



**National Park Service
US Department of the Interior**

**Haleakalā National Park
Hawai‘i**

**FINDING OF NO SIGNIFICANT IMPACT
Haleakalā National Park**

**Environmental Assessment for Pilot Release of ‘Alalā
(*Corvus hawaiiensis*) on East Maui, Hawai‘i**

Recommended:

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Date

Approved:

Regional Director, Interior Regions 8, 9, 10, and 12, National Park Service

Date

FINDING OF NO SIGNIFICANT IMPACT

1.1 INTRODUCTION

In compliance with the National Environmental Policy Act (NEPA), the U.S. Fish and Wildlife Service (USFWS) and State of Hawai‘i Department of Land and Natural Resources (DLNR), with the Haleakalā National Park (HALE) unit of the National Park Service (NPS) as a cooperating agency, prepared an Environmental Assessment (EA) to examine alternative actions and environmental impacts associated with the pilot release of ‘ālalā or Hawaiian crow (*Corvus hawaiiensis*) on east Maui. The purpose of the pilot project is to evaluate whether ‘ālalā will breed in wet forest on east Maui and have better survival and possible breeding success without ‘io or Hawaiian hawk (*Buteo solitarius*) predation on ‘ālalā. The ‘ālalā is endemic to Hawai‘i Island and is currently extinct in the wild. The three conservation translocation attempts of ‘ālalā conducted on Hawai‘i Island, in the 1990’s and two in the 2010’s, were unsuccessful due in part to predation on ‘ālalā by ‘io. Radiocarbon dating of crow subfossil remains indicate east Maui had the ‘ālalā or a similar species as late as the period of human occupation (James *et al.* 1987, entire). Because sightings of ‘io on Maui are extremely rare and ‘io do not breed on Maui (Banko 1980, entire), pilot release of ‘ālalā on east Maui will allow the opportunity to test if ‘ālalā are able to breed in the wild in absence of predation on ‘ālalā by ‘io. To prevent the extinction and assist with recovery of this corvid species, timely management action needs to be taken to reintroduce ‘ālalā into the wild. As of December 2023, conservation breeding facilities host a population of approximately 120 ‘ālalā.

The NPS has determined that the pilot release of ‘ālalā will have no significant impact on the human environment and is issuing this finding of no significant impact (FONSI). Although the EA was a cooperative federal and state compliance document satisfying both NEPA and Hawai‘i Environmental Protection Act (HEPA) regulations, this FONSI only analyzes the impacts that would occur to Federal trust resources and NPS lands. The Hawai‘i DLNR and USFWS will sign their own FONSI.

1.2 SELECTED ALTERNATIVE AND RATIONALE FOR DECISION

1.2.1 Selected Alternative

The USFWS and DLNR as joint lead agencies, and NPS as a cooperating agency, analyzed four alternatives in detail in the EA. Based on this analysis, “Alternative 3: Release of ‘Alalā to only Kīpahulu Forest Reserve on Maui,” was selected as the preferred alternative for implementation because it best meets the purpose of, and need for action, without causing significant impacts on Federal trust resources, NPS lands, and other conservation resources and the human environment. The selected alternative is described in detail in Chapter 2 of the EA.

Under the selected alternative, the agencies plan to release a cohort (group of released birds) of up to seven ‘ālalā at the Kīpahulu Forest Reserve (Kīpahulu FR) on east Maui, which is managed by Hawai‘i DLNR Division of Forestry and Wildlife (DOFAW). The Kīpahulu FR release site is located between Kaupō Gap and Kīpahulu Valley at approximately 1,400 m (4,600 ft) elevation on the southeast slope of Haleakalā Volcano and is immediately adjacent to Haleakalā National Park (HALE).

Project Methods

The Kīpahulu FR release site will receive a cohort of birds initially supported within an aviary. Kīpahulu FR will contain the release site, aviary, support camp, supplemental feeding, and predator control. The release aviary and feeding stations are approximately 0.3-0.5 miles from NPS lands. As the release site is not reasonably reached by ground transport, project activities will require helicopter support and some noise may travel into NPS lands. All project infrastructure and installations would be temporarily constructed for ‘alalā releases and would be removed at the end of the 5-year pilot project. All plans for release are to occur adjacent to and completely off of NPS lands.

If a pair of ‘alalā is found nesting on NPS lands, project personnel will request permission for temporary placement of a supplemental feeder in the vicinity of the nest for up to six months and will conduct predator control near the nest. ‘Alalā travelling into HALE may also need to be tracked, accessed, or recaptured if project personnel are concerned about the health of ‘alalā, impacts to threatened and endangered species, or negative interactions with the environment. The NPS will issue a permit for access to HALE for above described needs, yet access will only be necessary if ‘alalā travel or nest within the park.

Project Support

Daily monitoring of birds by field personnel will occur throughout the project and released ‘alalā will be fitted with satellite locators and/or VHF radio trackers that transmit the birds’ locations. These tracking devices will enable project personnel to determine if ‘alalā are nesting or entering NPS lands. Temporary supplemental feeders for nesting pairs will be composed either of a tripod structure supporting a pole to which the feeder is attached, or a pole driven into the ground, to which the feeder is attached. Lethal predator control for rats (*Rattus* spp.), feral cats (*Felis catus*), and mongooses (*Herpestes auropunctatus*) will be performed in the immediate vicinity of the release aviary, supplemental feeders, and nests where feasible to reduce direct depredation of ‘alalā and ‘alalā eggs, as well as minimize exposure to diseases spread by these non-native mammals. All traps used will have excluder devices to prevent accidental trapping of ‘alalā or other non-target animals. Traps on trails and fence lines will be checked between one to four times every 1-2 months. Estimated average helicopter flight hours to provide access and support to the release site for the pilot project is from 1-12 hours/month, depending upon the stage of the release. Initial project setup will require a greater number of helicopter flights and is expected to taper off as the project progresses. To access the release site, field teams will need to use one of several temporary helibases to stage for each helicopter operation. Helicopter operations within NPS lands are not prioritized for the project, are expected to be minimal, and will mostly be used to support ‘alalā traveling into and nesting within HALE. To access the release sites, field teams would need to use one of several temporary helibases to stage for each helicopter operation, one of which may be located within HALE and is accessible by ground vehicles.

Additional details of the selected alternative and other alternatives considered are described in Chapter 2 of the EA. In keeping with the NPS Management Policies 2006, a Determination of No Impairment for the selected alternative was also prepared and is attached to this document (Attachment C).

1.2.2 Rationale

The selected alternative best meets the purpose and need because it provides the most effective and feasible solution to assess if ‘alalā can survive and breed in wet native forest habitat in absence of the

threat of ‘io depredating ‘alalā. The selected alternative also best meets Section 4.4.2.3 of NPS *Management Policies 2006* which requires the NPS to “...protect and strive to recover all species native to national park system units that are listed under the Endangered Species Act”.

Numerous other potential alternatives were considered but dismissed from further analysis as described in Chapter 2 of the EA.

1.2.3 Changes to the Selected Alternative

The NPS added clarifications to some elements of the selected alternative but made no substantive changes. Minor edits and clarifications are included in Attachment B, Errata.

1.3 MITIGATION MEASURES

The NPS places strong emphasis on avoiding, minimizing, and mitigating potentially adverse environmental impacts. Therefore, the agencies will implement multiple avoidance, minimization, and conservation measures to protect plants (including rare, threatened and endangered species), animals (including rare, threatened and endangered), wilderness resources, cultural resources, visitor use and experience, and acoustic environment (noise impacts). These measures and practices are described in detail under each environmental topic in Chapter 3 and within the appendices (H, I, J, K) of the EA and are hereby incorporated by reference. As stated in the EA, these avoidance, minimization, and conservation measures are included as integral parts of the selected alternative. Other impact topics that are special categories for the lead agencies are included in the EA, but are not described here as the focus is on NPS impact topics. NPS impact topics that were dismissed from analysis are listed in “Appendix L: NPS Issues and Impact Topics Dismissed from Detailed Analysis.” The NPS has the authority to implement the mitigation measures under the Organic Act, The Wilderness Act, The National Historic Preservation Act, NPS *Management Policies 2006*, and other federal and state applicable requirements.

Pre-Release Surveys

In the EA, it was established that additional Hawaiian tree snail data are necessary at the Kīpahulu FR release site to analyze risks of predation by ‘alalā on rare snails. Though not federally or state listed on Maui, rare *Partulina* tree snails occur on east Maui from 2,400 to 4,000 feet elevation and populations are declining in the wild. Wild ‘alalā populations were observed eating “land snails,” and snail shell fragments were found in ‘alalā feces (Sakai et al. 1986, p. 213), prior to ‘alalā becoming extinct on the Hawai‘i Island. Due to the higher elevation of the Kīpahulu FR release site (4,600 feet), occurrences of *Partulina* species is only expected in the lower region of the expanded analysis area that ‘alalā are expected to use less frequently. On May 2, 2024, Hawaiian tree snail surveys were conducted by the DLNR Maui Nui Snail Extinction Prevention Program within the Ka‘apahu section of HALE with detection of 16 individuals in approximately 10 of 50 acres of potential habitat surveyed and an estimated representative population of approximately 32-48 individual snails in the 10 acre area surveyed (Bustamente et al. 2024, entire). A recommendation for ‘alalā is incorporated below.

At the time of EA public release, the potential impacts to snails as a result of ‘alalā release at the Kīpahulu FR site was considered a low risk and it was recommended ‘alalā release would not have significant impacts on rare tree snail populations. The survey conducted on May 2, 2024, confirmed the DLNR Maui Nui Snail Extinction Prevention Program's recollection of the distribution and abundance of

Partulina anceyana in that location, and confirmed that the potential interaction between *Partulina* and ‘ālalā to be low, but that follow up monitoring be performed. Because this location is approximately two miles from the proposed ‘ālalā release site and is on the periphery of the projected foraging grounds, the risk to the critically imperiled *Partulina anceyana* is likely low. To mitigate any possibility of impacts to *Partulina* snails from depredation by released ‘ālalā, genomics testing for the presence of *Partulina anceyana* DNA in ‘ālalā fecal samples will be conducted by DLNR or USFWS partners quarterly throughout the duration of the project. In addition, NPS will be notified immediately by project staff, DLNR or USFWS if radio monitored birds are within .25 miles of the population of *Partulina anceyana*.

1.4 SIGNIFICANCE CRITERIA REVIEW

1.4.1 Potentially Affected Environment

The agencies identified an analysis area by incorporating ‘ālalā behavior data and surrounding habitat. Past release cohorts have remained at release sites as long as supplemental food was available and it is anticipated that birds released on Maui would use the area within a 0.8-mile radius from their release aviary and spend approximately 95% of their time in this area. Approximately 5% of their time may occur within a larger radius from the release site, where ‘ālalā previously released on Hawai‘i Island flew longer distances for exploratory trips before returning to their release site. ‘Alalā are expected to avoid crossing large open fragments of habitat and show preference for closed canopy habitat.

Human impacts are anticipated to be those from humans that will result from supporting and monitoring released birds and most impacts from helicopter support. The spatial area considered in analysis of human impacts is directly within the release area, containing infrastructure, supplemental feeders, and traps for predator control. This human impact area is within the estimated range of released ‘ālalā and is approximately 250 acres in size, with the release aviary at the center. This area borders the NPS boundary and fenceline.

‘Alalā impacts are anticipated to be those from ‘ālalā that will result from the birds’ interactions with the environment. The spatial area considered in analysis of the primary ‘ālalā impacts is 1,350 acres (area within a 0.8-mile radius from the release aviary) and is the area it is expected ‘ālalā will spend most of their time. Lower frequency of ‘ālalā impacts is expected for the area from 0.8 miles to 2.04 miles of the release aviary, an area of 7,017 acres. This includes areas within the NPS boundary.

Specific release location maps are retained by the agencies in the decision file but were not included in the EA to protect sensitive ‘ālalā habitat. This FONSI only applies to impacts on NPS lands within Haleakalā National Park. Approximately 24% of the Kīpahulu FR release site analysis area is in designated wilderness, which accounts for approximately 1% of the total Haleakalā Wilderness area.

To evaluate the potential for significant impacts, agencies must consider the setting, or potentially affected environment, in which impacts may occur. In this case, the selected alternative may beneficially or adversely impact the plants (including rare, threatened and endangered species), animals (including rare, threatened and endangered), wilderness resources, cultural resources, visitor use and experience, and acoustic environment (noise impacts). Wilderness and threatened and endangered species are resources that are afforded different levels of protection through the Wilderness Act and the Endangered Species Act (ESA). Therefore, they are briefly discussed in this section as well as in more detail under Chapter 3 of the EA.

Haleakalā Wilderness

Releasing ‘ālalā at the Kīpahulu FR site has the potential to result in adverse effects to the untrammeled quality of wilderness since proposed actions will be an intentional manipulation of an ecological system. However, the introduction of ‘ālalā under the proposed action will result in some beneficial impacts to the natural quality of wilderness character because of the resultant stabilization or increase in bird populations over time, including the beneficial seed dispersal roles the ‘ālalā plays in the ecosystem. Any negative ecological interactions possible if ‘ālalā are found to disperse non-native invasive plant seeds will be monitored and mitigated to prevent the spread of invasive weeds. Any installations or predator control work will adversely impact the undeveloped quality. However, most impacts to wilderness will only occur if ‘ālalā individuals travel into designated wilderness and nest or frequent the habitat. In past releases, ‘ālalā mostly remained near their release site and feeders, so although ‘ālalā could enter Haleakalā Wilderness, it is expected they will stay close to the release site and aviary off NPS land. Impacts to Haleakalā Wilderness are expected to be minimal and temporary, since the proposed action is a 5-year pilot and temporary release where all birds would be collected at the termination. If after three years of implementation, the agencies would like to determine whether or not ‘ālalā could be left in the wild permanently, additional NEPA evaluation and documentation would be necessary to assess long term impacts to wilderness. All actions taken that involve a prohibited use pursuant to Section 4(c) of the Wilderness Act of 1964 (Act) are subject to a Minimum Requirements Analysis (Attachment D).

Haleakalā Threatened and Endangered Species

Although there could be intermittent disturbance to some listed species from direct and indirect impacts of ‘ālalā release at the Kīpahulu FR site, the selected alternative will result in the opportunity to learn more about recovery goals and could result in long-term beneficial impacts to endangered ‘ālalā. The ‘ālalā is the only native Hawaiian corvid still in existence in Hawai‘i, and is listed as endangered under the ESA (ESA; 16 U.S.C. §§ 1531-1544, 87 Stat. 884) and currently extinct in the wild. The Revised USFWS Recovery Plan for the ‘Alalā (*Corvus hawaiiensis*) (USFWS 2009) guides urgent and essential steps in preventing the extinction of the ‘ālalā, while at the same time providing an overarching plan for the species’ eventual recovery. Actions within the Recovery Plan include establishing new populations in managed suitable habitat, conducting pilot releases as soon as genetically and demographically redundant birds are available, optimizing aviaries and rearing/socialization techniques to maximize behavioral fitness of selected birds for release. The species needs opportunities to support recovery and conservation by improved understanding of release methods and habitat conditions for ‘ālalā reintroduction and breeding. The project incorporates several measures to minimize impacts on listed plant and animal species and monitoring protocols to measure potential effects of presence of ‘ālalā on these communities. Therefore, the selected alternative will primarily benefit this federally listed species and will not result in significant adverse effects.

Please refer to Chapter 3 for a more detailed description of the potential effects of the selected alternative on each of the resources discussed in the affected environment.

1.4.2 Degree of Effects of the Action

The NPS considered the following actual or potential project effects in evaluating the degree of effects (40 CFR 1501.3(b)(2)) for the selected alternative.

Beneficial and Adverse, and Short-term and Long-term Effects of the Selected alternative

No significant impacts to resources were identified that would require analysis in an Environmental Impact Statement (EIS). Whether taken individually or as a whole, the impacts of the selected alternative, including direct, indirect and cumulative effects, do not reach the level of a significant effect because adverse impacts associated with implementation will be minimal or temporary, lasting only as long as actions are being executed. The selected alternative will result in beneficial impacts to endangered ‘alalā species recovery and the natural quality of wilderness. Avoidance, minimizations and conservation measures as mentioned above (and described in detail under each environmental topic in Chapter 3 and related Appendices of the EA) will further minimize any potential adverse impacts.

Plants (Including Rare, Threatened and Endangered Species)

As discussed in Chapter 3 of the EA, activities associated with the selected alternative will result in limited adverse impacts to native vegetation with the majority of vegetation clearing occurring in the Kīpahulu FR within the smaller 250-acre area of the project analysis area, which is outside of NPS lands. Within the larger analysis area, both adverse and beneficial impacts could occur to native vegetation, as the ‘alalā’s larger mouth and body size have the potential to disperse seeds that are too large for other forest birds or could collect larger amounts of seeds for distribution.

‘Alalā are important seed dispersers for native fruiting plants, carrying fruit and transporting seeds in the gut with the potential to disperse the seeds of several native plant species (including rare, threatened or endangered) that currently lack a seed disperser on Maui. Seed germination for some native plants may be improved when fruits are eaten by ‘alalā. ‘Alalā also have the potential to contribute to dispersal of seeds of invasive plants within the analysis area. However, ‘alalā are familiar with native fruits from their captive diet and this conditioning will help lead to a preference for native fruiting plants. ‘Alalā visiting downslope vegetation at the Kīpahulu FR release site where invasive plants are more abundant is not expected due to preference displayed for native canopy forest available upslope of the release site. There are no means to prevent ‘alalā from transporting seeds of introduced plants within the release analysis area, but there are measures that can be used to better understand if dispersal of seeds of introduced (and native) plants is occurring. These measures are listed in section 3.1.3 Avoidance, Minimization, and Conservation Measures of the EA and include the monitoring, and germination off-site of collected ‘alalā fecal samples around feeding stations to assess which plant species ‘alalā are targeting.

With implementation of mitigation measures, the impacts to designated critical habitat are expected to be negligible and therefore not significant. Thus, a beneficial impact of the pilot project is the potential for enhanced seed dispersal and improved seed germination of native plants and the ability to monitor the areas where ‘alalā are proposed to be released and record evidence of this ecosystem service.

Animals (Including Rare, Threatened and Endangered Species)

As discussed in Chapter 3 of the EA, the release of ‘alalā on east Maui may result in limited adverse effects to animals, including rare, threatened and endangered species. Benefits to ‘alalā species recovery efforts will occur if released ‘alalā are able to breed and raise young to fledging in the wild on east Maui. ‘Alalā raised in captivity and released into the wild have not yet been able to reach this reproductive milestone and data from this pilot release will inform future ‘alalā recovery. There are several challenges that released ‘alalā would need to overcome on east Maui, including surviving wetter environments, exposure to toxoplasmosis disease through invasive cats, rats or feral pigs and predation by invasive mammals. However, the risk factor of ‘io predation on ‘alalā, is absent on Maui.

Facilities that rear ‘alalā are reaching capacity and construction of additional facilities to house ‘alalā is

unlikely and would not increase the chance of successful introduction to the wild. The pilot release on Maui will not affect the stability of the captive population.

‘Alalā are omnivorous and depend on a diversity of food resources, including fruits and invertebrates, but have the potential to depredate other native forest bird eggs and nestlings. Although ‘alalā predation of listed Hawaiian forest birds (Hawaiian honeycreepers) is a possibility alongside other existing threats to honeycreepers like avian disease, the analysis area and expected habitat of released ‘alalā overlaps such a small portion of threatened and endangered honeycreeper habitat that interactions are not expected. Additionally, threatened and endangered honeycreeper densities are so low in the analysis area compared to non-listed Hawaiian honeycreepers and introduced forest birds that the likelihood ‘alalā would find and depredate these nests is considered unlikely. In total, the three listed species found within the Kīpahulu analysis area likely make up <10% of the overall bird abundance in the area. Should ‘alalā disperse farther into areas where they are determined to pose a significant threat to listed forest birds, mitigations include “recall” techniques for released bird recapture utilized by project staff.

Prior to going extinct in the wild, ‘alalā on Hawai‘i Island were observed eating “land-snails,” and snail shell fragments were found in ‘alalā feces (Sakai et al. 1986, p. 213), but it was never identified whether these fragments were of native or introduced snail species. Though not federally or state listed on Maui, rare *Partulina* tree snails occur on east Maui from 2,400 to 4,000 feet elevation and populations are declining in the wild. Due to the higher elevation of the Kīpahulu FR release site (4,600 feet), occurrences of *Partulina* species is only expected in the lower region of the expanded analysis area the ‘alalā are expected to use less frequently. *P. marmorata* is known from three observation locations at the Kīpahulu FR release site, yet the only area of potential habitat within the park portion of the analysis area would be in the upper Ka‘apahu area. Although ‘alalā have the ability to develop a search image for snails and rapidly decimate the population, potential impacts to *Partulina* tree snail species was evaluated based on ‘alalā abundance and amount of time of ‘alalā are on the landscape, the numbers of tree snail populations and point locations, and the amount of time ‘alalā spend in an area where there are *Partulina* tree snails. Each alternative release location was evaluated on the above data and one release location was eliminated from consideration due to the risk to *Partulina* tree snails. For the Kīpahulu FR release site, approximately six birds will be released and allowed to remain on the landscape for up to five years under the pilot project and there are only three known snail observation locations within the analysis area, so the likelihood that ‘alalā will impact *Partulina* tree snails is considered unlikely. Additionally, mitigations are included requiring tree snail surveys are conducted at Kīpahulu FR release site, prior to release of ‘alalā and the information obtained incorporated into a the decision document for the EA. After the public release of the EA, the DLNR Maui Nui Snail Extinction Prevention Program conducted rare tree snail surveys near the Kīpahulu FR release site, within the NPS Ka‘apahu area and the results and NPS mitigations are described in section 1.3 of the FONSI.

In summary, impacts to animals, including rare, threatened and endangered species will not be significant because very few direct impacts are anticipated from ‘alalā release and monitoring activities, and indirect impacts will be limited in duration, frequency, and intensity. Over the long term, the alternative would benefit the recovery of ‘alalā compared to existing conditions if long-term ‘alalā releases into the environment were approved or if ‘alalā are able to gain enough wild traits to survive translocations to Hawai‘i Island.

Wilderness

As discussed in chapter 3 of the EA, although actions taken at the Kīpahulu FR release site are planned

outside of wilderness, project actions will have some impacts on adjacent Haleakalā Wilderness. The release of ‘ālalā on east Maui under the selected alternative will have some adverse impacts on the untrammelled, undeveloped, solitude and natural qualities of wilderness. However, protection of native ‘ālalā and ecosystem services ‘ālalā provides are likely, thus benefiting the natural and other features of value qualities of wilderness. Impacts to Haleakalā Wilderness are expected to be minimal and temporary, since the action is a pilot and temporary release where all birds will be collected at the termination.

The broad intervention of the ecosystem through the pilot release of ‘ālalā will degrade the untrammelled quality of wilderness for the life of the plan, up to five years if ‘ālalā travel into designated wilderness to nest, forage, or visit habitat. If a nest is established in Haleakalā Wilderness, then predator control would be conducted near the nest for up to six months, which will adversely impact the untrammelled quality, although all targeted predators are non-native. ‘Ālalā have mostly remained near their release site and feeders in past releases, so it is expected they will mostly stay close to the release site, keeping them primarily out of wilderness. Although nesting within Haleakalā Wilderness is possible due to ideal habitat, those instances are likely to be infrequent due to few birds being released and their preference to remain near their release site and feeders.

The release of ‘ālalā into the wild could result in recovery of ‘ālalā populations over time and performance of niche ecosystem roles that are not currently present, which would benefit the natural quality of wilderness. Negative ecological interactions are possible if ‘ālalā are found to disperse non-native invasive plant seeds, however ‘ālalā fecal samples would be collected around feeding stations and samples examined to identify seeds to gauge the effects ‘ālalā may cause to vegetation communities through dispersing seeds. Due to the ability to learn more about ‘ālalā in the natural environment and beneficial dispersing roles of native seeds, the natural quality of wilderness could see long-term valuable results.

The presence of noise from motorized and mechanized uses, such as helicopter support, will result in temporary adverse impacts on the solitude or primitive and unconfined recreation quality of wilderness during any monitoring activities. Noise from helicopters would only occur for minutes at a time during take-off and landing mostly outside of wilderness, but some landing of aircraft may occur if ‘ālalā nest within Haleakalā Wilderness. All infrastructure and project support work is focused outside of Haleakalā Wilderness on Kīpahulu FR State land, but noise impacts may travel into designated wilderness. Helicopter flights to and from the project area over portions of designated wilderness would occur on an intermittent basis (approximately once or twice per week), very briefly (perhaps 15 seconds to a few minutes) audibly and visibly impacting the primitive wilderness experience. Most of the project area is closed to public access, so impacts to solitude are only expected briefly in areas further from the release site where visitors are present. The Kaupō Trail is included to the west and within the outer analysis area. Hikers may hear helicopter impacts along the trail, which is one of the more remote and less visited open trails within the park. Project noise created within HALE portions of designated wilderness closed to public access, that does not travel beyond that boundary would not affect opportunities for solitude and primitive experiences in wilderness areas open to public access.

Installations that are a prohibited use pursuant to Section 4(c) of the Act are subject to a Minimum Requirements Analysis (Attachment D) and will minimize the impacts to the undeveloped wilderness character. Any temporary installation of feeders or predator control within Haleakalā Wilderness will degrade the undeveloped quality of wilderness, although all equipment would be installed with little impact to the environment, then removed once a nest is unoccupied or at the completion of the project. An

installation would only need to occur within Haleakalā Wilderness if ‘ālalā nest within the wilderness boundary and the installation will be temporary, removed after six months of supporting nesting efforts.

In summary, the selected alternative will impact wilderness character qualities including the untrammeled quality, natural quality, undeveloped quality, and opportunity for solitude from the project efforts to support the release ‘ālalā. Under the selected alternative the small temporary adverse impacts to the undeveloped quality, untrammeled quality, and opportunity for solitude from ‘ālalā releases will result in benefits to the natural quality of wilderness through the recovery efforts to ‘ālalā and the ecological roles that they could fulfill. Impacts to wilderness will not be significant because adverse impacts to the undeveloped quality will be temporary and intermittent, occurring only when mechanized and motorized activities are being conducted; impacts to the opportunity for solitude will be barely perceptible because wilderness in the project area is mostly not accessible to the public; and impacts to the natural quality of wilderness will be monitored to ensure only beneficial over the long term. The majority of the park’s wilderness is outside the project area and will remain mostly unaffected by actions under the selected alternative.

Cultural Resources

As discussed in chapter 3 of the EA, the selected alternative does not impact known archaeological sites or interfere with the performance of cultural practices including traditional gathering and historic trails systems. The ‘Ālalā Cultural Impact Assessment (CIA) was initiated by the DLNR and prepared by Kau‘i Lopes and Lokelani Brandt of ASM Affiliates, which is appended to the EA (Appendix M; Brandt and Lopes 2023, entire). Although there are historic properties within the Area of Potential Effect (APE), the agencies have made a Section 106 effect determination of “no adverse effects to historic properties” and the State Historic Preservation Officer (SHPO) madena determination of “no historic properties effected” under Section 106 of National Historic Preservation Act (NHPA).

In accordance with 36 CFR § 800.2(a)(2), the NPS and USFWS agreed to have the USFWS serve as the lead Federal agency to fulfill their collective responsibilities under Section 106. Please see below section *Effects That Would Violate Federal, State, Tribal, or Local Law Protecting the Environment* for a summary of the Section 106 process.

Visitor Use and Experience

As discussed in chapter 3 of the EA, there are minimal adverse impacts to visitor use and experience anticipated with implementation of the selected alternative. Noise or visual interruptions may occur from helicopter support noise and although these will be rare, could adversely impact visitors, if audible. The project analysis area does overlap some visitor areas, where it is possible that ‘ālalā could be viewed or heard by a visitor, which would be a beneficial impact to visitor experience.

Access to HALE within the project analysis area is restricted to on-trail use and only includes a portion of Kaupō Trail (1 mile west of release site) in areas where ‘ālalā are expected to spend 5% of their time. ‘Ālalā are unlikely to disperse within the 5 years maximum of the pilot project to sites that are readily accessible by the public. Very little visitor use and recreation occurs within the NPS portion of the project area, so impacts to park visitors would be minimal. Any impacts to HALE visitor experience would be indirect from project helicopter noise outside of the park boundary and the minimal flights within HALE, whose flight paths will avoid popular park visitor destinations.

In summary, release activities under the selected alternative will contribute minimal adverse impacts on visitor experience near landing zones, helibases, and flight paths of helicopters in the form of noise and visual intrusion. Impacts to visitor experience will not be significant because the majority of the project area is closed to the public and therefore there will be only intermittent impacts during project support activities, mostly concentrated near landing zones, helibases, and flight paths. These impacts will only occur during daylight hours on weekdays, as operations will not occur at night. For those who are visiting portions of the analysis area, a rare siting of ‘alalā is possible and would be beneficial impact to visitor experience. Overall adverse impacts to visitor use and experience will be brief and minimal and should be outweighed by the overall benefits to ‘alalā recovery and restoring ecosystems enjoyed by visitors to the park.

Acoustic Environment (Noise Impacts)

As discussed in Chapter 3 of the EA, activities associated with the selected alternative will result in intermittent noise that could impact the acoustic environment. The majority of the project analysis area is within the park’s Kīpahulu District where common natural sounds include rain, water flowing, bird calls and insects buzzing. Noise impacts are expected near the Kīpahulu FR release site and off of NPS lands, although some noise impacts may travel into HALE. Direct noise impacts will occur within HALE if ‘alalā choose to nest within NPS lands and helicopter landings and support are necessary.

Noise impacts to HALE will be mitigated by routing all project support helicopter flights to avoid flying over NPS lands, where possible. If ‘alalā choose to nest within HALE, then helicopters may need to land within the park to transport staff to monitor, feed, and protect the pair, nest, and nestlings. Due to project flights mostly avoiding HALE and possible, but not targeted use of remote landing zones and camps within the park boundary, noise impacts to HALE’s natural soundscapes are expected to be infrequent and negligible.

In summary, noise from helicopter support will be the most intense acoustic impacts to result from this project. However, the adverse impacts from helicopter support will be confined mostly to backcountry areas, mostly go unnoticed by humans, only briefly disturb wildlife and be prioritized outside of NPS lands. Humans and animals may experience slight perceptible increases in sound and noise intermittently. Impacts to the acoustic environment will not be significant because impacts from ‘alalā release activities would be intermittent and mostly occur outside of NPS lands.

Degree to Which the Selected Alternative Affects Public Health and Safety

The selected alternative considers public health and safety during project implementation. Any risks to public health and safety from helicopters use will be minimized by maintaining safe distances (to aircraft), with appropriate planning, and by incorporating mitigation measures as described earlier in this document and in Chapter 3 of the EA.

Release of ‘alalā will pose no risk to human health. ‘Alalā are expected to stay close to release aviaries and may only travel to the outer regions of analysis area for a couple days before returning back to the release site. Human interactions with ‘alalā, although possible, are not expected and would be a positive experience for visitors viewing or hearing birds from afar. Therefore, there is no potential for significant

adverse impacts to human health from releasing ‘alalā.

Effects That Would Violate Federal, State, Tribal, or Local Law Protecting the Environment

The selected alternative does not threaten or violate applicable federal, state, or local environmental laws or requirements imposed for the protection of the environment. Section 7 of the Endangered Species Act (ESA) requires federal agencies to ensure that the actions they authorize, fund, or carry out do not jeopardize the continued existence of listed species or destroy or adversely modify critical habitat. Section 106 of the National Historic Preservation Act, as amended (NHPA) (54 USC 300101 et seq) requires federal agencies to consider the impacts of their undertakings on historic properties and to provide state historic preservation officers, tribal historic preservation officers, and as necessary, the Advisory Council on Historic Preservation a reasonable opportunity to review and comment on the impacts of agency actions. Based on the analysis provided in Chapter 3 of the EA, project activities under the selected alternative, all analyzed federally listed plant species and their designated critical habitat, as applicable. Based on the analysis provided in Chapter 3 of the EA, project activities under the selected alternative, all analyzed federally listed wildlife species and their designated critical habitat, as applicable.

Agency Consultation and Determinations

U.S. Fish and Wildlife Service (USFWS)

The USFWS is the lead federal agency for the project and NPS coordinated with the USFWS Pacific Islands Field Office to ensure compliance with Section 7 of the ESA. On May 21, 2024, the NPS received a letter from the USFWS Pacific Islands Fish and Wildlife Office stating that they determined that the selected alternative is *not likely to adversely affect* federally listed species or designated critical habitats. An official Species List and associated avoidance and minimization measures from the USFWS was included in the letter, which references conservation measures included in the EA. Because the selected alternative would not result in adverse impacts to federally listed species, there would be no potential for significant impacts.

Hawai‘i State Historic Preservation Division (SHPD)

Section 106 of the National Historic Preservation Act, as amended (NHPA) (54 USC 300101 et seq) requires federal agencies to consider the impacts of their undertakings on historic properties and to provide state historic preservation officers, tribal historic preservation officers, and as necessary, the Advisory Council on Historic Preservation a reasonable opportunity to review and comment on the impacts of agency actions. Since the project Area of Potential Effect (APE) falls within HALE, the NPS is required to take into account the effects of the undertaking on historic properties, and therefore is also responsible to conduct Section 106. As a cooperating agency, the NPS designated the USFWS, in accordance with Section 106 of NHPA, as the lead federal agency for Section 106 review for the undertaking. Pursuant to 36 CFR § 800.2(c)(4), USFWS authorized DLNR to initiate and conduct Section 106 consultation with the State Historic Preservation Officer (SHPO) and others but remains legally responsible for all findings and determinations. The State Historic Preservation Division (SHPD) received an updated letter from the DLNR to initiate the NHPA Section 106 consultation process, to initiate the HRS Chapter 6E historic review process, and to request the SHPO’s concurrence with the Section 106

and Chapter 6E effect determinations for the Pilot Release of ‘Alalā (*Corvus hawaiiensis*) on the island of Maui. The SHPD received the initial submittal on January 9, 2024, the updated letter on January 22, 2024, and a record of consultation correspondence on February 6, 2024. The SHPD requested additional information via email on February 12, 2024, and received from DLNR the information requested on February 13 and 20, 2024.

DLNR determined that the geographic area within which the undertaking may directly or indirectly cause alterations in the character or use of historic properties, or APE, is the entire project area. Direct effects would include locations where predator control traps, supplemental feeders, field camp and release aviary will be placed or constructed and the use of created pedestrian trails. The APE is approximately 8,440 acres. ‘Alalā will not cause ground disturbance nor impact any cultural resources or historic properties. In accordance with regulations 36 CFR 800.4, identification of historic properties, and HRS Section 6E, DLNR made a reasonable and good faith effort to carry out the requirement to document and identify any historic properties within the APE. This included reviewing planning documents and seeking historical accounts of the vicinity. Due to the nature of the proposed project activities, it is anticipated that no cultural and historic sites would be directly or indirectly affected by project activities. The potential physical impacts that the proposed action would have on the landscape, both archaeological and cultural, would be negligible.

Given that not all of the project area has been archaeologically surveyed, it is possible that previously unrecorded sites could be present in the vicinity of the access routes where project activities would take place. To avoid effects, project personnel would be directed to not install traps or feeders in areas that appear to have human made structures or formations. One of the primary impacts of the proposed action on cultural resources is the anticipated positive outcome of the release of the ‘alalā into native forests. Their existence and presence within the forest environments are important for maintaining cultural continuity between traditional and contemporary cultural customs, practices, and beliefs.

DLNR made a Chapter 6E-8 effect determination of “No historic properties affected” and the SHPD concurred. On behalf of USFWS and NPS, DLNR made a Section 106 effect determination of “no adverse effects to historic properties”. SHPD concluded that although there are historic properties in the APE they will likely not be affected by the proposed project as it is described, and therefore the SHPO made a determination of no historic properties affected. SHPD recommended that should any potential historic properties be encountered, to immediately halt work in the vicinity of the find, secure the find from further disturbance, and follow the stipulations set forth in 36 CFR 800.13 and in §13-275-12. Should any potential human remains be encountered immediately halt work in the vicinity of the find, secure the find from further disturbance, and contact SHPD prior to work in the area continuing.

Cultural Consultation

Gathering input from community members with genealogical ties and long-standing residency or relationships to the study area is vital to the process of assessing potential cultural impacts to resources, practices, and beliefs. As described in the CIA, the comments of interviewees with genealogical ties and relationship to ‘alalā regarding the proposed release were positive, encompassing the need to do something to help recover the ‘alalā and maintain the species on the landscape as an important part of

native ecosystems and the cultural importance of the ‘ālalā as a family ‘aumakua (a Hawaiian personal and family god).

During the Section 106 process, four consulting parties (Kīpahulu ‘Ohana, J. Alohalani Smith, Kī‘ope Raymond, and Historic Hawai‘i Foundation) responded favorably, had no comment, and/or agreed with the finding of no adverse effect. The Department of Hawaiian Homelands (DHHL) responded that it was critical that traditional and customary practices were able to continue to be perpetuated within the project area and that Native Hawaiians continued to have access to the project area. They also recommended consultation with Native Hawaiians and homestead communities to better understand access in and around the APE to engage in traditional and cultural practices to mitigate project effects on those constitutionally protected rights, and to identify potentially significant historic properties and/or places of cultural import used for traditional and cultural practices known to those Native Hawaiians and homestead communities that may be impacted by the proposed project. DNLR responded that regarding access, the Pilot Release of ‘Ālalā on East Maui Project will not affect access to the APE. All current publicly accessible access points to NPS and DLNR lands would remain open for public use. Regarding consultation, DLNR responded that they have reached out to Native Hawaiian groups and community members for their assistance in identifying potentially significant historic properties and/or places of cultural importance used for traditional and cultural practice. Letters seeking information and comments, identical to the one sent to DHHL, were also sent to individuals in the HALE Kūpuna Group and to the following Native Hawaiian groups: ‘Aha Moku o Kahikinui, ‘Aha Moku o Kaupo, ‘Aha Moku o Maui Inc., Association of Hawaiian Civic Clubs, Historic Hawai‘i Foundation, Kaupo Community Association, Kumu A‘o, Na Koa Ikaika Ka Lāhui Hawai‘i, Office of Hawaiian Affairs Compliance Enforcement, The Royal Order of Kamehameha I – Moku o Kahekili – Helu ‘Ehā, Waiehu Kou Phase 3 Association, and Wananalua Congregational Church.

DLNR noted that, pursuant to HRS Chapter 343, a CIA was prepared by ASM Affiliates in August 2023. The community members with genealogical ties and long-standing residency or relationships to the study area who provided comments or interviews did not object to construction of infrastructure within the project area nor to the project as a whole.

1.6 FINDING OF NO SIGNIFICANT IMPACT

Based on the information contained in the EA, I have determined that the selected alternative does not constitute a major federal action having a significant effect on the human environment. Therefore, an EIS will not be required.

This finding is based on consideration of CEQ criteria for significance (40 CFR 1501.3 (b)), regarding the potentially affected environment and degrees of effects of the impacts described in the EA.

1.7 PUBLIC INVOLVEMENT

Agency Outreach

The statements and conclusions reached in this FONSI are based on documentation and analysis provided in the EA and the associated decision file. Relevant sections of the EA are summarized and incorporated by reference here. The EA is available on the USFWS website at <https://www.fws.gov/media/final-draft->

[ea-alala-release-east-maui-20231016converted-checked-508-compliantpdf](#) and the DLNR website at <https://dlnr.hawaii.gov/dofaw/files/2023/10/Final-DRAFT-EA-for-Alala-Release-on-East-Maui.pdf>. The NPS shared the request for public input on the EA on the Haleakalā National Park site at <https://www.nps.gov/hale/learn/management/publicinvolvement.htm>.

The USFWS and DLNR requested public input on the EA during a 34-day EA public review period from October 27, 2023, to November 29, 2023. In total, 35 independent pieces of correspondence to the EA were received. The USFWS, DLNR, and NPS also held a public meeting from 6 p.m. to 8 p.m. HST on November 8, 2023, at Kula Elementary School on Maui, at which 8 members of the public attended. The comments received to the EA and responses by the agencies is provided in Attachment A of this document. Minor modifications to the text of the EA are provided in Attachment B.

1.8 CONCLUSION

As described above, the selected alternative does not constitute an action meeting the criteria that normally requires preparation of an environmental impact statement (EIS). This finding is based on consideration of CEQ criteria for significance (40 CFR 1501.3 (b)), regarding the potentially affected environment and degrees of effects of the impacts described in the EA.

Based on the foregoing, it has been determined that an EIS is not required for this project and, thus, will not be prepared.

REFERENCES USED IN FONSI AND ATTACHMENTS

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ATTACHMENT A: RESPONSES TO PUBLIC COMMENTS ON ENVIRONMENTAL ASSESSMENT

Comment 1

Linda Brooks, 10/27/23

Comment: I hope to see them flourish in the future and if they can survive on Maui that would make me very happy.

Response: Thank you for your comment.

Comment 2

Timothy Hutchinson, 10/27/23

Comment: I fully support reintroduction of Alalā to build a wild sustainable population on Maui. I hope with a large enough population the birds can be brought back to the Big Island.

Response: Thank you for your comment.

Comment 3

Diana Miller, 10/27/23

Comment: I have followed the progress of captive breeding of the 'alalā on Hawaii island and the unsuccessful attempts to release them into the wild on Hawai'i island. I fully support release of the birds on Maui. I believe that is the best chance for the recovery of the species. Too many native birds have already gone extinct already. Let's try to save this one.

Response: Thank you for your comment.

Comment 4

Elizabeth Miller, 10/27/23

Comment: Thank you for allowing those who care so deeply about the well-being and survival of the 'alala in the wild to participate in this important conversation. Think relocating the 'Alala to Maui is the only viable solution for a future where this keystone bird can thrive and breed in a natural Hawaiian island habitat. If fact, i always wondered why they weren't relocated to Maui years ago. I'm absolutely delighted and relieved to be hearing that the time has finally come to seriously consider this move. I am 100% in favor of it. I personally feel profoundly inspired by and connected to the 'Alala. Knowing that it would be safe from 'Io predation on Maui', able to freely fly again, to feed on native fruits and foods, and to build nests in our native trees on an island that we can see from the Kona/Kohala coast, makes me extremely happy!

Response: Thank you for your comment. A release on Maui could be an important tool to understand approaches that could be used for successful reintroduction of 'alalā on Hawai'i Island.

Comment 5

Kamal Islam, 10/28/23

Comment: As a trained wildlife Biologist and Professor of Ornithology, I strongly advocate the release of 'Alala on the island of Maui given that we have historical evidence of the existence of Corvid species based on the fossil record. I have followed the numerous unsuccessful attempts and challenges of establishing a wild population on the

island of Hawai'i with a native predator, the 'Io.

Through a successful breeding program, the numbers of 'Alala have increased gradually and it is time to establish wild populations instead of maintaining only captive populations in perpetuity. As a visitor to the islands of Hawai'i since the early 1980's, I have the unfortunate distinction of having witnessed the extinction of 6 species of native honeycreepers during my lifetime! We cannot afford to waste more time and every effort should be attempted at releasing 'Alala on the island of Maui.

Response: Thank you for your comment. Releases on Maui could be an important tool to understand approaches that could be used for successful reintroduction of 'alalā on Hawai'i Island. We continue to work to develop ways to establish wild populations of 'alalā on Hawai'i Island.

Comment 6

Doug Hertzog, 10/28/23

Comment: My wife and I have raised several crows over several years as outdoor pets. In other words, we hand fed them as babies and trained them as fledglings to fly to us for food. We built them an enclosed, out door aviary that they could come and go from during the day as they wished, and at night we closed it up because of neighborhood cats. We blew a plastic whistle which as fledglings meant "food" and worked later to mean "come"

What we found that Crows were fine pets as youngsters, but within a year or two, they would rather live in the wild. They eventually would go off on their own, and breed among themselves, often nearby. but not depending on us to provide them food.

So, my thoughts in the context of hearing about your project to "release them" might be jumping the gun so to speak, to the degree that you might loose control of any breeding pairs that you have, especially if you as many environmentalists might, have been limiting human contact with the birds you have been raising, thinking that they need to be able to fend for themselves so to speak, in order to keep things as natural as possible.

I am assuming that you have at least some "proven pairs" in captivity. My advise would be that you don't release all of the those proven birds that you have, ideally very few of them or none at all, rather than jeopardize your potential ability to regrow your population and or subsidize the population you have begun in the wild.

As you undoubtedly know having worked with these birds (crows) for some time, they are exceptionally smart. My wife and I can attest to the fact that they are capable of forming individual relationships with humans, and at the same time will naturally gravitate to their own community. Trust them.

What you can do about their predators is an issue over my head.

Response: Thank you for your comment. We appreciate you sharing your insights from raising crows. Captive 'alalā are raised so they do not imprint on humans but recognize other 'alalā as their species and are familiar with the native foods provided to them. These measures will help the transition of the birds to the wild and away from human care. 'Alalā would be selected for release based on a series of criteria, including genetic and reproductive value to the captive flock to avoid negative impacts to the breeding potential of the captive breeding program.

It is unlikely that the project would lose track of released 'alalā. Released 'alalā will be fitted with transmitters, which allow project staff to monitor them via radio telemetry and/or satellite GPS. This monitoring would enable project staff to know the location of each 'alalā. Released 'alalā would also receive "recall" training, a type of training where they would be taught to associate a specific sound with the presentation of food. This training could be used to draw the birds into recapture should that be needed in the event of a veterinary emergency or other situation which requires human intervention. Similar methods of recapture have been successful in past reintroduction efforts for the species, even after several years in the wild.

Comment 7

Anonymous, 10/29/23

Comment: Crows are the noisiest and most aggressive birds That bother hawks and eat the young of all other birds

With the preponderance of bird life in Hawaii you will surely eliminate some of the finest species if you bring the crow in

Forget it !!

Response: Thank you for expressing your concern that ‘alalā could harm other bird life in Hawai‘i. For the Maui proposed release, impacts have been thoroughly evaluated in the draft EA, including the potential impacts of ‘alalā on native forest birds on Maui. Based on our analysis, there is a very low risk of ‘alalā depredating nests of listed Hawaiian forest birds on Maui. Furthermore, we have designed the release so that if released ‘alalā are found to be a significant threat to listed forest birds, we would be able to recapture released ‘alalā and return them to captivity. See response to comment #9 for additional information on impacts to other native forest bird species.

Historically ‘io (Hawaiian hawk) and ‘alalā coexisted in the same habitat, alongside a diverse community of native honeycreepers. All observed interactions between released ‘alalā and ‘io (Hawaiian Hawk) on Hawai‘i Island suggested that ‘io are a greater threat to ‘alalā than ‘alalā are to ‘io. ‘Alalā may alarm call or warn ‘io of their presence, but these behaviors are defensive rather than aggressive. ‘Io are not present on Maui. Maui was chosen as a potential release site to allow ‘alalā the opportunity to gain experience in the wild without the threat of ‘io.

Comment 8

Bruce Eilerts, 10/29/23

Comment: I support introduction of Alala to east Maui

Response: Thank you for your comment.

Comment 9

J.D. Griggs, 10/29/23

Comment: I just hope the ‘alalās don’t take a liking to Maui Parrotbill eggs and young. (Or to other Hawaiian birds on Maui).

Response: While ‘alalā may depredate songbird nests, previous releases of ‘alalā on Hawai‘i Island indicate that bird nests represented a very small part of their diet (0.2% of foraging observations). The rarity of ‘ākohekohe and kiwīkiu in the vicinity of the release areas also reduces the potential impact of ‘alalā on these species. Other bird nests, including non-native and non-threatened species, vastly outnumber those of the endangered species and there is no indication that ‘alalā would preferentially depredate kiwīkiu nests or those of any other native forest bird species. Further, the EA presents a mitigation involving the removal of released ‘alalā from the area should a released ‘alalā be found frequently visiting an area where endangered forest birds occur and posing an unacceptable risk to endangered forest bird nests. A more detailed examination of the potential threat ‘alalā pose to other threatened and endangered forest birds, including kiwīkiu (Maui Parrotbill), can also be found in Section 3.2.2.2 “Impacts of Proposed Action to Other Listed Animal Species” in the draft EA.

Comment 10

Kate Akina, 10/29/23

Comment: Aloha, I hike a lot in the kaupo gap and have definitely seen Hawaiian hawks ‘Io, including immature ones with their lighter heads. I have had park rangers from California with me at one of the sightings and they know what hawks look like. At the community meeting in Kaupo, some residents were concerned that these fruit-eating alala will spread non-native fruit seeds into inaccessible areas of the forest. Respectfully, Kate akin

Response: Thank you for providing new information regarding intermittent sightings of birds identified as ‘io or

Hawaiian hawk in Kaupō Gap. Available information during the writing of the draft EA suggests ‘io are not resident on Maui and sightings of ‘io on Maui are very rare. There is also no evidence that ‘io breed on Maui. Because of this, ‘alalā released on Maui are unlikely to be attacked or killed by ‘io. Please see Pyle and Pyle (2017) below for more details on reports of ‘io sightings on Maui.

Thank you for your comment expressing concern that ‘alalā would spread non-native fruit seeds into inaccessible areas of forest on Maui. In the draft EA, we evaluated the potential for ‘alalā to spread seeds of introduced plants. Our analysis found that the potential for ‘alalā to spread seeds of introduced plants is minimal compared to what is currently occurring by introduced birds and non-native species such as warbling white-eye (*Zosterops japonicus*) and red-billed leiothrix (*Leiothrix lutea*). These non-native species, although significantly smaller than ‘alalā, vastly outnumber the proposed number of released ‘alalā. Based on body mass and the number of birds on the landscape, we estimate that these non-native species would consume and disperse 30 times as many non-native seeds as released ‘alalā. As described in the draft EA, we would be collecting seeds of native and introduced plants in ‘alalā fecal samples to evaluate amounts of native and introduced fruits eaten. Finally, the project would conduct a plant survey before the release of ‘alalā and at intervals of time after the release to monitor potential spread of invasive plants that may be attributed to ‘alalā. The results of these surveys would be evaluated in future decision-making about whether to continue with ‘alalā releases on Maui.

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Comment 11

Maria Elena, 10/30/23

Comment: As a Hawai‘i Island resident I have supported this project here and now hope that it is successful on Maui. Persistence is crucial when it comes to protecting endangered wildlife. At a time when people all over Hawai‘i are focused on protecting the a‘ina by restoring forest habitats and the ahupua‘a, East Maui seems like the right place for this project to flourish. Community members and schools can become involved in its success, bringing people together and inspiring hope for the future during hard times. Best of all, it could bring the ‘Alala back to Hawai‘i for good!

Response: Thank you for your comment. We appreciate the importance of reaching out to community members and community involvement to the success of the proposed release of ‘alalā on east Maui.

Comment 12

Kally Goschke, 10/30/23

Comment: I do not currently live in Hawaii, so not sure I can wait in but I think that’s a great idea even if does slow the Big Islands progress. They need a large murder to protect them from Io correct?

Response: Thank you for your comment. An important goal of the proposed Maui release is to determine whether ‘alalā can breed and raise young in native forests where ‘io do not breed. We are currently conducting ‘io research on Hawai‘i Island to better understand habitat conditions and different types of ‘alalā release strategies that may reduce the threat from ‘io. While there can be theoretical benefits to larger group sizes around predators, and groups of ‘alalā share the burden of aerial vigilance when together, it is not known whether a larger group size (i.e. murder) would protect ‘alalā from ‘io.

Comment 13

koali63@yahoo.com, 10/30/23

Comment: I greatly support the release of the Alala crow into East Maui forest. It would be a great addition to our native forest uplands. I’ve seen the bird in the forest on the big island and they are a very unique bird. I’ve help

during my work at Haleakala National Park, going to the Olinda Aviary and help provide food for the captive birds there. Yes with the absence of I‘o, I believe the species could thrive and prosper within our forest here on Maui. Aloha.

Response: Thank you for your comment.

Comment 14

Tracey Dobson, 10/30/23

Comment: Extraordinary bird a Christian Cooper suggested I email you about re-introducing the Alala bird to the wild. If he thinks it’s an excellent idea, then I say yes, absolutely run with it! Good luck

Response: Thank you for your comment.

Comment 15

Jonathan Soroff, 10/31/23

Comment: I am very excited by the efforts to reintroduce the alala on Maui. Well done!

Response: Thank you for your comment.

Comment 16

Sam Sparks, 10/31/23

Comment: I am reaching out in response to the open comment period related to the ‘Alalā release on Maui. I am the wildlife manager at Diva Crows, a songbird rehabilitation center located in Northern Virginia. Has any consideration been given to administering the West Nile Virus (WNV) vaccine prior to their release? Each summer we see the significant and fatal impact of WNV on corvid populations, specifically American and fish crows. I am currently on the Big Island and recently had the opportunity to speak to Dr. Daryl Stang of Kahola Vet Clinic about the broader issue of mosquitoes and their role in the dramatic decline of native bird species. The vaccine is often given on commercial poultry farms, so it is something that does exist. Our knowledge on it is limited as we do not use it in a rehab setting, but we’re happy to provide any further corvid insights that might be useful. Regards, Sam Sparks

Response: Thank you for your comment regarding administering West Nile Virus (WNV) vaccine to ‘alalā prior to their release. We plan to administer WNV vaccine to all released ‘alalā as discussed on pages 23 and 26 of the draft EA.

Comment 17

Elton Miyagawa, 11/4/23

Comment: Having read the EA, I’m in support if the Maui release. This great "out of the box" thinking around the I‘o predation problem. Nothing ventured, nothing gained.

Response: Thank you for your comment. By releasing ‘alalā on east Maui where ‘io do not breed, we anticipate the long-term survival of released ‘alalā will be improved compared to prior ‘alalā releases on Hawai‘i Island.

Comment 18

Jonah F., 11/4/23

Comment: I fully support the release of ‘Alala on Maui! Since they disperse native seeds, they will replenish the forests on Maui. With no ‘Io on Maui, ‘Alala will have a higher survival rate. We owe it to this bird to have them thriving in the wild again.

Response: Thank you for your comment.

Comment 19

Megumi Nakayama (DBEDT State Planning), 11/6/23

Comment: Thank you for the opportunity to review this Draft Environmental Assessment. The Office of Planning and Sustainable Development has no comments at this point in time.

Response: Thank you for your comment.

Comment 20

Shennan Jiang, 11/7/23

Comment: It's time to take the risks. Even in the worst situation, nothing fatal will be done to the local environment. If we choose to wait, there will be less and less chance for the Hawaiian crow to recover. If we are to save the species, we will have to make the move one day, and I think it could be today.

Response: Thank you for your comment.

Comment 21

Bruce Bond, 11/7/23

Comment: Thank you to everyone for the hard work on preparing the report and processing all of our comments. As a student and activist and caretaker of native species I have to support this efforts even though we understand that it is a bit of an experiment. I urge the state to monitor the introduction and control any invasive spread by the Alala and ensure they do not impact other native species. At the end of the day we are in a very desperate situation and risks must be taken albeit wisely.

Response: Thank you for your comment. In the draft EA, we evaluate the potential impacts of 'alalā on native plants and animals and find these potential impacts would be minimal. Further, we have developed protocols to monitor potential impacts of 'alalā on plants and animals. If it is found that 'alalā do have significant impacts, we would recapture the individual birds causing these impacts. As described in the draft EA, we would collect seeds of native and introduced plants in 'alalā fecal samples to evaluate amounts of native and introduced fruits eaten. We would also conduct a plant survey before and after the release of 'alalā to determine whether 'alalā are spreading non-native plants. These data would inform future decision-making about whether to release additional 'alalā on Maui beyond the duration of the proposed pilot project.

Comment 22

Scott Werden, 11/8/23

Comment: I am in favor of the project to release 'alala in E. Maui, as described in the EA. However, I do have a couple of comments. The EA lists proposed activities for Alternatives 2-4. Activity 1 (the last one), is to remove all 'alala after five years. I understand that this project is experimental and the need to be cautious but the default outcome should be to leave the birds in place at the end of five years, and only remove them if it is necessary for their long term survival or there are other environmental problems. It really makes no sense to have an assumption of failure (why else would they be removed, if not for a failure?) of the program built into it. My second comment is on avian malaria. My understanding as an interested outside observer is that one of the earlier releases of 'alala on the big island, several birds died from avian malaria. And isn't the 'alala aviary at the Maui Bird Conservation Center enclosed with mosquito screens? My concern is that the altitude of the releases should be above where Culex are able to survive, which I believe is around 5000'. My last comment is that alternate 2 seems preferable to alternate 3. The reason is that from a risk management viewpoint it is less risky to have a more diverse set of releases. With only one location you are putting all the eggs in one basket.

Response: Thank you for your comment regarding potential removal of ‘alalā at year five of the project. We expect that ‘alalā will survive and breed on Maui, however we need more data before we can evaluate the potential environmental impacts of leaving them in the wild on Maui beyond the duration of this pilot project. Should ‘alalā successfully survive and breed on east Maui, we will initiate a second NEPA process (EA or EIS) to evaluate the potential environmental impacts of keeping them in the wild in east Maui.

Thank you for your comment regarding avian malaria. While ‘alalā are known to contract avian malaria if exposed, there have not been any documented mortality events resulting from avian malaria infection. Avian malaria and other mosquito-borne diseases found in Hawai‘i (e.g. avipoxvirus) may still present a threat to ‘alalā especially in combination with other stressors, although these diseases are not considered likely causes of death on their own. As the commenter points out, the Kīpahulu FR release site is above 5,000 ft in elevation, where the threat of mosquito-borne disease transmission is reduced. Both proposed release sites are within the project area for future application of incompatible insect technique mosquito control, which may reduce mosquito populations that could threaten released ‘alalā. Disease was a factor in several ‘alalā mortalities during the previous Hawai‘i island releases, however ‘alalā succumbed to toxoplasmosis, which is transmitted by non-native mammals, not by mosquitoes.

In response to your comment about the alternatives described in the draft EA, the preferred alternative selected was Alternative 3, Release of ‘Alalā to only Kīpahulu Forest Reserve. Alternative 3 was selected because potential impacts to rare tree snails are minimized at the Kīpahulu release site and rainfall is comparable to areas on Hawai‘i Island where ‘alalā have bred historically.

Comment 23

Scott Billets, 11/8/23

Comment: I read the draft EA, and the threats to Listed Forest Birds outline 3.2.2.2 & 3.2.2.3, and particularly to Kiwīkiu is quite alarming. I wasn’t convinced by reading the assessment, that the risk was sufficiently low enough to justify this release project in the defined preferred areas. Alala is known to depredate forest bird and their nests, and not good timing to bring them into an area currently in planning stages for a critical mosquito control, that will help prevent the extinction of some critically endangered forest bird species within the next few years. I am an ardent supporter of both The Alala Project and the Maui Forest Bird Recovery Project, but don’t believe this is a good idea at this time. It seems that we are okay with Alala depredating endangered Kiwīkui (147 birds) and threatened I‘iwi, but no acceptable for ‘io hawk to depredate Alala? I say keep them in Hawaii, and figure out how to prevent ‘io depredation (if it really is that bad, which doesn’t seem that strong a case is given in the EA).

Response: Thank you for your comment regarding the potential threat ‘alalā pose to other threatened and endangered forest birds. Please see the response to Comment 9 (above). The threat of ‘io to released ‘alalā is significant: in the 2016-2019 releases on Hawai‘i island, at least 9 of 30 released ‘alalā were killed by ‘io.

Comment 24

Steve Robertson, 11/19/23

Comment: I strongly support re-introduction of the Alala to East Maui. This will entail a lot of public cost, work, and a little inconvenience for a few, but restoring our natural environment and cultural heritage is of the greatest importance. Thank you for moving forward with this important project!

Response: Thank you for your comment.

Comment 25

Megan Owen - VP of Conservation Science, San Diego Zoo Wildlife Alliance, 11/21/23

Comment: The San Diego Zoo Wildlife Alliance (SDZWA) supports the USFWS and DLNR’s draft environmental assessment for a pilot release of ‘alalā or Hawaiian Crow (*Corvus hawaiiensis*) on East Maui, Hawaii. SDZWA’s Keauhou and Maui Bird Conservation Centers focus on the preparation of endangered Hawaiian forest birds, including the ‘Alalā, to thrive upon returning to the wild where they can fulfill their ecological and cultural roles in

the forests of Hawai‘i. This work has been done in partnership with USFWS, DLNR’s Division of Forestry and Wildlife, and other conservation partners. This draft environmental assessment and funding from USFWS is essential to prevent the extinction of the ‘alalā and to return this iconic species to the forest.

Response: Thank you for your comment. We appreciate the information you provide for an understanding of the critical role SDZWA plays through research and conservation breeding for recovery of the ‘alalā.

Comment 26

Scott K. Parker, 11/21/23

Comment: I am fully supportive of the ‘alalā release on Maui, particularly focused on the east Maui area. This release is integral to the continued existence and sustainability of ‘alalā across the pae ‘āina o Hawai‘i. What I want to emphasize, call attention, and hold all parties accountable to is a statement that is called out in the EA:

““Conducting background research, consulting with community members who so willingly gave their time and knowledge, and recommending practical actions to mitigate any potential cultural impacts are done so with the utmost aloha, for both the land and the people whose heritage is intimately connected to this landscape and to the ‘alalā. If DLNR-DOFAW and its partners assume their kuleana to implement the proposed project, we recommend that it be done so in the same spirit and practice.”

It's important to note, and affirm, the wealth of cultural information cited in the draft EA, and my sincere encouragement for project implementers to understand the nature of our mo‘olelo and mo‘okuauhau (which are heavily cited in this document) as a means to ensure pono implementation that is inclusive of Hawaiian biocultural approaches to conservation. And ensuring that project implementers apply these culturally appropriate considerations are present during all operations. My ask would be that project implementers deeply reflect on how they intend to do all of these things.

Finally, it will be significantly important for cultural protocols to be in place for the entire duration of this work. When difficult balancing acts/decisions are needed, project implementers need to not only be familiar with, but truly involve traditional Hawaiian practices like kilo and ‘ike pono. None of these native Hawaiian practices should take a back seat to biologically desired metrics, or be devalued when compared to “western science” and “western perspective and knowledge.”

Response: Thank you for your comment regarding the cultural importance of the proposed release and that cultural protocols need to be in place for the entire duration of the release. The education and outreach component of The ‘Alalā Project is very active and will continue this work during the entire duration of the release. The ‘Alalā Project has been working closely with cultural practitioners and respected community members in a cultural advisory group. This group has provided guidance and support throughout the planning process, site scoping, and writing of this draft EA. They will continue to guide and advise our work throughout the release process. Additionally, the project would be subject to compliance with Section 106 of the National Historic Preservation Act and Chapter 6E of the Hawai‘i Revised Statutes prior to implementation. Through the Section 106 and Chapter 6E consultation process, the project would be open for public comment to any member of the public who has a concern about potential effects on cultural or historic resources.

Comment 27

Anonymous, 11/21/23

Comment: This could be the restoration of an extinct species! I am excited by the prospect of this project. The ‘Alalā has always fascinated me and I hope these birds can live in the wild again.

Response: Thank you for your comment.

Comment 28

Lori Robertson, 11/22/23

Comment: I am a Kula resident and writing to express my strong support for this project which will assist in restoring our wildlife.

Response: Thank you for your comment.

Comment 29

Edward Baldwin, 11/22/23

Comment: The ‘Alalā is in need of a place with no hawks where it can hopefully rebuild the population. Further it can contribute to a healthier native Hawaiian forest as some plants require ingestion and elimination of seeds to germinate. The olapa tree in particular comes to mind. I fully support this effort and hope these efforts can help bring the ‘alalā back much like was done with the nene.

Response: Thank you for your comment. ‘Alalā is an important disperser of seeds of native plants. As described in the draft EA, we will be collecting seeds of native and introduced plants in ‘alalā fecal samples to evaluate amounts of native and introduced fruits eaten.

Comment 30

River Barros, 11/22/23

Comment: I believe that having ‘alalā released on Maui is an excellent decision as we need more native species to spread native seeds. The company of the ‘alalā on Maui would bring joy to me and to many others. All the science shows that this would be good for all of the ‘āina.

Response: Thank you for your comment.

Comment 31

Joy b Kaaz, 11/22/23

Comment: I am writing in support of the proposed release of the indigenous ‘alalā in east Maui. This beautiful, smart bird species is currently extinct in the wild. It is both environmentally and culturally important to the Hawaiian Islands. A thriving population of this species would help preserve and enhance the health of our forests by distributing seeds of native plants critical to forest health. Thank you for your consideration of my comment in favor of the project to restore ‘alalā to its former habitat.

Response: Thank you for your comment. ‘Alalā is an important disperser of seeds of native plants. As described in the draft EA, we will be collecting seeds of native and introduced plants in ‘alalā fecal samples to evaluate amounts of native and introduced fruits eaten.

Comment 32

Lauren Schmuck, 11/22/23

Comment: I would like to thank you for the opportunity to submit comments on the draft Environmental Assessment to address the impacts of the pilot releases of ‘Alalā on east Maui. Please find my comments in the attached document. I am in support of the release of ‘Alalā on east Maui, but offer some considerations and questions in the attached. I would like to commend you and your team for undertaking this extremely important work. You have my utmost respect. Thank you, Lauren Schmuck Wildlife Biologist Ottawa, Ontario Canada

Commentor’s “attached document” is appended here:

Timing: My main comment pertains to timing. I think it is important to carefully consider whether now is the best time to carry out the release. Please note that I am not suggesting now is not the right time, I am just suggesting that we ensure all important considerations have been made. Is 120 ‘alalā in captivity (that is my understanding of the

current number) enough individuals to enable the release of x number into the wild, while still maintaining a relatively genetically healthy population in captivity? Would there be any advantage to waiting a few more months or years to do this release? Are there conditions that would be more favourable for successful wild population establishment which could/will occur in the coming months or years? Or, will the chances of a successful wild population being established decrease with time (due to, for example, changing genetics in captive populations, etc.)?

Population Viability Analysis: Has a Population Viability Analysis (PVA), or some other similar tool, been used to determine the ideal number of ‘alalā that should be released to increase the chances of success? A PVA could also be used to address the question of whether the time is right for release now (I have heard of efforts to assess the viability of both captive and wild population simultaneously). I didn’t see any mention of a PVA in the draft EA. In my experience, it is important to have access to vital rates in order to complete a PVA. Do you have vital rates available for ‘alalā? If not, it could be possible to substitute vital rates of other crow species. I do recognize that no other crow species occur on Hawaii, so the vital rates would need to be those of a crow species native to somewhere other than Hawaii, but I think this could still work if it had to.

Predator-avoidance training: The EA notes that “USFWS and DOFAW decided for future releases to develop improved methods to teach predator recognition and appropriate behavioral response for ‘alalā to ‘io predation attempts”. Though the ‘io (*Buteo solitarius*) does not occur on Maui, section B of the “Proposed activities for all Action Alternatives (Alternatives 2, 3, and 4)” portion of the EA suggests that *Rattus spp.*, *Felis catus*, and *Herpestes auropunctatus* do occur on Maui, and are also predators of ‘alalā, and their eggs. While I recognize that this could be difficult, I think it is important that consideration be given to teaching predator recognition and appropriate behavioural response for ‘alalā to *Rattus spp.*, *Felis catus*, and *Herpestes auropunctatus*.

Habitat: My understanding is that the part of Maui where the ‘alalā will be released is wetter than the habitat on the big island, where the ‘alalā occurred naturally in recent history. I do not have any information about where exactly on the big island the founders of the captive ‘alalā population came from, but if they were taken from more than one habitat on the big island, then it is possible that the genetics of the founders may vary slightly from each other (e.g., if different individuals were adapted to different habitats on the big island). If that is the case, and if one of the habitats on the big island was wetter than the other(s), then it may be worth including those individuals whose ancestors came from the wetter habitat on the big island as part of the ‘alalā that are selected for release, because their genetics could convey some advantages and increase their odds of survival.

Further, the EA notes that “small mammal control using kill traps; rodents, cats and mongooses will be controlled in vicinity of release aviaries, feeding stations, and along trails and fence lines”. Will this occur over the long term, or the short-term only? Long-term predator control may be required to help increase the chances of success of this project.

Wild-born individuals: Is it safe to assume that none of the ‘alalā that will be released on Maui were born in the wild? If one or more were born in the wild, perhaps there could be some ‘cultural transmission’ of knowledge, such as where and when to look for different food sources. Having said that, I recognize that any wild-born individuals would have been born on the big island (and not on Maui), so perhaps cultural transmission of knowledge is not applicable in this case, given the change from the big island to Maui.

Comments pertaining to specific parts of the EA:

1) Chapter 2 (Alternatives), 2.4 (Alternative 3: Release of ‘Alalā to only Kīpahulu Forest Reserve on Maui): § Suggest that the size and composition of the planned "release group" of alala be described here because that could shed some light on the establishment probability, or the probability of success.

2) Chapter 3 (Affected Environment and Environmental Consequences), 3.1 (Plants), 3.1.1 (Environmental Setting), paragraph 2: § In the sentence “Plant species listed as threatened or endangered receive federal and state protection under the ESA and Chapter 195D, Hawai‘i Revised Statutes, respectively, and are characterized as those that are in danger of or area threatened with extinction throughout all or a significant portion of their range.”, I think perhaps the word written in red text should be “are”, rather than “area”

3) Chapter 3 (Affected Environment and Environmental Consequences), 3.1 (Plants), 3.1.1 (Environmental Setting), paragraph 6: § In the sentence “The Kīpahulu proposed release site (Alternatives 2 and 4), though fenced in some portions, has presence of feral ungulates throughout the area.”, suggest that this could say that feral ungulates are present throughout the area, rather than saying that the proposed release site “has presence of feral ungulates”.

4) Chapter 3 (Affected Environment and Environmental Consequences), 3.2 (Animals), 3.2.1 (‘Alalā): § In this sentence “Although the proposed action is intended to provide critical information to help recover this extinct-in-the-wild, it comes with certain risks to the individual ‘alalā involved in the pilot project, and to some extent, to the limited population from which these individuals are drawn (discussed in 3.2.1.2 below).”, suggest revision to “.... help recover this extinct-in-the-wild species”. The same holds true for the first sentence of section 3.2.1.3 Avoidance, Minimization, and Conservation Measures paragraph: “Any project that seeks to experiment with reintroducing an extinct-in-the-wild bird species into the wild poses unavoidable risks to the individual birds involved.”

5) ‘ALALĀ: A GENERAL DESCRIPTION; The Decline of ‘Alalā In the Wild; paragraph 4: § There seem to be different spellings of mosquitoes and mosquitos in this document. Suggest remaining consistent throughout.

Response: Thank you for your comments. Here are our responses to your comments:

Timing:

In response to whether there are sufficient ‘alalā currently in captivity to enable releases of ‘alalā, genetic and population modeling conducted for the Revised Recovery Plan for the ‘Alalā (*Corvus hawaiiensis*) (Revised Recovery Plan) estimated 75 ‘alalā are needed to retain maximum genetic diversity in the captive population for a period of 20 years (USFWS 2009, p. III—1-2). As the captive flock currently retains maximum genetic diversity there is no advantage to waiting to do the release. Additionally, a Population Viability Analysis conducted in 2022 by San Diego Zoo Wildlife Alliance found that there would be no long term loss of rare alleles or decline in the size of the captive population following the pilot release proposed in the draft EA.

Genetic Diversity and Population Growth Modeling was conducted for the Revised Recovery Plan (USFWS 2009, Appendix A). Based on the model, the number of ‘alalā in captivity is expected to increase over a 20-year period from roughly 50 to 200 individuals. Growth to 200 individuals has not been pursued because the conservation goal to maintain maximum genetic diversity in the captive flock has been met and we are now focused on releasing ‘alalā into the wild.

We plan to release ‘alalā during the warmer spring and summer months to minimize the impacts of cold wet weather, which occurs in the late fall and winter months in Hawai‘i. Data from releases on Hawai‘i Island suggest some mortality of released birds occurred from exposure during winter storms. A delay in releases may decrease the chances of success because of the gradual loss of genetic diversity in the captive flock and loss of wild behaviors in captive birds.

Population Viability Analysis:

We do not have estimates of vital rates for ‘alalā in the wild. Previous ‘alalā releases have been unsuccessful largely due to ‘io predation. The goal of the proposed pilot release is to figure out how to successfully release captive ‘alalā. Until we have a release strategy that promotes survival and breeding, we do not wish to release the ideal number of ‘alalā to facilitate population growth in the wild. Instead, our efforts in the proposed pilot project would be focused on refining release methods so that we could eventually release the larger cohorts necessary to promote population growth in the wild.

Predator-avoidance training:

Currently, there are no fully tested methods to teach ‘alalā to recognize and avoid ground-dwelling mammalian predators. However, as part of the release plan, we would investigate potential methods/approaches for conducting anti-predator training towards feral cats (*Felis catus*). Additionally, to address the threat from mammalian predators, we would conduct small mammal predator control around aviaries, feeding stations, and along trails and pathways mammalian predators are likely to use within the release area. Predator control would be conducted for the entire duration of the release. Predator control would also be conducted around nest sites, should released ‘alalā breed on east Maui.

Habitat:

All founders of the captive ‘alalā population are from the drier Kona side of Hawai‘i Island. Therefore, if there is a genetic component for potential better breeding success in wetter habitats, it is unlikely that this is present in the ‘alalā captive flock.

Wild-born individuals:

None of the birds in the captive flock were born in the wild. There are five older ‘alalā (> 5 years old) that have experience in the wild on Hawai‘i Island, although these individuals were also born in captivity. These older, experienced birds could be used to mentor the younger (9–18-month-old) release cohort in captivity. Because older, breeding-age birds (> 3 years old) display territorial behavior and are aggressive towards ‘alalā outside of their breeding pair, these > 3-year-old birds would not be released with the younger cohort.

Responses to comments pertaining to specific parts of the EA:

1) Description of “release groups,” size and composition begins on page 7 of the draft EA. Release groups would be either breeding pairs, between 2 and 3 pairs at a release site, or a group of 6 or 7 young birds, aged 9 to 18 months. Pairs and young birds would not be released at the same release site because of likely aggressive behavior by pairs towards younger birds.

2) We have corrected “area” to “are” in the final EA.

3) We have revised the sentence for clarity in the final EA to read: “The Kīpahulu proposed release site (Alternatives 2 and 3) has presence of feral ungulates throughout the area.”

4) We have retained “critically endangered species” in both sentences as we think this description is most clear.

5) Thank you for pointing out possible different spellings for “mosquitoes” and “mosquitos” (plural). We have used “mosquitoes” (plural) consistently in the draft EA.

Comment 33

Daniel Francisco, 11/22/23

Comment: I have been studying the movements in conservation and endangered species for some time now beginning with wolves in Colorado back in 2016. The Alala crow is one of the many birds that has a tremendous impact on Hawaii's ecosystems. Plant life depends greatly on these crows to disperse seeds especially the Hoawa tree. The Hoawa and Alala are codependent on each other for survival. It is my opinion, that introducing the Alala crow is one of the best decisions we can make for Maui's ecosystem. My only hope is that all risks have been measured so that when the time comes to release these birds, they will have a greater chance of survival. Mahalo, Daniel

Response: As described in the draft EA, we would collect seeds of native and introduced plants in ‘alalā fecal samples to evaluate fruits eaten and contribution by ‘alalā to the dispersal of native Hawaiian plants. Also described in the draft EA (pages 21-27), we have considered the different risks to ‘alalā, including predators, disease, and weather, and ways to address these risks

Comment 34

Theresa Thompson, 11/28/23

Comment: Because the ‘Alalā is a predator and preys on small birds, eggs, and nestlings an introduction of NEW wild populations on Maui would jeopardize our already fragile native bird populations. Natives such as the: ‘I‘iwi, Amakihi, ‘Apapane, and Kiwīkiu that are already struggling to survive here might become prey to the ‘alalā. “‘Alalā are omnivorous, primarily eating native Hawaiian fruits and insects, and occasionally eggs and nestlings of small birds. As fruit eaters, ‘alalā play a vital role as seed dispersers in their native ecosystem. Seeds that pass through their digestive system propagate throughout their native forests as the birds fly from tree to tree.” Might the ‘Alalā also eat berries from the invasive species and disperse them, increasing another problem? We should NOT put our

small populations of precious natives at risk of becoming Extinct too! Hawaii is the endangered and extinct species capital of the World! Loss of any one of them upsets the natural balance of the ecosystem in Expected and Unexpected ways. The need is to protect ALL native species. Hawaii has too many Extinct species already. Maui should NOT be the choice for the NEW 'Alalā site. Maui was never their home. There is also the issue of LIABILITY to adjacent landowners. We do not want to get sued.

Response: Thank you for your comment regarding the threat 'alalā pose to other native forest birds. Please see Comment 9 (above) for our response to your comment.

Thank you for your comment regarding the potential for 'alalā to spread seeds of introduced plants. See comment 10 (second paragraph) above for a response to your comment. A more detailed examination of the potential threat 'alalā pose for the spread of seeds of introduced plants can be found in Section 3.1.2. "Impacts of Proposed Actions on Plants" in the draft Environmental Assessment.

Thank you for your comment about releasing 'alalā on Maui. As discussed in Section 2.1 "Identification of Alternatives," subfossils found on the southwest slope of Haleakalā Volcano are either 'alalā or a very closely related species.

Thank you for your comment regarding the liability of adjacent landowners. 'Alalā are protected under the Migratory Bird Treaty Act (MBTA), the Endangered Species Act (ESA), and Hawai'i Revised Statute 195-D2 (HRS 195-D2). It is prohibited to remove an 'alalā nest or to harm, kill, or harass 'alalā without permit(s) under these authorities. See Appendix K of the Draft EA for more information on Conservation Measures recommended for 'alalā on private lands. Landowners will not assume any liability as long as permit(s) are obtained for activities that may result in harm to 'alalā nests or potential to harm, kill, or harass 'alalā.

Comment 35

Nicole Galase, 11/29/23

Hawaii Cattlemen's Council, Inc.
November 28, 2023

Comment on Environmental Assessment for Pilot Release of 'Alalā (*Corvus hawaiiensis*) on East Maui, Hawai'i

To the U.S. Fish and Wildlife Service and Department of Land and Natural Resources,

The Hawai'i Cattlemen's Council (HCC) is the Statewide umbrella organization comprised of the four county-level Cattlemen's Associations, including the Maui Cattlemen's Council. Ranchers are the stewards of 750,000 acres of land in Hawai'i, or 20% of the State's total land mass. We represent the interests of Hawai'i's cattle producers. We thank the 'Alalā Working Group for meeting with the Hawai'i Cattlemen's Council in 2022 to discuss Maui rancher's concerns about the proposed release. Hawai'i's ranchers are land managers who observe flora and fauna, adapt to changing environments, and steward the land. The health of the land is paramount. After reviewing the draft EA, we would like to reiterate some of these concerns.

Spread of Invasive Plants

While the EA states that the 'alalā will not preferentially seek out invasive plant species, we are concerned that as a larger species they will have a greater impact as seed spreaders. Maui already suffers from negative impact of invasive species, and the spread of strawberry guava, kahili ginger, and Koster's curse will have a negative impact on both forests and rangelands. We ask that the project be diligent in monitoring any increased spread the 'alalā release might have, and be transparent in sharing this information.

Negative Impact on Native Forest Birds

One of the main concerns of the ranchers is the negative impact this release may have on native forest birds. Hawai'i's ranchers understand the importance of a balanced ecosystem, and introducing the 'alalā to an environment that has not hosted such a species in a long period of time has the potential to have lasting effects on native birds that already struggle to survive. We are concerned about the competition for food, the potential for 'alalā to predate on

forest bird eggs and nestlings. While the EA is optimistic that there will be minimal impact with listed honeycreepers, we once again ask that the project be diligent in monitoring any negative impact and share this information. Further, to prevent any unnecessary loss to forest bird species, we ask that measures be taken to adapt if it is found that predation is taking place.

Impact on Ranch Operations

While the EA notes that ‘alalā do not prefer grasslands, it should not be assumed that ranches only consist of open grasslands. Many of Hawai‘i’s ranchers are advocates for maintaining healthy forests, and are concerned of the implications if ‘alalā are found on their property. Ranchers are able to steward their land because of their cattle operations – a business that must be profitable in order to succeed. The EA is hopeful that the ‘alalā will not use the open pasture land of Kaupō Ranch and Nu‘u Mauka Ranch, but we are extremely concerned about the impact it will have if any ‘alalā are found on these tracts of land. If this project results in further releases elsewhere on Maui, ranchers are concerned about any restrictions that may be placed on their operation as a result of this introduction.

Thank you for the opportunity to comment on this Draft EA. If a release takes place, we respectfully ask the project to be transparent in the results and impacts of the release, as well as adaptive- that is measures are taken to change course and reduce any found negative impact to the ‘alalā, other native species, and the environment.

Nicole Galase
Managing Director

Response: Thank you for your comments. We appreciated the opportunity to meet with the Hawai‘i Cattleman's Council and the organization’s continued engagement. We agree that the stewardship of private lands, including ranches, is essential for the conservation of Hawaii’s natural resources. Here are our responses to your comments:

Spread of Invasive Plants

Thank you for your comment about the potential for ‘alalā to spread seeds of invasive plants. Please see response to comment 10, second paragraph for our response to your concern.

Negative Impact on Forest Birds

Thank you for your comment about the potential impacts to native forest birds. ‘Alalā would not be expected to compete with native forest birds due to their different foraging preferences. Additionally, there is no overlap in bill size between ‘alalā and other native forest birds, which suggests that they generally forage on different native fruits, seeds, and insects. Native Hawaiian honeycreepers such as ‘ākohekohe, ‘i‘iwi, ‘amakihi, and ‘apapane primarily forage on nectar and small insects; Maui ‘alauahio forage on small insects; kiwīkiu use their strong bill to extract insect larvae from branches. By contrast, ‘alalā are generalist foragers and primarily consume fruit, larger insects, other invertebrates, and eggs and young of small perching birds (Sakai et al. 1986). The potential for ‘alalā to compete with native birds for food is minimal compared to the competition that is currently occurring from introduced birds such as non-native species like the warbling white-eye (*Zosterops japonicus*) and red-billed leiothrix (*Leiothrix lutea*). These non-native species, although significantly smaller than ‘alalā, vastly outnumber the proposed number of released ‘alalā. Based on body mass and the number of birds on the landscape, we estimate that these non-native species would consume 30 times as many insects as released ‘alalā. Lastly, food is not currently identified or believed to be a limiting factor for our declining honeycreepers.

In response to your comment about the potential for ‘alalā to depredate forest bird nests, please see response to comment 9.

Impact on Ranch Operations

In response to your comment about the potential for ‘alalā to impact ranch operations, based on observations of habitat use by ‘alalā on Hawai‘i Island it is unlikely that ‘alalā will use habitat with grassland and scattered trees, although this is possible. Ranch lands with grass understory and fairly continuous tree overstory could be used for foraging and potentially for nesting. As discussed in the response to Comment 34, last paragraph, ‘alalā are protected under the Migratory Bird Treaty Act (MBTA), the Endangered Species Act (ESA), and Hawai‘i Revised Statute 195-D2 (HRS 195-D2). It is prohibited to remove an ‘alalā nest or to harm, kill, or harass ‘alalā without permit(s) under these authorities. Landowners would not assume any liability as long as permit(s) are obtained for activities that may result in harm to ‘alalā nests or potential to harm, kill, or harass ‘alalā. Please see Appendix K of

the draft EA for more information on recommended Conservation Measures for ‘alalā on private lands.

The chief impact of ‘alalā on private lands would be if ‘alalā were to nest on private lands. If nesting on private lands were to occur, we would request that the private landowner follow the recommended Conservation Measure in Appendix K to maintain a distance of 660 feet from the nest for all operations until the nest is confirmed to have fledged young or to have failed. Based on habitat use and dispersal distance, private lands with sufficient tree cover that ‘alalā might use for nesting are greater than 2 miles from the preferred release site at Kīpahulu Forest Reserve. Two miles is the maximum expected dispersal of released ‘alalā based on Hawai‘i Island releases. Therefore, the potential for nesting on private lands is small.

We are committed to providing information to landowners about the presence of ‘alalā should ‘alalā venture onto their lands and working with landowners on ways to minimize potential impacts of ‘alalā on their operations. Should ‘alalā successfully survive and breed on east Maui at the preferred release site, we will initiate a second NEPA process (EA or Environmental Impact Statement, EIS) to evaluate the potential environmental impacts including potential impacts on ranching operations of keeping them in the wild in east Maui.

ATTACHMENT B: ERRATA

Environmental Assessment for Pilot Release of ‘Alalā (*Corvus hawaiiensis*) on East Maui, Hawai‘i

INTRODUCTION

This errata documents changes (corrections and minor revisions) to the text of the Environmental Assessment for Pilot Release of ‘Alalā (*Corvus hawaiiensis*) on East Maui, Hawai‘i (EA) as a result of comments received on the EA during the public review process, as well as other corrections. Page numbers referenced pertain to the EA released to the public for review on October 31, 2023. Original text from the EA is included to provide context and to allow for comparison to the text change. Additions to text are underlined, and deleted text is shown by ~~strikeout~~.

ERRATA

Page 1

Original: Because ~~there are no ‘io on Maui, the island~~ would allow the opportunity to test if released ‘alalā are able to breed successfully in absence of predation on ‘alalā by ‘io.

Revision: Because sightings of ‘io on Maui are extremely rare and ‘io do not breed on Maui (Banko 1980, entire) (all references are in Appendix A), releasing ‘alalā on Maui would allow the opportunity to test if ‘alalā are able to breed successfully in absence of predation on ‘alalā by ‘io.

Original: Subfossil remains indicate that corvids were once present on islands of O‘ahu, Maui, and Moloka‘i; Maui had the ‘alalā or a similar species as late as the period of human occupation based on radiocarbon dating of crow subfossil remains from east Maui (James *et al.* 1987, p. 2354; ~~all references are in Appendix A~~).

Revision: Subfossil remains indicate that corvids were once present on islands of O‘ahu, Maui, and Moloka‘i; Maui had the ‘alalā or a similar species as late as the period of human occupation based on radiocarbon dating of crow subfossil remains from east Maui (James *et al.* 1987, p. 2354).

Page 5

Original: The Kīpahulu proposed release site is located on the southeast slope of Haleakalā volcano on east Maui at approximately ~~5,000 ft~~ elevation in Kīpahulu Forest Reserve (Kīpahulu FR) and is managed by DLNR DOFAW (Fig. 1).

Revision: The Kīpahulu proposed release site is located on the southeast slope of Haleakalā volcano on east Maui at approximately 1,400 m (4,600 ft) elevation in Kīpahulu Forest Reserve (Kīpahulu FR) and is managed by DLNR DOFAW (Fig. 1).

Page 16

Original: Plant species listed as threatened or endangered receive federal and state protection under the ESA and Chapter 195D, Hawai'i Revised Statutes, respectively, and are characterized as those that are in danger of or area threatened with extinction throughout all or a significant portion of their range.

Revision: Plant species listed as threatened or endangered receive federal and state protection under the ESA and Chapter 195D, Hawai'i Revised Statutes, respectively, and are characterized as those that are in danger of or area are threatened with extinction throughout all or a significant portion of their range.

Page 17

Original: The Ko'olau proposed release site (Alternatives 2 and 3) is protected by ungulate exclusion fencing and natural barriers from ungulate intrusion.

Revision: The Ko'olau proposed release site (Alternatives 2 and 4) is protected by ungulate exclusion fencing and natural barriers from ungulate intrusion.

Original: The Kīpahulu proposed release site (Alternatives 2 and 4), though fenced in some portions, has presence of feral ungulates throughout the area.

Revision: The Kīpahulu proposed release site (Alternatives 2 and 3), though fenced in some portions, has presence of feral ungulates throughout the area.

Page 21

Original: 'Alalā experienced a severe decline in numbers and range during the latter part of the 19th and throughout the 20th century (Berger 1972, p. 91).

Revision: 'Alalā experienced a severe decline in numbers and range during the latter part of the 19th and throughout the 20th century (Berger 1981, p. 91).

Page 37

Original: Conservation measures include tree snail surveys, tree snail live collection and captive propagation, and introduction of tree snails to the ~~OSTE~~ snail enclosure. Tree snail surveys would be conducted at the Kīpahulu proposed release site before the proposed release, and information obtained from these surveys incorporated into the final EA. There is a population of approximately 60 *Partulina marmorata* in captivity, and it is anticipated a small number of *P. marmorata* tree snails will be introduced to the ~~OSTE~~ in 2024. The conservation measure to introduce captive raised *Partulina marmorata* to the ~~OSTE~~ snail enclosure is its own recovery action independent of the proposed 'alalā release, but when accomplished, will result in a second (protected) wild population of *Partulina marmorata* tree snails. There is virtually no risk of 'alalā flying over 15 miles from the Kīpahulu proposed release site to the ~~OSTE~~, and if this did occur, these 'alalā would be captured and returned to captivity.

Revision: Replace the acronym "~~OSTE~~" where it appears in this paragraph with "OTSE."

Page 75

Add the following reference to Appendix A: References.

Banko, W.E. 1980. History of Endemic Hawaiian Birds. Part 1. Population Histories—Species Accounts. Forest Birds: Hawaiian Hawk (‘Io). Cooperative National Park Resources Studies Unit, University of Hawaii at Manoa. 24 pp.

Remove the following reference from Appendix A: References.

Bouyer, B.L., and S.K. Lopes. 2023. Cultural Impact Assessment for the Release of Endangered Captive-bred ‘Alalā in the Ko‘olau and Kīpahulu Forest Reserves. Prepared for Department of Land and Natural Resources, Division of Forestry and Wildlife, 1151 Punchbowl Street, Room 325, Honolulu, HI 96813. 111 pp.

Page 76

Add the following reference to Appendix A: References.

EPA (U.S. Environmental Protection Agency). 2015. Registration Review – Preliminary Problem Formulation for Ecological Risk and Environmental Fate, Endangered Species, and Drinking Water Assessments for Diphacinone and Diphacinone Sodium Salt. United States Environmental Protection Agency, Washington D.C., 20460. MEMORANDUM, Date 12/06/2015.

Page 77

Add the following reference to Appendix A: References.

Giffin, J.G., J.M. Scott, and S. Mountainspring. 1987. Habitat Selection and Management of the Hawaiian Crow. The Journal of Wildlife Management 51:485-494.

Page 78

Add the following reference to Appendix A: References.

Klavitter, J., P. Banko, D Ball, K. Clarkson, P. Harrity, and S. Johnston. 1995. Activity patterns and foraging ecology in ‘Alalā (*Corvus hawaiiensis*): A comparison of wild adult and captive reared juvenile Hawaiian Crows. Preliminary U.S. Fish and Wildlife Service Report. 1995. Pacific Islands Fish and Wildlife Office, Honolulu, Hawaii. 16 pp.

Page 79

Original: Work, T., J. Dagenais, R. Rameyer, and R. Breeden. 2015 Mortality patterns in endangered Hawaiian geese (Nene; *Branta sandvicensis*) Journal of Wildlife Diseases 51:688-695.

Revision: Work, T., J. Dagenais, R. Rameyer, and R. Breeden. 2015. Mortality patterns in endangered Hawaiian geese (Nene; *Branta sandvicensis*) Journal of Wildlife Diseases 51:688-695.

Original: Greggor, A. ~~12-14-2022~~. Pers. Comm. to J. Nelson, email communication. Subject: ~~food resources at Kīpahulu release site.~~

Revision: Greggor, A. 12-21-2022. Pers. Comm. to J. Nelson, email communication. Subject: ‘Alala response to low flying helicopters and drones at Pu‘u Maka‘ala NAR.

Page 80

Original: Similarly, on Hualālai, ‘alalā were historically seen moving from the montane dry forests on the north side to the wet west side of Hualālai in response to seasonal food resources (~~Giffin 1983, pp. 21–22~~; Banko *et al.* 2002, p. 4).

Revision: Similarly, on Hualālai, ‘alalā were historically seen moving from the montane dry forests on the north side to the wet west side of Hualālai in response to seasonal food resources (Banko *et al.* 2002, p. 4).

Page 81

Original: In common with many Hawaiian birds, the ‘alalā experienced a severe decline in numbers and range during the latter part of the 19th and throughout the 20th century (Berger ~~1972~~, p. 91).

Revision: In common with many Hawaiian birds, the ‘alalā experienced a severe decline in numbers and range during the latter part of the 19th and throughout the 20th century (Berger 1981, p. 91).

Page 83

Original: The primary cause of death for three recovered carcasses could not be determined (~~A. Gregor, pers. comm., 2022~~).

Revision: The primary cause of death for three recovered carcasses could not be determined (USFWS/DLNR, unpubl. data).

Page 84

Original: During the Pu‘u Maka‘ala release the field team observed release cohorts mixing around supplemental feeding stations near hacking aviaries built for later releases and intra-specific conflicts at and near the feeding stations, as well as in the surrounding forest (~~A. Greggor, pers. comm., 2022~~).

Revision: During the Pu‘u Maka‘ala release the field team observed release cohorts mixing around supplemental feeding stations near hacking aviaries built for later releases and intra-specific conflicts at and near the feeding stations, as well as in the surrounding forest (USFWS/DLNR, unpubl. data).

Original: Preliminary analyses of the circumstances surrounding ‘alalā mortalities suggest that birds were at higher risk during periods of weaning and as the number of territorial birds on the landscape increased (~~A. Greggor, pers. comm., 2022~~).

Regional: Preliminary analyses of the circumstances surrounding ‘alalā mortalities suggest that birds were at higher risk during periods of weaning and as the number of territorial birds on the landscape increased (USFWS/DLNR, unpubl. Data).

ATTACHMENT C: DETERMINATION OF NO IMPAIRMENT

As described in National Park Service (NPS) 2006 Management Policies, § 1.4.4, the National Park Service Organic Act prohibits the impairment of park resources and values. Guidance for Non-Impairment Determinations and the NPS NEPA Process (September 2011) provides guidance for completing non-impairment determinations for NPS actions requiring preparation of an environmental assessment (EA) or environmental impact statement (EIS) pursuant to the National Environmental Policy Act (NEPA). The NPS has completed a non-impairment analysis for the Pilot Release of ‘Alalā (*Corvus hawaiiensis*) on East Maui, including Haleakalā National Park (HALE) and determined that it will not result in impairment of Park resources, or in unacceptable impacts as described in § 1.4.7.1 of the 2006 NPS Management Policies.

An action constitutes impairment when its impacts “harm the integrity of park resources or values, including the opportunities that otherwise will be present for the enjoyment of those resources or values” (NPS 2006, Section 1.4.5). To determine impairment, the NPS must evaluate the “particular resources and values that will be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts. An impact on any park resource or value may constitute impairment, but an impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
- identified in the park’s general management plan or other relevant NPS planning documents as being of significance (NPS 2006, Section 1.4.5).

Resources that were carried forward for detailed analysis in the Environmental Assessment (EA), and for which a non-impairment determination has been made, include plants (including rare, threatened and endangered species), animals (including rare, threatened and endangered), cultural resources and acoustic environment (noise impacts). A non-impairment determination is not necessary for visitor use and experience or wilderness resources because these impact topics are not generally considered a park resource or value subject to the non-impairment standard (see NPS 2006, Section 1.4.6).

As a basis for evaluating the potential for impairment or unacceptable impacts on the Park’s resources, the NPS relied on the EA for Pilot Release of ‘Alalā (*Corvus hawaiiensis*) on East Maui, Hawai‘i. Additionally, the non-impairment analysis for biological resources was informed by the Section 7 documentation for the Endangered Species Act.

PLANTS (INCLUDING RARE, THREATENED AND ENDANGERED SPECIES)

Over 420 plant species in Hawai‘i are federally and state listed as threatened or endangered (USFWS 2022b). Many of these plant species persist at very low numbers and are in rapid decline. Existing threats to listed plant species across the Hawaiian Islands include habitat loss, degradation, and modification of habitat from non-native invasive plants and animals, and disease (USFWS 2021). The selected alternative

will occur in areas of HALE that include rare, threatened and endangered plants, as well as designated critical habitat.

Impacts to listed plant species, designated critical habitat, and rare plant species during ‘alalā release and support work could occur through vegetation clearing, the removal or trampling of individual plants, physical damage to plant parts, introduction or spread of invasive plants or pathogens, or damage to habitat, including designated critical habitat, from clearing, maintenance, and increased use of existing management trails and fence lines, helicopter landing zones, and camps. All plans for release are to occur adjacent to and completely off of NPS lands and established trails, fence lines, camps, and helicopter landing zones will be used for monitoring activities only if ‘alalā nest or travel within the NPS boundary. Therefore, no additional adverse impacts from vegetation removal or trampling on NPS lands will be anticipated.

With implementation of minimization and mitigation measures in Chapter 3 of the EA, potential impacts to federally listed plant species, designated critical habitat, and rare plant species during ‘alalā release and monitoring will be negligible and impacts to designated critical habitat are expected to be negligible. The selected alternative includes mitigations to limit potential impacts to these plant species and impacts are expected to be so small that they would not impact the integrity of the resources nor change the prevalence in the park. Because the expected impacts are so minimal, the USFWS determined that any impacts to these plant species is not likely to adversely affect them. Therefore, the NPS has determined the selected alternative will not result in impairment of threatened and endangered plant species and rare plant species.

ANIMALS (INCLUDING RARE, THREATENED AND ENDANGERED SPECIES)

Island species co-evolved in isolation over millions of years with unique adaptations to their environments and endemic plants, birds, and insect pollinators to Hawai‘i are remarkably co-specialized (Carlquist 1974). The ecosystems of east Maui (and the project area) include a wide diversity of animal, plant, and invertebrate species native to the Hawaiian Islands, many of which are found only in east Maui. The upper elevation habitats of the project area within HALE are characterized as very wet, high-quality native-dominated rainforest (Price et al. 2007). Significant changes in the forest ecosystems of Hawai‘i, beginning with Polynesian arrival and increasing after European contact, have contributed to the decline and disappearance of many species of endemic birds (Banko 2009, entire). Several species of federally listed threatened and endangered wildlife (mostly bird species) are known to occur within the project area. Three of these listed bird species are Hawaiian honeycreepers—kiwīkiu, ‘ākohekohe and ‘i‘iwi—and are declining rapidly due to mosquito-borne avian malaria and other threats. The ‘alalā is critically endangered and currently extinct in the wild and the selected alternative will assist with recovery of the species.

Impacts to listed animal species, designated critical habitat, and rare animal species during ‘alalā release and support work could occur through the presence of and noise from helicopters, predation by ‘alalā on other rare and listed animal species, and the risk or benefit to ‘alalā during release. Low risk from predation by ‘alalā to Hawaiian honeycreeper and rare tree snail species was evaluated in Chapter 3 of the EA and, additionally, risk to rare tree snails is negligible based on recommendations of snail researchers

at the Department of Land and Natural Resources after conducting rare snail surveys in HALE in spring 2024. Mitigation measures have been incorporated in the selected alternative to avoid or minimize any impacts. On May 21, 2024, the NPS received a letter from the USFWS Pacific Islands Fish and Wildlife Office stating that they determined that the selected alternative is not likely to adversely affect federally listed species or designated critical habitats. ‘Alalā recovery may substantially benefit from the selected alternative to pilot release ‘alalā on east Maui. Therefore, the NPS has determined the selected alternative will not result in impairment of rare, threatened and endangered wildlife species.

CULTURAL RESOURCES

HALE includes many cultural resources, including ethnographic resources, sacred sites, traditional cultural properties (TCPs), archeological resources and historical and architectural resources. These resources within the project analysis area are described in detail in Chapter 3 of the EA on page 45. Many traditional Hawaiian practices require that the sounds of nature are heard and not interrupted by other human noises. Sustaining connections and interrelationships between Native Hawaiians and culturally significant park resources and places is fundamental resource and value of HALE (Foundation Document, page 8).

The selected alternative does not impact known archaeological sites or interfere with the performance of cultural practices including traditional gathering and historic trails systems. Although there are historic properties within the Area of Potential Effect (APE), the agencies have made a Section 106 effect determination of “no adverse effects to historic properties” and the State Historic Preservation Officer (SHPO) made a determination of “no historic properties effected” under Section 106. Therefore, the NPS has determined the selected alternative will not result in impairment of cultural resources.

ACOUSTIC ENVIRONMENT

The natural acoustic environment of HALE is a key fundamental resource and value (NPS 2015), and is important for wildlife, visitors, and native Hawaiian ceremonies. Common natural sounds include weather-related sounds (wind in the forest canopy, thunder, and rain), water flowing, waterfalls rushing, bird calls, insects buzzing, and other animal calls or communications (Lynch 2012, Lee et al. 2016, Job et al. 2018). Overall, the acoustic environment of the park is generally in good condition, even though aircraft are documented as the most prevalent noise source adversely affecting the soundscape (Wood 2015, Lee et al. 2016). Commercial air tours, commercial flights, private aviation, and other administrative flights currently contribute noise to the park.

Noise from helicopter support and monitoring will be the most intense acoustic impacts to result from this project. However, the adverse impacts from the helicopter use, which will be mostly localized off NPS lands, will be confined largely to backcountry areas and will largely go unnoticed by humans and will only briefly disturb wildlife. Humans and animals may experience slight perceptible increases in sound/noise intermittently during helicopter operations. The selected alternative will contribute small and largely unnoticeable adverse impact to the acoustic environment during ‘alalā release support and monitoring activities. Mitigation measures (e.g., timing of flights, selection of flight paths, avoiding NPS lands, etc.) have been incorporated in the selected alternative to avoid or minimize potential impacts to

the acoustic environment. Park visitors will still be able to enjoy the park's natural quiet and since operations will mostly occur in areas closed to public access. Because the noise impacts are short in duration, low in intensity, and are prioritized outside of HALE, the NPS has determined that the selected alternative will not result in impairment of the acoustic environment.

SUMMARY

The NPS has determined that implementation of the selected alternative will not constitute impairment of the resources of the park. This conclusion is based on consideration of the park's purpose and significance, a thorough analysis of the environmental impacts described in the EA, comments provided by the public and others, and the professional judgment of the decision maker guided by the direction in NPS Management Policies 2006.

Haleakalā National Park
Minimum Requirements Analysis Worksheet 2024

ATTACHMENT D: WILDERNESS MINIMUM REQUIREMENTS ANALYSIS

The Minimum Requirements Analysis (MRA) is designed to examine whether a project truly needs to occur in wilderness, and if so, how to accomplish it with the least impact to the wilderness resource. This document is intended for uses prohibited by Section 4(c) of the Wilderness Act in designated wilderness, but it can be used to analyze all projects in wilderness.

“...except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act...”

— Section 4(c), Wilderness Act of 1964

Title: Pilot Release of ‘Alalā (*Corvus hawaiiensis*) on East Maui, Hawai‘i

Step 1: Determine If Administrative Action May Be Necessary

Issue Statement: The ‘alalā or Hawaiian crow (*Corvus hawaiiensis*) is extinct in the wild, but a captive population survives in conservation breeding centers in Hawai‘i. Previous attempts to release captive-bred ‘alalā into the wild on Hawai‘i Island failed, largely due to predation of ‘alalā by ‘io or Hawaiian Hawk (*Buteo solitarius*). Agencies would like to evaluate whether ‘alalā can survive and breed on east Maui, where there is not a breeding population of ‘io. The ‘alalā is known historically from Hawai‘i Island and ‘alalā or a similar species also occurred on Maui prehistorically. Efforts are being led by the U.S. Fish and Wildlife Service (USFWS) and the State of Hawai‘i Department of Land and Natural Resources (DLNR) Division of Forestry and Wildlife (DOFAW), with Haleakalā National Park as a cooperating agency.

Options Outside of Wilderness: *Can the issue be resolved or addressed outside of wilderness?*

☒ **No, Explain:** None of the areas assessed for release of ‘alalā on Maui are within designated Wilderness, but the only viable release location is adjacent to Haleakalā Wilderness and it is highly likely that released birds may prefer habitat and fly over and/or nest within wilderness. During initial scoping, a total of eight sites, described below in detail under Considered But Dismissed, were identified as potential release sites. These sites were narrowed down to two feasible sites on east Maui for more detailed evaluation based on habitat quality, area of suitable habitat, and other factors. Alternative locations were developed based on the best available scientific data and applicable conservation principles, although most were dismissed due to various reasons. The locations of potential release sites were evaluated, but were dismissed from further consideration due to technical, environmental or economic infeasibility or because they did not meet the purpose and need of the proposed action. Please refer to Chapter 2.1 of the Environmental Assessment for a detailed review of the alternative dismissal process.

Criteria For Determining Necessity: *Do any of the criteria below apply?*

Haleakalā National Park
Minimum Requirements Analysis Worksheet 2024

- A. Wilderness Character:** *Are any of the qualities of wilderness character degraded, impaired, or threatened to a degree that is necessary to analyze potential action otherwise prohibited by Section 4(c) to address the issue?*

UNTRAMMELED: ☐ Yes ☒ No

Explain: It is not necessary to take action to preserve this quality. Although the intent is to protect the species from extinction, the proposed action involves manipulating the environment and represents interference in the natural processes of “the earth and its community of life.”

UNDEVELOPED: ☐ Yes ☒ No

Explain: It is not necessary to take action to preserve this quality. The proposed study would not include activities that would be considered “expanding settlement and growing mechanization” within Haleakalā Wilderness.

NATURAL: ☒ Yes ☐ No

Explain: It is necessary to take action to preserve this quality. A wilderness area is to be “protected and managed so as to preserve its natural conditions” meaning that wilderness ecological systems are substantially free from the effects of modern civilization. To preserve this quality and address the Scenic and Conservation public purposes of wilderness, it may be necessary to take action to correct unnatural conditions even if they were present at the time of designation. ‘Alalā are the largest surviving endemic Hawaiian forest bird able to disperse larger seeded native plants that Maui extant species cannot. ‘Alalā are on a realistic trajectory toward extinction, and the loss of a species within the Native Hawaiian biological ecosystem would represent a permanent degradation of the natural quality.

OUTSTANDING OPPORTUNITIES FOR SOLITUDE or PRIMITIVE and

UNCONFINED RECREATION: ☐ Yes ☒ No

Explain: It is not necessary to take action to preserve this quality. The Wilderness Act defines wilderness as having “outstanding opportunities for solitude or a primitive and unconfined type of recreation.” This quality is preserved when the opportunity for people to experience wilderness in terms of the visitor's sense of solitude, and their expectation for an undeveloped environment with minimal restrictions is available.

OTHER FEATURES OF VALUE: ☒ Yes ☐ No

Explain: It is necessary to take action to preserve this quality. Hawaiian culture encompasses the need to do something to help recover the ‘alalā and maintain the species on the landscape as an important part of native ecosystems and the cultural importance of the ‘alalā as a family ‘aumakua (a Hawaiian personal and family god). The loss of only extant Hawaiian corvid would be devastating to the ‘alalā’s connection to Hawaiian lineage and culture.

- B. Valid Existing Rights:** *Is action necessary to satisfy a valid existing right? If so, cite the specific right, terms and conditions, and source.* ☐ Yes ☒ No

Explain: Action is not necessary to satisfy a valid existing right.

- C. Special Provisions of Wilderness Legislation:** *Is action necessary to satisfy a special provision in wilderness legislation (i.e., Section 4(d) of the Wilderness Act of 1964 or subsequent wilderness-enabling laws) that requires action? Cite law and section.* ☐ Yes ☒ No

Explain: Action is not necessary to satisfy a valid existing right.

Haleakalā National Park
Minimum Requirements Analysis Worksheet 2024

D. Requirements of Other Federal Laws: *Not including special provisions found in wilderness-enabling laws, does another Federal law, by itself or as implemented or interpreted through EO, court order, etc., require action? Cite law and section.* ☒Yes ☐No

Explain: The Endangered Species Act (ESA) of 1973 (Public Law 93-205) as amended. Sec. 2 (c) POLICY.—(1) It is further declared to be the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act. The USFWS is the joint lead agency directing this action and is the agency which is responsible for recovery of threatened and endangered (T&E) species.

Step 1: Determination – Is Administrative Action Necessary in Wilderness? ☒Yes ☐No

Explain: The proposed action is focused outside of Haleakalā Wilderness on nearby State of Hawai‘i land within the Kipahulu Forest Reserve. Released birds are likely to prefer the nearby pristine habitat of the Haleakalā Wilderness. If ‘ālalā choose to nest on NPS lands, within Haleakalā Wilderness, actions must be taken by the agencies to protect and perpetuate the species, such as supplemental feeding and invasive species predator control. Allowing the Haleakalā Wilderness as potential habitat is a measure that must be taken to evaluate if ‘ālalā can nest in the wild without predation pressure from i‘o and to assist rehabilitating this species in the wild. All other potential sites on Maui and within the state were evaluated and dismissed due to technical, environmental or economic infeasibility or because they did not meet the purpose and need.

Step 2: Determine the Minimum Activity

Other Direction: *Is there “special provisions” language in legislation or other congressional direction that explicitly allows consideration of (but does not require) a prohibited use? (Step 1 has a similar question in Section C, but that question is specific to other legislation requiring action in wilderness; this question is specific to other legislation addressing consideration of prohibited uses).*
AND/OR

Has the issue been addressed or prescribed in agency policy, management plans, or legal directive (e.g., treaty, EO, court order, or other binding agreement with federal, state, or local agencies or authorities)? ☒Yes ☐No

Explain: Federal Register Vol. 67, No. 31 / Thursday, February 14, 2002 / Notices 6944: Notice of Conversion of Potential Wilderness as Designated Wilderness, Haleakala National Park

“It is noted that construction of fences to exclude feral animals and access into the wilderness via helicopter for fence maintenance, to control destructive invasive alien plants and non-native animals may be necessary to preserve wilderness resources and ecosystem processes.” Fran P. Mainella, Director, National Park Service

Management Policies 2006:

6.3.7 Natural Resources Management Management actions, including the restoration of extirpated native species, the alteration of natural fire regimes, the control of invasive alien species, the management of

Haleakalā National Park Minimum Requirements Analysis Worksheet 2024

endangered species, and the protection of air and water quality, should be attempted only when the knowledge and tools exist to accomplish clearly articulated goals.

Wilderness Building Blocks 1 & 2, Wilderness Basics and Wilderness Character Assessment: Haleakalā Wilderness “Birds are the primary wildlife resource here and, like Haleakalā’s native plants, native bird species have evolved to occupy a range of specialized niches, making for an intriguing yet fragile diversity of bird life. For threatened and endangered birds such as the ‘ua’u, nēnē, ‘ākohekohe (crested honeycreeper) and kiwīkiu (Maui parrotbill) the wilderness provides integral habitat and offers reduced danger of predation by invasive land mammals.”

2009 USFWS Revised Recovery Plan for the ‘Alalā (Corvus hawaiiensis)

Pg. x Recovery Action #3 Establish new populations in suitable habitat by selecting and preparing captive-reared ‘Alalā for release, and planning release protocols to maximize survival and obtain crucial information for improvement of subsequent releases.

Uncontrollable Timing Requirements: *What, if any, are the considerations that would dictate timing of the action? (For example, to avoid a critical bird nesting season. Do not include availability of workers, available funding, or other administrative considerations.)*

Explain: Immediate or timely management action needs to be taken to prevent the extinction of threatened and endangered ‘alalā in Hawai‘i and remaining populations in captivity. Planning for the release of birds for a pilot project requires timing constraints based on captive rearing programs, including preparing individuals for release and avoiding the harshest conditions of the wet season.

Step 2: Alternatives

Alternative 1 Title: Pilot Release of ‘Alalā at Kīpahulu Forest Reserve on Maui

Alternative 1 Description: Under the selected alternative, the agencies plan to release a cohort (group of released birds) of up to seven ‘alalā at the Kīpahulu Forest Reserve (Kīpahulu FR) on east Maui, which is managed by Hawai‘i DLNR and is immediately adjacent to Haleakalā Wilderness. The Kīpahulu FR release site is located between Kaupō Gap and Kīpahulu Valley at approximately 1,400 m (4,600 ft) elevation on the southeast slope of Haleakalā Volcano.

The Kīpahulu FR release site will receive a cohort of birds initially supported within an aviary. Kīpahulu FR will contain the release site, aviary, support camp, supplemental feeding, and predator control. The release aviary and feeding stations are approximately 0.3-0.5 miles from NPS lands and designated wilderness. As the release site is not reasonably reached by ground transport, project activities will require helicopter support and some noise may travel into Haleakalā Wilderness. All project infrastructure and installations would be temporarily constructed for ‘alalā releases and would be removed at the end of the 5-year pilot project. All plans for release are to occur adjacent to and completely off of NPS lands and Haleakalā Wilderness.

Each ‘alalā release cohort would be supplementally fed for a period from 6 months to 2 years following release at each site to ease the transition to life in the wild. If a pair is found nesting on NPS lands, the

Haleakalā National Park Minimum Requirements Analysis Worksheet 2024

‘Alalā Project would be permitted for temporary placement of a supplemental feeder in the vicinity of the nest for a period of 3-6 months, depending upon project resources and perceived need.

All ‘alalā to be released would be fitted with satellite locators and/or VHF radio trackers that transmit the birds’ locations. These tracking devices would be used throughout the entirety of the project to monitor birds’ locations and locate birds that are potentially breeding, in need of assistance, or that may need to be removed (recaptured) if they are found to be negatively affecting other resources. Any successful offspring would be captured and given trackers to monitor their movements and habitat use. Satellite and VHF trackers would allow personnel to track birds’ movements and locations and target birds for recapture at the end of the 5-year pilot project.

Lethal predator control for rats (*Rattus* spp.), feral cats (*Felis catus*), and mongooses (*Herpestes auropunctatus*) would be performed in the immediate vicinity of the release aviary, supplemental feeders, and nests where feasible to reduce direct depredation of ‘alalā and ‘alalā eggs as well as minimize exposure to diseases spread by these non-native mammals. Predator control would be conducted near the release aviary and feeding stations and would not be prioritized on NPS lands for release but could be necessary in the event of ‘alalā nesting within the park. The NPS would issue a permit for access to federal lands for supplemental feeding and predator control only if ‘alalā choose to nest within the park.

As these sites are not reasonably reached by ground transport (no roads, more than 8 hours of hiking), all staff, materials for project activities, and personal gear would need to be delivered via helicopters.

Workflow Components: *What are the distinct components or phases of the action?*

1. **Component 1:** Release of ‘alalā in aviaries built outside of Wilderness – Helicopter noise impact
2. **Component 2:** ‘Alalā choose to nest within Haleakalā Wilderness
3. **Component 3:** NPS permits support staff to access Haleakalā Wilderness
4. **Component 4:** Permittee erects temporary feeding stations and conducts predator control in wilderness and/or accesses wilderness to locate and capture ‘alalā individuals, performs surveys
5. **Component 5:** Condition of the site with presence of ‘alalā in Haleakalā Wilderness
6. **Component 6:** Condition of site and species recovery with ‘alalā removed from the Wilderness

What is the effect of each Component Method on the qualities of wilderness character? What mitigation measures will be taken? Include cumulative impacts in the explanation.

UNTRAMMELED: ☒ Yes ☐ No

Explain: Releasing ‘alalā at the Kīpahulu proposed release site would degrade the untrammelled quality of wilderness since the actions would be an intentional manipulation of an ecological system and even though releases are occurring adjacent to wilderness, subject matter experts believe it is highly likely that released ‘alalā may choose to habitate and/or nest within Haleakalā Wilderness. In past releases, ‘alalā mostly remained near their release site and feeders, so although ‘alalā could enter Haleakalā Wilderness it is expected they will mostly stay close to the release site and aviary off NPS land, at least for the first three years of the five-year pilot project. If ‘alalā decide to nest on park lands within Haleakalā Wilderness, the nests would need to be monitored and surrounding predator control implemented to protect nesting birds and potential young. Predator control, although targeting non-native invasive animals, is a trammeling and would degrade the untrammelled quality. Impacts to Haleakalā Wilderness are expected to be

Haleakalā National Park Minimum Requirements Analysis Worksheet 2024

minimal and temporary, since the proposed action is a pilot and temporary release where all birds would be collected at the termination. Actions involving trammeling are specifically targeted to occur outside of Haleakalā Wilderness and this form is being completed to assess impacts of indirect actions as a result of the proposed action.

UNDEVELOPED: ☒Yes ☐No

Explain: The Undeveloped quality is degraded by the use of helicopters for access, motorized and mechanized equipment, and presence of installations for feeding and predator control. If ‘ālalā decide to nest on park lands within Haleakalā Wilderness, the nests would need to be monitored, surrounding predator control implemented, and temporary installation of feeding stations may occur. Installations and landing of aircraft that are a prohibited use pursuant to Section 4(c) of the Act are the minimum requirement necessary to support ‘ālalā that choose to enter and nest within wilderness and would strive to minimize the impacts to wilderness character. Any temporary installation of feeders or predator control within Haleakalā Wilderness would degrade the undeveloped quality of wilderness, although all equipment would be installed with little impact to the environment, then removed once a nest is unoccupied or at the completion of the project.

Noise from helicopters would only occur for minutes at a time during take-off and landing mostly outside of wilderness, but some LZs within wilderness may be used if bird monitoring or capture needs to happen on NPS land. The presence of and noise from these motorized and mechanized uses would result in temporary adverse impacts on the undeveloped quality of wilderness during any monitoring activities. Helicopters would land briefly near wilderness during ‘ālalā infrastructure installation, feeding, and monitoring, to pick up and drop off teams and supplies. All planned infrastructure and project work is focused outside of Haleakalā Wilderness on Kīpahulu Forest Reserve State land, but noise impacts may travel into designated wilderness. Most of the project area is located in areas that are not publically accessible.

NATURAL: ☒Yes ☐No

Explain: Manawainui and upper Kīpahulu Valley areas of Haleakalā Wilderness provide refuge for some of Hawai‘i’s most unique native plant and wildlife communities. The introduction of ‘ālalā under the alternative could result in beneficial impacts to the Natural quality of wilderness character because of the resultant stabilization or increase in bird populations over time, including the beneficial roles the ‘ālalā plays in the ecosystem. There could also be some adverse impacts to the Natural quality if ‘ālalā prey on other rare or T&E species. ‘Alalā are important seed dispersers for native fruiting plants, carrying fruits and transporting seeds in the gut, and can consume larger native fruits, increasing germination in some plant species. Negative ecological interactions are possible if ‘ālalā are found to disperse non-native invasive plant seeds and would be monitored and mitigated to prevent the spread of invasive weeds. The planned ‘ālalā pilot study would inform future efforts of restoring natural ecosystem processes that have been degraded over time by human-related impacts. Over the long term, the alternative would substantially benefit the natural quality of wilderness compared to the existing conditions if long-term ‘ālalā releases into the environment were approved or benefit the species per the ESA if ‘ālalā are able to gain enough wild traits to survive in translocations to Hawai‘i Island.

Haleakalā National Park Minimum Requirements Analysis Worksheet 2024

Listed Hawaiian honeycreepers' (a specific group of Hawaiian forest birds) ranges on Maui are predominantly restricted to montane forests above 4,500 feet in elevation due to habitat loss and threat of disease at lower elevations. 'Alalā are omnivorous and depend on a diversity of food resources from native understory fruit trees and shrubs, and also utilize other forest resources, including forest bird eggs and nestlings, primarily during the 'alalā breeding season (Sakai et al. 1986, entire; USFWS/DLNR 1999, p. 4). From data collected in past reintroduction efforts on Hawai'i Island, nest predation by captive released 'alalā is very rare, especially when supplemental food was available. While it is clear that 'alalā may depredate native Hawaiian honeycreeper nests within Haleakalā Wilderness, including listed species, the overall likelihood of this occurring is low. 'Ākohekohe and kiwīkiu are rare within the Kīpahulu FR release analysis area. 'I'iwi are moderately common at in the Kīpahulu analysis area. The Kīpahulu analysis area overlaps <2% of 'ākohekohe and kiwīkiu ranges. Based on published densities for the park, this area likely holds fewer than 20 pairs of 'ākohekohe, roughly 2% of the total species' abundance. This analysis area overlaps an even smaller portion of the kiwīkiu range, and this area is unlikely to contain more than one pair of kiwīkiu. It should be noted, however, that both 'ākohekohe and kiwīkiu are regularly detected just upslope of the analysis area and, should 'alalā disperse farther up into Manawainui, the risk of 'alalā depredation on these species' nests would increase. Mitigation in the form of avoidance measures for each of these species in addition to minimal project area overlap with listed honeycreepers' habitat, would reduce any such impacts to negligible levels. The project includes providing 'alalā with "recall" training so released birds can be recaptured if they move into areas where they are determined to pose a significant threat to listed forest birds. Project staff would use various methods that can confidently recapture 'alalā if an 'alalā presents a threat to listed forest birds. Any impacts to native honeycreepers would be a degradation of the Natural quality of wilderness, although impacts would be swiftly mitigated to prevent harm.

Distribution of native *Partulina* tree snails on east Maui is generally from 2,400 to 4,000 feet elevation. *Partulina* tree snails are small and are found on surfaces of vegetation from near the forest floor to the upper canopy where they glean algae and other material from vegetation surfaces. Tree snails are vulnerable to predation. Wild 'alalā on Hawai'i Island were observed eating "land-snails," and snail shell fragments were found in 'alalā feces (Sakai et al. 1986, p. 213), but the study did not identify whether these fragments were of native or introduced snail species. Due to elevational limitations, any *Partulina* snails located on park lands would be within the upper Ka'āpahu area and outside of Haleakalā Wilderness, so impacts to *Partulina* snails are not expected within wilderness.

Through the mitigations for this project, surveys for negative impacts to the native ecosystem within the project area and designated wilderness may occur. This may result in some trampling of native vegetation to access remote locations, although the use of management trails will be prioritized to minimize impacts.

OUTSTANDING OPPORTUNITIES FOR SOLITUDE or PRIMITIVE and

UNCONFINED RECREATION: ☒Yes ☐No

Explain: Only a portion of the 'alalā core analysis area (within 0.8 miles of the proposed release aviary) is located within designated Haleakalā Wilderness, while the outer analysis area (between

Haleakalā National Park Minimum Requirements Analysis Worksheet 2024

0.8 and 2 miles from the release aviary), where impacts are unlikely or uncommon, covers a larger portion of wilderness. Most of the project area is closed to public access, but the Kaupō Trail is included to the west and within the outer analysis area. However, helicopter flights to and from the project area over portions of designated wilderness would occur on an intermittent basis (approximately once or twice per week), very briefly (perhaps 15 seconds to a few minutes) audibly and visibly impacting the primitive wilderness experience. Hikers may hear helicopter impacts along the trail, which is one of the more remote and less visited open trails within the park. Helicopters would land briefly near wilderness during each ‘alalā implementation or monitoring effort, to pick up and drop off teams and supplies. Direct adverse impacts on the primitive wilderness experience would result, though these would be rarely and intermittently perceptible to visitors in accessible wilderness areas. Although unlikely or rare, visitor sightings of ‘alalā in the wild may be possible from nearby hiking trails if ‘alalā choose to fly in that area. An ‘alalā wild sighting would be a positive impact to the Solitude quality of wilderness. Project noise created within the Kīpahulu Valley Biological Reserve, and Manawainui portion of designated wilderness, that does not travel beyond that boundary would not affect opportunities for solitude and primitive experiences in wilderness areas open to public access.

OTHER FEATURES OF VALUE: ☒Yes ☐No

Explain: Ample historical records (Brandt and Lopes 2023, entire) document ‘alalā as a family ‘aumakua (ancestral deity) and an important part of Hawaiian religious and cultural practices. As described in the Cultural Impact Assessment, the comments of interviewees with genealogical ties and relationship to ‘alalā regarding the proposed release were positive, encompassing the need to do something to help recover the ‘alalā and maintain the species on the landscape as an important part of native ecosystems and the cultural importance of the ‘alalā as a family ‘aumakua (a Hawaiian personal and family god). By releasing ‘alalā on the landscape, the Other quality would be improved for perpetuation of this aspect of Hawaiian culture.

Alternative 2 Title: No action.

Alternative 2 Description: No release of ‘alalā would occur and other ways to perpetuate the species and attempt to reintroduce them to the wild would need to be visited.

Workflow Components: *What are the distinct components or phases of the action?*

1. **Component 1:** No build up of release supportive infrastructure
2. **Component 2:** No ‘Alalā nesting within Haleakalā Wilderness
3. **Component 3:** No access necessary into Haleakalā Wilderness
4. **Component 4:** No installation of temporary feeding stations or conducting of predator control in wilderness and/or access to wilderness to locate and capture ‘alalā individuals
5. **Component 5:** Condition of the site without presence of ‘alalā in Wilderness

UNTRAMMELED: ☐Yes ☒No

Explain: There is no effect on the untrammed quality of wilderness character under the no action alternative.

UNDEVELOPED: ☐Yes ☒No

Haleakalā National Park Minimum Requirements Analysis Worksheet 2024

Explain: There is no effect on the undeveloped quality of wilderness character under the no action alternative.

NATURAL: ☐Yes ☒No

Explain: Under the no-action alternative, the natural quality of wilderness would continue to exist as it does currently with the loss the ecosystem has experienced from loss of larger dispersers. ‘Alalā are important seed dispersers for native fruiting plants, carrying fruits and transporting seeds in the gut, and can consume larger native fruits, including from the genus *Pittosporum*. Seed germination for some native plants in the genera *Clermontia* and *Pittosporum* is improved when fruits are eaten by ‘alalā (Culliney et al. 2012, p. 1729). ‘Alalā or a crow species very similar existed on Maui into the era of human occupation providing these ecosystem services (James et al. 1987, p. 2354). If no action is taken ‘alalā will not contribute to the potential for enhanced dispersal of larger seeds and improved seed germination of native plants on east Maui. No additional action would be taken to support the recovery of ‘alalā as existing methods continue.

OUTSTANDING OPPORTUNITIES FOR SOLITUDE or PRIMITIVE and

UNCONFINED RECREATION: ☐Yes ☒No

Explain: There is no effect on solitude and unconfined recreation under the no action alternative.

OTHER FEATURES OF VALUE: ☒Yes ☐No

Explain: No action would allow the continual degradation of Other Features quality relating to Hawaiian culture and the relationship to ‘alalā bird species. The significant loss of all Hawaiian corvid species would diminish opportunities for Hawaiian cultural and familial lineage connections.

Step 2: Alternatives Considered but Dismissed

What alternatives were considered but dismissed? Why were they dismissed?

Explain: Alternatives were developed based on the best available scientific data and applicable conservation principles. Early in the alternatives’ development process, the following possible release sites were considered but were ultimately eliminated for the reasons provided. The locations of potential release sites were evaluated, but were dismissed from further consideration due to technical, environmental or economic infeasibility or because they did not meet the purpose and need of the proposed action.

Other Islands. Previous ‘alalā recovery efforts focused on Hawai‘i Island; however, high predation by ‘io or Hawaiian Hawk (*Buteo solitarius*) identified a need for further investigations into ‘io life history prior to additional releases on Hawai‘i Island. Better understanding of ‘io habitat preferences, seasonal movements, and habitat use and territorial behavior during breeding to help identify locations on Hawai‘i Island where potential conflict between ‘io and ‘alalā are reduced or can be minimized. Pilot release on Maui is recognized as an opportunity to allow captive released ‘alalā the ability to gain more wild traits and learn how to defend against ‘io with a possible translocation to Hawai‘i Island. Release on Kaua‘i was not considered because there are no known corvid species to have inhabited Kaua‘i. Release on O‘ahu was not considered although there are two corvid species known from the paleontological record to

Haleakalā National Park Minimum Requirements Analysis Worksheet 2024

have lived on O‘ahu (*Corvus impluviatus* and *C. viriosus*) (James and Olson 1991, pp. 11-22) they are different species than the ‘alalā, and O‘ahu today lacks sufficient suitable habitat for ‘alalā. Two sites on Moloka‘i were initially considered (Pu‘u Ali‘i Natural Area Reserve and Kamakou Preserve); however, the expense and logistics of supporting and monitoring released birds on an island with no contracting helicopter company, limited stores for supplies, and no captive care facility were greater than the project was able to support at this time. Furthermore, the only remains of a corvid found on Moloka‘i are from a different species than ‘alalā (James and Olson 1991, pp. 11-22; Fleisher 2003, entire). The species of corvid on Maui, from subfossils on the southwest slope of Haleakalā Volcano, is either ‘alalā or a very closely related species (James et al. 1987, p. 2354; James and Olson 1991, pp. 11-22; Fleischer et al. 2003). For these reasons, other islands were considered but dismissed for ‘alalā release locations.

Other Sites on Maui. Five other sites on Maui were initially considered for ‘alalā release [Olowalu section of West Maui Forest Reserve (Olowalu FR), The Nature Conservancy's (TNC) Waikamoi Preserve, northwestern Ko‘olau Forest Reserve, Nakula Natural Area Reserve (Nakula NAR), and lower Hanawī Natural Area Reserve (Hanawī NAR)]. These sites were not considered further for several reasons. The Olowalu FR was not considered because the small area of suitable forest and the very steep topography would make releasing and tracking ‘alalā extremely difficult. The TNC’s Waikamoi Preserve was dismissed from consideration due to the further complexities of performing releases on private lands as compared to state lands. Nakula NAR and West Maui FR are significantly farther from the largest patch of contiguous native forest on Maui than the alternative sites considered. Nakula NAR is smaller than the proposed action sites, and likely lacks sufficient year-round food resources (Price et al. 2022). Average annual rainfall at Hanawī NAR was considered to be too high and greatly outside precipitation amounts for the historic range of ‘alalā. Northwestern Ko‘olau FR lacked sufficient tree canopy to provide key nesting trees. These sites may be considered again for potential future releases after more information is gained about how ‘alalā use forests on Maui absent the threat from ‘io. For these reasons, other locations in Maui were considered but dismissed for ‘alalā release.

Alternative Release Site of ‘Alalā to Ko‘olau Forest Reserve Assessed in the Environmental Assessment. The Ko‘olau proposed release site is located on the north slope of Haleakalā volcano on east Maui at approximately 3,000 ft elevation in Ko‘olau Forest Reserve (Ko‘olau FR) and is managed by DLNR. This site was thoroughly evaluated in the Environmental Assessment as an alternative, but was eliminated as a viable choice due to the risk to rare native *Partulina* snails and recovery efforts present in the area.

Pedestrian Release of ‘Alalā and Support Without the Use of Helicopters. For the Kīpahulu proposed release site it is not expected released birds will use habitat areas to the west and south that are grassland greater than 0.8 miles from the release aviary, but it is expected that they will enter wet forest to the north owned and managed by Haleakalā National Park. The project area is characterized by very remote, heavily forested, and exceptionally rugged terrain. Most of the project area does not include roads or access on foot. In order to release and support ‘alalā using only pedestrian access, a massive trail system would need to be developed into Kīpahulu Forest Reserve and Manawainui portions of the project area at great cost and with resultant environmental impacts. ‘Alalā release sites were determined by subject matter experts evaluating needs to benefit ‘alalā rather than practicality of human access. Pedestrian

Haleakalā National Park Minimum Requirements Analysis Worksheet 2024

release and access could not feasibly fulfill the purpose and need established for the project. Therefore, this alternative has been dismissed from detailed analysis.

Step 2: Determination – What is the Minimum Activity?

Selected Alternative: Pilot Release of ‘Alalā at Kīpahulu Forest Reserve on Maui

Explain Rationale for selection, including a comparison to other alternatives: Avoiding the reintroduction into the wild of native species that are threatened or endangered to prevent any impacts to designated wilderness is not the intention of The Wilderness Act. While the release of ‘alalā adjacent to Haleakalā Wilderness, with likelihood of travel into wilderness is essential to the preservation of the species and has benefits to the Natural and Other qualities of wilderness, there would be some temporary negative impacts to most wilderness qualities.

Alternative 1 could have long-term beneficial impacts to the Natural and Other qualities of wilderness that outweigh the short-term negative impacts to wilderness character. Alternative 1 was selected as the preferred alternative because all other alternatives, except no action, were considered but dismissed since they do not meet the purpose and need for action at this time, are considered infeasible or are more impactful to wilderness character.

Taking no action would violate The Endangered Species Act, which states “Federal agencies shall...utilize their authorities... by carrying out programs for the conservation of endangered species and threatened species.” Conservation, as defined in the Act, means “to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measure provided pursuant to the [Endangered Species] Act are no longer necessary.” NPS *Management Policies 2006*, 4.4.2.3 states, “The Service will survey for, protect, and strive to recover all species native to national park system units that are listed under the Endangered Species Act...To meet these obligations, the Service will participate in the recovery planning process, including the provision of members on recovery teams and recovery implementation teams where appropriate.” The continued decline of ‘alalā has been well documented and only individuals exist in captivity at this time. Subject matter experts have thoroughly weighed options for recovery and Alternative 1 is considered the only feasible and/or least impactful option with current technology and understanding of the species. The NEPA and Environmental Assessment processes have allowed a thoughtful and reasoned consideration of alternatives and impacts to wilderness which complement and provide thorough references to inform this document.

Some of the components and methods proposed in Alternative 1 are uses prohibited in Section 4(c) of the Wilderness Act. However, these were found necessary to meet minimum requirements of the Act after thorough analysis. Alternatives that may have been less impactful to wilderness were considered and dismissed by an extensive panel of experts, due to a lack of feasibility or efficacy. Because of the remote nature of threatened and endangered bird habitat, helicopter access is the only option to supply personnel and material. Only skilled and highly trained personnel will perform tasks under these prohibited uses and mitigations will be made to allow for the least impact to the wilderness and highest level of safety.

Haleakalā National Park
Minimum Requirements Analysis Worksheet 2024

Approved Prohibited Use: *Explain quantity, timing, frequency, or duration.*

☐ **Mechanical Transport:**

☒ **Motorized Equipment:** Helicopter use for ‘alalā release, support and gear transport prioritized outside of wilderness and only within Haleakalā Wilderness if ‘alalā nest in wilderness areas.

☐ **Motor Vehicles:**

☐ **Motorboats:**

☒ **Landing of Aircraft:** Using landing zones and external sling loads touching down only when ‘alalā nest within Haleakalā Wilderness.

☐ **Temporary Roads:**

☐ **Structures:**

☒ **Installations:** Feeding stations and predator control installations only if ‘alalā nest within Haleakalā Wilderness (temporary) for 3-6 months.

Describe mitigation measures as well as monitoring and reporting requirements, if appropriate:

1. All actions taken that involve a prohibited use pursuant to Section 4(c) of the Wilderness Act would strive to minimize the impacts to wilderness character.
2. Noise impacts and infrastructure resulting from the project would be prioritized outside of Haleakalā Wilderness and all would be temporary and removed at the end of the pilot project.
3. ‘Alalā would not be fed fruits of introduced plants while in captivity to avoid released birds developing a search image for fruits of introduced plants as food.
4. ‘Alalā fecal samples would be collected around feeding stations and samples examined to identify seeds. A subset of fecal samples would be spread in germination trays every three months, to determine what fruits of native and non-native plants ‘alalā are eating (based on seeds that sprout). This would be used to gauge the effects ‘alalā may cause to vegetation communities through dispersing seeds of native and non-native plants.
5. Vegetation baseline surveys would be conducted prior to introduction of ‘alalā to proposed release sites using protocols previously used for vegetation surveys for ‘alalā proposed release sites on Hawai‘i Island (Price and Jacobi 2007). Follow-up surveys would be repeated at approximately two-year intervals within areas we expect ‘alalā to use frequently to gather information whether ‘alalā may be dispersing seeds of native and non- native plants and possible changes to vegetation communities in these areas.
6. Collection of fecal samples and vegetation surveys would be conducted for the 5 years of the proposed pilot project.

Haleakalā National Park
Minimum Requirements Analysis Worksheet 2024

Approvals

Project Title: Pilot Release of ‘Alalā at Kīpahulu Forest Reserve on Maui

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