FINAL

IMPLEMENTATION PLAN

MAKUA MILITARY RESERVATION
ISLAND OF OAHU

SECTION 1: BACKGROUND AND METHODOLOGY

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Executive Summary

This document was prepared to guide conservation efforts that will result in the stabilization of 27 endangered plant taxa and an endangered species of Hawaiian tree snail that could be affected by military training activities at Makua Military Reservation (MMR) in Hawaii. In 1998, the U.S. Army (Army) initiated formal consultation under section 7 of the Endangered Species Act (16 U.S.C. 1531 et seq.) with the U.S. Fish and Wildlife Service (USFWS) to determine if routine military training at MMR would jeopardize the continued existence of 41 endangered species. The Army is responsible for maintaining stability of each of these taxa, applying additional management specified in this plan, to those taxa below stability. The consultation used an action area (AA) (area potentially affected by military training) that extended beyond the boundaries of MMR and was based on vegetation types, fire history, natural and human-made barriers, and a consensus of where fire could be stopped by State, Federal, and Army fire-fighting resources. Taxa for which either a significant portion of the populations occur within the AA or for which no populations are stable, hereafter referred to as target taxa, were addressed in the Army’s proposed action of military training and conservation measures in such a way as to avoid jeopardy.

In 1999, the USFWS issued a biological opinion (BO) concluding that the routine military training and the conservation measures identified by the Army in its Biological Assessment (BA) would not jeopardize the endangered species found within the AA. The conclusion of no jeopardy was based on certain restrictions to military training, preparation and implementation of a wildland fire management plan, implementation of management actions identified in the BA for the 13 endangered species at stability and minimally impacted by Army training, and preparation and implementation of a plan (Implementation Plan) for the additional 27 plant target taxa and one snail target taxon. The Implementation Plan (IP) would identify additional management actions beyond those the Army was already implementing or agreed to implement in the BA to stabilize the 28 target taxa. During the preparation of the IP, the Army decided on additional restrictions to routine military training, four additional taxa were found within the AA, additional populations outside the AA were found for one taxon, and the Federal status of another taxon changed. The Army reinitiated consultation and the USFWS provided a supplement to the BO which determined that the additional four taxa will not be jeopardized by Army training, resulting in a final number of 28 target taxa. When stabilization of all of the target taxa is achieved, restrictions to routine military training may possibly be eliminated, following reinitiation of consultation with the USFWS. In addition, there are other conditions such as fires outside of the firebreak road, discovery of additional taxa, change in status of taxa, etc., which would trigger reinitiating consultation under section 7 of the Endangered Species Act.

To stabilize the target taxa, each taxon must be maintained with sufficient numbers of populations to ensure their long-term viability. Additionally, threats to the managed and reproducing individuals in each population must be controlled, and each taxon must be adequately represented in an ex situ (out of the wild) collection. Stabilization is only the first step toward eventual recovery of these endangered species. Recovery of these taxa is beyond the Army's responsibilities under the section 7 consultation process. Because the implementation of this kind of taxon stabilization effort has never before been attempted in Hawaii, the Army...
created an Implementation Team (IT) to assist the Army and its contractors in preparing the IP. The IT is comprised of biologists representing the Army, USFWS, State of Hawaii, Honolulu Board of Water Supply, The Nature Conservancy of Hawaii, Campbell Estate and endangered taxon or ecosystem experts (see Chapter 3: Implementation Team).

The Makua IP provides taxon background summaries describing the biology and current status of the target taxa, methodology and a conceptual framework for the required stabilization, the specific actions required to stabilize each taxon and the habitat they depend upon, and monitoring protocols to evaluate success of the management actions. The stabilization plan for each target taxon outlines specific actions, including threat abatement and reintroductions into appropriate, protected habitat. Threat abatement actions include control of feral ungulates, selected weeds, predators such as small mammals, insect pests, and diseases. In addition to taxon level management of target taxa in situ (in the wild), habitat level management, requiring a broader geographic scope and control of threats affecting ecosystem processes, is also included to support the development of stable populations of target taxa. Because of the widespread distribution of the target taxa and the need for maintaining ecosystem processes, 31 management units (MUs) are proposed in the Waianae and Koolau Mountains of Oahu and at sites on the island of Kauai, where the most important wild populations of the target taxa occur. These areas encompass the important habitat for in situ management and reintroduction efforts that will lead to the stabilization of the target taxa. The proposed MUs occur on Army, Navy, State of Hawaii, Honolulu Board of Water Supply, and private lands, and will require cooperation and memoranda of agreement with the landowners prior to initiation of management actions at these sites. This IP includes taxon actions and MU actions, as well as a timetable and budget for implementation.

The anticipated outcome of the IP is the implementation of management actions in populations and MUs to achieve stabilization of populations for each target taxon across its range. To assess the success of the stabilization actions, the monitoring program in this IP will allow for an assessment of both taxon and habitat status over time relative to achieving the IP goals. The IT will conduct an annual assessment of the results of the management actions through a review of the monitoring data to determine the Army’s progress toward achieving stabilization of the target taxa within a reasonable time frame. The assessment will also allow for modification of the IP strategies as needed using an adaptive management approach.

The timeline for this IP is projected over 33 years, during which time all of the management actions identified in the IP will be initiated, and in the process of implementation. There are three phases of implementation, each approximately 10 years in duration, which result in increasing levels of taxon and MU management over time. These phases are sequenced based on specific criteria of rarity and risk described in this document. All populations and MUs will be at full stabilization management by the third phase. The implementation of the IP is expected to cost an average of approximately $8,066,000 per year, for an estimated total of $269,551,000 over 33 years. This figure is subject to change depending on timing of implementation of actions. The complete implementation of the IP is estimated to require similar amounts of funding over at least the next 33 years, and then lower funding for maintaining stable populations of the target taxa for the duration of Army training in MMR.
The IP is subject to the availability of funds and nothing in this plan should be interpreted to violate the Anti-deficiency Act. The Army intends to fund the program through its operating funds each year. The IP requires the Army to continue as an active member of regional conservation efforts in support of stabilization of the target taxa and the habitats they depend on. By taking an active role to determine the best available practices and the highest priority threat management needs, the Army's conservation efforts will be in the forefront of species conservation in Hawaii. Successful implementation of the IP assures that the Army will be in compliance with Endangered Species Act and still accomplish its training mission.
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