

**FINDING OF NO SIGNIFICANT IMPACT**  
**MISSION CRITICAL ADMINISTRATIVE AVIATION PLAN**  
National Park Service, U.S. Department of the Interior  
Hawai'i Volcanoes National Park  
December 2015

## **INTRODUCTION**

The National Park Service (NPS) has prepared this Finding of No Significant Impact (FONSI) in accordance with the National Environmental Protection Act (NEPA), for the Mission Critical Administrative Aviation Plan, Hawai'i County, Hawai'i. The FONSI, along with the Environmental Assessment (EA), Response to Comments, and Errata comprise the complete record of environmental impact analysis for the project. In addition, as required by NPS *Management Policies 2006*, a Determination of Non-Impairment rendered by the park superintendent has been prepared. The EA and associated compliance documentation was prepared according to the requirements of the NPS 2001 Director's Order (DO) 12 and DO-12 Handbook.

This document describes the selected alternative and provides an explanation of why it will have no significant effects on the human environment. The selected alternative (the plan) will provide a decision-making framework for managing the administrative use of aviation over the park. Administrative aviation will be used for the health and safety of visitors, employees, and island residents and for park resource protection and restoration activities. Under this plan, formal best management practices (BMPs), area closures, and flight restrictions will be instituted to minimize impacts to park resources, soundscapes, wilderness, visitors, and adjoining landowners.

## **PURPOSE AND NEED FOR ACTION**

The purpose of the project is to develop a comprehensive management plan for administrative use of aviation. The plan will provide for operational use of aviation by the park staff and cooperating agencies in a safe, timely, and efficient manner to monitor and research volcanic activity, carry out search and rescue and law enforcement operations, and manage park ecosystems and cultural resources, while avoiding or minimizing impacts to park natural and cultural resources, soundscapes, and visitor experience. To do so, the plan will incorporate a suite of Best Management Practices to be followed by staff and cooperators conducting administrative flights.

## **ALTERNATIVES**

Two alternatives were identified and analyzed in the EA, a no action alternative and a preferred alternative. In addition, actions that were common to both alternatives were described in the EA.

### Actions Common to All Alternatives

Continue to use the current park helibase near park headquarters as no other suitable sites are available that can be used year-round. All administrative aviation users will follow the park procedure to request, receive approval, and report flights in the park, as outlined in the park's Aviation Management Plan (AMP). The temporary helispots formally designated in the park's AMP may be used on a routine basis. These sites are typically used infrequently for emergency and non-emergency purposes (i.e. once a year or less). For non-designated temporary helispots, natural openings may be used for authorized non-emergency aircraft landings, but no site markings or permanent improvements of any kind may be installed to support non-emergency use. Temporary landing sites may be used to meet the minimum requirements of emergency situations. Site improvements determined to be essential for safety reasons during individual emergency situations may be authorized and supervised by a resource advisor, but the site will be restored to natural conditions after the emergency has ended. No permanent heliports or helipads will be allowed in wilderness.

In accordance with Section 7 of the Endangered Species Act, the NPS will notify the US Fish and Wildlife Service (USFWS) by telephone or facsimile of an emergency situation. The USFWS may recommend measures to minimize effects of the response. As soon as practicable after the emergency is under control, the action NPS will initiate formal consultation with the USFWS if listed species or critical habitat have been adversely affected by the emergency response.

To comply with Section 106 of the National Historic Preservation Act (NHPA), the State Historic Preservation Officer (SHPO) will be notified of emergency actions as described under Emergency Actions in the Programmatic Agreement (NPS 2008b). The Superintendent will notify the SHPO within 24 hours of the emergency or as soon as conditions permit. Park staff will assess impacts and recommend actions necessary for stabilization or preservation, as soon as is practicable, and will consult with the SHPO for any undertakings necessary as a result of the emergency or emergency response.

### **Selected Action**

The NPS selects the preferred alternative for implementation. This alternative meets the purpose and need for the project (plan). No changes to the preferred alternative (as described in the EA) are incorporated in the selected action.

The approved plan will continue to use aviation for the health and safety of visitors, employees, and island residents for park resource protection and restoration, geologic research, and maintenance of backcountry trails and shelters, but will institute formal BMPs, area closures, mitigations, and flight restrictions to minimize impacts to park resources, soundscapes, visitors, and adjoining landowners. Although impacts will be reduced compared to the no action alternative, they will not be eliminated due to the need to respond to emergencies (e.g. wildland fires, search and rescue, natural disasters), and because of changing weather conditions that may require helicopters to reroute (laterally or vertically) to meet safety requirements. However, based on past administrative activities, these are expected to be infrequent and of short duration.

The BMPs are an integral part of the plan and may be updated as needed, for example, to include additional restrictions. If updates are significant, the need for additional compliance will be evaluated. The BMPs include mitigation measures, as well as area and time of year restrictions for sensitive wildlife, to be implemented or followed in administrative use of aviation. See Attachment C for revised Best Management Practices.

### **Responsive Management**

Responsive management is an element of the selected alternative. Conditions can change in park resources, visitor use, or adjoining areas and require changes in practices, mitigation, and especially temporary flight closures or restrictions. For example, the range of sensitive bird species may change over time or with improved information and require an adjustment in temporary closure or above ground level (AGL) restrictions. As conditions change, the BMPs will be updated to address those changes.

### **Other Alternatives Considered**

#### Other Alternatives Considered and Analyzed

The other alternative considered and analyzed in the EA was the no action alternative. Under the no action alternative, the park and its cooperators would have continued to use aviation for the health and safety of park visitors, staff, and island residents, for resource protection and restoration, geologic research, and maintenance of backcountry trails and shelters. Informal practices developed to minimize impacts on park resources, visitors, and adjacent communities would have been implemented by some flight managers or pilots but would not have been formalized or universally followed.

#### Preliminary Alternatives Considered but Dismissed

Two additional alternatives were considered but dismissed because they did not meet the objectives of the project or were not feasible. One alternative dismissed from further consideration was to prohibit all aviation use except for emergencies and eruption response. Aviation is essential for the safety of island residents, as well as park visitors and staff in the context of eruptive behavior of Kīlauea and Mauna Loa. Helicopters are essential tools in evaluating eruptive behavior and maintaining the network of instruments established throughout the park for monitoring and assessing hazards from volcanic activity. Helicopters are also an essential tool in the protection and restoration of park biological and cultural resources, as mandated by federal legislation and NPS management policies. Invasive species are the overriding natural resource issue in Hawai‘i. Intensive control of invasive species is required to protect federally listed species and designated critical habitat. Helicopters are needed, for example, to transport heavy fencing materials needed to control and exclude nonnative ungulates in remote roadless areas, suppress wildland fire that threaten rare species, and locate and control invasive plants established on extensive lava flows.

Another alternative considered but dismissed was to relocate the park helibase away from the park headquarters and Kīlauea Visitor Center area. One potential site, the abandoned park quarry near Kīpukapuauulu, was considered but rejected because the presence of threatened and endangered species there precluded or limited use of the facility for nine months of the year.

Other locations in the park were also rejected because of the absence of required infrastructure and sensitive species in the area. Potentially available locations outside the park were dismissed because of unacceptable response time to emergencies.

**MITIGATION**

Mitigation measures are presented as part of the selected action. As documented in the EA, the park determined that there will be no significant impacts, however these measures have been developed to lessen the adverse effects of the selected action.

Resource Area	Mitigation	Responsible Party
<b>General Considerations</b>	1. Approved Project Aviation Safety Plan required.	Park Project Manager, Park Flight Manager
	2. Consolidate planned flights on same days as much as practical.	Park Project Manager, Park Flight Manager
	3. Do not conduct planned missions on Saturday and Sunday (does not apply to emergencies).	Park Project Manager, Park Flight Manager
	4. Reschedule flights, when feasible, if weather forces low-level (<500' AGL as defined in Director's Order Reference Manual 60) flights over visitors or adjacent landowners.	Park Project Manager, Park Flight Manager
	5. Training missions with repeated take-offs and landings will be conducted at current helibase on an infrequent basis and will involve additional public outreach.	Park Project Manager, Park Flight Manager, Park Public Affairs Specialist
	6. Select staging areas, landing zones, minimum AGL, and flight paths to minimize impacts on visitors, adjoining landowners, soundscapes, wilderness, and other park resources.	Park Project Manager, Park Flight Manager
	7. Use staging areas nearest to the work site based on these priorities: 1) safety, 2) impact concerns, and 3) cost/efficiency.	Park Project Manager, Park Flight Manager
	8. Select in priority order: 1) helispots listed in Park Aviation Management Plan, 2) no clearing needed (e.g., roadways, bare lava), 3) other sites with resource advisor approval.	Park Project Manager, Park Flight Manager

Resource Area	Mitigation	Responsible Party
	9. Avoid low-level flights above crews on ground.	Park Project Manager, Park Flight Manager
	10. Pilots will receive a copy of the BMPs and be required to adhere to them while conducting contract work for NPS and cooperating agencies.	Park Project Manager, Park Flight Manager
	11. Helicopter managers will receive regular training in implementation of the BMPs, mitigations, and flight restrictions.	Park Project Manager, Park Flight Manager
	12. Select type of helicopter to reduce impacts, as feasible (e.g., use quieter helicopters near wilderness; use larger helicopters for heavy loads if it reduces the number of flights). Contract helicopters with quiet technology would be considered.	Park Project Manager, Park Flight Manager
	13. Airspace closures for administrative flights will be in effect for special ceremonies and events, with a mandatory five mile standoff distance.	Park Project Manager, Park Flight Manager
	14. Anticipate and comply with any Temporary Flight Restriction around sites of eruptive activity.	Park Project Manager, Park Flight Manager
<b>Visitor Experience</b>	15. Avoid low-level flights over backcountry campsites and trails.	Park Project Manager, Park Flight Manager
	16. Avoid areas where visitors concentrate.	Park Project Manager, Park Flight Manager
	17. If visitor concentrations cannot be avoided, post notices or directly notify visitors prior to flights to allow visitors an opportunity to select other sites if desired. Explain purpose of the flights.	Park Project Manager, Park Flight Manager
<b>Cultural Resources</b>	18. Avoid flights at sunrise and sunset; consult with park liaison on areas and times to avoid.	Park Project Manager, Park Flight Manager
	19. Cultural resources specialists will be consulted prior to clearing of new landing zones, and impacts to sites and features will be avoided.	Park Project Manager, Park Flight Manager

Resource Area	Mitigation	Responsible Party
Natural Resources	20. Natural resources specialists will be consulted prior to clearing of new landing zones, and impacts to sensitive species will be avoided.	Park Project Manager, Park Flight Manager
	21. Flight managers will use maps and species' information for sensitive wildlife and habitat to determine species-specific avoidance distances to avoid those areas during sensitive periods. Flight managers will consult with resource specialists to minimize impact when avoidance is not possible. The resource specialist will evaluate potential impacts to species and determine if further consultation with USFWS is needed.	Park Project Manager, Park Flight Manager
Threatened and Endangered Species – Fire-Related	22. All personnel on the fire are informed about listed species and the importance of protecting their habitats and minimizing take. All personnel on the fire are informed about cultural resources in the area. This is best identified in the incident management objectives.	Park Project Manager, Park Flight Manager
	23. Resource Advisors are assigned to the incident to coordinate natural and cultural resource concerns and provide recommendations for minimizing impacts of response endorsed by the Incident Commander.	Park Project Manager, Park Flight Manager
	24. The effectiveness of suppression activities and mitigation measures should be documented and evaluated after a fire. Procedures should be revised as needed.	Park Project Manager, Park Flight Manager
Wilderness	25. Fly outside wilderness boundaries and over roads whenever possible. Follow prescribed actions and mitigation measures in prepared wilderness MRDG.	Park Project Manager, Park Flight Manager

## **PUBLIC INVOLVEMENT AND AGENCY CONSULTATION**

### **Scoping**

Internal scoping sessions were held at the park on February 8, 2011. In attendance were an interdisciplinary team of natural and cultural resource specialists from the park, aviation specialists, and park managers that utilize aviation, as well as representatives from USGS Hawaiian Volcano Observatory, the main aviation cooperator in the national park. Internal scoping focused on defining uses of aviation in the park, methods of minimizing impacts of aviation, articulating purpose and need for the project, objectives of the project, NEPA compliance for aviation use at other parks, and determining environmental issues and impact topics to be analyzed in the EA. A meeting was held by the interdisciplinary team on November 22, 2011 to discuss alternatives for the EA. A summary of the results of this meeting are part of the administrative record for this EA.

Public scoping on purpose, need, and environmental issues occurred from February 23, 2012 to March 26, 2012. Scoping was initiated with a letter mailed to individuals, agencies, and organizations identified in the park mailing list for other park NEPA projects. The proposed plan was discussed with the Kūpuna Consultation Group from Ka'ū and Puna. Information about the plan/EA was posted on the park website and on the NPS Planning, Environment, and Public Comment website.

Comments were received from officials at two public agencies and from two members of the general public responding to the park's February 23, 2012 scoping letter soliciting public comment on the proposed project. Hawai'i County Police Department and Hawai'i State Department of Health and one individual from the general public indicated they had no issues at this point but planned to follow development of the plan and may comment in the future. Only one respondent identified issues, primarily about the noise pollution in the surrounding communities and in the park caused by commercial air tour flights, park-related flights over surrounding communities, and flights in the park. Recommendations for BMPs were offered for air speed, AGLs, flight paths, and other elements of helicopter operations that affected noise levels. These comments were considered and incorporated, where appropriate, during development of the plan/EA and BMPs.

The EA was available for public review and comment from February 5 to March 8, 2014. Letters were sent to 136 individuals, organizations, as well as federal, state, and local agencies and elected officials. A news release was sent to 123 contacts for media, organizations, and partners on February 6, 2014. An article was published in the *Hawaii Tribune Herald* on February 7, 2014. The information regarding the public review and comment period was also posted in PEPC and on the park's website. Hard copies of the plan/EA were sent to nine public libraries on Hawai'i Island.

Seven correspondences were received: two from individuals, one from a non-governmental organization, and four from state agencies. The Hawai'i Department of Land and Natural Resources, Division of Forestry and Wildlife supported the plan/EA and the Engineering Division had no comments. The Hawai'i Department of Health sent a comment letter providing

information on sustainable and healthy design of communities and buildings, as well as notice that they forwarded the plan/EA to other divisions and offices (two correspondences).

One of the individual commenters provided several comments on the Best Management Practices (Appendix A in the plan/EA), primarily related to above ground level heights and potential impacts. The other individual identified a discrepancy in the plan/EA and provided comments relating to the impact of noise, the document's analysis of such, and concern that they thought the park had not considered previous comments during scoping. Please see the Comment Response Report (Attachment A) and Errata Sheet (Attachment B) for detailed responses to the comments received.

## **Agency Consultation**

### U.S. Fish and Wildlife Service

In accordance with the *Endangered Species Act* of 1973, informal Section 7 consultation was initiated with the USFWS Pacific Islands Fish and Wildlife Office on June 12, 2012 concerning potential impacts to candidate, threatened, or endangered species in the park. This letter outlined purpose and need, alternatives, BMPs, closures, and restrictions proposed in the preferred alternative to protect Hawaiian forest birds, 'io, and nēnē. A response was received on July 16, 2012 outlining information that should be considered and addressed in the draft EA. Further communication with USFWS regarding the consultation was through email in April and May 2013. Letters were sent on February 5, 2014 for informal consultation with the USFWS and the National Marine Fisheries Service (NMFS) to coincide with the public comment period. No response was received from NMFS. The USFWS concurred with the park's determination of 'may affect, not likely to adversely affect' on March 3, 2014.

### National Historic Preservation Act - Section 106 Compliance

In accordance with Section 106 of the National Historic Preservation Act, the NPS initiated consultation on February 23, 2012. The NPS sent a letter and/or met with the following groups during initial scoping for the plan/EA.

- Advisory Council on Historic Preservation
- Department of Hawaiian Homelands
- Department of Land and Natural Resources, Chairman
- Department of Land and Natural Resources, State Historic Preservation Division
- Department of Land and Natural Resources, State Historic Preservation Division, Hawaii Island Burial Council
- Edith Kanaka'ole Foundation
- Hale O Na'ali'i
- Historic Hawai'i Foundation
- Ho'oulu Lahui
- Hui Malama I Na Kupuna O Hawaii Nei
- Kalapana Community Organization
- Kalapana Fishing Council
- Kalapana 'Ohana



- Kalauonaone O Puna Association
- Ka Ohana O Honuapo
- Kamehameha Schools
- Ka'ū Preservation
- Kua o Ka La Public Charter School
- National Park Service, Associate Director for Cultural Resources
- The Nature Conservancy of Hawai'i
- O Ka'ū Kakou
- Office of Hawaiian Affairs
- Naki'i Ke Aho
- Na Ohana O Kalapana

Formal written consultation occurred on February 5, 2014 to coincide with the public comment period for this environmental assessment. Consultation letters were sent to the same list as above. The Historic Hawai'i Foundation submitted a letter encouraging further analysis of impacts to the setting, feeling or association of the historic structures and impacts to cultural practitioners (ethnographic resources). Both of these items were included as part of the BMPs when the EA was sent for review. See the Comment Response Report (Attachment A) for further information. The Hawai'i State Historic Preservation Division concurred with the finding of no historic properties adversely affected on March 5, 2014.

#### Native Hawaiian Consultation

The proposed plan was discussed with the Kūpuna Consultation Group from Ka'ū and Puna on March 16, 2012 and September 7, 2012; the meetings were held at the park. In addition, consultation letters were sent on February 23, 2012. Follow-up letters were sent on 4/10/2012 that included the purpose and need for the plan, as well as the draft BMPs. Overall in the meetings, the group considered administrative aviation as critical to accomplishing the purpose and objectives of the plan. One written response was received recommending mandatory annual training of helicopter operators with regards to sensitive cultural and natural resources. This comment is addressed in the BMPs by requiring that all contract pilots receive and adhere to the BMPs, and the project leader and flight manager will ensure the BMPs are adhered to.

Formal written consultation occurred on February 5, 2014 to coincide with the public comment period for this environmental assessment. No additional comments were received.

#### **WHY THE SELECTED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE QUALITY OF THE HUMAN ENVIRONMENT**

The NPS used the following NEPA criteria and factors defined in 40 CFR §1508.27 to evaluate whether the Selected Alternative would have a significant impact on the environment.

**Impacts that may have both beneficial and adverse aspects and which on balance may be beneficial, but that may still have significant adverse impacts that require analysis in an EIS.**  
There were no significant impacts from the Selected Alternative that were identified as part of

the analysis for this plan. Implementation of the Selected Alternative may result in short-term, minor to moderate adverse impacts on park soundscapes and on wilderness quality and users. Impacts to visitor use and experience would be short-term, negligible to moderate and adverse; adverse impacts to park operations would be long-term and negligible; impacts to native wildlife would be short-term, minor and adverse. The potential impacts to special status species would be negligible to minor, short-term and adverse. Overall, the Selected Alternative will have less adverse impact compared to the No Action Alternative and will result in long-term beneficial impacts to human health and safety and long-term beneficial impacts from restoration of park ecosystems.

**Degree of effect on Public Health or Safety.**

The Selected Alternative will have both beneficial and adverse effects on public health or safety, but the effects are not significant. Beneficial effects arise from the ability to quickly conduct missions, such as volcanic monitoring, search and rescue, and fire operations. The adverse effects would be related to potential safety risk of utilizing aircraft for missions. The BMPs, combined with existing NPS policies and plans, were developed to address all aspects of aircraft operations, including safety.

**Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.**

No wetlands or wild and scenic rivers exist in the park. The limited areas identified as potentially prime and unique farmlands are not currently in active production and the Selected Alternative will not impact those lands. With the implementation of mitigation measures, the Selected Alternative will not have a significant effect on historic or cultural resources, park lands, or ecologically critical areas. Some flights may occur over wilderness or potentially temporarily land in wilderness, but since the flights are occasional, short-term, and completed only after determined necessary in the minimum requirements analysis, it has been determined that no significant impacts will occur.

**Degree to which effects on the quality of the human environment are likely to be highly controversial.**

Based on previous public scoping and the comments received on the plan/EA, the effects presented in the plan/EA are not highly controversial. One of the individual commenters provided several comments on the Best Management Practices. Another individual commenter identified a discrepancy in the plan/EA and provided comments relating to the impact of noise, the document's analysis of such. The evaluation of and response to the comments provided did not change the impact analysis. In general, the majority of the comments received were in support of the plan.

**Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks.**

There are no highly uncertain or unknown risks that are anticipated to occur.

**Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.**

The Selected Alternative is consistent with current management methods, directives, and practices and therefore would not establish any precedent for future actions.

**Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.**

The Environmental Assessment analyzed cumulative effects of the plan. Actions by the park or the park partners would not contribute to significant cumulative impacts. Actions outside of the park's control, such as air tours, may be considered a significant impact on some resources, such as soundscapes and wilderness, but specific analysis of those impacts is outside the scope of this plan/EA. In the future, an Air Tour Management Plan would provide any regulation regarding the numbers and time of day of flights, the alignments (altitudes, flight routes) of aircraft, or flight route incentives (such as quiet technology helicopters on specific flight routes) which may reduce the level of this significant cumulative impact at some point in the future. The implementation of this plan will not contribute significantly to existing adverse impacts.

**Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.**

The Selected Alternative will not adversely affect or cause the loss or destruction of significant scientific, cultural, or historical resources.

**Degree to which the action may adversely affect an endangered or threatened species or its critical habitat.**

Under the Selected Alternative, the use of administrative aviation can be expected to have adverse, negligible to minor short-term impacts on special status wildlife species in Hawai'i Volcanoes, which is equivalent to a determination of *may affect, but not likely to adversely affect*. These short-term impacts are offset by the major, long-term benefits to species that result from aviation-assisted habitat and rare species recovery and protection efforts (e.g. rare species recovery programs, removal of non-native ungulates and predators). The USFWS concurred with this determination on March 3, 2014.

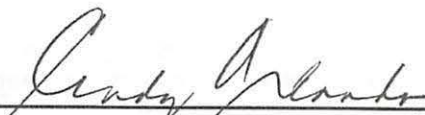
**Whether the action threatens a violation of Federal, state, or local environmental protection law**

The Selected Alternative will not violate federal, state, or local environmental protection law. The use of aviation for administrative purposes will follow all applicable laws.

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**CONCLUSION**

Implementation of the Selected Alternative for the Mission Critical Administrative Aviation Plan will not have significant impacts on the human environment. The determination is sustained by the analysis in the EA, agency consultations, the inclusion and consideration of public review, and the capability of mitigations to reduce or avoid impacts. Adverse environmental impacts that could occur are negligible to moderate in intensity, duration, and context and less-than-significant. As described in the EA, there are no highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence. There are no previous, planned, or implemented actions, which in combination with the selected alternative would have significant effects on the human environment. Requirements of the National Environmental Policy Act have been satisfied and preparation of an Environmental Impact Statement is not required. The park will implement the Selected Alternative as soon as practical.

Recommended:  12.3.15  
Cynthia L. Orlando, Superintendent Date  
Hawai'i Volcanoes National Park

Approved:  12/21/15  
Martha Lee, Acting Regional Director Date  
Pacific West Region, National Park Service

**Attachment A**  
**NPS Responses to Public Comments on the**  
**Mission Critical Administrative Aviation EA**  
**Hawai'i Volcanoes National Park**

In response to the public availability of the environmental assessment, a total of seven correspondences were received. Consistent with the requirements of 40 CFR 1503, the NPS has provided written responses to those pieces of correspondence that have either substantive comments or comments that the NPS determined written response was required for clarification. A single correspondence may have more than one substantive comment. Comments that contain substantive points regarding information in the draft plan/EA or comments that need clarification are summarized below followed by the NPS response.

1. One comment requested further analysis on how impacts to the setting, feeling, and association of historic structures will be avoided and minimized during aviation use within park boundaries.

**Response:**

An Interdisciplinary Team including Cultural Resource Specialists assisted with the impacts analysis. The impact level was determined to be minor or less, which under NPS Director's Order 12, does not require full analysis (page 14). Any flights to areas that have historic structures are of short duration and infrequent (less than once a year on average); therefore they will not be impacting the setting, feeling or association of the historic structures. An example flight would be to deliver supplies and materials for repairs to the Mauna Loa Summit cabin. The landing/drop site is greater than or equal to 75-110 feet from the historic structure. The purpose of a flight near a historic structure would be to conduct repair, rehabilitation, and preservation work on the structure. In the park, pack stock is used for delivering supplies and materials where and when feasible. For example, if materials are too large or too heavy for the stock, or the elevation is higher than the stock can safely travel, helicopters are used.

Aviation safety standards require landing zones to not have obstructions within 75-110 feet of a landing zone. Potential impacts from rotor wash have been determined to be negligible. When cultural resources advisors have been present during helicopter work near historic structures in the past, no impacts have been observed to historic structures or sites.

2. One comment requested the inclusion of protocol or the planned establishment of protocol which would highlight the way in which impacts to cultural practitioners at the Kilauea Summit and Kalapana Fishing Access area would be avoided or minimized.

**Response:**

The impact level for ethnographic resources was determined to be minor or less, which under NPS Director's Order 12, does not require full analysis (pages 14-15). Consultation with the park's Kupuna Consultation Group was conducted through meetings 3/16/2012 and 9/7/2012, and written communication on 2/23/2012 and 4/10/2012 (see page 86). Several of the Best Management Practices (BMPs) were developed specifically to protect ethnographic resources and rights with regards to administrative flights (see Attachment D for revised BMPs).

3. One comment recommended an expanded definition of adjoining landowners to include all inhabitants of Hawai'i Island.

**Response:**

The park does not have any control over the helicopter pilots outside the park when they are not under contract by the park. Within the park, or when under contract by the park (for example, when traversing from the park helibase to the Kahuku Unit of the park), the pilots will be required to follow the Best Management Practices (BMPs), which have been designed to reduce impacts from those operations as much as feasible. Outside of the contracted work for the park, the pilots should be following Federal Aviation Administration (FAA) regulations for flight routes and altitudes.

4. Two comments recommended higher minimum above ground level (AGL) for administrative aviation flights, questioned the definition of low-level flights, where low-level flights should not occur, flight monitoring, and discussed air tour operations.

**Response:**

The BMPs are an integral part of the plan and EA. The BMPs were developed specifically to limit or reduce our impacts in the park and nearby landowners related to the administrative use of helicopters.

Low-level is defined by NPS Director's Orders Reference Manual #60 (2013) as aircraft operations below 500' Above Ground Level (AGL). It was defined up front so when 'low-level' is used in the BMPs, the reader would be clear on the definition. It was not meant to suggest that all flights are conducted at this altitude. The Plan/EA describes specific types of flights, average flight frequencies, and typical altitudes for flights when a specific altitude is required for that type of mission (see pages 18-23). In order to 'eliminate noise impact', the aircraft would not be able to accomplish the mission it was contracted to complete. The BMPs were developed to reduce impacts from the administrative aircraft operations as much as feasible, but by the nature of the work, it will not be possible to eliminate all noise impact.

The park conducts flight following for all the administrative aviation use within the park. Low-level flights would only be conducted when necessary for the mission. Defining low-level in the BMPs was not meant to give the impression that all flights are conducted at this altitude. The BMPs referencing low-level flights are indicating that if low-level flights are necessary for the specific work, then they should avoid being at a low-level, as feasible, when they are near specific areas, such as, campsites and trails. In addition, under the BMPs backcountry users will be notified about expected administrative helicopter work in the area.

Air tour operations are outside of the scope of this document. Air tours operators are regulated by the Federal Aviation Administration (FAA) and follow the Hawaii Air Tour Common Procedures Manual (FAA Document Number: AWP13-136A), which includes a map showing minimum altitude by area.

5. One comment recommended a process if BMPs are not adhered to.

**Response:**

The flight manager and crew are required to follow BMPs and deviations are reported to their supervisor, who will take appropriate action.

6. One comment questioned the incentives for the helicopter contractor to invest in quiet technology.

**Response:**

Due to the technical nature of the administrative aviation needs, quiet technology is not the only factor in contractor selection. Pilot and aircraft qualifications to conduct a particular mission are also considered (e.g., short-haul, sling load, ACETA, etc.). All factors are considered in the selection of a contractor.

7. One comment pointed out a discrepancy in the decibel level cited for the Hughes 500D helicopter, questioned the relationship between the dBA cited and the plan, and suggested the plan did not consider impacts to wildlife and neighboring communities during low-level flights.

**Response:** The entire program is not based on the decibel level cited in the Plan/EA for the Hughes 500D helicopter. The information on the Hughes 500D aircraft dBA sound level contained in Table 3 (page 37) has been removed from the table and the sound levels have been clarified. Please see the errata sheet for detailed information.

Low-level is defined by NPS Director's Orders Reference Manual #60 (2013) as aircraft operations below 500' Above Ground Level (AGL). It was defined up front so when 'low-level' is used in the BMPs, the reader would be clear on the definition. It was not meant to suggest that all flights are conducted at this altitude. The Plan/EA describes specific types of flights, average flight frequencies, and typical altitudes for flights when a specific altitude is required for that type of mission (see pages 18-23).

As discussed in the plan/EA, the available studies regarding impacts of overflights on wildlife show varying responses depending on species, noise level, AGL of overflight, and frequency of occurrence (see pages 71-72). In addition, a recent Final Environmental Impact Statement for the Feral Swine Damage Management Program: A National Approach (APHIS, 2015; pages 204-208) has a summary of the scientific literature on the potential impacts of overflights which had similar findings: the impact to the species is dependent on many factors. One important factor appears to be how frequently the flights occur in a given area (chronic impacts). As described in the plan/EA, the administrative aviation flights are infrequent, brief in duration, and because they are based on specific missions or projects, will not occur at the same altitude or over the same locations chronically. An important part of the plan/EA is the BMPs that were developed to minimize impact on wildlife, visitors, and adjoining landowners.

8. One comment requested information on the number of flights instead of total hours per year.

**Response:**

The total number of hours flown varies each year, and is driven by the mission of the flight. In fiscal year 2013, the park and cooperating agencies recorded a total of 120 hours of flight time; and in FY14 the total was 230 hours. Specific data has not been kept in the past regarding the number of individual flights for a specific mission. More than one flight can occur on a given day, as the park and its cooperators try to be the most efficient in scheduling aircraft use. Each flight is for a specific mission and is unlikely to be in the same area as the previous flight unless it is for a specific project (such as, supplying fence material to a remote area). The total number of hours is based on the number of hours the park paid the contractor. Flight time for an individual flight can be as short as 15 minutes or as long as two hours. The length of flight depends on what type of work is being completed and the distance

from the helibase to the project site. Data collection methods continue to evolve and in future years, an estimate should be available for number of individual flights conducted.

Under the Council on Environmental Quality regulations (1508.14), the NPS is required to consider impacts to the 'human environment', which includes the natural and physical environment and the relationship of people with that environment. Please see Chapter 3: Affected Environment and Environmental Consequences for the analysis of the potential impacts of the administrative aviation on the human environment.

9. One comment suggested that all reasonable alternatives were not considered, that BMPs suggested during public scoping were not considered, and that a response to scoping was not received.

**Response:**

All reasonable alternatives were considered to meet the purpose and need. See page 4 for the purpose and need, page 27 for alternatives considered but dismissed, and page 28 for how the alternatives meet project objectives. The NPS has developed and incorporated BMPs to address and reduce the potential impacts our flights may have on the human environment.

In the response to scoping letter referenced by the commenter, the individual had stated that some of the items listed are already required by the Hawai'i Administrative Rules. Since the pilots are already legally required to follow those rules, the NPS did not feel it necessary to include those items in the BMPs.

The following items were included in the response to scoping letter receive by the NPS and are already included in the BMPs, but are not worded exactly the same as suggested: Avoid residential areas when possible; Fly at an altitude that is as high as possible over scenic and recreational areas such as parks and beaches; Identify noise sensitive areas and adjust routes to avoid them to the greatest extent possible.

The public scoping period for an environmental assessment is the time for interested and affected public to identify issues, alternatives, and potential impacts that they want the NPS to consider while they are developing the EA. The NPS considers all scoping letters received, but is not required to include every suggestion or respond to the commenter during the public scoping period regarding whether or not the comments were specifically incorporated.

10. One comment questioned if cumulative impacts adequately addressed air tour operations and flights over 'vast tracks of residential land'.

**Response:**

Air tour operations as a cumulative impact were discussed in the EA. For an example see pages 44-45, particularly the footnote on page 44. The Mission Critical Administrative Aviation Management Plan/EA is not analyzing impacts of air tours, as that is outside the scope of this document. Air tour operations are regulated by the FAA and follow the Hawai'i Air Tour Common Procedures Manual (FAA Document Number: AWP13-136A).

This plan and environmental assessment only addresses the administrative flights which occur over the park or nearby landowners. The NPS only has jurisdictional control over park lands. The NPS has



developed BMPs to address and reduce the potential impacts our flights may have over nearby landowners when we cannot avoid flying over those areas.

11. One comment questioned if environmental justice was adequately addressed, particularly related to the Keaukaha area.

**Response:**

The flight path of all aircraft into and out of the Hilo International Airport is directed by FAA and is outside of the park's control. In addition, the contract aircraft the park uses does not fly over Keaukaha when departing from or arriving at the Hilo International Airport.

The Plan/EA may affect a number of neighborhoods near the park spanning a wide range of socioeconomic and ethnic backgrounds, these 'adjacent landowners' are within our scope of analysis and are not disproportionately affected due to environmental justice. The NPS has developed BMPs to address and reduce the potential impacts our flights may have over nearby landowners when we cannot avoid flying over those areas.

**Additional Reference:**

APHIS. 2015. Final Environmental Impact Statement for the Feral Swine Damage Management Program: A National Approach. ([www.aphis.usda.gov/wildlife-damage/fseis](http://www.aphis.usda.gov/wildlife-damage/fseis))

## Attachment B

### Errata Sheets

The Errata must be attached to the Environmental Assessment to comprise the complete record of environmental impact analysis for the project.

Page 1, second paragraph –

One of the contract helicopters that the park uses is actually a McDonnell Douglas 369E, which is similar in sound level to the Hughes 500D helicopter. A Type III (light) helicopter has 4-8 passenger seats, carries up to 100 gallons of water and the maximum weight for landing and takeoff is up to 6,000 pounds (Interagency Helicopter Operations Guide, February 2013, [http://www.nwcg.gov/pms/pubs/pms510/10\\_pms510\\_1.pdf](http://www.nwcg.gov/pms/pubs/pms510/10_pms510_1.pdf)). Hawai'i Volcanoes uses Type III helicopters for most administrative aviation missions due to the type of missions conducted that require maneuverability of the helicopter and ability to conduct a wide range of tasks.

Page 25, Table 1, the following entry should read:

Use of Helibase Near Park Headquarters	Training missions with repeated take-offs and landings will be conducted at current helibase on an infrequent basis and will involve additional public outreach.
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There was an error in the decibel level cited for the Hughes 500D; the 54 dBA provided was not for 500' overhead, but was instead obtained from a very specific modeled scenario representing a receiver some distance away at a slant. When the NPS received the number of 54 dBA from the Volpe Transportation Center, as was cited in the plan/EA, it was not recognized that it was for the slant distance instead of directly overhead until after the public release of the document.

This error affects the text on pages 37, 38, and 43, as described below.

Page 37, Table 3 (reference to Hughes 500D deleted because the metrics of measurement are not the same as the other examples in the table):

**Table 3: Common Sound Levels and Their Effect on the Human Ear**

Sources	Decibel Level (Lmax dBA)	Qualitative Perception
Normal breathing	10	Very low
Leaves rustling	20	Very low
Soft whisper, quiet library (at 15 feet)	30	Low
Crickets (at 15 feet)	40	Low
Light auto traffic (at 100 feet)	50	Medium

Conversational speech (at 3 feet)	60	Medium
Vacuum cleaner	70	High
Off-road vehicles	70-90	High
Heavy truck or motorcycle (at 25 feet)	90	High
Military jet (at 330 feet)	120	High

Source: NPS 2013.

Hawai'i Volcanoes uses Type III helicopters for most administrative aviation missions due to the type of missions conducted requiring maneuverability of the helicopter and ability to conduct a wide range of tasks. Figures 1 and 2 below illustrate maximum noise levels (L<sub>max</sub>) and sound exposure levels (SEL) at a range of distances for several Type III helicopters. These data were extracted from the Integrated Noise Model (INM, 2008) and are based on a standardized method of data collection and adjusted to reference atmospheric conditions in accordance with SAE-AIR-1845 (Society of Automotive Engineers, 1986). They are not actual measured noise levels. Actual noise levels will vary during a particular mission depending on the operating altitudes, types of maneuvers, speed, and power settings during flight. Due to the varying nature of the missions, predicting a specific flight path for the purposes of modeling is not feasible, however, decibel levels directly under flight paths are expected to be substantially above background ambient levels based on the maximum sound levels. Sound levels decrease as distance from the flight path increases (approximately 6 dB reduction for each doubling of the distance). Maximum sound levels were not available for the AS350 or Hughes 500D, however, sound exposure levels (SEL or sound energy normalized to 1 second) for the Hughes H500D, EC 130, and AS350 were similar at distances between 200 and 4,000 feet above ground level (Figures 1 and 2 below). The Bell 407 is louder than the other Type III helicopters. Actual sound levels would be lower than the SEL.

Aircraft Name	NOISE_ID	Metric	Operational Mode	Distance									
				200	400	630	1000	2000	4000	6300	10000	16000	25000
Aerospatiale AS350 (5 passengers)	SA350D	SEL	Departure	89.2	85.5	82.9	80.0	75.1	69.3	65.1	60.2	55.8	51.0
Aerospatiale AS350 (5 passengers)	SA350D	SEL	Overflight	87.1	83.5	80.8	78.0	73.2	67.5	63.3	58.4	54.0	49.2
Aerospatiale AS350 (5 passengers)	SA350D	SEL	Approach	94.2	90.9	88.6	86.1	82.0	77.1	73.3	68.7	64.6	60.2
Bell 407 (5 passengers)	B407	Lmax	Departure	84.4	78.0	73.7	69.2	62.0	54.2	48.6	42.4	35.2	27.3
Bell 407 (5 passengers)	B407	Lmax	Overflight	87.9	81.3	76.8	72.2	64.6	56.0	49.5	41.9	32.8	22.7
Bell 407 (5 passengers)	B407	Lmax	Approach	90.2	83.9	79.7	75.3	68.3	60.6	54.9	48.4	40.8	32.7
Bell 407 (5 passengers)	B407	SEL	Departure	92.3	88.2	85.4	82.4	77.5	72.0	67.8	63.1	57.4	51.0
Bell 407 (5 passengers)	B407	SEL	Overflight	93.3	88.9	85.9	82.8	77.5	71.2	66.1	60.0	52.4	43.8
Bell 407 (5 passengers)	B407	SEL	Approach	95.2	91.2	88.5	85.6	80.9	75.5	71.3	66.2	60.2	53.5
Eurocopter EC130 (7 passengers)	EC130	Lmax	Departure	78.4	71.4	66.7	61.6	53.5	44.5	38.0	30.9	23.8	17.5
Eurocopter EC130 (7 passengers)	EC130	Lmax	Overflight	82.7	76.0	71.4	66.6	58.7	50.0	43.6	36.4	28.5	21.1
Eurocopter EC130 (7 passengers)	EC130	Lmax	Approach	88.3	82.0	77.8	73.4	66.6	59.1	53.7	47.6	40.6	33.2
Eurocopter EC130 (7 passengers)	EC130	SEL	Departure	85.3	81.1	78.1	74.8	69.3	62.9	58.3	53.3	48.6	44.2
Eurocopter EC130 (7 passengers)	EC130	SEL	Overflight	87.2	83.3	80.7	77.8	72.8	66.9	62.4	57.1	51.6	46.8
Eurocopter EC130 (7 passengers)	EC130	SEL	Approach	93.8	90.5	88.1	85.6	81.4	76.4	72.6	68.1	62.8	57.0
Hughes H500D (3 passengers)	H500D	SEL	Departure	86.4	83.1	80.8	78.3	74.2	69.2	65.1	60.3	56.0	51.3
Hughes H500D (3 passengers)	H500D	SEL	Overflight	84.9	81.6	79.3	76.8	72.7	67.9	64.2	59.8	55.9	51.6
Hughes H500D (3 passengers)	H500D	SEL	Approach	90.4	87.1	84.7	82.2	77.9	72.7	68.5	63.3	58.8	53.8

**Note:**  
Lmax = Maximum Sound Level: The maximum sound level that occurred during an aircraft event. *This data is not available for all aircraft.*  
SEL = Sound Exposure Level: The sound energy from an aircraft event, normalized to 1 second.

Figure 1. Integrated Noise Model maximum noise levels (Lmax) and sound exposure levels (SEL) for reference conditions at a range of distances for several Type III helicopters (INM, 2012).

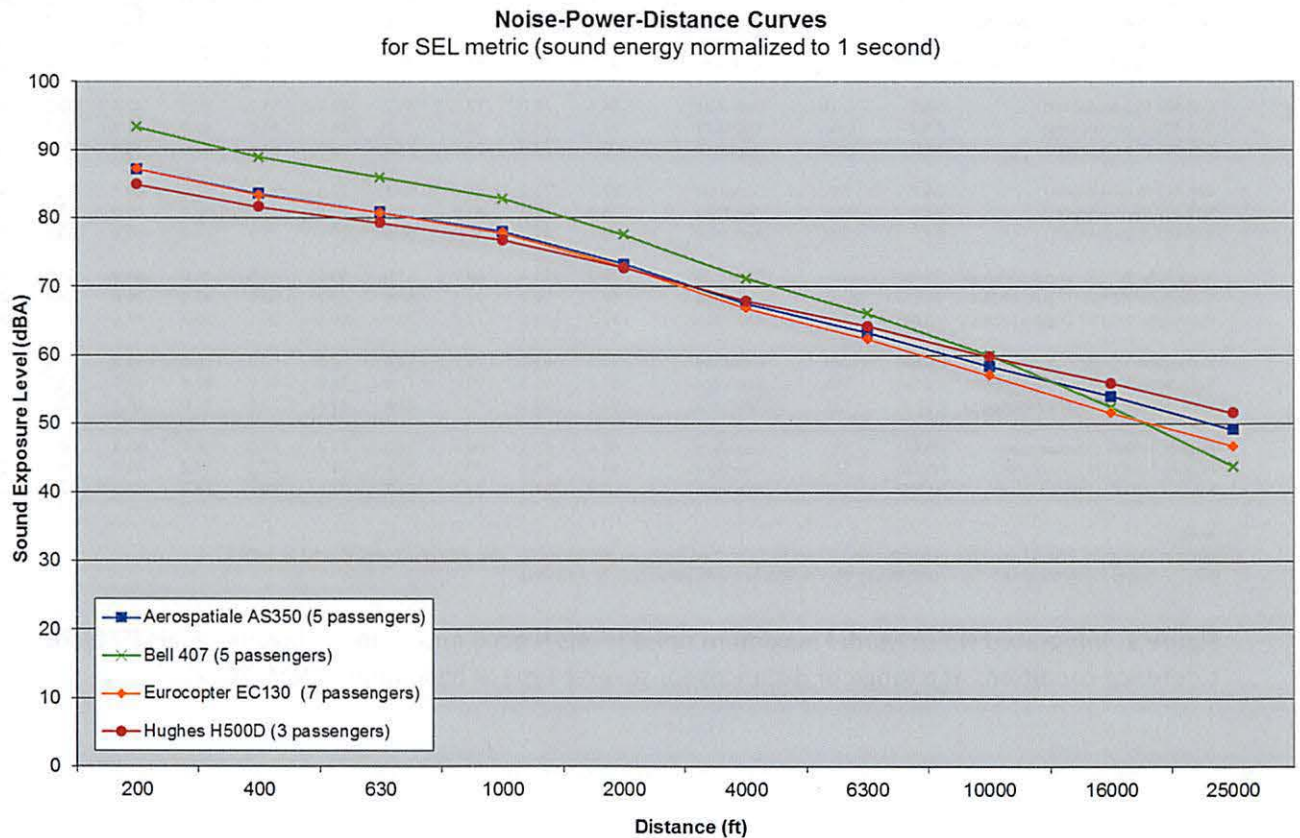


Figure 2. Integrated Noise Model source data sound exposure level Noise-Power-Distance Curves for reference conditions for several helicopters (INM, 2012).

Page 38, second paragraph, last two sentences should be changed to read: To understand how quiet those sound levels are, a soft whisper in a quiet library has a dBA of 30 at 15 feet; conversational speech at three feet is 60 dBA; and a motorcycle at 25 feet is 90 dBA (table 3). Hawai'i Volcanoes uses Type III helicopters for most administrative aviation missions. Based on Figure 1 above, Type III helicopters (at 400' overhead) can range from 76 – 83 dBA (Lmax) depending on the particular aircraft.

Under the impact thresholds on page 43, moderate is described as: "Human-caused noise associated with proposed aviation operations is present occasionally across most of an area. When present, it is at medium levels that may mask natural sounds briefly, and may be audible at a distance. High noise levels may occur, but would be brief in duration." Based on Figure 1 above, Type III helicopters at 400' overhead can range from 76 – 83 dBA (Lmax) depending on the particular aircraft. When compared to other sounds in the Common Sound Levels (Table 3), then the Type III helicopters would fall under the 'High' level for Qualitative Perception. The administrative flights are occasional and brief in duration. Individual administrative flights can be low-level (500' AGL), but also can be much higher (1,500' or higher), particularly when in transit to project site, depending on the mission. Therefore, the impacts

analysis of the administrative flights does not change (page 44 for No Action, page 46 for Preferred Alternative).

**Additional References:**

Integrated Noise Model (INM) Version 7.0 Technical Manual (Boeker, et al.) Report No. FAA-AEE-08-01, John A. Volpe National Transportation System Center: Cambridge, MA, March 2008.

Interagency Helicopter Operations Guide, February 2013.  
[http://www.nwccg.gov/pms/pubs/pms510/10\\_pms510\\_1.pdf](http://www.nwccg.gov/pms/pubs/pms510/10_pms510_1.pdf)

Integrated Noise Model [computer program]. Version 7.0c. Washington, DC: United States Department of Transportation, Federal Aviation Administration, 2012.  
[http://www.faa.gov/about/office\\_org/headquarters\\_offices/apl/research/models/inm\\_model/](http://www.faa.gov/about/office_org/headquarters_offices/apl/research/models/inm_model/)

INM Version 7.0c Software Update [software release notes]. United States Department of Transportation, Federal Aviation Administration, 2012.  
[http://www.faa.gov/about/office\\_org/headquarters\\_offices/apl/research/models/inm\\_model/inm7\\_0d/media/ReleaseNotes\\_inm70c.pdf](http://www.faa.gov/about/office_org/headquarters_offices/apl/research/models/inm_model/inm7_0d/media/ReleaseNotes_inm70c.pdf)

Society of Automotive Engineers (SAE), Committee A-21, Aircraft Noise. Procedure for the Computation of Airplane Noise in the Vicinity of Airports. Aerospace Information Report No. 1845, Warrendale, PA, March 1986.

## **Attachment C**

### **Aviation Best Management Practices for HVNP**

**Background information:** The average annual hours of administrative use of helicopters by Hawai'i Volcanoes National Park (HVNP) and park partners (primarily USGS-Hawaiian Volcano Observatory) that originate in the park is 250 hours (150 hours park, 100 hours park partners). This includes NPS emergency responses to monitor and suppress wildland fires, search and rescue missions, maintenance of backcountry facilities and trails, invasive species management, and protection of native ecosystems. For some, particularly Hawaiian Volcano Observatory (HVO), a lot of the flight time is outside of park boundaries (e.g. monitoring Pu'u 'Ō'ō). The amount of administrative helicopter use in a given year is influenced by project funding, eruptive and seismic activity, and other emergency responses. In a typical year, when wildland fire activity is low, monitoring an active volcano and actively protecting threatened and endangered species requires the majority of the helicopter use.

#### **General Best Management Practices (BMPs)**

A flight plan will be required and approved according to the procedures outlined in the current park Aviation Management Plan. Potential impacts can be minimized or resolved through discussions in the planning stage including consultation with resource specialists and other subject matter experts to result in the least impact.

Temporary landing zones, staging areas, flight paths, time of flight, and above ground level (AGL) will be selected to avoid or minimize flight hazards as well as impacts on visitors, nearby landowners or communities, developed areas, wilderness, and park resources. Pilots will be asked to fly at highest AGL as practicable on flight to park to minimize impacts under flight path.

Low-level / low-flying is defined as below 500' AGL (NPS Director's Orders Reference Manual #60, 2013). Not all administrative flights are low-level flights.

Missions will be combined into a single flight or flight day to the extent possible.

Examples include: – HVO combines various missions into a single flight day, usually on the day an eruption reconnaissance flight is scheduled. – Work groups combine helicopter use with other work groups or projects, for example, coastal area sling loads for maintenance projects are done the same day as turtle operation sling loads.

Two days a week are currently 'no fly' days, Saturday and Sunday. Very rarely, routine work may be completed on these days, but enhanced outreach/education would be considered. This would not be applicable for eruptions, emergencies.

Wilderness values will be protected. Fly outside wilderness boundaries and over roads where possible (sling load flights cannot fly over roads). Avoidance distance will be determined based on project and location. Land/drop outside of wilderness and hike people/materials in when feasible. Minimum Requirement Decision Guide (MRDG) will be completed for all flights over or in wilderness (or suitable/eligible/recommended). Consider non-aviation modes of transport (like livestock) when feasible.

Avoid low-level flights over backcountry campsites and trails, particularly along or parallel to trails.

Avoid flights over high concentration visitor use areas. These areas include: Kīlauea Visitor Center, Volcano House, Jaggar Museum, end of Chain of Craters Road, Steam Vents, Thurston Lava Tube, Kīlauea Iki Overlook, Kīlauea Caldera, Devastation Trail, Kipukapuauulu, Mauna Ulu – parking lot and trail to Pu‘u Huluhulu, Ka‘ū Desert Footprints area, Hilina Pali Shelter, Mauna Loa Road Lookout, and Puhimau hot spot.

When feasible, disperse helicopter operations within the park or to existing helispots outside the park to reduce concentrations of flights out of rainshel helibase at Kīlauea summit.

Minimize flights over the known quietest locations (natural ambient sound) in the park, including Kīpuka Kī, Mauna Loa, and Ka‘ū Desert. As additional soundscape monitoring occurs, incorporate the expanded data into the protection of quiet natural soundscapes.

Avoid low level flights over USGS and NPS personnel working on the ground due to the hazards of blowing cinders from rotor wash and noise and vibration interference with monitoring equipment.

Adhere to restrictions for threatened and endangered (T&E) and sensitive species and their habitats (see ‘Restrictions’ for more information).

Avoid sunrise and sunset flights as these are the most sensitive for cultural resources/ethnographic concerns, as well as for sensitive species.

Avoid flying over areas where traditional Native Hawaiian practices are known to occur.

Use the staging area (temporary helispots) nearest to the work site to disperse flights. Helispots will be selected by the priority order of: 1. Safety first, 2. Impact concerns (disturbed sites or bare lava selected first if possible), and 3. Cost/efficiency/closeness to job site (may have the temporary helispot further away from job site if it means less impact).

Utilize helispots in this order of preference: 1. List of temporary helispots from Aviation Management Plan (already cleared/surveyed/routinely used); 2. Sites that do not need a survey (e.g. bare ground (rock), roadway, existing helipads outside of park in proximity to project site); and, 3. Sites that need a survey (natural resources and cultural resources) prior to being cleared for use.

When possible, reschedule flights if weather forces low-level flights over visitors, nearby landowners or communities, T&E or sensitive species, or wilderness, and multiple flights are anticipated.

If a planned flight involves choices between impacts to T&E/sensitive species or visitors/adjacent landowners, then protection of T&E species will take precedence (due to legal requirements), with mitigation to reduce impacts on visitors and neighbors through notification and education.



When planning flights, anticipate a minimum 1-mile radius Temporary Flight Restrictions (TFRs) around new eruptive vents, within which all flights are suspended. Eruption monitoring and emergency response are authorized within the TFR by the Superintendent. HVNP will request from the Federal Aviation Administration (FAA) a TFR upon new eruptive events.

Flight path out of the rainshed helibase will typically be to the north due to prevailing wind patterns. After departing the helibase, the flight path will avoid adjoining landowners, as much as practicable, and will be at least 500 AGL until project/mission work area is reached.

### **Mitigations**

Airspace closures will be implemented for special ceremonies/events. There will be a mandatory 5 mile standoff distance for special events which could be impacted by administrative overflights, limited to the day of the event. These events may include significant cultural events, other park/partner programs or events, etc.

Project Managers will notify the appropriate staff of upcoming flights through the notification email distribution list, as well as any additional coordination necessary for protection of sensitive species. To increase visitor notification and education regarding administrative flights, the backcountry permit office will be notified of flights and will notify permit applicants when appropriate. Notices may also be posted (such as at visitor center, backcountry permit office, trailheads, etc.) prior to flights to allow visitors to select quieter places if desired, and educate visitors on purpose of flights.

The Public Affairs Officer will determine if a media advisory and public outreach is necessary based on the flight plan, but would typically be considered for intensive helicopter work near visitor use areas and nearby landowners or communities. Examples of intensive helicopter work would be 2-3 hours of flight time per day or frequent flights over a 2 or 3 day period for a large fence replacement project, intensive volcanic monitoring, or equipment replacement. For intensive helicopter work, the flight managers would provide at least 3 days' notice of the upcoming flights to the appropriate park staff so the public notification and education can occur. Examples of those notified in a media advisory include, but are not limited to local media, park partners, park affiliates, social media, and the park website.

For all project planning and implementation, the project leader, or his designee, is responsible for ensuring that Best Management Practices (BMPs) are adhered to, and applicable Minimum Requirement Decision Guides (MRDGs) for wilderness flights are completed and implemented. He/she is also responsible for consulting with the appropriate subject matter expert to identify and mitigate potential resource concerns with proposed flights/landings. The project leader is responsible for communicating appropriate BMPs, MRDGs and resource mitigations to the flight manager. The flight manager will follow the project leader's instructions while ensuring that all aviation safety procedures and policies are followed.

Project and Flight Managers will ensure staff working with/on flights understand and adhere to the BMPs. This applies to all park and park partner project and flight managers (such as HVO, NPS Inventory and Monitoring, USGS-Biological Resources Division, etc.)

Contract helicopter pilots will receive a copy of the BMPs. Project and flight managers will ensure they are adhered to while conducting contract work for the park or its partners in the park.

The park's Cultural Resources Management Division will contact cultural practitioners prior to flights in culturally sensitive or important areas.

Resource specialists will be contacted prior to vegetation clearing or potential resource concerns for landing site (vegetation, invertebrates/understory plants, birds, bats, cultural resources) and sites will be relocated to avoid impacts to resources. Tree trimming (for landing site improvements) will be avoided during critical nesting and pupping periods. In cases where trimming during sensitive periods are unavoidable (e.g. in forest where multiple species co-occur), resource specialists will determine if sensitive wildlife are in the area and depending on the determination, consult USFWS.

The Avian Biologist would be contacted prior to low-level flights in the following areas:  
Kīlauea summit - KMC to SW Rift and Keanakāko'i to Pu'u Pua'i  
Kahuku - subalpine scrub along upper eastern boundary (Nēnē Cabin up to 8,500 feet).

The helicopter that is selected for the work would be the most effective for the mission (e.g., larger helicopter for fewer trips when appropriate, quieter helicopter for work near wilderness if available and cost effective). Contract helicopters with quiet technology would be considered.

During wildland fire and other extended emergency incidents:

1. As soon as possible, resource advisors are assigned to incidents to coordinate natural and cultural resource concerns and provide recommendations for minimizing impacts of response endorsed by the Incident Commander. Follow Endangered Species Act (ESA) regulations and any other US Fish and Wildlife Service (USFWS) guidance or instructions regarding the consultation process and notification of incidental take with USFWS.
2. As soon as possible, all personnel on the fire are informed about sensitive cultural features to avoid and sensitive and listed species and the importance of protecting their habitats and minimizing take. This is best identified in the incident management objectives.
3. The effectiveness of suppression activities and mitigation measures should be documented and evaluated after an incident. Procedures should be revised as needed.

### **Restrictions**

Specific area and time of year restrictions, as prescribed by park resource specialists, will be followed to avoid impacts to sensitive, threatened, and endangered species and their habitat. Species and specific areas include, but are not limited to: Hawaiian goose, Hawaiian petrel, Hawaiian hawk, Hawaiian crow, black noddy and other seabirds, Hawaiian hoary bat, Hawaiian monk seal, and sensitive and endangered forest bird habitat. Restrictions are designed specifically to minimize disturbance to each species in that species' primary habitat and may include limitations, such as, specific times of day in specific areas, minimum AGL or lateral distances, no landing zones, and/or no rotor wash areas.

If the area and time of year restrictions cannot be followed, then the project manager needs to talk to the subject matter expert for the species/area to evaluate potential impact to species and determine if

consultation with USFWS is needed. Consultation with USFWS can take 60+ days. For helicopter activities that are part of an emergency response (e.g. wildland fire, search and rescue, active eruptions, and catastrophic events) follow ESA regulations regarding the consultation process and reporting of incidental take with USFWS.

General species and/or habitat descriptions include:

Sensitive and Endangered Forest Bird habitat - Avoid low-level flights over forest habitat from February - May due to endangered and sensitive forest bird nesting.

Hawaiian hawk habitat - Low-level helicopter work will be scheduled before or after the breeding season (March thru September). If low-level flights are unavoidable during the breeding season, routes will avoid flying within 1,500 feet of known nests. In addition, year-round the helicopter crew and pilot will be informed of the importance of watching for circling hawks, and reroute to avoid collision.

Hawaiian petrel and band-rumped storm petrel - Avoid sunrise and sunset flights in subalpine habitat above 8,000' elevation on Mauna Loa and other areas birds are known to use in the park.

Newell's shearwater – Avoid sunrise and sunset flights over the east rift of Kīlauea.

Hawaiian hoary bat - Avoid sunset flights on Mauna Loa near forest edge for protection of Hawaiian hoary bat. Avoid removing or trimming trees >15 feet tall and helicopter work that would generate rotor wash in trees in forest below 5,000 feet elevation from June 1 – September 15 to protect breeding, roosting, and non-volant bats (e.g. avoid short haul, sling loading during that time period in that area).

Black noddy and other seabirds - Avoid flying low along coastal cliffs; for tropic birds, avoid flying directly over pit craters during breeding season (March through October).

Hawaiian monk seal - For flights near coastal beaches, if monk seals are present, flights and landings should be kept 1,000 feet from the animal (AGL and laterally).

Hawaiian crow - in the event that 'alalā is introduced in the vicinity of the park – low-level flight and landing restrictions may apply.

Hawaiian goose - No flying below 2,000 feet AGL and no landing should occur in critical breeding and flocking areas.

**Determination of Non-Impairment**  
**Mission Critical Administrative Aviation Plan**

**The Prohibition on Impairment of Park Resources and Values**

National Park Service (NPS) Management Policies 2006, §1.4.4, explains the prohibition on impairment of park resources and values:

While Congress has given the NPS management discretion to allow impacts within units of the national park system, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the NPS must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the 1916 Organic Act, establishes the primary responsibility of the NPS. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them.

*What is Impairment?*

An explanation of impairment is provided in NPS Management Policies 2006, §1.4.5, What Constitutes Impairment of Park Resources and Values, and §1.4.6, What Constitutes Park Resources and Values. Impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values.

§1.4.5 of NPS Management Policies 2006 states an impact to any park resource or value may, but does not necessarily, constitute impairment. An impact is more likely to constitute 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 as a goal in the park's general management plan or other relevant NPS planning documents as being of significance.

An impact would be less likely to constitute impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values and it cannot be further mitigated.

As per §1.4.6 of NPS Management Policies 2006, park resources and values at risk for being impaired include:

- the park's scenery, natural and historic objects, and wildlife, and the processes and condition that sustain them, including, to the extent present in the park: the ecological, biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological

resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structure, and objects; museum collections; and native plants and animals;

- appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairing them;
- the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and
- any additional attributes encompassed by the specific values and purposes for which the park was established.

Impairment could result from NPS activities in managing the park, visitor activities, or activities undertaken by concessionaires, contractors, and others operating in the park. Impairment could also result from sources or activities outside the park, but this would not be a violation of the 1916 Organic Act unless the NPS was in some way responsible for the action.

#### *How is an Impairment Determination Made?*

§1.4.7 of NPS Management Policies 2006 states, "In making a determination of whether there would be an impairment, an NPS decision maker must use his or her professional judgment. This means that the decision-maker must consider any environmental assessments or environmental impact statements required by the National Environmental Policy Act; consultations required under Section 106 of the National Historic Preservation Act; relevant scientific and scholarly studies; advice or insights offered by subject matter experts and others who have relevant knowledge or experience; and the results of civic engagement and public involvement activities relating to the decision."

#### **Non-Impairment Determination for the Selected Alternative**

This determination of no impairment has been rendered solely by the NPS and pertains only to the administrative use of aviation at Hawai'i Volcanoes National Park for the health and safety of visitors, employees, and island residents for park resource protection and restoration, geologic research, and maintenance of backcountry trails and shelters, as outlined in the Mission Critical Administrative Aviation Plan and Environmental Assessment.

The impairment determination does not include discussion of impacts to visitor experience, socioeconomics, public health and safety, environmental justice, land use, park operations, etc. This is because impairment findings relate back to park resources and values, and the above impact topics are not generally considered to be park resources or values according to the 1916 Organic Act, and thus are not subject to assessments of impairment as are cultural or natural resources.

Impacted resources within Hawai'i Volcanoes National Park (Park) assessed for impairment are as follows:

#### **Soundscapes**

The soundscapes of Hawai'i Volcanoes are characteristically quiet and dominated by natural sound. The majority of existing ambient sound levels do not exceed 55 dBA except near well-traveled roadways or in the presence of air tours or other aircraft. The selected alternative will have short-term, minor to moderate, adverse impacts on park soundscapes. Impacts to park soundscapes from administrative

aviation operations will be reduced due to the implementation of BMPs (mitigations) which may reduce overall flight time in the park, allow for longer periods of natural quiet between days with administrative flights, and encourage avoidance of naturally quiet areas of the park, thus reducing impacts on park soundscapes. A formal procedure for flight approval will result in better planning, efficiency of flight time, and consolidation of flights among park divisions or partners. The park and its cooperators on average fly approximately one to two days per week, exceptions would include during wildfires and other emergency actions. The impacts are considered minor to moderate because the noise generated from flight activities is detectable, but infrequent and temporary.

### **Native Wildlife**

Hawai'i Volcanoes protects a unique diversity of native wildlife species, over 90% of which are endemic to the Hawaiian Islands. Under the selected alternative, administrative aviation can be expected to have intermittent, short-term and minor to moderate adverse impacts on native birds, depending on flight location and time of year. Impacts on native bird species will be reduced by BMPs. For example, flight restrictions in forested areas of Kahuku upslope from the Ka'ū Forest Reserve to protect endangered Hawaiian honeycreepers will also benefit common bird species found in that habitat. Restrictions, to be described in the following impact topic, on flights in the lower Mauna Loa Strip to protect nesting 'io will also benefit 'apapane, 'elepaio, Hawai'i 'amakihi, and 'ōma'ō utilizing this habitat. In addition, impacts on common birds may also be reduced with avoidance of flights at sunrise and sunset when there are peaks in forest bird activity. Finally, selection of staging areas and temporary landing zones nearer to work sites, rather than at the park temporary helibase at Kīlauea summit with high abundance of forest bird species will reduce noise impacts to native birds in the wet forests.

### **Special Status Species**

Hawai'i Volcanoes is home to 19 threatened, endangered, or candidate animal species. These species include two mammal, two reptile, nine bird, one crustacean, and five insect species. There are no published reports of aviation impacts on Hawai'i's special status wildlife species or even common wildlife species. Only limited anecdotal observations are available. The BMPs and mitigation measures will reduce exposure of endangered bats, seals, and birds to the auditory and visual impacts of administrative aviation. The BMPs listed below are specific to avoiding and minimizing impacts to species listed under the Endangered Species Act.

#### **General BMPs:**

1. Temporary landing zones, staging areas, flight paths, time of flight, and flight height above ground level (AGL) will be selected to avoid or minimize flight hazards as well as impacts on visitors, adjoining landowners, developed areas, wilderness, and park resources.
2. Flights will adhere to restrictions (see below) for threatened and endangered and sensitive species and their habitats.
3. Flights will use the staging area (temporary helispots) nearest to the work site to disperse flights. Helispots will be selected by the priority order of safety first, impact concerns (disturbed sites or bare lava selected first if possible), and cost/efficiency/closeness to job site.
4. Helispots will be utilized in this order of preference: 1) list of temporary helispots from Aviation Management Plan (already cleared/surveyed/routinely used), 2) sites that do not need a survey (e.g. bare ground, roadway, existing helipads outside of park in proximity to project site), and 3) sites that need a survey (natural or cultural resources) prior to being cleared for use.
5. When possible, flights will be rescheduled if weather forces low-level flights over visitors, adjacent landowners, listed species, or wilderness.

6. If a planned flight involves choices between impacts to listed species or visitors/adjacent landowners, then protection of listed species will take precedence (due to legal requirements), with mitigation to reduce impacts on visitors and neighbors.
7. Project and flight managers will ensure staff working with/on flights understand and adhere to the BMPs. This applies to all park and park partner project and flight managers.
8. Contract helicopter pilots will receive a copy of the BMPs. Project and flight managers will ensure BMPs are adhered to while conducting contract work for the park or its partners in the park.
9. Resource specialists will be contacted prior to vegetation clearing or potential resource concerns for landing sites (vegetation, invertebrates/understory plants, birds, bats, cultural resources) and sites will be relocated to avoid impacts to resources. Tree trimming (for landing site improvements) will be avoided during critical nesting and pupping periods. In cases where trimming during sensitive periods are unavoidable (e.g. in forest where multiple species co-occur), resource specialists will determine if sensitive wildlife are in the area, and depending on the determination, consult the Service.
10. The Avian Biologist will be contacted prior to low-level flights in the following areas: Kīlauea summit: Kīlauea Military Camp to southwest rift and Keanakakoʻi to Puʻu Puaʻi and Kahuku: subalpine scrub along upper eastern boundary (Nēnē Cabin up to 8,500 feet).
11. During wildland fire and other extended emergency incidents:
  - a. As soon as possible, resource advisors are assigned to incidents to coordinate natural and cultural resource concerns and provide recommendations for minimizing impacts of the response endorsed by the Incident Commander. ESA regulations and any other Service guidance or instructions regarding the consultation process and notification of incidental take with Service will be followed.
  - b. As soon as possible, all personnel on the fire will be informed about sensitive and listed species and the importance of protecting their habitats and minimizing take.
  - c. The effectiveness of suppression activities and mitigation measures should be documented and evaluated after an incident. Procedures should be revised as needed.

**Restrictions:**

Specific area and time of year restrictions, as prescribed by park resource specialists, will be followed to avoid impacts to sensitive, threatened, and endangered species and their habitat. Restrictions are designed specifically to minimize disturbance to each species in that species' primary habitat.

If the area and time of year restrictions cannot be followed, then the project manager will talk to the subject matter expert for the species/area to evaluate potential impact to species and determine if consultation with Service is needed. For helicopter activities that are part of an emergency response (e.g. wildland fire, search and rescue, active eruptions, and catastrophic events) the project manager will follow ESA regulations regarding the emergency consultation process and reporting of incidental take with Service.

1. Low-level flights over known endangered forest bird habitat will be avoided during the breeding season of February to May.
2. Low-level helicopter work will be scheduled before or after the Hawaiian hawk breeding season (March thru September). If low-level flights are unavoidable during the breeding season, routes will avoid flying within 1,500 feet of known nests. In addition, the helicopter crew and pilot will be informed of the importance of watching for circling hawks, and to reroute to avoid collision.

3. To minimize impacts to Hawaiian petrel and band-rumped storm petrel, sunrise and sunset flights will be avoided in subalpine habitat above 8,000 feet on Mauna Loa and in other areas birds are known to use.
4. To minimize impacts to Newell's shearwater, sunrise and sunset flights over the east rift of Kilauea will be avoided.
5. Sunset flights will be avoided on Mauna Loa near the forest edge for protection of the Hawaiian hoary bat. From June 1-September 15, removing or trimming trees greater than 15 feet tall and helicopter work that would generate rotor wash in trees in forest below 5,000 feet elevation will be avoided to protect breeding, roosting, and non-volant bats.
6. When the Hawaiian crow is introduced in the vicinity of the park, low-level flight and landing restrictions may apply for specific areas.
7. No flying below 2,000 feet AGL and no landing will occur in critical Hawaiian goose breeding and flocking areas.

Implementation of BMPs, including mitigation measures, will help avoid or reduce impacts on monk seals from low-level flights, on foraging bats in their most important habitat in the park on the Mauna Loa Strip, on 'ua'u, 'a'o and 'akē'akē during atypical sunset or sunrise flights, and on 'io populations at Kilauea Caldera and the lower Mauna Loa Strip. Negligible to minor short-term adverse impacts are expected for these species. Negligible to minor short-term adverse impacts may be expected to endangered honeycreepers and nēnē with restricted low-level flying in their habitat. Major long-term benefits would be derived through the use of aviation in support of targeted rare species recovery programs, invasive species control projects that assist recovery of habitat.

### **Wilderness**

In 1978, under Public Law 95-625, *National Parks and Recreation Act of 1978*, the U.S. Congress designated 123,100 acres of wilderness at the park. There are 7,850 acres of land outside the park that were identified as potential wilderness, which could become designated wilderness should the park acquire those lands in the future (for a total of 130,950 acres). There are four disjunct wilderness units at the park: the Mauna Loa Unit, which includes the Mauna Loa Strip (above 5,000 feet in elevation) and the summit; the 'Ōla'a Unit, which includes the 'Ōla'a Forest; the East Rift Unit in the upper east rift zone; and the Ka'ū Desert Unit, encompassing the Ka'ū Desert (below 3,000 feet in elevation). The upper elevations of Kahuku Unit (121,015 acres) meet the criteria for wilderness and are eligible for further wilderness study and potential designation.

Under the selected alternative, administrative flights over wilderness would still occur and impact wilderness character and wilderness user experience. However, with implementation of the BMPs there will be fewer flights and/or less total flying time over wilderness, resulting in less degradation of wilderness character and fewer impacts on wilderness users. Administrative aviation under the preferred alternative has a direct, short-term, adverse, minor impact, typically lasting minutes, on wilderness quality and wilderness users. Some actions may have moderate adverse effects in limited areas of the park lasting one day (e.g., ferrying supplies for fence construction and replacement projects, mouflon census, or GPS surveys). Administrative aviation under the preferred alternative has a long-term beneficial effect on public safety in wilderness by supporting volcano monitoring and eruption monitoring, search and rescue, fire, and law enforcement operations. Administrative aviation also has a long-term beneficial effect on restoration of natural conditions in wilderness by supporting invasive species control, native ecosystems restoration, and rare species recovery as well as preservation of



wilderness cultural resources. These actions for public safety and restoration have a beneficial effect on wilderness users, and in addition, are required for the administration of such areas as wilderness.

**Summary**

In the professional judgment of the Park manager, there will be no major significant nor severe adverse effect upon any resource or value whose conservation is: (1) necessary to fulfill specific purposes identified in the establishing legislation of the park; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the park's general management plan or other relevant NPS planning documents.