# United States Department of the Interior

NATIONAL PARK SERVICE
Pacific West Region
333 Bush Street, Suite 500
San Francisco, California 94104-2828

IN REPLY REFER TO:

L7617 (PWRO-PP)

23 MAY 2016

Memorandum

To: Superintendent, Kaloko-Honokohau National Historical Park

From: Regional Director, Pacific West Region

Subject: Environmental Compliance for Restoring the Aimakapa Fishpond

The *Finding of No Significant Impact* (FONSI) for the restoration of the Aimakapa Fishpond, including selective control treatments of non-native flora and fauna, is approved. To conclude this particular environmental compliance effort, at the time when the park announces the decision, a copy of the FONSI should be made available to all individuals, agencies, and organizations that received or commented on the environmental assessment during the winter 2015-16 public review.

Congratulations are extended to all the park staff for their concerted efforts towards taking this important step towards achieving one of the inspirational visions of the 1974 "Spirit Report" and the park's enabling legislation, and as called for in the 1994 General Management Plan.

Patricia L. Neubacher

Laura E. Joss

Attachment

cc:
PWR-PAD

# FINDING OF NO SIGNIFICANT IMPACT

Mālama ʻAimakapā: ʻAimakapā Fishpond Wetlands Restoration Management Plan
and
Environmental Assessment

Kaloko-Honokōhau National Historical Park
Kailua-Kona, Hawaiʻi
May 2016

## Introduction

This Finding of No Significant Impact (FONSI) for the ʻAimakapā Fishpond Wetlands Restoration Management Plan documents the decision of the National Park Service (NPS) to (1) undertake restoration of the ʻAimakapā Fishpond wetlands in Kaloko-Honokōhau National Historical Park (hereafter Kaloko-Honokōhau NHP, or the Park), and (2) documents the determination that no significant impacts on the human environment are associated with that decision.

Approval of this wetlands restoration management plan establishes a foundation for achieving long-term goals for the Park that are set out in the 1974 *Spirit of Ka-loko Hono-kō-hau* Advisory Commission Report (*Spirit Report*)[1] and the 1994 *Kaloko-Honokōhau NHP General Management Plan/EIS* (GMP).[2] The programmatic direction for managing Kaloko-Honokōhau NHP is based on the recommendations in the *Spirit Report*, as well as the Park's enabling legislation. Pursuant to the enabling legislation, the *Spirit Report* provides continuing guidance for management at the Park. In particular, it creates a foundation for taking action to restore the ʻAimakapā Fishpond, a rare example of a Hawaiian *loko puʻuone* fishpond. The *Spirit Report* calls for the establishment of a program to restore the Park's two fishponds "*as nearly as possible to their original appearance for the function they fulfilled*" and that restoration at ʻAimakapā "*will not have an adverse effect on the wildlife that presently inhabits the pond*."[3] Moreover, the *Spirit Report* calls for protection of the Park's remnant Hawaiian ecosystems from further degradation and competition from nonnative plants and animals, preservation of the natural environment, and maintenance of the ecological balance of the area.[4] The *Spirit Report* also states that "*…the restoration and operation of Ka-loko, and ʻAimakapā fishponds as food producers would be a dominant cultural exhibit in the park. ʻAimakapā would also double as a wildlife sanctuary which provides a major scenic and wildlife attraction for park visitors*."[5]

Accordingly, the GMP states, "*The overall goal of resource management is not only the protection and preservation of individual archeological sites and features, but also traditional*

[1] Honokōhau Study Advisory Commission, 1974. Spirit of Ka-loko Hono-kō-hau Report, pp. 28, 30, and 41; NPS 1994. Kaloko-Honokōhau National Historical Park General Management Plan/EIS, pp. 39, and 41.
[2] GMP, pp. 39 and 66-68
[3] Spirit Report, p. 30
[4] Spirit Report, p. 28
[5] Spirit Report, p. 41

*use of certain of these cultural resources*."[6] "*In keeping with Kaloko-Honokōhau's purpose as 'a center for the ... perpetuation of traditional native Hawaiian activities and culture,' some of its cultural resources must be considered for restoration and traditional use. The park's two fishponds are the most appropriate resource for this kind of treatment*."[7] Implementing this wetlands restoration management plan is a major step in accomplishing these larger long-term goals.

The Environmental Assessment (EA) completed by the NPS tiers from the GMP and considers integrated treatment methods (physical, mechanical, and chemical) for nonnative plant and predation control that may be used over the next 15 years. This FONSI describes the alternatives considered and the environmentally preferable alternative, discusses the basis for the decision, describes measures to minimize environmental harm, and summarizes agency coordination and public involvement in the decision-making process. Responses to summarized public comments are attached as Attachment A. The determination of non-impairment of Park resources for the selected action, completed pursuant to *National Park Service Management Policies 2006*, accompany this FONSI.

## Purpose and Need for Federal Action

The purpose of the ʻAimakapā Fishpond Wetlands Restoration Management Plan is to restore and maintain ecological integrity; cultural sites, landscapes and practices; and native plant and animal species of ʻAimakapā in an operationally efficient manner. To achieve these objectives, the EA describes a range of actions are needed to (1) control nonnative plant and animal species and (2) restore native species. This programmatic restoration plan is intended to have a 15-year life span, at which time it will be reviewed and adapted as needed.

These actions are needed to efficiently control nonnative species at ʻAimakapā because they threaten the Park's natural and cultural resources and values, and modify the ecological balance between native plants and animals, soil, and water that has evolved over thousands of years. ʻAimakapā is a rare example of a naturally-formed *loko puʻuone,* a fishpond separated from the sea by a sand berm and modified by Hawaiians to hold and grow fish. However, nonnative plants have altered the cultural function of the fishpond, and its cultural landscapes via invasive and destructive plant growth that threatens the integrity, and stability of historic and cultural sites and structures. Nonnative animals and plants prey on or compete with native organisms. They alter native fish and waterbird habitat, resulting in declines in food sources and habitat suitability. The U.S. Fish and Wildlife Service (USFWS) has designated 17 "core" wetlands in the main Hawaiian islands as essential habitat for the recovery of endangered Hawaiian coot and stilt populations. Currently, ʻAimakapā is the only protected core wetland on the island of Hawaiʻi.

In addition, the NPS needs to respond to foreseeable consequences of sea-level rise in the Park through appropriate planning. As sea-level changes occur, coastal wetlands will be altered and their extent or location may shift. Implementation of the restoration management plan will

[6] GMP, p. 39
[7] GMP, p. 41.

enhance both local and statewide breeding populations of endangered waterbirds as well as rare anchialine pool fauna and increase their resiliency to withstand future climate-driven habitat shifts.

## Selected Action

After careful review of comments received during the initial scoping and consultation phase, and during public and agency review of the EA, and with due consideration of potential impacts to affected resources and visitor use, the NPS has selected Alternative 2 (NPS Proposed Action), which is the Environmentally Preferred Alternative, for implementation as presented in the EA. The Proposed Action as detailed in the EA, remains unchanged. No new issues, additional reasonable alternatives, or mitigation measures were suggested during the public review process; therefore none of the comments received necessitated changes to the Proposed Actions.

The actions selected for implementation include the following elements as stated in Alternative 2, Framework for Wetlands Restoration and Management: Increased Planning and Monitoring, Selective Use of Vegetation and Predator Control Methods, Management of Existing Hydrologic Conditions, Enhanced Community Involvement, Active Restoration of Native Plants, and Aquatic Invasive Species Control.

The NPS will apply a systematic approach that prioritizes wetland areas and nonnative plant species for treatment; improves predator control efficiency; monitors effects of restoration treatments on nonnative plants and Park resources, and uses the results to adjust treatment methods to reach the desired future condition of treated areas. The effectiveness of efforts to control nonnatives and increase native habitat will increase as a result of increased planning and monitoring, and the selective use of machinery (e.g., mini-excavator, mini-tractor, or remote access vehicle and helicopter for hauling). Additionally, as appropriate during implementation, there are expected to be increased opportunities for community involvement, stewardship, and resource interpretation programs. This alternative includes an active native plant restoration program to enhance the return of native species in high-priority areas. A separate environmental analysis for specific methods to control invasive tilapia fish will stem from this EA.

This restoration project area encompasses approximately 40 acres and includes:

1) the ʻAimakapā Fishpond delineated wetlands (water: 12 ac; wetlands: 18 ac);

2) upland areas along the southern wetlands boundary to be used for equipment and pedestrian access, and for staging of removed vegetation (Staging Area 1) before transport by UTV and helicopter, and the natural sand berm,

3) an anchialine pool complex outside the delineated wetlands; and

4) a 1-ac staging area (Staging Area 2) located near the Park's eastern boundary at Queen Kaʻahumanu Highway for receiving, disposing of, and composting vegetative material.

On the west side of the fishpond, the project area includes a majority of the natural sand berm to facilitate pedestrian and UTV access. To the north and east, the project area extends outside of the wetland to include an access trail along the wetland boundary. Existing Park trails will be used for primary access, and temporary routes will be established between the Action Area and

trails. Vegetation clearing will progress systematically within prioritized (1 to 4) Management Areas as funding is obtained. The priority of actions may adaptively change based on lessons learned during implementation and monitoring. Management Areas are established based on their location, habitat type(s), nonnative species composition, seasonal and access considerations, control methods anticipated, equipment and personnel needed, and Park planning needs.

Management Area 1 (5.9 ac) comprises the southern shore of ʻAimakapā from the barrier beach to the southeast corner and includes Staging Area 1.

Management Area 2 (2 ac) is along the *mauka* (inland) shore and includes the pond's internal rock walls, which are covered mainly by dense paspalum grass. Because a lava flow rises abruptly above the shoreline of Management Area 2, and because the upland access trail to this area is narrow and rocky, vegetation will be removed to the southern shore Staging Area 1 by water transport and/or helicopter to Staging Area 2.

Management Area 3 (9.8 ac) comprises the north shore and includes a marshy meadow in the northwest corner, and numerous anchialine pools located primarily in the northeast corner outside of the wetland. Access to the western portion of Management Area 3 is by the coastal trail and water from the south shore. Removed vegetative material from this area may be temporarily staged on platforms and removed to the southern shore Staging Area 1 by water and/or helicopter to Staging Area 2.

Management Area 4 (0.24 ac) consists of the fishpond side of ʻAimakapā's barrier beach shoreline and the vegetation strand of native and nonnative plants.

The prioritization of management actions is based on immediacy of benefit to native species, cultural sites, and traditional activities. At all Management Areas, the priority species for vegetation removal and control will be pickleweed and seashore paspalum because these aggressively dominate ʻAimakapā's open water and mudflat habitats and reproduction is primarily vegetative through underground rhizomes.

**Vegetation Control and Management.**

The NPS applies Integrated Pest Management (IPM) principles to vegetation control and will use a "toolbox" of methods (manual, mechanical, chemical) to restore and maintain the wetland vegetation. Control methods that are economical, that minimize environmental damage and contamination, and that can be sustained over the long-term will be favored. The Proposed Action does not include shaping or altering soil substrate (e.g., no cut, fill, or grading) and is confined to removal of live plant root-material.

**Manual methods** will be used in culturally or naturally sensitive areas such as cultural sites, rock walls, anchialine pools, and areas containing native plants. Manual methods include hand tools to remove paspalum grass; small gas-powered tools to remove woody species; and hand-pulling, covering/smothering growth with tarpaulin, and use of torches for propane flaming aboveground growth of pickleweed. A non-motorized vessel, such as a Hawaiian canoe, kayak, raft, or other floating platform, or a vessel powered by a small electric trolling motor, will be used to convey plant material from removal areas to loading and hauling access points.

**Mechanical methods** include powered machinery such as the Park's mini-excavator, mini-tractor, or a remote access (RAV) amphibious utility vehicle with a backhoe attachment and amphibious trailer, and a helicopter to move equipment and transport large amounts of vegetation waste to the disposal area. Machinery will potentially be used for first removal of large expanses of nonnative vegetation, especially the waterlogged root masses paspalum grass, from areas where archeological clearance has been given and manual methods have proven infeasible. A floating platform or barge constructed on-site may be needed to support the weight of non-amphibious machinery in areas of floating mats of paspalum; a platform would not be necessary if an amphibious utility vehicle is used. Alternatively, large construction mats may be used to distribute the weight of an excavator working in saturated soils to minimize impacts.

**Chemical methods** may be selectively used in the wetland to control woody species, pickleweed, or other species. Chemical control of nonnative species would be implemented if an IPM action-threshold is met and if other methods (manual, mechanical, tarping) prove ineffective or inefficient. If chemical control is needed on Park lands, per NPS policy, the most specific (selective) chemical available for the target species would be used unless considerations of persistence or other environmental and/or biotic hazards would preclude use of that chemical. Herbicide use would be implemented in accordance with the registered labels, state and federal regulations and permits, and NPS policy and Best Management Practices (BMPs). A State of Hawai‘i National Pollution Discharge Elimination System herbicide permit is required for herbicide application in wetlands and would be obtained. By law, only herbicides registered by the Environmental Protection Agency (EPA) specifically for application in wetlands would be used. Herbicides registered by EPA specifically for use in aquatic settings are demonstrated to have very low toxicity and mortality rate for fish and aquatic organisms.

**Vegetation restoration.** Passive restoration from the existing seed bank, maintenance of native-plant stands, wild transplants, and out-planted nursery-propagated plugs will be incorporated into vegetation restoration actions. A planting plan for each Management Area will be prepared.

**Hauling and Removal.** All excavated plant materials will be transported (by hand, boat, or machine depending on removal location and method) along pre-defined access paths to an upland drying area located on an adjacent upland lava flat (Staging Area 1). A helicopter will be used periodically to remove large amounts vegetation material or move equipment at scheduled times when sufficient waste material is staged. Helicopter operations will avoid archeological resources and protected species habitat, and will not land in the Action Area. Helicopter flights will hover above staging areas to sling-load material from Staging Area 1 to Staging Area 2, or from temporary staging areas in Management Areas 2 and 3 to Staging Area 2 as necessary. Foot, UTV, and machine access paths will be sited to protect cultural and biological resources, including stands of native plant species. At staging areas, excavated plant materials will be stockpiled on constructed, raised platforms covered by helicopter slings (constructed of wire fencing lined with shade cloth). Once sufficient material is staged, the material may be hauled by water to Staging Area 1 and then by UTV along existing Park trails and/or by helicopter sling-load to a green waste collection point at Staging Area 2. Material may be dried and disposed of at cost by weight in roll-off containers, and/or dried and pulsed through a chipper with dust control baffling (box built around output chute) for incorporation into Park compost.

**Predator control.** The NPS applies IPM methods in managing pest animals. Control of mongooses, feral cats, and rats is essential for recovery of endangered Hawaiian waterbirds. In addition to live-traps, toxin-free humane instant-kill traps will be used to control populations of mongooses and rats. These traps have performed well in study trials and provide humane and effective control. The NPS may partner with the state of Hawaii and the USFWS in the future to haze or control the nonnative cattle egret (*Bubulcus ibis*), which prey on adult or young Hawaiian coots and Hawaiian stilts.

**Water quality and hydrology monitoring**. Hydrology is at the core of wetland functions and measuring hydrology provides insight into the most dynamic part of a wetland system. A continuous data-logging instrument measuring conductivity, temperature, and water level is installed in the fishpond. A staff gauge is also installed on the south shore. Rainfall is monitored hourly through the Park's remote automated weather station. Dissolved oxygen, pH, turbidity, temperature, conductivity, and oxidation/reduction potential will be monitored quarterly at selected historic monitoring locations and nutrients will be measured semiannually at minimum. ʻAimakapāʻs sand barrier berm will be monitored for overtopping during high wave events.

**Visitor interpretation and community stewardship.** Actions include expanding interpretation programs, signs and site bulletins to include specific education and outreach about the restoration process and ʻAimakapāʻs natural and cultural history. Stewardship groups will contribute to the success of monitoring and the restoration process. Stewardship opportunities will be created to engage the community in the restoration of ʻAimakapā ideally resulting in a core of individuals with a wide range of knowledge and interests who may desire to demonstrate, teach, or learn Hawaiian cultural pursuits, and biocultural and natural area preservation. Such interests may include (but are not limited to) native plant propagation and restoration, Hawaiian fishponds and their management, native wildlife watching and preservation, and cultural uses of native wetland plants. This stewardship and education program will integrate with and build upon the Park's Na Leo Kahiko Cultural Center (https://parkplanning.gov/kaho) programs and activities as they are developed.

## Other Alternatives Considered

Alternative 1 - No Action, continues with current management. Operations, programs, and conditions at ʻAimakapā Fishpond would continue as they have since the Park's GMP was approved in 1994. The NPS would continue to use an integrated pest management approach to treat site-specific infestations of target nonnative plant and animal species with current manual-control methods. The NPS would not implement a more comprehensive, strategically planned, active restoration of ʻAimakapā Fishpond wetlands habitat. Rather than following a systematic management plan with identified priorities and course of action towards ultimate restoration, target nonnative plant species would be removed on an ad hoc basis based primarily on the severity and immediacy of threat to individual historic properties and/or to threatened or endangered species within ʻAimakapā, and on the availability of resources and funding. Interpretation programs and community engagement would continue be limited to current efforts and projects. The native seedbank would be the primary means of native plant restoration. Restoration would therefore remain limited in scope and new projects would need to be vetted on a case by case basis through the Park's compliance process.

Alternative 1 was rejected because current management is incapable of meeting the goal of restoring the ecological integrity of the ʻAimakapā Fishpond and wetland habitats in an acceptable timeframe, nor does it provide capability of efficiently responding to sea-level rise.

## Preliminary Options Considered but Dismissed from Analysis

### *Exclusive Use of Manual Removal of Nonnative Vegetation*

Management actions limited to only manual methods of removal of non-native invasive vegetation was dismissed due to the large area involved (approximately 18 acres) and the difficulty in removing by hand large amounts of alien invasive biomass from the wetland surface quickly enough to keep ahead of its rampant regrowth. To be effective, manual control efforts must be persistent and several treatments are generally needed to reduce or eliminate target populations. If infestations are too pervasive, manual control becomes overly labor intensive and thus not economically feasible. Pilot projects undertaken in fall 2012 and 2013 to test manual-only methods of removal reached the same conclusion. Therefore, an integrated approach consisting of a variety of appropriate control methods was determined to be most effective.

### *Install Predator-Proof Perimeter Fence Around Wetland*

Because the endangered ground-nesting waterbirds found at ʻAimakapā Fishpond are extremely vulnerable to mammalian predators, the construction of predator-proof fencing around the fishpond was considered as a potential management action. The control of these predators is essential to attain the goal of restoring and maintaining ʻAimakapā's native wildlife communities. Predator-proof fencing combined with active monitoring and trapping (since predators do still find their way into fenced areas, particularly near the ocean) is an effective way to prevent predation on ground-nesting birds. Fencing the ʻAimakapā wetland would also limit unauthorized access by hikers and visitors with leashed or unleashed dogs, preventing disturbance to wildlife and native plant restoration, and to historic properties. However, construction of a fence was dismissed from further consideration at this time because of the potential to adversely affect historic properties and the visual cultural landscape. In the future it may be advantageous to consider fencing the *mauka* (inland) back and sides of the fishpond where the majority of waterbird nesting takes place and the majority of predators appear to gain access to the wetland.

### *Open ʻAimakapā Fishpond to the Sea through Excavation and Opening of Historic ʻAuwai (channel) or Excavation of New ʻAuwai.*

Reopening the fishpond's known, historic ʻ*auwai* or excavating a new ʻ*auwai* and restoring functioning *mākāhā* (sluice gate) was identified as a possible action during public scoping and also during Park management discussions following the 1994 avian botulism outbreak at ʻAimakapā. Installation of a solid rather than fenced *mākāhā* within an ʻ*auwai* to allow periodic (but not continuous) flushing of silt and water during high outgoing tides without allowing saltwater inflow has also been mentioned as a potential action.

The known, historic ʻ*auwai* sluice channel site at the northern end of the wetland is nonfunctional and the pond area behind it has been silted in and vegetated for decades. A

considerable amount of excavation and channelization (several hundred feet) is required in order to allow water flow at its location. The site of the probable southern ‘*auwai* is likewise closed off.

The benefits of opening a connection for exchange of water with the sea include: improving aspects of the pond’s water quality and nutrient dynamics, reducing potential for, and managing existing, avian botulism disease outbreaks and fish kills, flushing out of silty sediments, and flocculent organic matter, providing potential influx of coarse marine sediments and native fish species, and restoring aspects of historic fishpond production specific to ‘Aimakapā.

There are also numerous, potential, major long-term adverse effects of this alternative action component. Endangered waterbird populations have plummeted at ‘Aimakapā due to loss of suitable habitat. ‘*Alae ke*‘*oke*‘*o* (Hawaiian coots) generally prefer freshwater; though they will use brackish water bodies. A permanent increase in salinity caused by direct influx of seawater to the pond might make the habitat unacceptable to coots and to migratory waterfowl by potentially affecting food availability (for example, coots and waterfowl do not use currently Kaloko Fishpond, which is open to the sea). If the influx and salinity change were abrupt, a resulting invertebrate or fish die-off could potentially trigger a botulism outbreak. Salinity fluctuations are less likely to have an effect on *ae*‘*o* (Hawaiian stilt) and migratory shorebirds using the pond but higher water levels may reduce available mudflat foraging areas.

An open connection with the sea would allow the entry of predatory marine fishes that might prey on endangered waterbird young and even adults. Predatory marine fish would also likely prey beneficially on nonnative fish (tilapia, guppies, mosquitofish) but would not likely eradicate their populations.

An ‘*auwai* would increase the likelihood for the invasive Mozambique tilapia (*Oreochromis mossambicus*), which are adaptive to a wide range of salinities and known to compete aggressively in marine waters with mullet, bonefish, and milkfish, to potentially disperse along the coastal marine environment to Kaloko Fishpond and other habitats within and outside of the National Park. Because of the potential impacts to cultural and other fish resources, eradication of tilapia would be a necessary step prior to construction and operation of ‘*auwai* and *mākāhā*.

Export of sizable sediment and nutrient loads from the pond to the near-shore reef and coastal environment through one or more ‘*auwai* has the potential to affect corals and nearshore marine habitats.

Based on these potential environmental consequences, the NPS determined that additional studies and evaluations are necessary to analyze this alternative action component. Appropriate measures to avoid, lessen, or mitigate the degree or extent of potential impacts would also need to be developed based on the results of these studies. Needed studies include: 1) further review of historic records, maps, photos, oral history accounts and onsite surface and subsurface magnetic surveys with modeling to better identify historic ‘*auwai* locations, potential “new” locations, and to assess potential affects to the historic property by opening one or more historic or “new” ‘*auwai*; and 2) circulation, mixing, and water quality modeling studies to identify the best locations for maximum water circulation in the fishpond, and to characterize the fate and

potential effects of discharge from the fishpond to the sea and the potential effects of direct seawater flow to the pond on endangered birds and other organisms.

The combination of 1) the need for additional scientific studies, 2) the potential threat of spreading tilapia to uninvaded habitats, 3) the recommendation of the *Spirit Report* for ʻAimakapā to be "*restored to the extent at which it will not have an adverse effect on the wildlife that presently inhabits the pond*," and 4) the goal of initiating traditional fishpond management of Kaloko Fishpond in the future as a focus of Na Leo Kahiko Cultural Center programs and activities led the NPS to dismiss this action component from further consideration in the EA.

However, dismissal of opening existing or establishing new ʻ*auwai* does not prevent future development of closed-pond fish-production and traditional use activities at ʻAimakapā in consultation with descendants, the community, and the USFWS, or future consideration of opening existing or establishing new ʻ*auwai*. Any such future considerations would necessitate a separate environmental compliance process, including consultation, and public review and comment.

## Environmentally Preferred Alternative

As documented in the EA, Alternative 2 was deemed to be the Environmentally Preferred Alternative . The biological and physical environment would be best protected by implementing a framework for wetlands restoration and management that consists of increased planning and monitoring, selective use of vegetation and predator control methods, management of existing hydrologic conditions, enhanced community involvement, active restoration of native plants, and aquatic invasive species control. This restoration framework provides more operationally efficient controls for invasive, nonnative plants and animals that threaten the integrity of the native ecosystem and the reestablishment and/or enhancement of native plant and animal communities. Alternative 2 also provides a more operationally efficient and effective vegetation control approach to stabilize and improve the condition of cultural features, historic properties, and the cultural landscape in the restoration area.

The Alternative 2 meets environmental policy goals by expanding and improving upon the Park's current invasive, nonnative plant and animal management efforts through implementation of an adaptive management strategy that prioritizes restoration management, allows a wider range of control options, and incorporates active restoration and community stewardship into the action. Expanded control options include the use of machinery where feasible, the potential for including the future use of herbicides for species and populations that may prove unable to be adequately controlled through manual, mechanical and cultural methods, and the use of humane, instant-kill traps for mongooses and rats.

The Alternative 2 meets environmental policy goals by providing a reasonable, science-based prescription for restoring wetland habitat, improving the condition of cultural resources, controlling predators, and preparing for the long-term maintenance and conservation of the resources and long-term effects of climate change.

Alternative 1, the No Action Alternative, would attempt to meet environmental policy goals by continuing the Park's existing invasive, nonnative species management and cultural resource protection actions at ʻAimakapā. It is not the Environmentally Preferred Alternative because control efforts would be limited to current methods and projects, and no additional techniques or controls would be introduced. Interpretation programs and community engagement would continue be limited to current efforts and projects. Restoration efforts would remain limited in scope and new projects would need to be vetted on a case by case basis through the Park's compliance process.

## Best Management Practices and Impact Avoidance, Minimization, and Mitigation Strategies

The following best management practices (BMPs), which are included in the selected plan, were developed to protect resources by avoiding, minimizing, or mitigating impacts. Scheduling, completing, and monitoring effectiveness of each measure is the responsibility of the Park Restoration Project Lead in coordination with the Park Archeologist.

### *Aquatic and Terrestrial Ecosystems*

1. Appropriate soil erosion and sediment controls will be used and maintained in effective operating condition during the project. Type I turbidity barriers will be placed around the work area margins and will be relocated to new active areas as work progresses. In areas where large stands of seashore paspalum grow along the waters' edge, a border of plants will also be left intact as a natural sediment barrier while shore-to-border areas are cleared, and then removed once completed.
2. Park BMPs for proper storage and transportation safety procedures will be followed for storing, using, and transporting all hazardous materials that are used for fueling and maintenance (e.g., gas, diesel, lubricants), for sweating vegetation (propane fuel), and controlling vegetation (herbicides).
3. Ground machinery will be placed on protective construction mats or geotextile material with 3-6" of wood chips to protect substrates.
4. Machinery will be stored, fueled, and maintained within the project area in an upland site away from wetlands and open water.
5. On site, BMPs (e.g., drip pans, absorbent mats, biodegradable lubricants where possible, and daily maintenance checks of machinery) will be used to protect the wetlands environment from leaks and spills.
6. A spill prevention plan will describe measures to reduce potential for spills and isolate accidental spills should they occur. Should a spill occur during the project, the following steps would be taken:
    a. The Park's hazardous waste emergency response plan will be followed;
    b. Local environmental regulatory and emergency response agencies will be immediately informed; and
    c. All fill and debris associated with hazardous materials or wastes encountered on-site will be characterized and disposed of according to federal, state, and local regulations.

7. Selective chemical control of nonnative species would be implemented if management objectives cannot be met with the use of the other (manual/mechanical, tarping) control techniques.
    a. A State of Hawai‘i National Pollution Discharge Elimination System herbicide permit is required for herbicide application in wetlands and would be obtained in advance.
    b. Herbicides would be selected, and BMPs would be implemented, to maximize the effectiveness of the treatment on the target invasive plant, and to minimize potential adverse effects on non-target plants and sensitive species.
    c. Only herbicides that that have a low potential toxicity and that are registered by the Environmental Protection Agency specifically for application in wetlands would be used.
    d. All product labels would be read and followed by herbicide applicators. It is a violation of federal law to use an herbicide in a manner that is inconsistent with its label. All federal, state, and local regulations regarding herbicide use would be followed at all times.
    e. No applications would be made directly to water.
    f. Herbicides would be applied according to application rates specified on the product label. Reduced application rates would be used wherever possible.
    g. Herbicides would be applied to minimize drips and overspray drift. Methods such as hack and squirt, frill and girdle, injection, cut-stump, and foliar (leaf) wick and/or spot-spray treatments will be used to the extent possible.
    h. Equipment would be maintained and calibrated prior to each application of herbicide.
    i. Areas treated with herbicides would be signed during the no-entry period to advise visitors of herbicide use in the area and against entering treated areas. Visitor information center employees would also inform visitors of treatments taking place.
    j. Following application, treated plant material would be removed from areas regularly utilized by waterbirds and migratory waterfowl.
    k. Prior to using herbicides in the wetland areas near anchialine pools in Management Area 3, a baseline survey (methodology approved by the USFWS) is required and would be conducted for orangeblack Hawaiian damselflies at one site within, and one site outside the treatment area.
8. To prevent accidental introduction or transfer of nonnative plant fragments or propagules between wetland areas and other sites, BMPs will be followed.
    a. Barrier methods will be used to restrict propagules and broken pieces of plants, particularly pickleweed, from being carried to new habitat by water.
    b. Tools and equipment used in other areas of the Park will be thoroughly cleaned before relocation to wetlands work-areas. Equipment and clothing will be regularly checked to prevent moving seeds and propagules between work areas in the Park.
9. Cut vegetation will be removed from the restoration areas to avoid contributing an avian botulism outbreak.
10. Helicopter operations will avoid protected species habitat and archeological resources, and will not land in the restoration area.

11. Ingress and egress routes will be sited to protect biological resources, including stands of native plant species.

### *Cultural Resources*

1. An NPS archeologist will site ingress and egress routes to ensure protection of cultural resources.
2. Protective mats and/or constructed protective surfaces will be placed over ground-surface historic properties (e.g., petroglyphs, *papamu*, pavements, etc.) where they occur on lava flats in staging areas and other work areas, and placed along temporary access routes within the project area. Constructed protective surfaces will consist of geotextile material covered by 3 to 6 inches of wood chips. The wood chips will be contained onto the geotextile material. When the temporary access route is no longer required, the mats and constructed surfaces will be removed.
3. An NPS archeologist will monitor project actions as required to ensure no impacts to known archaeological sites, and will monitor in areas where ground-disturbing activities (vegetation removal from soils) have potential to impact unknown buried archaeological deposits. Outplanting areas will be approved by the archeologist. Full-time, on-site archeological monitoring will be required
    a. for all ground-disturbing activities within five feet of a known historic property.
    b. when mechanical methods (i.e., small equipment such as a mini-excavator) are used to remove vegetation from within 20 feet of known historic properties,
    c. when mechanical methods (i.e., small equipment such as a mini-excavator) are used to remove the roots of pickleweed,
    d. during the placement and construction of temporary access routes and staging areas.
4. All known historic properties within the project area will have preservation buffers of 20 feet for mechanical methods, and five feet for manual and chemical methods. Vegetation removal will be by manual methods when within five feet of historic properties (e.g., stacked walls, terraces, platforms, pavings, petroglyphs, etc.).
5. Prior to ground disturbance activities, the area will be surveyed for vegetation and soil type to determine appropriate removal and/or maintenance methods to use, and if on-site archeological monitoring is required.
6. Randomly selected sites for soil examination with a spade or shovel will occur prior to the start of work to identify areas with older soils that may have the potential for unidentified subsurface historic properties.
7. During work activities, if soil characteristics change and/or cultural material is observed, work will be halted and the NPS archeologist will be notified to make the determination if on-site archeological monitoring of ground-disturbing activities will be required in that specific area.
8. Should unidentified archeological resources be discovered during restoration and maintenance actions, work in that location would be halted, the Park Cultural Resources Program Manager will be contacted, and the site secured. Any archeological site identified would be properly recorded by an NPS archeologist and evaluated under the eligibility criteria of the National Register of Historic Places.

9. If the newly identified resource is determined eligible, appropriate measures would be implemented either to avoid, or prevent further resource impact (if such has occurred), or to mitigate their loss or disturbance (e.g., by protective measures as described above or other means) in consultation with the Hawai‘i State Historic Preservation Division and the Advisory Commission on Historic Properties as required according to 36 CFR 800.11.
10. In compliance with the Native American Graves Protection and Repatriation Act, the NPS would notify and consult Park lineal descendants and Native Hawaiian Organizations for the proper treatment of human remains, funerary and sacred objects, should these be discovered during the course of the Proposed Action.
11. Prior to beginning work in the project area and consistently throughout the project, the project lead and all workers (NPS employees, volunteers, partners, etc.) will participate in historic preservation awareness training led by the NPS archeologist, and will participate in daily briefings. Training and briefings will include
    a. The required procedures described above.
    b. Secretary of the Interior Standards for Treatment of Historic Properties.
    c. Location(s) and description(s) of historic properties within and near the day's work area.
    d. Work restrictions within buffers of known historic properties.
    e. Criteria to identify newly-formed and older soils and potential cultural material.
    f. Work safety topics and situational awareness.

### *Listed Species*

**Hawaiian stilts and coots**

1. As required by the USFWS's Biological Opinion and Conference Opinion, the NPS shall implement the following Conservation Measures.
    a. Each day, the work area and a 50-foot buffer around it, will be surveyed for nests by either a trained field crew member or a trained waterbird biologist. A waterbird biologist will train the field crew to survey for nests.
    b. When nests are located, they will be marked on a map and shared with the field crew.
    c. A reasonable effort will be made to avoid work in the immediate areas where stilts or cools arc nesting. However, in order to accomplish the restoration work, this may not be possible at all times. A minimum of a 15-foot buffer will be established and maintained around all active nests until the eggs have hatched. No potentially disruptive activities or habitat alteration would occur within this buffer.
    d. A minimum of a 15-foot buffer will be established and maintained around all stilt and coot chicks after eggs have hatched. The work area will be searched for stilt or coot chicks daily by either a trained field crew member or a trained waterbird biologist.
    e. To minimize effects to nesting waterbirds, both a 50-foot and a 100-ft buffer will be established around staging areas where helicopters will be used. Prior to, and the day of, a helicopter operation, the 100-foot buffer area around a staging area will be surveyed for stilt and coot nests. When there are active nests within 50

feet of a staging area, helicopter operations will not occur at that staging area. When there are nests between 50 to 100 feet from a staging area, the helicopters will use a 150-foot sling load. Helicopters will not fly over the wetlands, and after picking up the sling loads, the helicopters will fly away from the wetlands.

f. Water transport (Hawaiian canoe, kayak, or skiff) will be used to move cut-vegetation to the staging areas for removal. Water transport will be non-motorized or use an electric trolling motor. When transporting material via water, staff will keep voices, motions, and splashing low, and in-water coots and stilts will he avoided by at least 15 feet.
g. All stilt and coot nests in the project area will be monitored weekly during the duration of active restoration activities to determine hatching and fledging success, and monitor for disturbance, including length of time of flushing and nest abandonment.
h. Predator control traps shall be placed and set in a manner that will reduce risk of non-target species being captured in or affected by the traps

**Green sea turtles and Hawaiian monk seals**

1. When basking green sea turtles or Hawaiian monk seals hauled-out on the shore are encountered by crews on foot, by UTV, or other equipment while accessing the wetlands via the barrier beach, the following will occur.
    a. For green sea turtles, crews on foot and UTV will maintain a minimum distance of 20 feet from basking green turtles. Larger equipment will not transit within 50 feet of a basking turtle, or an alternate route will be used until the individual clears the area on their own.
    b. For Hawaiian monk seals, if crews on foot, by UTV, or other equipment, encounter a resting monk seal when accessing the wetlands via the barrier beach berm, the area occupied by the seal will be avoided altogether and an alternate access route (from the main trail) will be used until the seal has returned to the ocean. A barrier and signs will be placed to provide a buffer between the resting seal and beach-goers.

## Why the Selected Alternative Will Have no Significant Effect on the Quality of the Human Environment

Using the significance criteria as defined by the Council on Environmental Quality's NEPA Regulations (40 CFR 1508.27) the NPS has determined that the implementation of the approved plan will have no significant adverse effect on the human environment. The following criteria were used to determine the significance of each impact:

### 1. Effects on public health and safety

No negative effects on public safety were identified during preparation of the Environmental Assessment or agency consultation. Job hazard analyses will be developed for work crews and will define the activity, identify the hazards associated with each phase of the activity, and identify ways in which to minimize or eliminate hazardous conditions that could result in injury.

2. **Unique characteristics of the area (proximity to historic or cultural resources, wetlands, or ecologically critical areas and so forth).**

Unique characteristics of the areas potentially affected by Alternative 2 include wetlands, cultural resources, anchialine pools, special status species. However, the selected alternative will not adversely affect these resources and values. Restoration work in wetlands will have short-term, negligible to moderate adverse impacts, but long-term major beneficial impacts as natural wetland functions are restored, and cultural sites and landscape are protected.

3. **Degree to which impacts are likely to be highly controversial.**

There were no highly controversial impacts identified during preparation of the Environmental Assessment, during the public review period, or during the consultations under Section 7 of the Endangered Species Act and Section 106 of the National Historic Preservation Act.

4. **Degree to potential impacts are highly uncertain or involve unique or unknown risks.**

There are no highly uncertain effects, nor any unique or unknown risks identified during preparation or public review of the Environmental Assessment. The NPS is committed to implementing Best Management Practices and measures to avoid, minimize, and mitigate risks during implementation of restoration actions.

5. **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 action is consistent with the1974 *Spirit Report*, the Park's 1994 *General Management Plan/EIS*, and park resource management goals and objectives. Nothing described in the selected alternative precludes or constrains future actions, nor does it commit the NPS to other actions with significant impacts. It does not set a precedent for future actions with significant impacts or represent a decision in principle about a future consideration.

6. **Whether the action is related to other actions that may have individually insignificant but cumulatively significant effects.**

The impacts of the selected alternative on each resource impact topic were identified in the EA. Cumulative impacts relative to past, present, and reasonably foreseeable future actions to each resource topic were also identified and none were determined to have cumulatively significant adverse effects. Site-specific, local, and regional-scale, imperceptible to appreciable, cumulative beneficial effects to archeological and ethnographic resources, to cultural landscape, to the resiliency and ecological integrity of wetlands, and to native plant and animal populations were identified.

7. **Degree to which an action may adversely affect historic properties in, or eligible for listing in, the National Register of Historic Places, or other significant scientific, cultural, or historical resources.**

Implementation of Alternative 2 will have no adverse effect on cultural resources, including historic properties in, or eligible for listing in, the National Register, and will not cause loss or destruction of significant scientific, cultural, or historical resources. ʻAimakapā is a significant cultural resource; a rare example of a naturally-formed *loko puʻuone*, a fishpond separated from

the sea by a sand berm and modified by Hawaiians to hold and grow fish. Alternative 2 is a major step in accomplishing long-term goals to "*restore existing historic sites within these [fishpond] complexes as nearly as possible to their original appearance for the function they fulfilled*"[8] as set out in the 1974 *Spirit Report* and the 1994 *General Management Plan/EIS*.

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

The NPS consulted with the USFWS on the following species. The USFWS concurred with our determinations and authorized incidental take in a February 26, 2016, letter. The determinations are summarized in the table below.

Table 1. Endangered Species Act, section 7 consultation. Species, status, and the U.S. Fish and Wildlife Service determination are shown.

| Species | Status | Determination |
|---|---|---|
| Hawaiian stilt (*Himantopus mexicanus knudseni*) | Endangered | Incidental take |
| Hawaiian coot (*Fulica alai*) | Endangered | Incidental take |
| Orangeblack Hawaiian damselfly (*Megalagrion xanthomelas*) | Proposed for listing as endangered | Incidental take |
| Green sea turtle (*Chelonia mydas*) | Threatened | Not likely to adversely affect |
| Hawaiian hoary bat (*Lasirius cinereus semotus*) | Endangered | Not likely to adversely affect |
| yellow-faced bee (*Hylaeus anthracinus*) | Proposed for listing as endangered | Not likely to adversely affect |

In their February 26, 2016, letter the USFWS also concurred with our determination that this project may affect, but is not likely to adversely affect, proposed critical habitat for endangered plant species *Bidens micrantha* spp. *ctenophylla*.

The NPS has determined that the Proposed Action will have no effect on the outplanted endangered plant species in the Park (including *Bidens micrantha spp. ctenophylla, Pleomele hawaiiensis, Pritchardia affinis*) the hawksbill sea turtle (*Eretmochelys imbricata*), Hawaiian petrel (Pterodroma sandwichensis), Newell's shearwater (*Puffinus auricularis newelli*), Hawaiian monk seal (*Monachus schauinslandi*) and the Blackburn's sphinx moth (*Manduca blackburni*).

[8] Spirit Report, p. 30

9. **Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment.**

The Proposed Action does not violate any federal, state, or local law or requirements imposed for the protection of the environment.

## Agency Consultation

### *Hawai'i State Historic Preservation Division*

A letter initiating consultation was sent to the Hawai'i State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation on March 1, 2013, informing the agencies of the planning for the restoration of the 'Aimakapā wetlands and the intent to use the EA process and documentation to comply with Section 106 of the National Historic Preservation Act (NHPA). Acknowledgement was received on April 15, 2013, from the Hawai'i SHPO. National Park Service staff met with the Hawai'i Island State Historic Preservation Division archeologist for meetings and site visits on June 19, 2013, and June 16, 2014, to discuss the potential actions, and existing and planned data (survey, soil sampling) documentation for the project. The NPS met with an U.S. Army Corps of Engineers (ACOE) engineer and SHPD Hawai'i Island archeologist on September 9, 2014, to discuss the pilot study and proposed actions, and the ACOE followed up with a site visit on October 28, 2014.

On November 17, 2015, the NPS submitted a consultation letter to the SHPO seeking review and concurrence on the proposed Area of Potential Effects and project Action Area. Additionally, the NPS provided survey results, and requested review and comments on the undertaking and on the NPS determination of no adverse effects to historic properties. On December 1, 2015, the EA was provided to SHPO. On December 28, 2015, the SHPO responded with questions regarding the implementation of the Proposed Action. On February 18, 2016, the NPS provided answers to the SHPO's questions, notified SHPD that the undertakings comprising the Mālama 'Aimakapā project meet the criteria to use the streamlined review process under both the nationwide 2008 *Programmatic Agreement between the National Park Service (U.S. Department of the Interior), the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers for Compliance with Section 106 of the National Historic Preservation Act*, and the NPS-Hawai'i 2006 *Programmatic Agreement between Kaloko-Honokōhau National Historical Park and the Hawaii State Historic Preservation Officer*, and confirmed use of the streamlined review process. Consultation with the Hawai'i SHPO concluded on February 18, 2016. On March 23, 2016, the NPS notified the Advisory Council on Historic Preservation of the conclusion of Section 106 consultation.

### *US Fish and Wildlife Service*

The NPS met with USFWS biologists at 'Aimakapā wetlands September 10, 2014, and on September 22, 2015, to discuss the challenges of the pilot study, the Proposed Action, upcoming formal consultation, and avoidance and minimization measures. On November 5, 2015, the NPS sent a letter to the USFWS requesting concurrence with the NPS determination that restoration and maintenance of 'Aimakapā wetlands may affect, but is not likely to adversely affect, the green sea turtle, Hawaiian hoary bat and yellow-faced bee in the Park. The letter also initiated

formal consultation regarding potential impacts to the Hawaiian stilt and Hawaiian coot, and the orangeblack Hawaiian damselfly, which is proposed for listing. On December 1, 2015 the EA was provided to USFWS. The USFWS provided comments on the EA on December 18, 2015, stating that the Proposed Action, Alternative 2, is expected to provide a net benefit to native species and habitats in the Park and that they fully support implementation of the Restoration Management Plan/EA. On February 26, 2016, the USFWS sent a letter concurring with the NPS' determination the project may affect, but is not likely to adversely affect, the green sea turtle, Hawaiian hoary bat and yellow-faced bee. In the same letter, the USFWS via Biological Opinion and Conference Opinion authorized incidental take of Hawaiian stilts and Hawaiian coots, and if they are listed, authorized incidental take of orangeblack Hawaiian damselflies. The USFWS stated overall, the proposed action is likely to have a beneficial effect on Hawaiian stilts, Hawaiian coots and orangeblack Hawaiian damselfly populations in the Park.

### *State of Hawaii Office of Planning Federal Consistency Program*

The Coastal Zone Management Act, Section 306 (16 U.S.C. §1456) requires Federal agencies to conduct their planning, management, and development regarding coastal use or resources in a manner consistent with state Coastal Zone Management Act programs. Through informal consultation with the Federal Consistency Program, the NPS has determined that the proposed action is consistent with the Hawai'i Coastal Zone Management Program policies and objectives as contained in Section 205A-2, Hawai'i Revised Statutes and there will not be effects to coastal use or resources. The NPS has also determined that the proposed action will not have any spillover effects that significantly affect the coastal zone. The NPS is in the process of submitting its Negative Determination to the Federal Consistency Program.

### *Army Corps of Engineers*

The NPS has completed the Clean Water Act (CWA) Section 404 (33 U.S.C. §1344) permit determination process with the Army Corps of Engineers (ACOE) and received notification on April 27, 2016, of the Corps' determination that no permit is required for the 'Aimakapā Fishpond Wetlands Restoration Project. The ACOE also recommended use of best management practice measures as described to avoid and minimize impacts to aquatic resources, and that the NPS continue to maintain compliance with other Federal, State, or local requirements.

## Public Involvement

### *Scoping*

During the scoping process, the NPS conducted both internal meetings and discussions with NPS staff and partners, and external meetings and discussions with the public, interested and affected groups, and agencies to facilitate the development of the EA.

Internal scoping was conducted with an interdisciplinary team from the Park, the NPS Pacific West Regional Office, the NPS Water Resources Division, and the University of California at Davis beginning in April 2010. Data needed to identify potential impacts to cultural and natural resources were obtained during site visits to the proposed project area by interdisciplinary team members and other technical experts. Additional interdisciplinary team meetings were held

following the 2012 public-scoping meeting to discuss the issues and various alternative components identified; potential environmental and historic property impacts; past, present, and reasonably foreseeable projects that may contribute to cumulative effects; and to develop avoidance, minimization, and mitigation measures. Pilot projects were undertaken in 2012 and 2013 in partnership with University of California at Davis to develop and test manual-only vegetation removal methods.

The external, public scoping process was initiated on August 1, 2012, simultaneously with consultation under Section 106 of the NHPA. A consultation letter was sent to Park descendants and Native Hawaiian Organizations and other interested parties along with an invitation to an open-house public scoping meeting on September 8, 2012. The public scoping meeting was also publicized through a press release, notification on social media (the Park web blog), and the Park website. An article discussing the project and announcing the scoping meeting appeared in the West Hawaii Today newspaper on August 28, 2012.

Approximately 20 people attended the September 8, 2012, scoping and consultation meeting. In addition to individual community members and descendants, representatives from the Hawai‘i Island Land Trust, Hawai‘i Wildlife Center, Kona Hawaiian Civic Club, Makani Hou o Kaloko-Honokōhau, and the Hawai‘i Wetland Joint Venture attended. At the meeting, a brief introduction was given regarding the purpose and need for the restoration of ‘Aimakapā wetlands. Individual discussions followed at several informational poster displays, which described the threats of nonnative species (plants, tilapia, small-mammal predators) to the cultural sites, wetlands habitat, and native species; the potential tools and actions for addressing the threats; and descriptions and photos of the cultural landscape and cultural sites. A box to submit comments was provided, and mail-in comment flyers were also provided. Staff at information stations also collected oral comments. Eleven comments cards were submitted and 28 oral comments were recorded. Public scoping and consultation response topics included the following: support for the restoration of native plant populations, protecting and improving habitat for endangered waterbirds and indigenous wildlife, increased community involvement, increased cultural use of the pond, traditional fishpond management, opening of the pond to the ocean, climate-change planning, increased interpretative signage for the area, the removal of invasive plant and animal species including Mozambique tilapia, and suggested methods for tilapia removal.

Public scoping and consultation continued into 2015 by individual meetings and site visits with descendants and interested parties, discussions at Na Hoa Pili Federal Advisory Commission meetings, and a presentation to the Pacific Birds Habitat Joint Venture.

### *Public and Agency Comment on the EA*

The EA was posted on the NPS Planning, Environment, and Public Comment website and the Park webpage for public review and comment from December 1, 2015, to January 10, 2016. Hard copies for public review were also made available at the Kailua-Kona Public Library, the Park visitor contact station, and the Park headquarters public lobby. The public review period was announced and public comment invited via press release, the Park’s webpage, and social media (the Park’s Facebook page). Email and hard copy letters were sent out via Park email-distribution lists, and/or U.S. Postal Service to Park descendants, the Na Hoa Pili Federal

Advisory Commission members, local, state, and federal agencies, special interest groups, academic institutions, businesses, and interested individuals, including those who participated in the scoping meeting.

During the 40-day comment period, a request for a site visit was received from a community member and a site visit and public information meeting was held on the beach fronting ʻAimakapā on December 12, 2015. This opportunity was widely publicized to all local and island-wide residents via press release, social media, and Park email-distribution lists. Approximately six people attended and participated in informal question and answer session followed by a short hike to view the pond and wetlands. No comment cards were filled out and provided to the NPS during the visit.

The NPS received a total of nine responses during the 40-day comment period, three from public agencies, five from unaffiliated individuals, and one from a non-profit organization. The comments were reviewed and analyzed to identify substantive concerns as defined by Director's Order 12 *Conservation Planning, Environmental Impact Analysis and Decision Making*.

Five of the nine respondents, including the USFWS, the Hawaiʻi Department of Land and Natural Resources (DLNR), and the non-profit Hawaiʻi Fishermen's Alliance for Conservation and Tradition, Inc. (HFACT) expressed full support for the proposed action to establish a framework for wetlands restoration and management; increased planning and monitoring; selective use of vegetation and predator control methods; management of existing hydrologic conditions; enhanced community involvement; active restoration of native plants; and aquatic invasive species control. The respondent for HFACT also participated in the 2012 public scoping session and also provided comments at that stage of the process.

The remaining four respondents, including the Hawaiʻi County Planning Department, did not oppose the proposed action; they simply asked questions, made suggestions, and provided information. No comments necessitated in changes to the Proposed Action, or questioned the accuracy the information or adequacy of analyses in the EA, and no additional reasonable alternatives or mitigation measures were suggested.

The NPS has summarized all comments received and has provided responses in Attachment A. The comments were grouped into the following categories, 1) questions, 2) statements of support for specific actions, and 3) recommendations for community engagement and partnerships at ʻAimakapā. A summary statement was then developed for each group of similar comments under each category. In addition, although details were presented in the EA, some respondents nevertheless inquired about Alternative 2 and the affected environment, and responses to these questions are also included in Attachment A.

## Conclusion

Based on information contained in the Environmental Assessment as summarized above, the measures designed to avoid, minimize, or mitigate potential impacts, and the results of public review and agency coordination, the National Park Service has determined that implementation of Alternative 2 does not constitute a major federal action that would significantly affect the

quality of the human environment. The selected alternative is not without precedent, nor is it similar to an action that normally requires an environmental impact statement. No connected actions with potential significant impacts were identified. Therefore, in accordance with the National Environmental Policy Act of 1969 and regulations of the Council on Environmental Quality, an Environmental Impact Statement will not be prepared and undertaking the restoration of 'Aimakapā Fishpond wetlands at Kaloko-Honokōhau NHP will be implemented as soon as practical.

Recommended:

/s/ TADM 5/13/16

Tammy Ann Duchesne, Superintendent — Date
Kaloko-Honokōhau National Historical Park

Approved:

Patricia L. Neubacher 5/23/16

for Laura E. Joss, Regional Director — Date
Pacific West Region

## Attachment A: Restoration Management Plan/EA Comments and Responses

The NPS received comments on the Restoration Management Plan/Environmental Assessment (EA) from nine respondents during the 40-day public comment period. All comments received were grouped into the following broad categories, 1) questions, 2) statements of support for specific actions, and 3) recommendations for community engagement and partnerships at ʻAimakapā. A summary statement was developed for each group of similar comments under each category. In addition, although detailed information was presented in the EA, some respondents nevertheless inquired about Alternative 2 and the affected environment, and responses to these questions are also included.

**1.** The NPS received several comments that indicated that the Restoration Management Plan may not have clearly articulated the limited scope of the Plan and its relationship to the larger, long-term goals for the Park as described in the 1974 *Spirit of Ka-loko Hono-kō-hau* Advisory Commission Report (Spirit Report) and the 1994 *Kaloko-Honokōhau NHP General Management Plan/EIS* (GMP).

**NPS RESPONSE:**

The NPS would like to clarify that the Restoration Management Plan describes a specific range of actions to (1) control nonnative plant and animal species and (2) restore native species in an operationally efficient manner. Additionally, the following language has been included in the FONSI for clarification.

> "Approval of this wetlands restoration management plan establishes a foundation for achieving long-term goals for the Park that are set out in the 1974 *Spirit of Ka-loko Hono-kō-hau Advisory Commission Report* (*Spirit Report*)[1] and the 1994 *Kaloko-Honokōhau NHP General Management Plan/EIS* (GMP).[2] The programmatic direction for managing Kaloko-Honokōhau NHP is based on the recommendations in the *Spirit Report*, as well as the Park's enabling legislation. Pursuant to the enabling legislation, the *Spirit Report* provides continuing guidance for management at the Park. In particular, it creates a foundation for taking action to restore the ʻAimakapā Fishpond, a rare example of a Hawaiian *loko puʻuone* fishpond. The *Spirit Report* calls for the establishment of a program to restore the Park's two fishponds "*as nearly as possible to their original appearance for the function they fulfilled*" and that restoration at ʻAimakapā "*will not have an adverse effect on the wildlife that presently inhabits the pond*."[3] Moreover, the *Spirit Report* calls for protection of the Park's remnant Hawaiian ecosystems from further degradation and competition from nonnative plants and animals, preservation of the natural environment, and maintenance of the ecological balance of the area.[4] The *Spirit Report* also states that "…*the restoration and operation of Ka-loko, and ʻAimakapā fishponds as food producers would be a dominant*

[1] Honokōhau Study Advisory Commission, 1974. Spirit of Ka-loko Hono-kō-hau Report, pp. 28, 30, and 41; NPS 1994. Kaloko-Honokōhau National Historical Park General Management Plan/EIS, pp. 39, and 41.
[2] General Management Plan/EIS, pp. 39 and 66-68
[3] Spirit Report, p. 30
[4] Spirit Report, p. 28

*cultural exhibit in the park. 'Aimakapā would also double as a wildlife sanctuary which provides a major scenic and wildlife attraction for park visitors*."[5]

Accordingly, the GMP states, "*The overall goal of resource management is not only the protection and preservation of individual archeological sites and features, but also traditional use of certain of these cultural resources*."[6] "*In keeping with Kaloko-Honokōhau's purpose as 'a center for the ... perpetuation of traditional native Hawaiian activities and culture,' some of its cultural resources must be considered for restoration and traditional use. The park's two fishponds are the most appropriate resource for this kind of treatment*."[7] Implementing this wetlands restoration management plan is a major step in accomplishing these larger long-term goals.

The Environmental Assessment (EA) completed by the NPS tiers from the GMP and considers integrated treatment methods (physical, mechanical, and chemical) for nonnative plant and predation control that may be used over the next 15 years. This FONSI describes the alternatives considered and the environmentally preferable alternative, discusses the basis for the decision, describes measures to minimize environmental harm, and summarizes agency coordination and public involvement in the decision-making process."

**2.** One respondent asked for additional information regarding the protection of archeological resources during restoration and maintenance activities, and assurances of protection for cultural sites that may be obscured by nonnative vegetation and for subsurface cultural deposits.

**NPS RESPONSE:**

'Aimakapā is a rare example of a naturally-formed *loko pu'uone,* a fishpond separated from the sea by a sand berm and modified by Hawaiians to hold and grow fish. During restoration activities, the safeguarding of 'Aimakapā, its cultural sites, and cultural landscape is of utmost importance. Removal of destructive, nonnative vegetation is an accepted, standard preservation treatment for historic properties and cultural landscapes. The vegetation removal and maintenance methods for this project were developed to prevent adverse impacts to both known, and presently unidentified historic properties in consultation with the Hawai'i State Historic Preservation Officer (SHPO), historic preservation specialists, descendants, and other consulting individuals.

Vegetation removal and restoration (out-planting) of native plants by the methods described in the NPS Proposed Action are activities that are eligible for National Historic Preservation Act, Section 106 streamline review under two programmatic agreements:

- The 2008 national *Programmatic Agreement for Compliance with Section 106 of the National Historic Preservation Act* among the National Park Service, the Advisory Council

[5] Spirit Report, p. 41
[6] General Management Plan/EIS, p. 39
[7] General Management Plan/EIS, p. 41.

on Historic Preservation, and the National Conference of State Historic Preservation Officers; and

- The 2006 state *Programmatic Agreement between the National Park Service, Kaloko-Honokōhau National Historical Park and the Hawai'i State Historic Preservation Officer*.

The project area (Figure 2 of the Restoration Management Plan/EA: p. 23) has been surveyed for historic properties (2015) and the archeology survey results were provided to the Hawai'i SHPO in the documentation for the finding of No Adverse Affect. For their protection, as required by the National Historic Preservation Act (16 U.S.C. §470w-3), specific locations of historic properties in the project area are not included in Figure 2 of the Restoration Management Plan/EA. The final archeological survey report is currently in NPS peer-review and will be submitted to the SHPO.

Archeological testing in 2010 in advance of the 2012-2013 pilot study and the lack of discovery of cultural deposits during the pilot study, which tested manual removal methods of paspalum grass and pickleweed, indicated a low probability of encountering previously unidentified historic properties in 'Aimakapā wetlands that are either overgrown by vegetation or are subsurface. Nevertheless, the preservation of historic properties is paramount during removal and maintenance activities. Therefore, standard operating procedures have been established to ensure protection of both known and previously unidentified historic properties, and to identify areas with higher potential for unidentified subsurface historic properties. A description of these standard procedures is in the Best Management Practices section of this FONSI and on page 31 of the Restoration Management Plan/EA.

**3.** Two respondents asked for clarification on the reasoning for the 15-year duration of the plan.

**NPS RESPONSE:**

The Restoration Management Plan focuses on the essential first steps in restoring the ecological integrity of the 'Aimakapā wetlands. These first steps are, (1) to control nonnative plant and animal species and (2) restore native species, as conditions (such as funding, staffing and other resources) allow. These first steps (control and restoration) are necessary as the NPS and its partners work towards meeting the management goal of combined traditional use and wildlife habitat as described in the *Spirit Report*[8] and GMP[9].

The NPS described the Restoration Management Plan/EA as "programmatic" because it provides a framework for a range of future actions to control nonnative species and restore the 'Aimakapā wetlands as newly proposed methods or actions that were not evaluated in this Restoration Management Plan/EA become available or able to implement. Those actions would require additional, more site-specific or action-specific environmental compliance review. Actions that are ongoing and that require ongoing evaluation or reappraisal, or both, often do not have a termination date. In this case, however, the NPS has set a 15-year review date to ensure that future options regarding adaptive ecosystem management and traditional uses of the fishpond for aquaculture remain open. The intent for a 15-year review of the Restoration Management

[8] Spirit Report, p. 30
[9] General Management Plan/EIS, pp. 39 & 66

Plan/EA does not prohibit consideration or implementation of potential future actions (such as eradication of invasive tilapia or opening ʻ*auwai* (channel) to the sea) at any time before the 15-year review. Moreover, the NPS was attempting to describe as fully as possible the purpose of the actions and the range of actions that are currently available, and those that might be available in the future in one document.

**4.** Two respondents asked for more information about how the actions to restore the wetlands were prioritized.

**NPS RESPONSE:**

During the internal and external public scoping and consultation process, Park descendants, state and federal agencies, wildlife, wetland, and historic preservation specialists, and other interested parties provided information that aided the NPS in identifying and prioritizing actions and areas for restoration. This information was used to develop a systematic, or operationally efficient, process to accomplish restoration goals. Criteria for prioritization by area, species, and timing included the immediacy of benefit to native species habitat, to protection of cultural sites and cultural landscape, and to traditional activities. Other factors such as geographically-dictated constraints on establishing temporary access routes, staging areas, hauling, and other logistical or operational issues were also considered in the process.

**5.** Two respondents wrote in support of improved control of small mammal predators, including the use of instant-kill traps for rats and mongoose. The Hawaiʻi Fishermen's Alliance for Conservation and Tradition (HFACT) also urged the NPS to increase and enhance efforts to eradicate feral cats from the Park, noting that as carriers of toxoplasmosis, feral cats also pose a threat to the Hawaiian monk seal. The Hawaiʻi Department of Land and Natural Resources (DLNR) recommended that instant-kill traps be checked frequently and placed in such a manner that would reduce the risk of non-target species being affected by their use. The DLNR also requested details on how baited toxicants might be used to control predators.

**NPS RESPONSE:**

Small mammal predators, particularly feral cats and mongooses, are highly detrimental to native wildlife and the NPS is dedicated to controlling their populations in the Park. We agree that predator control traps should continue to be placed and set in a manner that will reduce risk of non-target species being captured in or affected by the traps. To ensure that non-target species are not captured, the traps will be monitored frequently so that immediate corrective actions can be taken if necessary.

The NPS currently has no plans to use baited toxicants to control small-mammal predators. However, the USFWS is currently preparing a *Programmatic Environmental Impact Statement (PEIS) for Invasive Rodent and Mongoose Control and Eradication on US Pacific Islands within the National Wildlife Refuge System and in Native Ecosystems in Hawaiʻi*. The NPS is a cooperating agency in development of this PEIS. The PEIS will evaluate a variety of control methods and provide guidance for managers to select from a suite of tools, including baited toxicants, and make informed choices relevant to their site-specific management needs. In the future, if it is determined under the criteria of the NPS integrated pest management program

that use of baited toxicants would meet the needs of the predator control program, the NPS will examine the guidance provided in the PEIS, conduct any necessary remaining compliance, acquire the necessary permits to use the product for conservation purposes, and follow the law as written on the product label.

**6.** The Hawaii Fishermen's Alliance for Conservation and Tradition (HFACT) commented in support of targeted chemical control methods (such as hack and squirt and cut-stump treatment) as a tool for nonnative woody vegetation management in the wetlands and encouraged the use of glyphosate. Another respondent asked if the NPS could be more specific on the exact chemicals that are proposed to control invasive species in the wetlands.

**NPS RESPONSE:**

As described in Chapter 2 of the Restoration Management Plan/EA, herbicides are not used in the Park's wetlands. Chemical control of nonnative plants in the ʻAimakapā wetlands remains an option if other methods prove ineffective or inefficient. Because new herbicide formulations are constantly in development, it is not possible to be specific about the exact chemicals that may be available for wetlands use in the future.

However, in general, herbicides registered for use by the Environmental Protection Agency (EPA) in aquatic settings, (e.g., active ingredient imazapyr, glyphosate, triclopyr), are demonstrated to have a short half-life in water and very low toxicity and mortality rates for fish and aquatic organisms. By law, only herbicides registered by the EPA specifically for application in wetlands may be used at ʻAimakapā. Additionally, a State of Hawaiʻi National Pollution Discharge Elimination System herbicide permit is required for wetlands application and would be obtained in advance.

NPS policy requires the most specific (selective) chemical application available for the target species be used unless there are concerns of persistence or other environmental and/or biotic hazards associated with that herbicide that would prohibit its use. All chemicals proposed for use for invasive plant management are reviewed and approved by the NPS regional IPM coordinator. As with all herbicide applications in the Park, public notification of herbicide use is provided through use of signs posted at the public access boundaries of the work area and at visitor contact areas.

**7.** The Hawaii Fishermen's Alliance for Conservation and Tradition (HFACT) and one other respondent commented on the importance of securing the quality and the continuing availability of fresh groundwater for the fishpond/wetlands ecosystem, and urged the NPS to "put special effort in monitoring and maintaining historical groundwater flow" in and around the park.

**NPS RESPONSE:**

Maintaining water quality and quantity are essential to the reason that Congress created the Park. Since the Park's establishment in 1978, the NPS has been concerned about potential adverse impacts to the quality and quantity of its water resources. In fact, the Park's enabling law is specific in its direction to enter into agreements with agencies and neighbors to protect the water flowing into Kaloko-Honokōhau NHP. Nonpoint source pollution from existing and proposed

urban development around the Park (including wastewater treatment and disposal, individual wastewater systems, and surface runoff to groundwater via drainage wells) pose a threat to the Park's water quality. Through participation in state and county administrative proceedings, and through agreements with other agencies, the NPS has been successful obtaining nonpoint source pollution controls for new developments upslope of and adjacent the Park.

Similarly, increasing development of groundwater for human uses (e.g., groundwater withdrawals for drinking water, irrigation, etc.) near the Park may reduce the quantity of groundwater available to Park resources, including ʻAimakapā. The future potential for both maintaining appropriate habitat for endangered waterbirds and other native species and perpetuating traditional fishpond activities is dependent in part on ensuring adequate quantities of clean, fresh water entering the pond at the *mauka* (inland) shore.

Because of the threats from existing and future groundwater development, the NPS has sought assistance from the state in protecting groundwater flow in and around the Park. In 2013, the NPS petitioned the Hawaiʻi Commission on Water Resource Management to designate the Keauhou Aquifer as a water management area. The petition is still pending before the Commission. In addition, the NPS continues to work with the Commission and other interested parties to identify how designation or other controls can protect groundwater flow into the Park and along the north Kona coastline.

The NPS actively monitors water quality and groundwater levels in the Park, and regularly reviews the monitoring data collected from water resources outside of the Park. In 1996, three, shallow observation wells were drilled in the Park in collaboration with the U.S. Geological Survey. The NPS is continuously monitoring groundwater levels, salinity and temperature with automated recording instruments in these wells, The continuous data can be accessed online at https://irma.nps.gov/aqwebportal/. The Park's wells have also been sampled for contaminants and environmental tracers have been used in various scientific studies. Nutrients and other water quality parameters are measured in the Park wells, anchialine pools, and marine waters on a quarterly basis. In 2012, the NPS began continuous monitoring of water level, salinity and temperature in a piezometer installed in Aimakapā Fishpond. The NPS plans to continue these monitoring efforts and will continue to use these data to inform Park management decisions.

**8.** Two respondents, including Hawaiʻi Fishermen's Alliance for Conservation and Tradition (HFACT), which also participated in the September 8, 2012, public scoping session, recommended that control and eradication of the Mozambique tilapia should be considered a high priority in managing ʻAimakapā.

**NPS RESPONSE:**

during the public scoping and consultation process for the Mālama ʻAimakapā Restoration Management Plan/EA Removal of invasive fish was identified as an important and desirable element of ʻAimakapā's restoration, and several potential methods of tilapia eradication and control were suggested. Removal of invasive fish is an extensive and complex undertaking in an area as large as ʻAimakapā. Therefore, the U.S. Geological Survey is currently analyzing the potential environmental consequences, effectiveness, and operational efficiencies of these potential methods. At a future date, this analysis will be included in a separate Environmental

Assessment that will "tier" from the Mālama ʻAimakapā Restoration Management Plan/EA and undergo consultation, and public review and comment.

**9.** Three respondents asked for additional information regarding a) the cost efficiencies of implementing the restoration management plan alternatives (Alternative 1: continue manual-labor methods, versus Alternative 2: include machinery and helicopter methods); b) the potential funding sources for restoration; and c) how the plan will assist the NPS in securing future funding for restoration activities.

**NPS RESPONSE:**

A 2012-2013 pilot study to test manual removal methods at ʻAimakapā Fishpond demonstrated, as expected, that manual-only removal of vegetation in the study area, and individual UTV loads (a means of hauling material away) were costly in labor-hours. The use of machinery where possible, given the constraints of archeological site locations, and the consolidated hauling of removed vegetation by helicopter are more cost efficient methods than by manual labor alone. Small machinery and helicopter hauling of cut vegetation have been used to increase operational efficiency in other Park restoration projects.

The Restoration Management Plan describes a range of potential future wetlands restoration and management actions at ʻAimakapā as funding is made available from Congressional appropriations. Much of the work outlined in the Restoration Management Plan will be funded through the annual appropriations that fund the operation of the National Park System, which includes funding for project-specific requests by Park staff. The Restoration Management Plan will provide essential support for these future funding requests. To the fullest extent possible, while meeting other essential actions at the Park, the NPS will supplement any project funds received with Kaloko-Honokōhau NHP's annual operations funding. As the Plan is implemented and future funding requests are prepared, detailed cost information for the specific location of work in each of the prioritized management areas will be fully developed.

**10.** One respondent asked how the National Park Service will engage Native Hawaiians, neighboring communities, visitors, and other partners in interpretation activities at ʻAimakapā Fishpond, and how future educational opportunities will differ from those presently offered.

**NPS RESPONSE:**

As described in the Restoration Management Plan/EA, Chapter 2, *Visitor Interpretation and Community Stewardship* (page 33), the NPS wishes to engage native Hawaiians and others in new interpretive programs centered on ʻAimakapā Fishpond. Currently, the Park has no interpretation programs specific to ʻAimakapā. Chapter 2, *Visitor Interpretation and Community Stewardship*, lists the variety of relevant topics that provide opportunities for education and outreach associated with actions to restore and traditionally manage the pond. For immediate information delivery and community engagement, new displays and/or site bulletins, social media, and ranger programs will be developed and shared. To access wider audiences, hands-on opportunities will be created for community-stewardship partnerships, service volunteers, and school groups. These various methods and opportunities provide educational focus on several

themes and stewardship challenges including the ways in which Hawaiians lived with and related to the forces of nature; Hawaiian fishponds and their management; the historic cultural importance of the ʻAimakapā Fishpond in the context of the Honokōhau Settlement; reasons for preserving Hawaiʻi's native species and ecosystems; and threats from invasive species.

Through these stewardship opportunities, a core group of individuals with a wide range of expertise, interests, and skills will be identified who may desire to share their knowledge of, or simply to learn more about, Hawaiian cultural pursuits, and biocultural and natural area preservation. This stewardship and education program will also integrate with, and build upon, the Na Leo Kahiko Cultural Center programs and activities as they are developed. New connections and community engagement will be built and expanded through relationships with the community, schools, partners, and individuals.

**11.** One respondent recommended that the NPS develop partnerships with families and others with strong ties and connections to the Kaloko-Honokōhau area, and increase Hawaiian participation in management decisions regarding care of ʻAimakapā Fishpond and wetlands.

**NPS RESPONSE:**

Community and stewardship involvement and partnerships are vital to fulfilling the purpose for which the Park was created. Partnerships connect the Park and its communities for learning opportunities and collaboration, ensure different perspectives are represented, and achieve more than any one group could do on its own. The NPS will continue to develop relationships and partnerships with native Hawaiians, families with strong ties to the area, and other community members to exchange knowledge and restore and manage the ʻAimakapā Fishpond and wetlands. This goal is important to both current and future management at ʻAimakapā and is specifically expressed in the Restoration Management Plan/EA.

More information about National Park Service partnerships is available at https://www.nps.gov/partnerships/about.htm. We encourage individuals and groups wishing to explore types of partnerships with the Park to contact the Superintendent of Kaloko-Honokōhau NHP. Ultimately, the Park's Na Leo Kahiko Cultural Center will be the primary mechanism for future traditional resource management actions, such as fish production, at ʻAimakapā Fishpond. The purpose of the Cultural Center, as described in the *Spirit Report* and the GMP, is the perpetuation of Hawaiian activities and culture through in-depth cultural education. Details on planning for the Cultural Center and its programs are available in the Kaloko-Honokōhau Cultural Center Environmental Assessment, accessible online at http://parkplanning.gov/KAHO.

Currently, the NPS hosts a monthly "Mālama Kaloko" community workday in the Park, which focuses on removing nonnative vegetation from Kaloko Fishpond and connecting people with the land and the fishpond. Mālama ʻAimakapā community workdays will also be established. These workdays may expand in the future to include future management actions at Kaloko Fishpond and at ʻAimakapā Fishpond through the Na Leo Kahiko Cultural Center. These workdays have the benefit of a passionate and committed community-stewardship organizer. As a result, the workdays are well organized and well attended. People with strong family ties to the area, native Hawaiians, community members, university groups, and others have participated in

these workdays; we encourage and support this group of community stewards to continue to grow and to strengthen mutual connections to each other and the Park.

The NPS and invited community members recently completed a planning workshop to develop a "foundation document" for future Park planning and management. The process relied heavily on the guidance of the 1974 *Spirit Report*. The workshop was an opportunity to integrate a shared understanding of what is most important about the Park. The workshop participants targeted developing and implementing a "Community Engagement and Partnership (Stewardship) Plan" that will guide establishing and maintaining new partnerships and a "Fishpond Management Plan" as high priorities.

**12.** One respondent commented that community members should be included in the goal of expanding understanding of Hawaiian waterbird and wetland ecology through scientific research.

**NPS RESPONSE:**

Community members are, and will continue to be, an important and integral part of expanding our shared knowledge and understanding of the native species and the habitat that make up the ʻAimakapā wetlands and other ecosystems in Kaloko-Honokōhau.

## Comments outside of the scope of the Restoration Management Plan/EA

The NPS also received several thoughtful comments regarding park management that are beyond the scope of the EA. However they address considerations important to Park management.

**13.** Two respondents expressed concern that protection of natural resources will take precedence over future traditional cultural use of the fishpond for aquaculture, and questioned how the NPS will balance traditional use of the fishpond with the protection of wildlife resources and preservation of historic properties at ʻAimakapā Fishpond.

**NPS RESPONSE:**

Balancing the traditional use of Park biocultural resources such as Kaloko and ʻAimakapā Fishponds, the protection of natural resources, and the preservation of historic properties is a fundamental goal of resource management at the Park as set out in the *Spirit Report*[10] and the GMP.[11] The NPS is committed to achieving a balance of traditional use and protection in consultation with descendants and the community.

At Kaloko-Honokōhau, the significance and density of Hawaiian cultural sites intermixed with important natural resources such as habitats for rare and endangered species and overlaid with an expanding demand for recreational use by visitors result in a complicated interplay of legal mandates and resource management goals that may sometimes conflict.[12] At ʻAimakapā Fishpond, the NPS's obligations under the NPS Organic Act, the Endangered Species Act, and

[10] Spirit Report, pp. 28-30,
[11] General Management Plan/EIS, p. 39
[12] General Management Plan/EIS, p. 10

the *Spirit Report* (as set forth in the Park's enabling law)[13] do not allow for a focus on any one single management aspect but require a balance for all appropriate uses.[14]

The Restoration Management Plan/EA is the necessary first step in restoring ʻAimakapā Fishpond and wetlands to a functioning ecosystem and Hawaiian fishpond, and maintaining it as such. Improvement of the pond and wetland-ecosystem functioning simultaneously improves the conditions necessary for traditional aquaculture. The Restoration Management Plan/EA goal to restore ʻAimakapā to its pre-disturbance (i.e., pre-western contact) habitat composition and maintain the system at that successional stage (i.e., ecological state) follows the *Spirit Report* recommendations for restoration of the fishponds and their immediate surroundings "*as nearly as possible, to the conditions that existed before the introduction of foreign influences"* and that the *"remnant Hawaiian ecosystems be protected from further degradation by exotic plants and animals*."[15]

Two species of waterbirds protected by state law and the federal Endangered Species Act breed at ʻAimakapā. Therefore, the NPS must consult with the U.S. Fish and Wildlife Service (USFWS) under section 7 of the Act to determine if NPS actions at ʻAimakapā may have an adverse effect on threatened or endangered species and their habitat, and if so, to identify measures to minimize or prevent incidental take of these species. This determination by the USFWS is required regardless of whether the activity is wetland restoration or traditional fishpond management. We concluded formal consultation with the Fish and Wildlife Service on February 26, 2016, for the restoration actions described in the Restoration Management Plan/EA. We anticipate further consultation with Fish and Wildlife Service in the future as restoration progresses and as actions to preserve, interpret, and perpetuate are planned.

## Questions addressed by the Restoration Management Plan/EA

**14.** Two respondents asked the following questions regarding specific details on the proposed action for restoration and on the affected environment, the answers to which are found in the Restoration Management Plan/EA document.

a. One respondent asked how the plan has incorporated climate change and predicted sea level rise information for ʻAimakapā. The *Climate Change* section in Chapter 3, *Affected Environment* (pp. 71-72) provides information on the projected effects of climate change to the fishpond over the next several decades. The sub-section, *Hydrologic Conditions,* in Chapter 2, *Alternative 2 NPS Proposed Action* (p. 32) describes long-term monitoring for storm surge events.

b. One respondent asked several questions regarding waterbird seasonality and breeding as it relates to timing of restoration actions. Information on the timing of the proposed action as it relates to waterbirds is found in Chapter 2, *Alternative 2: Protection of Special Status Species* (p. 29) and information on the biology of waterbirds is found in the *Special Status Species* section of *Chapter 3: Affected Environment* (pp. 49-51).

[13] Sprit Report, p. 30, 41
[14] Mālama ʻAimakapā Management Plan/EA, p. 34
[15] Spirit Report, p. 28

c. One respondent asked if woody vegetation could be removed to create a temporary access road or trail to support mechanical equipment in a strip around the pond and to create a staging area. Nonnative woody plants (e.g., *kiawe*) will be removed where necessary to permit access routes in staging areas and along the pahoehoe edge of the pond. Chapter 2, *Alternative 2, Wetlands Access* describes siting of temporary access routes, which are shown on Figure 2 (p. 23) of the Restoration Management Plan/EA. Temporary routes include a strip along a portion of the pond's southern shoreline.

d. One respondent asked for a map showing both the existing and proposed access paths for vehicles and machinery, and the location of staging areas. Figure 2 (p. 23) of the Restoration Management Plan/EA is a map that shows the Project Area, the delineated wetland boundary, the four management areas, existing Park trails, the proposed and existing access paths for machinery and vehicles, and the proposed staging areas. Chapter 2, *Alternative 2 NPS Proposed Action* describes the temporary access paths, and the management and staging areas (p. 21-28).

e. One respondent asked for information on the proposed components that were dismissed from further analysis after consideration. The section *Alternative Action Components Considered but Dismissed from Further Analysis* (pp. 34-37) in Chapter 2, *Alternatives*, provides details on the considered components and explanations of why they were dismissed from further analyses.

f. One respondent asked how Alternative 1 (No Action) compares to Park management at ʻAimakapā over the past 15 years. Alternative 1 is described in Chapter 2, *Alternative 1 (No Action) Continue Existing Management and Programs* (p. 18) and is the continuation of current management and programs, including that of the past 15 years during which small-scale, site-specific periodic projects to manually remove vegetation as protection for archeological sites at ʻAimakapā have been undertaken.

g. One respondent asked for information on how the plan addresses monitoring for non-point source pollution and monitoring water quality of the fishpond. Information on monitoring is found in Chapter 2, in the *Alternative 2 NPS Proposed Action* sub-section, *Water Quality and Hydrology Monitoring* (page 32).

h. One respondent asked for information on the migratory waterfowl that stopover at ʻAimakapā and whether they are the same group of birds each year, and also asked for information on other areas in the state that provide waterbird habitat. Information on migratory waterfowl and migratory shorebirds is found in Chapter 3, *Affected Environment*, in the Section *Other Federally Protected Species and Species of Concern* (pages 56-57). It is unknown whether the migrants are the same individuals each year because no banding study is currently in effect. Information on waterbird habitat throughout Hawaiʻi can be found in the Recovery Plan for Hawaiian Waterbirds, Second Revision, available online at http://www.fws.gov/pacific/ecoservices/endangered/recovery/plans.html.

i. One respondent asked about the regrowth of nonnative vegetation and maintenance of restored areas. Alternative 2 includes increased planning and monitoring as tools to improve efficacy of nonnative species control and maintenance of restored areas. Chapter 2, *Alternative 2 NPS Proposed Action Alternative 2,* sub-section *Vegetation Control and Management* (p. 24-28), and, *Vegetation Monitoring* (p. 28) discuss vegetation control and restoration actions, and monitoring of regrowth for adaptive management purposes. Chapter 2, *Exclusive Use of Manual Removal of Nonnative Vegetation*, describes the challenges of combating regrowth with manual-only removal techniques (p. 34).

j. One respondent asked if the beach barrier berm would be closed to visitors. Under both Alternatives, the berm will remain open to Park visitors and will remain the location for public viewing of the wetlands and wildlife.