

Proposal for Contingency Measures for the Round-Leaved Chaff Flower (*Achyranthes splendens* var. *rotundata*) Habitat Conservation Plan for the Kenai Industrial Park Project

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INTRODUCTION

In 2013, a Habitat Conservation Plan (HCP) was developed in compliance with Chapter 195D (Sections 4 and 21) of the Hawai'i Revised Statutes and approved by the Board of Land and Natural Resources of the Department of Land and Natural Resources (DLNR) that year.¹ The HCP aimed to address the incidental take of three federally and state-endangered round-leaved chaff flower (*Achyranthes splendens* var. *rotundata*) plants and their associated seed bank at a 0.75-acre industrially zoned development site within the otherwise fully built out Kenai Industrial Park (KIP) in Kapolei, O'ahu (TMK 9-1-074:023).²

To mitigate the effects of the proposed development on round-leaved chaff flower plants, then then-owner of the parcel, CIRI Land Development Company³ proposed to 1) maintain genetic representation of the impacted plants by growing cuttings and seeds in nurseries for outplanting efforts and placing seeds in a seed storage facility (Lyon Arboretum); and 2) establish new wild populations within protected suitable habitat at Pearl Harbor National Wildlife Refuge Kalaeloa Unit (NWR).

To ensure an overall net benefit for the species, Section 6.7 of the HCP included contingency measures in case the success measures outlined in Section 6.6 of the plan were not achieved by Year 5. Under these contingency measures, AKC would be responsible for identifying an additional recipient mitigation site, either within the NWR or at an alternative location. The HCP identifies the Kalaeloa Heritage Park (KHP), a 77-acre biocultural restoration site in Kapolei, as a potential alternative site for contingency purposes for the round-leaved chaff flower outplanting. According to the HCP, "All contingency measures would be submitted to DLNR for approval prior to implementation." HCP at p. 30.

DLNR—Division of Forestry and Wildlife (DLNR-DOFAW) has confirmed that the work done at the NWR as of December 2021 has provided overall benefits to the species. However, AKC and DLNR- DOFAW have a difference of opinion as to whether and to what extent the applicable success criteria in Section 6.6 of the HCP, as revised by DOFAW, have been met.

¹ SWCA Environmental Consultants (SWCA). 2013. *Round-Leaved Chaff Flower (Achyranthes splendens var. rotundata) Habitat Conservation Plan, Kenai Industrial Park Project*. Available at: <https://dlnr.hawaii.gov/wildlife/files/2013/10/FINAL-KIP-HCP-SWCA-11202013.pdf>. Accessed May 2024.

² Although the HCP and associated ITL authorized take of three plants, only two plants were in existence at the time of the take in 2014.

³ AKC Leasing Corporation acquired the KIP parcel from CLDC in September 2014.

In furtherance of benefiting the species, this report serves as a retroactive formal submittal of AKC's contingency measures; the location of the site; the specific contingency measures proposed and the outplanting, monitoring, and maintenance activities.

CONTINGENCY SITE DETAILS

Located at 91-1940 Coral Sea Road in Kapolei, the 11-acre KHP is managed by the Kalaeloa Heritage and Legacy Foundation (KHLF). The KHLF was awarded a 40-year lease for the property in December 2015, which is owned by the State of Hawaii and overseen by the Hawai'i Community Development Authority. The KHLF is a 501(c)(3) Native Hawaiian organization whose mission is to foster stewardship and preservation of the Native Hawaiian cultural sites at the park, maintain the cultural landscape of Kalaeloa, and educate the community about cultural traditions and practices. To facilitate awareness of Hawaiian culture, the foundation regularly undertakes community volunteer and education events that include site maintenance and ecological restoration.

The site is situated on the 'Ewa Plains, a unique geological formation consisting of raised coralline reefs and associated eolian deposits (wind-dispersed sand dunes). Over millennia, the slightly acidic rainfall has dissolved parts of the plains, resulting in the formation of notable sinkholes. The heritage park, situated in this unique landscape, experiences a climate characterized by an extended dry season and a brief wet season. Rainfall is relatively low, with an average annual precipitation of 540 millimeters, which primarily occurs during the wet season.

Prior to the commencement of ecological restoration efforts at the KHP, the area in which active restoration activities are being implemented contained mature kiawe (*Prosopis pallida*) forest with an understory dominated by koa haole (*Leucaena leucocephala*) and buffelgrass (*Cenchrus ciliaris*). In contrast, the majority of unmanaged areas throughout the property still contain kiawe forest.

PROPOSED CONTINGENCY MEASURES

Following consultations with DLNR-DOFAW and the KHLF, AKC proposed to plant approximately 100 round leaved chaff flower plants at the KHP. These plants were sourced from clonal material from the original plants at the KIP industrial site. AKC preserved these cuttings as a contingency measure to meet the HCP requirements.

The timeline for the cultivation and eventual outplanting at KHP will be driven by the status of the plants that that were cultivated at Native Ecosystem Services' (NES) nursery, the issuance of necessary permits to transfer the plant, the availability of the DLNR-DOFAW nurseries to safely store those plants until the appropriate time for outplanting, and the determination of the status of the soil moisture levels at KHP for the purposes of receiving the outplantings. The timeline for the implementation of the contingency measure will run for approximately one year from the date of the outplanting at KHP.

Outplanting

AKC will have approximately 100 round-leaved chaff flower plants out planted at the KHP. The plants will be those propagated by Native Ecosystems Services LLC. This propagation material was originally sourced from the two surviving plants at the KIP site when AKC acquired the property in 2014. This carefully maintained lineage enhances the preservation and continuation of the original native plant population.

The plants will be planted at sites within KHP that will provide easy access, thereby facilitating future maintenance and monitoring efforts. (Figure 1).

The plants will be watered immediately after planting, and the precise location of each plant will be recorded using GPS technology.

Maintenance

Throughout the HCP contingency measure period, KHP custodians will water the plants every 3 to 4 days, ensuring they received adequate water for optimal growth. Weeding around the plantings will be done as needed to prevent the encroachment of invasive species and to promote a healthy environment for the plants. Similarly, additional mulch will be applied around the plantings to help retain moisture and suppress weed growth as needed.

For the 12 month contingency period, SWCA ecologists will be available to provide guidance and expertise to KHP custodians and volunteers regarding plant maintenance by offering support and advice as needed to facilitate the success of the planting initiative.

Monitoring

AKC will undertake an inventory of the plants at the time of planting and again approximately four months after the planting date. AKC will undertake a final monitoring visit within approximately 12 months from the initial planting date.

In addition, KHP custodians are expected to perform informal monitoring throughout the 12-month contingency period to ensure the ongoing health and well-being of the plants. SWCA ecologists will be available during the 12-month contingency period to provide guidance and expertise to KHP custodians and volunteers regarding the monitoring of the plants.



Figure 1. The general planting area for the round-leaved chaff flower plants at Kalaeloa Heritage Park.

LONG-TERM MAINTENANCE

Considering the organizational purpose of KHLF (a Native Hawaiian organization whose mission is to foster stewardship and preservation of the Native Hawaiian cultural sites at the KHP, maintain the cultural landscape of Kalaeloa, and educate the community about cultural traditions and practices), it is expected that KHP custodians and volunteers will provide continued maintenance of the plants at the KHP beyond the 12-month contingency measure period. Based upon current practices at KHP, this care may include watering, weeding to prevent the encroachment of invasive species, and periodic monitoring to assess plant health and survival. It is also expected that KHLF would be required to obtain from DLNR-DOFAW a Natural Area Reserve, Rare Plant, and Native Invertebrate Research Permit.

CONCLUSIONS

This report summarizes the proposed actions to be taken to fulfill the contingency measures outlined in Section 6.7 of the *Round-Leaved Chaff Flower Habitat Conservation Plan, Kenai Industrial Park Project*. The primary focus of the contingency measures is the planting of approximately 100 round-leaved chaff flower plants at the KHP. The planting will be followed by a 12-month maintenance and monitoring period.

Thanks to the ongoing commitment of KHP volunteers, this outplanting initiative holds the potential to become the largest round-leaved chaff flower restoration site in the state. By preserving the genetic diversity of the original plants found at the KIP, this site could serve as a valuable source of propagation material for future conservation projects, ensuring the continued survival of this unique species. Moreover, the site's educational value for KHP visitors will further raise awareness of the importance of round-leaved chaff flower conservation.