

State of Hawaii  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
Division of Forestry and Wildlife (DOFAW)  
Honolulu, Hawaii 96813

October 23 and 24, 2014

Endangered Species Recovery Committee  
State of Hawaii  
Honolulu, Hawaii

Committee Members:

**SUBJECT:** Request for comments from the Endangered Species Recovery Committee on mitigation and success targets outlined in the Habitat Conservation Plan for *Abutilon menzeisii* at Kapolei, Island of O‘ahu

**BACKGROUND**

On April 8, 2004 the Board of Land and Natural Resources approved the Incidental Take License (ITL) and Habitat Conservation Plan for *Abutilon menziesii* (HCP) at Kapolei, O‘ahu to the Hawai‘i Department of Transportation (DOT). The DOT project under the HCP included the development of a 1,300-acre East Kapolei Master Plan project and construction of the North-South Road arterial highway planned to bisect the 1,300-acre property. The project area contained the endangered plant species *Abutilon menziesii* and take coverage for all plant individuals of *A. menziesii* within the 1,381-acre project area was approved per conditions described in the HCP and ITL.

The HCP outlines a strategy to maintain genetic representation of the original on-site population and to establish three new populations in protected areas on O‘ahu. Additionally, an 18-acre Contingency Reserve Area (CRA) was identified on the project site to be undisturbed until at least one of the three outplanting sites meets established short-term success criteria described in the HCP.

Measurable success criteria for the three new populations are clearly described in the HCP and include short-term, long-term, and overall success criteria of the mitigation actions. The short-term success criteria include that at least 25% of the full complement of lineages outplanted in a population must survive for two years without irrigation and that during the first five years recruitment of seedlings that survive through the dry season and seed production by at least 25% of the full complement of outplanted lineages without irrigation must be observed.

The long-term success criteria include that over a five-year period in the absence of irrigation at least 80 reproducing adult plants shall be present in each population and that the number of seedlings recruiting into the mature age class must be greater than the mortality rate of existing adult plants. If the long-term success criteria are met, the overall success will be met if there are more than 120 reproducing adult plants present as a site at the end of a five year period (including at least 40 plants recruited from the seed bank on site). Then no additional management action will be required for that site and only monitoring needs to be continued over the next five year period.

The Division of Forestry and Wildlife (DOFAW) is working to implement mitigation measures outlined in the HCP. To date Populations of *A. menziesii* have been successfully established at the following sites: 1) Diamond Head State Park; 2) Koko Crater Botanical Garden; 3) Honouliuli Refuge part of the U.S. Fish and Wildlife Service (USFWS) O'ahu National Wildlife Refuge Complex; 4) Pouhala Marsh on City and County property in Waipahu; and 5) Ewa Villages Golf Course in close proximity to the project site. From an original founder population of 93 plants on the project site in 2002, outplanting efforts have resulted in establishment of 348 mature *A. menziesii* plant individuals throughout the five off-site mitigation areas and an additional 64 mature *A. menziesii* plant individuals on the on-site contingency reserve area. Current monitoring data indicate that a total of 41 seedlings from outplanted individuals have survived beyond four years.

Although important progress has been made, significant set-backs and challenges have occurred since the implementation of the mitigation under the HCP. These include:

- Lack of suitable habitat for Department of Land and Natural Resources/State use for Abutilon population establishment;
- Minimal interest and cooperation from private landowners;
- Most suitable habitat is managed by the Navy and currently not willing to partner;
- Plant is not a generalist as once assumed, it has specific soil requirements (deep, fertile, lowland soils, preferably alluvial); Land classification for the best/most suitable habitat is often Agriculture, further limiting the options for new population establishment.
- Fire destroyed one of the first established new Abutilon populations at Kaena Point;
- There are increased stressors on the plants due to the highly altered state of their suitable habitat (i.e. previously cultivated or urban);
- Highly altered state of the habitat makes management of new populations labor intensive, requiring regular weeding and outplanting/growing of common native plants;
- Plants have low seed germination rates due to an unknown cause. The germination is highly variable, even in a good year; and
- A non-native insect has been selectively targeting Abutilon seeds.

## ANALYSIS

The short-term and long-term goals under the HCP are included in Table 13 and measurable success criteria and goals under Table 14 of the HCP are the following:

	Goals
Short-Term Goals	<ol style="list-style-type: none"><li>1) Propagate the full complement of lineages of the in situ Kapolei population of <i>Abutilon menziesii</i>.</li><li>2) Establish a cultivated repository of the full complement of lineages of Kapolei <i>A. menziesii</i> at Koko Crater Botanical Garden.</li><li>3) Establish two test outplantings of <i>A. menziesii</i> at appropriate sites.</li><li>4) Represent the full complement of lineages of the in situ Kapolei population at all sites.</li><li>5) Establish and maintain an 18-acre contingency reserve area within the Kapolei population until the short-term success criteria are met at one wild outplant site.</li></ol>
Long-Term Goals	<ol style="list-style-type: none"><li>1) Maintain three new stable wild populations of <i>A. menziesii</i> by out-planting at several (more than three) appropriate sites.</li><li>2) For each wild population maintain an effective population of 120 flowering and seed producing plants (minimum of 100 mature individuals) over the term of the HCP. This number will assure an approximate 75 to 100 percent increase of the original population in each location and is five times that recommended by the Hawaii and Pacific Plants Recovery Coordinating Committee (as cited in USFWS 1998).</li><li>3) Monitoring of the outplanted populations will be conducted to determine progress toward attaining population stability.</li></ol>

	Success criteria
Measurable Short-Term success criteria	<p>1) At least 25% of the full complement of lineages outplanted in a population must survive for 2 years after irrigation is ceased.</p> <p>2) During the first 5 years after each wild population is established there must be (a) recruitment of seedlings that survive through the dry season. and. (b) seed production by at least 25 % of the full complement of outplanted</p>
Measurable Long-Term Success Criteria	<p>1) At least 80 reproducing adult plants will be present in each population, averaged over a five-year period after irrigation is ceased.</p> <p>2) The number of seedlings recruiting into the mature age class must be greater than the mortality rate of existing adult plants, averaged over a five-year period after irrigation is ceased.</p>
Overall Success Criteria	<p>If both Long-Term Success Criteria are met and there are more than 120 reproducing adult plants present at the end of a 5-year period at a site (including at least 40 plants recruited from the seed bank on site) then no additional management action will be required for that site as part of the HCP and only monitoring need continue over the following 5-year period.</p>

DOFAW wants to ensure that success of mitigation and recovery of *A. menziesii* occurs on the island of O'ahu. Due to the significant challenges mentioned above, DOFAW would like to consider incorporating three additional out-planting sites in addition to the three required under the HCP and consider amending the long-term goals and measurable long-term success criteria.

The following (underlined) are proposed changes to the long-term goals item 1 and 2:

1) Maintain six new stable wild populations of 50 mature individuals each of *A. menziesii* by out-planting at appropriate sites.

2) For each of the six wild populations, maintain an effective population number of 50 mature, flowering and seed producing plants over the term of the HCP. This number is twice the number of individuals recommended per population for stabilization of the species in the 1995 USFWS Recovery Plan for the Lanai Plant Cluster. Also, Oahu Army Natural Resources Program (OANRP) often uses the stabilization goal of three populations of 50 mature, reproducing plants per population for long-lived perennials such as the *Gardenia manii*. OANRP also manages *Abutilon sandwicense* and has set their stabilization goal as 4 populations of 50 reproducing plants for that species.



The following (underlined) are proposed changes to measurable long-term success criteria item 1:

1) At least 50 reproducing adult plants will be present in each of six populations, averaged over a five-year period after irrigation is ceased.

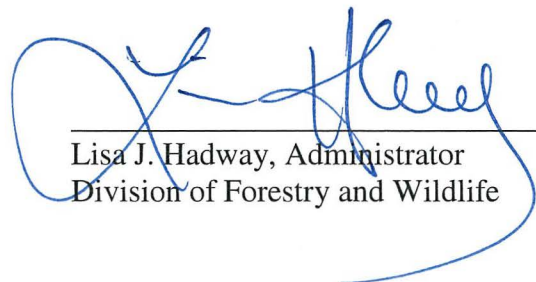
With the additional populations sites, DOFAW believes that the genetic representation of all plants at the project site will be preserved and additional populations will provide further assurances that the species will persist on O'ahu.

DOFAW is currently in discussion and working with the Department of Transportation (DOT), license holder, regarding the proposed changes mentioned above.

#### RECOMMENDATION

That the ESRC provide comments on the abovementioned proposed changes to the existing *A. menziesii* HCP to include new success criteria that still meet the required net benefit criteria under HRS Chapter 195D-4.

Respectfully Submitted,



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Lisa J. Hadway, Administrator  
Division of Forestry and Wildlife