

**2006
ANNUAL REPORT
of the**

**HABITAT CONSERVATION PLAN
for
ABUTILON MENZIESII at KAPOLEI**

by

State of Hawaii, Department of Transportation
Highways Division, Planning Branch

February 2009

I. INTRODUCTION

This is the second annual report which has been prepared pursuant to the requirements of Chapter 195D, Hawaii Revised Statutes, which state:

“Participants in a habitat conservation plan shall submit an annual report to the department within 90 days of each fiscal year ending June 30, that includes a description of activities and accomplishments, analysis of the problems and issues encountered in meeting or failing to meet the objectives set forth in the HCP, areas needing technical advice, status of funding, and plans and management objectives for the next fiscal year, including any proposed modifications thereto.”

A threatened and endangered species, *Abutilon menziesii*, was discovered in East Kapolei in 1996, and, through a memorandum of agreement, the Housing and Community Development Corporation of Hawaii engaged the services of Department of Land and Natural Resources (DLNR) to perform preliminary recovery efforts. Hence, conservation of the endangered species began in October 1998 with an Interim Management Program. The proposed long-term mitigation, consistent with the *Habitat Conservation Plan for Abutilon menziesii at Kapolei* (HCP) began in August 2001, and consequently, this report covers the fifth year of this 20-year mitigation effort.

As stated in the first and previous report, the purpose of this annual report is to examine and update the long-term mitigation effort as described in the HCP. The previous report, dated October 2005, was prepared by the Department of Transportation (DOT) and the Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW), and the first report is available at the DOT, Highways Division, Planning Branch.

Finally, this current report is essentially comprised of two elements: 1) the administration of the HCP and Incidental Take License No. ITL-05 by the Department of Transportation, Highways Division (DOT); and, 2) the conservation/biological activities and functions of DLNR, DOFAW.

II. DESCRIPTION OF ACTIVITIES

A. Goals of the HCP

1. Administrative Accomplishments

As stated in the October 2005 report, the primary administrative goal of the DOT involved the securing of adequate funding to finance the conservation and recovery activities of DLNR. Thus far, the following amounts have been obtained by the approximate dates shown:

March 2001	\$250,000	(from DOT)
October 2004	\$750,000	(from DOT)

October 2005	\$200,000	(from DOT)
January 2006	\$120,000	(from Department of Hawaiian Home Lands)

As reflected above, a Certificate of Inclusion for Incidental Take License No. ITL-05 was issued to the Department of Hawaiian Home Lands (DHHL) in January 2006, based largely on a Memorandum of Agreement between DOT, DLNR and DHHL.

Another Certificate of Inclusion is being processed for the University of Hawaii, West Oahu College, and this document should soon be finalized. As stated in the previous report, it is also anticipated that the City and County of Honolulu will soon be requiring a Certificate of Inclusion, and these documents together should increase funding for this effort by approximately \$80,000.

2. Recovery Activities

The primary goal of the HCP is the continued survival of the Kapolei genetic stock of *Abutilon menziesii* through the establishment of three (3) protected, wild populations and one (1) repository population, on the island of Oahu. Short-term and long-term goals of the HCP dealt primarily with the early stages of the propagation of the *Abutilon menziesii* and were described in the October 2005 report. Also described in the previous report, were the long- and short-term success criteria which will be used to evaluate the progress of this effort.

The overall success criteria, as provided in the HCP, will be met if the long-term success criteria are satisfied and there are more than 120 reproducing adult plants present at the end of a five-year period at a site (including at least 40 plants recruited from the seed bank on site). Further, if this criteria is met, then no additional management action will be required for that site as part of the HCP and only monitoring need continue over the following five-year period.

C. Recovery Accomplishments

The DLNR report, entitled "*Abutilon menzeisii* 2005-2006 Status Report" is enclosed with this report as Attachment A. In a general comparison with the "*Abutilon menziesii* 2004-2005 Status Report", the latest report reflects the following:

1. In 2006, two (2) additional propagation sites, at Ka Iwi and the Ewa Villages Golf Course, were started by DLNR staff. Because of these two

(2) sites, 72 plants have been added to the total number of outplanted *Abutilon menziesii*.

2. The total number of plants for all of the outplanting sites has increased, from 213 in 2005, to 267 in 2006.
3. The Honouliuli Wildlife Reserve, which is a part of the USFWS Oahu National Wildlife Refuge, has shown the greatest decline in its total number of *Abutilon menziesii*, from 78 plants in 2006 to nearly 57 plants in 2007. However, because of the salt content of the soil at its original location, the outplanting site has been shifted approximately 500 feet to the south, and the plants at this new site seem to be flourishing.
4. The population of *Abutilon menziesii* at the Diamond Head State Park appears to be the most stable. In 2005, there were 103 plants at this site; by 2006, the number of plants had increased slightly to 106.
5. The construction of the Contingency Reserve Area (CRA), which is located in East Kapolei, was essentially completed in 2006. Currently, there are approximately fifty (50) *Abutilon menziesii* located within the 24 acres of this property. As stated in the HCP, the CRA may eventually become a wildsite for the *Abutilon menziesii* and other endangered species.
6. According to DOFAW staff, an improved database for the monitoring and tracking the *Abutilon menziesii* should onboard by 2007.

III. ANALYSIS OF PROBLEMS AND ISSUES

A. Administrative Problems

The DOT has been having difficulty obtaining the annual status reports which are prepared by DLNR and are due in July of every year. It should be noted that DOT personnel have repeatedly requested that these documents be provided to them. However, it is generally believed that these documents are prepared on an annual basis, but have not been submitted.

In addition, the DOT has requested that the Fiscal Office of DLNR develop a financial report for the funding that has been provided for the HCP. Currently, the balance of the total funding provided to DLNR is unknown.

As indicated in the attached status report, a new outplanting site near the Ewa Golf Course has been initiated, consistent with this recovery effort. The report does not reveal the terms under which this strip of land will be reserved for the establishment of *Abutilon menziesii* and would consequently avoid further development or encroachment. In addition, with the development of nearby

lands, vehicle access to the recovery area and wildfires may become more serious concerns, unless appropriate measures are undertaken by DLNR.

B. Recovery Problems

Problems and issues regarding the recovery effort are discussed in the attached DLNR 2005-2006 Status Report. Among the more obvious concerns are:

1. According to the latest status report, the Kaena Point site continues its decline as a potential long-term, outplanting site for *Abutilon menziesii*. The site has encountered problems relating to vandalism, off-road vehicles, fire, and a heavy mat of overgrown weeds. In addition, DLNR staff requires outside assistance regarding the relocation of boulders to form a barricade for the site. As previously stated, it is anticipated that the site will not meet the goals which are outlined in the HCP, at its fifth year (in 2006) review.
2. At Ka Iwi, a small population of 35 *Abutilon menziesii* was established, and due to heavy rains, nearly 19 of these plants were lost.
3. The Kealia Experimental Sites will be discontinued as a potential outplanting site, due to the lack of space and weeds. Originally, there were approximately 25 *Abutilon menziesii* at two sites; as stated in the status report, only 18 plants continue to survive at these sites.
4. A small fire occurred in the Contingency Reserve Area, which burnt approximately one acre of this site. Although no plants were destroyed, this event indicates the need for fire precautionary measures.
5. More cuttings of *Abutilon menziesii* from the Kapolei genetic stock should be transplanted to the Honouliuli Wildlife Refuge and Diamond Head Crater sites.

At the moment, the HCP for the recovery of the *Abutilon menziesii* should be approximately 30 percent complete. Based on their accomplishments, DOFAW appears to be slightly ahead of this schedule.

V. STATUS OF FUNDING

This is partially described in Sections II.A.1 and III.A.

VI. PLANS AND MANAGEMENT OBJECTIVES FOR NEXT YEAR

Goals of DLNR regarding the HCP have been documented in their attached 2005 to 2006 Status Report. Some of the more notable goals include:

“Fully represent the Kapolei plants at the Diamond Head and Honouliuli populations.

Continue to monitor and maintain the plants at all sites.

Determine what is causing germination issues for *Abutilon menziesii* in the field.”

Attachment

Abutilon menzeisii 2005-2006 Status Report



By Greg Mansker, Horticulturist, Hawaii Department of Land and Natural Resources
May 2006

I. Introduction

A population of *Abutilon menzeisii* was discovered in late 1996 at Kapolei in the Ewa area, island of Oahu, on former sugarcane land. *Abutilon menzeisii* has been a federally listed species since 1986. This population is located within the proposed footprint of a Department of Transportation road and as a result, a Habitat Conservation Plan (HCP) for *Abutilon menzeisii* at Kapolei was completed to mitigate for the effects of development on this population (November 2003). The HCP outlines the measures planned over the next 20 years. The goal of the HCP is to initiate and sustain a program, which would result in an overall net gain in the number of *Abutilon menzeisii* on Oahu. The end goal is the establishment of three protected off-site populations on Oahu from the single degraded Kapolei population. This 2005-2006 status report serves as a way of monitoring the progress towards this end goal.

To date, *Abutilon menzeisii* has been outplanted at seven different sites: Diamond Head, Honouliuli Wildlife Refuge, Kealia Trail, Kaena Point, Ka Iwi, Ewa Villages Gold Course, and Koko Crater Botanical Garden. Five of these sites will be used towards the goal of establishing three self-reproducing wild populations (Ewa Villages Golf Course, Diamond Head, Honouliuli Wildlife Refuge, Ka Iwi, and Kaena Point). The Koko Crater Botanical Garden population will function as a protected repository for the full genetic stock of the Kapolei population. The Kealia Trail site was an experimental site to test the biological requirements of the plant. The focus for 2005 was establishing the Ewa Villages outplanting site and to establish a small test site at Ka Iwi to determine the feasibility of a full population. Time was also spent on the golf course site this year.

II. Population Summaries

A. Diamond Head

In 2004, an MOU was established with the Hawaii State Parks and the Hawaii Army National Guard to establish an *Abutilon menzeisii* population. Ground work for this site involved six days of clearing the site using a tractor, clearing the site of trees, digging the holes for outplanting, testing the soil, and outplanting the plants. One hundred and four plants were outplanted in September 2004 representing 65 percent of the genetics from the Kapolei population. A low flow, low maintenance irrigation system is in place that utilizes the municipal water supply. The planting strategy used at this site was to plant the plants close together with high rates of fertilization and water to help the plants out compete the weeds and fill the area with a continuous stand of *Abutilon menzeisii*. This has resulted in a very healthy population of *Abutilon menzeisii*. The thought behind this strategy is that by getting the plants off to a healthy start, a seed bank will be established early on in the process. A firebreak was established around the perimeter of the population using plants that were present in the nursery in excess numbers. Groundcover was established for fire and weed control purposes using the following native species: *Vitex rotundifolia*, *Rauvolfia sandwicensis*, *Lipochaeta lobata*, *Sida fallax*, and *Sesbania tomentosa*.

In 2005, eight new plants were outplanted. There are now 112 total plants at Diamond Head representing 75 percent of the Kapolei population. This site is currently monitored and weeded once every other week.



Figure 1. Diamond Head Population, Dec. 2004



Figure 2. Diamond head Population, May 2005



Figure 3. Diamond Head Population, May 2006



Figure 4 Diamond Head Population, May 2006

B. Kaena Point

This population was established in the fall of 2000. A total of 62 plants representing 46 lineages were outplanted at this site. As of winter, 2002 there was recruitment of three new juvenile *Abutilons*. Of these initial recruits, one plant has survived to maturity. This population does not receive supplemental water at this point and appears to be stable. DLNR Forestry staff has been trying to reduce the time spent on this location in an effort to determine if the population can survive on its own without continuous maintenance. As a result of this reduced maintenance, the weeds have established themselves in areas not dominated by natives (i.e. *Sida fallax*, *Vitex rotundifolia*, *Dodonea viscosa*, *Sesbania tomentosa*, etc.). The *Abutilon* seems to be competing with the Guinea grass and other weeds with no apparent detriment to its health. During the 2004 propagule collection at Kaena Point, a search for seedlings was conducted. Twelve plants were lost in the August 2003 fire; however, the remaining plants have recovered from this event. The cohorts planted at the site are maturing and competing with the weeds (i.e. naio and milo). The population is monitored every couple months. This site has inherent issues such as vandalism, off-road vehicles, and fire.

In 2005, monitoring of this population showed that few of the *Abutilon* plants are thriving. Most of the existing plants are barely holding their own against the weeds. For most of the plants, including other natives that are present, there is little chance they will produce offspring because of the dense weed cover. One thing that was apparent was that the *Abutilon* seedlings that were outplanted versus cuttings were healthier. Given this information, additional outplantings will not be done at Kaena Point. The long-term viability of this site is in question. The five-year review of this site will be done during 2006.



Figure 5. Kaena Point Population, May 2006

C. Koko Crater Botanical Garden

The plants at Koko Head Botanical Garden are thriving. Originally, there were 62 plants representing 46 lineages at this site. Currently, there are 62 plants representing 50 lineages. The plants located at Koko Head are an invaluable source of working material for the program (i.e. cuttings, seeds, etc). This is a good example of how botanical gardens and various forestry programs can and should work together towards recovery of rare species. During 2005, air layers were employed as a new propagule source. This has proven to be a successful method of collection. During 2005-2006, better communication was established with the Garden employees to ensure that the plants remain healthy. During 2005-2006, 6 additional plants were outplanted at Koko Head.



Figure 6. Koko Head Crater Botanical Gardens, May 2006



Figure 7. Koko Head Crater Botanical Gardens, May 2006

D. Honouliuli

The Honouliuli outplanting site is located along the western edge of the West Loc of Pearl Harbor. This site is within three to four miles of the original population and is very well protected. The site itself is part of the Oahu National Wildlife Refuge Complex. The refuge consists of about 20 acres of fenced land, much of which is occupied by two ponds. The land itself is still under Navy ownership but USFWS has a cooperative agreement with the Navy to manage the site as a refuge in perpetuity. There are two separate areas being used for outplanting within the refuge. The first consists of a narrow strip, approximately 20 by 600 feet, while the second site is approximately 60 by 300 feet.

The first planting commenced on March 15, 2002 in the 20 by 600 foot site. Forty-one plants were installed at that time, 32 healthy robust plants remain. The loss of plants after outplanting can be attributed to the higher salt levels present within the soil at one end of the site. There has been no recruitment of juveniles at this location, although the threat from weeds is minimal. Work at the second location began January of 2003.

The new location is about 500 yards south of the first outplanting site. There are currently a total of 43 plants at the second site. This outplanting is a mix of cuttings and seedlings removed from the wild population at Kapolei. Many of the plants have grown substantially over the past year and the site is showing promise. During 2005-2006, one keiki appeared and is looking healthy.

Both locations are on an irrigation system and are managed entirely by the State of Hawaii Forestry and Wildlife staff. Efforts are being made to adjust the conditions of the soil at both sites so that they are more favorable for regeneration and growth. During 2005-2006, a total of 10 additional plants were outplanted at Honouliuli. This site is monitored twice a month. This site requires frequent weed control. Access is an issue at this site due to bird nesting and the usage by school groups for outdoor education. During the nesting season, work can only be accomplished at this site before 9 am. Plans for 2006-2007 include additional outplantings to try and reach full representation of the Kapolei plants.



Figure 8. Honouliuli Population, Apr. 2002



Figure 9. Honouliuli Population, Spring 2005

E. Ka Iwi

During 2006, a special use permit was issued by the State Parks to DLNR for use of Ka Iwi State Park as an outplanting site for *Abutilon*. Ka Iwi is located along the road just before Makapuu Beach Park. The Ka Iwi population was established down slope of the Makapuu Lighthouse in a natural drainage. During February 2006, 35 plants were outplanted, of which 19 were lost during Oahu's heavy rains due to flooding. An additional 6 plants were outplanted to replace the 19 that were lost. There are currently, a total of 22 plants at this site representing 11% of the Kapolei plants. A small number were used to establish the population to determine the long-term feasibility of this site. Weed density at this site is of concern. This site is being monitored and weeded 3 times per month. There is no on site irrigation at this site; which means watering will be necessary through the dry summer months. The loss of plants due to flooding made it apparent that this may be a reoccurring issue at this site during times of heavy rains. However, this year had much more rain than past years so it remains to be seen whether this will happen again. The goal for 2006-2007 is to expand the population if growth of existing outplantings is good.



Figure 10. Ka Iwi Outplantings, May 2006

F. Ewa Villages Golf Course

The Ewa Villages Golf Course is located adjacent to the original wild *Abutilon* site. The Ewa Villages Golf Course population is located within 125 yards of the original wild site; which was the primary reason for choosing this location. During March 2006, 57 plants representing 53 lineages were outplanted. This represents 49% of the total plants/genetics available from the Kapolei plants. Even though this is not a “wild” situation, it is an undisturbed, protected site with favorable conditions, much like the original wild site. Irrigation is present at this site. Weeds will be an issue at this site as well. This site is monitored up to 3 times per month. The goal for 2006-2007 is to increase the number of outplantings.



Figure 11. Ewa Golf Course Outplanting, May 2006



Figure 12. Ewa Golf Course Outplanting, May 2006

G. Wild Site/Ewa/Kapolei

*Ken Nagata discovered *abutilon menzeisii* at this site in 1996.* Subsequent surveys by Winona Char recorded a total of 88 plants. Since its discovery in 1996, the population has fluctuated with rainfall levels. Through natural senescence and accidental take, the number of plants has declined to 25 plants. However, 28 new plants have been discovered since 2002. These plants are not fully represented in off-site collections at this point. This will be a goal for 2006-2007. The most recent find was a plant on the City and County parcel giving a total of six plants now found on this parcel. The Kapolei population is monitored once a month. This monitoring includes collecting seeds, occasional watering, fertilizing, and recording the general fitness of the plants.

During 2005-2006, 35 plants were moved to the Contingency Reserve Area (CRA). There are currently 7 wild plants left at the original sites. Only one plant was lost during the move. All other transplanted individuals are looking healthy. The transplanted plants in the CRA have irrigation available to them. Once the plants were moved, the Department of Transportation contractors around the CRA site installed a perimeter fence. A firebreak was also installed before the construction of the fence. The firebreak consists of a weed free gravel barrier. The perimeter fence and firebreak require regular and consistent weed control. Additionally, 10 plants were outplanted to this site in November 2005.

On October 31, 2005, a small fire occurred in the CRA taking out approximately one acre. The fire was quickly contained and no *Abutilon* were damaged. A meeting was held with the Waipahu/Ewa Fire Department at the CRA site to determine possible wildfire issues and to familiarize them with the site.

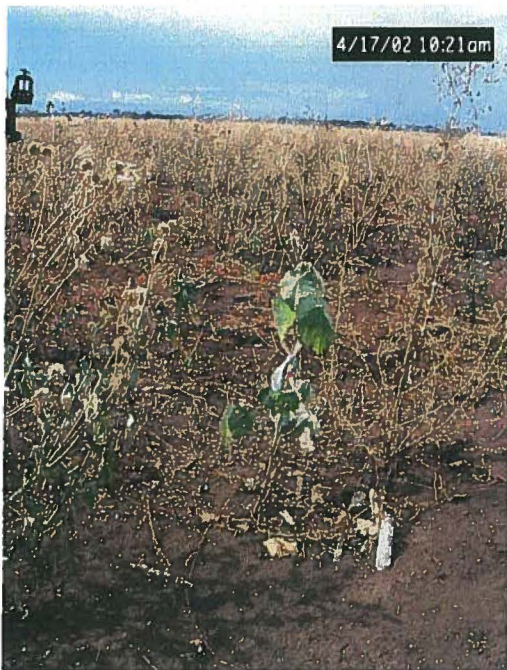


Figure 13. Kapolei Population, Apr. 2004



Figure 14. Contingency Reserve Area Fencing, May 2006

H. Kealia Experimental Sites (2003)

In 2003, there were approximately twenty-five plants at two sites located near the top of Kealia Trail. There are currently 18 plants at this site. This site has proven to be unfeasible because of weeds and adequate space and will not be used as a population site. This site will not be discussed in future annual reports.

III. Greenhouse

A. Construction

The greenhouse established for *Abutilon menziesii* is located near the base of the Kealia Trail head, just behind the western end of Dillingham Airstrip in Mokuleia. The initial structure was completed in December 2002. All work on this structure was done in-house mainly by the DLNR horticulturist, Greg Mansker. Installation of the water and electrical systems was completed in 2003. The greenhouse is 130 feet long by 40 feet wide by 12 feet tall. It is divided into an upper and a lower section along the entire length and has gravel floor. The site contain two separate Matson container type storage facilities, one is used as office space. The site also contains an additional raised 8-foot by 32 foot storage facility was completed inside the greenhouse structure. The storage building is built with framed enclosed walls on 3 sides, with a portion on one side remaining open for easy access. In addition to the storage area, at one end of the building a 6-foot by 10 foot covered (roofed) open walled work area was constructed. The open walled work area will provide an escape from the sun and rain when work needs to be done. The building is being utilized for the storage of growing/potting supplies. The close proximity of the potting supply storage area to the mixing and potting area is ideal and will minimize the time spent moving heavy and bulky materials. It should be noted that the above mentioned storage area was built over a sloped area which otherwise would have been unusable greenhouse space. This area was recaptured using creative and thoughtful construction means.

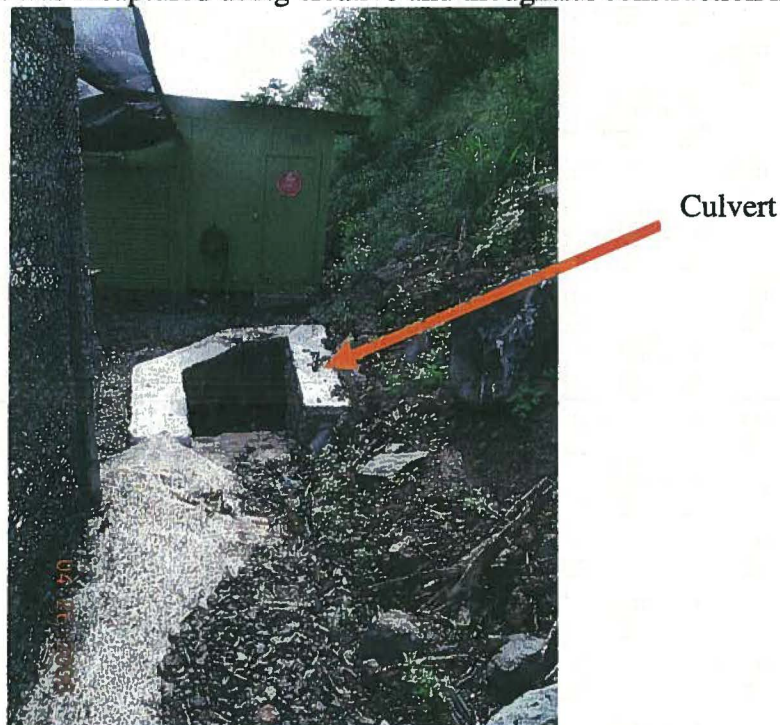


Figure 15. Nursery Drainage Culvert

During 2005-2006, a drainage culvert was installed to drain the water away from the nursery and building and across the road to prevent erosion. Signs were installed alerting the public that the area is off limits to public access. This year, building maintenance, such as repainting and weeding, was also completed.

B. Propagation

2004 marked the point in time in which the Mokuleia nursery moved beyond the propagation of just a single species. Propagation of select rare coastal species, including *Sesbania tomentosa* and *Lipochaeta remyi*, is currently under way. Two hundred and fifty seven *Sesbania tomentosa* were propagated and outplanted at Kaena Point. An additional 67 plants were propagated and outplanted on the Kaohikaipu islet. A goal for 2006-2007 is collection of *Lipochaeta remyi* and direct seeding trials around the Kealia area.

Another goal for 2006-2007 is to continue to collect and propagate *Abutilon menziesii* plants found at the outplanting sites and/or the wild population at Kapolei that were not represented with stock on hand at the Mokuleia nursery. In other words, filling in the gaps between plants on hand at the nursery and plants in the field, which are not represented in the nursery stock. These gaps are due to the time needed for the construction of the Mokuleia nursery, during which there was no propagation of plants. This was due to the lack of facilities to grow and care for them and the time that was needed to complete the greenhouse and the HCP.

C. Issues to be Resolved

The lack of a restroom facility needs to be resolved. A phone line for computer access needs to be installed. An air conditioning unit needs to be purchased for the office container.

IV. Miscellaneous Achievements

Roy Kam at Hawaii Heritage Program was contacted to discuss development of a tracking database to be used to track the status of the plants at the different outplanting sites. Roy estimated that it would be completed in 2007.

This year, work began to get a vehicle barrier installed at Kaena Point to help protect the dunes located outside the Natural Area Reserve. Work so far has included working with the State Parks to get their support of the project, dealing with possible effects to archeological resources, and applying for funding for the project. Rocks were acquired in 2005 and stacked outside the entrance to the State Park. The funding will be used to secure vehicles to move the rocks into place around the dunes. Once the barrier is in place, the area will be used for rare plant reintroduction.

V. Summary

Table 1. Status of *Abutilon menzeisii* populations

	Kaena Point	Honouliuli Reserve	Ka Iwi	Ewa Villages	Diamond Head	Total
Mature	32	57	15	57	106	267
% Genetic Representation (Original Kapolei Plants)	37%	64%	19%	49%	83%	94%
% Genetic Representation (New Kapolei Plants)	0	35%	5%	54%	62%	76%
Seedling (Transplanted from Kapolei)	0	18	0	0	9	27
Seedlings 2004 (Natural Regeneration)	0	0	N/A	N/A	N/A	0
Seedlings 2005 (Natural Regeneration)	0	0	N/A	N/A	N/A	0
Seedlings 2006 (Natural Regeneration)	0	1	N/A	N/A	0	1
Survival of Seedlings (6 mon.-1 yr.)	2	1	N/A	N/A	N/A	3

A. Accomplishments for 2005-2006

- Interagency agreement completed for use of Ka Iwi State Park
- Started the Ka Iwi population
- Completed the Ewa Villages population
- Monitored Kaena Point
- Air Layers collected from Koko Head and Kapolei plants
- Honouliuli population expanded by 10 plants
- Monitoring forms completed for all plants at Ewa Villages and Ka Iwi populations
- Helped Department of Transportation with Contingency Reserve Area (CRA)
- Installed no trespassing signs at the nursery site
- Installed drainage culvert at the nursery
- Continued collecting and propagating of other rare coastal species in the greenhouse
- Met with Roy Kam to discuss creating a database
- Completed monitoring forms for Kaena Point
- Established better communication with Koko Crater Botanical Garden
- Working with State Parks to ensure vehicle barrier at Kaena Point does not effect cultural resources
- Working on getting funding from the USFWS for the Kaena Point Coastal Restoration project, including the vehicle barrier
- Cleared an area of kiawe around the wild *Capparis* at Kaena Point
- Outplanted 257 *Sesbania tomentosa* at Kaena Point with the help of volunteers and other agencies
- Outplanted 67 *Sesbania tomentosa* on Kaohikaipu islet
- Helped Army determine *Sesbania* status for USFWS
- Worked with Army Environmental Staff at Lyon Seed Lab to research possible germination issues for *Abutilon*

B. Goals for 2006-2007

- Establish a phone line, restroom, and purchase an air conditioning unit for the greenhouse
- Complete the tracking database for the project
- Ensure that at least one (as many as possible given space availability) of every Kapolei plant is represented at least one of the outplanting sites
- Fully represent the Kapolei plants in the Diamond Head and Honouliuli populations
- Continue to monitor and maintain the plants at all sites
- Continue to survey for and collect from rare coastal species
- Continue to outplant rare coastal species within the *Abutilon* populations
- Complete the vehicle barrier at Kaena Point and secure funding from USFWS or other source
- Establish an additional outplanting site (location unknown at this time)
- Determine what is causing germination issues for *Abutilon* in the field