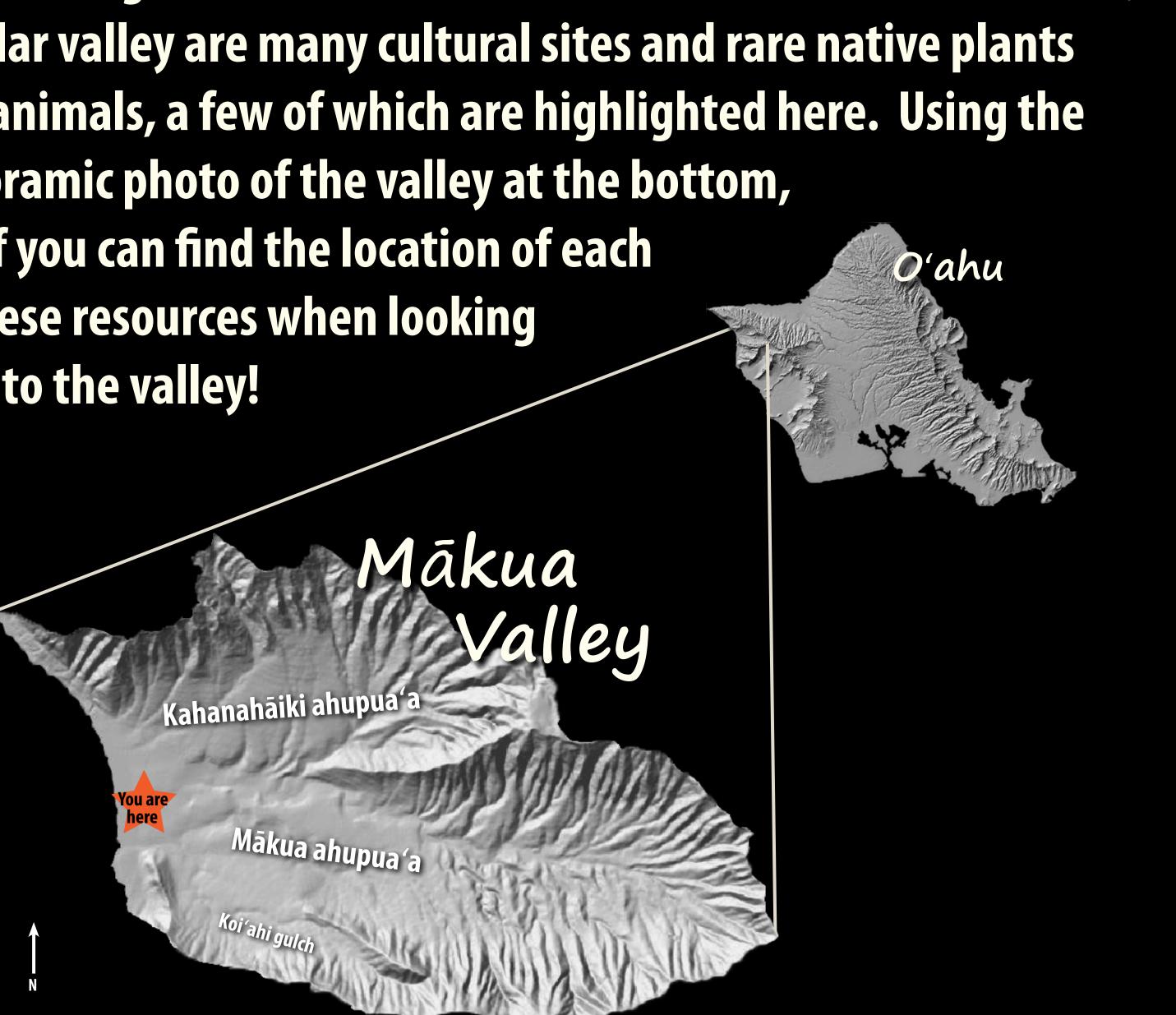


Mākua Valley's Cultural and Natural Resources

Cradling XX acres of land in the Wai'anae district, Mākua Valley includes two ahupua'a - Kahanahāiki and Mākua - and a distinctive gulch to the south called Koi'ahi. Within this broad, circular valley are many cultural sites and rare native plants and animals, a few of which are highlighted here. Using the panoramic photo of the valley at the bottom, see if you can find the location of each O'ahu of these resources when looking up into the valley!





Ukanipō

Nākua's lower coastal zone. Ukanipō Heiau is relatively intact and is listed on the National Register of His-

ologist Gilbert McAllister mapped Ukanipō and described it as the principal heiau for Kahanahāiki where bodies of *ali'i* had been placed until the *kahuna nui*, or high priest, was informed where to inter their remains. Ukanipō is surrounded by agricultural structures, temporary and permanent habitation sites, and small religious shrines.



Elepaio

O'ahu flycatcher - Chasiempis ibidis

a 'elepaio 'ia ka wa'a (the canoe is marked by the 'elepaio). In early Hawai'i, 'elepaio helped canoe-makers judge the quality of koa logs. Since the 'elepaio is an insect-eater, its ability to identify bug-infested wood made it a valuable ally. If the bird pecked at the tree, the wood was considered poor quality. If it simply landed and sang, the wood was sound.

he endangered Oʻahu ʻelepaio dwell in the forested gulches of Mākua, and can often be identified by the way they perch on a branch with their tails pointing upward. 'Elepaio are fiercely territorial, and may fly close to approaching hikers, announcing their presence with a squeaky chirp or a loud whistle. Unfortunately, this behavior is no match for rats, which feast on 'elepaio chicks, eggs, and nesting females.



Stream Complex

oit. The architecture of certain features within this complex suggest the remains of a heiau, which would have been constructed to serve the ritual needs of the residents, in addition to the major heiau recorded along the coast. Branch coral, a well-documented religious offering, was found on an *ahu*, or stepped stone altar. Artifacts found in other portions of this complex include basalt adze heads, coral octopus lure sinkers, basalt awls, hammerstones, grinding stones, and 'ulu maika (game pieces). At Site # 4544, a petroglyph depicts a linear human form holding a triangular shaped object.



Ma'o Hau Hele

Native yellow hibiscus - *Hibiscus brackenridgei*

istorically, the beautiful ma'o hau hele could be found on all of the main Hawaiian Islands, and was therefore chosen as Hawai'i's state flower. However, like its neighbor-island cousins, the O'ahu variety (Hibiscus brackenridgei subsp. mokuleianus) is now endangered. Habitat destruction by development and the spread of invasive weeds, grazing by goats and cows, and

wildfires have all contributed to the decline of these hibiscus. On O'ahu, small wild populations remain along the Wai'anae mountain range in Waialua, Kealia, Kea'au, and here in Mākua Valley. Ma'o hau hele display variation in form based on different environmental conditions found in these locations; from impressive 23-foot tall trees in the dry forests of Waialua, to rambling shrubs here in lower Mākua Valley.



Kāhuli

O'ahu tree snail

Uften referred to as "jewels of the forest," endangered Kāhuli snails dwell in the tree-tops of Mākua's native forests. The snails are most active in the cool evenings, when they slowly glide along leaves and bark feasting on algae and fungi. Although very rare, the keen observer may be able to spot the

swirled shell of a kāhuli on the leaves of kolea (Myrsine lessertinana) or olopua (Nestegis sandwicensis), two of their favorite trees.

Within these trees they spend their entire lives, maturing slowly to the size of an adult's thumbnail at 4-5 years old. As is true for most snails, kahuli are hermaphroditic, exhibiting both male and female reproductive structures, yet they cannot fertilize themselves. It takes two to make a family, and successful reproduction results in the birth of only 1 - 4 keiki each year. Growth, reproduction and movement of the endangered kahuli ruly happens at a "snail's pace," making life in the forest with cannibal snails and rats especially challenging!



Kuleana Walls

he 1848 Mahele and the Kuleana Act of 1850 brought tremendous changes in land ownership to Hawai'i. These acts transformed the traditional system of tenure

and established a new system of private property. Kuleana walls, rock walls built to demarcate property boundaries, increased in number during this period.

uleana walls are still intact in Mākua's lower coastal zone, matching early maps that show almost all the house lots on or very near the beachfront. Access to coastal resources determined where people lived, forming a linear village pattern with perpendicular access to the shoreline for



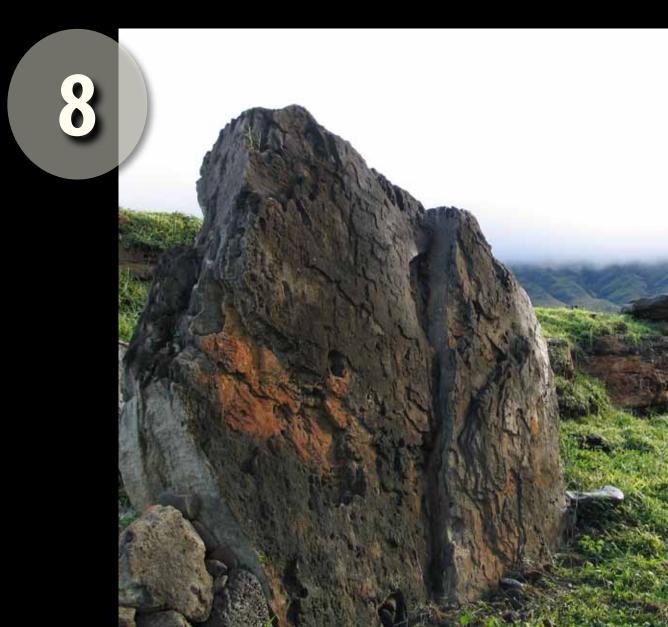
Loulu

ative fan palm - *Pritchardia kaalae*

Loulu are a type of native fan palm - in fact, these fan-palms are the only palm trees that are truly native to Hawai'i (many more palm varieties, such as the the ubiquitous coconut tree, were later brought to Hawai'i by humans). Pritchardia kaalae an endangered loulu species that is endemic (found no where else) to the rim of Mākua Valley, where just over 300 known wild plants exist. Fences have been con-

structed along the ridgelines of Mākua to prevent goats from destroying the loulu keiki, allowing new generations of loulu to take root.

Although protected from the threat of goats, loulu continue to suffer from attack by rats, which feed on the fruit and seedlings. Rat traps are set and regularly checked on the steep cliffs surrounding these palms to help ensure the survival of this endangered species.



Kumuaku'opio

Remnant features of this heiau can still be seen within a larger site that includes a historic wall complex, a lined well, and multiple pre-contact petroglyphs on a large upright slab. Kumuakuʻopio Heiau was thought to have been destroyed until, in 1999, Army archaeologists conducting an inventory survey took a closer look at an uplifted coral reef and sandstone outcrop that dominates

an otherwise low area. The location and description matched two well-documented observations by archaeologists in 1906 and 1930. Today, archaeologists think that at least one wall, constructed primarily of upright limestone slabs and coral blocks, is a portion of Kumuakuʻopio.