



OUR AHUPUA‘A

How did people in old Hawai‘i live in our ahupua‘a?

ACTIVITY AT A GLANCE

Students draw and label a map of their ahupua‘a showing key geographic features that provided resources for people in old Hawai‘i. Students create cut-outs of important plants that Hawaiians gathered or grew and place them in the appropriate sections (ma uka and kula) of the ahupua‘a.

KEY CONCEPTS

- Ahupua‘a are traditional Hawaiian land units usually extending from mountain summits to the outer edges of reefs.
- In the upland section of the ahupua‘a Hawaiians gathered resources such as plant fibers for cordage and wood for tools, houses and canoes.
- In the lowlands of the Moanalua ahupua‘a, Hawaiians constructed lo‘i to grow kalo and six large fishponds to grow fish.
- People have made many changes to our ahupua‘a over time.

SKILLS

Mapping, reading comprehension, identifying patterns and relationships

TIME

3 - 4 class periods

ASSESSMENT

Students:

- Construct an enlarged ahupua‘a map and label important geographic characteristics and Hawaiian place names.
- Write a descriptive label for their map that explains the patterns and relationships among geographic features and human use of resources.

Hawai‘i State Standard Benchmarks

Social Studies 6: Cultural Anthropology
SS.4.6.2 Describe how individuals or groups deal with conflict, cooperation, and interdependence within the ahupua‘a.

Social Studies 7: Geography: World in Spatial Terms

- **SS.4.7.2** Collect, organize, and analyze data to interpret and construct geographic representations.

Common Core Benchmarks

Language Arts: Writing: Text Types and Purposes

- **LA.4.W.2** Write informative / explanatory texts to examine a topic and convey ideas and information clearly.

Nā Honua Mauli Ola

‘Ike Honua: Sense of Place Pathway

- **NHMO.8.5** Recognize and respond to the people, places, and natural elements in their community.
- **NHMO.8.9** Understand the symbiotic relationship between humans and their environment.



- Place plant cut-outs on their maps in the appropriate sections to illustrate where Hawaiians gathered or grew plants they relied on for various needs.

MATERIALS

Provided:

- ✓ Student Assessment Overview (provided in the Unit Introduction)
- ✓ Learning Log 2
- ✓ Student Reading
- ✓ Moanalua ahupua'a map
- ✓ *Moanalua Ahupua'a* PowerPoint (presentation provided on CD)

Needed:

- ✓ Chart paper and colored markers
- ✓ Large sheet of blank chart paper (for each pair of students)
- ✓ Folders or large construction paper folded in half (one per student to use as Learning Log)
- ✓ Overhead projector(s)
- ✓ Colored markers
- ✓ Children's book: *From the Mountains to the Sea: Early Hawaiian Life* (see Suggested Resource at end of lesson)

ADVANCE PREPARATION

- Make a copy of the Learning Log cover and Student Assessment Overview (provided in the Unit Introduction).
- Make a copy of the Learning Log and Student Reading for each student.
- Make transparencies (one for each overhead projector available) of the ahupua'a map provided with this lesson.
- Preview the Moanalua Ahupua'a PowerPoint presentation provided with the unit and prepare to share it with the class.

VOCABULARY

ahu – heap, pile, mound, altar

ahupua'a – traditional Hawaiian land unit usually extending from mountain summits to the outer edges of reefs; this system ensured that everyone living in the ahupua'a had access to natural resources

geographic feature – stream, ridge, valley, forest, fishpond, salt pond, ocean

kai – the ocean or sea

kula – the region inland of the coast where Hawaiians grew many of their crops

lawai'a – fisher

loko i'a – fishpond

mahi'ai – farmer

ma kai – toward the sea

ma uka – toward the mountain

moku – island and also large districts or land divisions on the Hawaiian Islands that were further subdivided into ahupua'a. [Six moku on the island of O'ahu: Kona, Ko'olaupoko, Ko'olauloa, Waialua, Wai'anae, and 'Ewa.]

mokupuni – island

'ohana – family

pa'akai – salt

pua'a – pig

pu'u – hill, peak, cone

resource – wood, fish, plant fibers, plant foods, salt, rocks

uka – (also ma uka) - mountains and upland regions that Hawaiians depended on for important forest products





TEACHER BACKGROUND INFORMATION

Ahupua'a are traditional units of land in Hawai'i that vary in shape and size. They are political and ecological land units designed to meet a community's need for food and materials. Ahupua'a generally range from summit peaks or ridge crests, extending down the mountain, becoming wider as the land slopes to the outer edge of the reef. The boundaries between adjacent ahupua'a usually conform to valley walls or ridges. They are called such because "the boundary was marked by a heap (ahu) of stones [also referred to as an altar] surmounted by an image of a pig (pua'a), or because a pig or other tribute was laid on the altar as tax provided to the chief (Pukui and Elbert, 1986).

The general concept of the ahupua'a is that the human community living within its boundaries would be self-sufficient in obtaining the resources needed for survival such as fish, water and land to grow kalo (taro), and forests to gather wood and useful plants. However, due to the wide range of elevation, rainfall and topography in the Islands, there are a number of ahupua'a that don't conform to this generalized ideal. For example, on O'ahu, the ahupua'a of Wai'anae reaches beyond Wai'anae Valley to include a wedge of land that extends to the summit of the Ko'olau range. In early times, this extended boundary enabled people living in the arid leeward area of Wai'anae Valley to gather resources from the wetter Ko'olau area.

People also shared resources among ahupua'a to obtain plants that only grow in certain areas. Pili grass, which was prized for thatching, grows best in dry leeward areas. Hala trees, which provide materials for weaving, grow best in wet windward valleys. Koa trees large enough for canoes were found in koa forests that typically grow at elevations above 3,000 feet on the larger islands.

Governance in the Ahupua'a

Politically, the ahupua'a were governed by a konohiki (land manager) who oversaw the right to use the resources within the ahupua'a and served as an intermediary between the chief and the haku'ohana, or representative of the resident

families or commoners (maka'ainana). Konohiki were responsible to chiefs of greater rank (ali'i nui or ali'i) who ruled over a moku (an island or district). Within the ahupua'a, individual families were allowed to cultivate and inhabit smaller sections of land or 'ili. The konohiki also directed the people in the building, cleaning, and repair of fishponds whenever the ali'i nui commanded.

During the Makahiki (annual harvest festival which began about the middle of October and lasted about four months), an entourage of ali'i (chiefs) sometimes numbering 100 people or more, would tour the island, traveling from one ahupua'a to another. At the boundary of each ahupua'a, the residents placed an offering of some of their food crops, fish harvest, and feathers from forest birds for the touring ali'i. The offerings were placed at an ahu that was adorned with the head of pig (pua'a). The people in each ahupua'a would provide shelter and food for the ali'i and all those who traveled with them (Project Kāhea Loko, 2003).



The Ahupua'a of Moanalua

The ahupua'a of Moanalua, which includes Kamananui and Kamanaiki valleys, is located in the Kona moku of O'ahu. It is a rich ahupua'a blessed with streams, forests and what was once a productive shoreline where Hawaiians constructed fishponds. In the uplands of the ahupua'a native forests provided habitat for birds that were found only in the Islands. Hawaiians gathered bird feathers, medicinal herbs, plant fibers for cordage, and trees for tools, canoes and shelter from the forests. The forests also provided plants that were important for hula. Moanalua was a center of hula and



chanting during the reign of O'ahu's King Kākuiehewa in the 1500s.

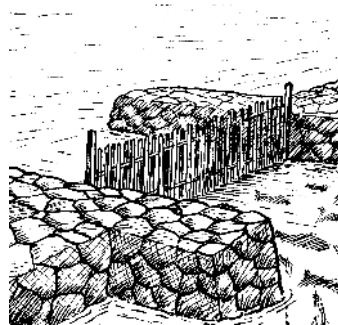
In the lowlands, Hawaiians constructed extensive lo'i that were irrigated by Moanalua Stream.

“There was an area of lo'i inland of what is now Moanalua Park which was irrigated with water from Kalou Stream, a tributary of Moanalua Stream. A large area southwest of lower Moanalua Stream was formerly all lo'i. From here taro plantations went right down to the sea. Above Kalou Stream there were some terraces. Back in the valley the land was not suited to terracing. Quantities of semi-wild taro were grown along the stream and on slopes above. Yams, wauke, and olona were grown here. The seaward area was one of extensive coconut, wet-taro, breadfruit, and banana cultivation.” (Handy and Handy, 1991)

Loko I'a (Fishponds)

Water from the lo'i flowed into some of the large fishponds along the shoreline where Hawaiians practiced aquaculture and raised fish. In Moanalua, there were six large fishponds that were known for their mullet and crabs.

The loko kuapā (shoreline ponds with rock and coral walls) were unique to Hawai'i. Fish from these loko kuapā were reserved for the ali'i. The Hawaiian innovation of the wooden mākāhā (sluice grates) that were placed in the 'auwai allowed young fish fry to enter the ponds. After the fish matured, they were unable to escape through the narrow slats of the mākāhā.



Moanalua Ahupua'a Today

Today, only remnants of the native forests remain in the uplands of Moanalua. In

the lowlands, the reef runway and the roads and buildings of urban Honolulu have replaced the former fishponds. Fortunately, there are still lo'i being tended in Moanalua Gardens and the songs of the native 'elepaio bird still grace the forests in the back of Kamananui Valley. The Hawai'i Department of Land and Natural Resources, Division of Forestry and Wildlife is overseeing the care of the valley. As students progress through this unit, they too, will have opportunities to care for this very special ahupua'a.

Nā Loko I'a (Fishponds) Once Found in Moanalua (See Ahupua'a Map on page 39.)

Loko I'a	Size (acres)	Description
Māpunapuna	40	Wall (mostly of coral) - 1,600 feet long, 10 feet wide, and 2.5 feet high on outside; 4 mākāhā
Awa'awaloa	8.8	Coral rock wall - 900 feet long; 2 mākāhā
Kāloaloa	36	Semicircular coral wall 2,700 feet long, 6 feet wide and 3 feet high; 3 mākāhā
Kaihikapu	258	Coral wall 4,500 feet long, 3 - 8 feet wide and 3 feet high; 3 mākāhā (salt pans nearby)
Lelepaua	332	Inland pond with coral and earth embankment walls at least 10 feet wide
Kaikipapu	20	(No description)

(Sources: Sterling and Summers, *Sites of O'ahu*, 2001 and Wyban, *Tide and Current*, 1992)



TEACHING SUGGESTIONS

Part 1: Introduction

1. Introduce the unit.

- Pass out one folder and copies of the Learning Log cover sheet and the Student Assessment Overview to each student.
- Instruct students to glue the cover sheet to the outside of their folder and to glue the assessment sheet to the inside cover of the folder—this will serve as each student’s Learning Log or portfolio.
- Go over the information on the assessment sheet as a class (unit essential question, standards, assessment procedures and expectations for culminating projects).

2. Find out what students know about the ahupua‘a where they live.

- Initiate a class discussion focusing on the geography of their ahupua‘a, especially Hawaiian place names.
- Create a K-W-L chart and record what students know (K) and what students wonder (W) about their ahupua‘a and life in early Hawai‘i. Students may record what they’ve learned (L) at the end of the activity.

Discussion Questions:

- What is an ahupua‘a? What ahupua‘a do you live in?
- In what ahupua‘a is our school located?
- What other Hawaiian place names are known in our area?
- How was land divided in early Hawai‘i? What is a moku?
- What do you think life was like in early Hawai‘i in our ahupua‘a? How do you think it was different from life in our ahupua‘a today?

3. Begin a “word wall” or “word bank” of key vocabulary words.

- Teach students the names of moku and ahupua‘a on the island using a map that shows land divisions of early Hawai‘i. (See Resource at end of lesson for source of map and for additional student reading.)
- Distribute **Learning Log 2** to students and review it.
- Add new vocabulary words to a “word wall” or “word bank” on chart paper (mokupuni, moku, ahupua‘a).

Part 2: Ahupua‘a Mapping

4. Project the map of the Moanalua ahupua‘a onto chart paper using an ELMO or overhead projector.

- Tape some large sheets of blank chart paper to the wall.
- Trace the boundaries and some of the lines of the projected map onto one sheet of chart paper. (Be careful not to move the overhead projector since it becomes difficult to match the lines up once the image has moved.)
- Turn off the projector and show students the enlarged map on the chart paper.
- Instruct students to work in pairs to create their own enlarged maps to be labeled, illustrated and colored during this activity. (NOTE: It takes approximately 10 minutes for a pair of students to create an enlargement of the map at an overhead projector. If possible, set up more than one projector)



where students can work. You could set these up as independent work centers and have students take turns at the projectors while doing other activities during the day.)

5. Hand out the Student Reading and read it aloud with students.

- Introduce the terms kai (ocean), kula (the region inland of the coast where many important crops were planted) and uka (the forested mountain areas) and add these words to the “word wall” or “word bank.”
- Review what was grown or found in each of these areas of the ahupua'a.
- Ask students to find and color the features on their large ahupua'a maps that the pueo (native owl) sees flying over the ahupua'a. Share and discuss their illustrations.

6. Project the Moanalua map and review some of the additional geographic and cultural features.

- Discuss the meaning of the place names:
 - Kamananui (“the large branch” or “great power”)
 - Kamanaiki (“the small branch” or “lesser power”)
 - Moanalua (Moana “ocean” or “broad expanse of land or sea” and lua “two”) One interpretation of the name is that it is for the large expanse of land and reef. Another interpretation of the name is that it relates to the two encampments or two taro patches near 'Īemi Spring where travelers from 'Ewa en route to Honolulu would rest.
- Have students point out geographic features:
 - ✓ Kauakaulani Ridge
 - ✓ Kamananui Valley
 - ✓ Kamanaiki Valley
 - ✓ Pu'u o Ma'o
 - ✓ Āliapa'akai (Salt Lake)
 - ✓ Āliamanu Crater (Red Hill)
- Find the streams (Moanalua, Manaiki, and Kahauiki) and 'Īemi Spring on the map and help students to follow their courses from headwater to the mouth of the streams.
- Ask students to find the fishponds that were built in the ahupua'a. Have students color the streams and fishponds blue.
- Discuss how geographic features are connected to human use of resources (forests, streams, fishponds, Salt Lake).
- Ask students to point out these sites that were featured in the mo'olelo in lesson 1: Maunakapu, Kaho'omoe'ihikapulani, Keanaakamanō, and Pōhākukaluahine.

7. Have students read a section of “From the Mountains to the Sea: Early Hawaiian Life” to learn more about plants Hawaiians used in their ahupua'a.

- Ask students to read the chapter, “Umi Divides the Land” and take notes about the plants Hawaiians used in the uka and kula portions of the ahupua'a.
- Have them illustrate and make cut-outs of the plants shown in the book and add them to the appropriate sections of their ahupua'a maps. (This will set the stage for their plant explorations in this unit.)

Part 3 - Moanalua Ahupua'a - Today

8. Present the *Moanalua Ahupua'a* PowerPoint presentation.

- Before viewing the slides, conduct a Think-Pair-Share activity where pairs of students brainstorm answers to the following question: What changes would pueo (owl in the Student Reading) see in the Moanalua ahupua'a if he flew over it today?



- Provide pairs of students with two minutes to generate a list. Then call time and ask pairs to each to share one change.
- Show the slides in the PowerPoint and challenge students to look for changes and answer the questions.

Changes to discuss in slides:

- Ma Kai - Find the Honolulu Airport reef runway. How has this part of the ahupua'a changed over time? The fishponds and salt ponds have been filled in and the area is now urban.
- Āliapa'akai - Hawaiians once gathered salt here; today it is urbanized.
- 'Īemi Spring - This spring, which is located across from Moanalua Elementary School, is now capped. Lo'i once found here are gone but kalo is growing in Moanalua Gardens. Travelers no longer walk from 'Ewa to Moanalua or stop to drink from 'Īemi Spring today.
- Kula - Homes, buildings, and roads replace the crops that Hawaiians once grew here. The stone figures that were carved at Pu'u o Ma'o are now at Bishop Museum. The stream flows into a cement channel here.
- Ma Uka - Changes - fewer native forests plants with fewer native birds; many new plants introduced by people (to be explored further in the unit).
- Moanalua Stream - The stream no longer flows year-round to the sea and there are fewer native stream animals (to be explored further in the unit).
- Sacred peaks and places: Maunakapu, Keanaakamanō, and Kaho'omoe'ihikapulani. (See ahupua'a map and review mo'olelo "The Ancestors of Kamananui" from Lesson 1.)

9. Complete the K-W-L chart by asking students to record what they learned about the ahupua'a and early Hawaiian life.

10. Assess students' ahupua'a maps and map labels.

ADAPTATION / EXTENSION

- Obtain a copy of the ahupua'a poster from Conservation Council for Hawai'i (www.conservehawaii.org). Review the geography of an ahupua'a using the poster that illustrates Hawaiians using natural resources in different areas of the ahupua'a. Project the poster for students to see. Ask students to identify familiar Hawaiian terms and activities illustrated on the poster. Discuss students' ideas about life in early Hawai'i and how life today is different from life in pre-contact Hawai'i.

REFERENCES

Handy, E.S. Craighill and Elizabeth G. Handy; with the collaboration of Mary Kawena Pukui. *Native Planters in Old Hawaii. Their Life, Lore, and Environment*. Bernice P. Bishop Museum Bulletin No. 233. Honolulu: Bishop Museum Press. 1991.

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Pukui, Mary Kawena and Samuel H. Elbert. *Hawaiian Dictionary*. Revised and Enlarged Edition. Honolulu: University of Hawai'i Press. 1986.

Sterling, Elspeth P. and Catherine C. Summers. *Sites of Oahu*. Honolulu: Bishop Museum Press. 2001.

Wyban, Carol Araki. *Tide and Current: Fishponds of Hawai'i*. Honolulu: University of Hawaii Press. 1992.



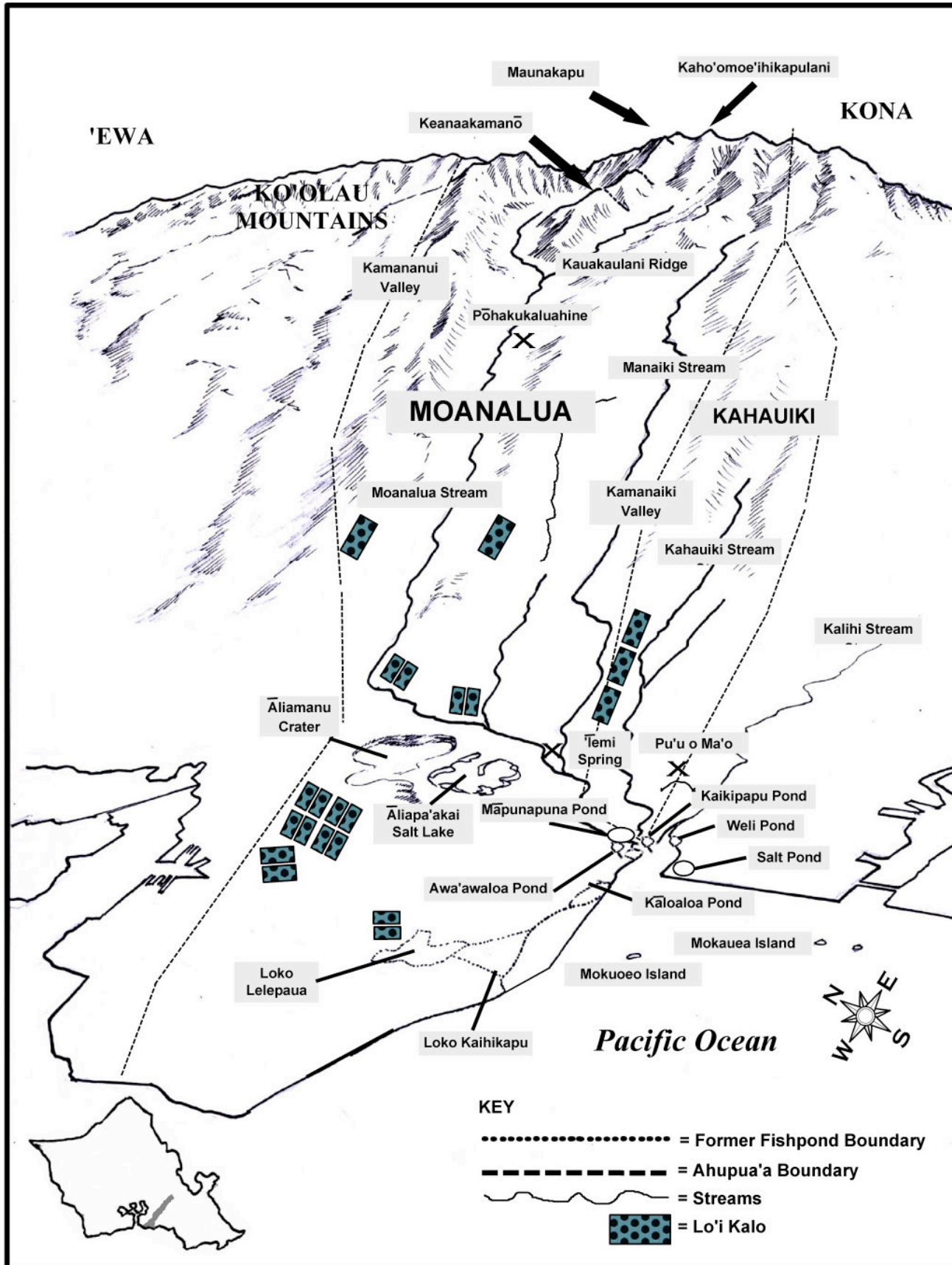
SUGGESTED RESOURCE

Williams, Julie S. 1997. *From the Mountains to the Sea*. Honolulu: Kamehameha Schools Press. 1997. (This children's book includes a map showing the ahupua'a and moku of O'ahu and pictures of plants Hawaiians used in various sections of the ahupua'a.)



OUR AHUPUA'A

MOANALUA AHUPUA'A MAP



**OUR AHUPUA'A****LEARNING LOG 2**

NAME _____

DATE _____

1. Create a poster-map by projecting the ahupua'a map onto chart paper. Trace the projected map on your chart paper to see a bigger diagram for you to label, color, and illustrate.
2. Study the map and read the Student Reading. Then make a chart of the geographic features in the ahupua'a and at least one way the resource was used. An example is provided below.

Geographic Feature / Resource	Human Use
Forest / wood	Building material

3. Write a descriptive label for your ahupua'a map that explains how people used the geographic features and resources of Moanalua to help them survive.
4. Find out what kinds of plants people used in different parts of the ahupua'a and what they used them for. Make cut-outs of these plants and place them where they would go on your large ahupua'a map.



OUR AHUPUA'A

STUDENT READING

Ahupua'a are traditional units of land in Hawai'i. An ahupua'a usually extends from mountain summits to the outer edges of reefs. People living in an ahupua'a had the natural resources they needed for survival. The name ahupua'a comes from ahu - the stone altar or monument that was topped by an image of a pua'a (pig) carved out of wood. This monument marked the boundary of an ahupua'a. Pigs, fish and plants were laid on the altar as tax provided to the chief.

In the uka section of the Moanalua ahupua'a native forests provided habitat for beautiful native birds like the 'elepaio and the 'amakihi. In the forests, Hawaiians gathered plants for medicine, cordage, and weaving. They harvested trees for tools, canoes and shelters. Plants like olonā provided them with strong fibers to use for cordage.

In the kula section of the ahupua'a, the native owl, pueo soared over the land. Here Hawaiians grew some of the crops they needed for food. Along the streams, people grew some kalo, but the land in Moanalua was not suited to building terraces (lo'i) for kalo. They grew 'uala (sweet potatoes), mai'a (banana), ulu (breadfruit), and plants like wauke to make kapa.

Mahi'ai (farmers) built lo'i kalo (taro terraces) out of stone. Water from Moanalua Stream flowed into these lo'i that spanned down to the sea. Other lo'i near what is now Moanalua Elementary School were fed by 'Īemi Spring. A writer in a 1922 Hawaiian newspaper describes the kalo there as "so large that the keepers groped in the dark [beneath them] for taro for the chiefs." (Handy and Handy, 1991)



mahi'ai



lawai'a

In the ma kai part of the ahupua'a Hawaiians grew fish in six large fishponds. The ponds were famous for their mullet and crabs. Beyond the ponds, the lawai'a (fishers) would fish on the reef.

In the ahupua'a, lawai'a would share fish from the sea with the mahi'ai who shared food from the land. In this way, the ahupua'a provided the people with the resources they needed to live.

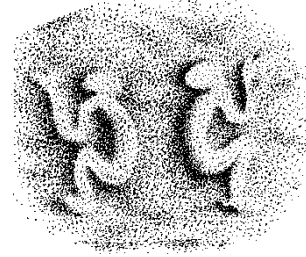
An Imaginary Flight

The ahupua'a of Moanalua is a very special place. Imagine that you are a pueo, a native owl living in this ahupua'a a few hundred years ago. As you spread your wings and soar over the mountains, what do you see?

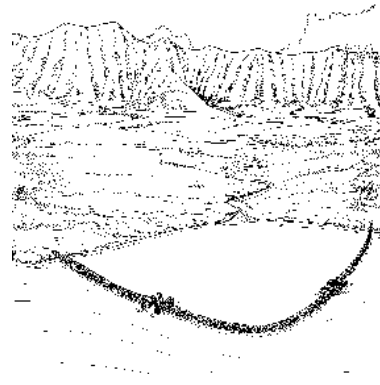
- Lush forests where colorful honeycreepers flit among the branches of native trees



- Lofty mountain peaks named for valley ancestors: Kaho'omoe'ihikapulani, Maunakapu, and Keanaakamanō
- Stone figures carved in the rocks at Pu'u o Ma'o
- Streams rushing over boulders and down to the sea
- Travelers stopping by 'Īemi Spring to rest and drink the cool spring water as they walk from 'Ewa to Honolulu
- Mahi'ai (farmers) in the lo'i at 'Īemi, reaching beneath the large kalo leaves to harvest for the ali'i



- Kalo leaves softly dancing in the breeze in lo'i (terraces) that stretch from lower Moanalua Stream down to the sea
- Hawaiians gathering pa'akai (salt) that had dried along the shores of Āliapa'akai (Salt Lake)
- Sunlight sparkling on six fishponds full of fat mullet and crabs



On your Moanalua ahupua'a map, find and color the features that pueo would have seen soaring over this beautiful ahupua'a.