State of Hawai`i
DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Forestry and Wildlife
Honolulu, Hawai'i 96813

April, 6, 2016

Chairperson and Members
Natural Area Reserves System Commission
State of Hawai'i
Honolulu, Hawai'i

NARS Commission Members:

SUBJECT: APPROVAL OF A PERMIT TO SAN DIEGO ZOO TO REINTRODCE 'ALALĀ (*CORVUS HAWAIIANEIS*) INTO THE KŪLANI SECTION OF PU'U MAKA'ALA NATURAL AREA RESERVE, ISLAND OF HAWAI'I.

This submittal requests the Natural Area Reserves System Commission (NARSC) approve and recommend to the Board that it grant this permit.

Background and Discussion:

The attached Special Use Permit application was withdrawn from the December 14, 2015 NARSC meeting agenda, to be rescheduled for the April 6, 2015 meeting. The 'alalā, once a common sight and sound in the forests of the island of Hawai'i, was one of the first birds added to the Endangered Species List from Hawai'i, as its numbers dramatically declined due to a variety of reasons from habitat alteration to disease, to predation, and it was declared extirpated from the wild in 2000.

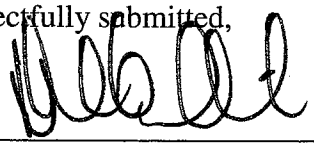
Various attempts have been made to bring this raven- sized bird back from the brink, and the San Diego Zoo, working as a Cooperator with the State and other partners, has built up a captive flock from with the ultimate goal of re-introducing them back into the wild.

After careful consideration of numerous localities, it was determined that the Kūlani Section of Pu'u Maka'ala Natural Area Reserve (NAR) was the best site due to ongoing management of habitat and predator control. The birds will be released in small numbers over time. This action has been long anticipated by the Forest Bird Recovery team, as well as other groups and individuals. Their calls were varied and quite noisy in the wild (according to Pukui,'alalā means to caw or make noise). Fortunately, their wild vocalizations were tape recorded and it is hoped that the young will pick up and re-learn these sounds. Although Hawai'i has lost so many of its

birds, there is a chance here to restore this unique bird and bring its sights, sounds, and connections back to the wild. The proposed actions have the support of DOFAW staff as well as other agencies and organizations.

Recommendation:
That the NARS Commission approve and recommend, to the Board of Land and Natural Resources, approval for a Special use Permit for the proposed reintroduction of ʻalalā (*Corvus hawaiiensis*) into Kūlani Section of Puʻu Makaʻala Natural Area Reserve, island of Hawaiʻi.

Respectfully submitted,



DAVID G. SMITH, Administrator
Division of Forestry and Wildlife

Attachment: Application form

Department of Land and Natural Resources
Division of Forestry and Wildlife

1151 Punchbowl St., Room 325; Honolulu, HI96813
(808) 587-0063, (808) 587-0064 (Fax)

Application for NARS Special Use Permit

Name: Douglas Myers
Title of Proposed Activity: Alala Reintroduction Project

The following activities require a Special Use Permit under HAR §13-209-5. If your work in the Natural Area Reserve (NAR) will involve one or more of the following, please indicate with an 'X' below:

X remove, injure, or kill any form of plant or animal life, except game mammals and birds hunted according to department rules*
__ introduce any form of plant or animal life*
__ remove, damage, or disturb any geological or paleontological features or substances*
__ remove, damage or disturb any historic or prehistoric remains*
X engage in any construction or improvement*
__ engage in any camping activity
X establish a temporary or permanent residence
__ start or maintain a fire
__ litter, or to deposit refuse or any other substance
__ operate any motorized or nonmotorized land vehicle or air conveyance in any area (including roads and trails) not designated for its use
__ operate any motorized water vehicle of any shape or form in freshwater environments or marine waters, except as otherwise provided by DLNR's boating rules
__ enter into, place any vessel or material on, or otherwise disturb a lake or pond
__ engage in commercial activities, defined as "the use of or activity on state lands for which compensation is received by any person for goods or services or both rendered to customers or participants in that use or activity"
__ have or possess the following tools, equipments or implements: fishing gear or devices (in `Ahihi-Kina`u NAR), cutting or harvesting gear (in any NAR), and hunting gear or tools (except as permitted by the hunting rules of the department)
__ hike or conduct nature study **witha group larger than 10**
X presence in an area closed pursuant to HAR §13-209-4.5 or after visiting hours established by §13-209-4.6
__ anchor any motorized or non-motorized water vehicle in the marine waters of `Ahihi-Kina`u NAR
__ other (please explain): _____

*** May require additional State or Federal permits. Applicants are responsible for identifying and securing all approvals that may be required.**

**** The NARS rules and recent rule amendments can be viewed on-line at http://www.state.hi.us/dlnr/dofaw/Unofficial%20compilation%20HAR%2013.209.pdf**

***** Please allow for a minimum permit processing time of three months*****

All permits will have the following standard conditions, pursuant to HAR § 13-209-5. Additional conditions may apply.

1) The permittee shall adhere to the specifications given in the permit application
2) Disturbance of vegetation and wildlife shall be avoided as much as possible
3) Precautions shall be taken to prevent introductions of plants or animals not naturally present in the area. The permittee is responsible for making sure that participants' clothing, equipment, and vehicles are free of seeds or dirt to lessen the chance of introducing any non-native plants or soil animals. Should an infestation develop attributable to the permittee, the permittee is responsible for eradication by methods specified by the department
4) Once approved, the permit is not transferable
5) Once approved, the permit does not exempt the permittee from complying with any other applicable rule or statute
6) The State of Hawaii shall be released and held harmless from any and all liability for injuries or death, or damage or loss of property however occurring during any activity related to the permit

I certify that the information contained in this application is true and correct.

Mary S. Myers

Applicant's Signature

If approved, copies of the permit will be provided to:

- *Applicant*
- *NARS Commission Executive Secretary*
- *NARS Branch staff*
- *DLNR-DOCARE*

For internal use only:

Application received on: _____

Distributed to District staff for review on: _____

Approval ( ) recommended ( ) not recommended by NARS Commission or authorized representative on: _____ **( ) with the attached special conditions.**

( ) Approved **( ) Not Approved**

_____ _____

Chairperson, DLNR **Date**

Applicant Contact Information
You may either enter the information directly onto this form; if you need more space or need to attach additional pages, please indicate that there are attachments.
Name:
Douglas Myers

If you are applying on behalf of an organization, the organization and your title:
Zoological Society of San Diego dba San Diego Zoo Global, Chief Executive Officer

Title of Proposed Activity:
Alala Reintroduction Project

Primary contact person for this permit application:
Douglas Myers

Mailing Address:
2920 Zoo Drive, San Diego, CA 92101

Phone:619-557-3999
Fax:-
E-mail:dmyers@sandiegozoo.org

Principal local contact, reference, or collaborator:
Bryce Masuda, Conservation Program Manager (local contact)

Mailing Address:
P.O. Box 39, Volcano, HI 96785

Phone:808-985-7218
Fax:-
E-mail:bmasuda@sandiegozoo.org

Supporting Information
Please provide the following information about your proposed activity that requires a special-use permit ("proposed special-use"). Failure to provide responses to the following questions may result in your application being rejected or taking longer to review and process.

1. **What is the period of time for which the permit is requested (e.g., the date of a proposedsingle event or an ongoing research project, from beginning time or date until end of the event or project, for group hikes the number of hikers and leaders)?**

   * *Please note:* ***permits are limited to one year in length****, except where waived for permits to other governmental agencies where the board determines the waiver to be in the best interest of the State. Proposals for multi-year projects are advised of the need to apply for a new permit EACH year.*

This permit application is requested for one year.

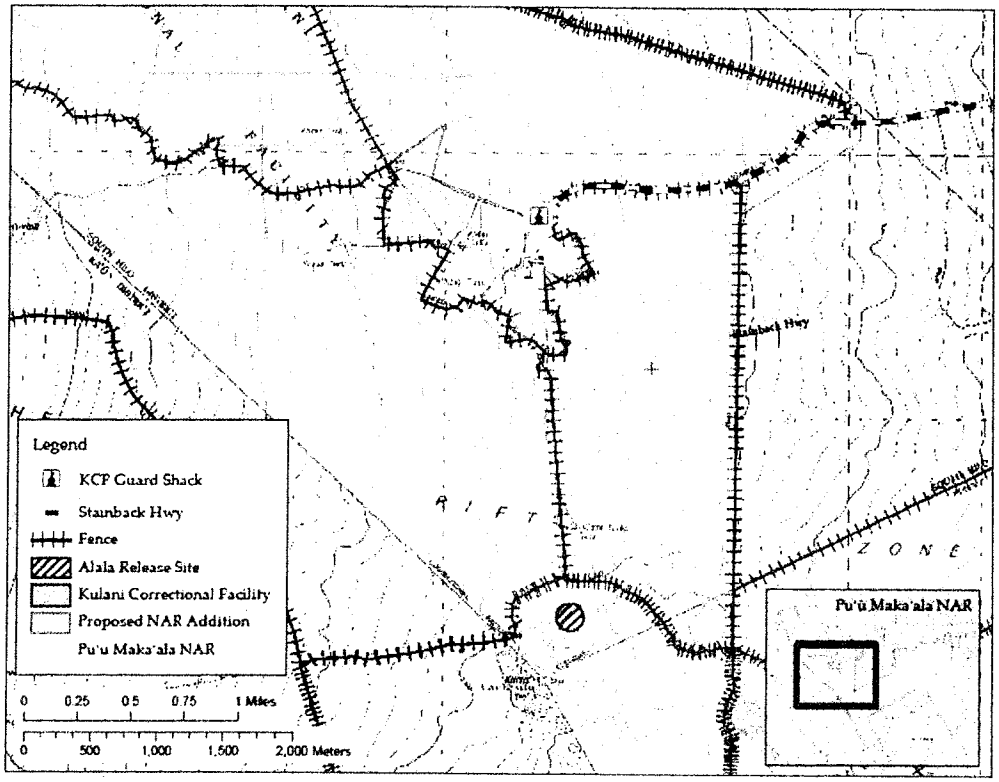
2. **List the individual Natural Area Reserve(s) involved:***Please note that Laupahoehoe is now has an overlay under the jurisdiction of the US Forest Service as part of the Hawai`iExperimentalTropicalForest (HETF). Applicants wishing to work in this Natural Area Reserve will need to apply for a separate permit by going to* http://www.hetf.us/page/conducting_research/ *You will* ***not*** *need to submit an additional application fee, but you will have to have it pass thorough the HETF review process. Permits are issued off of the BigIsland DOFAW Branch.*

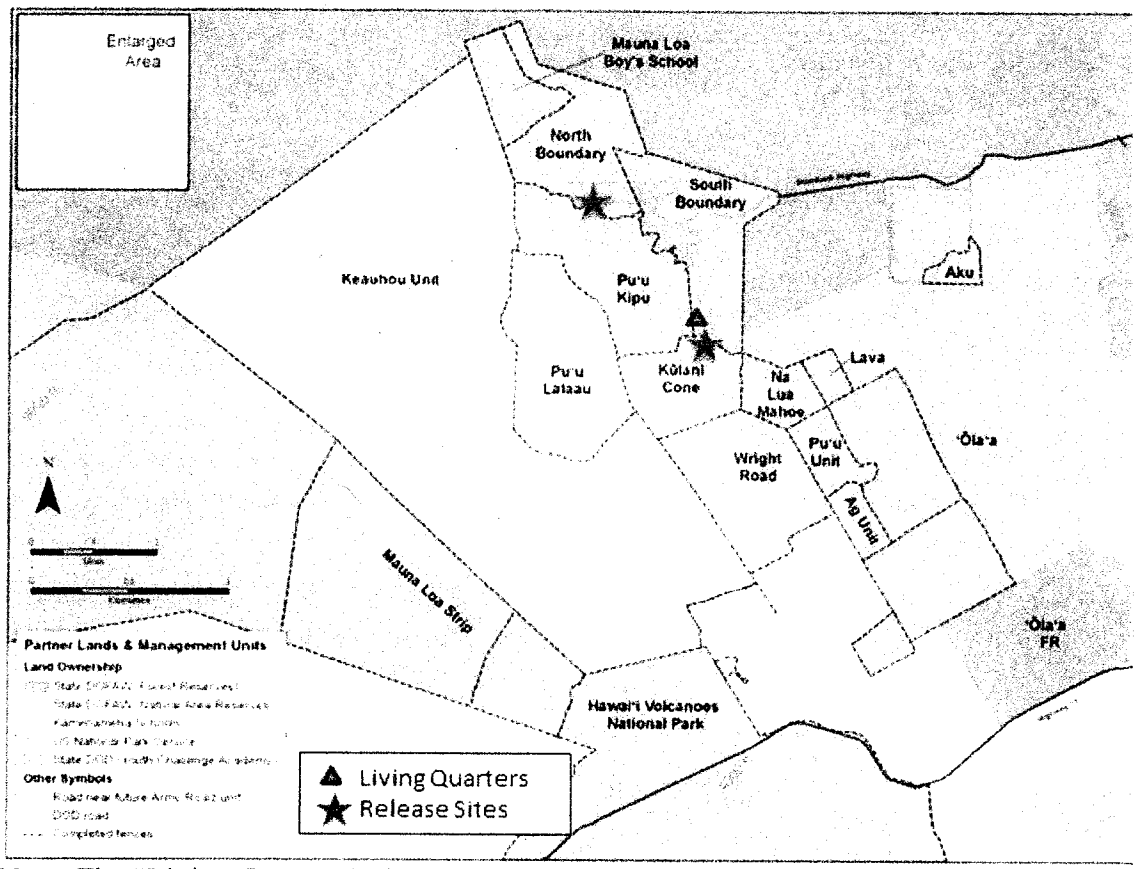
   Kahauale`a is currently closed due to continuing volcanic activity; entry is prohibited, but may be granted under special use request made directly to the Big Island NARS Manager and issued off of the Big IslandDOFAW Branch (also subject to approval of Hawaiian Volcano Observatory to insure safety).

   The majority of `Ahihi-Kina`u is closed to public access; entry for research or other purposes may be made under a Special Use Permit.

The NAR involved in this permit is Puu Makaala NAR.

3. **Attach a map that illustrates where in the Natural Area Reserve(s) you propose to conductyour special-use.***The map should be legible and reproducible in black and white. The map should also be at the appropriate scale for the type of activity proposed and of sufficient detail to allow the Division to identify activity sites within 10 meters. For any activity off established trails, entry and exit routes should be marked.*





Note: The "Living Quarters" site may be moved following discussion and agreement with NARS Manager (N. Agorastos).

4. **Provide a thorough and detailed description of the proposed special use, including names of field assistants and other collaborators**. *The description should be detailed enough so that those reviewing your application understand what you propose to do and the scope of your proposal. As part of your description, please include: a) a description of the planned method of transportation to and within the Natural Area Reserve, and b) if other people than you will participate in the proposed special-use, please note how many people, and whether they are volunteers, students, research assistants, paying customers, etc.*

For research proposals,

a) please explain your objectives, your methods, and why the proposed special-use is necessary to your research;

b) if the research is part of your undergraduate or graduate studies, please include the name and affiliation of your major professor;

c) if you are seeking permission to remove or introduce any form of plant or animal life, please list all species involved and specifically identify which are threatened, endangered, or candidate species.

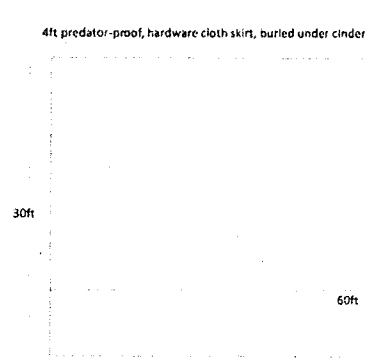
d) if you are seeking permission for the collection of any specimens, please note type of specimen (species and parts collected, if less than entire specimen), quantities to be collected, storage methods, and ultimate disposition.

Failure to provide sufficient information may result in your application beingreturned for additional information or rejected. Please feel free to attach additional sheets as necessary.

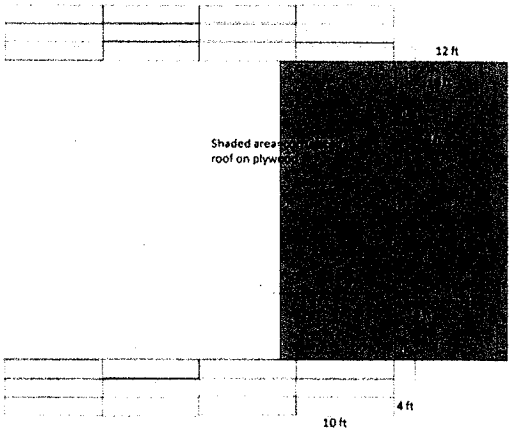
Alala will be held at, then released into, the Puu Makaala NAR starting in July 2016. This process will be a collaborative effort between the San Diego Zoo Global (SDZG), USFWS, DOFAW, NARS, NPS, KS, TMA, and other partners. As part of this process, a SDZG field team will conduct the on-the-ground management and monitoring of Alala which will require building and maintaining infrastructure (e.g. pre-release aviary, living areas, office space), caring for birds in the pre-release aviaries, and conducting post-release monitoring.

We would like to request the building of infrastructure in previously cleared areas that have been approved by NARS Manager (N. Agorastos). We request the construction of a greenhouse-style pre-release aviary to be built using metal framing and covered in vinyl coated wire.

Alala Release Aviary Diagram 7Feb16
Top view



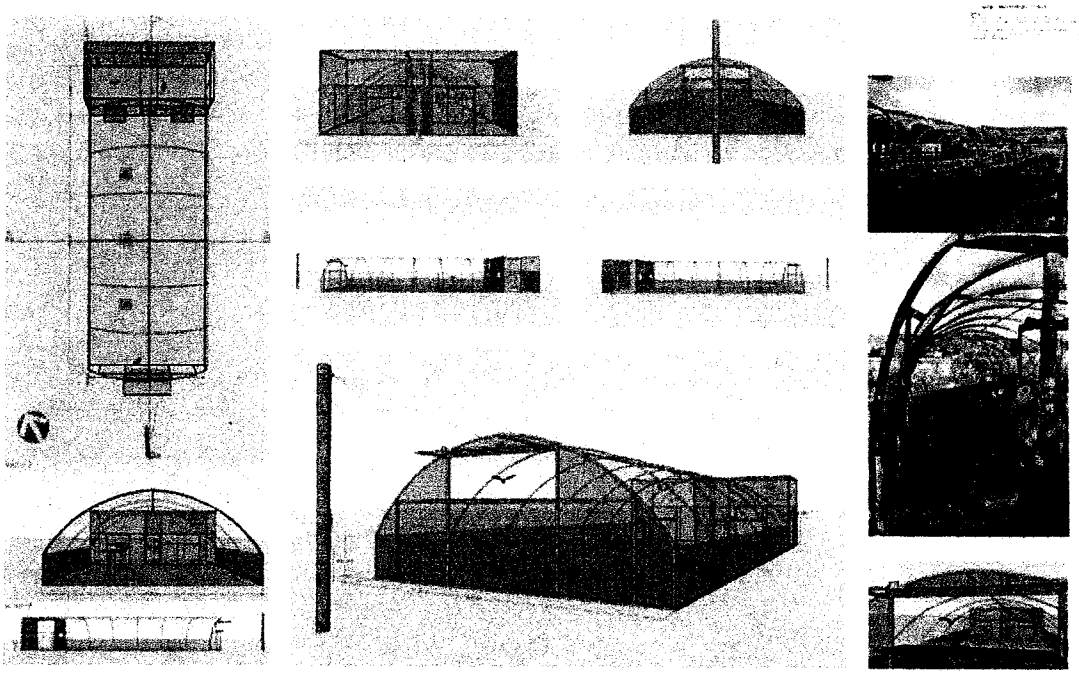
Side compartment made from removable panels; each panel 4' x 10'
12 roof panels, 3 panels on short side, 10 panels on long side, 3 panels on short side = 28 panels (not including hinged keeper door with access to interior of aviary)
1" square black anodized aluminum (or other robust material) tubing, 1/2" X 1/2" - 16 ga. Vinyl coated wire mesh, Stainless steel hardware



Materials:
Wood framing for greenhouse
Metal framing for greenhouse with perching and browse tube attachment areas
Wire mesh 1" x 0.5", 16 ga wire, galvanized after welding and coated with black PVC vinyl (wire mesh available from Riverdale Mills)
Plywood for roof
Corrugated roofing for roof
Side compartment panels from Corners Limited
Doors for vestibule, hack boxes, side compartments
Hack box bird doors
Metal solid paneling to block visual access

Side compartment made from removable panels; each panel 4' x 10'
12 roof panels, 3 panels on short side, 10 panels on long side, 3 panels on short side = 28 panels (not including hinged keeper door with access to interior of aviary)
1" square black anodized aluminum (or other robust material) tubing, 1/2" X 1/2" - 16 ga. Vinyl coated wire mesh, Stainless steel hardware

Alala Release Aviary Diagram 7Feb16
Side view



To minimize the impact on the area, a mobile office is the preferred structure for living facilities and office space. The mobile office would be purchased from a company such as Hawaii Modular Space and will be approximately 10' x 32', to allow for up to five individuals to stay overnight at the field site. The following figure is an example of a mobile office design that may be used for this project.

Water will be obtained from a rain catchment system attached to the mobile trailer, and electricity will be solar powered or connected to the existing grid. We also request the installation of a contained sanitation system such as a cleanwaste portable toilet (http://www.amazon.com/dp/B001TKGAKO) with WAG bags (http://www.amazon.com/dp/B017S8FSYE), within an outhouse structure.

The release site is located near the Kulani Correctional Facility – Operated by the State of Hawaii, Department of Public Safety (hereafter "Kulani Correctional Facility"). Transportation into the NAR will be by 4wd vehicle accessed through the Kulani Correctional Facility, or on the South Boundary access road to the east of the release site. We plan to follow strict quarantine procedures to protect the Puu Makaala NAR from incursions of invasive and unwanted pests as much as possible. If NARS SOPs are unavailable, SOPs for ants and Ohia wilt written by Hawaii Volcanoes National Park will be followed (see below). To prevent the spread of these and other invasives, vehicles will be cleaned using a commercial car wash and/or high pressure hoses after

each instance when the vehicle is taken off-road outside of Puu Makaala NAR, and before re-entering Puu Makaala NAR. Exceptions to this policy will be discussed with and approved by NARS Manager (N. Agorastos) before proceeding (e.g. vehicles may not need to be cleaned following off-road travel within pristine units adjacent to Puu Makaala NAR). Vehicles will also be thoroughly cleaned on a regular basis, even if they are only taken off-road into Puu Makaala NAR and otherwise remain on paved roads.

12/4/2014
D. Benitez, B. Everett, R. Loh
Hawaii Volcanoes National Park
Division of Natural Resources Management

Ant Sanitation Standard Operating Procedures (SOPs) for Contractorsin Hawaii Volcanoes National Park

Sanitation protocols address ways to minimize the introduction of new ant species within and from outside the park by individuals, vehicles, machinery, and construction materials.

Ants are not native to Hawaii, and many introduced species have had disastrous effects on Hawaiian ecosystems. The spread of Argentine ants on Maui threatens native insects and the Haleakala silversword, and the rapid spread of little fire ants (LFA) on Hawai'i Island threatens human health, agriculture, and native ecosystems. LFA are considered among the world's worst 100 invasive species.

To prevent introduction of ants into new areas of the park, vehicles, machinery, and construction materialsmust be carefully inspected and sanitized for ants prior to arriving to the work site. This includes vehicles (cars and trucks), and heavy machinery such as bulldozers, as well as construction materials such as lumber, gravel, and cinder. Potted plants and soil are another vector for invasive ants and these are prohibited from entry into the park except under special circumstances provided they are free of invasive ants and other pests.

In personal and commercial vehicles ants typically occupy the cab areas, persisting on food stuffs, in packs or other gear, and supplies. But they may also be found in wheel wells or in other portions of the vehicle body, such as in debris in the undercarriage, the beds of pickups, or in the engine compartment and under the battery. Ants may be found in these same areas on heavy machinery and construction vehicles, and the potential for ant dispersal by any vehicle is greater if the vehicles are parked in an area infested with ants for any length of time.

Additional considerations apply to high elevations in the park above 5,000' where the argentine and big headed ants are not established. Additional documentation is on file to describe sanitation measures for contractors to prevent the introduction of invasive plants, coqui frogs, and other pests into the park, as well as sanitation for imported firewood brought into the park by concessioners.

The procedures outlined below must be followed for all administrative, researcher, cooperator, and contractor vehicles in the park, to prevent the introduction or movement of LFA and other ants.

Keep vehicles and machinery clean by:

1. Using high pressure hoses to clean wheel wells, bumpers, grill, fenders, undercarriage, and side panels behind wheel. Remove any mud or debris.

2. Visually inspecting the engine compartment including the area under the battery.

3. Visually inspecting the interior of all vehicles, remove rubbish and vacuum. All foodstuffs shall be removed from the vehicles at the end of the workday

Test for invasive ants:

1.Deploy ant traps or chopstick baited with small amounts of peanut butter to attract LFA and other ants. Place these in the cab and engine compartment, as well as the truck bed, and re-check in 20minutes to 1 hour. If LFA or other protein attracted ants are present, they will aggregate around the chopstick. **This method is only useful for detection and does not control ants,** and the bait should not be left in the vehicle for over 1 hour as this may attract ants from surrounding areas. Approximately 6 chopstick baits are adequate to test most personal vehicles and trucks, larger vehicles and heavy machinery may require up to 10-20 baits.

2. Monitoring bait stations should be also be deployed throughout the vehicle base yard.

3. To test gravel, building materials, or other equipment (e.g., portable buildings) for LFA, utilize the same method placing baited chopsticks every 10-20 feet around the equipment. If ants are found, the material needs to be quarantined and properly treated. You can use bait or barrier treatments to deal with LFA, but a dual approach of baiting followed by barrier treatments is recommended by the Hawaii Ant Lab.
4. For travel to sensitive sites in the park and high elevation sites above 5,000', follow previous method but also include honey or jelly for sugar attracted ant species including argentine and big headed ants.

If ants are found in vehicle or on materials:

1.) If a vehicle, machine, or materials are found to have ants, they are not allowed into the park until free of ants. Infested vehicles will be sanitized by deploying poison bait stations following recommendations by the Hawaii Ant Lab http://www.littlefireants.com/ and in accordance with all State and Federal laws. The owner of the vehicle/equipment is responsible for cleaning and/or sanitizing the infested object before it can be re-tested.
2. If gravel or substrate is found to test positive for LFA, the material needs to be quarantined and properly treated. It is important to make sure that no equipment comes in contact with the tainted material and that the material does not get moved around. You can use bait or barrier treatments to deal with LFA, but the best way to manage LFA is to use a dual approach of baiting followed by barrier treatments.
3. Once an infested vehicle is treated, it must be re-tested to ensure ants are not present. Vehicles parked in LFA areas may not be driven into the park until they are free of ants.

Treatment options:

For bait treatments, Hawaii Ant Lab has recommended several products including: Siesta Fire Ant Bait, Amdro, and Probait.*
For barrier treaments, Hawaii Ant Lab has recommended several products including: Ortho Home Defence Max granules, Ortho Home Defence ready to spray, Triazicide Once and Done Insect Killer Granules, and Triazicide Once and Done Insect Killer.*

*The use of trade names herein is for descriptive purposes only and does not imply endorsement by the National Park Service.

07/16/2015
D. Benitez, J. Campbell
Hawaii Volcanoes National Park
Division of Natural Resources Management

Ceratocystis fimbriata (Ohia wilt) Sanitation Standard Operating Procedures (SOPs) for Contractors in Hawaii Volcanoes National Park

This document details mitigation measures to prevent the introduction of Ceratocystis fimbriata into Hawaii Volcanoes National Park (HAVO) by individuals, vehicles, machinery, and construction materials. Ceratocystis fimbriata is newly identified fungal pathogen causing ohia wilt and rapid ohia death (ROD). Over 15,000 ac are infested on Hawaii Island, and up to 50% of the ohia in these areas have been killed by the fungus. There is no known treatment for infected trees. For more information on ohia wilt, visit www.ohiawilt.org

The procedures outlined below must be followed for all administrative, researcher, cooperator, and contractor vehicles in the park.

Keep vehicles and machinery clean by:
1. Using high pressure hoses to clean wheel wells, bumpers, grill, fenders, undercarriage, and side panels behind wheel. Visually inspect and remove any mud or debris, since Ceratocystis may persist in soil.
2. Visually inspect the interior of all vehicles, remove debris, wood, dirt and mud.
3. Notify the park via email (david_benitez@nps.gov) if equipment has been used over the past year in infested areas. Additional inspections may be required.

Keep outerwear (shoes/boots, raingear, backpacks, gloves, and hats) clean by:
1. Scrubbing all outerwear clean of visible dirt and other contaminants prior to beginning work, or before moving to a new site within the park. Pay special attention to boots. If mud or debris persists on outerwear, use of 10% bleach solution, 70% isopropyl alcohol or spray disinfectant such as Lysol or equivalent to sanitize*.
2.) Use dedicated outerwear for park work if you have worked in infested areas over the past year.

Keep tools (machetes, hand saws, chainsaws, loppers) clean by:
1.) All cutting tools which come in contact with ohia must be sanitized to remove visible dirt and other contaminants at the end of the work day. All cutting surfaces must be washed and sterilized, including chainsaw chains and bars, in 10% bleach solution, 70% isopropyl alcohol or spray with a disinfectant such as Lysol or equivalent to sanitize. Rinse with clean water, dry, and spray chainsaw chains or other parts with oil based lubricant to prevent corrosion.
2.) Use dedicated gear to cut or sample known or suspected Ceratocystis fimbriata infected trees in the park.

Imported firewood:

1.) All firewood imported into the park must be sourced from an park approved site free of Ceratocystis fimbriata.

Identification and Reporting: See www.ohiawilt.org for the most current information.
The crowns of infected trees will turn yellowish (chlorotic) and then brown within days to weeks of first symptoms. Dead leaves will typically remain on dead branches for some time after tree death. Occasionally single branches or limbs of infected trees will exhibit symptoms before the remainder to the crown becomes affected.

The fungal pathogen manifests itself as dark nearly black staining in the sapwood along the outer margins of the trunk. The staining is often radially distributed throughout the wood creating a starburst pattern radiating out from the tree's core.
If you believe you have seen evidence of Ceratocystis fimbriata within the park, please contact David Benitez (david_benitez@nps.gov) immediately with details on the exact location of the affected trees and the date observed.

*The use of trade names herein is for descriptive purposes only and does not imply endorsement by the National Park Service.

The Alala Reintroduction Project will be overseen by Bryce Masuda (Conservation Program Manager) and Kate Richardson (Post doctoral Associate). The team will also consist of two or three Research Assistants and one or two interns which will be hired in Spring 2016. Although the primary aim of activities at Puu Makaala NAR is the reintroduction of Alala, research will also be conducted as part of the project. Research projects will require activities such as the collection of blood samples from Alala.

Alala will be held in the pre-release aviary starting in July and the first of two cohorts released in September. The second cohort will be transferred to the pre-release aviary starting in September and released in November. A total of approximately 12 birds will be released in 2016. These details are subject to change depending on the number and dates of hatching.

GPS and VHF transmitters will be attached to Alala to monitor their post-release behavior and dispersal. This spatial information is essential to determine and understand reasons why Alala survive and settle after release. To limit the impact on the Puu Makaala NAR, remote monitoring will be conducted as much as possible. This will include automatic downloading of spatial data to small GPS receivers. We would also like to request permission for the installation of VHF automated telemetry towers in strategic locations surrounding the release site. The towers will consist of approximately 15 foot tall metal towers with an antennae attached. Guy lines will be used to support the towers. The exact locations of the towers will be determined with approval from NARS Manager (N. Agorastos). On the ground monitoring will be conducted only as needed and following fencelines as much as possible.

We would like to request the immediate collection of Alala carcasses for necropsy. Carcasses will be sent to the San Diego Zoo for necropsy, then to the Bishop Museum. The San Diego Zoo has conducted necropsies of Alala for over two decades and is able to provide extensive expertise to determine the causes of mortality to inform future releases. This process has been approved in USFWS and DOFAW permits issued to SDZG. Similarly, we would like to request the removal of birds from the wild in instances where birds are sick or injured. These birds will be taken to the nearby Keauhou Bird Conservation Center for care and rehabilitation.

5. **Please answer the following questions about your proposed special use:**
    a. **Can your proposed special use be conducted elsewhere? If not, why not?**

The proposed special use was chosen by the Alala Working Group (which includes representatives from the NARS and DOFAW) to be conducted at the Puu Makaala NAR after an

in-depth analysis of all proposed release sites. This site was chosen to ultimately give Alala the greatest chance of success at establishing a wild population.

b. Is your proposed special-use consistent with the purpose and objectives of the Natural Area Reserves System (the purpose and objective of the NARS is to protect in perpetuity specific land and water areas which support communities, as relatively unmodified as possible, of the natural flora and fauna of Hawai`i)? If so, how?

The proposed special-use is consistent with the purpose and objectives of the NARS, because it involves reintroducing and restoring a currently extinct in the wild endemic Hawaiian bird to the NARS.

c. Is your proposed special-use consistent with the management plan developed for the individual Reserve(s) (*Management plans are available for review at www.dofaw.net/nars or by contacting the NARS office*)?

The proposed special-use of reintroducing Alala to Puu Makaala NAR is consistent with the management plan, which explains that the "overall management goal is to protect, maintain, and enhance Puu Makaala's unique natural, cultural, and geological resources." The proposed activities are consistent with the management plan, as reintroducing Alala will protect natural resources (e.g. trapping of introduced mammalian predators), enhance natural resources (e.g. the release of Alala as an endemic species), and enhance cultural resources (e.g. the release of the culturally important Alala).

d. Does your proposed special-use provide a benefit (direct or indirect) to the Natural Area Reserves System or to the individual Reserve(s) or both? (*For research, please note whether any studies have previously been made similar to the one proposed and how you will convey your research findings to the Department*).

The proposed reintroduction of Alala will benefit the NARS by bringing attention to the importance of the NARS in general. It will also benefit the Puu Makaala NAR specifically, as Alala are important seed dispersers of endemic Hawaiian plants.

e. Will the proposed special-use damage or threaten to damage the integrity or condition of the natural, geological, or cultural resources in the individual Natural Area Reserve(s) and adjacent area or region? If so, how? If not, why not?

The proposed special-use will have a minimal impact on the NAR. The pre-release aviary and housing and office space will be constructed on a disturbed site which has been approved by NARS Manager (N. Agorastos), and will be overseen by both NARS and SDZG staff. Any other possible infrastructure will be built only after obtaining approval from NARS Manager (N. Agorastos). Browse and perching will be obtained from NARS staff when they clear fencelines and dirt roads. If additional browse and perching for the birds are necessary, SDZG staff will consult with NAR staff prior to doing any vegetation collections. Vehicles will be cleaned immediately prior to being driven in the NAR and boots and all other gear will also be

thoroughly cleaned and disinfected prior to being transported to the NAR. As much as possible, brand new equipment and supplies will be used and stored at the living facilities and office space to limit unwanted organisms from entering the NAR. Driving will be done slowly along dirt roads in the NAR. Remote monitoring (e.g. towers) will be preferentially used and off-trail work will be kept to a minimum.

f. **Does the proposed special-use comply with the provisions and guidelines contained in HRS Chapter 205A, entitled 'Coastal Zone Management,' where applicable?** ***HRS Chapter 205A can be accessed at:http://www.capitol.hawaii.gov/hrscurrent/Vol04_Ch0201-0257/HRS0205A/***

Not applicable.

g. **Have you (the applicant) previously received a NARS Special Use Permit? If so, did you comply with the conditions of any previously approved permit (including providing a final report as requested)?**

We have not previously received a NARS Special Use Permit.

h. **Do you (the applicant) have any other current NARS special-use permits? If so, please list and state whether you are currently in compliance with the conditions of those permits.**

We do not currently have any other NARS special use permits.

6. **Is the proposed special-use expected to have an environmental impact on the Natural Area Reserve(s) or the surrounding area? If, so please elaborate. If not, why not?** ***Please include discussion of any off-trail work, such as mist-netting, setting of traps, removal of vegetation, etc. and any measures planned to mitigate any short and long-term damage.***

The proposed special-use will have a minimal impact on the NAR. The pre-release aviary and housing and office space will be constructed on a disturbed site which has been approved by NARS Manager (N. Agorastos), and will be overseen by both NARS and SDZG staff. Any other possible infrastructure will be built only after obtaining approval from NARS Manager (N. Agorastos). Browse and perching will be obtained from NARS staff when they clear fencelines and dirt roads. If additional browse and perching for the birds are necessary, SDZG staff will consult with NAR staff prior to doing any vegetation collections. Vehicles will be cleaned immediately prior to being driven in the NAR and boots and all other gear will also be thoroughly cleaned and disinfected prior to being transported to the NAR. As much as possible, brand new equipment and supplies will be used and stored at the living facilities and office space to limit unwanted organisms from entering the NAR. Driving will be done slowly along dirt roads in the NAR. Remote monitoring (e.g. towers) will be preferentially used and off-trail work will be kept to a minimum.

7. **There is an application fee of $50 to cover the cost of processing; please attach a check made out to:** ***Department of Land and Natural Resources.*** **Please mail a hard copy of the application with original signature (students must also have the**

signature of their Advisor. This should be mailed to the attention of: Executive Secretary, Natural Area Reserves System Commission, Division of Forestry and Wildlife, Department of Land and Natural Resources, 1151 Punchbowl Street, Room 325, Honolulu, HI96813. An electronic version of the application (signed or unsigned) may be e-mailed to betsy.h.gagne@hawaii.gov so that it may be sent out for review to appropriate staff and others.

Check is no longer required.

8. **For research proposals, please list any local collaborators or contacts (if any).**

Not applicable.