

State of Hawai'i
DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Forestry and Wildlife
Honolulu, Hawaii 96813

September 14, 2017 ESRC Meeting

Endangered Species Recovery Committee
State of Hawai'i
Honolulu, Hawai'i

Committee Members:

SUBJECT: REQUEST FOR COMMENTS ON THE REVISED DRAFT NORTH KONA GAME MANAGEMENT HABITAT CONSERVATION PLAN (RETITLED: GAME MANAGEMENT AT PU'U WA'AWA'A AND PU'U ANAHULU, NĀPU'U CONSERVATION PROJECT), ISLAND OF HAWAII

BACKGROUND:

The Department of Land and Natural Resources (DLNR) Division of Forestry and Wildlife (DOFAW) has developed this Habitat Conservation Plan (HCP) to address the potential impacts from DOFAW's game mammal management activities on endangered species within the Pu'u Wa'awa'a and Pu 'u Anahulu areas (Plan Area is 103,988 acres). The August 2017 draft HCP includes revisions from the previous draft plan which the ESRC reviewed and provided recommendations during the March 2015 ESRC meeting. The primary change in the August 2017 HCP is the inclusion of game mammal population augmentation as part of the game enhancement actions for the Plan Area and additional monitoring to be conducted to evaluate the game management program.

Current land management in the Pu'u Anahulu Game Management Area is primarily for maintenance of non-native game mammal populations for hunting, in addition to conservation of native habitat. Pu'u Wa'awa'a Forest Reserve is a multi-use area where management includes game population maintenance for hunting, natural resource conservation and restoration, and other activities including hiking for the general public.

Covered Species likely to be impacted by Plan activities were identified through consideration of previous botanical and wildlife surveys, as well as on-the-ground botanical and wildlife surveys performed as part of the HCP planning process. These species include one endangered insect, Blackburn's sphinx moth (*Manduca blackburni*), and 15 threatened or endangered plants, collectively the Covered Species.

Impacts to Blackburn's sphinx moth are possible from removal of non-native tree tobacco (*Nicotiana glauca*) from fuelbreaks to allow access for management and hunting activities. Clearing of fuelbreaks and roads is critical for overall fire suppression.

Potential negative impacts on plant Covered Species are primarily in the form of direct take from grazing, browsing, and trampling associated with the proposed management of game mammals in the Plan Area, including game mammal population enhancement activities and installation and maintenance of infrastructure and fuel breaks. All these activities may result in trampling, browsing, or grazing impacts on the plant Covered Species. For purposes of this HCP all Covered Plant species located outside of fenced units proposed for avoidance and minimization and mitigation are considered subject to take due to game mammal management actions. A model was developed to estimate the density of individuals of each covered plant species within the Plan Area. These estimates are used to quantify the level of take anticipated for the covered plant species over the course of the HCP.

INCIDENTAL TAKE AND MITIGATION PROPOSED:

The HCP describes the incidental take of 15 threatened or endangered plants and one endangered insect, Blackburn's sphinx moth (*Manduca blackburni*). The plan provides for avoidance and minimization measures, and mitigation which will provide net benefits to the species and environment, above any incidental take of protected species which may occur due to project actions.

Clearing tree tobacco from roads and fuel breaks will likely result in direct mortality of Blackburn's sphinx moth eggs and larvae as tree tobacco is cut down. Incidental take of the moth will be difficult to detect and cannot be accurately quantified but is estimated by the proportional loss of tree tobacco plants in the Plan Area which is calculated as 0.9 percent based on surveys. Applying this to the total estimated population in the Plan Area of 157,445 individuals results in a conservative take estimate of 1,417 larvae and unhatched eggs. Mitigation for this take is based on habitat, not numbers of individuals in accordance with the recommended USFWS ratio of 1 acre of restored habitat containing host and nectar plants for each 5 acres of degraded tree tobacco habitat. Applying the 5 to 1 ratio to 38.6 acres of tree tobacco determined to be present on roads and firebreaks within the Plan Area results in a mitigation requirement of 7.7 acres. The moth host plant 'Aiea is present or will be planted in at least 7 separate fenced exclosures that will also contain nectar plants for the species, far exceeding the required mitigation.

Mitigation of plant species takes is proposed through fencing of specific plant exclosure units to preserve remnant plant habitat and individuals (avoidance and minimization) and mitigation restoration within those units to include new plantings of the Covered Species (summarized in Table 1). Currently, 4,181 acres (4% of the Plan Area) are fenced within eleven exclosures across the Plan Area, and additional 4,757 acres (4.5% of Plan Area) are proposed for fencing under this HCP.

Table 1. Summary of Covered Species, avoidance and minimization measures, take estimates, mitigation goals, and net benefit goals.

Species	Fenced Indiv.	Take Est.	Mitigation Goal	Net Benefit Goal	Total Mitigation Target¹
<i>Asplenium peruvianum</i>	45	19	3 populations, 50 plants each	1 population of 50 plants	250 plants
<i>Chrysodracon hawaiiensis</i> (Hala pepe)	235	331	3 populations totaling take estimate	1 population of 25 plants	381 plants
<i>Colubrina oppositifolia</i> (Kauila)	692	805	3 populations totaling take estimate	1 population of 25 plants	855 plants
<i>Haplostachys haplostachya</i> (Honohono)	80	796	3 populations totaling take estimate	1 population of 50 plants	896 plants
<i>Hibiscus brackenridgei</i> (Ma‘o Hau hele)	65	59	3 populations, 50 plants each	1 population of 50 plants	250 plants
<i>Kokia drynarioides</i> (Koki‘o)	4	1	3 populations, 100 plants each	1 population of 100 plants	500 plants
<i>Mezoneuron kavaense</i> (uhiuhi)	11	144	3 populations totaling take estimate	1 population of 50 plants	244 plants
<i>Neraudia ovata</i>	8	29	3 populations, 100 plants each	1 population of 100 plants	500 plants
<i>Nothocestrum breviflorum</i> (‘Aiea)	123	265	3 populations totaling take estimate	1 population of 50 plants	365 plants
<i>Portulaca sclerocarpa</i> (Po‘e)	1	0	3 populations, 50 plants each	1 population of 50 plants	250 plants
<i>Silene lanceolate</i> (Hawaiian Catchfly)	30	1812	3 populations totaling take estimate	1 population of 50 plants	1,912 plants
<i>Solanum incompletum</i> (Popolo kii mai)	14	87	3 populations, 100 plants each	1 population of 100 plants	500 plants
<i>Stenogyne angustifolia</i>	58	325	3 populations totaling take estimate	1 population of 50 plants	425 plants
<i>Zanthoxylum dipetalum</i> var. <i>tomentosum</i> (A‘e)	5	19	3 populations, 50 plants each	1 population of 50 plants	250 plants

¹ Includes recruitment loss mitigation for those individuals outside of exclosures equal to the net benefit goal.

Species	Fenced Indiv.	Take Est.	Mitigation Goal	Net Benefit Goal	Total Mitigation Target ¹
<i>Zanthoxylum hawaiiense</i> (A'e)	169	218	3 populations take estimate	1 population of 50 plants	318 plants

RECOMMENDATION:

That the ESRC provide comments on the August 2017 Draft HCP for Game Management at Pu'u Wa'awa'a and Pu'u Anahulu, Nāpu'u Conservation Project.

Respectfully Submitted,



David G. Smith, Administrator
Division of Forestry and Wildlife

Attachment 1: August 2017 Draft HCP for Game Management at Pu'u Wa'awa'a and Pu'u Anahulu, Nāpu'u Conservation Project