

CESSPOOLS IN HAWAII

Proposed Amendments to
Chapter 11-62
Wastewater Systems Rules

Hawaii Department of Health
Environmental Management Division
Wastewater Branch

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Why Reduce Cesspools in Hawaii?

- Hawaii is America's cesspool capital
 - 88,000 cesspools
 - Only state that currently allows new cesspools
 - Approximately 800 new cesspools being constructed on the Big Island, Maui and Molokai.
- Cesspools release 55 million gallons/day raw sewage into Hawaii's groundwater
 - Leading to contamination of drinking water, streams, & oceans
 - Potential source of disease-causing pathogens & chemicals



2014 Milestones to Amend Ch. 11-62 Rules

Date	Rule Change Proposal	Summary Changes	Remarks
Sept. 2014	Original Amendments	<ul style="list-style-type: none"> • Ban all new cesspools • All 88,000 cesspools be upgraded within 180 days after property sale • Reduce from 50 to 15 lots the size of new proposed subdivisions allowed to use individual wastewater systems (IWS) rather than package treatment 	<ul style="list-style-type: none"> • Little opposition • Objection from realtors • Some developer opposition
Nov. 2014	Revised Amendments (Following Public Comment Period)	<ul style="list-style-type: none"> • Ban all new cesspools • Require 19,800 cesspools be upgraded within 365 days after property sale • Reduce from 50 to 15 lots the size of new proposed subdivisions allowed to use IWS rather than package treatment 	<ul style="list-style-type: none"> • Little opposition • Objection from realtors • Some developer opposition

Ch. 11-62 Rules Development

Date	# Cesspools	Basis	Impact
Sept. 2014	88,000	<ul style="list-style-type: none"> Total # Cesspools 	<ul style="list-style-type: none"> Rules would apply to ALL cesspools
	↓		
Nov. 2014	19,800	<ul style="list-style-type: none"> Located within 750 ft of surface water body or a public drinking water source 	<ul style="list-style-type: none"> Targets locations that would most affect human health & environment

DOH withdraw rules from the Governor's office in May 2015.



Proposed 2015 Major Amendments

- Ban NEW cesspools
- Delete two prior rule requirements:
 - a) Required 19,800 cesspools to upgrade within 365 days after property sale
 - b) Reduced from 50 to 15 lots, the size of new subdivisions allowed to use IWS rather than package treatment
- Provide language to implement Act 120 that provides a tax credit for the cost of upgrading or converting a qualified cesspool to a septic tank system or an aerobic treatment unit system, or connecting to a sewer system.



Act 120 - Cesspool Tax Credit

- Up to \$10,000 per taxpayer for qualifying cesspool upgrade or sewer connection
- Tax credits available for five years, starting in 2016 and ending 2020.
- \$5M annual cap (1/1/2016 to 12/31/2020)
- Would address approx. 6,900 cesspools
- Any taxpayer who is not eligible to claim the credit in a taxable year shall be eligible to claim the credit in the subsequent taxable years from 2017 to 2020.

Act 120 - Cesspool Tax Credit

- **What is a qualified cesspool covered under Act 120?**

Qualified cesspools are cesspools that are:

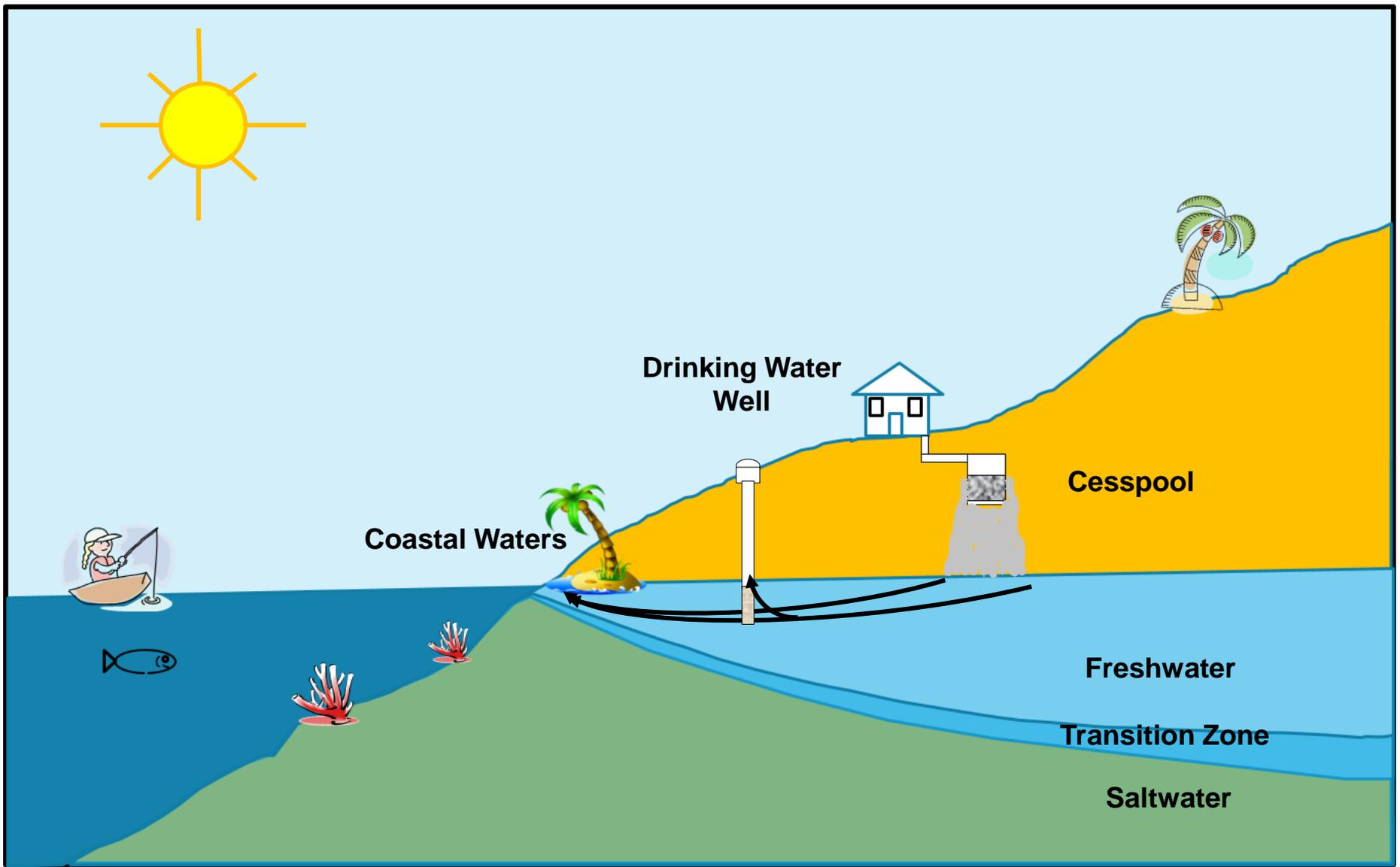
Located within 200 feet of a shoreline, perennial stream, wetland, or within a source water assessment program area (two year time of travel from a cesspool to a public drinking water source).

Act 120 - Cesspool Tax Credit

Description of the tax credit eligible zones

Cesspool Upgrade Tax Credit

- Goal:
 - Provide financial support to upgrade those cesspools that pose the highest risk to human health and the environment,
 - Adverse impact occurs,
 - By consumption
 - i.e. public drinking water sources
 - By physical contact with pathogens
 - Recreational waters
 - By nutrient loading or contamination by the discharge of groundwater with degraded water quality
 - Coastal waters
 - Wetlands
 - Perennial streams



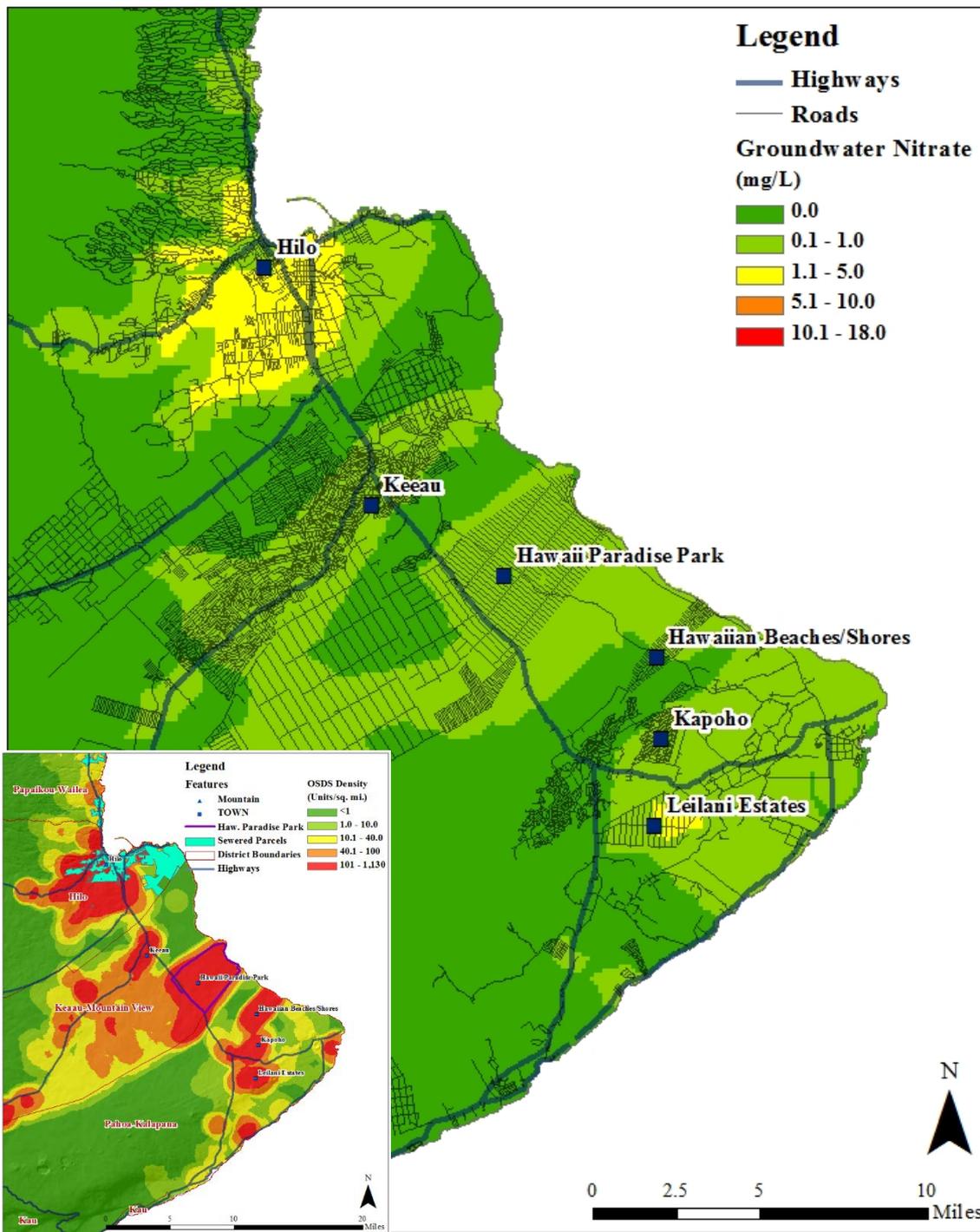
Cesspool leachate may impact drinking water wells, or the nearshore waters, perennial streams, or wetlands

Cesspool Upgrade Tax Credit

- Eligible Areas:
 - The Zone B Capture Zones Delineations for Public Drinking Water Well (i.e two year time of travel),



Cesspool Impact on Groundwater Hawaiian Paradise Park



Modeled the nitrate in groundwater (GW-n) from cesspools

GW-n in most of East Hawaii is Low due to:

- High Recharge
- Inflow of more pristine groundwater from upslope

HPP, GW-n < 1 mg/L

- Natural GW-n concentration ~0.04 – 1 mg/L

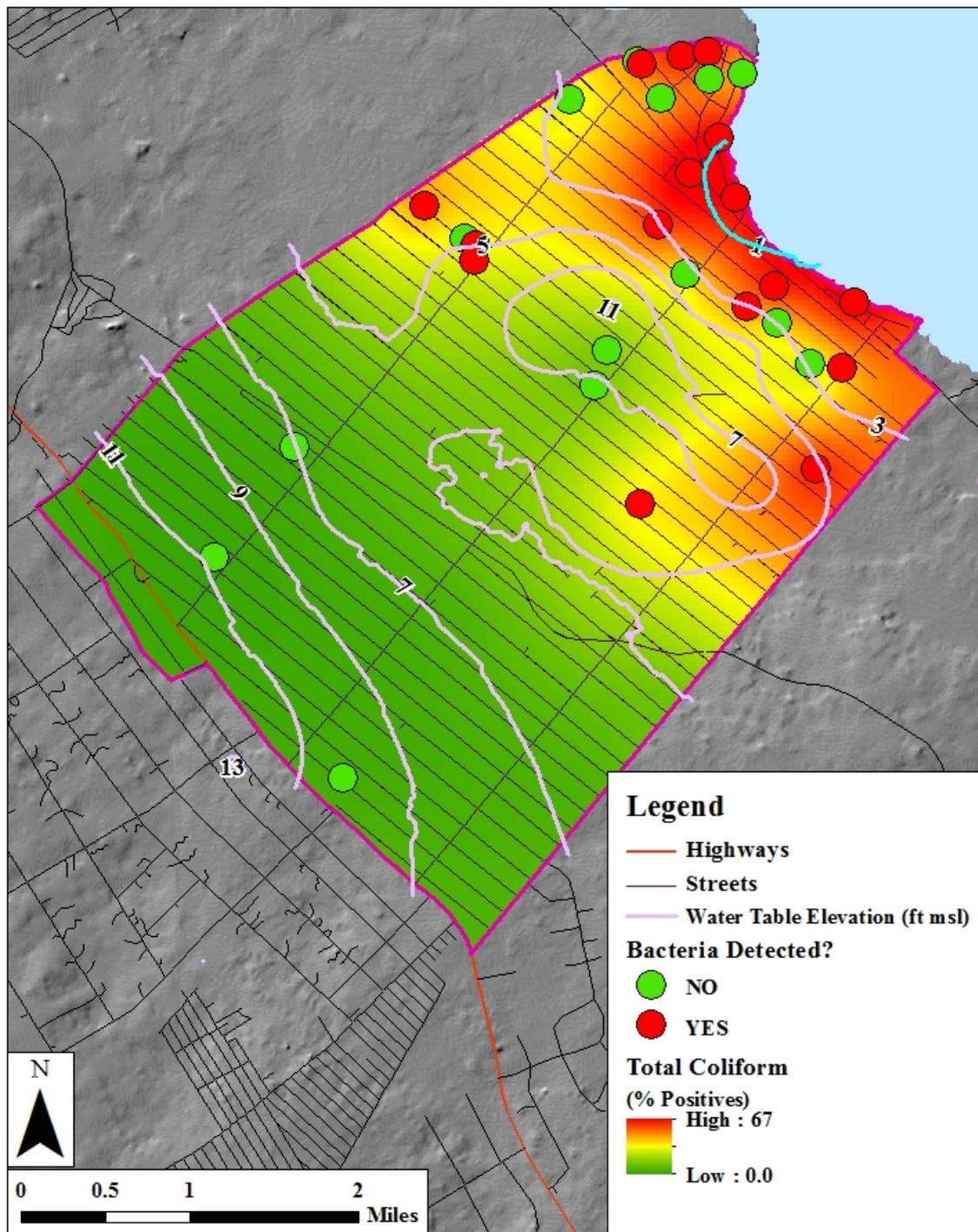
Contrast with Leilani Estates

Some areas of West Hawaii GW-n is > 10 mg/L

- Lower recharge

HPP Bacteria Screening Results

- Samples collected 2010/11 and 2014
- 69 samples collected
- From 32 wells
- 29 samples positive for Total Coliform
 - 50% of the wells
- 8 wells positive for E Coli
 - 25% of the wells
- Incidents of bacteria detection increase
 - near the coast
 - After heavy rain
- Study did not consider longer lived viruses!



Cesspool Upgrade Tax Credit

- Eligible Areas:
 - The Zone B Capture Zones Delineations for Public Drinking Water Well (i.e two year time of travel),
 - Within 200 ft. of,
 - A wetland



Cesspool Upgrade Tax Credit

- Eligible Areas:
 - The Zone B Capture Zones Delineations for Public Drinking Water Well (i.e two year time of travel),
 - Within 200 ft. of,
 - A wetland,
 - A perennial Stream,

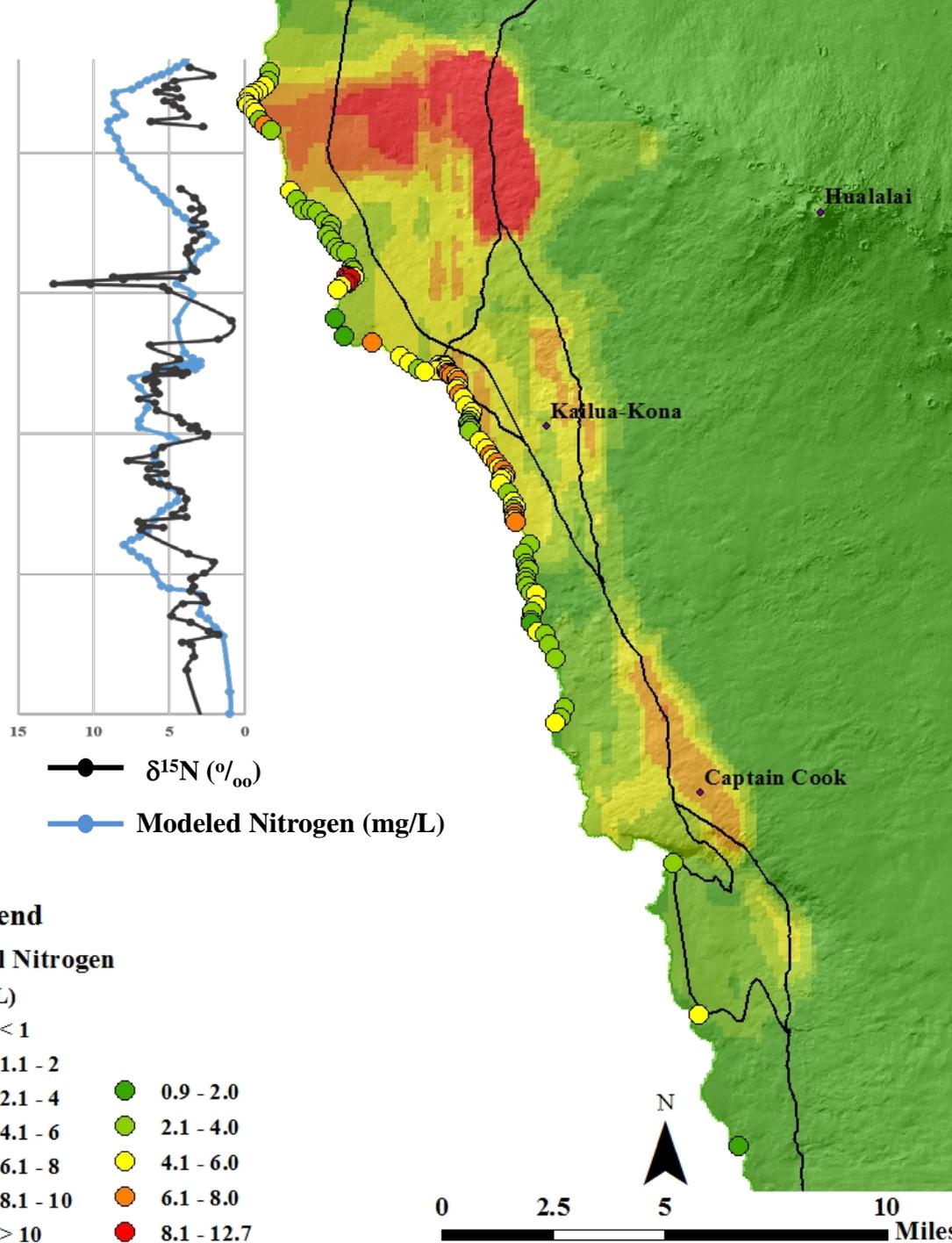


Cesspool Upgrade Tax Credit

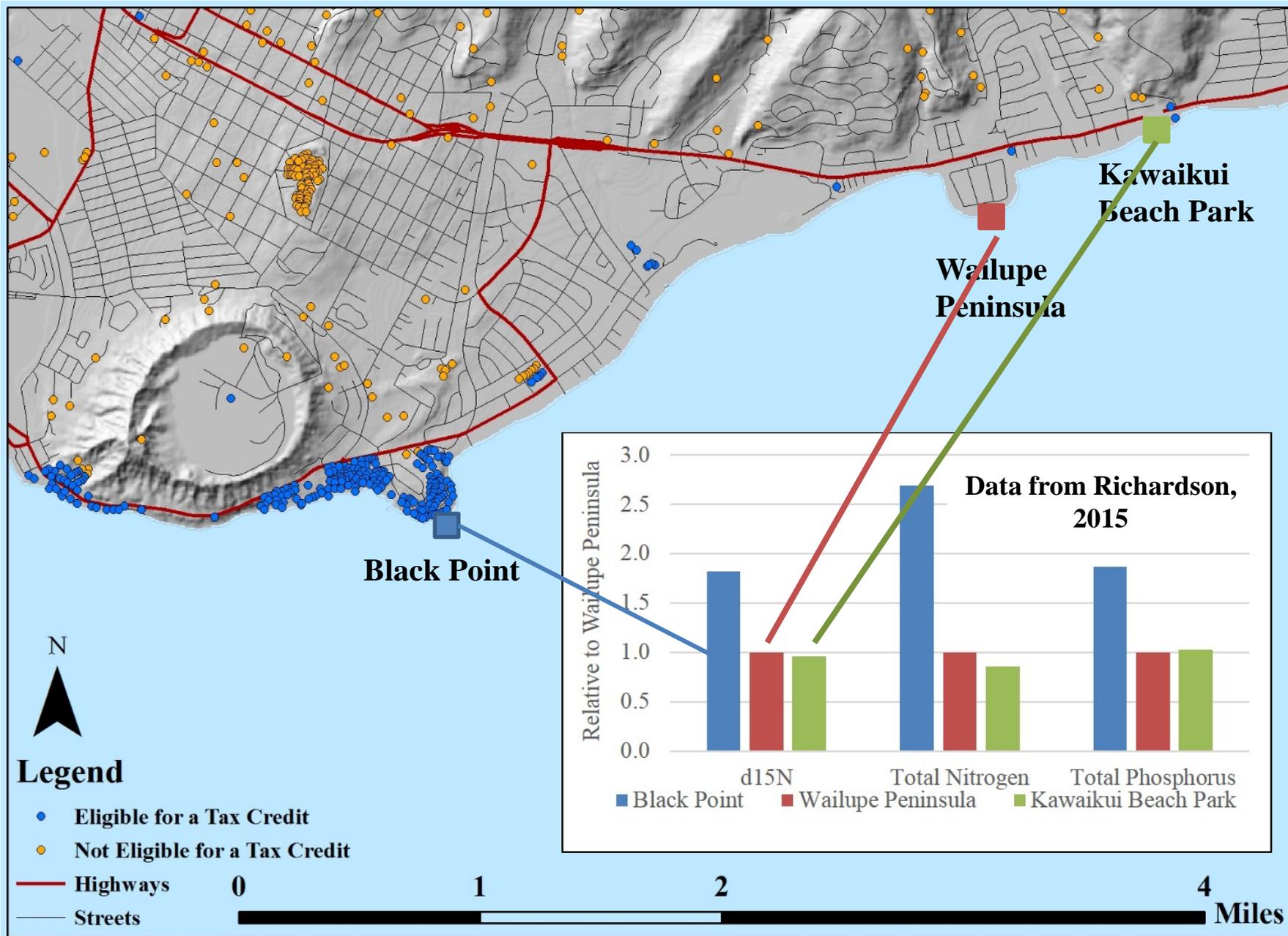
- Eligible Areas:
 - The Zone B Capture Zones Delineations for Public Drinking Water Well (i.e two year time of travel),
 - Within 200 ft. of a,
 - A wetland
 - A perennial stream
 - The shoreline



Measureable Cesspool Impact Coastal West Hawaii



- Modeled the nitrate in groundwater (GW-n) from cesspools
- UH measured the isotopic composition of algae along the coast
 - Wastewater is enriched in the nitrogen-15 isotope
- The similarity between the GW-n and the N-15 strongly suggest that cesspools affect the coastal nutrient chemistry
- Modeling did not account for wastewater injection

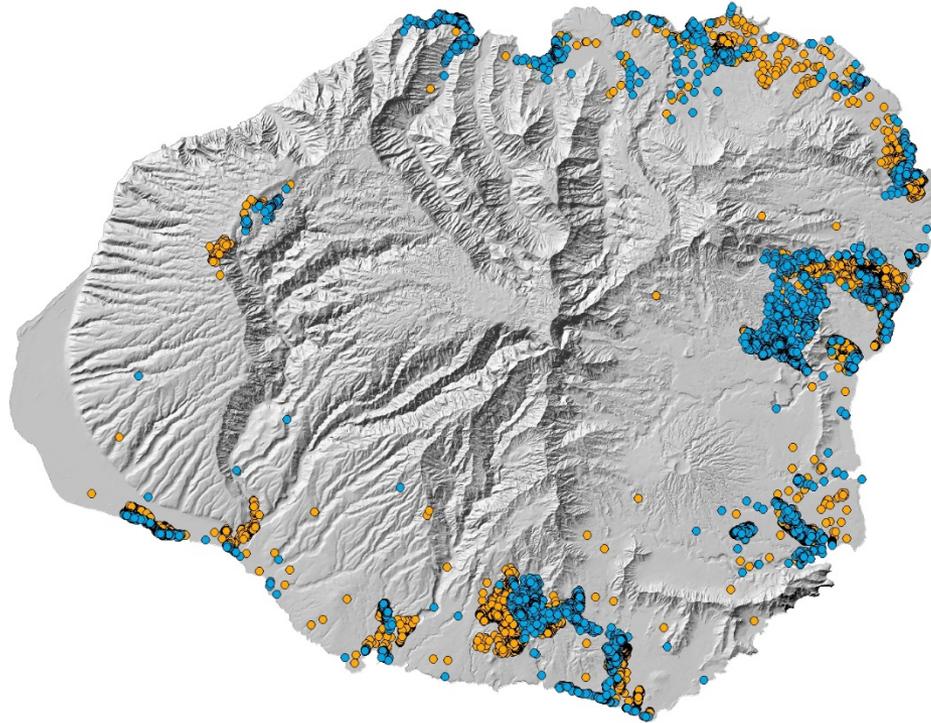


Contrast coastal water chemistry of Black Point (cesspools) with Wailupe and Kawaikui (no cesspools)

Cesspools Qualifying for a Tax Credit

County	Near a Drinking Water Well	Within 200 ft of			Total Number of Qualifying Cesspools
		A Perennial Stream	A Wetland	The Shoreline	
Hawaii Total	787	1,069	6	307	2,102
Kauai Total	391	883	40	246	1,497
Maui Co. Total	652	137	16	229	982
Honolulu Total	727	363	43	984	2,063
Statewide Total	2,557	2,452	105	1,766	6,644

CESSPOOL LOCATIONS ON KAUAI



Tax Credit Eligible Cesspools Kauai

- About 1,500 out of approximately 14,000 cesspools qualify
- Majority within 200 ft of a perennial stream
- Most are located in east-central and southeast Kauai

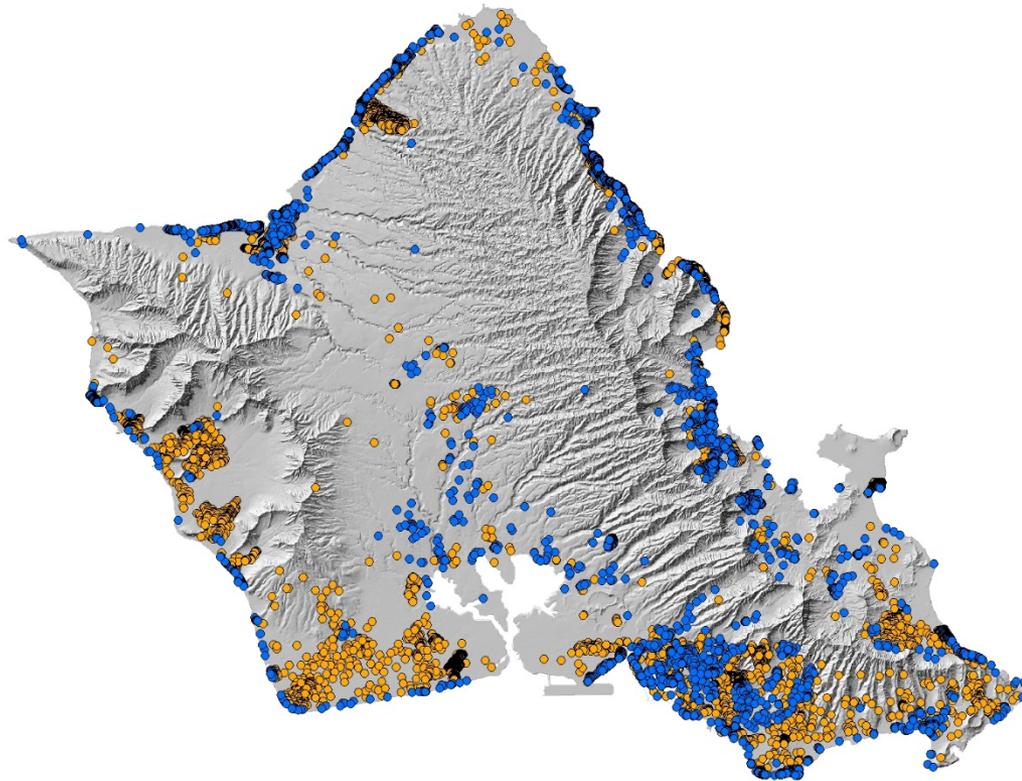
Legend

- Eligible for a Tax Credit (approximately 1,500)
- Not Eligible for a Tax Credit (approximately 12,000)

0 7.5 15 30 Miles



CESSPOOL LOCATIONS ON OAHU



N



Legend

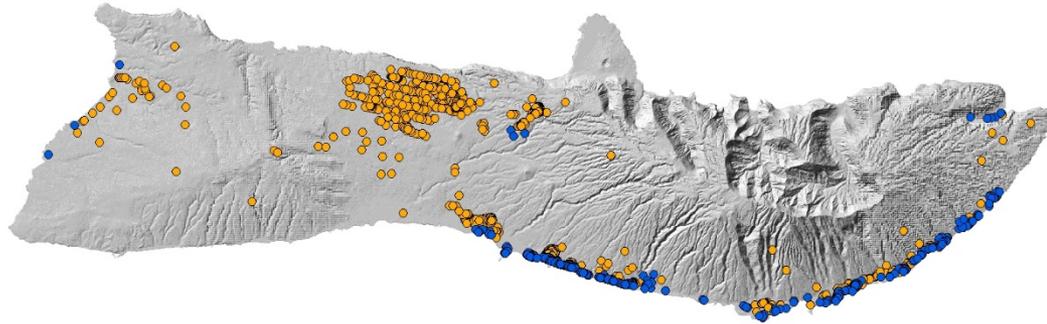
- Eligible for a Tax Credit (approximately 2,100)
- Not Eligible for a Tax Credit (approximately 9,200)

0 5 10 20 30 40 Miles

Tax Credit Eligible Cesspools Oahu

- About 2,100 out of 11,000 cesspools qualify
- Second only to Hawaii Island
- Most are located near the shoreline
- Over 700 eligible cesspools located near a drinking water well

CESSPOOL LOCATIONS ON MOLOKAI



Tax Credit Eligible Cesspools Molokai

- About 130 out of 1,400 cesspools qualify
- Eligible cesspools are mostly along the shoreline

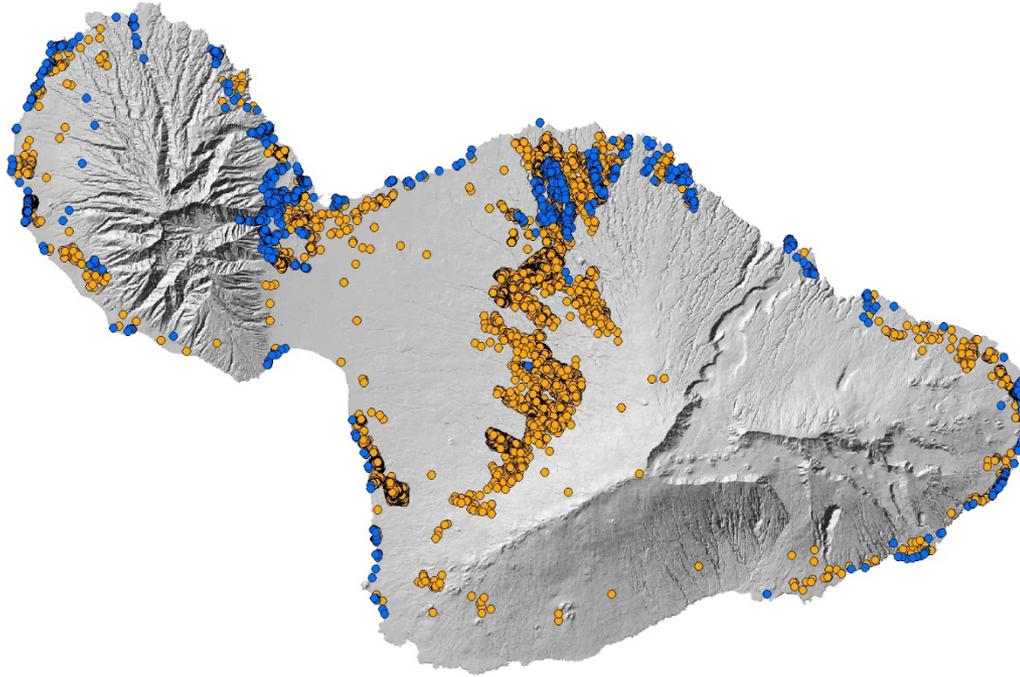
Legend

- Eligible for a Tax Credit (approximately 130)
- Not Eligible for a Tax Credit (approximately 1,300)

0 5 10 20 30 Miles



CESSPOOL LOCATIONS ON MAUI



Legend

- Eligible for a Tax Credit (approximately 900)
- Not Eligible for a Tax Credit (approximately 11,000)

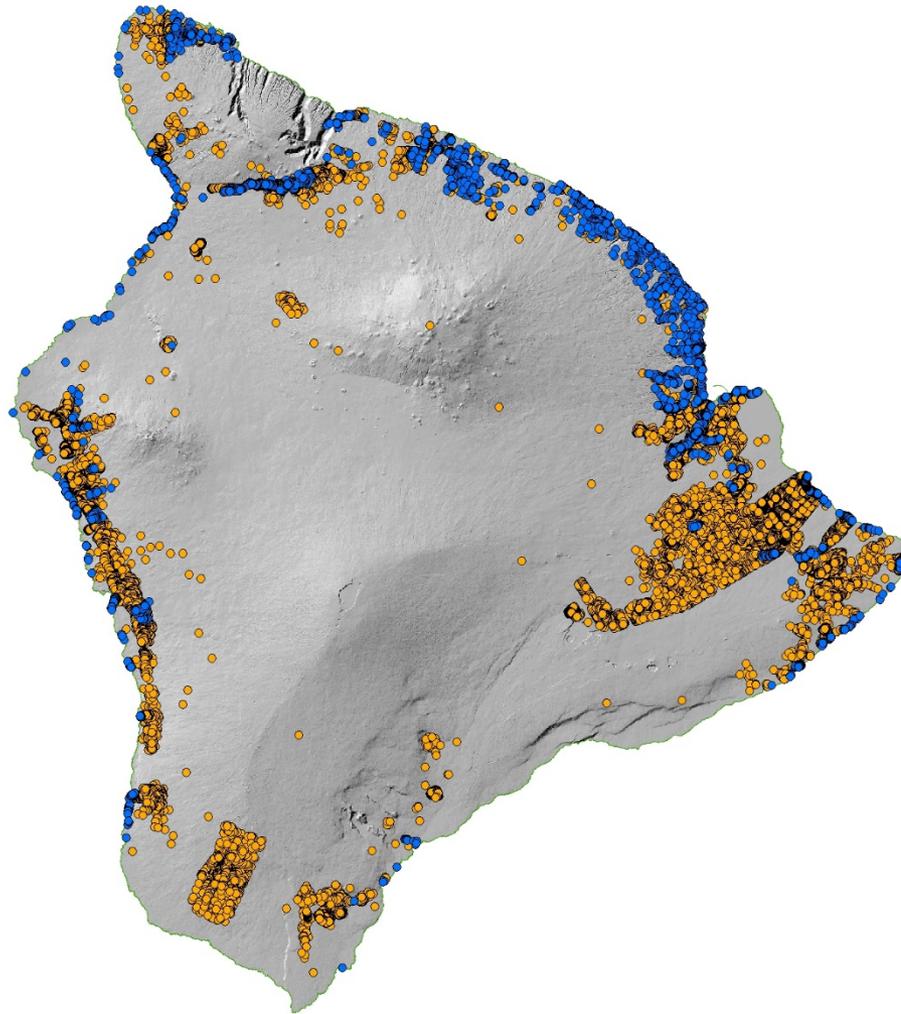
Tax Credit Eligible Cesspools Maui

- About 900 out of 12,000 cesspools qualify
- Most of the eligible cesspools are near a drinking water well
- North central and north east Maui

0 5 10 20 30 40 Miles



CESSPOOL LOCATIONS ON HAWAII ISLAND



Legend

- Eligible for a Tax Credit (2,200)
- Not Eligible for a Tax Credit (47,000)

0 10 20 40 60 80 Miles



Tax Credit Eligible Cesspools Hawaii

- About 2,200 out of approximately 49,000 cesspools qualify
- Majority in within 200 ft of a perennial stream
- Most are located in north east Hawaii

Act 120 - Cesspool Tax Credit

How will DOH certify a qualified cesspool?

Qualified cesspools that are located within 200 feet of a shoreline, perennial stream or wetland will need to be verified by a licensed engineer or licensed surveyor.

DOH will certify the qualified cesspools that are located in a source water assessment program area (two year time of travel from a cesspool to a public drinking water source).



Act 120 - Cesspool Tax Credit

How will DOH certify a qualified expense?

The taxpayer seeking a tax credit shall submit to the DOH all receipts of payments made to surveyors, engineers, and installers for the survey, design, completed installation and final construction inspection for the cesspool upgrade.



Tentative Schedule

August - September 2015:

- Conduct public outreach

September - October 2015:

- Submit request for Governor's approval to conduct public hearings

November 2015:

- Issue public notice for 30 day comment period

December 2015:

- Conduct public hearings on Oahu & neighbor islands
- Work on the response to public comments & final rules package

January 2016:

- Route final rules package for the Governor's signature.



Contact

- Contact the Wastewater Branch at (808) 586-4294
- Website: <http://health.hawaii.gov/wastewater/>

Questions?