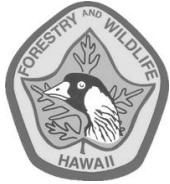


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December 2, 2021

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*Log no. 3454*

The Department of Land and Natural Resources (DLNR), Division of Forestry and Wildlife (DOFAW) has reviewed the 2021 Fiscal Year Annual Report (dated September 15, 2021) for the Kenai Industrial Park (KIP) Habitat Conservation Plan (HCP). On September 27, 2021, DOFAW staff also paid a visit to the KIP mitigation site for *Achyranthes splendens* var. *rotundata* (referred to simply as *Achyranthes* in this letter) located at the Kalaeloa Unit of the Pearl Harbor National Wildlife Refuge (NWR). Participating staff included the State HCP Coordinator and Associate and both the Hawai'i State and O'ahu botanists.

Based on information presented in the annual report and observations made during the site visit DOFAW feels that the work done at the mitigation site to date has provided overall benefits to the species by 1) preserving a unique population of *Achyranthes* from the KIP project site in seed storage collections held at the Lyon Arboretum; 2) establishing plants (64 progeny) at the NWR; and 3) providing detailed reports on the efficacy of the methods used to date. Ultimately, however, not all measurable mitigation criteria set forth in the project HCP have been met. DOFAW's assessment is specifically detailed as follows.

**Criterion #1:** "Outplanted individual survivorship."

- DOFAW staff supported removing this criterion because it set unrealistic goals for survival of the outplants. We felt, for instance, that transplant shock and other factors that are beyond the control of the license holder were not truly accounted for with this criterion. As documented, the SWCA outplantings at the NWR did not survive as long as expected, potentially due to impacts of alien invertebrate pests. We feel that the KIP FY 2021 Annual Report, however, seriously misrepresents DOFAW's guidance as we did not agree to remove this criterion owing to a re-evaluation of the lifespan of *Achyranthes*. Plants grown from the same KIP stock by other permitted projects have reported plants that have persisted longer than five years at their outplanting sites, and wild *Achyranthes* have been observed to survive for at least ten years.

**Criterion #2:** “There must be a) recruitment of seedlings that survive through the dry season, in absence of any supplemental watering; and b) seed production by at least 25% of the outplanted lineages by Year 5.”

- Although the annual report states that this criterion has been met, DOFAW does not agree. Both outplants and seedling were watered through the summer of 2021 and were observed still being watered during the site visit by DOFAW staff on September 27<sup>th</sup>. The license holder and / or project staff additionally failed to track the provenance of the plants grown or outplanted for this project. Although all the outplanted *Achyranthes* were observed to flower and produce fruit, plants were not tagged and tracked, and it is therefore impossible for DOFAW to determine or confirm which outplants represent the KIP lineage. The plants currently held by the project contractor are from unknown lineages. As a result, and because of supplemental watering through the dry season, this criterion has not been met.

**Criterion #3:** “The number of seedlings recruited into the mature age class must be greater than the mortality rate of existing adult plants over a five-year period, with a minimum recruitment (replacement) of 25% of the number of outplanted individuals over a five-year period.”

- This criterion is not met and is not well described in the KIP FY 2021 report. A total of 159 *Achyranthes* were planted in four plots by December of 2014. Only 64 *Achyranthes* currently occur at the NWR, none of which are those originally planted in 2014, and not all of which are mature. The mortality rate of adult plants, therefore, has exceeded recruitment of new individuals, resulting in fewer remaining *Achyranthes* than were in the founding population.

**Criterion #4:** “No fewer than 120 mature plants, which will include plants recruited from the planted lineages, will be established by Year 5.”

- This criterion is not met. DOFAW feels that the plants added to the mitigation site in 2021 should not be counted towards the total as they have not yet reached the age to be established and survive without supplemental watering.

In terms of overall project management, the 60 plants installed at the NWR in the summer of 2020 were not watered and did not survive. This was a preventable occurrence and does not comply with best management practices for outplanting Endangered plant species. SWCA staff reported there was little or no communication with their subcontractor (Matt Schirman, Hui ku maoli ola) about watering the plants and no follow-up monitoring was done to catch the mistake (i.e., lack of watering) in time. DOFAW staff met with SWCA in 2019, who were specifically asked to plant only in the wet season; this, however, was not done in either 2020 or 2021.

Lack of adequate plant care is reported as the cause of early plant death in several of the past project permit reports. Insufficient pest control and competition with invasive alien plants also tend to be noted as factors in the low survival rate of outplants and seedlings. DOFAW feels that if these tasks had been done in a timely manner, the *Achyranthes* plants at the NWR would have lived long enough to contribute additional seeds to the new population. As stated above, wild *Achyranthes* and other out-plantings done with the species in the same region have been reported to survive for longer than five years.

If you have any questions, please contact Paul Radley, Protected Species Habitat Conservation Planning Coordinator at (808) 295-1123 or [paul.m.radley@hawaii.gov](mailto:paul.m.radley@hawaii.gov).

Sincerely,



DAVID G. SMITH  
Administrator

cc: SWCA Consultants, Attention Jaap Eijzenga [jeijzenga@swca.com](mailto:jeijzenga@swca.com)