



Hawai'i Volcanoes National Park | Kahuku Site Management Plan

Desired Conditions

NPS Photo / A.LaValle

Desired Conditions

Desired conditions and management zones describe what the park strives to achieve in each area of the park.

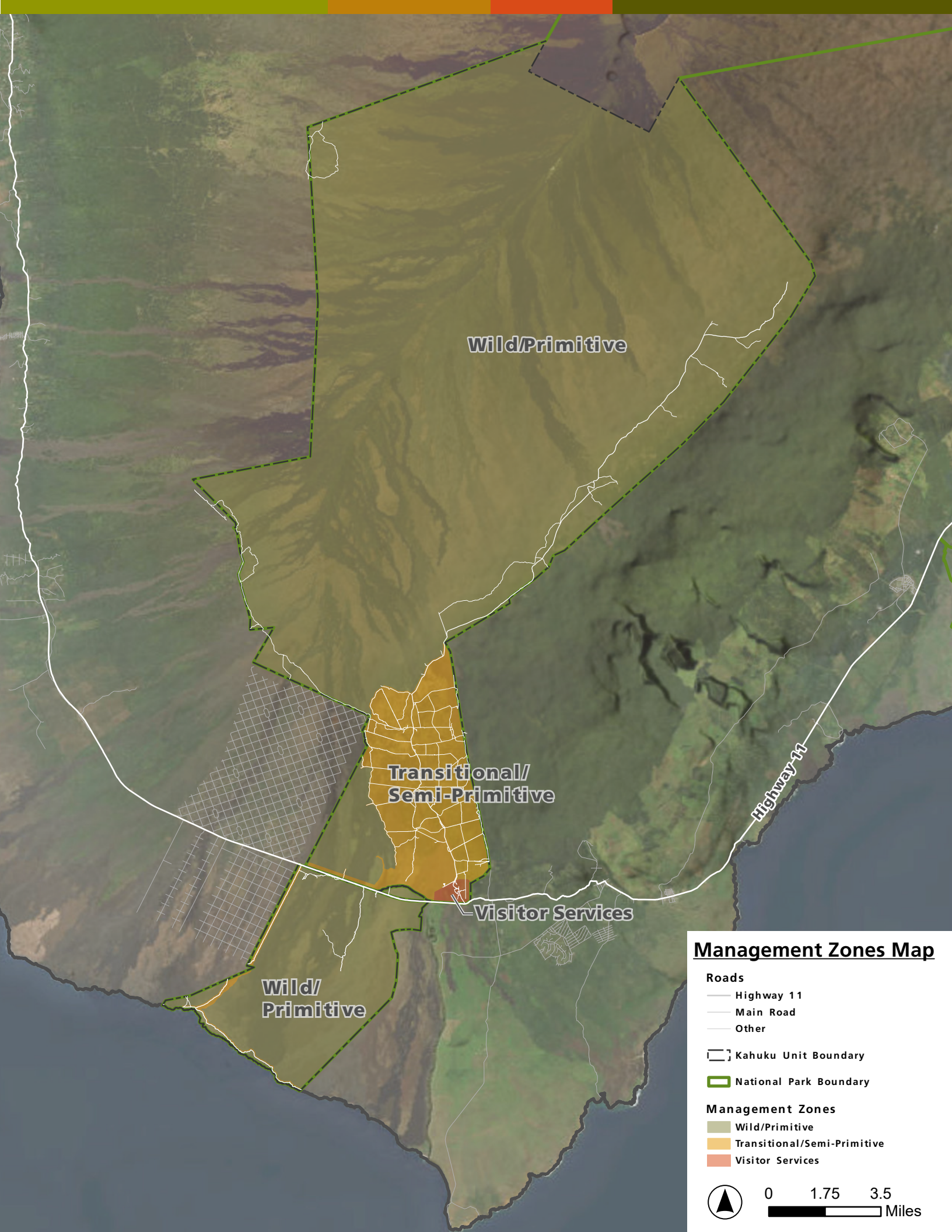
Desired conditions are aspirational statements that describe environmental or ecological conditions, visitor experiences and opportunities, and facilities and services that a park strives to achieve and maintain in a particular area. Taken together, management zones and desired conditions allow park managers to offer a spectrum of opportunities to meet the needs of a broad array of diverse public interests.

See the map on the next page for management

zones of Upper and Lower Kahuku and the proposed management zones for Kahuku-Pōhue.

In addition to park-wide desired conditions which are presented in the 2016 General Management Plan, the Kahuku Unit has desired conditions shared across all management zones of the unit as well as desired conditions specific to each zone.

The following desired conditions statements begin with statements applicable to all zones. Statements for each management zone are organized by topic including environment, culture, wilderness, visitor use and experience, and management operations.



Wild/Primitive

Transitional/
Semi-Primitive

Visitor Services

Wild/
Primitive

Highway 11

Management Zones Map

Roads

- Highway 11
- Main Road
- Other

 Kahuku Unit Boundary

 National Park Boundary

Management Zones

-  Wild/Primitive
-  Transitional/Semi-Primitive
-  Visitor Services



0 1.75 3.5



Miles

Desired Conditions Common to all Management Zones



NPS Photo/J.Robinson: Expansive view of Kahuku looking towards the coast.

Culture

- To the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, the National Park Service accommodates continued traditional practices, and access to and ceremonial use of Native Hawaiian sacred sites by Native Hawaiian religious practitioners to maintain or re-establish connection with the land, and avoids adversely affecting the physical integrity of these sacred sites.
- Management is coordinated to provide consistency in regulations, standards, and guidelines to the extent feasible, and work will continue to be done with the State of Hawai'i, the County of Hawai'i, U.S. Fish and Wildlife Service, US Department of Agriculture, nearby private landowners, other local and regional groups, communities, agencies, and Native Hawaiians to preserve wilderness values.

Private & Public Organization, Adjacent Landowner, and Government Agency Relationships

- Good relations are maintained with adjacent landowners, such as the State of Hawai'i, Kamehameha Schools, The Nature Conservancy, surrounding communities, and private and public groups that affect, and are affected by, Hawai'i Volcanoes National Park.

Nearby Community Relationships

- NPS staff maintains close working relationships, trust, and goodwill with nearby communities, providing the ability for local communities to maintain a meaningful relationship with the landscape while accomplishing the management objectives and maintaining desired conditions in this management zone.

Visitor Services Zone



Environment

NPS Photo: View along Pu'uolokuana Trail

- The night environment is Dark Skies compliant and consists of largely natural light, with only the necessary amount of onsite artificial outdoor lighting to provide for visitor safety and comfort. Artificial light sources in this developed area are designed to minimize light pollution and serve as an example to educate visitors about night sky and wildlife friendly lighting.
- Opportunities to listen to natural sounds of native insects and birds are possible; some human generated sounds are present in this more social setting, with sounds of traffic from the nearby road occasionally audible.
- Plant and animal communities endemic to this area are promoted to flourish here as part of the natural ecosystem alongside a built human environment. Some introduced pasture grasses may remain in this portion of the park. The smells of both cut grasses and native blooming flowers coexist in this zone.
- Interpretation and information enlist visitors and local communities as partners in park stewardship, helping them understand and embrace behaviors that maintain the ability of native plant and animal communities and introduced pasture grasses to coexist in this area, and prevent new non-native, invasive species from overtaking existing vegetation.
- Appropriate infrastructure for fire management is present in this zone. All wildland fires are effectively managed, and resource values are not only considered but protected. Firefighter and public safety are prioritized in decision making. Fire management utilizes a full range of strategic and tactical operations as described in an approved fire management plan.
- Infrastructure exists to facilitate stewardship projects that may involve the community and the public.
- Air quality meets national ambient air quality standards for specified pollutants and is maintained or improved with little or no deterioration, except for volcanic related emissions. Visibility is excellent, such that scenic views within and outside the park are clear, except for volcanic-related and other natural visibility reductions.
- Surface water and groundwater are protected, and water quality meets or exceeds all applicable water quality standards, and hydrologic processes continue unimpeded. NPS and NPS-permitted programs and facilities are maintained and operated to avoid pollution of surface water and groundwater.

Visitor Services Zone



NPS Photo: Ka'ū agricultural field system in Kipukaka'ōpapa.

Culture

- Overlapping cultural landscapes exist here, including the Kahuku Ranch Cultural Landscape, the Kahuku Military Landscape, and the Ethnographic Landscape.
- 'Ōhi'a forest restoration is evident and represents a powerful cultural landscape story that is important to reestablish and interpret in this part of the park. 'Ōhi'a forest restoration occurs alongside aspects of historic ranching, where implements of the historic ranching period (paddock fences and water systems) are present, as well as remnants of World War II era military activity. These layers of history are interpreted to inform visitors of the different time periods relevant and evident on the overlapping cultural landscapes. Interpretation and information enlist visitors as partners in stewardship, helping them understand the significance of these resources, and embrace behaviors that protect important cultural resources.
- Archeological sites are identified, documented and inventoried, and their significance is assessed. Some archeological sites that can

be adequately protected may be interpreted to visitors. Site conditions are monitored to record changes in resource conditions because of environmental conditions or visitor use impacts. To the extent feasible, archeological resources degrading from environmental conditions and visitor impacts are mitigated through site stabilization, data recovery or other preservation strategies, including closure to visitors.

- Historic structures and cultural landscapes are documented, inventoried, monitored, inspected, and managed to enable long-term preservation of a resource's cultural and historic features, qualities, and materials.

Wilderness

- Visitor interpretation and education reinforces the need for visitors to prepare for their experiences in park Wilderness and teaches techniques and behaviors that allow visitors to interact with park resources safely and harmoniously.

Visitor Services Zone



Visitor Use and Experience

NPS Photo/J.Ferracane: Visitors on Puʻuolokuana cinder cone look down at the Cultural Festival grounds in Lower Kahuku.

- This zone provides convenient, accessible, and comfortable access and orientation to the Kahuku area, with paved or gravel drive-up access sufficient for automobiles, trucks, mini-buses, and school buses, dedicated parking spaces, a comfort station with running water, fee collection area, and some amenities (e.g., bookstore).
- While frequent encounters with other visitors are to be expected in this zone, visitors will still find opportunities to have an enjoyable and fulfilling park experience.
- Visitors can transition from their vehicles to embark on an accessible pedestrian experience as they enjoy this zone or access trails leading to more remote areas of the park. This zone allows visitors easy access to hikes that are appropriate for all ability levels, on well surfaced trails, have clear wayfinding signage, and are close to parking.
- Visitors have opportunities to interact with and learn about natural resources and cultural resources, that help interpret the ranching history, the Native Hawaiian cultural landscape, and the military history.
- Walkways between built structures, and some trails are ABA accessible, providing a diverse experience for all visitors.
- Sufficient covered space (with applicable utilities, such as electric and telecommunications) is available for educational and interpretive programming at or in vicinity of the visitor contact station.
- Some limited CUA access to this zone may be possible, such as small passenger vans or minibuses for guided hiking.
- Visitors can expect safe and improved visitor facilities, with some historic buildings rehabilitated for visitor experiences, or new structures that fit with the character of the area, and cultural landscape features that are adapted for universal access.
- Hardened surfaces in this zone accept substantial visitation and a wide range of visitor abilities. Built environments in this zone are designed to intuitively guide visitors toward key facilities and services that are designed to help orient them for the rest of their visit.
- Information and signage in this area orients visitors and prepares them for experiences in other zones of the park. Basic needs, like restrooms, water, and expanded amenities like picnic areas, accessible to visitors of all abilities, provide for an engaging and enjoyable visitor experience.



NPS Photo/M.Watanabe: Scenic view of pasture and forest from Kahuku Road.

Environment

- Plant and animal communities endemic to this area are reintroduced, promoted, and flourish here as part of the natural ecosystem, providing habitat for native birds and insects. Some introduced pasture grasses are maintained in this portion of the park as potential areas for nēnē reintroduction. Other rare, threatened, and endangered species are protected and sustained.
- Interpretation and information enlist visitors and local communities as partners in park stewardship, helping them understand and embrace behaviors that maintain the ability of native plant and animal communities to be reintroduced and exist in this area, and help keep non-native, invasive species from gaining a foothold in the park.
- Populations of non-native plant and animal species are monitored and controlled. These populations are excluded and eradicated wherever such species threaten park resources or public health and when control is prudent and feasible.
- Non-native ungulates and predators are excluded and managed when prudent and feasible. Mosquitoes are controlled or eradicated when prudent and feasible. Incipient populations of invasive species are eradicated (e.g., little fire ants, etc.).
- Air quality meets national ambient air quality standards for specified pollutants and is maintained or improved with little or no deterioration, except for volcanic related emissions.
- Visibility is excellent, such that scenic view within and outside the park are clear, except for volcanic-related or other natural event visibility reductions.
- Surface water and groundwater are protected, and water quality meets or exceeds all applicable water quality standards, and hydrologic processes continue unimpeded. Some existing reservoirs are present and are maintained.

Transitional / Semi-Primitive Zone



NPS Photo/J.Ferracane: View of 'ōhi'a and 1868 lava flow from the Kahuku Kona Trail.

Environment Continued

- Appropriate infrastructure and restrictions based on conditions for fire management are present in this zone. All wildland fires are effectively managed, considering resource values to be protected and firefighter and public safety, using a full range of strategic and tactical operations as described in an approved fire management plan. Water catchment facilities left over from the ranching history are present and may be used for visitor use and/or fire suppression. Fuel breaks are maintained, and wildfire fuels are reduced.
- The night environment is Dark Skies compliant and consists of largely natural light, with some light intrusion from adjacent neighborhoods.
- Opportunities to hear natural sounds are prevalent in this zone, with some human-caused sound present from visitors, vehicles on nearby roads, and management activities.
- Native forests are reintroduced, allowing species to flourish under predicted climate conditions in the future to the extent possible.
- NPS provides opportunities for nēnē to recover in the area, providing suitable habitat and areas that are free from predators to the extent possible.
- Geologic and soil resources, which are a mix of substrate ages, the potential for major lava flow through this area, and the changing nature of the geology and soils is interpreted to and experienced by visitors.
- Utilize the best available science to reduce wildlife-visitor conflicts (includes nēnē, honu 'ea, anchialine pools, 'ua'u etc.).

Transitional / Semi-Primitive Zone



NPS Photo/J.Wei: New trail to Kahuku-Pōhue coast.

Culture

- Significant historic, cultural, and archeological resources are present and are preserved in this zone. Visitors may have opportunities to interact with these resources knowingly or unknowingly. Interpretation and information enlist visitors as partners in stewardship, helping them understand and embrace behaviors that protect these important resources. Many layers of history and culture are present in this zone, including historical ranching that took place during the last century, the Kaʻū agricultural field system that were utilized during the 1400 -1800s, and other significant archeological sites. Kahuku-Pōhue is rich in archeological resources.
- Portions of the contributing Kahuku Ranch cultural landscape are maintained and preserved, with select paddocks preserved and historic buildings and structures stabilized, restored, and reused for visitor and management facilities and interpretation to the extent possible.
- Whenever possible, indigenous knowledge is utilized to manage this zone, with the potential for interpretation of and the possibility for the development of experimental gardens and community stewardship programs in the Kaʻū Traditional Dryland Agricultural Field Systems to further interpret the site for visitors and help protect the resources.
- Appropriate cultural anthropological and ethnographic research is conducted in cooperation with groups associated with the park, including reestablishment and protection of native forests, completion of an ethnographic cultural landscape inventory, mapping of wao (horizontal land divisions), restoration of indigenous place names, and continued documentation of cultural resource sites.
- Visitors will experience place names that are appropriate for the cultural landscape within this zone, and educational and stewardship activities in accessible locations.
- To the extent possible, the Kahuku-ʻĀinapō Trail may be re-established for visitor use.

Transitional / Semi-Primitive Zone



NPS Photo/M.Watanabe: Boot decontamination to reduce the risk of spreading Rapid 'Ōhi'a Death.

Wilderness

- Visitor education reinforces the need for visitors to prepare for their experiences in park Wilderness and teaches techniques and behaviors that allow visitors to interact with park resources safely and harmoniously.

Transitional / Semi-Primitive Zone



NPS Photo: Hikers on trail in Lower Kahuku.

Visitor Use and Experience

- Visitors feel immersed in the site, where the likelihood of encountering others is moderate to low. A moderate level of challenge will be found here due to limited vehicle accessibility. A moderate level of self-reliance and outdoor skill is needed by visitors who choose to hike or camp in this zone.
- Interpretation immerses visitors in the many layers of history and culture, and the interplay of nature and culture in this location. Drawing on the rich diversity of resources, visitors become familiar with the geology, and natural settings that are present under their feet and around them.
- Visitors are aware of the heightened fire risk in this zone and are enlisted to help reduce that risk.
- Drive-up and hike-in camping opportunities in this zone provide visitors with a rustic camping experience with vault or composting toilets, picnic tables, and small rain shelters that may provide non-potable water. The camping experience provides visitors with Night Sky viewing opportunities from the comfort of their campsites. Night skies can be seen clearly, without intrusion from light source within the park. Visitors will also find opportunities for easy to moderate day-hiking on well-marked trails, with trailhead interpretation focusing on the multiple layers of history present in the site, with connectivity to more challenging remote hiking opportunities. Visitors will also experience opportunities for birdwatching and biking or e-biking on existing roads.

Transitional / Semi-Primitive Zone



NPS Photo/J.Ferracane: View of Pōhue Bay.

Management Operations

- The NPS strives to identify recognizable threats to safety and health of visitors and staff. There is limited cell phone coverage in this area of the park to contact emergency services. To the extent possible, the park applies appropriate measures to mitigate this limitation.
- Facilities in this zone may include a well-marked trail system, gravel roads appropriate for administrative purposes, picnic areas, drive-up and hike-in campsites, that may include non-potable water from small rain shelters.

Wild / Primitive Zone



NPS Photo: Native forest in Upper Kahuku.

Environment

- In this relatively undisturbed natural setting, natural ecosystem processes predominate. Visitor access and use improvements are primitive or largely absent. Native species, communities, and ecological processes are perpetuated and restored in as natural a condition as possible, as feasible under future climate conditions.
- Resource impacts or manipulation of resources for visitor use or administration is rare and avoid sensitive areas to the greatest degree possible.
- Non-native species are detected, prevented, and controlled up to and including eradication. Management actions are undertaken wherever such species threaten park resources or public health and when control is prudent and feasible.
- Opportunities to hear natural sounds (rain in trees, wind in trees, waves) abound in this zone which has one of only a few areas to hear forest birds (some species of forest birds are only in Upper Kahuku). Occasional intrusions by helicopter tours may occur, particularly in areas adjacent to the highway in Lower Kahuku and upper Kahuku-Pōhue.
- Appropriate infrastructure and restrictions based on conditions for fire management are present in this zone. All wildland fires are effectively managed, considering resource values to be protected and firefighter and public safety, using a full range of strategic and tactical operations as described in an approved fire management plan. Fuel breaks are maintained, and wildfire fuels are reduced.

Wild / Primitive Zone



NPS Photo/J.Wei: Rugged coastline of Kahuku-Pōhue at Hosaka Flats.

Environment Continued

- The night environment is Dark Skies compliant and consists of largely natural light, with some light intrusion from outside the park.
- Geologic and soil resources which are a mix of substrate ages, the potential for major lava flow through this area, and the changing nature of the geology and soils is experienced by visitors.
- Plant and animal communities endemic to this area are reintroduced, promoted, and flourish here as part of the natural ecosystem, providing habitat for native birds and insects. Other rare, threatened, and endangered species are protected and sustained.
- Some active restoration and exclusion fences are present in this zone, as are some historic backcountry shelters.
- All new visitor amenities or facilities avoid sensitive sites to the extent possible.

Wild / Primitive Zone



NPS Photo: Petroglyphs in Kahuku-Pōhue.

Culture

- Significant cultural resources are present in Upper and Lower Kahuku and Kahuku-Pōhue. Cultural sites are preserved to the greatest extent possible. Archeological sites are documented, inventoried, monitored and protected.
- Education and interpretation of these resources occurs outside the Wild/Primitive zone to protect wilderness character.
- All new visitor amenities (e.g. trails) or facilities (e.g. composting toilets) avoid sensitive sites to the extent possible.

Wild / Primitive Zone

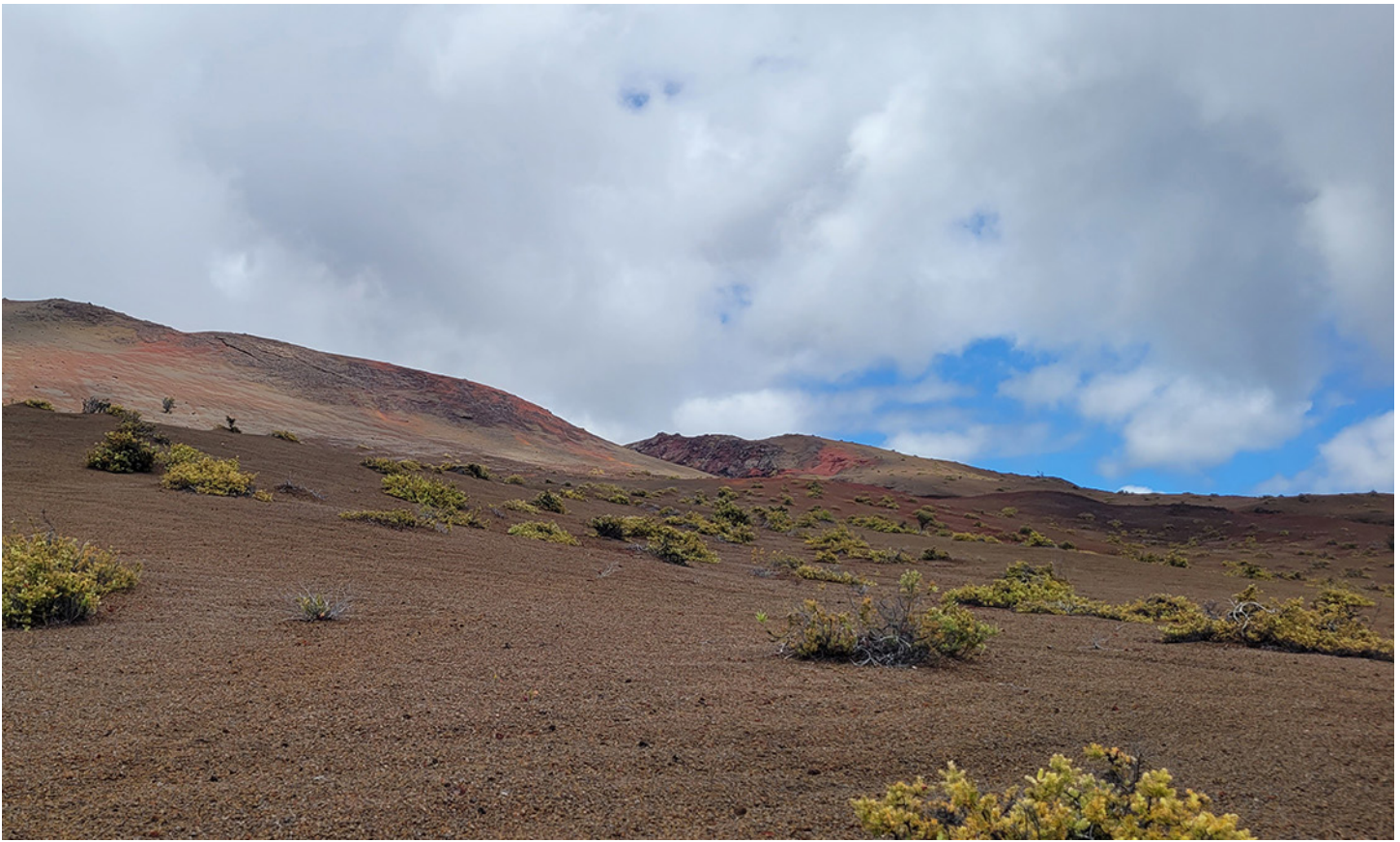


NPS Photo: Anchialine Pool - Anchialine pools provide critical habitat for 'ōpae'ula shrimp.

Wilderness

- The park ensures that the land's primeval character and influence is retained and protected; that visitors continue to find opportunities for solitude and primitive, unconfined recreation; and that the landscapes generally appear to have been affected primarily by the forces of nature with the imprint of human work substantially unnoticeable. This includes most of Upper Kahuku, portions of Lower Kahuku, and potentially much of Kahuku-Pōhue.
- Cultural resources that have been included within wilderness will be protected and maintained according to the pertinent laws and policies governing cultural resources using management methods that are consistent with the preservation of wilderness character and values.
- Natural processes, native components, and the interrelationships among them are protected, maintained, and/or restored to the extent possible, while providing opportunities for their enjoyment as wilderness.
- Present and future visitors enjoy the unique qualities offered in wilderness. These include the experiences of solitude, remoteness, risk, challenge, self-sufficiency, discovery, and observation of an untrammeled ecosystem.
- Scientific studies are encouraged that contribute to understanding wilderness resources, threats, and restoration of wilderness character.
- Wilderness management is based on the minimum requirement concept, allowing only those actions necessary and appropriate for administration of the area as wilderness and that do not cause a significant impact to wilderness resources and character.
- The values of the wilderness in the park are understood by the public and staff through education in wilderness ethics and use, and by using management skills and techniques to promote and preserve these values.

Wild / Primitive Zone



NPS Photo: Colorful hills of the Hapaimamo flow in Upper Kahuku.

Visitor Use and Experience

- Visitors feel immersed in the natural environment, where the likelihood of encountering others is low, particularly as visitors travel deeper into the interior of this zone. Access to this zone is on foot via trailheads in the Transitional Zone. Visitors will experience a sense of arrival or entering a place when hiking between different environments (such as from misty, open scrub-shrub to dense forest). Opportunities to experience solitude, risk, adventure, and wildness abound.
- A fair bit of time is needed to visit this zone, with a half to full day to visit areas which are closer to development; and overnight to multiple night visits are needed to visit the interior of this zone. Advanced preparation is needed, including provisions for food, water, sun protection, navigational tools, adequate protective clothing, and other items needed to spend time in this wild area safely. This zone can be hazardous if visitors are not prepared for conditions.
- A high level of challenge will be found here. A high level of self-reliance and outdoor skill is needed as visitors move away from more developed areas in the transitional zone into this zone.
- Dispersed visitor activities predominate in this zone, including hiking, backpacking, bird watching, primitive camping, exploring, nature photography, and shoreline fishing in Kahuku-Pōhue. Solitude in this zone will allow visitors to focus both on the park's grand scenic features, and the nature near their feet. Opportunities for up-close encounters with the park's flora present themselves in this zone. Traditional practices (e.g., salt drying and gathering) are also appropriate where allowed.
- Where feasible and appropriate, rain shelters, tent platforms, water catchments and cabins may be added.
- Where feasible, historic trails, including the Kahuku-Āinapō Trail are restored and utilized.

Wild / Primitive Zone



NPS Photo/J.Wei: Honue'ea (Hawaiian hawksbill turtle) nest protection.

Management and Operations

- The NPS strives to identify recognizable threats to safety and health of visitors and staff. There is limited cell phone coverage in this area of the park to contact emergency services. To the extent possible, the park applies appropriate measures to mitigate this limitation.
- Fences for natural features protection, composting toilets, tent platforms, and potentially rain shed shelters at primitive campsites may be provided in this zone.