



Welina Mai—Welcome

Protecting & Restoring Native Ecosystems by Managing Non-Native Ungulates Draft Plan & Environmental Impact Statement

Dear Friends,

We are pleased to announce the availability of the draft plan and draft environmental impact statement (DEIS) for protecting and restoring native ecosystems by managing non-native ungulates at Hawai'i Volcanoes National Park.

As vital contributors to the planning process, your feedback is essential to the development of the final plan and EIS. We hope you take the opportunity to provide us your feedback.

Mahalo,

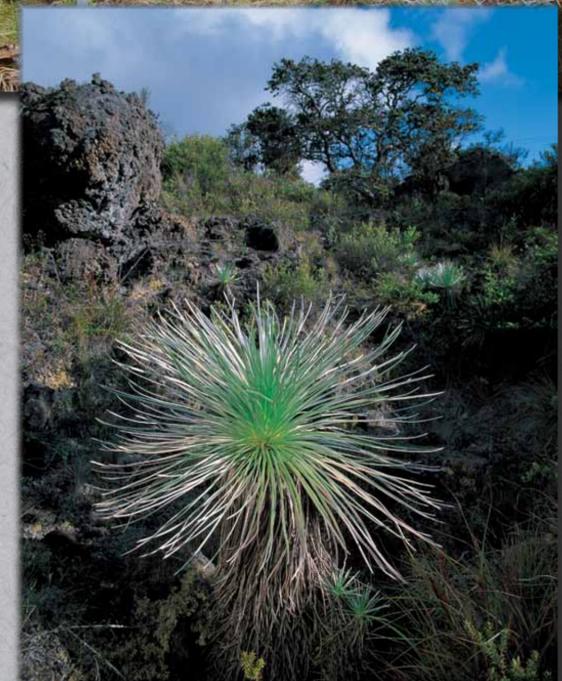
Cindy Orlando
Superintendent
Hawai'i Volcanoes National Park



Open House

Our Goals for the open house are to:

- Explain the planning process and timeline
- Provide main findings of the draft plan/draft environmental impact statement (DEIS)
- Receive your comments
- Provide comments to NPS staff during the open house
- Writing your comments on a comment card provided at these meetings
- Submitting comments on-line at http://parkplanning.nps.gov/havo_ecosystems_deis
- Mailing comments to:
Superintendent, Hawai'i Volcanoes National Park
RE: Protecting and Restoring Native Ecosystems by Managing Non-Native Ungulates
Management Plan/EIS
P.O. Box 52
Hawai'i National Park, HI 96718-0052



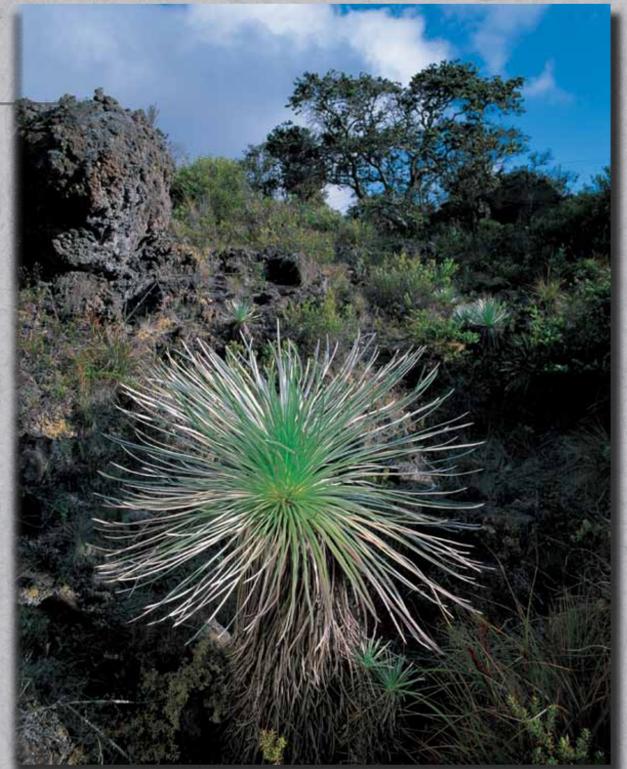


Welina Mai—Welcome

Protecting & Restoring Native Ecosystems by Managing Non-Native Ungulates Draft Plan & Environmental Impact Statement

The National Environmental Policy Act (NEPA)

- A legally required environmental planning process
- Imposes analysis and public review requirements on federal decision makers
- NEPA documents are meant to be focused, analytic, problem-solving reports to help agencies make informed and wise decisions



Elements of the NEPA Planning Process

- Articulate the Purpose, Need, and Objectives
- Look at all reasonable alternatives, including No Action
- Analyze impacts using reliable scientific data and a problem solving approach
- Public participation





Protecting & Restoring Native Ecosystems by Managing Non-Native Ungulates Draft Plan & Environmental Impact Statement

The National Environmental Policy Act (NEPA) Schedule:

December 5-7, 2011	←————→	Public Open House Meetings
January 20, 2012	←————→	Public Comment Period Closes
Early Spring 2012	←————→	NPS Analyzes Public Comments
Spring 2012	←————→	Prepare Final Plan
Summer 2012	←————→	Notice of Availability for Final Plan (30-day waiting period)
Summer 2012	←————→	Record of Decision; plan implementation begin



Tips for Commenting on the Draft Plan/Environmental Impact Statement (DEIS)

- The National Park Service will review and consider all comments made on the draft plan/DEIS
- Those comments considered substantive are most helpful
- Substantive comments are not a vote, but rather comments related to elements of the DEIS such as:
 - Purpose, Need, Objectives
 - Range of Alternatives
 - Elements of Alternatives/Preferred Alternative
 - Impact Analysis
 - Additional Studies/Data



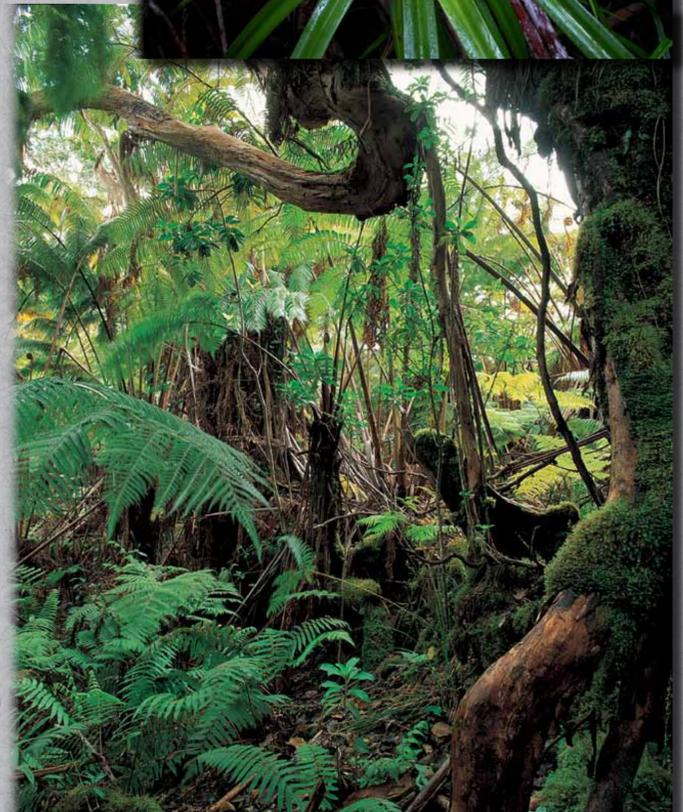


Welina Mai—Welcome

Protecting & Restoring Native Ecosystems by Managing Non-Native Ungulates Draft Plan & Environmental Impact Statement

Impacts Considered

- Vegetation
- Native Wildlife and Wildlife Habitat
- Rare, Unique, Threatened, or Endangered Species
- Cultural and Historic Resources
- Wilderness
- Soils
- Soundscapes
- Land Management Adjacent to the Park
- Socioeconomics
- Visitor Use and Experience
- Visitor and Employee Safety





Welina Mai—Welcome

Protecting & Restoring Native Ecosystems by Managing Non-Native Ungulates Draft Plan & Environmental Impact Statement

Alternative A: No Action / Existing Conditions

Under alternative A , park staff would continue current non-native ungulate management practices, which are lethal, supported by qualified volunteers, include the use of boundary and internal fences, and informed by existing management and operating plans, and other management decisions.



Inside a pig-free fenced unit

There would be no parkwide strategy laid out in a comprehensive plan to guide future actions-implementation of ungulate management would rely on professional judgement, past experience, and scientific knowledge of NPS staff. Consistent application of management tools over time would be uncertain.



Outside a fenced unit

Native plant recovery in 'Ōla'a rainforest sixteen years following exclusion of non-native feral pigs inside a fenced unit is pictured above left. Vegetation and soils continue to be impacted just outside the fenced unit pictured at left. Photos taken in 2011.



Welina Mai—Welcome

Protecting & Restoring Native Ecosystems by Managing Non-Native Ungulates Draft Plan & Environmental Impact Statement

Alternative A: No Action / Existing Conditions

Management Activity	Alternative A: No Action (Continue Existing Non-native Ungulate Management Activities)
Population-level objective	<p>Has been described in different ways for the older section of the park, but for practical purposes is zero non-native ungulates (or as low as practicable).</p> <p>No established population-level objective for Kahuku, but past experience and current scientific knowledge suggest a practical goal of zero non-native ungulates (or as low as practicable).</p>
Direct reduction with firearms—ground shooting	<p>Lethal removal of non-native ungulates using firearms from the ground.</p> <p>All actions related to direct reduction with firearms from the ground would be included, such as shooting, data collection, and carcass handling.</p> <p>Direct reduction with firearms—ground shooting—could also include the following elements:</p> <ul style="list-style-type: none"> •Could be used in combination with dogs; however, dogs would not be used in nēnē habitat until trained to avoid the nēnē. •Could be used in combination with telemetry.
Direct reduction with firearms—aerial shooting	<p>Lethal removal of non-native ungulates using firearms from the air. This activity would occur in open-canopy areas where skilled shooters are able to take animals that appear in vegetation openings. Choice of firearm, ammunition, and shot placement are all factors in the humaneness and success of using aerial shooting that would be considered. Personnel would have the appropriate skills, proficiencies, training, and certifications in helicopter operation and in the use of firearms for the removal of wildlife. Direct reduction with firearms—aerial shooting—could also include the following elements:</p> <ul style="list-style-type: none"> •Could be used in combination with dogs; however, dogs would not be used in nēnē habitat until trained to avoid the nēnē. •Could be used in combination with telemetry.
Snaring	<p>Snaring would be used exclusively for the removal of feral pigs under one or more of the following conditions:</p> <ul style="list-style-type: none"> •Populations are at remnant levels •Densities are low •Terrain is rugged •Location is remote •Pigs have become accustomed to other removal techniques. <p>Using this method, a cable snare would be placed in areas where pigs are most likely to travel, or approximately one snare per acre. Snares would be mapped and marked with global positioning system (GPS) technology. Units with snares would be well signed to limit potential safety issues.</p>
Baiting and Trapping	<p>Baiting and trapping would include trapping non-native ungulates and dispatching the animals in or near the traps. This tool would be used wherever feasible.</p>
Relocation	<p>Relocation would not be used.</p>
Fencing	<p>NPS would continue retrofitting boundary fences from 4-foot fences to 6-foot fences in areas vulnerable to mouflon sheep ingress in the older section of the park.</p> <p>The NPS would continue to use interior fencing to delineate managed non-native ungulate removal areas and exclude non-native ungulates from sensitive resource areas, including restoration plots, in the older section of the park.</p> <p>Past experience and consideration of current scientific knowledge indicate that boundary fencing would be necessary in Kahuku. However, under alternative A implementation of a comprehensive boundary fence would be uncertain.</p>
Use of qualified volunteers	<p>Qualified volunteers would be used for direct reduction with firearms during the reduction phase in more accessible areas of Kahuku (e.g., areas below 5,000 ft in elevation). The following would be required of potential qualified volunteers:</p> <ul style="list-style-type: none"> •Completing a registration form •Obtaining a Hunter Education Certificate or card •Presenting registration of the firearm to be used and a Hawai'i hunting license •Providing their own transportation •Being able to spend a minimum of 8 hours hiking over rough terrain <p>A minimum of one NPS staff member would directly supervise and escort every two volunteers and these staff members would direct volunteers as to which animals should be removed.</p> <p>Volunteers would be allowed to keep the meat or other parts from any animal they kill (inconsistent with current NPS practice).</p> <p>Qualified volunteers could also be used for other non-native ungulate management activities, including fence construction and maintenance, monitoring, baiting, trapping, and relocation. These qualified volunteers would need to demonstrate proficiency appropriate to their proposed involvement</p>
Carcass disposal	<p>Carcasses of animals would generally be left in place, unless volunteers choose to keep the meat or other parts of the animal.</p> <p>Carcasses may be relocated from kill sites if they are located in sensitive areas, such as next to a road, trail, or cultural site.</p>



Protecting & Restoring Native Ecosystems by Managing Non-Native Ungulates Draft Plan & Environmental Impact Statement

Actions Common to Alternatives B through E

Common to all FOUR ACTION alternatives are a parkwide comprehensive, systematic framework for managing non-native ungulates that includes:

- A progression of management phases, monitoring and considerations for the use of management tools;
- A population objective of zero, or as low as practicable in managed areas;
- Continued boundary fencing for Kahuku and 'Ōla'a units; and
- The potential use of localized internal fencing to assist in the control of non-native ungulates, if needed.



Park staff construct a 10-acre, ungulate-proof enclosure in former pasture



Trunk of an 'Ōlapa tree damaged by ungulates



Protecting & Restoring Native Ecosystems by Managing Non-Native Ungulates Draft Plan & Environmental Impact Statement

Proposed Boundary Fencing

Proposed park boundary fences (blue)

- Continue boundary fencing for Kahuku and 'Ōla'a units
- For Kahuku, boundary fence would terminate at the 11,000 foot elevation where potential for animal ingress would be low.
- Boundary fence could be re-established along the east rift, if active lava flow ceased and ingress of feral goats or other ungulates occurred in significant numbers
- The potential use of localized internal fencing to assist in the control of non-native ungulates, if needed.

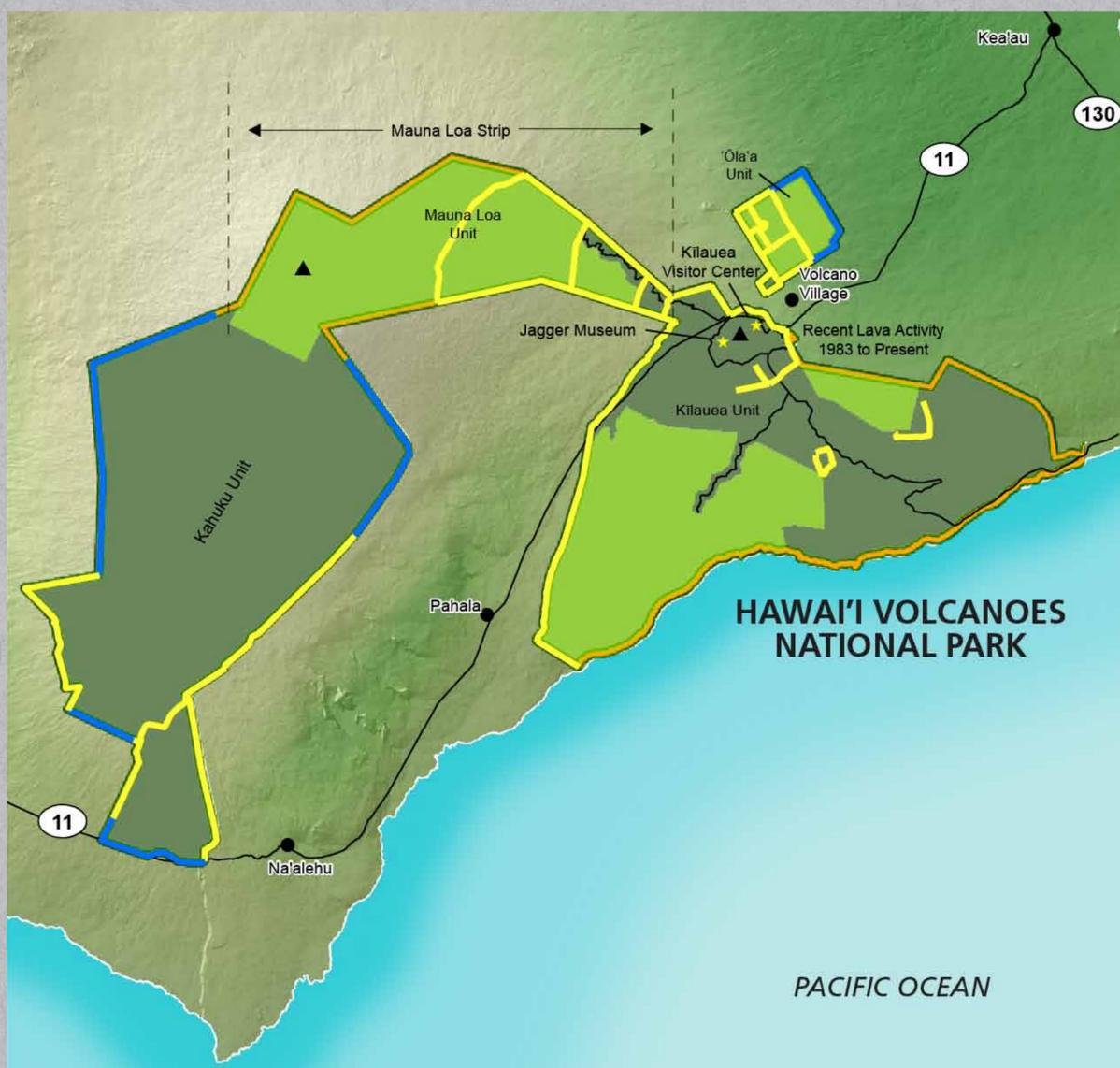


FIGURE 6:
Proposed Fence Boundaries

For Illustration Purposes Only.





Protecting & Restoring Native Ecosystems by Managing Non-Native Ungulates Draft Plan & Environmental Impact Statement

Alternative B

Comprehensive Management Plan that Uses Lethal Removal Techniques

Park staff would continue use of current lethal removal techniques, similar to alternative A, within a parkwide comprehensive, systematic framework for managing non-native ungulates.

Volunteer programs would continue, but modifications would be required for lethal removal programs to meet current NPS practices regarding the removal of meat or other parts of the animals.



Since 2004, over 400 volunteers have assisted in removal of non-native ungulates from Kahuku. The majority of volunteers are from communities on the island and in the state.

Management Activity	Alternative B: Comprehensive Management Plan that Uses Lethal Removal Techniques
Population-level objective	Zero non-native ungulates, or as low as practicable in managed areas, recognizing the possibility of remnant populations and ingress animals.
Direct reduction with firearms—ground shooting	Same as alternative A.
Direct reduction with firearms—airial shooting	Same as alternative A.
Snaring	Same as alternative A.
Baiting and Trapping	Same as alternative A.
Relocation	Relocation would not be used.
Fencing	NPS would continue retrofitting boundary fences from 4-foot fences to 6-foot fences in areas vulnerable to mouflon sheep ingress in the older section of the park. Same as alternative A, plus: <ul style="list-style-type: none"> •Establish a boundary fence for the Kahuku Unit, •Establish a boundary fence for unmanaged portions of the 'Ōla'a rainforest, In addition, localized internal fencing could be constructed to assist in the control of non-native ungulates, as needed. Boundary fences could be established on the east end of Kilauea if active lava flow ceased and ingress occurred. The actual sequence of fencing would be based on conditions on the ground as the implementation of other parts of the plan occurs. Design of fencing could be modified based on new information and future experimentation to exclude multiple non-native ungulate species.
Use of qualified volunteers	Same as alternative A, except: <ul style="list-style-type: none"> •For consistency with current NPS practice, volunteers would not be allowed to keep any part of the animal, including the meat. •The NPS would work to promote increased volunteer engagement in the full spectrum of non-native ungulate management activities open to volunteer participation (e.g., fence construction and maintenance, monitoring, etc.).
Carcass disposal	Same as alternative A. However, volunteers would not be able to keep the meat. The NPS would investigate opportunities to salvage and donate meat when practicable, following all applicable NPS guidelines.



Protecting & Restoring Native Ecosystems by Managing Non-Native Ungulates Draft Plan & Environmental Impact Statement

Alternative C

Maximizes Efficiency by Expanding Lethal Removal Techniques and Discontinuing the Use of Volunteers

Would expand the use of current lethal removal techniques to include new species and technologies (e.g., estrogen implants, cracker shells, use of snares and traps for species other than pigs), within a parkwide comprehensive, systematic framework for managing non-native ungulates. Volunteer participation would be discontinued with the aim of increasing the efficiency of management actions.

Because this alternative provides for the most expedient and efficient management, *alternative C has been identified as the Environmentally Preferred Alternative*. According to the Council on Environmental Quality, the environmentally preferred alternative means “the alternative that causes the least damage to the biological and physical environment; it also means that alternative which best protects, preserves, and enhances historic, cultural, and natural resources.”

Management Activity	Alternative C: Comprehensive Management Plan that Maximizes Efficiency by Expanding Lethal Removal Techniques and Discontinuing the Use of Volunteers
Population-level objective	Same as alternative B.
Direct reduction with firearms—ground shooting	Same as alternative A, plus: <ul style="list-style-type: none"> •Ground-shooting activities could be expanded by use of bait stations to attract larger groups of non-native ungulates for removal. •Consider inducing estrus in captive female non-native ungulates to lure other non-native ungulates. •Consider use of cracker shells (shotgun shells that when discharged make a loud noise to startle animals) to flush animals into open areas. •Consider use of infrared technologies to locate non-native ungulates, which could also facilitate lethal removal by aerial shooting.
Direct reduction with firearms—aerial shooting	Same as alternative A, plus: <ul style="list-style-type: none"> •Aerial shooting activities could be expanded by use of bait stations to attract larger groups of non-native ungulates for removal. •Consider inducing estrus in captive female non-native ungulates to lure other non-native ungulates. •Consider use of cracker shells (shotgun shells that when discharged make a loud noise to startle animals) to flush animals into open areas. •Consider use of infrared technologies to locate non-native ungulates, which could also facilitate lethal removal by aerial shooting.
Snaring	Same as alternative A, plus: <ul style="list-style-type: none"> •Explore the use of snares for other non-native ungulates in addition to feral pigs. •Explore the use of snares in combination with telemetry devices that would alert park staff when snares have been tripped.
Baiting and Trapping	Same as alternative A, plus: <ul style="list-style-type: none"> •Explore expanding the use of this method for lethal removal of other non-native ungulates as well.
Relocation	Relocation would not be used.
Fencing	Same as alternative B
Use of qualified volunteers	Volunteers would not be used in any capacity associated with non-native ungulate management.
Carcass disposal	Carcasses of animals would generally be left in place. Carcasses may be relocated from kill sites if they are located in sensitive areas, such as next to a road, trail, or cultural site.



Protecting & Restoring Native Ecosystems by Managing Non-Native Ungulates Draft Plan & Environmental Impact Statement

Parks Preferred Alternative

Alternative D

Comprehensive Management Plan that Maximizes Flexibility of Management Techniques

Park staff would rely primarily on lethal techniques as described for alternative C, but non-lethal techniques such as relocation could also be considered, within a parkwide comprehensive, systematic framework for managing non-native ungulates.

Volunteer programs would continue, but modifications would be required for lethal removal programs to meet current NPS practices regarding the removal of meat or other parts of the animals.



Management Activity	Alternative D: Comprehensive Management Plan that Maximizes Flexibility of Management Techniques
Population-level objective	Same as alternative B.
Direct reduction with firearms—ground shooting	Same as alternative C.
Direct reduction with firearms—airial shooting	Same as alternative C.
Snaring	Same as alternative C.
Baiting and Trapping	Same as alternative C.
Relocation	<p>Park staff would investigate the possibility of capturing non-native ungulates and relocating them to other lands by either:</p> <ul style="list-style-type: none"> •Driving the non-native ungulates onto adjacent lands where they could be hunted; or •Capturing non-native ungulates, using radio-collaring and traps or non-lethal snares, and transporting them to another location. <p>All relocation activities would require willing recipients and would be carried out in close cooperation with the state. When considering areas to relocate animals, the NPS would avoid sites where undesirable impacts to the environment could occur. All necessary permits would be obtained. Prior to transporting animals to other locations, any necessary disease testing would be conducted.</p>
Fencing	Same as alternative B
Use of qualified volunteers	<p>Same as alternative B, plus:</p> <ul style="list-style-type: none"> •Volunteers could be used for ground shooting activities in additional management phases and areas where safe and practicable.
Carcass disposal	Same as alternative B.



Protecting & Restoring Native Ecosystems by Managing Non-Native Ungulates Draft Plan & Environmental Impact Statement

Parks Preferred Alternative

Alternative D

Comprehensive Management Plan that Maximizes Flexibility of Management Techniques

In identifying the preferred alternative, factors considered included:

- The extent to which alternatives meet plan objectives,
- Environmental consequences,
- Anticipated effort associated with implementation, and
- Degree of management flexibility, and costs.





Protecting & Restoring Native Ecosystems by Managing Non-Native Ungulates Draft Plan & Environmental Impact Statement

Alternative E

Increases Flexibility of Management Techniques while Limiting the Use of Volunteers

Park staff would rely primarily on lethal techniques as described for alternative C, but non-lethal techniques such as relocation could also be considered, within a parkwide comprehensive, systematic framework for managing non-native ungulates.

To provide a full range of alternatives, qualified volunteers would not be used for ground shooting activities, but could be used for other non-native ungulate management activities.

The endangered Ka'ū silversword in bloom. Highly susceptible to being eaten by non-native ungulates, this individual survived to maturity inside a fenced enclosure on Mauna Loa inside the park.



Management Activity	Alternative D: Comprehensive Management Plan that Maximizes Flexibility of Management Techniques
Population-level objective	Same as alternative B.
Direct reduction with firearms—ground shooting	Same as alternative C.
Direct reduction with firearms—airial shooting	Same as alternative C.
Snaring	Same as alternative C.
Baiting and Trapping	Same as alternative C.
Relocation	Same as alternative D.
Fencing	Same as alternative B.
Use of qualified volunteers	Same as alternative B, except: •Volunteers would not be used for any ground shooting activities.
Carcass disposal	Same as alternative B.