HAWAII VOLCANOES NATIONAL PARK

LAND PROTECTION PLAN

Recommended:	Superintendent	11/21/85 Date
Concurred:	Director, Pacific Area	11/26/85 Date
Approved:	Regional Director, Western Region	7/30/86 Date

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Finding of No Significant Impact

In accordance with the provisions of the National Environmental Policy Act, the regulations of the Council on Environmental Quality (Federal Register, Volume 43, No. 230, November 29, 1978), and the National Environmental Policy Act Guideline, September 1982 (NPS 12), an environmental assessment was prepared on the Land Protection Plan for Hawaii Volcanoes National Park, Hawaii.

The Western Regional Office, early in the development of the plan, notified the Advisory Council on Historic Preservation and the State Historic Preservation Officer of the intent and purpose of the plan and asked them to participate in its development. Neither of these agencies chose to comment.

The draft Land Protection Plan recommends that certain lands within the proposed boundaries of Hawaii Volcanoes National Park be acquired. Acquisition is judged necessary because of the inadequate existing level of protection and, in the instance of one important parcel, because of the threat of geothermal development. Most of these lands are to be acquired in fee.

Upon notification of the availability of the draft plan in the local press, a 30-day public review period was held commencing March 26, 1986. The review period was subsequently extended beyond the 30 days by the Superintendent to ensure that all interested parties had ample time to comment on the plan. Copies of the plan were furnished to the affected property owners, members of the Hawaii Congressional delegation, selected members of the State legislature, Federal, State, and local government officials, special interest groups and organizations, and interested citizens. All of the comments received during the public review period supported plan recommendations. None of the comments required making any changes in the plan. Consequently, the draft version is being submitted for approval as the final plan.

As a result of the nature of the comments received on the draft plan, it is concluded that no substantial controversy exists and that the recommendations do not have the potential to cause significant impacts on the quality of the human environment. Therefore, based on this conclusion, an environmental impact statement will not be prepared and no additional environmental compliance steps are necessary prior to the implementation of this plan.

Recommended: _____ June 11, 1986
Superintendent, Hawaii Volcanoes National Park — Date

Concurred: _____ 6/13/86
Director, Pacific Area — Date

Approved: _____ 7/30/86
Regional Director, Western Region — Date

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I. SUMMARY

Current Ownership (Non-Federal Lands are legislatively authorized additions to Hawaii Volcanoes National Park)

Federal	(NPS jurisdiction)	- 207,643 acres
	(NPS jurisdiction outside park)	- 9,654 acres
State of Hawaii		- 4 acres
Private		- 11,875 acres

Number of Tracts Remaining to be Protected

4 (01-118/22, 01-111/26, 01-112/27, and /19, Parcel 15)

Methods of Protection Proposed

Fee Acquisition by NPS - 7,846 acres

Number of Tracts Unsuitable for National Park Purposes

3 (01-131/19, 01-127/20, and 01-128/20)

No Protection Action Proposed - 4,033 acres

Top Priority

Avoid significant adverse effect on park resources (endemic forest, habitat for endangered native bird species) from geothermal power project development - 5,650 acres

II. INTRODUCTION

In May 1982 the Department of the Interior issued a policy statement for use of the Federal portion of the Land and Water Conservation Fund, which requires that, in carrying out its responsibility for land protection in federally administered areas, each agency using the fund will:

— Identify what land or interests in land needs to be in Federal ownership to achieve management unit purposes consistent with public objectives in the unit.

— Use to the maximum extent practical cost-effective alternatives to direct Federal purchase of private lands and when acquisition is necessary, acquire or retain only the minimum interests necessary to meet management objectives.

— Cooperate with landowners, other Federal agencies, State and local governments, and the private section to manage land for public use or protect it for resource conservation.

— Formulate or revise as necessary plans for land acquisition and resource use or protection to assure that sociocultural impacts are considered and that the most outstanding areas are adequately managed.

In response to this policy, a Land Protection Plan for Hawaii Volcanoes National Park has been prepared. The purpose of the plan is to

identify methods of assuring the protection of the park's natural, historic, scenic, cultural, recreational, or other significant resources. The plan was prepared in compliance with relevant legislation, Congressional guidelines, executive orders, and Departmental and National Park Service policies.

The major issue addressed by this land protection plan is to identify the means necessary to provide sufficient protection to those non-Federal lands which are (1) authorized additions to the park, (2) contain intact resource values of national significance, and (3) being threatened by non-park uses, either now or in the future. In some instances, these threats are imminent and have the potential to carry over and adversely affect Federal lands now in the park. At issue in Hawaii Volcanoes National Park is the identification of the most reasonable way to avoid the construction of a large-scale geothermal power project on lands adjacent to the park, which, since 1951, have been authorized additions.

This land protection plan for Hawaii Volcanoes National Park is intended to serve as a guide for subsequent activities undertaken by the National Park Service to protect the park's resources. Such future activities are subject to the availability of funds and other constraints. This plan does not diminish the rights of existing non-Federal landowners within proposed additions to the park.

III. PURPOSE OF THE PARK/LEGISLATIVE HISTORY

Purpose

The August 1916 Act (39 Stat. 432) establishing the park stated that it "...shall be perpetually dedicated and set apart as a public park or pleasure ground for the benefit and enjoyment of the people of the United States..."

The Congressional report (House Committee on the Public Lands, February 7, 1916, H.R. 9525) which accompanied the authorizing legislation stated:

> Strong reasons for creating a national park...are that the craters in question are among the most remarkable of natural wonders. Kilauea is the most continuously active volcano, Mauna Loa the largest volcano...in the world. There is urgent need for the protection of curiosities now being damaged. Scientific studies in inaccessible parts of the area, of importance for public safety, will be furthered by Federal control and public improvement. Scientifically and popularly, the volcanoes are national rather than a local asset.

The purpose of Hawaii Volcanoes National Park, as stated in the master plan "is to conserve the volcanic features, endemic Hawaiian ecosystems, Hawaiian cultural and archeological remains, and inherent scenic values for visitor enjoyment and appreciation and for their scientific and historic values with minimum impairment to the resources." The master plan adds that Hawaii Volcanoes

"preserves for public interest and scientific research significant features of Hawaii's natural history and cultural background, enabling people to understand the powerful volcanic forces, fragile biota and way of life which characterizes the Hawaiian Islands."

Legislative History, Administrative Directives

The park was originally authorized in 1916 as Hawaii National Park and consisted of lands on both the islands of Hawaii and Maui. In 1961, Congress changed the name to Hawaii Volcanoes (75 Stat. 577), the previous year having eliminated lands on Maui from the park by designating Haleakala National Park as a separate unit.

The park's boundaries on the Island of Hawaii have been extended by a series of Congressional actions, beginning with the 1916 Act. That Act delineated two separate areas for the park, the Kilauea section and the Mauna Loa section and called for a third section to be added which would connect the two. That Act also placed the park under the control of the Secretary of the Interior charging that individual with responsibility to make regulations to "provide for the preservation from injury of all timber, birds, mineral deposits, and natural curiosities or wonders within such park, and their retention in their natural condition as nearly as possible."

The Act of 1920 (41 Stat. 452) authorized the Governor of the Territory of Hawaii to acquire, at the expense of the Territory, all private lands within the boundaries of the park. By this act, Congress placed the responsibility (and the expense) of land acquisition for the park on the Territory of Hawaii.

In 1922, by Act of Congress (42 Stat. 503), a large area located in the adjacent Kau Desert was added to the park. Years later, in 1940, a tract of land was withdrawn from the Kau Desert addition and transferred to the then War Department for use as an aerial bombing range. In 1950, after being cleared of explosive materials, the tract was transferred back to the park.

The Mauna Loa section was deeded to the park in 1921. The Kilauea section was deeded over in four separate tracts in 1921, 1927, 1928, and 1939. The tract of land to connect the two was deeded to the park in 1927. The Kau Desert tract was deeded over in 1928. These lands had been either territorial or privately owned. The privately owned lands were acquired by the Territory under the authority of the 1920 Act, then donated to the park.

In 1928, Congress (45 Stat. 424) revised the boundary of the Kilauea section eliminating some lands and adding a small parcel so as to include the Thurston Lava Tube, an important geologic feature. The net result was a reduction in the overall size of the Kilauea section. This act also extended the provisions of the 1920 Act authorizing the governor to acquire privately owned lands for the park to cover the lands now included in the revised boundary of the Kilauea tract.

Exclusive jurisdiction for lands within the park was assumed by the Federal government in 1930 by Act of Congress (46 Stat. 227). Exclusive jurisdiction in the park continued after 1959 under a

specific section of the Act of Congress (73 Stat. 4,11) which granted statehood to Hawaii. This provision applies to future additions to the park as well.

In 1938, Congress passed another law for adding lands to Hawaii National Park. Two areas were proposed, the Kalapana extension and the Footprint extension. The 1938 Act (52 Stat. 781), however, differed fundamentally from previous acts. An important difference was the provision that "when title to all or any of the... lands...shall be vested in the United States, such lands shall be...added to and made a part of Hawaii National Park." Consequently, lands included within these two extensions could be a part of the park only when title became vested in the United States. Thus, the areas delimited by the 1938 Act; i.e., the Kalapana and Footprint extensions, did not constitute legal park boundaries until title to the lands within was vested with the Federal government.

Other important and germane provisions of the 1938 Act were: (1) that, in addition to the two areas described above, "any lands adjacent or contiguous" to the park could be added if, in the discretion of the Secretary of the Interior, they are judged to be "necessary for the proper rounding out" of the boundaries; (2) that these lands could be secured only by donation; and (3) authorized the Secretary of the Interior discretionary authority to allow leasing of homesites to Hawaiians on certain lands within the Kalapana extension and restricted fishing in waters offshore the

extension to Kalapana Hawaiians. Any of these "additional lands" would, of course, not legally be a part of the park until the Secretary of the Interior accepted title.

Since the lands comprising the Footprint extension were owned by the Territory, they became a part of the park upon passage of the 1938 Act. Similarly, a tract of territorial land, located within the Kalapana extension became a part of the park in 1938.

Other tracts within the Kalapana extension, however, were in private ownership. These were subsequently acquired by the Territory, usually through exchange for territorial lands located elsewhere. These tracts, six in all, were deeded over to the park in 1952, 1956 (2), 1960, and 1961 (2). Those deeded over after 1959 involved the State of Hawaii (Section 16a of the Statehood Act of 1959 included the following: "Upon the admission of said State all references to the Territory of Hawaii in said Act or in other laws relating to Hawaii National Park shall be deemed to refer to the State of Hawaii").

In 1979, another tract of land located within the Kalapana extension was added to the park. This particular tract, however, was purchased under the authority of a 1978 Act of Congress (92 Stat. 3467) which revised the park's boundaries and authorized an appropriation for that specific purpose. To date, this purchase, constitutes the latest addition to the park within the Kalapana extension.

Unlike previous additions, not all of the lands within the area delimited by the 1938 Act as the Kalapana extension have been added to the park. Moreover, the area proposed as an addition in 1938 was largely made up of unsurveyed lands. Many of the land descriptions had been taken from old records and when the area was subsequently surveyed by the Territory, its actual size fell short of the total area set forth in the legislation.

In 1951, using the authority of the 1938 Act, the Secretary of the Interior proposed that eight more tracts of land be added to the park. Two of these tracts were acquired by the Territory of Hawaii and donated to the park in 1953 and 1956, respectively. Two other tracts, authorized by the 1951 Secretarial Order, were purchased by the National Park Service in 1972 (the smaller of these two tracts is a portion of a much larger tract delimited by the 1951 Secretarial Order). The Endangered Species Act, as amended in 1969 (83 Stat. 282), was the authority used for these purchases. Section 12(c) of that act states:

> "The Secretary is authorized to acquire by purchase, donation, exchange, or otherwise any privately owned land, water, or interests therein within the boundaries of any area administered by him, for the purpose of conserving, protecting, restoring, or propagating any selected species of native fish and wildlife that are threatened with extinction and each such acquisition shall be administered in accordance with the provisions of law

applicable to such area, and there is authorized to be appropriated annually for fiscal years 1970, 1971, and 1972 not to exceed $1,000,000 to carry out the provisions of this sentence."

The status of the other tracts proposed as additions by the 1951 Secretarial Order is discussed later on in the section on Ownership; however, one of these has a rather complicated legal history and is discussed below.

In November 1952, the Governor of the Territory of Hawaii issued Executive Order 1540 which transferred the "possession, use and control" of two parcels of land located in the Upper Olaa Forest Reserve from the Territory to the United States (title had been vested in the United States at the time of annexation, with possession, use, and control given to the Territory under the authority of the Hawaiian Organic Act of 1900). The executive order specified that these lands were "...for a national wilderness area to be under the control and management of the National Park Service..." One of the two parcels transferred in the executive order had been included in those lands proposed as additions by the 1951 Secretarial Order. The other parcel was subsequently approved for addition by the issuance of another Secretarial Order in 1953. Neither of the two parcels transferred by Executive Order 1540, however, could legally be incorporated into the park since, according to Departmental solicitors, they did not meet the "adjacent or contiguous" proviso of the 1938 Act.

Subsequently, both parcels were formally accepted by the Secretary of the Interior, by stating to the Governor of the Territory that the National Park Service would "assume protective custody...pending their inclusion in the park." In 1978, the larger of the two parcels was designated wilderness, as part of a more extensive area so designated within the park. Consequently, though not legally within the park, most of the Upper Olaa Forest tract is administered by the Secretary of the Interior in accordance with the Wilderness Act (78 Stat 890).

As noted above, in 1978, Congress designated as wilderness a total of 123,100 acres in and adjacent to the park, along with 7,850 acres of non-Federal lands as potential wilderness additions. These roadless areas were to be designated when they were added to the park.

IV. LAND OWNERSHIP AND USES

Ownership

All lands within the legal boundaries of Hawaii Volcanoes National Park are in Federal ownership. Additionally, some adjacent lands are in Federal ownership and under the protective custody of the National Park Service, but are not within the legal boundaries of the park.

The two areas delimited and the one area identified by the 1916 Act — the 34,531-acre Kilauea section (as revised by the 1928 Act), the 17,920-acre Mauna Loa section, and the 46,050-acre connecting strip — are entirely in Federal ownership. The 43,400-acre Kau Desert addition, authorized by the 1922 Act, is likewise in Federal ownership.

Of the two areas proposed as park additions by the 1938 Act, only one, the 5,730-acre Footprint extension, is entirely in Federal ownership. The other, the 49,340-acre Kalapana extension (when subsequently surveyed, its area was reduced by more than 1,100 acres), however, is not entirely in Federal ownership. Current National Park Service land status maps show the total area encompassed by the Kalapana extension to be 48,229 acres, of which 45,419 acres are in Federal ownership and thus in the park and 2,810 acres remain unacquired. As noted, a provision of the 1938 Act prevents these non-Federal lands from being considered to be within the legal boundaries of the park.

Similarly, not all of the lands proposed as additions by the 1951 Secretarial Order are in the park. The Secretary approved the addition of eight tracts in what is now Hawaii Volcanoes National Park encompassing 24,036 acres. National Park Service land status maps show this same area in ten tracts encompassing 24,019 acres. To date, 14,950 acres in five tracts have been acquired. The remaining lands are unacquired and thus not in the park. However, as noted, of the five, one, transferred by Executive Order 1540, even though acquired is not considered to be legally in the park because of the "adjacent or contiguous" proviso of the 1938 Act. This applies also to the other parcel transferred by Executive Order 1540 and subsequently approved by the 1953 Secretarial Order (see Legislative History, Administrative Directives section).

Based on Table A, a total of 207,643 acres of Federal lands are presently within the boundaries of Hawaii Volcanoes National Park. Additionally, there are a total of 9,654 acres of non-contiguous Federal lands which are outside of the park, but under the "protective custody" of the National Park Service. Finally, there are a total of 11,879 acres of non-Federal lands which have been authorized as additions to Hawaii Volcanoes National Park.

There are three major non-park uses presently operating within Hawaii Volcanoes National Park. These uses are described in the following three paragraphs.

TABLE A

HAWAII VOLCANOES NATIONAL PARK - Authorized additions

Kilauea Section

Total area: 34,531 acres

Ownership: Federal

NPS Tract: 01-107 (28,745 acres)
01-116 (3,239.10 acres)
01-117 (2,526.20 acres)
01-119 (20.60 acres)

Authority: 1916 Act (39 Stat. 432),
1928 Act (45 Stat. 424) revised boundaries

Mauna Loa Section

Total area: 17,920 acres

Ownership: Federal

NPS Tract: 01-101 (7,926 acres)
01-102 (9,994 acres)

Authority: 1916 Act (39 Stat. 432)

Connecting Strip

Total area: 46,050 acres

Ownership: Federal

NPS Tract: 01-103 (46,050 acres)

Authority: 1916 Act (39 Stat. 432)

Kau Desert

Total area: 43,400 acres

Ownership: Federal

NPS Tract: 01-109 (40,348 acres)
01-130 (3,052 acres)

Authority: 1922 Act (42 Stat. 503)

Footprint Extension

Total area: 5,730 acres

Ownership: Federal

NPS Tract: 01-108 (5,730 acres)

Authority: 1938 Act (52 Stat. 781)

Kalapana Extension

Total area: 48,229 acres

Ownership: Federal (45,419 acres), non-Federal (2,810 acres)

NPS Tract: 01-113 (2,053 acres)
01-115 (12,190 acres)
01-121 (367 acres)
01-122 (10,492 acres)
01-123 (17,291.03 acres)
01-124 (2,458 acres)
01-125 (299 acres)
01-131 (2,810.32 acres)
01-132 (268.44 acres) 1/

Authority: 1938 Act (52 Stat. 781)

Ten Tracts Approved by the 1951 Secretarial Order

Total area: 24,019 acres

Ownership: Federal (14,950 acres - 14,594 acres within park boundary, 356 acres outside park); non-Federal (9,069 acres)

NPS Tract:		Parcel (1951 S. O.):
01-104	(356.13 acres) 2/	E (356.13 acres)
01-110	(8,193 acres)	C (8,193 acres)
01-111	(1,990 acres)	C-1 (1,990 acres)
01-112	(62 acres)	C-2 (62 acres)
01-114	(6,324 acres) 3/	F (6,197 acres)*
01-118	(5,649.88 acres)	B-1 (5,794.88 acres)
01-127	(1,362.78 acres)]	
01-128	(4.00 acres)]	A (1,405.83 acres)
01-129	(39.05 acres) 3/]	

Authority: 1938 Act (52 Stat. 781)

One Tract Approved by the 1953 Secretarial Order

Total area: 9,298 acres

Ownership: Federal

NPS Tract:		Parcel
01-104	(9,654.67 acres)	[5 (356.13 acres)
		[6 (9,298.54 acres)

Authority: 1964 Act (78 Stat. 890) 4/

1/ Purchased; under authority of the 1978 Act (92 Stat. 3467)

2/ NPS Tract 01-104 encompasses 9,654.67 acres and consists of the two parcels, 5 and 6, transferred by Territorial Executive Order 1540; the 1951 Secretarial Order included only the smaller of the two, the 356.13-acre Parcel 5. The 9,298 54-acre Parcel 6 was subsequently approved for transfer by the 1953 Secretarial Order.

3/ Purchased; under authority of the 1969 Endangered Species Act (83 Stat. 282).

4/ Designated Parcel 6 wilderness.

* Trustees of the Bishop Estate indicated that the larger figure was

About 11 miles of State highway crosses park lands along the northwestern portion of the Kilauea and Footprint sections. The State of Hawaii has an 80-foot wide easement along the right-of-way.

The U. S. Geological Survey's Hawaiian Volcano Observatory, located on a high point along the rim of Kilauea Crater, is operated under the terms of a memorandum of agreement originally signed in 1947 and updated in 1978. The update calls for the transfer of the present observatory building from USGS to the park for the establishment of an information and interpretation center. The transfer is to be effective upon completion of construction of a new observatory facility. This project has been funded by the National Park Service and will be located next to the existing one. Construction is scheduled to get underway by the middle of 1985. Upon completion of the new facility, the two agencies will enter into a new memorandum of agreement.

Within the Kilauea section of the park, the Department of Defense (U. S. Army) utilizes a 49-acre parcel of land as a recreational area for active and retired members of the Armed Forces and their families. The Kilauea Military Camp now exists in the park under the provisions of a special use permit drawn up by the Secretary of the Interior in 1936. The camp has been in existence since 1916 as a lease from the Bishop Estate. In 1920, the 49 acre parcel was transferred to the Territory of Hawaii and in 1921 to the National Park Service.

The following paragraphs discuss those lands which have been proposed as additions to the park, either by the authority of a specific Act of Congress, by the 1951 Secretarial Order, or by master plan recommendation, but are not yet within its legal boundaries.

As noted, there are lands proposed as additions to the park by the 1938 Act (Kalapana extension) that remain unacquired. However, nearly all of these non-Federal lands are no longer being considered as additions to the park. Much of this remaining area has been subdivided, contains paved and bulldozed roads and several residential structures. However, an undeveloped 144.20 acres (Parcel 15 of Tract 19 in the master plan) of the 2,810 acres (Tract 01-131 on the land status map) left unacquired are regarded as a necessary addition in order to protect the significant cultural values at Wahaula (heiaus, Hawaiian trails, village sites, and a canoe landing) and to complete the buffer from the adjacent subdivided lands and from the Kalapana Road.

Four tracts proposed as part of the 1951 Secretarial Order remain unacquired and outside of the park. The most important of these is a 5,650-acre tract owned by the Campbell Estate lying north of the Kilauea section of the park (Tract 22 in the master plan and 01-118 on the park's land status map). This is a roadless and presently unused area of superb native ohia and tree fern forest. Its acquisition has been a high priority for more than a decade because it contains endangered species habitat and has been identified by

biologists as an ecosystem not now adequately encompassed and protected in the national park system. The entire tract was identified by Congress in 1978 as "potential wilderness;" i.e., possessing all necessary attributes for wilderness designation excepting its non-Federal status. Its priority for acquisition has become even higher since 1982 when the tract was included as part of a larger area being proposed by the owner for geothermal energy development. Such development would significantly diminish the area's natural values and would ultimately affect biological resources within the adjacent park.

Also, the growing of marijuana on lands within this tract poses a serious problem not only because of the destruction of the native biota, but also because of the threat to public safety. The need to keep their operations undetected has motivated some growers to booby trap their patches and physically intimidate anyone who inadvertently might come upon them.

Two other tracts, 1,990 acres and 62 acres in size, proposed for addition by the 1951 Secretarial Order are located below the Kau Desert section of the park (Tracts 26 and 27 in the master plan and 01-111 and 01-112 on the land status map). They encompass an area of considerable geologic interest, being located at the ocean end of the Southwest Rift Zone, and contain native grasses. Their addition would place the remainder of the Great Crack, a significant geologic feature, within the park. Moreover, they would provide foot access along the shoreline, connecting to existing park trails.

This area may be subject to future development for geothermal energy. Recently (March 1985), the State identified it as part of a proposed geothermal resource subzone. It is not known at this time whether or not there is any interest in developing the resource, nor is there any proof that it exists. These tracts would be lower in acquisition priority than the Campbell Estate tract, since the threat to their natural values is, at this time, not as imminent.

The National Park Service has publically pledged not to attempt to acquire these lands until the potential for geothermal energy development had been explored. Consequently, the acquisition of these two tracts has been deferred. The position of the National Park Service regarding these two tracts is as follows: If the area's geothermal potential is ascertained and its development is judged to be economically prudent, then the National Park Service would not seek to acquire these tracts. If either of these do not take place, then these lands should be added to the park. Both tracts were identified in 1978 as "potential wilderness".

The fourth unacquired tract within the 1951 proposed expansion encompassing 1,367 acres located between Kilauea Crater and the Upper Olaa Forest (Tract 20 in the master plan and 01-127 and 01-128 on the land status map). It is now in two ownerships: a 4-acre tract (01-128) and a 1,362.78-acre tract (01-127). The 4-acre tract was acquired by the State of Hawaii as part of their realignment for the highway which runs through the park. The adjacent 1,362.78-acre tract is now occupied by a golf course, agricultural lands, and a

small residential subdivision. Proposed for acquisition in order to make the Upper Olaa Forest contiguous with the park and thereby allowing it to become legally a part of the park, these two tracts are now judged to be unsuitable for inclusion in the park.

A fifth tract, proposed as an addition by the 1951 Secretarial Order, is presently in Federal ownership, but outside of park boundaries. This is the 356-acre parcel which was part of the Olaa Forest Reserve transferred in 1952 by Territorial Executive Order 1540.

The disposition of the tracts of land discussed in the preceeding paragraphs is consistent with the recommendations of the 1975 master plan. The master plan also recommends the inclusion of that portion of the Upper Olaa Forest designated wilderness in 1978. The draft legislation prepared by the National Park Service in 1980 was in accord with the above master plan recommendations. However, the other lands proposed by the master plan — i.e., the Hualalai and Mauna Loa areas plus the offshore waters — are no longer considered to be viable additions to the park. The principle reason for adding these lands was protection of endangered bird species habitat, primarily the Hawaiian crow. In the intervening years, the crow population here has declined to numbers so low that scientists no longer feel the species can be maintained. The offshore waters appear to be adequately protected at this time.

The tracts of non-Federal lands described on Table B contain resource values which merit their inclusion within Hawaii Volcanoes

TABLE B

NPS TRACT NO./ MASTER PLAN TRACT NO.	ACREAGE	REGISTERED OWNER	BIOLOGICAL VALUES	CULTURAL VALUES	THREATS	EXISTING USE	GEOLOGICAL VALUES
118/22	5649.88	James Campbell Trust Estate	Unimpaired native rain forest community - western two-thirds is mostly closed canopy ohia forest with tree fern understory, with smaller areas of scattered ohia with uluhe ground cover. Eastern one third (lower elevations) is mostly closed canopy ohia forest with tree fern and uluhe understory in the eastern one-third. Native bird habitat for iiwi, apanane, amakihi, elepaio, hawk, and ou. The ou and the hawk are endangered species.	Unsurveyed - no record of archeological/ historical sites.	Development associated with geothermal energy production is being proposed on significant portions of this tract. Includes two power plants, at least one dozen drill sites (six wells/site) and five to six miles of access road, not including improved roads to lay pipeline for wells. Invasion by feral pigs, rats, cattle, and exotic birds. Portions of the tract are being used to grow marijuana.	Undeveloped open open space, water shed. Located on lands classified conservation district, limited (L) subzone.	Extension of the Chain of Craters rift zone, from Napau Crater eastward containing some of the most active geology on the earth.

NPS TRACT NO./ MASTER PLAN TRACT NO.	ACREAGE	REGISTERED OWNER	BIOLOGICAL VALUES	CULTURAL VALUES	THREATS	EXISTING USE	GEOLOGICAL VALUES
111/26	1990.00	Seamountain-Hawaii Ranch Co., Inc.	Pili grass and lava flows with little vegetation.	Within boundaries of Puna Ka'u Historic District.	Area is inhabited by feral goats who have caused extensive deterioration of native grasses and allowed the introduction and spread of alien species. In March 1985, the State identified this area as part of a potential geothermal resource subzone.	Undeveloped open space. Portions being used to graze cattle. Located on lands classified agriculture district. Hawaii County is agriculture - 20-acre minimum lot size.	Contains the ocean-end of the Great Crack, a major geologic feature associated with the park's volcanic activities.
Within Habitat Endangered Hawksbill turtle Candidate Endangered Plant Species (2)							
112/27	62.00	International Air Service Co., Ltd.	Lava flows with little or no vegetation.	Within boundaries of Puna Ka'u Historic District	Area is inhabited by feral goats who have caused extensive deterioration of native grasses and allowed the introduction and spread of alien species. In March 1985, the State identified this area as part of a potential geothermal resource subzone.	Undeveloped open space. Located on lands classified agricultural district. Hawaii County zoning is agriculture - 20-acre minimum lot size.	Contains the tail end of the Great Crack, a major geological feature.

NPS TRACT NO./ MASTER PLAN TRACT NO.	ACREAGE	REGISTERED OWNER	BIOLOGICAL VALUES	CULTURAL VALUES	THREATS	EXISTING USE	GEOLOGICAL VALUES
-/19, Parcel 15	144.20	Roberts, Oliver K. and wife, Maizie K., et al.	Closed lowland scrub, mostly low growing with some introduced shrubs.	Within boundaries of Puna Ka'u Historic District. Unsurveyed but is known to contain Hawaiian archeological features, such as burial sites and house	None known at the present time.	Undeveloped open space. Located on lands classified conservation district, resources (R) subzone. An unimproved road crosses the tract length-wise.	

National Park. These tracts are all legislatively authorized additions to the park — one by being within the Kalapana extension and the other three by virtue of the "rounding out" provision of the 1938 Act. However, as noted, this same act prevents them from being included within the legal boundaries of the park. All four are judged to be in need of additional levels of protection to ensure the long-term protection of the resource values they contain.

Social/Cultural Characteristics of the Surrounding Community

The economy of the Island of Hawaii is based primarily on tourism and agriculture. Hawaii Volcanoes National Park is, by far, the largest single visitor attraction. Sugar cane and macadamia nuts are the major crops. Sugar is declining in importance because it cannot compete in international markets. Macadamia nut production appears to be increasing in importance. Cattle ranching, flower growing, and fishing are also important to the island's economy. Coffee is still grown, but it is not regarded as a major crop. The illegal growing of marijuana is thought to be the island's largest cash crop, but no accurate figures are available.

Unemployment is high (around 9 percent), due mostly to the decline in the sugar cane industry. Improvement of the island's economic condition is the chief goal of local elected officials. The production of electrical power from geothermal energy is looked upon by most residents and business people as a means to improve the island's economy. The electric power company on the island is interested in constructing a 13 Megawatt geothermal power plant by

no later than 1989; otherwise, they will be forced to construct another oil-fuel plant to meet energy needs.

Lands around the park are, with a few minor exceptions, in open space uses. The Mauna Loa Forest and Game Reserve and the Kapapala Forest Reserve abut the Mauna Loa and connecting strip sections of the park. At the eastern end of the connecting strip, lands abutting the park are leased by Bishop Estate and the State of Hawaii for ranching purposes. State lands adjoining to the Kau Desert section of the park are under grazing lease to private interests. Although grazing is generally regarded as a compatible use on adjacent lands, the park maintains more than 40 miles of boundary fences to keep out cattle and feral goats.

Immediately to the north of Kilauea Crater section of the park, in the vicinity of the Kilauea Military Camp, is the Volcano Golf Course and a small low-density residential subdivision. Both are located on lands within a tract proposed for inclusion in the park by the 1951 Secretarial Order.

At the eastern end of the Kalapana extension, land subdivision occurred some years ago. The subdivision, called Royal Gardens, has only had a few homes actually built on it, most of the lots remain unimproved. However, the area is crisscrossed with paved and bulldozed roads.

Many lots and several homes have recently (1983 to 1985) been covered by lava emanating from Kilauea's middle rift zone.

The residential community of Volcano is located just outside of the park a short distance from headquarters.

Lands lying next to the Kalapana extension between the community of Volcano and the Royal Gardens subdivision with a more than 12-mile common boundary with the park are owned by the Campbell Estate. These lands are presently undeveloped and encompass more than 25,000 acres. There is evidence that marijuana cultivation is taking place on lands adjacent to the park.

In early 1982, the landowner revealed plans for large-scale geothermal energy development on these lands. These plans, prepared by the True/Mid-Pacific Geothermal Venture, propose the immediate development of 25-Megawatts of electrical power from about five well clusters and a single power plant during a three to five-year period. Approximately 50 geothermal wells are proposed which would be sited approximately 1,000 feet from the park boundary. Four of the five power plants are to be within 4,000 feet. Long-range plans call for the eventual development of 250-Megawatts from 35 well clusters and five power plants. Since the lands on which the geothermal development is proposed are within a State conservation district, the owners must first obtain a conditional use permit from the Board of the Department of Land and Natural Resources.

Substantial portions of the lands being proposed for geothermal development have, since January 1983, been covered over by a series of lava flows emanating from along Kilauea's East Rift Zone. This

volcanic activity continues and shows no sign of abatting, having completed its thirty-first phase in March 1985.

The potential for geothermal resource energy development in this area has not yet been proven, but developers appear determined to risk exploration and development. Success could mean replacing imported fossil fuel with geothermal steam as the generating fuel for electrical energy. Presently, imported oil generates about 90 percent of the State's electricity.

The long-range plan to develop 250-Megawatts envisions exporting most of the energy to other islands, including Oahu. Technology has not yet been developed which would transmit electrical power to other islands. The Island of Hawaii presently uses about 90-Megawatts total, about 60 percent coming from the burning of diesel, about 35 percent from the burning of sugar cane and wood chips and the remaining five percent from hydroelectric, geothermal and wind power. The burning of chips derived from native ohia trees has recently become a controversial issue on the Island of Hawaii.

Despite the risks, there is much to gain from the development of geothermal electrical power in Hawaii and the proposal has widespread support. While Hawaii Volcanoes' (and the Service's) position has been support of Hawaii's goal to become more energy self-sufficient through the development of altenative energy sources, grave concerns have been expressed regarding the total project's scale and proximity to the park. Adverse impacts

resulting from emissions, surface disturbance, noise, odor and vista impairment on the park would include: (1) deterioration of native plant and animal communities, and fragmentation of the ohia-fern forest essential for endangered native bird survival, (2) degradation of the wilderness quality of the east rift and Kalapana extension areas of the park, and (3) degradation of present and future visitors' perceptions of the national park.

In February 1983, in response to their application for permission to explore, drill, and develop geothermal energy, the Board of Land and Natural Resources granted the Campbell Estate a conservation district use permit to drill up to eight exploratory wells within a designated 800-acre area. The Volcano Community Association and others subsequently appealed the Board's decision in State court.

In June 1983, a State law was enacted, charging the Board of Land and Natural Resources with responsibility for assessing Hawaii's geothermal resources statewide for the purpose of designating subzones within which all future geothermal activities must take place. This law also allowed geothermal power production on conservation district lands.

In July 1984, public information meetings were held by the State in Volcano to hear that community's views on geothermal resource development. Similar meetings were held in other areas throughout the State. Generally, opposition was expressed by Volcano residents, citing the adverse effects of geothermal development on

the community, on nearby native forest and bird habitat, and the national park. In other areas, there was little opposition to geothermal development.

Based on the completed assessment of Hawaii's geothermal resources, the State published its report in August 1984 recommending that three areas, one on Maui and two on Hawaii, be designated as geothermal resource subzones. One of the two on Hawaii consists of a 5,300-acre tract within the area being proposed by the Campbell Estate for geothermal development. The proposed geothermal resource subzone boundary was located so as to provide a 2,000-foot wide buffer with the national park boundary.

Responding to the recommendation that the 5,300 acres next to the park be designated a geothermal resource subzone, the National Park Service, in October 1984, called for the State to consider exchanging their forest reserve lands located further down on the rift zone for the Campbell Estate lands located next to the park.

Based on the report's recommendation, the Board of Land and Natural Resources, in December 1984, issued its decision which included the following elements.

a. Designation of the February 1983 limited exploration area as a geothermal resource subzone, conditioned upon cessation of volcanic activity in that area (to be determined by the Board).

b. Request that a land exchange take place between Campbell Estate and the State; i.e., lands adjacent to the park being proposed for geothermal development to be exchanged for State forest reserve lands located further down on the rift zone. Lands exchanged, however, would not include Tract 22 (the 5,650 acres proposed as an addition to the park). The Board "strongly urges" the National Park Service to acquire Tract 22, essentially making that acquisition a condition to the exchange.

c. State to assess the forest reserve lands down rift as a potential geothermal resource subzone. If, following the assessment, designation as a geothermal resource subzone does not result and the exchange does not take place, the entire 5,300-acre tract is to be designated.

d. If the exchange takes place, the 5,300 acres (exclusive of Tract 22) shall be included and eliminated as a proposed geothermal resource subzone.

The Volcano Community Association and others have filed suit against the State over the use of conservation district lands for geothermal development.

With agreement on the mutual benefits accruing to each from the accomplishment of the proposed land exchange, the Pacific Area Office and representatives of the Campbell Estate met in January 1985 to discuss the steps each could take to further the exchange process.

V. PROTECTION ALTERNATIVES

Land Use Regulations in Hawaii

Based on Hawaii's statewide land-use zoning law, enacted in the 1960's, all lands are classified into one of four districts: urban, rural, agricultural, and conservation. Lands adjacent to the boundaries of Hawaii Volcanoes National Park are either within conservation or agricultural districts, except for a small area near Kilauea Crater which is urban.

Agricultural districts include lands with a high capacity for intensive cultivation and minimum lot size is one acre. Conservation districts are lands located in the existing state forest and water reserves, lands in national or state parks, lands with a slope in excess of 20 percent, and marine waters and offshore islands. Urban districts consist of those lands already in urban use, with a reserve to accommodate future growth.

The State Land Use Commission is the agency primarily responsible for regulating land use in Hawaii; however, the departments of Land and Natural Resources, Planning and Economic Development, Agriculture, and Taxation also have specific responsibilities. Within conservation districts, land uses are governed solely by the State (Department of Land and Natural Resources). Land uses within urban districts are administered solely by the counties. Within agricultural districts, the commission establishes regulations and

the counties are responsible for their administration. However, within agricultural districts, counties may choose to adopt more stringent controls than those imposed by the State. District boundaries may be changed by the commission through a petition and quasi-judicial hearing process.

Lands adjacent to the park's boundary along the Footprint extension and Kau Desert areas are agricultural districts, as are those on both sides of the eastern end of the connecting strip. Lands between the Kilauea section and the Upper Olaa Forest are partly conservation, partly agricultural and partly urban, the latter being about a one square mile area located just above the Kilauea Military Camp containing a golf course and low density residential development. Except for a small area of agricultural district lands, adjacent to the park's eastern boundary above the Royal Gardens subdivison, all other lands adjacent to the park are conservation districts.

The lands around the Upper Olaa Forest are conservation district, except for some agricultural district lands along portions of the western and southern sides and at the southeast corner. Lands on the northern and eastern sides of the Upper Olaa Forest have been designated a unit of the State's natural area reserve system.

Applicable Hawaii County zoning; i.e., on non-conservation district lands, is as follows: The agricultural district lands adjacent to the Footprint extension and Kau Desert areas are zoned Agriculture

(20-acre minimum lot size), as are lands on both sides of the eastern end of the connecting strip.

Within the urban district around the Volcano golf course, county zoning is mostly agriculture, ranging from one acre minimum lot size along the side nearest to the park to one-quarter acre minimum lot size on the other side. The golf course itself has been zoned open by the County.

The nearby community of Volcano, zoned by the County as single-family residential and agricultural, with one-quarter acre minimum lot size, is separated from the park by conservation district lands.

The area above the Royal Gardens subdivision is zoned agriculture (one acre minimum lot size) by Hawaii County and has been developed with paved roads and surveyed lots. This area and the Royal Gardens are within the Kalapana extension, an authorized addition to the park.

Protection Alternatives

Those tracts of non-Federal lands listed in Table B, all legislatively authorized additions to Hawaii Volcanoes National Park, are judged to be in need of additional levels of protection to ensure the permanent protection of their resource values. This is consistent with the park's intended purpose, as stated in the 1916 Act authorizing its establishment, and in the accompanying

Congressional reports. Including them in the park is also in accord with the "rounding out" provision of the 1938 Act.

The 5,650-acre tract (number 01-118 on the park's land status map and 22 in the master plan) owned by Campbell Estate and part of a larger area being proposed for large-scale geothermal energy development urgently needs additional protection. This tract is, without question, the park's highest land acquisition need. The geothermal development project, if implemented, would have an adverse impact on adjacent park resources in the form of air pollution, high noise levels, scenic vista degradation, and, most important, would result in the ultimate destruction of the biological values which make this fragile and undisturbed native forest habitat worthy of being included in the park.

The tract is being used for the cultivation of marijuana. In 1981, after visitors and park staff were intimidated and threatened by growers in the area, the park lands adjacent to this tract were temporarily closed. The marijuana being grown within the park at that time has since been eliminated; however, it is still being cultivated on a large scale on portions of the tract. Growers in the area still pose a threat to visitor safety.

Existing regulations on this tract — i.e., being within a conservation district whose subzone designation (Limited) provides the area with the second highest level of protection afforded by the State of Hawaii under its 1961 Land Use Law — heretofore had led

the park to believe that resources here were adequately protected, at least for the short-term. With the passage of the State law permitting geothermal power production within conservation districts in June 1983, this level of protection has been removed. Resource values on adjacent park lands and within the 5,650-acre proposed addition are now being threatened by the development of large-scale geothermal power plants, well drilling sites, pipelines, and roads.

The two tracts of land (01-111 and 112 on the park's land status maps and 26 and 27 in the master plan) located in the southwest corner of the park represent logical and important additions. Their inclusion would place the entire Great Crack, a significant geological feature extending for more than six miles along one of Kilauea's two main rift zones, wholly within the park all the way down to the ocean's edge. Inclusion in the park would also allow for the eventual recovery of the native grasses growing there through elimination of cattle grazing and the feral goat population.

Though unsurveyed, the presence of major archeological sites along the coastal portions of the park, including a major village complex very near these two tracts, indicates there is good potential for archeological sites and features to exist within the boundaries of these two tracts.

Finally, these tracts are needed to provide linkage to existing park trails and foot access to nearly three and one-half miles of shoreline.

The two tracts are on agricultural district land, with the attendent county zoning allowing subdivision into 20-acre parcels. No threats are in evidence at this time to the area's geologic values; however, with its recent identification as a proposed geothermal resource subzone there is no guarantee that this situation will continue. Existing regulatory controls at both the State and local levels are inadequate to prevent low-density development here. Since State law now permits geothermal power production on conservation district lands, there's every reason to believe that such uses would be allowed on agriculture district lands.

The 29 miles from Kupapau Point to Kapaoo Point is the longest stretch of undeveloped coastline left in the State of Hawaii. The addition of the three miles of coast encompassed by these two tracts to the point where the Great Crack intersects the coast is the natural culmination of this coastline and should be included in the park. If residential or commercial development were to occur anywhere along this three-mile stretch, it would degrade natural and scenic values to the point of making the area no longer suitable for inclusion in the park. The commitment to defer the acquisition of these two tracts pending the determination of geothermal resource development potential would no longer be in effect if the National Park Service, State of Hawaii, and Campbell Estate acquisition-exchange package were to be implemented.

The inclusion of the tract located next to the Royal Gardens subdivision (parcel 15 in the master plan) would complete the 1979 acquisition by purchase in the Kalapana area. Recommended in tandem with parcels 12 and 13, this tract was, however, not acquired. Title problems existed at that time and it appeared that the park would be acquiring an unknown interest from landowners. Its inclusion in the park, however, is still judged to be necessary, serving to complete the buffer zone of open, undeveloped lands next to Royal Gardens while, at the same time, giving permanent protection to the Hawaiian archeological features thought to be within. Large areas within the park to the south, east and west of this tract have been intensively surveyed by archeologists. Numerous village complexes have been identified on these adjacent lands, as well as many features related to agricultural activities. Areas within the park that are nearest to this tract and which have been surveyed contain archeological features. National Park Service archeologists believe that this tract should contain numerous archeological features.

The tract is presently conservation district and designated with the subzone (Resources) which affords it the greatest level of protection under Hawaii's 1961 Land Use Law. This serves as adequate protection in the short-term. However, there is no guarantee of long-term protection as demonstrated by the existing development threats to Tract 22, also located within a conservation district.

Agreements do not appear to be reasonable alternatives for protecting resources on any of these tracts. While it is technically possible for the National Park Service to enter into agreements with landowners whose property is located outside of the park's legal boundaries, these agreements would be based entirely on the owner's continuing to abide by the agreed upon terms. Consequently, agreements would not be an effective alternative to protecting lands.

As can be seen from the above, opportunities for protecting resources on the four tracts authorized as additions to Hawaii Volcanoes National Park by means other than direct acquisition and management are very limited. Moreover, as already pointed out, the 1938 Act states that lands proposed as additions to the park can be regarded as being in the park only when title becomes vested in the United States. This proviso effectively precludes alternatives for land protection such as regulation or agreements from being considered as reasonable methods.

Direct acquisition by means of exchange or donation remain possibilities; however, certain events in Hawaii over the past several years seem to indicate that the State is no longer willing to donate lands to the national parks or even to act as land broker. There appears to be a shift away from the traditional role which the Territory and later the State have played regarding land acquisition for national park purposes here in Hawaii. The legislation for

Kalaupapa National Historical Park, authorized in December 1980, provides an example. In this instance, Hawaii made it clear during preauthorization studies that they were unwilling to relinquish any of their lands within the proposed park to the Federal government, insisting rather on allowing use by the National Park Service through cooperative agreement. This is the present arrangement at Kalaupapa.

The sale in recent years of surplus Federal properties in Hawaii to outside interests, one of them a native Alaskan land corporation, coupled with the announced intention of selling off more have served to exacerbate the State's feelings in this regard. The State's position had long been that any surplus Federal lands in Hawaii should be turned over to them at no cost.

These events have bearing on the condition placed by the Land Board in their December 1984 decision to exclude Tract 22 (01-118) from the proposed exchange of state forest reserve lands for Campbell Estate lands, recommending instead that the National Park Service seek to acquire this parcel from Campbell Estate. The State made it clear that there is no intention here of donating lands to the national park and, at the same time, realize that the National Park Service would never buy these lands from them. Consequently, an alternative in this plan calling for Hawaii to donate Tract 22 or any of the other parcels, either by exchange or purchase, can not be considered reasonable.

Similarly, based on preliminary discussions with Campbell Estate officials, there has been no indication that they would be willing to donate Tract 22 to the National Park Service. Campbell Estate, however, has expressed a willingness to exchange Tract 22 for the Upper Olaa Forest tract. This offer is unacceptable to the National Park Service and would be illegal. In 1978, it was designated by Congress as part of the wilderness system. The tract is a superb and unique example of native fern and ohia forest and has long been proposed for inclusion within the park. Though in Federal ownership (outside the purview of this plan), the Upper Olaa Forest tract should be in the park, its inclusion having been held up based on a legal interpretation of the "adjacent or contiguous" proviso of the 1938 Act. Based on discussions related to the development of this plan, a review of this interpretation by Interior Solicitors has been requested.

Informal discussions have taken place between the landowners of the two tracts of land along the Great Crack and the park superintendent. At that time, there was no indication that the owners would be interested in donating any interest in their lands to the park.

With regard to parcel 15, the park superintendent believes that there are still owners with unknown interests. Consequently, a title search would be necessary as a preliminary step to clear title. Failing to clear title by that means would mean that

condemnation proceedings would have to be undertaken to acquire even a partial interest in this tract.

The exchange of surplus Federal property in Hawaii for Tract 22 or any of the others proposed for acquisition also does not appear to be a reasonable alternative at this time. The National Park Service would have to seek and be granted an exemption to the fair market value reimbursement requirement for any such exchanges (current policy requires that the National Park Service reimburse the General Services Administration the fair market value for any tract of surplus Federal property to be acquired as park lands). Moreover, as noted, the State of Hawaii feels they should get first crack at any surplus Federal lands.

Being a party to the Land Board's decision appears to represent the most reasonable alternative now available to achieve the protection needed to ensure long-term preservation of the resource values associated with Tract 22, as well as to protect the resources found in adjacent park lands.

The business community, political and community leaders, and the great majority of the residents of the Island of Hawaii support geothermal development. Even so, there have been long delays experienced in the attempt to get approval on the project being proposed on Campbell Estate lands. These delays, in the form of public hearings, contested case hearings and appeals have come from a small but vocal group of conservationists from the adjacent

community opposed to geothermal development taking place on those lands nearest to the park; i.e., Tract 22. These delays have gone on for more than two years.

The exchange proposed by the Land Board probably would significantly reduce the level of opposition to geothermal development on the Island of Hawaii. Moreover, Campbell Estate and their developers would no longer experience delays and would be able to proceed with the project.

VI. RECOMMENDATIONS

As can be seen from the discussion in previous sections of this plan, acquisition in fee simple appears to be the most reasonable and effective way to ensure long-term protection of resources. Departmental solicitors are of the opinion that the existing legislation authority for Hawaii Volcanoes National Park is sufficient for adding lands, subject to the enactment of appropriate budgetary legislation.

Tract 22/Ø1-118

Considering the circumstances which presently surround this parcel of land, it is recommended that it be acquired in fee by the National Park Service as soon as possible. For the past several years, the tract has been part of a larger area being proposed by the property owner for geothermal energy development. If carried out on the scale envisioned, this development would significantly diminish the tract's unique natural values of superb native ohia and tree fern forest. As noted, the acquisition of this tract has been a high priority for more than a decade. It has been identified by biologists as an ecosystem not now adequately encompassed and protected in the national park system. The tract has been identified by Congress as "potential wilderness."

Tracts 26/Ø1-111 and 27/Ø1-112

Due to the need to have the entire Great Crack area within the boundaries of the park coupled with the inadequacies of the existing

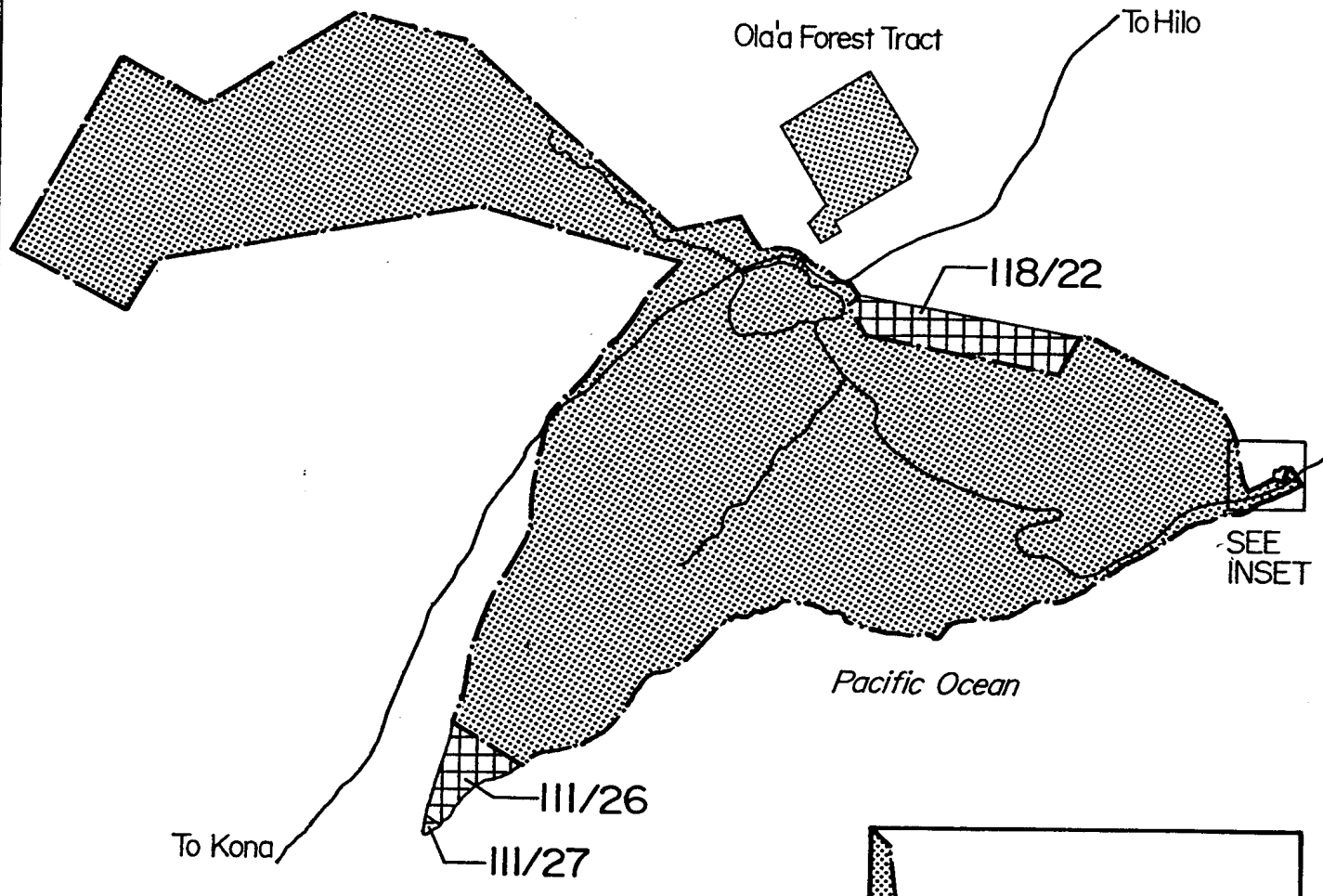
land use regulations, it is recommended that a fee interest be acquired in these two tracts to prevent the possibility of future low-density residential development (could be subdivided into more than 100 separate parcels), protect native grasses from cattle and feral goats and allow for public access. As noted earlier, acquisition of these tracts could be pursued if the pending exchange of State of Hawaii lands for Campbell Estate lands goes through and geothermal energy development takes place there rather than on lands adjacent to the park.

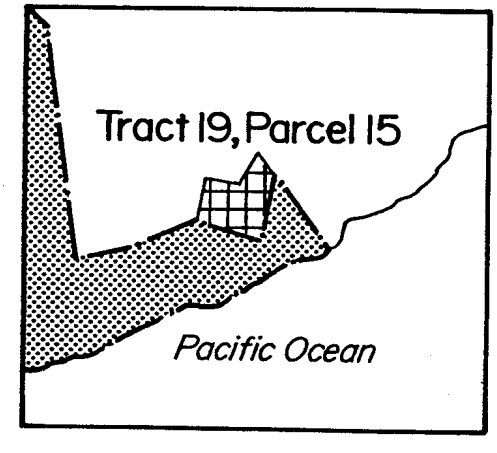
Tract 19, Parcel 15

Based on surface surveys conducted by National Park Service archeologists on nearby lands within the park, there is every likelihood that the Hawaiian features and sites found on surveyed lands will also be found on this tract. Consequently, a less-than-fee interest would not be adequate to protect these cultural resource values. It is recommended that a fee simple interest be acquired in this parcel.

APPENDICES

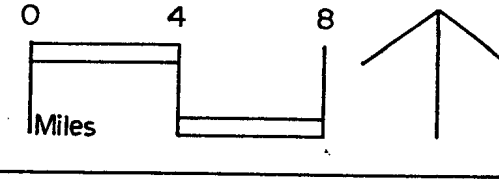
Recommended Land Acquisition





LEGEND

- Hawaii Volcanoes National Park
- Federal Lands
- Non-Federal Lands Requiring Additional Levels of Protection



ADDENDUM TO
LAND PROTECTION PLAN FOR
HAWAI'I VOLCANOES NATIONAL PARK

March 2001

The purpose of this addendum is to revise and update the July 1986 Land Protection Plan for Hawai'i Volcanoes National Park (HAVO) and the August 1998 Addendum to that plan. The lands covered by this Addendum consist of TMK 9:2-01-002 and TMK 9:3-04-002 (NPS tract numbers have not yet been assigned) comprising 115,652.96 acres and 135.03 acres respectively. The subject property is owned in fee by trustees and heirs under the will and of the estate of Samuel Mills Damon. Last year, the park superintendent was advised by The Nature Conservancy Hawaii (TNCH) that the Damon Estate was in a position where it would sell the Kahuku Ranch and that the preference of the trustees and heirs was to sell to an entity that would preserve the integrity of the property as a natural area.

Those portions of the Kahuku Ranch proposed as additions to HAVO are contiguous to the park and consist of all of the Southwest Rift Zone of Mauna Loa between the 800-foot and 12,600-foot elevations of this mountain mass. The higher elevation portions of Kahuku Ranch were identified as proposed additions in the park's 1975 Master Plan due to their scenic and recreational values set against outstanding geological, biological and cultural resources. For decades, HAVO has regarded the forested portions of the Kahuku Ranch above 4000 feet and the ohia/koa forest of the national park as integral components of the same native forest. The property also contains native Hawaiian biotic resources different than those now found within the national park. Biological surveys of the native sub-alpine portions of Kahuku Ranch carried out in the late 1970s revealed this property to be one of several "hot spots" for avifauna diversity and populations of plant species thought to be nearly extinct. The property is the sole habitat for at least four Federally listed threatened and endangered bird species, as well as habitat for one the three remaining populations of the endangered Kau Silverword. At the higher elevations, there are large and complex native Hawaiian archeological sites believed to date back to 1200 A.D. or earlier. The untouched condition of these sites offers great potential for increasing the knowledge and understanding of this early period of the native Hawaiian culture. U.S. Geological Survey scientists consider geological features of the Southwest Rift Zone of Mauna Loa to be unique in the world. There is also great potential for a wide variety of outdoor recreation opportunities ranging from biking, camping and picnicking in the lower elevations to wilderness hiking in the upper elevations. This is the first and only time that the Kahuku Ranch property has been available to NPS.

Plan Implementation

Since the approval of Hawai'i Volcanoes National Park Land Protection Plan and Addendum, no lands have been added to the park.

However, the Act of June 20, 1938 (52 Stat.781) which provides this national park with authority to add "adjacent or contiguous" lands...."necessary for the proper rounding out of the boundaries of the park" has been amended. Section 2 of the Hawaii Volcanoes National Park Adjustment Act of 1999 (Public Law 106-510, November 11, 2000) amends the 1938 Act by providing the park with general authority to acquire lands by "purchase with donated or appropriated funds." Although HAVO has received authorization for appropriations to acquire specific parcels of land by purchase in the past, the park now has broad legislative authority to purchase "adjacent or contiguous" lands.

Changes to the Plan

Negotiations between the property owner and NPS for the purchase of the Great Crack property (the subject of the 1998 Addendum to the Land Protection Plan) have been discontinued. During negotiations, the owner decided to subdivide his property and exclude from purchase a right-of-way and two coastal parcels. The park superintendent is no longer interested in the purchase since the property is now fragmented. The Interior Appropriations for FY2001 allow the $1,500,000 provided in FY2000 for the purchase of the Great Crack property to be used toward the purchase of the Kahuku Ranch.

There is some urgency to the purchase of the Kahuku Ranch property. First, it has never been available before and it will not likely ever be available again and, two, there appears to be interest in selling to NPS at a favorable price below the market. The Damon Estate, as a trust, is shortly due to go out of existence. The trustees and the present beneficiaries, numbering around five and now in their eighties, have collectively expressed their desire to sell the Kahuku Ranch. If not acquired now and the estate passes to the heirs, which will number 35, it is highly unlikely there would ever again be a consensus regarding disposition of the property.

Adding these lands would place the Southwest Rift Zone of Mauna Loa, considered by USGS Hawaii Volcanoes Observatory scientists to be unique in the world, within the boundaries of Hawaii Volcanoes National Park. These lands are also the sole remaining habitat for at least four threatened and endanagered avifauna species and the endangered, endemic Kau Silversword. Moreover, in this setting of dynamic geology and cultural history, there would be outstanding recreational and educational opportunities for visitors at the local to international levels.

This Addendum would change acquisition priorities in the 1986 Land Protection Plan and the 1998 Addendum to include the 115,652.96-acre parcel (TMK 9:2-01-002) and the 135.03-acre parcel (TMK 9:3-04-002) as Hawaii Volcanoes National Park's number one and number two acquisition priorities.

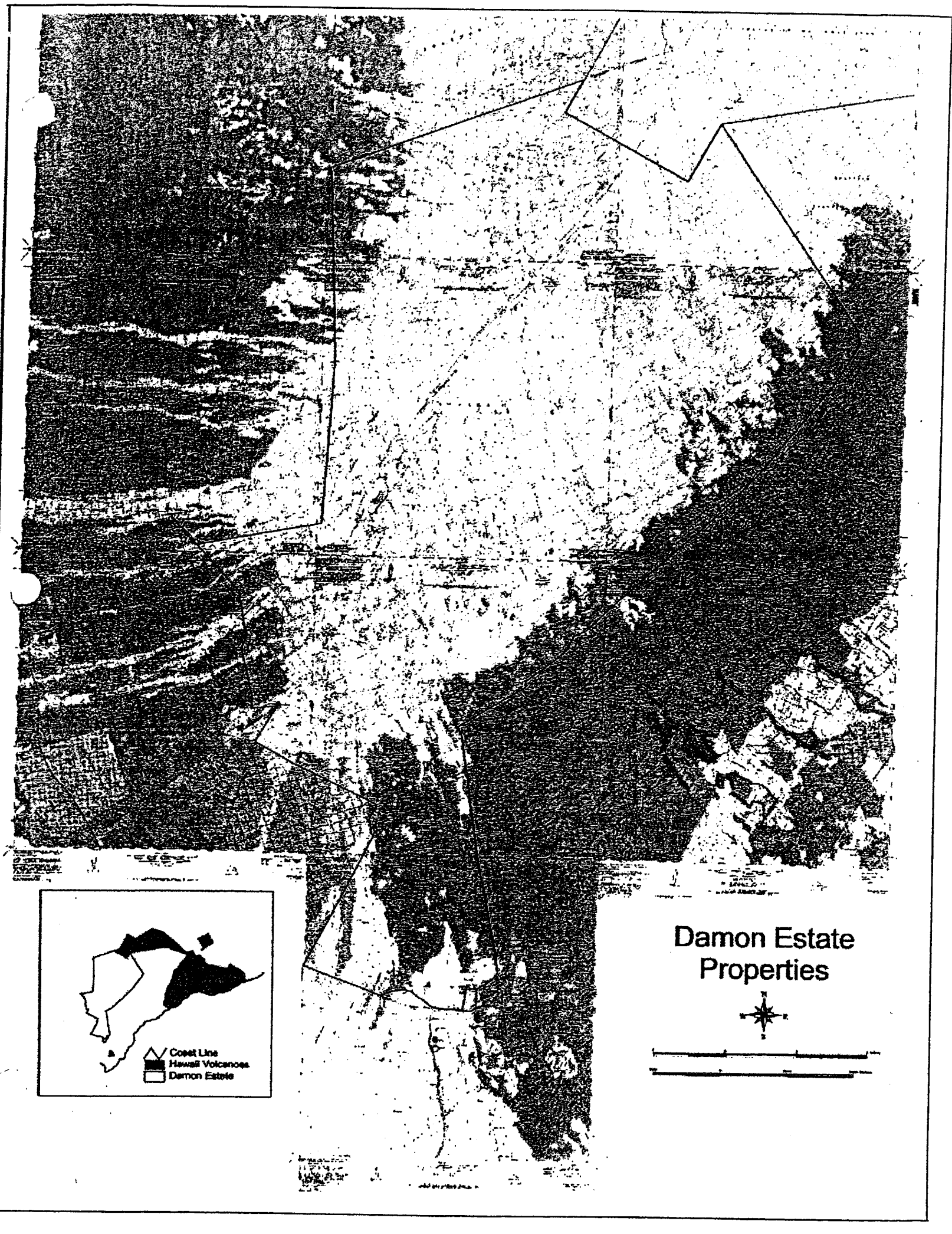
RECOMMENDED:

3/21/01

Superintendent, Hawai'i Volcanoes National Park / Date

CONCUR AND APPROVED:

Regional Director, Pacific West Region Date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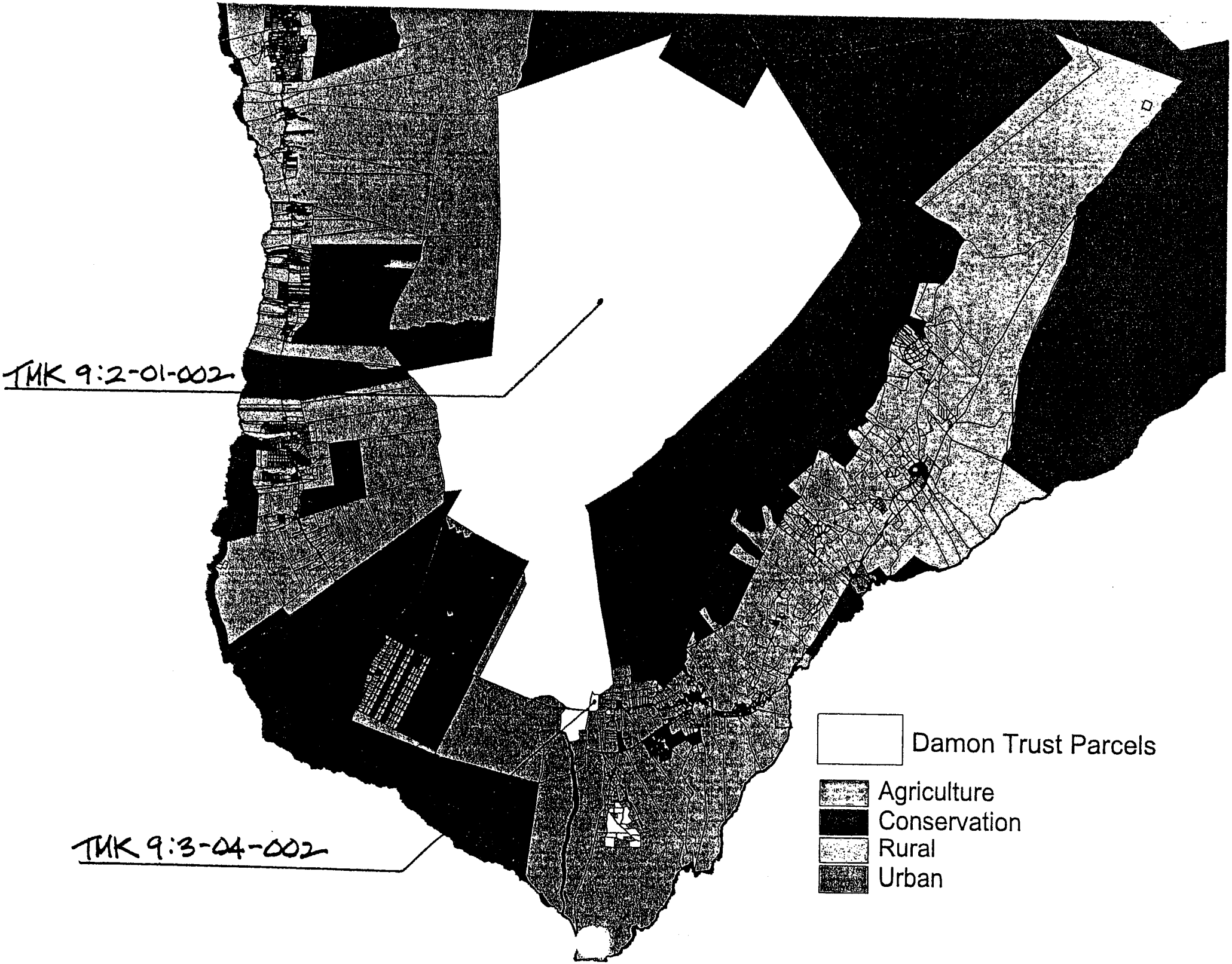
Coast Line
Hawaii Volcanoes
Damon Estate


TMK 9:2-01-002
TMK 9:3-04-002
Damon Trust Parcels
Agriculture
Conservation
Rural
Urban

United States Department of the Interior

NATIONAL PARK SERVICE
Hawaii Volcanoes National Park
P.O. Box 52
Hawaii 96718-0052

IN REPLY REFER TO:
L1417 (HAVO)

September 25, 1998

Memorandum:

To: Chief, Lands Resource Division, Pacific West Region

From: Superintendent, Hawaii Volcanoes National Park

Subject: Addendum to HAVO Land Protection Plan

Enclosed is an addendum to the 1986 Hawaii Volcanoes National Park's Land Protection Plan. This addendum justifies and recommends for acquisition additional lands that are next to and extensions of lands recommended for acquisition in the 1986 plan.

James F. Martin

Enclosures

cc: w/enclosure
Superintendent, Pacific Island Support Office
Regional Director, Pacific West Region

ADDENDUM TO
LAND PROTECTION PLAN FOR
HAWAII VOLCANOES NATIONAL PARK

August 1998

The purpose of this addendum is to revise the July 1986 Hawaii Volcanoes National Park Land Protection Plan to include additional lands proposed for addition to the park. These lands are next to and an extension of lands recommended for acquisition in the 1986 land protection plan. The additional lands covered by this addendum encompass 1,628 acres. They are owned by the International Air Service Company, Ltd.(IASCO).

Plan Implementation

Since the approval of Hawaii Volcanoes National Park Land Protection Plan in July 1986, no lands have been added to the park. The park's existing acquisition authority is contained in the Act of 1938 (52 Stat. 781) which provides for the addition of "adjacent or contiguous" lands, but limits the means of acquisition to public or private donation. Hawaii Volcanoes is currently seeking legislation to provide the park with the authority to acquire land by purchase.

Changes to Plan

Recently, the owners of the lands specified in this addendum have expressed an interest in selling to the National Park Service. These same owners have title to 161 acres of adjacent lands, identified as NPS Tract No. 01-112. This parcel is recommended for acquisition in the 1986 land protection plan. The park wishes to acquire both tracts of land from the owner. The park also wishes to acquire the adjacent 1,951-acre NPS Tract No. 01-111 owned by Hawaii Outdoor Tours, also recommended for acquisition by the 1986 land protection plan. The owner of this 1,951-acre parcel has also expressed an interest in selling to the National Park Service.

Together, the acquisition of these lands would place the entire Southwest Rift Zone within the park and also protect significant ancient Hawaiian archeological sites.

Over the past several years, these lands have been proposed for extensive development. Due to the decline of sugar on the island of Hawaii, replacement industries are being sought to form new economic bases for former agricultural communities. Developments proposed on these lands include a commercial satellite launching facility, light industry, resort, and a private prison. If developed, these new industries not only could degrade resources

found on these lands, but also indirectly threaten adjacent national park resources. Uncontrolled access to these lands would likely result in damage and/or destruction of Hawaiian archeological features, the spread of alien plant and animal species, and an increase in the fire hazard.

The lands to be added to the park by this addendum contain historic and ancient lava flows, two significant Hawaiian archeological sites, and remnant akia shrub land. Archeological features found on these lands include house platforms, petroglyphs, and lava tubes containing cultural remains. These features may date from around 700 A.D., the earliest arrival of Polynesians in Hawaii.

The list of acquisition priorities in the 1986 land protection plan would be modified to include the 1,628-acre parcel covered by this addendum. This parcel would be inserted in the list after NPS Tract No. 01-112 and before Master Plan Tract No. 19, Parcel 15. The 1,628 acres proposed as an addition to the park have not yet been assigned a NPS tract number.

Superintendent, Hawaii Volcanoes National Park 9/25/98 Date

Concur and Approved 10/5/98

ADDENDUM TO
LAND PROTECTION PLAN FOR
HAWAII VOLCANOES NATIONAL PARK

August 1998

The purpose of this addendum is to revise the July 1986 Hawaii Volcanoes National Park Land Protection Plan to include additional lands proposed for addition to the park. These lands are next to and an extension of lands recommended for acquisition in the 1986 land protection plan. The additional lands covered by this addendum encompass 1,628 acres. They are owned by the International Air Service Company, Ltd.(IASCO).

Plan Implementation

Since the approval of Hawaii Volcanoes National Park Land Protection Plan in July 1986, no lands have been added to the park. The park's existing acquisition authority is contained in the Act of 1938 (52 Stat. 781) which provides for the addition of "adjacent or contiguous" lands, but limits the means of acquisition to public or private donation. Hawaii Volcanoes is currently seeking legislation to provide the park with the authority to acquire land by purchase.

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Superintendent, Hawaii Volcanoes National Park 9/25/98 Date

STATUS OF PLANNING, PARK RESOURCES, AND VISITOR USE ACTIVITIES AND OBJECTIVES

Status of Planning

The Hawaii Volcanoes National Park Master Plan, approved November 1975, identifies additional lands needed to further the purposes of the park. These included lands adjacent to the park and generally consisted of the area around Hualalai volcano, the area between that mountain and Mauna Loa volcano, the upper slopes of Mauna Loa, and a strip to provide access to these additional park lands from the Kona side; tide and submerged lands extending one-eighth mile offshore along the park's coastal boundary were also included.

The Upper Olaa Forest, over which the National Park Service has "protective custody," but which is not legally within the park, was also included in the master plan list of adjacent lands to be added. The master plan proposes that legislation be sought to legally include the Olaa Forest lands as a non-contiguous part of the park.

The master plan also calls for legislative action to authorize purchase of three tracts of land which previously had been proposed as additions to the park. One of these tracts, located within the 1938 Kalapana extension, has, since master plan approval, been partially acquired (purchased in 1979). The other two tracts were both included as part of the lands proposed as additions by the 1951 Secretarial Order.

Finally, the master plan calls for the deletion of two tracts of land. One of these is within the Kalapana extension, the other consists of most of one of the tracts proposed by the 1951 Secretarial Order.

Master plan management objectives pertinent to this plan include the following:

Preserve the evolving natural scene by protecting outstanding geologic features, such as the calderas and rift zones, steam and sulphur banks, the profile of Mauna Loa, and the associated native ecosystems.

Cooperate with public and private landowners in striving to maintain the evolving natural landscape adjacent to the park.

Acquire those lands which will improve the geologic, ecologic, and scenic integrity of the park.

Protect the park's remnant Hawaiian ecosystems, including endangered species, from further depredation and competition by those exotic animals and plants introduced by modern man.

Re-establish the park's endemic species into their former ranges, concentrating efforts on those species which are in danger of extinction, and those that are key components of major native ecosystems.

Support the U. S. Geological Survey's research program on volcanism which contributes invaluable knowledge needed for park management and interpretation.

Conduct and encourage natural history research focused upon: (1) further definition and insight into the park's native island ecosystems; (2) developing life history and ecologic understanding of species facing extinction; and (3) developing management strategies for preserving endemic island ecosystems.

Encourage visitor enjoyment of remote areas, including the summit and slopes of Mauna Loa, Kau Desert, and the Kau coast.

When reasonable, provide safe routes of access for visitors to significant interpretive features and visitor facilities even though special hazards may exist.

In order to protect the native ecosystem and the ecological processes which support them, the park's natural resource management program has as its main objective the suppression and/or removal of the most disruptive plant and animal introductions. The resource management plan was last updated in November 1984. Major elements of the program consist of feral goat and pig control, feral pig research, exotic plant control, nene (Hawaiian goose) restoration, and native plant management.

The park's feral goat control project has been in existence for more than a decade and is now considered to be in its final stages. Approximately 100 to 200 goats still inhabit the park's higher elevations (above 2,000

meters) where fences have not yet been constructed. The inspection, maintenance, and periodic replacement of the existing fence is ongoing and continuous.

Feral pig research and management has been underway in the park since the mid-1970's. However, funding, organized research and control have been underway only since 1983. Approximately 6,000 acres of the park have so far been cleared of pigs and they have been reduced to remnant populations in another 2,500 acres. By the end of 1985, it is expected that approximately 12,000 acres will be either cleared or their numbers significantly reduced. Park research emphasizes elimination of remnant animals and monitoring of management effectiveness.

The control of exotic plants in the park is a complex problem because of the overwhelming number of species (about 400), the vulnerability of native ecosystems to exotic plants, lack of ecological knowledge about target species, and the lack of specific control methods. The program emphasizes identification and control of localized species which have high potential to disrupt natural ecosystems. A quarantine facility was recently built and certified in the park to identify, study, and evaluate potential insect releases as biological control organisms for banana poka, a serious exotic plant threat to the park's mid-elevation forests.

Native plant management is directed toward intensive control of exotic plants and feral animals found within remnant and intact communities of native plants and/or rare threatened and endangered species.

An updated statement for management has been completed in draft and is presently undergoing review by Western Region staff. A preliminary draft of the cultural resource management plan has recently been prepared and is being reviewed.

The park's land acquisition plan, approved in April 1980, called for the acquisition of the same three tracts proposed in the 1975 master plan. The land acquisition plan recommended these lands be purchased in fee simple and also indicated that legislative authority would be needed to allow for that purchase.

Park Resources

The park's natural features -- geology, vegetation, animal life, history, and archeology -- are all accurately and adequately described on pages 11 through 19 of the 1975 master plan. Since that plan was written, significant changes along the park's middle East Rift have been brought about by the volcanic eruptions which began in January 1983. As of March 1985, there have been 31 separate phases of these eruption activities. The lava flows have generally gone in an easterly direction crossing the Kamoamoa portion of the Kalapana extension along the eastern boundary of the park. New lava flows of basalt have covered sizeable areas, mostly outside the park. A cinder/spatter cone, recently named the Puu O'o vent, rising more than 600 feet in elevation has been created. At this writing, there is no indication that this series of eruptions has ceased.

The park's cultural resources are likewise covered in the 1975 master plan. Specifically, pages 20 through 24 discuss the park's history and archeology.

Visitor Use Activities and Objectives

Visitation in the park has risen by about 40 percent in the last decade:

1975 - 1,672,008	1980 - 2,367,911
1976 - 1,852,654	1982 - 2,368,907
1977 - 1,816,836	1982 - 2,626,971
1978 - 2,321,980	1983 - 2,821,115
1979 - 2,266,713	1984 - 2,597,838

This use is spread throughout the year, with a slight increase during the summer months. Generally, about 20 percent of the total visitation is "non-recreational;" i.e., composed of visitors who are utilizing State Highway 11, the major road which connects Hilo with the southern part of the Island of Hawaii, and are just passing through. Most of the park's visitation has been and will continue to be day-use. Nearly all visitation takes place in and around the headquarters area, the Crater Rim summit loop drive, the Chain of Craters corridor, and the Wahaula Visitor Center area.

Over the past decade, rental cars have replaced the tour bus as the mode of transportation most used by visitors. Overnight accommodations in the park are limited and consist of the concessioner-operated Volcano House, an 83-guest capacity lodge; Namakani Paio Campground, which includes 10 rustic camper-cabins. The Kilauea Military Camp provides overnight accommodations for 300, but is not available to civilian park visitors. In addition, there are two small campgrounds at Kamoamoa and Kipuka Nene. Camping in the park's backcountry has averaged about 5,000 overnight visitors for the past five years and does not appear to be increasing.

Certain volcanic eruptions cause abrupt and dramatic increases in the numbers of park visitors. The recent eruptions along Kilauea's East Rift, however, are of short duration and located in a remote section of the park. These have not caused significant changes in visitation patterns.

Visitor use objectives in the park are focused primarily on providing basic day-use needs, including meal service. Overnight facilities (lodging and campgrounds) are provided within the established overnight carrying-capacity of the park. The park relies on the gateway communities (private enterprise) for the development of any additional overnight facilities for park visitors.

ENVIRONMENTAL ASSESSMENT

LAND PROTECTION PLAN

HAWAII VOLCANOES NATIONAL PARK

PURPOSE AND NEED

There are six tracts of non-federal lands totalling 11,879 acres located within areas which are authorized additions to Hawaii Volcanoes National Park. About 11,875 acres are in private ownership and four acres are owned by the State of Hawaii.

Three of these tracts encompassing 4,177 acres are no longer considered to be viable additions to the park. They contain developments—residences, roads, a state highway corridor, and a golf course—which have altered their natural values and made them unsuitable. However, this unsuitability does not extend to a 144 acre portion of one of these tracts. This parcel (Tract 19, Parcel 15) requires additional protection to buffer adjacent parklands and to preserve the archeological sites and features within. These three tracts, two in their entirety and all but the 144 acres of the third, were recommended for deletion by the 1975 master plan. However, since they were never legally within the boundaries of the park, no action is required to have them deleted.

The other three tracts of land contain resource values of national significance. Moreover, they are either now being or could potentially be threatened by developments which would adversely affect these values. These three tracts have been judged to be in need of additional level of protection. The Land Protection Plan for Hawaii Volcanoes National Park

recommends the acquisition of these tracts as the most reasonable method to ensure the long-term preservation of their natural and/or cultural resource values.

One of these tracts (118/22), encompassing 5650 acres, is located within a larger area now being proposed by the land owner for large-scale geothermal power production. The scale of these developments and their proximity to the park would significantly alter and degrade the natural values of this tract and of the adjacent lands now within the park. The other two tracts (111/26 and 112/27), covering 2052 acres, have been identified by the State of Hawaii as being within an area having geothermal resource potential resource values.

DISCUSSION OF ALTERNATIVES

A land protection plan has been prepared to identify the most reasonable method to assure that these parcels of land will be protected. In selecting the recommended method, the plan considered alternative ways to protect resources such as land use regulation, cooperative agreements, fee acquisition, and less-than fee acquisition. Purchase, exchange, and donation were evaluated as possible means of acquisition.

Land use regulation exists at the State level on Tract 118/22 proposed for geothermal development since it is located within a conservation district. This level of protection, the highest provided by the State of Hawaii's land use law, was judged to be sufficient, at least in the short-term, until June 1983. At that time a State law was enacted which allowed for geothermal resource development on conservation district land.

Henceforth, this level of protection was removed placing the resources within this tract and on the adjacent park lands in jeopardy. This alternative would have the same socio-economic and environmental impacts as a no-action alternative.

Existing regulations on Tracts 111/26 and 112/27 — within an agriculture district and 20-acre minimum lot size—allow subdivision to the extent that resource values would be adversely affected. Moreover, the State has recently identified the area as part of a proposed geothermal resource subzone. Though there is presently no threat, it seems clear that regulatory authority is insufficient to protect resources here in the long-term.

Land use regulations present on the 144 acre parcel provide adequate protection to its open space values. However, there is great probability that this area contains numerous and perhaps significant archeological features. It is uncertain whether or not these can be adequately protected by regulation.

Agreements with landowners do not appear to hold much promise for protecting resources on any of the tracts requiring it. These lands are not within the legal boundaries of the park and the National Park Service presently has no authority to enter into agreements under those conditions.

Acquisition appears to be the most reasonable alternative for providing the needed protection to the above tracts of land. Refer to Pages 38 to

42 in the Land Protection Plan for a discussion on donation and exchange possibilities.

PERSONS/AGENCIES CONSULTED

Due to the small number of landowners involved and the sensitive nature of the geothermal energy issue in Hawaii, no public meetings were held during the preparation of the draft land protection plan for Hawaii Volcanoes National Park. Meetings and discussions took place during the preparation of the plan with landowners or their representatives. More discussions and meetings with the affected landowners will take place. Copies of the draft land protection plan will be made available for public review.

IMPACTS OF ALTERNATIVES

Alternative	Vegetation	Wildlife	Aesthetic	Archeological/ Historical	Socio-economic
A. Land Use Regulation Tract 22/118 (Same as no action)	More than 100 acres of native ohia and tree fern community would be destroyed by the development of two power plants, about a dozen well drilling sites, and the roads and pipelines to connect them—all of which are part of the geothermal power project proposed within this tract. Project development would also increase the likelihood of alien plant species invading the tract and spreading to the adjacent park lands. Marijuana cultivation would continue with its attendent adverse effect on the native vegetation.	Several hundred acres of endemic bird habitat, including that for endangered species, would be degraded by the development of the proposed project. Also, the development would increase the opportunities for the spread of alien animal species which would likewise adversely affect native bird species.	The ohia canopy would be interrupted by the 75' (3-story) power plant buildings resulting in a visual intrusion on the natural scene. In the open areas of lava, power plants, well sites, roads, and pipelines would be highly visible, aesthetic intrusions on the natural scene. Located adjacent to 7600 acres of a designated wilderness area which is dominated by recent lava flows interacting with native rain forest. The existing views of the tract from the park wilderness consists only of natural features. The proposed geothermal development would alter and degrade the aesthetics of that view.	No records of archeological sites are known to exist within the tract. However, the absence of any recorded sites does not mean that none exist. On nearby lands which have been surveyed, numerous sites and features have been identified.	Full and successful development of the proposed power project would generally have a positive effect on the local economy. This would be mainly from construction jobs and would last for 15 to 20 years. These jobs would depend upon whether or not the geothermal resource is found to be economically viable. Indirect benefits associated with increased sales to local commercial establishments would also accrue. There would also be a beneficial effect on the State's economy due to the lessening of Hawaii's dependence on imported oil for its energy. There would be a reduction in the outflow of dollars from the State for the purchase of fuel oil.

Alternative	Vegetation	Wildlife	Aesthetic	Archeological/ Historical	Socio-economic
Tract 22/118 (continued)					The above benefits would be offset somewhat by the costs to the local community of providing services to support the new developments. Another offsetting factor would be that geothermal development would go against the feelings of those Native Hawaiians who have expressed their opposition to the project because it would disturb the domain of Pele, the Fire Goddess whose domain includes Kilauea.
Tracts 111/26 and 112/27 (Same as no action)	Destruction of the native grasses by feral goats would continue, as would the opportunities for invasion of alien plant species. Area would be subject to exploration and potential development for geothermal energy. Such development would have an adverse effect on the native grasses.	No effect.	Continued browsing by feral goats would degrade the visual quality and natural character of the landscape. Area would be subject to exploration for geothermal energy development and/or subdivision, both of which would adversely affect its visual quality.	No protection would be afforded the archeological sites and features believed to exist within those tracts. Area would be subject to geothermal energy exploration and development which could destroy archeological features believed to exist within.	If the area's geothermal energy potential proved to be viable, its development would generally have beneficial effects on the local economy. However, at the present time the area's geothermal potential remains unproven.

ternative

	Vegetation	Wildlife	Aesthetic	Archeological/ Historical	Socio-economic
act 19 arcel 15 Same as no action)	Little or no effect.	No effect.	Little or no effect.	No protection would be afforded the numerous archeological features believed to be within this tract.	Little or no effect.
Acquisition Tract 22/118	Would protect and allow management of the area's native ohia and tree fern community. NPS management of the area would result in its eventually being cleared of marijuana plants. Area would begin to be managed for the preservation and protection of its native plants.	The endemic bird habitat would be managed so as to maintain its integrity. Management would also consist of undertaking efforts to control the introduction and spread of alien animals.	The natural landscape would be retained. Viewsheds from the adjacent park lands would be protected.	Any archeological sites or features located within this tract would be professionally surveyed and recommendations made as to how they should be managed.	Development of the area's geothermal resource potential would not be realized. Benefits to the local economy accruing from jobs associated with the construction of geothermal energy power plants, well-drilling sites, roads, pipelines, etc. related to the project as planned for this particular tract would not take place. However, acquisition of this tract would permit the exchange of lands between Campbell Estate and the State of Hawaii to take place thereby making it possible for geothermal resource development to take place on a nearby location. Consequently, there would be no loss of socio-economic benefits — at either the local or state levels.

Alternative	Vegetation	Wildlife	Aesthetic	Archeological/ Historical	Socio-economic
Tracts 111/26 and 112/27	Would permit management to control and eventually eliminate feral goats thereby permitting the restoration of native grasses to their natural range. Exploration and development for geothermal power would be forestalled and the attendant adverse effect on native grasses would be eliminated.	No effect.	The natural landscape would be retained and, where required, restored.	The archeological sites and features believed to be located within these tracts would eventually be surveyed and managed for the long-term protection of their resource values.	The exploration and development of the area's geothermal energy potential would not take place. Any potential benefits associated with that development here would not be realized.
Tract 19, Parcel 15	Little or no effect.	No effect.	Little or no effect.	The archeological sites and features believed to be located on this tract would be professionally surveyed and managed for their long-term protection.	Little or no effect.