Cesspools in West Hawai'i
Community Meeting
West Hawaii Council Chambers
June 29, 2018
6:00pm to 8:00pm
Agenda

I. Ground Rules
II. Opening Remarks
III. What is a Cesspool and Septic System
IV. Overview of Report
V. Prioritization Method and Priorities
VI. Kailua-Kona and Puako Cesspools
VII. University of Hawaii and NOAA Research
VIII. Question and Answer Session
IX. Next Steps

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In reply, please refer to:
File:

Report to the Legislature – Relating to Cesspools and Prioritization for Replacement

What are cesspools?

- Cesspools are little more than holes in the ground that collect and discharge raw, untreated human waste. Cesspools can contaminate ground water, drinking water sources, streams and oceans with disease-causing pathogens.

How many cesspools do we have in Hawai`i?

- There are approximately 88,000 cesspools in the State, with nearly 50,000 located on the Big Island, almost 14,000 on Kauai, over 12,000 on Maui, over 11,000 on Oahu and over 1,400 on Molokai.

What is Act 125?

- Act 125 was passed in the 2017 legislative session and require the replacement of all cesspools by 2050. It directs the Hawaii Department of Health (DOH) to evaluate residential cesspools in the state, develop a Report to the Legislature that includes a prioritization method for cesspool upgrades, and work with the Department of Taxation on possible funding options to reduce the financial burden on homeowners.

How many cesspools pose a risk to our water resources in Hawaii?

- The Report to the Legislature – Relating to Cesspools and Prioritization for Replacement identifies 14 areas in the state where an evaluation of data on hand indicates greatest need for action. These areas include approximately 43,000 cesspools.

- The Report identifies 4 priority categories. **Priority 1** are areas where cesspools present a Significant Risk of Human Impacts, Drinking Water Impacts, or Draining to Sensitive Waters. **Priority 2** are areas where cesspools present a Potential to Impact Drinking Water. **Priority 3** are areas where cesspools have the Potential to Impact Sensitive Waters in our state. **Priority 4** is a placeholder for all cesspools whose impacts DOH have yet to fully analyze.

- Coastal Kailua-Kona 6,500 cesspools are located in a Priority 3 area. Groundwater modeling and a survey of reef health indicates that nitrate concentrations from these cesspools may be resulting in a significant nutrient contamination load to the coral reefs in this area.

- Puako's 150 cesspools are located in a Priority 3 area. The Hawai'i Department of Land and Natural Resources, Division of Aquatic Resources found that the Puako reefs are in dire straits, with coral cover decreasing 35 percent and overgrowth of turf and macroalgae increasing 38 percent in the last 30 years.

- Research done by the University of Hawaii at Hilo found elevated concentrations of nutrients along the shoreline of Puako with chemical signatures consistent with sewage. A tracer dye study verified the hydraulic connection between cesspools and shore line with travel times varying from 13 to 250 feet per day.

How can I get a copy of the report?

- The Report is available for download from the following website: https://health.hawaii.gov/opppd/files/2017/12/Act-125-HB1244-HD1-SD3-CD1-29th-Legislature-Cesspool-Report.pdf

Who do I contact if I have questions about the report or cesspools in general?

- Contact our Wastewater Branch at (808) 586-4294 or email at wwb@doh.hawaii.gov for all other questions.

Hawaii Island Priority Upgrade Areas

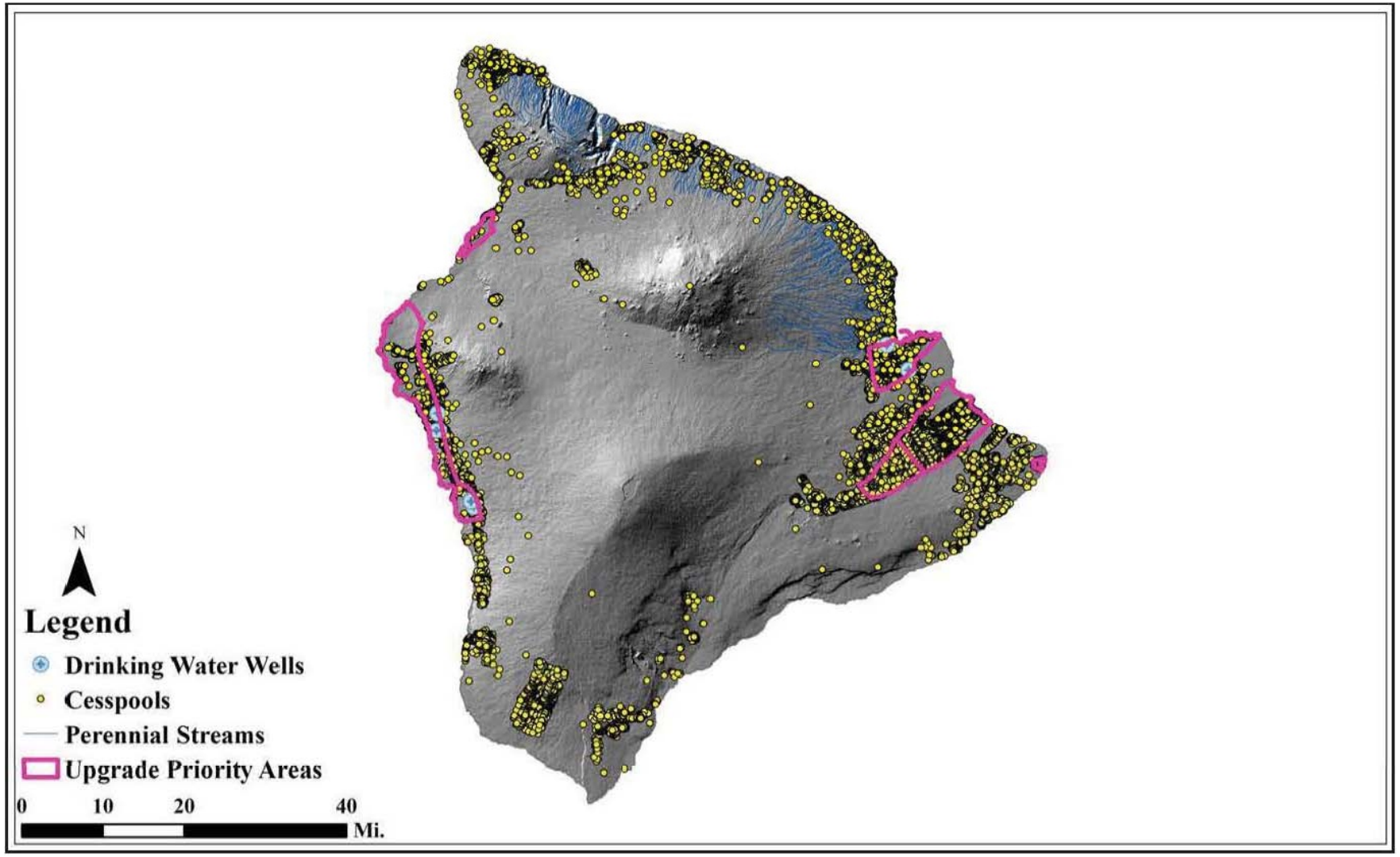


Figure 1 Hawaii cesspool locations, priority areas for upgrade, potentially affected drinking water sources, and perennial streams

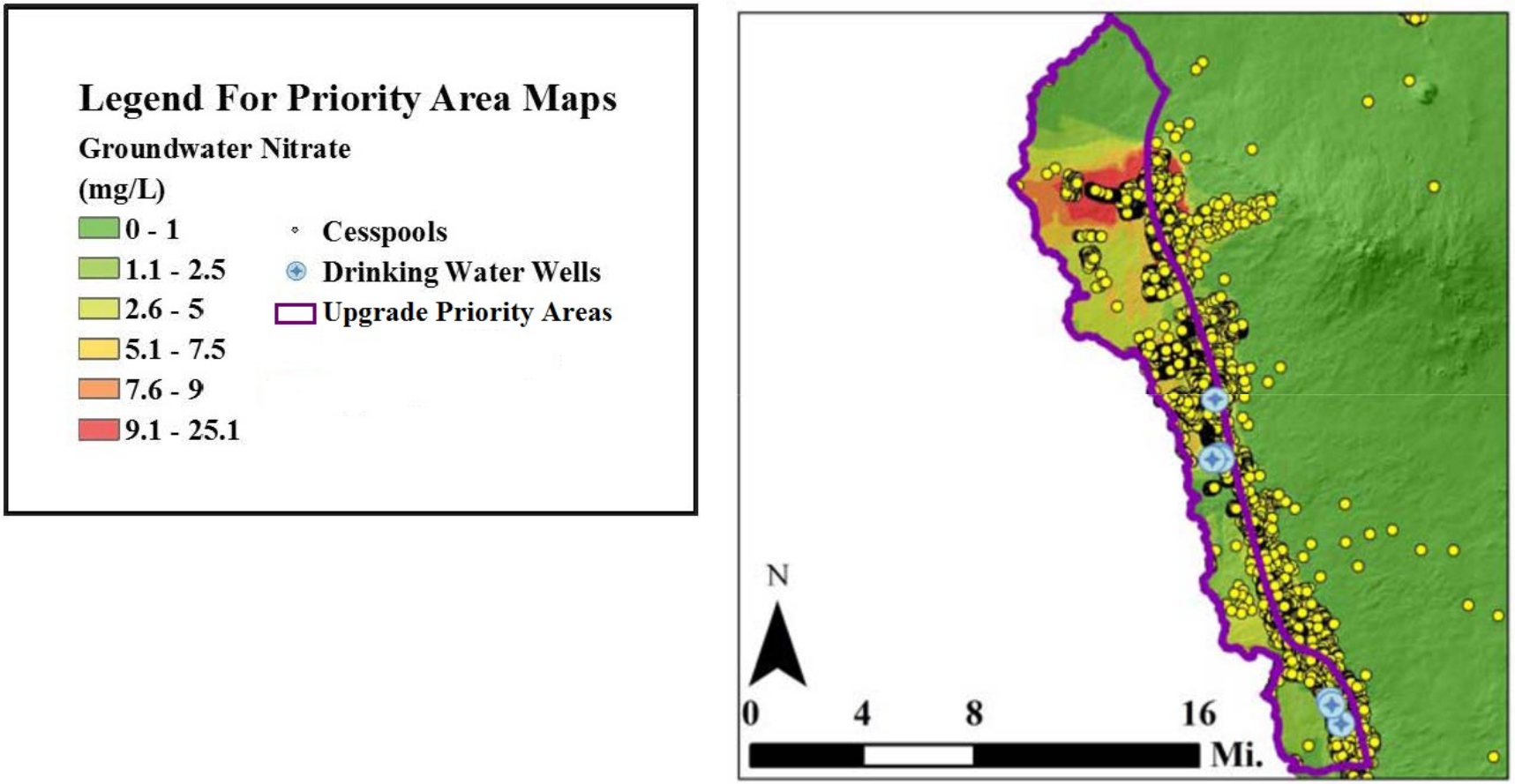


Figure 5 Kona priority area and cesspool nitrate

Priority 3: Potential Impacts to Sensitive Waters

- Coastal Kailua-Kona Area of Hawai'i Island: The groundwater in this area discharges to the economically important coral reefs and nearshore waters of West Hawai'i. Wastewater injection combined with discharge from 6,500 cesspools may contribute to degradation of coral reefs.



State of Hawaii
Department of Health

Cesspools in West Hawaii

TOPICS OF DISCUSSION

- Ground Rules
- Opening Remarks
- What is a Cesspool and Septic System
- Overview of the Report
- Prioritization Method and Priorities
- Kailua-Kona and Puako
- Question and Answer Session
- Next Steps

Opening Remarks:

- Act 125 – Required DOH to evaluate cesspools and develop a prioritization method for cesspool upgrades.
- Spent months analyzing existing data on existing cesspools
- Report identifies 14 areas in the state that are priorities for cesspool upgrades to protect public health and environment.
- Highest priority for action is located in Kahalu'u and Upcountry Maui; West Hawaii is in a Priority 3 area
- Introduction of Team

What is a Cesspool?



Cesspools are little more than holes in the ground;

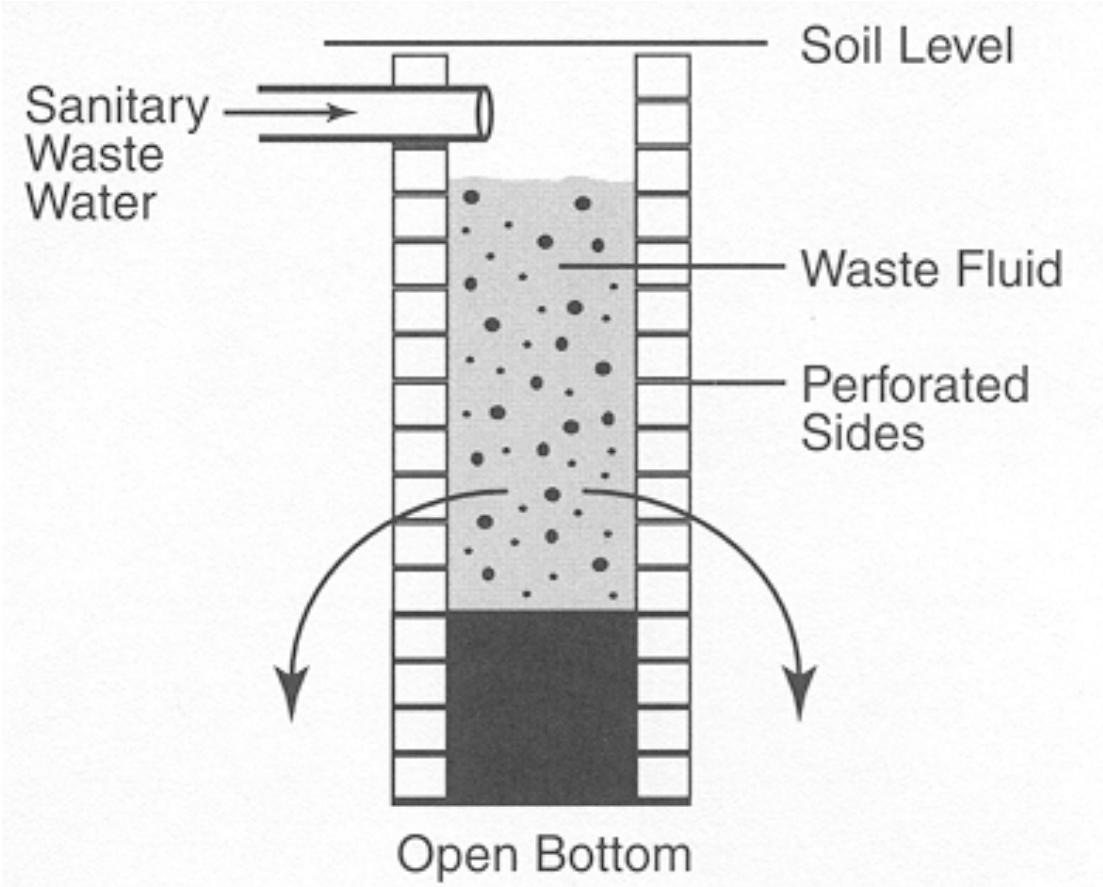
Cesspools discharge raw, untreated human waste into the subsoil;

Cesspools can contaminate ground water, drinking water sources and the ocean;

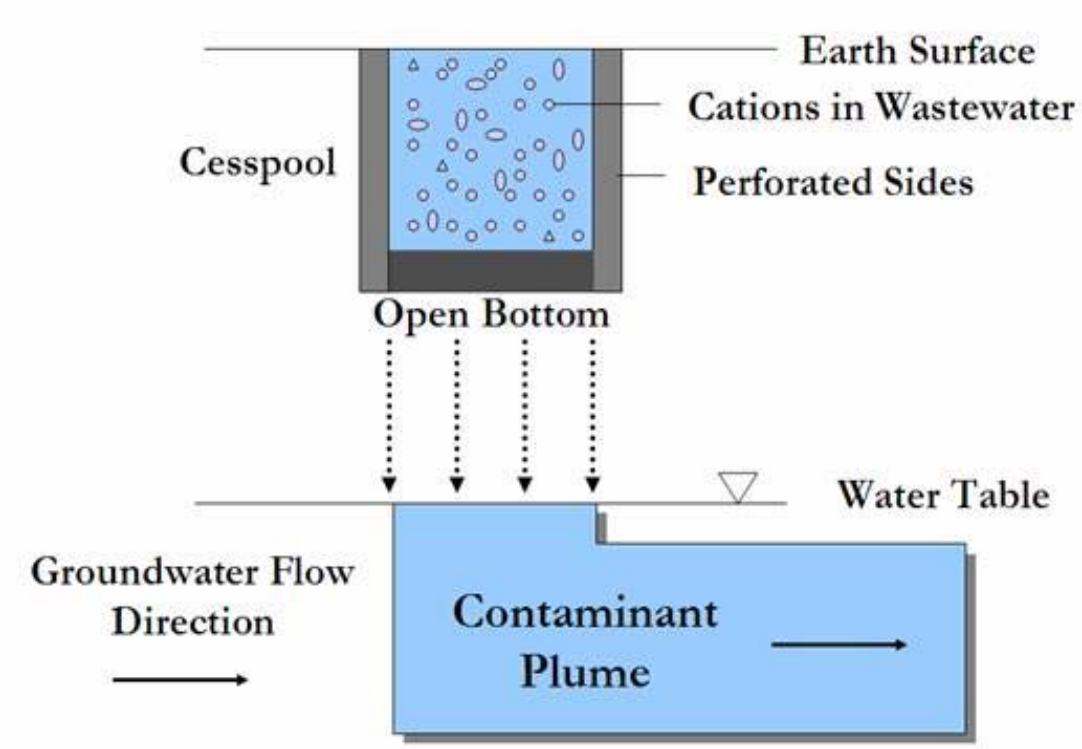
Presents risks to human health and the environment; and

Contains higher concentrations of nitrogen, phosphorus, and fecal coliform bacteria than septic tank systems.

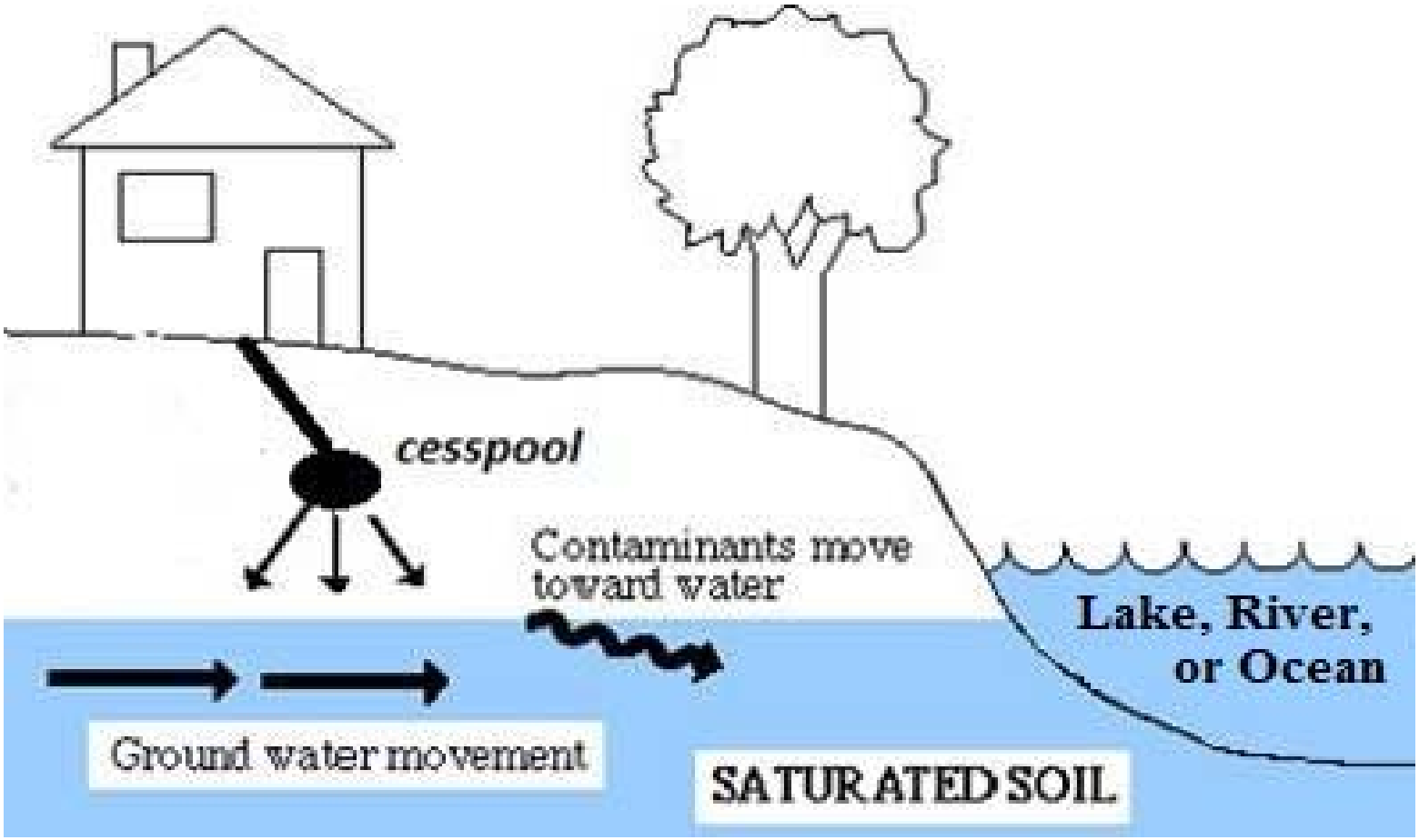
Cesspools discharges raw, untreated human waste into the subsoil



Cesspools contaminate Groundwater



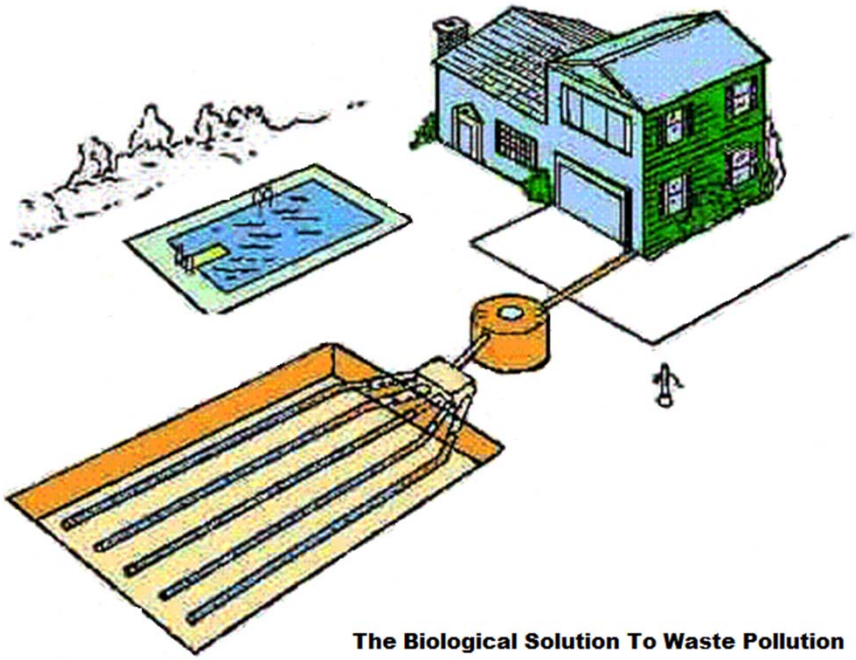
Cesspool contaminates ground and surface waters

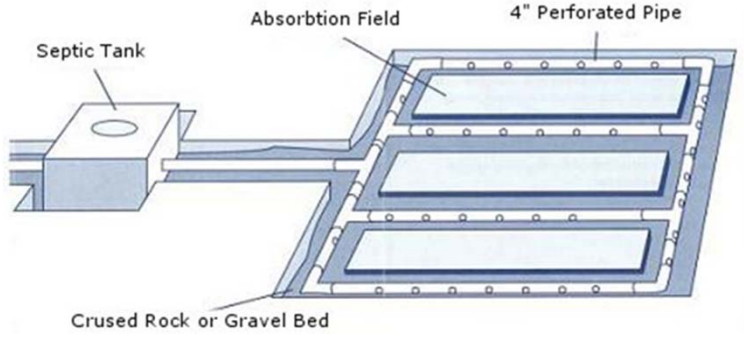


Septic Tank Systems



Polyurethane tank





Septic tank with leach field

Overview of the Report

- Cesspools are a major source of water pollution in Hawaii
- 88,000 cesspools that discharges 53 million gallons of raw sewage
- Public health depends on clean drinking water.
- Report identifies 14 areas in the state that are priorities for cesspool upgrades to protect public health and environment.
- 43,000 cesspools located in the 14 areas

Prioritization Method and Priorities

- **DOH analyzed data collected**
- **Report identifies 4 priority categories**

Priority 1

Areas where cesspools present a Significant Risk of Human Health Impacts, Drinking Water Impacts, or Draining to Sensitive Waters

Two areas identified:

- Upcountry Maui: 7,400 cesspools
- Kahalu'u: 740 cesspools

Priority 2

Areas where cesspools present a Potential to Impact Drinking Water.

Three areas identified:

Kea'au – Island of Hawai'i

Kapaa/Wailua and Poipu/Koloa – Island of Kauai

Priority 3

Areas where cesspools have the potential to impact sensitive waters in our state.

Nine areas identified:

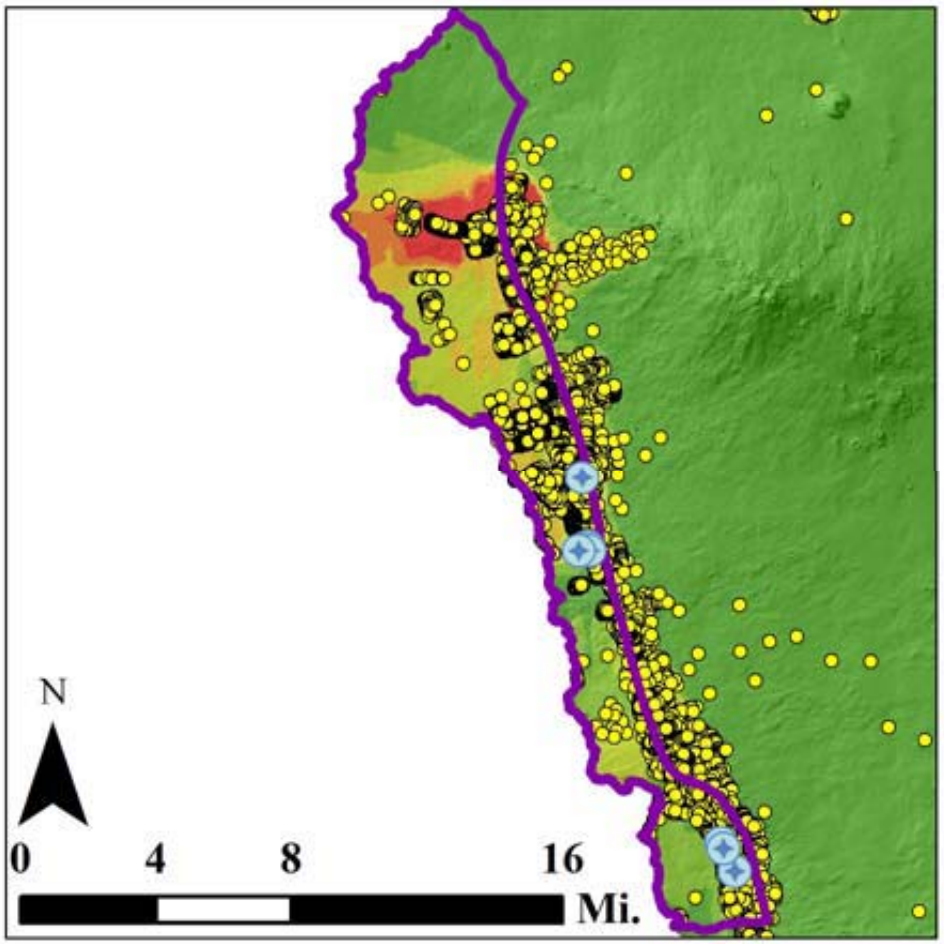
- Hilo Bay, Coastal Kailua/Kona, Puako and Kapoho of Hawaii
- Hanalei of Kauai
- Diamond Head, Ewa, Waialua and Waimanalo of Oahu

Priority 4

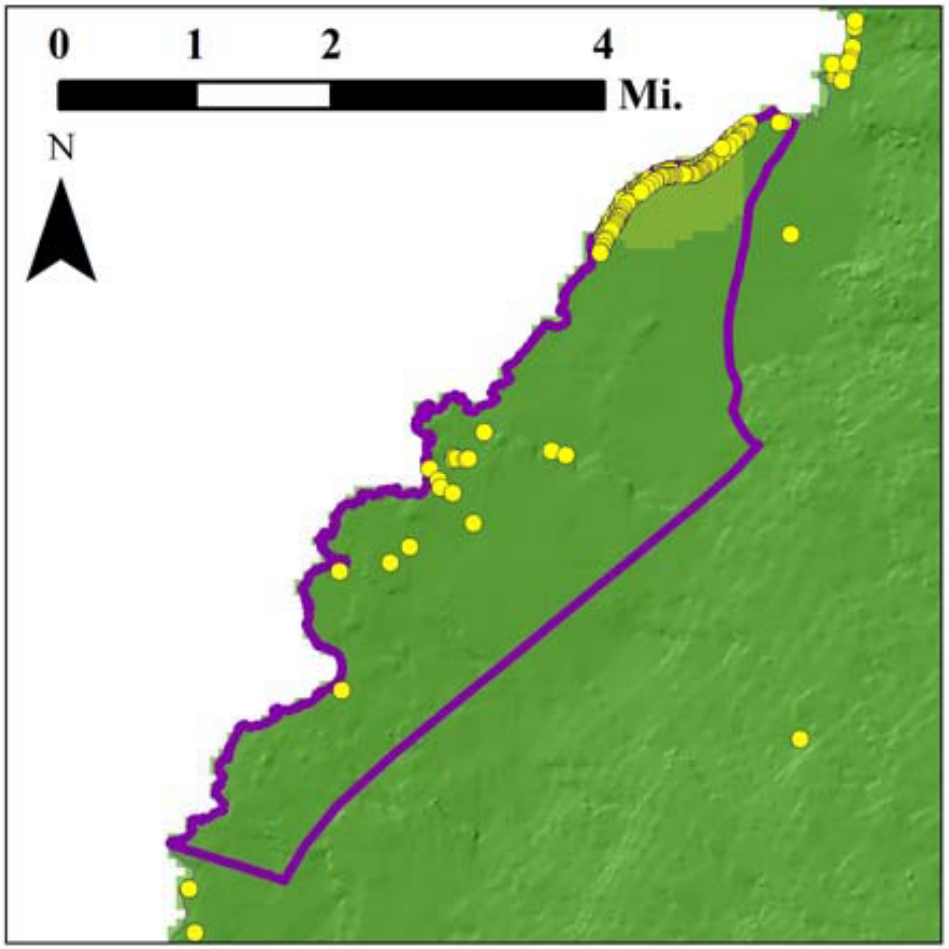
Placeholder for all cesspools whose impact we have yet to fully analyze, which are the remainder of cesspools in the state.

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Kona – 6,500 cesspools



Puako – 150 cesspools



- Research to be provided by Courtney Couch and Tracy Wiegner by 6/27

Next steps:

- Upgrades are expensive, average about $20,000
- Cost to upgrade 88,000 cesspools - $1.75 billion
- Partnerships and need for early collaboration with communities.
- Complex problem that will involve multiple solutions
- DOH to work with communities, legislators, state and county agencies and stakeholder groups to find solutions.



Contact Us

Wastewater Branch

Phone Number: 586-4294
Email: wwb@doh.hawaii.gov

Mahalo!

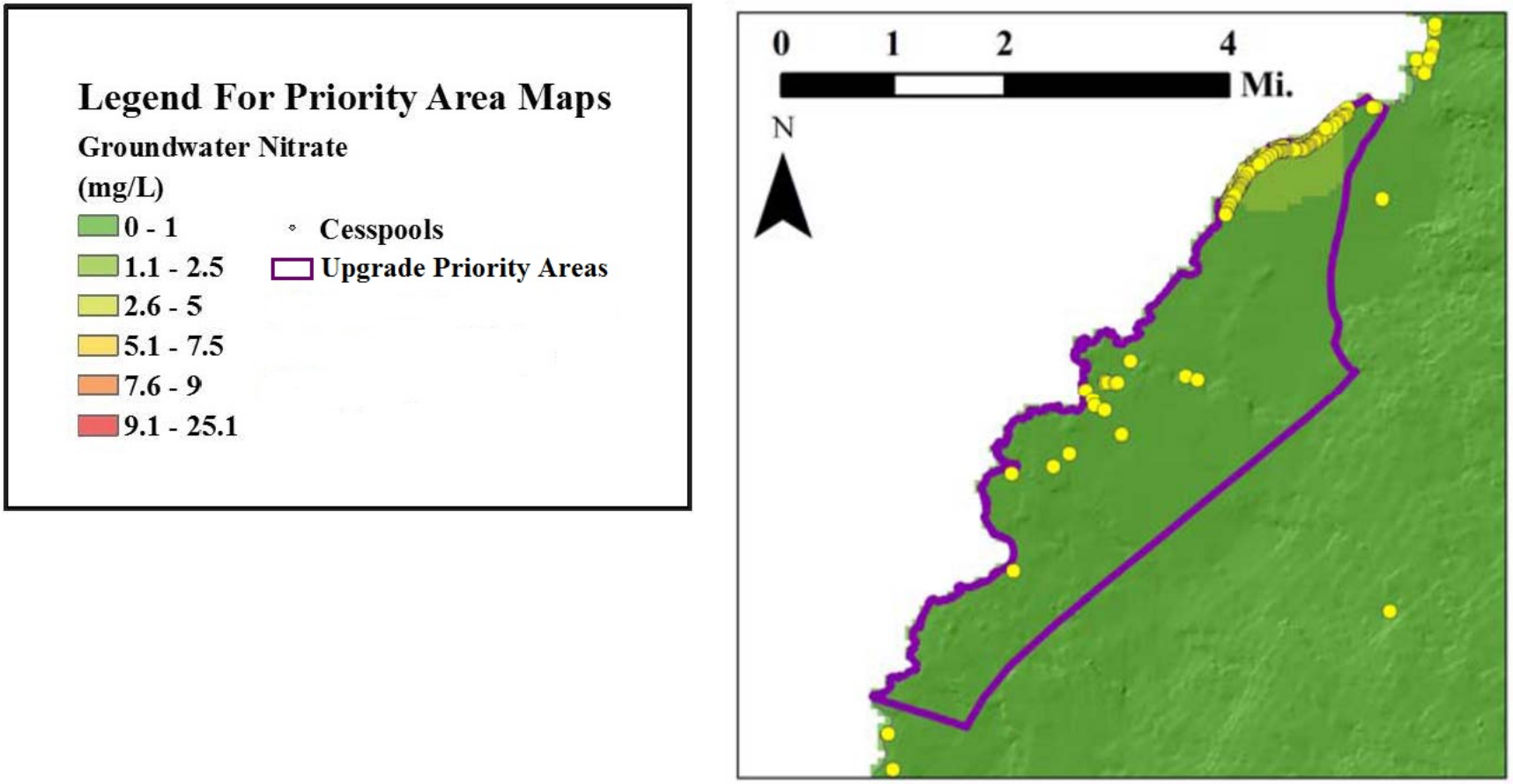


Figure 3 Puako priority area and cesspool nitrate

Priority 3: Potential Impacts to Sensitive Waters

- Puako Area of Hawai'i Island: Puako residents rely on 150 cesspools for wastewater disposal. Coral reefs here may be degraded by cesspool discharge; community concern about coral reef health is high.