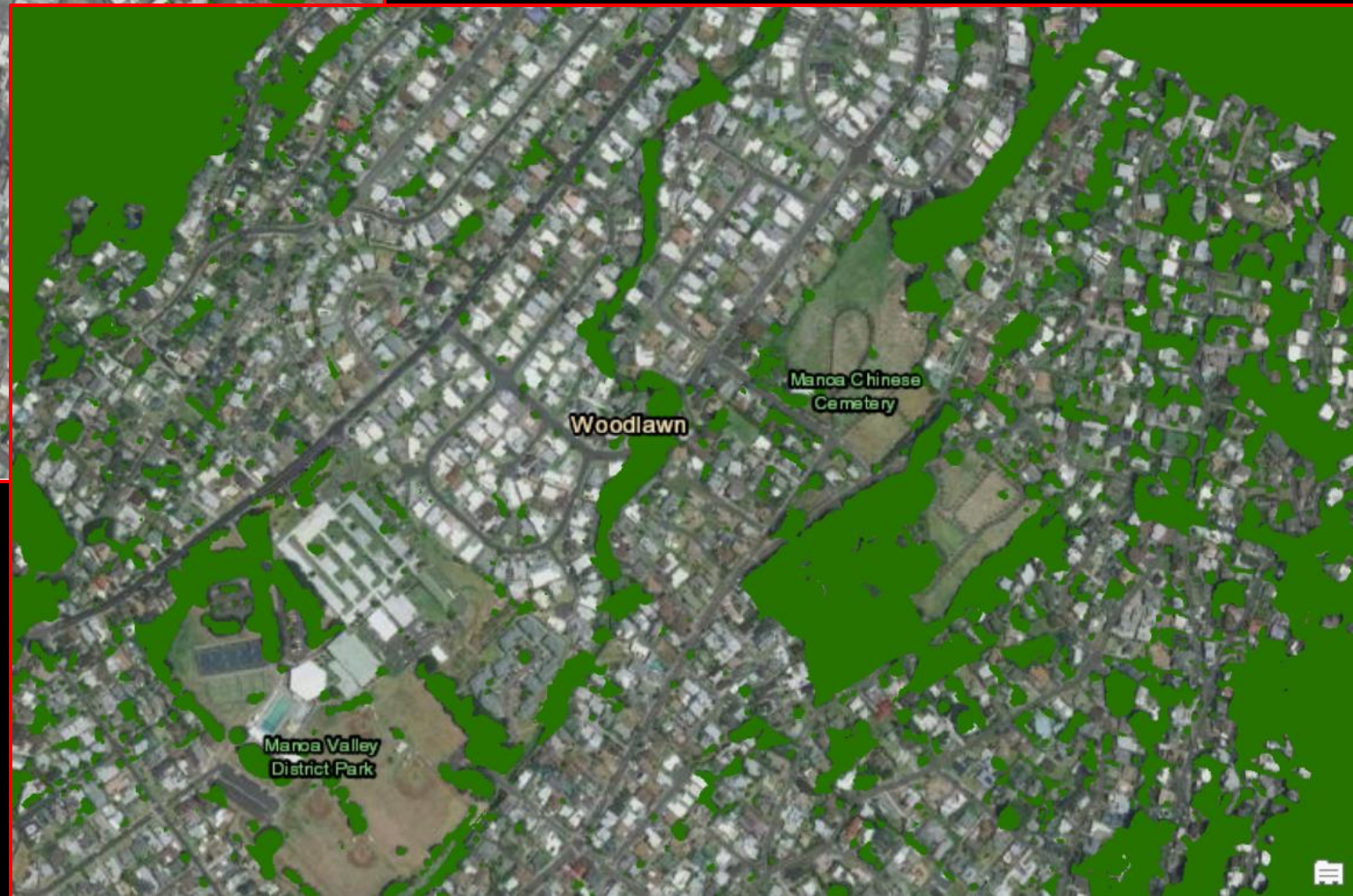



Mōʻiliʻili -McCully neighborhood

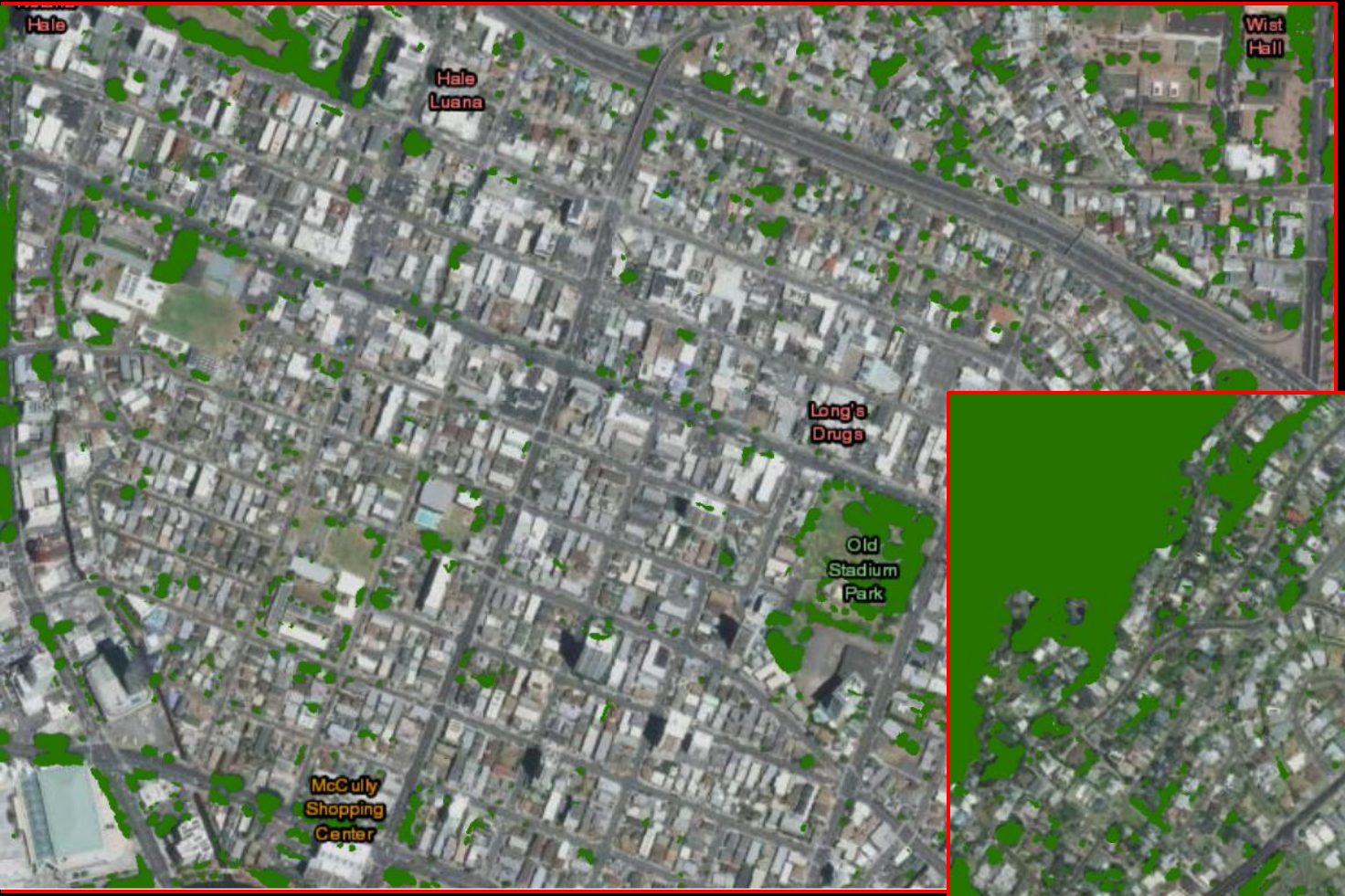
Canopy Cover = 6.7%



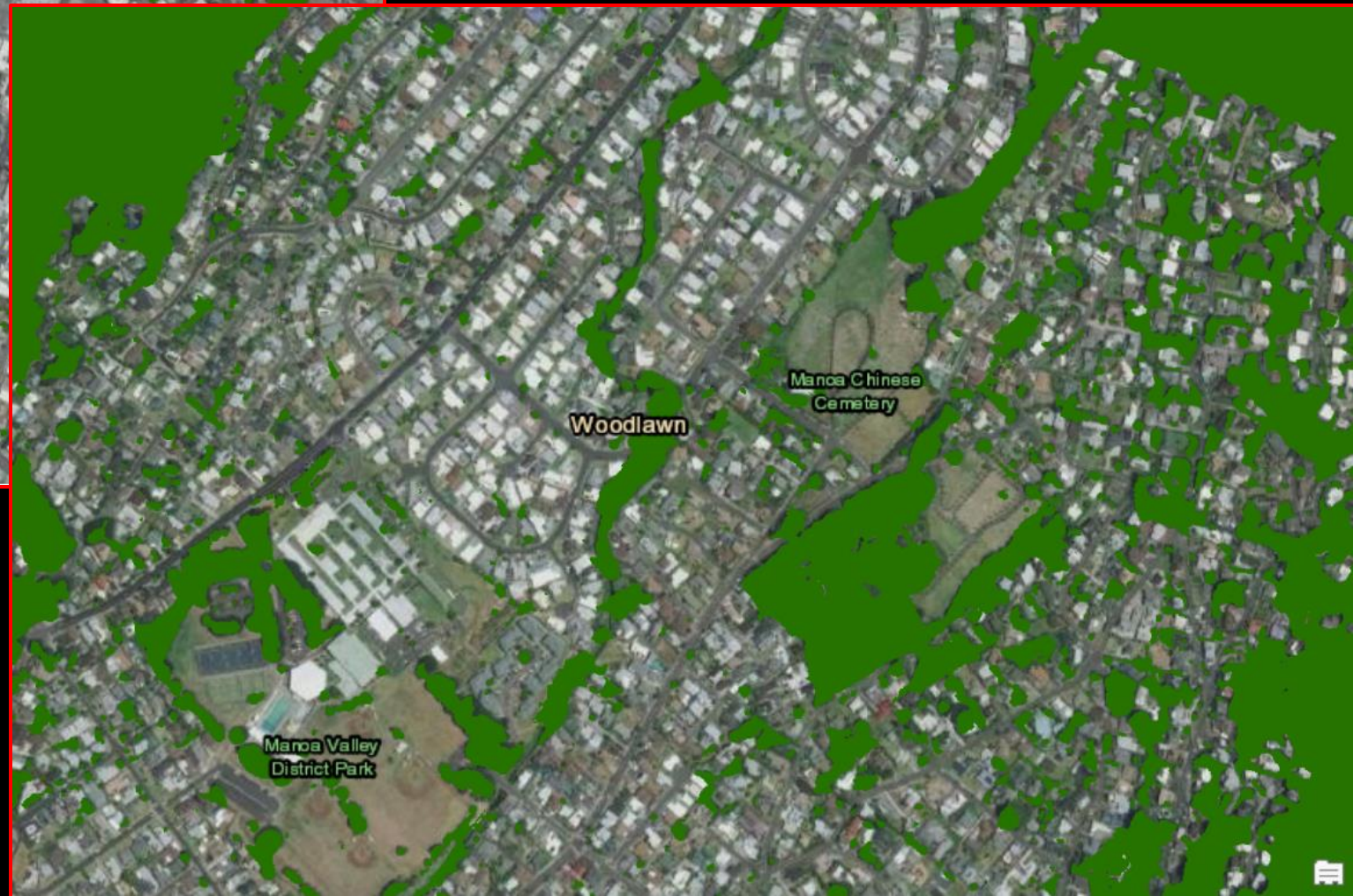

**Mō‘ili‘ili -McCully**
Canopy Cover 7%



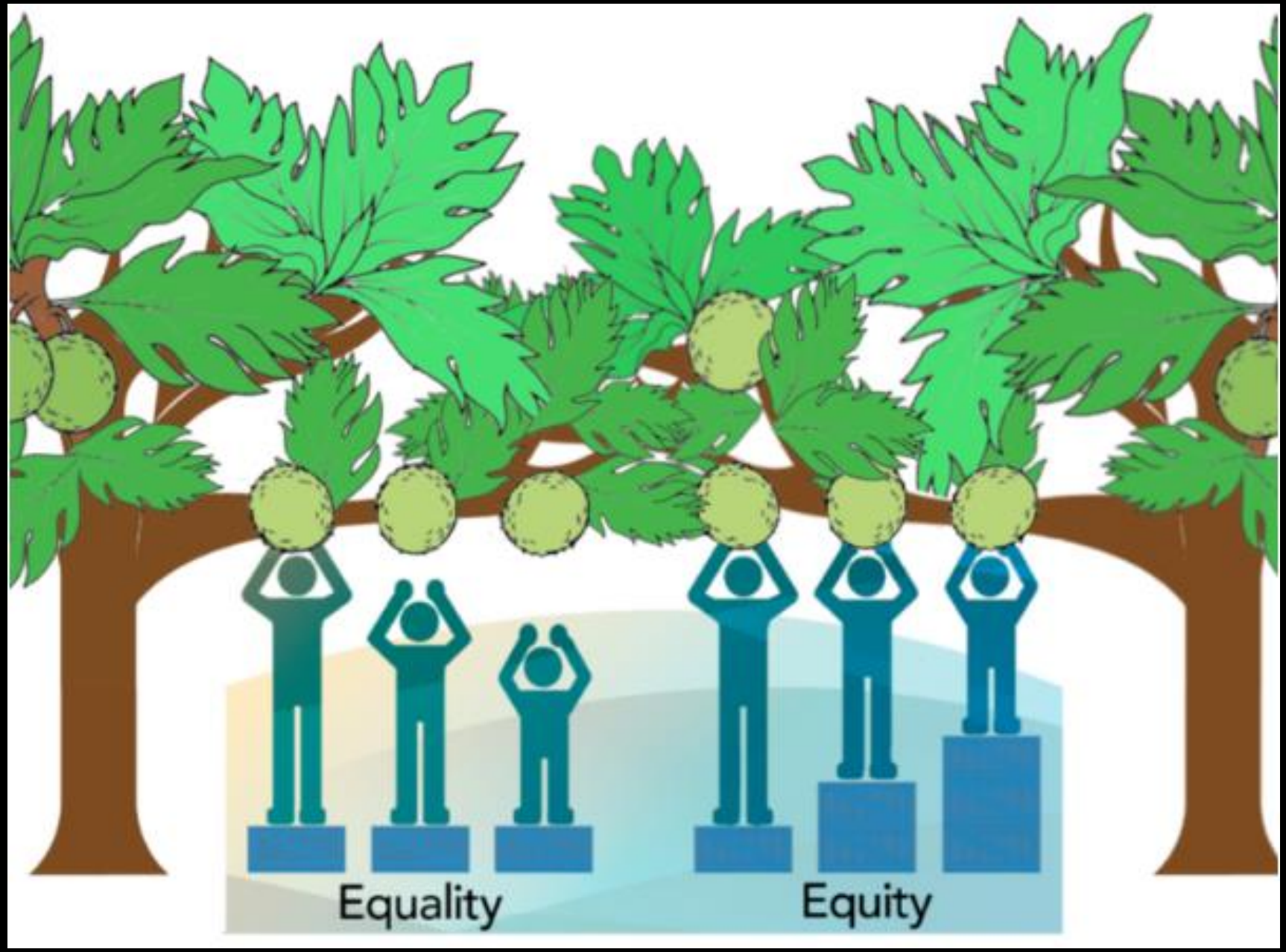

**Mānoa-Woodlawn**
Canopy cover 20 %




**Mō‘ili‘ili -McCully**
Canopy Cover 7%
Obesity Incidence: 23.2%
SNAP Recipient: 8%
Median Household Income: $54,391
Asthma Incidence: 8.4%




**Mānoa-Woodlawn**
Canopy Cover: 20%
Obesity Incidence: 17.5%
SNAP Recipient: 0.5%
Median Household Income: $119,310.50
Asthma Incidence: 7.4%




ttps://www.resilientoahu.org/equity

# Tree Canopy Viewer Fellows

- Four Fellows
- $5k stipends
- Mentorship
- Applications August 1 - Sept 15, 2022
- www.kaulunani.org for more info

# Access the Hawai‘i Tree Canopy Viewer

www.kaulunani.org

# Mahalo

**Heather McMillen**

**heather.l.mcmillen@hawaii.gov**

**www.kaulunani.org**
**@kaulunani**