

Ka piko kaulana o ka 'āina

The famous summit of the land

Hawaiian creation chants compress time and space narrowing the distance between earth and sky. Maunakea connects Hawai'i to the heavens.

Mālie 'ikea ka moku me ka honua

Serenely visible are island and earth,

Pa'a ia lewa lani i ka lima 'ākau o Wākea

Held in heavenly space by the right hand of Wākea

'O ka moku lā ho'i ko lalo nei

Down here shall be an island

'O wai lā ho'i ko luna, 'o wai lā?

Who shall be above - Who?

'O ke ao, 'o ia ho'i hā.

The cloud, that is who it shall be.

'O ke ao ho'i hā ko luna nei

A cloud shall be up here

'O wai lā auane'i ko lalo lā?

Who shall be below?

'O ka mauna, 'o ia ho'i

The mountain, that is who it shall be

'O hānau ka mauna a Wākea

Born of Wākea* was the mountain.

lines taken from a geneological birth chant composed for Kauikeaouli, Kamehameha III

*Wākea, main Hawaiian male creator.



WĒKIU BUG

Nysius wekiuicola

The wēkiu bug is found only on the summit of Maunakea. Less than a 1/4 inch in length, this tiny insect survives the freezing temperatures, snow and strong winds at the top of Maunakea by adapting to its surroundings. It feeds on dead or dying insects that are blown up from lower elevations.

MĀMANE

Sophora chrysophylla

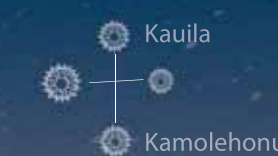
Māmāne trees are endemic to Hawai'i, meaning they are only found there. On Maunakea, māmāne can be found up to about 9,500 feet elevation and defines the wao la'alā'au or alpine tree line areas. Māmāne tree populations have been drastically reduced over time due to feral sheep and goats grazing. Native species like Palila birds and cydia moths eat the seeds, which are poisonous to many other species.



KILO HŌKŪ Astronomy

Hawaiians have extensive knowledge of the heavenly bodies. Like many world cultures, navigational starlines were named and passed down orally by associating them with significant cultural stories and chants. The remote location, clean air, dark skies, stable atmosphere, minimal cloud cover (~325 days/year cloud free), and transparency of the atmosphere to infrared radiation make the summit of Maunakea ideal for modern astronomy. The combination of international & national optical, infrared, and submillimeter wavelength telescopes provide synergy and opportunities to study the sky from multiple perspectives.

NĀHIKU



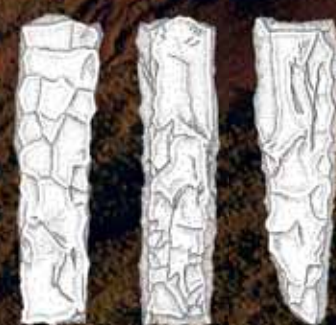
HĀNAIKAMALAMA

NATURAL HISTORY

Estimated at one million years old, Maunakea is an active shield volcano that last erupted 4,500 years ago. There were 3 episodes of glaciation during the past 200,000 years with the most recent ending about 9,000 years ago. Maunakea is an 'isolated laboratory' that facilitates the study of natural history. Scientists study volcanic processes and geologic evolution of Hawai'i volcanoes, the chemical and physical properties of lava, and the development and composition of unique landforms (such as self sorting stone stripes created by daily freeze-thaw cycles). The flora and fauna of rare tropical subalpine and alpine ecosystems are a window into ongoing evolutionary processes. In 1972 Maunakea was listed as a National Natural Landmark



Stone Stripes



HISTORIC ORIGINS

Native Hawaiian cultural traditions tell us that natural and cultural resources are one and the same - expressions of our heritage. This bond with the land sustains communities. At lower elevations, Hawaiians gathered resources in the māmāne and 'ōhi'a forests. At higher elevations, basaltic lava that was erupted beneath glaciers and quenched by ice several thousand years earlier, provided the ideal material for shaping stone adzes (sharp-edged stone tools). Keanakāko'i, the Maunakea Adze quarry, was the largest source of high-quality stone for adze making in all of Polynesia.

Archaeological surveys have identified hundreds of historic properties on Maunakea including: burial sites, stone tools, quarries, workshop complexes, and isolated artifacts. Shrines, made of one or more upright stones, are the most common type of archaeological feature.

PU'U

Cinder Cones

Pu'u (hills) are cinder cones scattered around the larger Maunakea volcano. Each cone formed during a brief, explosive eruption that may have also produced thick, pasty lava flows. The cinders, glassy vesicular fragments of lava, were formed as rising magma was ejected out of the cinder cone into the air.

The summit cluster of pu'u on Maunakea, Kūkahau'ula, translated as "Kū of the red hued dew," are said to be named for the male deity form of the god Kū, also a lover of Poli'ahu, goddess of the mountain. Akua (gods and goddesses) are part of the Maunakea landscape, they manifest in earthly forms such as Pu'ulilinoe, the goddess of the Mist and Pu'upoli'ahu, goddess of snow.



Pu'ullilinoe

MĀLAMA 'ĀINA

take care of the land

- Damage to historic properties and natural resources is subject to penalties as defined by Hawai'i State (Hawaii Revised Statutes Chapter 6E and Title 12) and Federal laws.
- Do not injure, remove or kill any plants or animals.
- Appreciate the spectacular views and natural quiet found at Maunakea.
- Do not move or remove any rocks, altars or offerings. Do not pile or stack rocks. Please remove offerings after completion of ceremonies.
- Cinder and lava is easily crushed. Drive, park and recreate only in designated areas. Drive slowly and carpool if possible.
- Secure items that could escape in high winds and dispose of trash properly (including snowplay items).
- Vehicle break downs and accidents are common. Keep vehicles in good working condition, drive safely, travel on designated roads, follow posted speed limits, do not pass and use 4x4 low. Inquire at the VIS about summit road and weather conditions.
- Avoid introducing non-native species. Non-native species can be spread by hitchhiking on personal belongings, equipment and offerings. Please clean hiking shoes, clothing and vehicles before arriving. If you see any ants, please notify a Ranger immediately.



TRADITIONAL IMPORTANCE

Maunakea is a recognized Hawaiian cultural site. It is a storied place of cultural, spiritual and archaeological significance where appropriate and respectful behavior is expected.

WAO AKUA

The realm of the gods and spirits, wao akua, is the upland area above the clouds and traditionally only visited at certain times of the year, by a select few for spiritual and ceremonial purposes. The tropical inversion cloud layer is seen as a veil to conceal the gods' activities. Skilled workers also gathered adze and stone in this wao. Life in Maunakea's alpine community (above 11,000 ft; 3,350 m) is evident in sparse grasses and ferns often referred to as a stone desert dominated by rock and cinder. Annual precipitation is less than 10 in (25 cm) per year. At first glance the area appears to be nearly barren of life, but in fact, this unique ecological community supports mosses, lichens, algae, and more than 40 cold-adapted invertebrates such as moths, spiders, and the wekiu bug. Many native insects at the summit are closely related to those found in the other alpine environments worldwide.



wolf spider



'iwa'iwa fern

WAO LA'ALĀ'AU

The wao la'alā'au is the region utilized by the Hawaiians for specialty hunting and gathering of bird feathers and hardwoods for tools. The alpine shrubland community begins above the tree line (from 9,500-11,000 ft; 2,896-3,350 m) and supports hardy shrubs like pūkiawe, 'ōhelo and hinahina in its cold and dry environment. Many arthropods are host specific, meaning they are only found on certain native shrubs.



Hawaiian thread waisted wasp



pāwale

WAO NAHELE

The wao nahele is the forested region where many resources were gathered by the Hawaiians to build wa'a (canoes), homes and crafts. The subalpine community (from 5,600-9,500 ft; 1,707-2,896 m) consists of woodlands, shrublands and grasslands. Many native plants and grasses have been lost due to heavy grazing by feral and domestic sheep and goats. Around Halepōhaku native māmāne trees provide food for Palila birds.



'āweoweo



'apapane

ALPINE DESERT COMMUNITY

ALPINE SHRUBLAND COMMUNITY

SUBALPINE COMMUNITY



Most land on Maunakea above approximately 8,000 ft (2,430 m) is State-owned and managed by the State of Hawaii, Department of Land and Natural Resources or the University of Hawaii. The University of Hawaii manages three parcels: the mid-level facilities at Halepohaku (19 acres; 7.7 ha), the Summit Access Road and its management corridor (~700 acres; ~283 ha), and the Maunakea Science Reserve (11,300 acres; 4,573 ha) which includes the 525 acre (212 ha) Astronomy Precinct.

UH Managed Lands

NARS Rules Prohibit

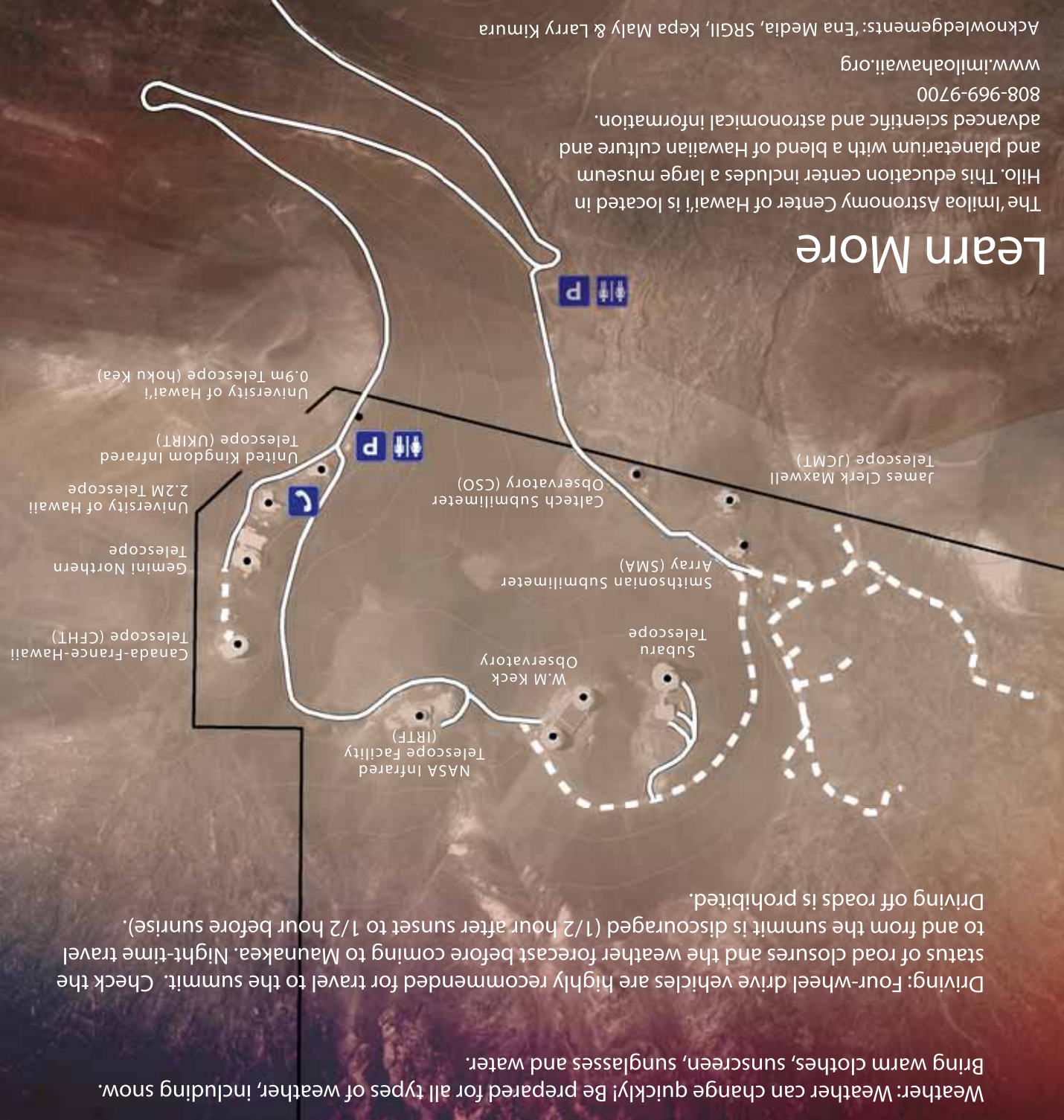
- Fires, littering, and camping.
- Injuring, removing, or killing any plant or animal life (except during permitted hunting).
- Vehicles of any kind, except on designated roads.
- Introducing any form of plant or animal life.
- Removing, damaging, or disturbing any historic or prehistoric remains, geological features or substrates; or notices, markers or structures.
- Placing any vessel or material in, on, or otherwise disturbing a lake or pond.

Sharing Responsibility ICE AGE NATURAL AREA RESERVE

The statewide Natural Area Reserves System (NARS) was established to preserve in perpetuity specific land and water areas which support sites, of Hawaii. The Maunakea Ice Age NARS contains rare alpine aeolian desert and the only alpine lake in Hawaii. Rare native invertebrates and evidence of pleistocene glaciation can also be found.

Learn More

The Imiloa Astronomy Center of Hawaii is located in Hilo. This education center includes a large museum and planetarium with a blend of Hawaiian culture and advanced scientific and astronomical information. 808-969-9700
www.imiloahawaii.org



AROUND THE SUMMIT: Astronomy Precinct

Weather: Weather can change quickly! Be prepared for all types of weather, including snow. Bring warm clothes, sunscreen, sunglasses and water.

Driving: Four-wheel drive vehicles are highly recommended for travel to the summit. Check the status of road closures and the weather forecast before coming to Maunakea. Night-time travel to and from the summit is discouraged (1/2 hour after sunset to 1/2 hour before sunrise). Driving off roads is prohibited.

MAUNAKEA

Heritage and Natural Resources Guide



Explore Safely

- Maunakea is remote and assistance may be hours away. There are no public accommodations, food, gasoline or vehicle services.
- Health and Safety:**
Spend at least 30 minutes at the Visitor Information Station (VIS) to acclimatize to the altitude before ascending to the summit.
Children under 16; pregnant women; and people with respiratory, heart or severe overweight conditions are advised not to go higher than the VIS.
SCUBA divers must wait at least 24 hours after their last dive before traveling to the summit.
- Hiking:**
There are no designated trails on UH Managed lands. Please follow all NARS trail rules and check in at the VIS before and after hiking. There is no shuttle service for hikers.
An experienced hiker will require ~10 hours and 1.5 gallons of water when hiking to the summit and back. Groups of more than 10 must obtain a permit in advance.
- Rangers:**
Rangers are on duty to ensure resource protection and visitor safety. Heed all warnings and report any suspected threats to resources.

He ali'i ka 'āina, he kauā ke kanaka. *The land is chief, man its servant.*

Quiet chants or prayers are appropriate ho'okupu (offerings). Physical offerings can potentially damage and alter a site's integrity. Remember, if unsure it's best to leave nothing behind.

Around Halepōhaku

Your respect and mālama (care) for the practices and beliefs of Native Hawaiians is important to the well-being of Maunakea. Your kuleana (responsibility) can best be demonstrated by leaving the mountain better than you found it. Renew your spirit by developing an attitude of ha'aha'a (humility) to your surroundings.

Traditional Hawaiian protocol for approaching wahi pana is to ask permission from the ancestors, give thanks for the privilege to visit and offer apologies for any disturbance your presence may unwittingly bring to the site.

Endangered 'Āhinahina (Maunakea silversword) plants are located in an enclosure behind the VIS parking lot. Avoid walking near plants as the root systems are fragile.

The Office of Maunakea Management (OMKM) is responsible for the day-to-day management of the University of Hawai'i management areas on Maunakea.
omkm@hawaii.edu | 808-933-0734
www.malamamaunakea.org



The Onizuka Center for International Astronomy Visitor Information Station (VIS), located on the Summit Access Road at 9,200 ft (2,804 m), is open daily from 9 am to 10 pm. Check for upcoming events.
808-961-2180
www.malamamaunakea.org/vis/

Please mālama 'āina and help to preserve our native habitats.

Visitor Information Station : 808.961.2180
Road & Weather Conditions:
www.malamamaunakea.org/road/
808.935.6268
Emergencies: 911

"Maunakea kuahiwi kū ha'ō i ka mālie"

"Maunakea is the astonishing mountain that stands in the calm," is an old Hawaiian 'ōlelo no'ēau or wise saying that expresses the sentiment that Maunakea is a source of awe and inspiration.

