

**Finding of No Significant Impact (FONSI)**  
**Environmental Assessment**  
**for**  
**‘A‘o (Newell’s shearwater) Management Actions**

**August 2016**

An environmental assessment (EA) was prepared by the U.S. Fish and Wildlife Service (Service) to evaluate recovery actions for threatened ‘A‘o (Newell’s shearwater, *Puffinus auricularis newelli*).

The purpose of the project is to increase the contribution of Kīlauea Point National Wildlife Refuge (Refuge or KPNWR) towards the recovery of ‘A‘o on Kaua‘i. The project is needed because, despite ongoing conservation actions both on- and off-Refuge, population indices of ‘A‘o have declined precipitously in the past two decades (Griesemer and Holmes 2011). The dramatic population decline, the abandonment of formerly known breeding colonies, the logistical difficulty and low probabilities associated with identifying previously undiscovered colonies for management in situ, the persistence of introduced predators particularly cats and rats within the few managed areas, the possibility of future mongoose establishment on Kaua‘i, and the vulnerability of existing breeding colonies due to stochastic events such as hurricanes or wildfire contribute to a need for immediate action.

**Alternatives Considered**

Alternative A (current management): Current management on KPNWR directed towards ‘A‘o consists of control of introduced predators, monitoring the coastal population, weed management, and continued habitat restoration of the predator-free Nihoku fenced unit, including removal of invasive species, planting native coastal species, and the installation of artificial burrows. Other entities fund and implement ‘A‘o specific management actions outside of the Refuge, including the State Department of Land and Natural Resources Division of Forestry and Wildlife (DLNR-DOFAW), the National Tropical Botanical Gardens (NTBG), Kaua‘i Island Utility Cooperative (KIUC), and the Kaua‘i Endangered Seabird Recovery Project (KESRP).

Alternative B: Under Alternative B, existing management actions as described under Alternative A would continue and social attraction techniques (such as the installation and playing of recordings of shearwater calls) would be used to lure prospecting ‘A‘o to the predator-free Nihoku fenced unit within the Refuge.

Alternative C (Preferred Alternative): Alternative C includes the actions described under Alternative B, combined with the translocation of ‘A‘o chicks over a period of 5 years to the predator-free Nihoku fenced unit within the Refuge. Proposed activities related to chick translocation include (1) collection and retrieval of chicks from source locations, (2) chick care at the translocation site, and (3) monitoring.

## Comparison of Effects across Alternatives

Alternative A (current management): Impacts to soils would be negligible because of the limited area, duration, and intensity of disturbance associated with activities such as monitoring or predator control. Impacts to water quality or quantity would be negligible because current management does not result in any discharges into existing streams or the ocean. Impacts to air quality would be negligible because activities impacting air quality (e.g., use of small mechanized equipment for habitat restoration, use of helicopters for transportation) would be localized and of short-term duration.

While the population in the currently managed colonies may stabilize or increase, the overall population of ‘A‘o is expected to continue to decline. Current management of the existing colony of ‘A‘o at KPNWR would have a minor long-term positive impact on the species.

Because the breeding habitat for ‘A‘o is similar to and overlaps with that of endangered ‘Ua‘u (Hawaiian petrel, *Pterodroma sandwichensis*), management and monitoring activities associated with Alternative A may also have a minor long-term positive impact on ‘Ua‘u. Continued habitat restoration at the predator-free Nihoku fenced unit would have a minor long-term positive impact on the endangered Nēnē (Hawaiian goose, *Branta sandvicensis*) by expanding the acreage of protected predator-free habitat available to this species. Since the endangered ‘Ōpe‘ape‘a (Hawaiian hoary bat, *Lasiurus cinereus semotus*) primarily roosts among foliage in trees and can forage over many habitat types, including native and non-native vegetation, negligible to minor positive impacts to the species are expected as habitat restoration efforts would not provide much additional and/or higher quality roosting or foraging habitat. The bats are primarily vulnerable to predation from introduced predators during the rearing and fledging period; since the project area does not likely provide habitat for these life-history stages, the benefits of a predator-proof site to the bat would be negligible. Negligible impacts to endangered forest birds are expected since they do not occur within the project area. Negligible to minor negative impacts to other native animals and native vegetation (including federally listed plants) would be anticipated, based on observations of the effects of existing management and the implementation of minimization measures (e.g., existing trails would be followed whenever possible, creation of new trails would be avoided, invasive species protocols would be implemented).

Minor long-term positive impacts to cultural and historic resources would be anticipated. There are no known archaeological or historic sites within the affected areas, but seabirds have cultural importance to Native Hawaiians and fishermen, and current management activities associated with their protection provides a benefit to these individuals. Spending to implement this alternative would lead to minor positive benefits to social and economic resources, primarily due to secondary effects.

Alternative B (social attraction): Impacts to soils, water quality, and air quality would be similar to Alternative A.

A minor to moderate long-term positive impact on ‘A‘o would be anticipated as a result of social attraction. The social attraction alternative presents the least risk to the species of the action alternatives considered, is appropriate for the species’ demography, and is less than 1 percent of

the cost of chick translocations. Social attraction brings in prospecting birds who have survived 3 to 6 years at sea and are ready to breed. Both empirical data and models in the Hawaiian Islands suggest ‘A‘o social attraction would likely be successful at Nihoku (McFarland et al. 2013, H.T. Harvey & Associates 2014). Buxton et al. (2014) suggest the most influential variable affecting recolonization of a predator-free site is a source colony within 25 km (15.5 mi; distance from Kīlauea to Līhu‘e, Kaua‘i). There are at least 7 potential source colonies within 25 km including the current KPNWR colony, which is only 1.3 km (0.8 mi) away.

Social attraction for ‘A‘o would be anticipated to have a minor positive impact on ‘Ua‘u. Social attraction efforts could lure subadult ‘Ua‘u to the predator-free Nihoku fenced unit. Although unstudied, negative interactions between ‘Ua‘u (either chicks to be translocated from 2016 to 2020, those chicks returning as subadults, or ‘Ua‘u lured by social attraction) and ‘A‘o are not anticipated, as the subfossil record suggests these two seabird species were historically sympatric. ‘Ua‘u and ‘A‘o appear to use distinct habitat patches; however, there is overlap of individuals and, some currently nest in close proximity to one another in the montane colonies of Upper Limahuli Preserve and Hono o Nā Pali Natural Area Reserve. Monitoring the behavior of ‘Ua‘u recruits in this novel lowland habitat would help inform future seabird management.

An existing endangered Nēnē breeding population within and adjacent to the predator-free Nihoku fenced unit could be affected by noise and activities associated with social attraction leading to minor short-term negative impacts. Mitigation measures (e.g., alternative access by foot to the fenced unit through southeast Seacliff Plantation easement to avoid disturbance of breeding nēnē on Crater Hill, mapping and monitoring of all Nēnē nests and broods in the fenced unit, avoiding the installation of speakers in known Nēnē nesting areas, predator monitoring and control) would be implemented. A long-term positive impact associated with habitat restoration and an increase in available protected predator-free habitat would be anticipated. Impacts on ‘Ōpe‘ape‘a, endangered forest birds, federally listed plants or invertebrates, and other native species except ‘Ua‘u kani (Wedge-tailed shearwater, *Puffinus pacificus*) would be similar to Alternative A.

‘Ua‘u kani have been observed to displace ‘A‘o from breeding burrows at the current KPNWR colony, although the demographic effects on ‘A‘o are uncertain. For example, from 2012–2014, three of four ‘A‘o pairs that relocated, likely because of ‘Ua‘u kani interference competition, are breeding successfully in other burrows, suggesting that ‘A‘o may have adaptations to such interactions. Blocking the entrances of artificial burrows within the predator-free Nihoku fenced unit during the earlier time period when ‘Ua‘u kani are returning to breed, monitoring for inter-species interactions, and removing or relocating ‘Ua‘u kani may be considered to prevent displacement of ‘A‘o returning as subadults or lured through social attraction techniques. Because ‘Ua‘u kani are the most common seabird at KPNWR and breed widely throughout the Hawaiian islands, these actions would be anticipated to have a minor negative short-term impact on this indigenous species.

Impacts to cultural and historic resources, and social and economic resources, would be similar to Alternative A.

Alternative C (Preferred – Chick translocation combined with social attraction): Impacts to soils, water quality and air quality would be similar to Alternative B.

A moderate long-term positive impact on ‘A‘o would be anticipated as a result of chick translocation combined with social attraction. Over the long-term, this alternative has greater potential than either Alternative A or B to establish a new breeding colony of ‘A‘o (composed of the ‘A‘o returning as subadults or lured by social attraction techniques) within the predator-free Nihoku fenced unit. While early seabird chick translocation efforts resulted in rates as low as 10% of chicks returning to their translocation sites (Miskelly and Taylor 2004, Miskelly et al. 2009, Miskelly and Gummer 2013), with improved techniques, some return rates have substantially increased (Jacobs et al. 2015). Return rates for translocated ‘A‘o are anticipated to be comparable to ‘A‘o in natural conditions ( $\geq 15\%$ ).

Removal of chicks from existing colonies would not be anticipated to have a significant negative impact on the source colony, based on observations of other seabird species where high proportions of nestlings were translocated with no measureable impact on the source colony (Carlile et al. 2012). Moving chicks carries the risk that the birds may be injured or die during capture and transport and/or may not acclimate to the translocation site and ultimately may die from stress or related illnesses. However, implementation of established techniques (e.g., ensuring enough space and ventilation in the transfer box, using heat-reflective and dark boxes with flooring that provides grip and absorption) would reduce the potential for harm from overheating, injury in the carrying containers, or stress from unfamiliar stimuli.

Translocation effects of ‘A‘o chicks on ‘Ua‘u would be similar to Alternative B. The period that both species’ chicks would be at Nihoku together is anticipated to short (because ‘A‘o typically fledge by end of October and ‘Ua‘u chicks will arrive early November), and to minimize disturbance to translocated chicks of either species before fledging, translocated ‘Ua‘u chicks and ‘A‘o chicks would be placed in artificial burrows on opposite sides of the nesting area within the predator-free Nihoku fenced unit.

Impacts to other federally listed species, native animals, native vegetation, cultural and historic resources, and social and economic resources would be similar to Alternative B. In addition to noise and activities associated with social attraction, activities associated with chick translocation (feeding and monitoring translocated chicks prior to fledging) may also temporarily disrupt the activities of Nēnē. As under Alternative B, due to mitigation measures, impacts on Nēnē would be minor.

## **Public Involvement**

The Service incorporated a variety of public involvement techniques in developing and reviewing the EA as well as coordinating outreach with related conservation efforts. This included direct outreach to Federal, State and County agencies, non-governmental organizations, and individuals; several public presentations about the project; media releases; and public review and comment on the EA. The EA was available for a 30-day public review ending June 10, 2016, during which time six public comment letters were received. Responses to the public comments were prepared and are included as an appendix.

## **Selection of Management Alternative**

Based on our review and analysis in the EA and the comments received during the public review period, we selected Alternative C for implementation. Compared to other alternatives, Alternative C offers a higher potential for (1) establishing a new viable 'A'ō breeding colony, at the Refuge, within an accessible, predator-free area, adjacent to the ocean, away from utility lines and disorienting lights and (2) evaluating the feasibility of social attraction and chick translocation as species recovery techniques, which would inform future seabird management.

If the 'A'ō population was not in a precipitous decline, social attraction only (Alternative B) would likely be the preferred alternative implemented for multiple years, before the more risky, costly chick translocations would be attempted. However, use of social attraction as the primary management response could limit the future use of chick translocations (if social attraction is unsuccessful), because finding candidate chicks for translocation would be anticipated to become more difficult over time with continued declines in the overall population and the possibility of decline in the existing management colonies (e.g., due to diseases, natural disaster, potential reduced funding for management and predator control) and it will continue to become more difficult to recover the species as this population decline continues. The information gained from the development of both 'A'ō-specific social attraction and chick translocation techniques may be applied to other seabird conservation projects.

Implementing the selected alternative will have no significant impacts on the environmental resources identified in the EA.

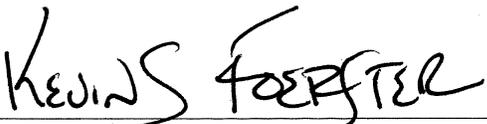
## Conclusions

The U.S. Fish and Wildlife Service has prepared this Finding of No Significant Impact (FONSI) in satisfaction of requirements of the National Environmental Policy Act of 1969 (NEPA). This FONSI documents the decision of the Service to utilize a combination of social attraction and chick translocation to a fenced predator-free area within Kīlauea Point NWR to establish a new protected breeding colony of 'A'o.

This FONSI was prepared for an action that would not normally require development of an environmental impact statement. Similar actions have been carried out elsewhere without significantly affecting the quality of the human environment.

Based on review and evaluation of the information contained in the EA, I have determined that implementing Alternative C will not constitute a major Federal action significantly affecting the quality of the human environment within the meaning of section 102(2)(C) of NEPA. Accordingly, preparation of an environmental impact statement for the proposed action is not required.

This Finding of No Significant Impact, responses to comments, and supporting references are available for public review at the Kaua'i National Wildlife Refuge Complex, Kīlauea Lighthouse Road, Kīlauea, HI 96754. These documents can also be found on the Internet at [http://www.fws.gov/refuge/kilauea\\_point/](http://www.fws.gov/refuge/kilauea_point/). Interested and affected parties are being notified of our decision.

  
Regional Chief, National Wildlife Refuge System

  
Date

## Appendix A: Written Comments Received During Public/Agency Review Period and Service Responses

The U.S. Fish and Wildlife Service (USFWS or Service) received comments from six entities regarding the Environmental Assessment (EA) for ‘A‘o (*Puffinus auricularis newelli*, Newell’s shearwater) Management Actions during the 30-day comment period (Table A-1). All written comments were reviewed and organized so that an objective analysis, summary, and presentation of the comments could be made.

**Table A-1. Source of EA Public Comments**

Affiliation/Entities	Number of Commenters (May 10, 2016 through June 10, 2016)
Agencies	4
General Public	2
<b>Total</b>	<b>6</b>

Substantive comments received during the public comment period and the Service’s responses are summarized in Table A-2. However, comments concerning technical/minor edits are not reflected below. Authors of comments are included in parentheses.

**Table A-2. Summary of Comments and Service Responses**

Comment	Response
The State of Hawai‘i Department of Lands and Natural Resources, Division of Forestry and Wildlife (DLNR-DOFAW) appreciates that monitoring will occur to determine if social attraction increases predator presence surrounding the predator-proof fence and that predator control will be implemented if an increase is observed. However, DLNR-DOFAW notes that no thresholds (e.g., increase in presence) for triggering control measures are clearly defined. Predator control for barn owls ( <i>Tyto alba</i> ) and cattle egrets ( <i>Bubulcus ibis</i> ) should be described and implemented. Monitoring of these species should be conducted to ensure that the large number of nēnē and seabirds occupying areas outside the predator-proof fence are not negatively impacted by the project. DLNR-DOFAW would like to emphasize that predator control outside the	Additional clarification was added to Section 2.3 based on this comment.  The Service uses an integrated pest management (IPM) approach to control introduced predators that prey on endangered and migratory species. Predator control is aimed at minimizing entry to Kīlauea Point National Wildlife Refuge (KPNWR or Refuge) using exclusion (e.g., fences), habitat modification (e.g., removal of non-native trees used by non-native cattle egrets and barn owls for roosting), and control/eradication (e.g., trapping, rodenticides). This program is for the benefit of native species found throughout the Refuge and not solely for those within the predator-proof fence. The current program is conducted in areas within and outside the predator-proof fence and has reduced predation within the Refuge. Cattle egrets are

<p>fence should be implemented in conjunction with the social attraction project to ensure protection of other species nesting outside the fence (DLNR-DOFAW).</p>	<p>currently relatively uncommon on the Refuge, although sightings of this species are on the rise. The Service acknowledges that introduced avian predators such as barn owls may be drawn to seabird recordings from the social attraction system. Thus, in conjunction with this project, the Service and partners are planning to increase monitoring (e.g., song meters) and predator control efforts (e.g., through partnership with DLNR-DOFAW), in accordance with the IPM approach.</p>
<p>The community surrounding the project area should be notified and engaged if they have concerns with the project. Monitoring as well as outreach to the community for future potential fall-out issues should be conducted (DLNR-DOFAW).</p>	<p>In addition to direct mailings to members of the surrounding community about this project, public presentations at the Refuge and at the Princeville Library have occurred regularly to keep the community informed and engaged.</p> <p>The Service and project partners will continue to conduct outreach surrounding this project, including outreach to raise fall-out awareness.</p> <p>The Service did not modify the EA based on this comment.</p>
<p>Upon review of the EA and due to lack of proximity to Hawaiian Home Lands, the State of Hawai‘i Department of Hawaiian Home Lands (DHHL) does not anticipate any impacts to its lands or beneficiaries, but does encourage consultation with Hawaiian homestead associations and other native Hawaiian organizations to better assess potential impacts to cultural and natural resources, access, and other traditional and customary practices of Native Hawaiians (DHHL).</p>	<p>The Service acknowledges that no impacts to Hawaiian Home Lands or its beneficiaries are anticipated. In addition, a scoping letter, followed by notice of the EA, was shared with a wide variety of Native Hawaiian organizations as a means to assess potential impacts to cultural resources, access, and other traditional and customary practices. The Service received no other comments from Native Hawaiian organizations.</p> <p>The Service did not modify the EA based on this comment.</p>
<p>The project must be consistent with specified State water quality criteria and state water quality standards (State of Hawai‘i Department of Health (DOH)).</p>	<p>The project will be consistent with State water quality criteria and water quality standards as no changes to existing water quality are anticipated.</p> <p>The Service did not modify the EA based on this comment.</p>
<p>A National Pollutant Discharge Elimination System (NPDES) permit may be required (DOH).</p>	<p>Due to the small scale of disturbance associated with proposed activities (less than one acre disturbed) and no anticipated changes</p>

	<p>to quality or quantity of any discharge, a NPDES permit is not anticipated to be required.</p> <p>The Service did not modify the EA based on this comment.</p>
<p>Work involving waters of the U.S. may require a permit from the U.S. Army Corps of Engineers (DOH).</p>	<p>An Army Corps of Engineers permit is not anticipated because project does not involve work in, over or under U.S. waters.</p> <p>The Service did not modify the EA based on this comment.</p>
<p>The proposed alternative puts valuable individuals (future breeding adults) at high risk. The EA should re-examine replicating the 1978–1980 egg translocation as an alternative (B. Zaun, M. Fernandes).</p>	<p>Additional clarification was added to Section 2.1, Alternatives Considered but Eliminated, based on this comment.</p> <p>The Service has and will continue to monitor and evaluate risks to individuals and take. The conservation value of federal actions must outweigh the risks to ‘A’o. We considered egg translocation as an alternative, but dismissed it from further consideration at this time for the reasons provided in Section 2.1.</p> <p>Although the previous egg translocation project on the Refuge resulted in good chick hatching and fledging rates, return rates appeared to be much lower than desirable for a rapidly declining subspecies. In 2015, 35 years later, the Refuge supported 13 breeding or prospecting ‘A’o pairs, as a result of the previous egg translocation program and social attraction efforts.</p> <p>An advantage of translocation of chicks over egg translocation is the ability to allow the natural parents to do most of the rearing, which reduces concerns about nutrition, transfer of natural gut flora, body temperature control, and species imprinting (Gummer 2013, Jacobs et al. 2015). Additionally, it eliminates the need to hand rear chicks for longer periods of time or destroy eggs of the foster parents (i.e., ‘Ua’u kani).</p>

<p>Last year ‘Ua‘u (<i>Pterodroma sandwichensis</i>, Hawaiian petrel) chicks were relocated within the Nihoku fenced area in the hope that a colony will establish. Has the possibility been considered that the larger ‘Ua‘u will impose greater negative impacts on ‘A‘o nesting (than ‘Ua‘u kani)? (B. Zaun, M. Fernandes)</p>	<p>Additional clarification was added to Section 4.3.1 based on this comment.</p> <p>The impacts of interactions between ‘Ua‘u and ‘A‘o within the 7-acre, lowland Nihoku fenced area are largely unknown. There is subfossil evidence that these two species were historically sympatric. Although ‘Ua‘u and ‘A‘o appear to use distinct habitat patches, there is overlap of individuals, and some currently nest in close proximity to one another in the montane colonies of Upper Limahuli Preserve and Hono o Nā Pali Natural Area Reserve (NAR). Monitoring of these species inside the Nihoku fence site will likely help inform future Hawaiian seabird conservation projects.</p>
<p>If the proposed alternative is selected, chicks should not be taken from the current KPNWR colony. Based on the low number of known fledglings (2 to 7/year, 2011–2014) from this small population, it is a concern that this successful breeding population will be reduced over time with no guarantee that any ‘A‘o will return. Managing two subpopulations, to become one contiguous, wouldn’t be possible if one is reduced annually with no guarantee that another will be established within the Nihoku fenced area (B. Zaun, M. Fernandes).</p>	<p>While the EA describes a set of potential source colonies, which currently includes KPNWR, Upper Limahuli Preserve, and Pōhākea within the Hono o Nā Pali NAR, the EA does not prescribe the use of specific source colonies for specific years of translocation. Due to the ongoing decline of ‘A‘o, removing chicks is a concern for every currently successful breeding population.</p> <p>Chicks translocated to and fledged from the Nihoku fenced site are more likely to imprint and return to the predator-free site. However, translocating chicks may pose some initial increased risks (e.g., handling stress, inability to acclimate to artificial food/feeding regimen, barn owl predation), which may decrease survival, lowering their chances of returning to Nihoku or anywhere else. However, as noted in the EA, the species is experiencing an ongoing rapid decline due to predation and other threats that are present, which necessitates an increase in effort to implement alternative management options that have potential to benefit the species in the long-term.</p> <p>Once hatched, chicks from KPNWR’s current colony have a 99 percent chance of fledging</p>

	<p>from their home burrows (USFWS unpublished average from 2002–2015); whereas, it is hoped translocated chicks have a similar rate but it could be lower due to inherent translocation risks.</p> <p>The effects of translocation from colonies with only a relatively small number of individuals are unknown; however the number of site-faithful sub-adults returning to breed at KPNWR proper could plausibly be reduced over time if fewer birds fledge from KPNWR proper and any effects are likely to have a greater impact within these colonies with already very low numbers.</p> <p>Because of the reasons outlined above, the Service acknowledges the concerns about reducing the current KPNWR colony that is believed to have been established from the egg translocation experiment, 35 years ago. Having two breeding colonies on the Refuge (versus one) improves the probability of population persistence and resilience to stochastic events. Additionally, the Service agrees that there may be increased difficulty achieving the objective of managing two subpopulations, to become one contiguous, if the number of individuals fledging from KPNWR proper is reduced by translocation.</p> <p>Section 2.4 of the EA describes the criteria to be evaluated in selecting potential source colonies each year. One of the criteria described is proximity—sites far from the planned translocation site are more suitable source colonies than sites close by as birds from those colonies would be unlikely to be lured through social attraction methods. Buxton et al. (2014) suggests the most influential variable affecting recolonization is a source colony within 25 km (15.5 mi). The Nihoku fenced area is well within that range at 1.3 km (0.8 miles) from the existing ‘A’o colony at KPNWR proper. ‘A’o have demonstrated responsiveness to social</p>
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	<p>attraction and past efforts have shown success with much less cost and labor input needed initially (McFarland et al. 2013).</p> <p>Because of the above factors, in particular the close proximity of the potential source colony at KPNWR proper to the Nihoku area, the Service acknowledges that the option to translocate chicks from KPNWR would not initially be considered the preferred option. For one or more years, social attraction <i>only</i> would be used to attract birds from the existing colony at KPNWR proper to the Nihoku fenced area, which would minimize risks to this colony while potentially still showing success using social attraction. However, the Service would evaluate source population suitability for translocation year-to-year. If conditions change (e.g., increased threat levels, decreased availability of alternative source colonies), the option to translocate chicks from KPNWR could be given additional consideration, based on weighing the potential factors mentioned above, the source population evaluation criteria and any new information, as appropriate.</p> <p>Additional clarification was added to Section 4.3.1 based on this comment.</p>
<p>Although the search for burrows is time intensive, the “dying” ‘A‘o colonies in peril due to predation are colonies where chick translocations may be beneficial if their current mortality is greater than the potential 30 percent mortality of translocated chicks (B. Zaun, M. Fernandes)</p>	<p>The EA outlined the criteria to be used each year for selecting source colonies. The unmanaged colonies at highest risk for extirpation were originally targeted for chick translocations. However, these sites now may be considered unsuitable, because the drastic population declines combined with ongoing predation make these sites unlikely to have discoverable burrows with accessible chicks available for translocation. In addition, there is a serious potential for increased predation and harm to occur within both managed and unmanaged colonies (e.g., as a result of trails created during intensive searches for burrows). However, the potential impacts from this are likely to be reduced within managed colonies</p>

	<p>due to ongoing predator control. ‘A‘o chick translocations from “dying” colonies may be considered an option with new information or technology.</p> <p>The Service did not modify the EA based on this comment.</p>
<p>Is the 30 percent mortality associated with this project’s translocated ‘a‘o chicks acceptable? (B. Zaun, M. Fernandes)</p>	<p>In year one (2016), up to ten chicks would be removed from their natal colony and hand-reared at the translocation site and it is expected that at least seven of those chicks would fledge. In each of years 2–5 (2017–2020) up to 20 chicks (depending on availability in source colonies) would be translocated and hand-reared at the Nihoku site and it is expected that fledging rates would be 85–100% giving an annual maximum mortality of three chicks/year (12 chicks total in years 2–5).</p> <p>After reviewing the current species status, the effects of the proposed actions, and the cumulative effects through the Service’s Endangered Species Recovery Permit and section 7 consultation processes, it is the Service’s biological opinion that implementation of the proposed actions is not likely to jeopardize the continued existence of ‘a‘o.</p> <p>The Service determined that the overall conservation benefit to the species outweighs the potential for incidental take as a result of the proposed translocation over the life of the project. Avoidance and minimization measures would reduce potential adverse impacts to the species.</p> <p>The Service did not modify the EA based on this comment.</p>
<p>The primary predators of nēnē and seabirds within KPNWR are cats, rats, and barn owls. Due to limited vegetation within Nihoku, chicks will be more visible when out of their burrows and more prone to barn owl predation; whereas, the current KPNWR</p>	<p>The Service acknowledges that chicks could be more prone to barn owl predation at Nihoku because of early successional vegetation and bare ground near the artificial burrows. The preferred alternative incorporates monitoring and control of barn owls to prevent predation</p>

<p>nesting area contains mature vegetation serves to protect birds from owl predation (B. Zaun, M. Fernandes)</p>	<p>of translocated chicks and native species inside and outside the fence. None of the translocated ‘Ua‘u chicks were predated by owls in 2015, and the restored native vegetation continues to thrive around the artificial burrows, and is anticipated to provide more extensive cover in 2016 and in the future.</p> <p>Additional clarification was added to Section 4.3.1 based on this comment.</p>
<p>I am concerned that all efforts, as well as considerable funds, are focused into a small 7-acre area of the Refuge and the remaining area may receive less protection. I look forward to the day when the Nihoku fence can be removed (moved) because a predator-proof fence will span the Refuge boundary, protecting the entire Refuge (B. Zaun, M. Fernandes)</p>	<p>The Service did not modify the EA based on this comment.</p> <p>The preferred alternative does not divert a significant amount of management funding from the Refuge; instead, the efforts centered at Nihoku are supported predominantly by non-profit funding and lawsuit settlement funds associated with previous take of endangered seabirds.</p> <p>The KPNWR CCP states that the Refuge will explore additions to or expansion of the Nihoku fenced area. Formulating a long-term plan for fencing entails analyzing trade-offs between cost, fragmentation, mitigating the risk of catastrophe, resource and other impacts. For example, regarding perimeter fence replacement, the pros and cons of predator-proof vs. ungulate-proof vs. cat-proof vs. game-proof designs need to be evaluated (e.g., cost, what would be protected, maintenance needs, longevity). Since funding is limited and dependent upon Congressional allocations and public and private partnerships and grants, building a single large predator-proof perimeter fence may not be feasible. However, the demonstrated success of the Nihoku project can be used to leverage additional funding to extend or establish a new enclosure. Creating a new predator-proof fenced area would result in a higher fence to area ratio, increasing incursion risk per unit area. Additionally, multiple enclosures increase management costs and may fragment</p>

	<p>populations and habitats (e.g., Nēne goslings and molting adults are flightless and movements may be restricted). However, a multiple-fence system also ensures that the entire population is never threatened by a single incursion.</p>
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