

# Teacher Instruction Guide: Lava Zone Worksheet

**Objective:** Introduce and understand the USGS Lava-Flow Hazard Zone Map to connect lava presence with land topography. Research ways to mitigate human risk to volcanic activity on Hawai'i.

**NGSS:** 4-ESS2-2. Analyze and interpret data from maps to describe patterns of Earth's features.

4-ESS3-2. Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.

**HĀ:** Strengthened Sense of Belonging

Strengthened Sense of Responsibility

Strengthened Sense of Aloha

Strengthened Sense of Hawai'i

**Materials Needed:** Pencil, Coloring pencils/Crayons (8 different colors)

**Time Estimate: 30 minutes**

## **Procedure:**

1. GUIDED ACTIVITY: Distribute worksheet, 1 per student. Distribute crayons/colored pencils.

Students will use the numbering system and coloring guide to create a lava zone hazard map. The reference map is located on the teacher copy of the worksheet.

2. GUIDED ACTIVITY: Part 2. Project (or print multiple copies for groups to look at) the *Drive Map of the Island of Hawai'i*. Have students identify the locations of the 3 circled towns, then individually draw X's on their personal maps for the approximate locations of each town. Ask students to identify which lava zone each town is in.

3. EXTENDED ACTIVITY: For students who live on the Island of Hawai'i, ask them to identify other areas familiar to them and which lava zones they are in. *E.g. their school, homes.*

## **Directory:**

Page 1 – Teacher Instruction Guide

Page 2 – Student Worksheet

Page 3 – Teacher Copy of Worksheet (with answers)

Page 4 – Drive Map of Hawai'i Island

Page 5 – USGS Lava-flow Hazard Zone Map Key

## **Additional Resources:**

- [https://volcanoes.usgs.gov/observatories/hvo/faq\\_lava.html](https://volcanoes.usgs.gov/observatories/hvo/faq_lava.html)

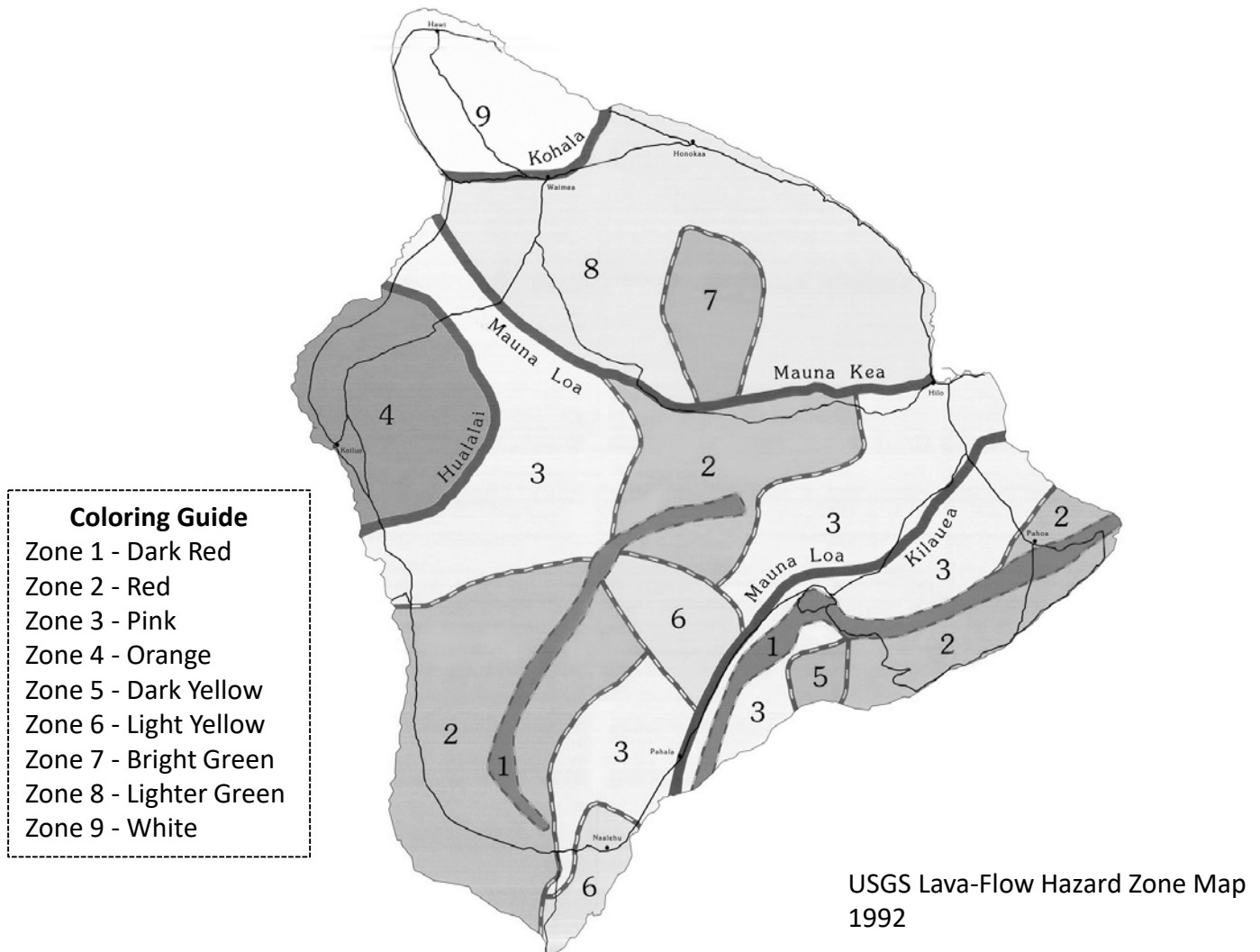
Name \_\_\_\_\_

Date \_\_\_\_\_

## Living in Lava-Flow Hazard Zones

**What are Lava-Flow Hazard Zones?** This Lava-Flow Hazard Zone Map was developed by scientists to show the probability of lava flowing through different land areas. The Island of Hawai'i has nine lava hazard zones. The zones, ranked from 1 through 9, show the different risk levels on the island.

Part 1. Color the Island of Hawai'i map using the coloring guide provided.



Part 2. Using the drive map, draw an X on the towns of Kailua-Kona, Hilo, and Hāwī . Which lava zones are they located in?

Kailua-Kona is in Lava Zone \_\_\_\_\_

Hilo is in Lava Zone \_\_\_\_\_

Hāwī is in Lava Zone \_\_\_\_\_

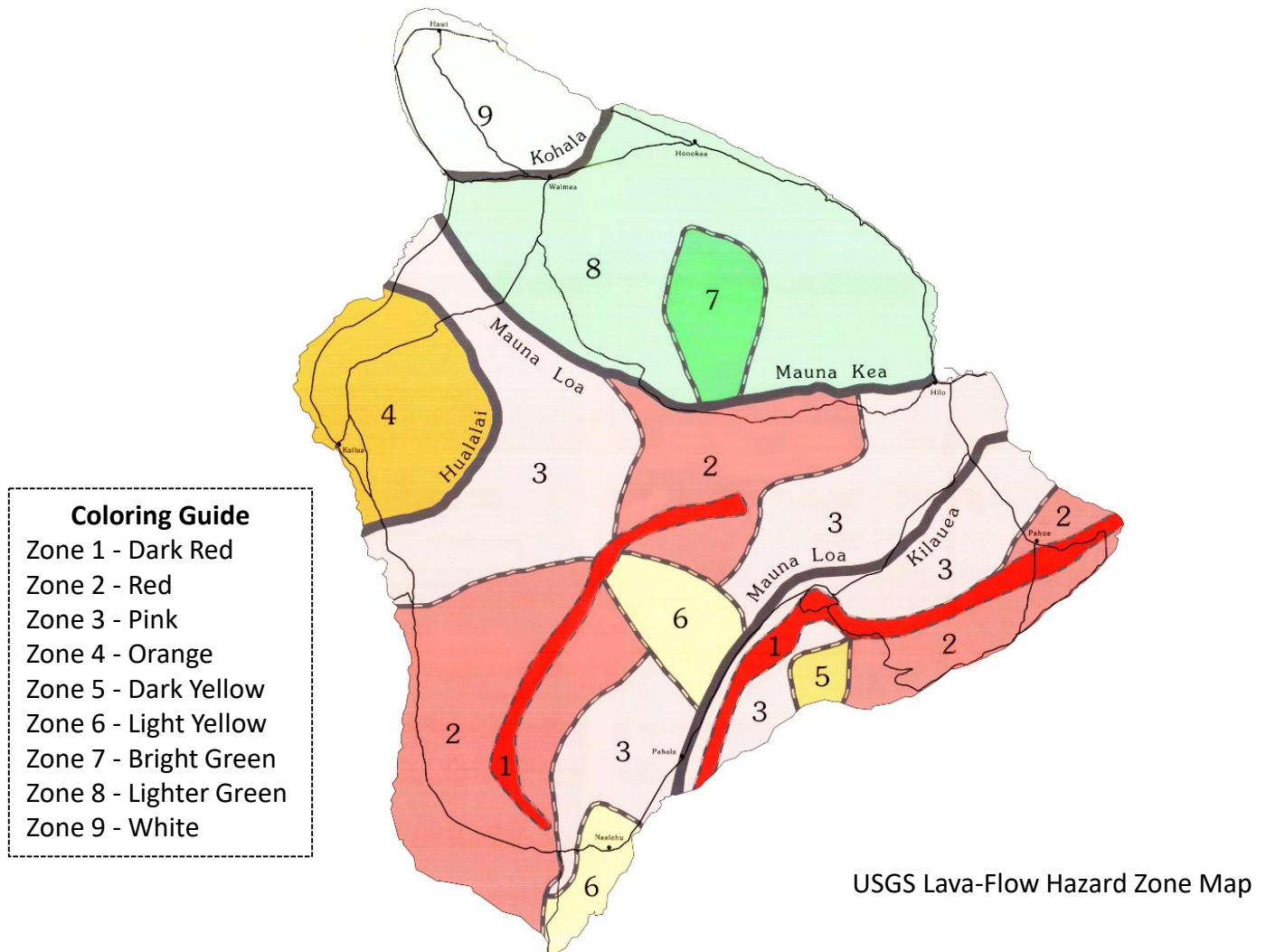
Lava Zone 1 is dangerous because it is a specific volcanic feature. Do you know what feature it is?

# Living in Lava-Flow Hazard Zones

## Teacher Guide

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Kailua-Kona is in Lava Zone 4

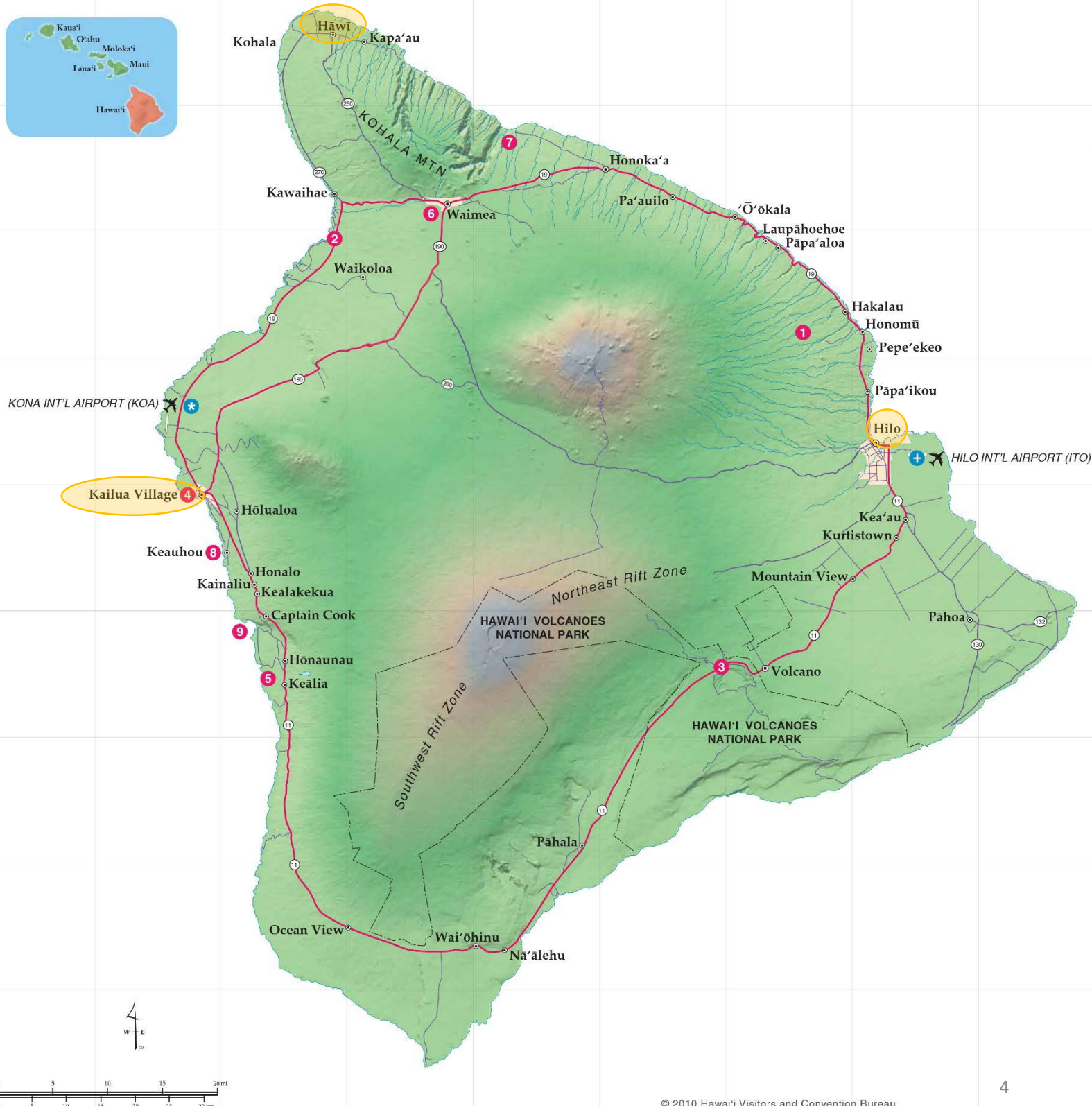
Hilo is in Lava Zone 3

Hāwī is in Lava Zone 9

Lava Zone 1 is dangerous because it is a specific volcanic feature. Do you know what feature it is?

## Island of Hawai'i Drive Map

Refer to the map you have colored for lava zones and draw an X on the approximate locations of Kailua-Kona, Hilo, and Hāwī, which are circled and highlighted on the map.



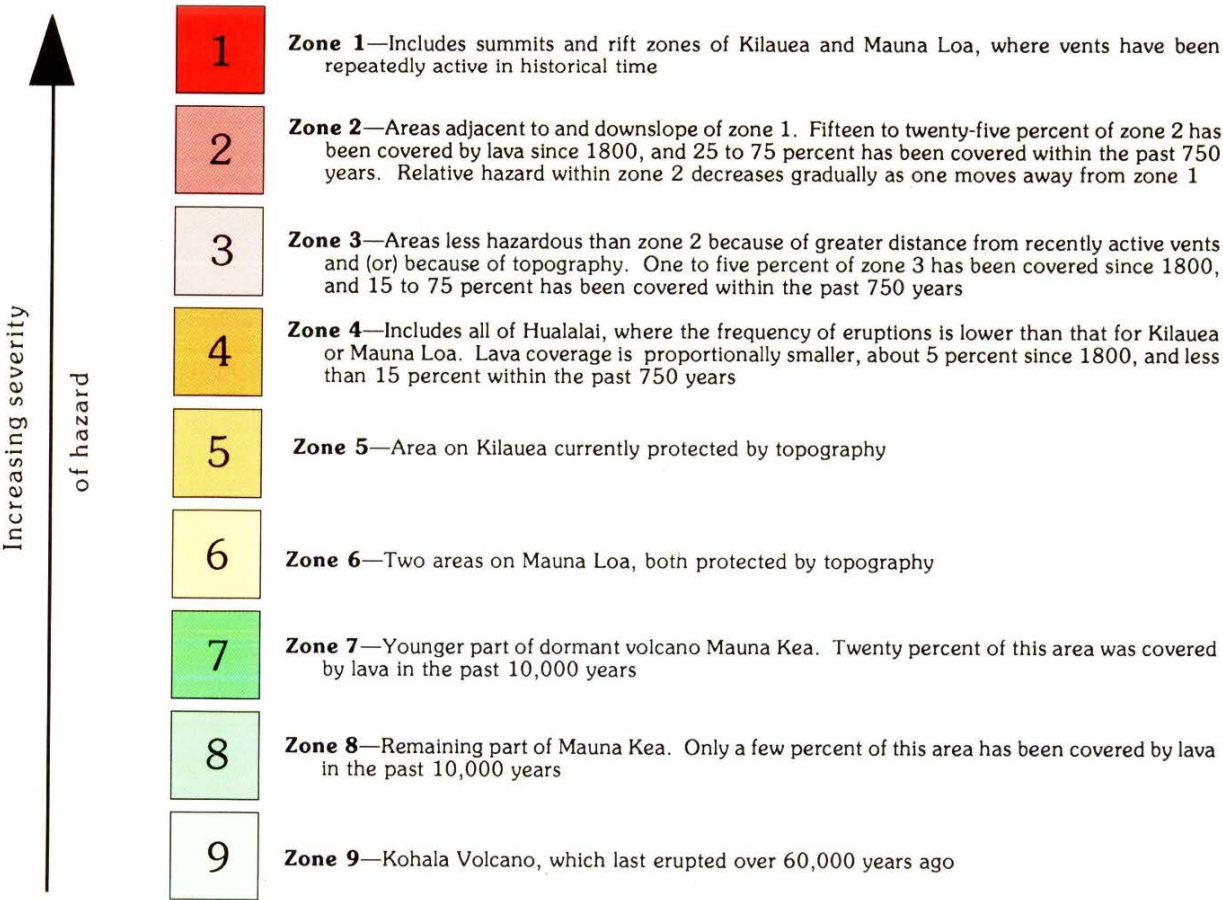
Supplementary Material for Part 1.

USGS Lava-flow Hazard Zone Map Key

MISCELLANEOUS FIELD STUDIES  
MAP MF-2193

EXPLANATION

Lava-flow hazard zones—Based on location of eruptive vents, past lava coverage, and topography



Boundaries—Approximately located and gradational

