

Activity #2

# Where Does the Sand Come From?

## ● ● ● In Advance *Setting Up Information Stations*

- Set up four information stations around the room using the “Information Station Graphics” (master, pp. 25-30) for three of them and vials of sand from Oneuli and Oneloa beaches for the fourth. (See class period one materials & setup below.)

## ● ● ● Class Period One *Where Does the Sand Come From?*

### Materials & Setup

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- Small, labeled vials containing sand samples from Oneuli and Oneloa beaches (samples included with Activity #1, or instructions for collecting more in “Guidelines for Collecting Sand,” p. 8)
- “Information Station Graphics” (master, pp. 25-30)

### For each student

- Student Page “Where Does the Sand Come From?” (pp. 31-32)

### Instructions

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- 1) Hand out a copy of the Student Page “Where Does the Sand Come From?” to each student.
- 2) Have students visit the stations, transferring relevant information to their own maps, and answering the questions on the student page.
- 3) Near the end of class, discuss students’ hypotheses about where the sand that comprises Oneuli and Oneloa beaches originates, and what accounts for the differences in particle size and composition that they observed during Activity #1 “Sand Analysis Lab.”

### Journal Ideas

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- Find out the meaning of the Hawaiian names, Oneuli and Oneloa. Write a chant or poem, or draw a picture that illustrates where the sand from each of these beaches seems to originate and how it might be deposited on the beach.

### Assessment Tools

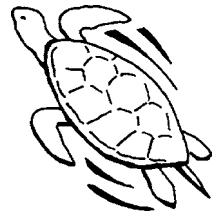
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- Student Page “Where Does the Sand Come From?” (teacher version, p. 24)
- Journal entries

Some teacher-only resources have been omitted from the online document.

They are available as password-protected files at:

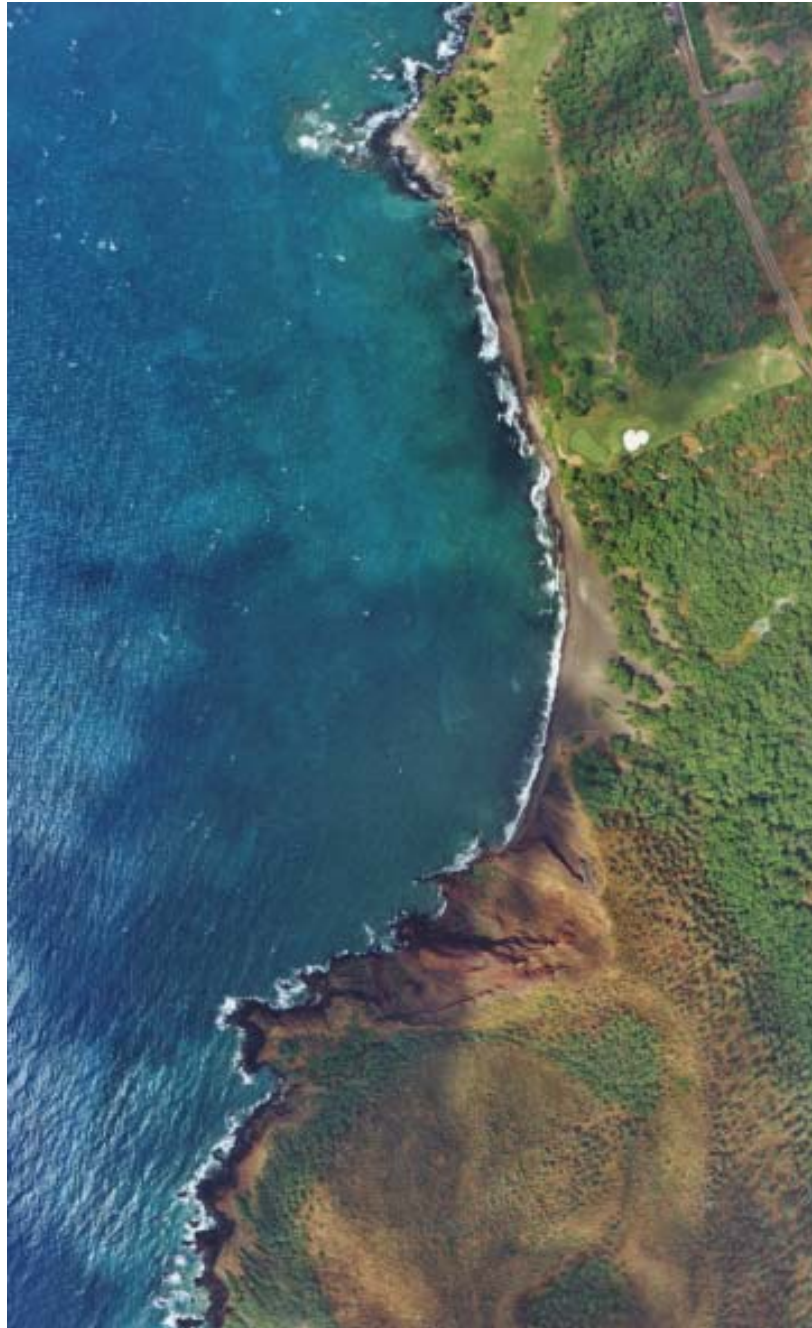
[www.hear.org/hoike/teachermaterials](http://www.hear.org/hoike/teachermaterials)



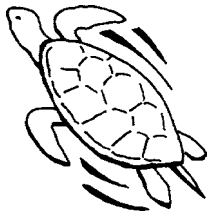
# Information Station Graphics

## Station #1: Aerial Photos of Oneuli and Oneloa Beaches

Oneuli Beach



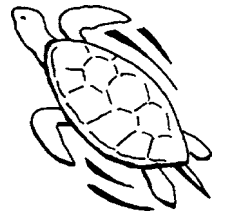
*Photo: Air Survey Hawai'i*



## Oneloa Beach



*Photo: Air Survey Hawai'i*

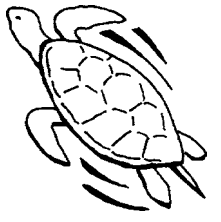


## Station #2: Photos of Oneuli and Oneloa Beaches

### Oneuli Beach



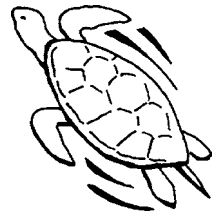
*Photos: Ann Fielding*



## Oneloa Beach

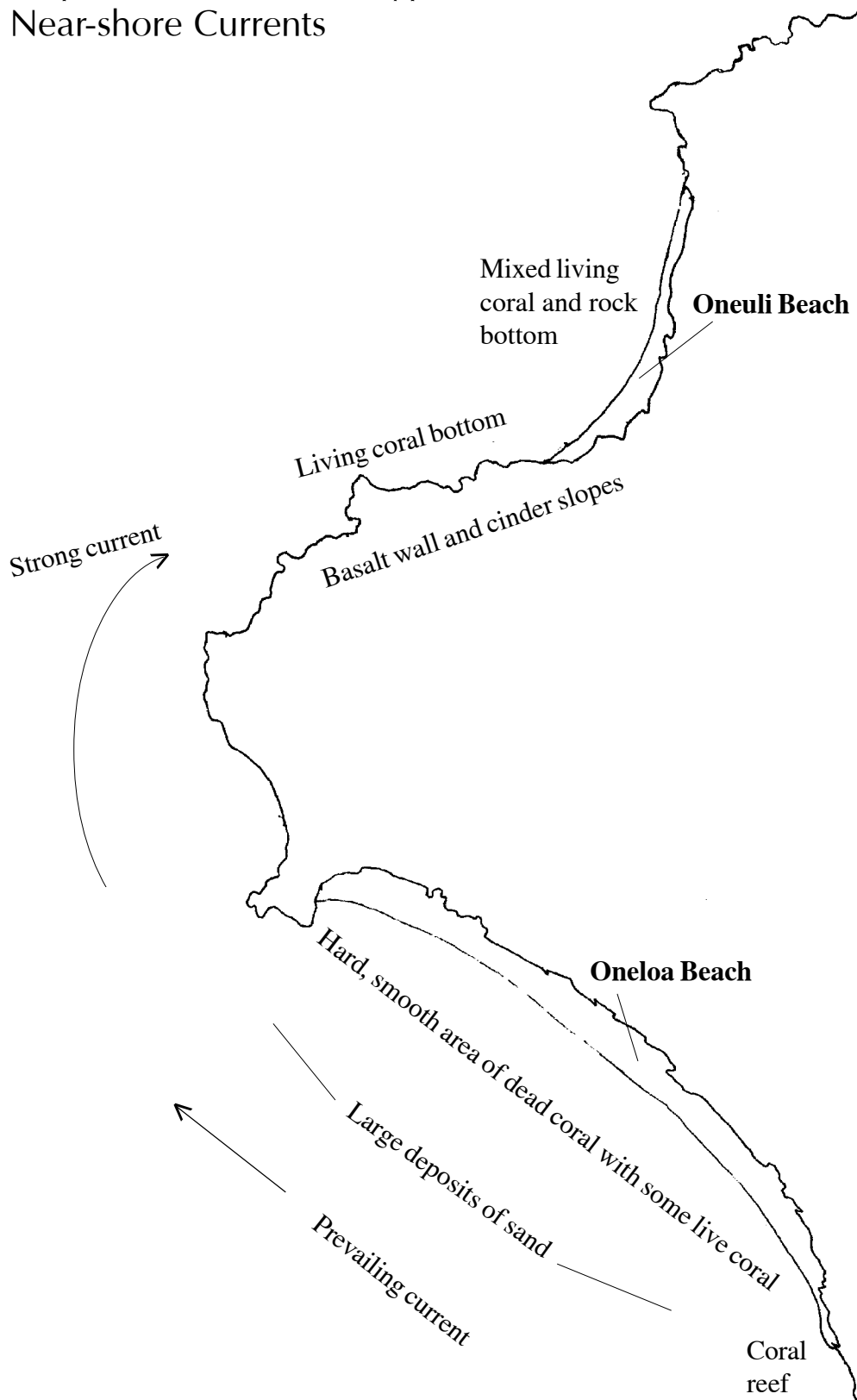


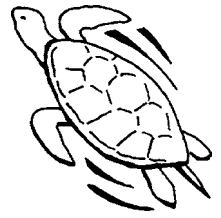
*Photos: Ann Fielding*



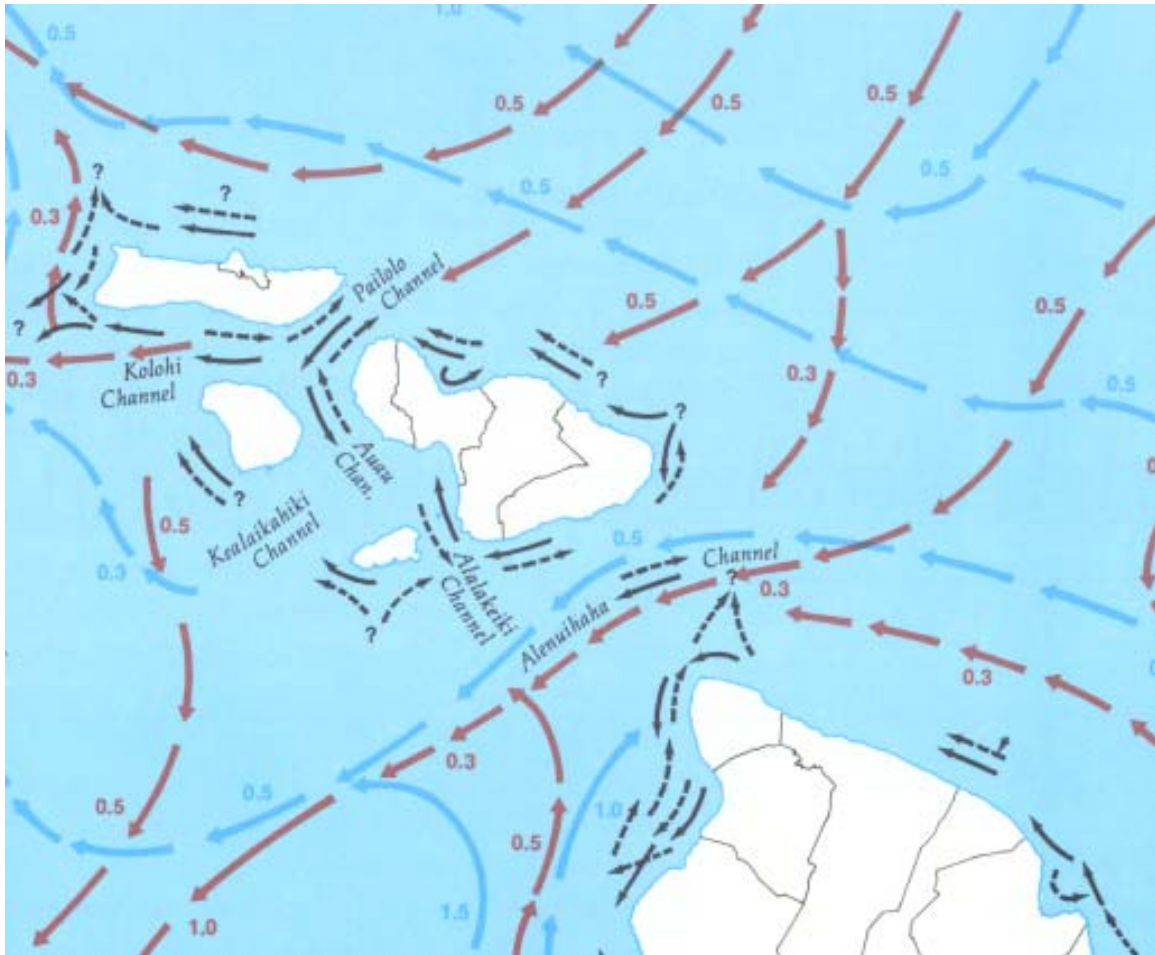
### Station #3: Maps Showing Bottom Types and Major Currents

Map of Ocean Bottom Types and  
Near-shore Currents





### Map of Major Ocean Currents Around Maui



#### SURFACE CURRENTS

Typical surface currents, velocity in knots

Winter (blue arrow) Summer (red arrow)

Near-shore tidal currents

Flood current (solid line) Ebb current (dashed line)

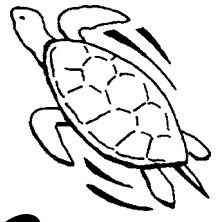


Source: Hawaii Institute of Geophysics, University of Hawaii

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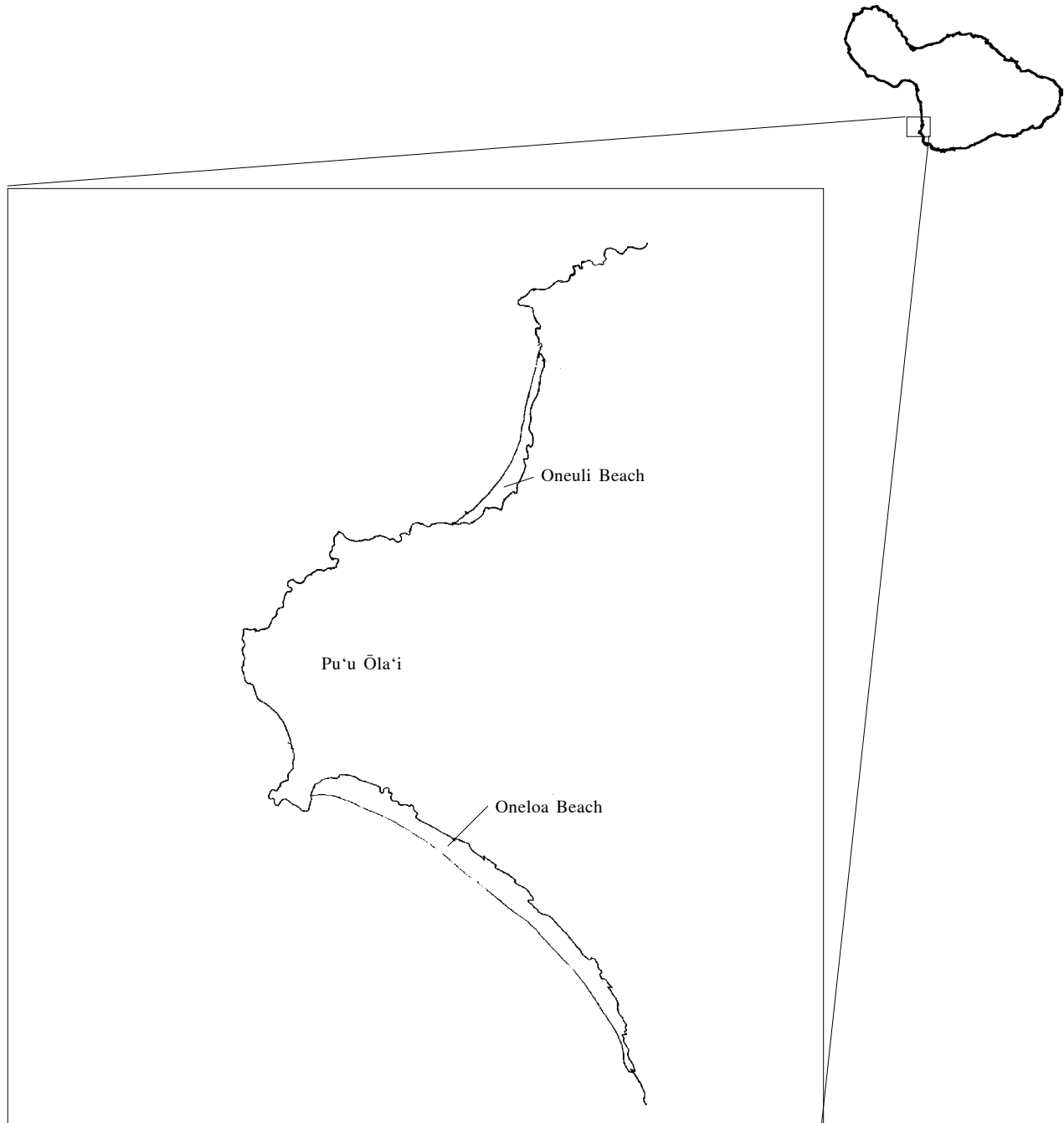
*Department of Geography, University of Hawai'i, Atlas of Hawaii, 2nd edition, University of Hawai'i Press, Honolulu, 1983, p. 57*

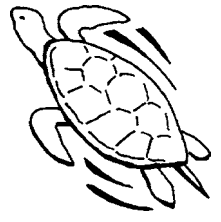




# Where Does the Sand Come From?

Read the questions that follow the map. Use the maps and graphics at the information stations to help you answer them. Record relevant information from those maps and graphics onto this page. Make additional sketches and notes as needed.





- 1) Where does the sand on Oneuli beach come from?
  
- 2) Where does the sand on Oneloa beach come from?
  
- 3) What factors may explain the differences in sand composition and particle size between the two beaches?
  
- 4) What additional information would you need to have to be more confident in your hypotheses?  
How could you collect that information?