



‘Alae ke‘oke‘o chick Laura Beauregard/USFWS

Chapter 1. Introduction

Kakahai‘a National Wildlife Refuge (NWR or Refuge) is a coastal freshwater pond situated along the south coast of Moloka‘i (Figure 1.1, page 1-13). The Refuge is managed as part of the Maui National Wildlife Refuge Complex (Complex) headquartered on the Island of Maui. This 44.6 acre Refuge was set aside in 1976 to protect and manage endangered Hawaiian waterbirds ae‘o (Hawaiian stilt) and ‘alae ke‘oke‘o (Hawaiian coot) and their habitats.

1.1 Purpose and Need for the CCP

The purpose of the CCP is to provide the Service, the Refuge System, partners, and citizens with a management plan for improving fish and wildlife habitat conditions and Refuge infrastructure, for wildlife and public use on Kakahai‘a NWR over the next 15 years. An approved CCP will ensure that the Service manages to achieve the Refuge purpose, vision, goals, and objectives to help fulfill the mission of the Refuge System.

The CCP is needed for a variety of reasons. Primary among these is the need to establish improved habitat conditions on the Refuge’s wetland habitats, which are degraded by invasive plants and animals. The plan also recognizes and identifies threats to the endangered ae‘o and ‘alae ke‘oke‘o, including predation by nonnative mammals, limited water supply, and human disturbance. There is also a need to analyze potential Refuge public use programs for wildlife-dependent priority public uses and to determine what improvements or alterations should be made in the pursuit of a high-quality visitor experience. Finally, there is a need to describe the steps that should be taken to better protect the habitats and wildlife through strategies to accomplish our goals.

1.2 Planning and Management Guidance

The Service, an agency within the Department of the Interior, is the principal Federal agency responsible for conserving, protecting, and enhancing fish, wildlife, and plants and their habitats. Refuge management is guided by Federal laws, Executive orders, Service policies, and international treaties. Fundamental guidelines are found in the mission and goals of the Refuge System and the designated purpose of the Refuge as described in establishing legislation, Executive orders, or other documents establishing, authorizing, or expanding a refuge.

Key concepts and guidance of the Refuge System derive from the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee) (Administration Act), the Refuge Recreation Act of 1962 (16 U.S.C. 460k-460k-4), as amended, Title 50 of the Code of Federal Regulations (CFR), and the Fish and Wildlife Service Manual (FW). The Administration Act is implemented through regulations covering the Refuge System, published in Title 50, subchapter C of the CFR. These regulations govern general administration of units of the Refuge System.

1.2.1 U.S. Fish and Wildlife Service Mission

The mission of the Service is “working with others, to conserve, protect, and enhance fish and wildlife and their habitats for the continuing benefit of the American people.” National natural resources entrusted to the Service for conservation and protection include migratory birds, endangered and threatened species, interjurisdictional fish, wetlands, and certain marine mammals. The Service also manages national fish hatcheries, enforces Federal wildlife laws and international treaties on importing and exporting wildlife, assists with State and Territorial fish and wildlife programs, and helps other countries develop wildlife conservation programs.

1.2.2 National Wildlife Refuge System

The Refuge System is the world’s largest network of public lands and waters set aside specifically for conserving wildlife and protecting ecosystems. From its inception in 1903, the Refuge System has grown to encompass over 550 national wildlife refuges in all 50 States, and waterfowl production areas in 10 States, covering more than 150 million acres of public lands and waters. More than 40 million visitors annually fish, hunt, observe and photograph wildlife, or participate in environmental education (EE) and interpretive activities on national wildlife refuges.

1.2.3 National Wildlife Refuge System Mission and Goals

The mission of the Refuge System is “to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.” The goals of the Refuge System, as articulated in the Mission, Goals, and Purposes policy (601 FW1), follow:

- Conserve a diversity of fish, wildlife, and plants and their habitats, including species that are endangered or threatened with becoming endangered;

- Develop and maintain a network of habitats for migratory birds, anadromous and interjurisdictional fish, and marine mammal populations that is strategically distributed and carefully managed to meet important life history needs of these species across their ranges;
- Conserve those ecosystems, plant communities, wetlands of national or international significance, and landscapes and seascapes that are unique, rare, declining, or underrepresented in existing protection efforts;
- Provide and enhance opportunities to participate in compatible wildlife-dependent recreation (hunting, fishing, wildlife observation and photography, and EE and interpretation); and
- Foster understanding and instill appreciation of the diversity and interconnectedness of fish, wildlife, and plants and their habitats.

1.2.4 National Wildlife Refuge System Administration Act of 1966

The Administration Act, as amended by the National Wildlife Refuge System Improvement Act of 1997 (Improvement Act), requires us to develop a CCP for each national wildlife refuge in an open public process. The Administration Act states that the Secretary shall provide for the conservation of fish, wildlife, plants, and their habitats within the Refuge System, and ensure that the biological integrity, diversity, and environmental health of the Refuge System are maintained. House Report 105–106 accompanying the Improvement Act states “...the fundamental mission of our System is wildlife conservation: wildlife and wildlife conservation must come first.” As later made clear in the Biological Integrity, Diversity, and Environmental Health (BIDEH) policy (601 FW 3), “the highest measure of biological integrity, diversity, and environmental health is viewed as those intact and self-sustaining habitats and wildlife populations that existed during historic conditions.”

Each refuge must be managed to fulfill the Refuge System mission as well as the specific purpose(s) for which it was established. The Administration Act requires the Service to monitor the status and trends of fish, wildlife, and plants on every refuge. Additionally, six wildlife-dependent recreational uses are granted special consideration in the planning, management, establishment, and expansion of units of the Refuge System: hunting, fishing, wildlife observation and photography, and EE and interpretation. When determined compatible on a refuge-specific basis, these six uses assume priority status among all public uses of the refuge in question. The overarching goal is to enhance wildlife-dependent recreation opportunities and access to high-quality visitor experiences on refuges, while managing refuges to conserve fish, wildlife, plants, and their habitats. The Service is directed to make extra efforts to facilitate wildlife-dependent visitor opportunities.

When preparing a CCP, refuge managers must evaluate all general public, recreational, and economic uses proposed or occurring on a refuge for appropriateness and compatibility. No refuge use may be allowed or continued unless it is determined to be appropriate and compatible. Generally, an appropriate use is one that contributes to fulfilling refuge purposes, the Refuge System mission, or goals and objectives described in an approved refuge management plan. A compatible use is defined as a use that, in the sound professional judgment of the refuge manager, will not materially interfere with or detract from the fulfillment of the mission of the Refuge System or the purpose(s) of the refuge. Current Appropriate Use Findings and Compatibility Determinations for existing and proposed uses for Kakahai‘a NWR are in Appendix B.

The Administration Act also requires that, in addition to formally established guidance, the CCP must be developed with the participation of the public. Public comments play a role in identifying issues, guiding alternatives considered during development of the CCP, and selecting a preferred

alternative. It is Service policy to develop CCPs in an open public process; the agency is committed to securing public input throughout the process.

1.3 Relationship to Previous and Future Refuge Plans

Planning has been a part of Refuge operations since establishment. Current management plans include:

- Interim Management Plan - 2001
- Wildland Fire Management Plan - 2005
- Integrated Pest Management Plan - 2008
- Refuge Safety Plan - 2010
- Highly Pathogenic Avian Influenza Disease Contingency Plan - 2009
- Avian Botulism Disease Contingency Plan - 2008
- Emergency Preparedness Response Plan (updated annually) - 2011
- Continuity of Operations Plan (updated annually) - 2011
- Station Hazardous Communications Plan (updated annually) - 2011

1.3.1 Future planning

The CCP will be revised every 15 years or earlier if monitoring and evaluation determine that changes are needed to achieve the Refuge purposes, vision, goals, or objectives. The CCP provides guidance in the form of goals, objectives, and strategies for Refuge program areas but may lack some of the specifics needed for implementation. Step-down management plans will therefore be developed for individual program areas, as needed, following completion of the CCP. Step-down plans require appropriate NEPA compliance.

1.4 Refuge Establishment and Refuge Purpose

1.4.1 Legal Significance of the Refuge Purpose

The purpose for which a refuge was established or acquired must form the foundation for planning and management decisions. The purpose(s) of a refuge are specified in or derived from the law, proclamation, Executive order, agreement, public land order, donation document, or administrative memorandum establishing, authorizing, or expanding a refuge, refuge unit, or refuge subunit.

Unless the establishing law, order, or other document indicates otherwise, purposes dealing with the conservation, management, and restoration of fish, wildlife, and plants, and the habitats on which they depend take precedence over other purposes in the management and administration of any unit. Where a refuge has multiple purposes related to fish, wildlife, and plant conservation, the more specific purpose will take precedence in instances of conflict. When an additional unit is acquired under an authority different from the authority used to establish the original unit, the addition takes on the purpose(s) of the original unit, but the original unit does not take on the purpose(s) of the newer addition.

1.4.2 Refuge Establishment and Purpose

Kakahai‘a NWR was established in 1976 under the authority of the Endangered Species Act of 1973 (ESA). The Refuge was funded through the Land and Water Conservation Act of 1965. Refuge purposes are the driving force in the development of the refuge vision statements, goals, objectives, and strategies in the CCP and are critical to determining the appropriateness and compatibility of all existing and proposed refuge uses. Kakahai‘a NWR was established with the purpose “... to conserve (A) fish or wildlife which are listed as endangered species or threatened species, or (B) plants.”

Table 1.1 Refuge Acquisition History for Kakahai‘a NWR

Date	Acquisition Authority	Comments
03/15/1976	Endangered Species Act of 1973	Fee title acquisition of 41.95 acres. Initial acquisition.
10/17/1977	Endangered Species Act of 1973	Conservation Easement on 2.31 acres.
06/21/1978	Endangered Species Act of 1973	Conservation Easement on 0.35 acres.

1.5 Refuge Goals

Goals and objectives are the unifying elements of successful refuge management. They identify and focus management priorities, resolve issues, and link to refuge purpose(s), Service policy, and the Refuge System mission. A CCP describes management actions that help bring a refuge closer to its vision. A vision broadly reflects refuge purpose(s), Refuge System mission and goals, other statutory requirements, and larger-scale plans as appropriate. Wildlife, habitat, and visitor services management goals then define general targets in support of the vision, followed by objectives that direct efforts into incremental and measurable steps toward achieving those goals. Finally, strategies identify specific tools and actions to accomplish objectives. The Refuge vision statement is found on the inside front cover of this document. The following are our goals; their order does not imply any priority in this CCP.

Nā Pāhuhopu Pu‘uhonua Holoholona

1. Kīā‘i a mālama i nā ‘āina pālialia a me ālialia wai maoli nohokau a me nā pālialia noho manawa no ka mālama ‘ana i ka mō‘aukala ola pono o nā manu wai Hawai‘i ‘ane make loa.
2. Kīā‘i, ho‘ōla hou, a mālama i nā kaianoho lihikai no ka pono no ka ho‘opunana ‘ana o nā honu kai, manu kai, a me ka kūkahi o kēia mau kaiaola pio pau wale.
3. Ho‘ola hou, kīā‘i, a ho‘oponopono in ā ululā‘au ‘oiwi i mea e pale ho‘oka‘awale ai i nā pilikia o uka mai nā ‘āina kumu wai mai.
4. ‘Ohi‘ohi i nā waiwai ‘epekema (nānā, noi‘i, a me ka ho‘ā‘o ‘ana) no ke kāko‘o ‘ana i nā makemake o ka mālama ‘ia ‘ana ma ka pāhuhopu helu 1 a helu 3 no ka pu‘uhonua holoholona.
5. Ho‘omākaukau i kumu waiwai nui no nā kaianoho mākaukau no na holoholona ‘āhiu, a e kokua ho‘i i ka lehulehu ma ka ho‘onā‘auao a a‘o mai iā lākou e pili ana i nā i‘a, nā holoholona hihui, a me nā waiwai nohona ‘oiwi o kēia wahi nei i kapa ‘ia o Kakahai‘a NWR.
6. Ho‘omākaukau ho‘i i polokalamu waiwai loa no ke a‘o ‘ana i nā haumāna e pili ana i nā kumuhana kūpono a me ka hana lima pu ma nā kaianoho holoholona hihui.

Refuge Goals

1. Restore and maintain seasonal and permanent wetland habitats to meet the life history needs of endangered Hawaiian waterbirds.
2. Protect, restore, and manage coastal habitat for the integrity of the fragile ecosystem.
3. Protect, restore, and manage forest habitat to provide a buffer from upper watershed impacts.
4. Gather scientific information (survey, research, and assessments) in support of adaptive management decisions on the Refuge under goals 1-3.
5. Provide high-quality wildlife-dependent recreation, interpretation, and outreach opportunities to enhance public understanding, appreciation, and enjoyment of the native wildlife, natural communities, and cultural history of the Kakahai‘a NWR.
6. Provide students and teachers high-quality hands-on environmental education programs that foster a connection with nature and the Refuge.

1.6 Relationship to Ecosystem Planning Efforts

When developing a CCP, the Service considers the goals and objectives of existing national, regional, and ecosystem plans; State/Territorial fish and wildlife conservation plans; and other landscape-scale plans developed for the same watershed or ecosystem in which the refuge is located. To the extent possible, the CCP is expected to be consistent with these existing plans and assist in meeting their conservation goals and objectives (602 FW 3.3). This section summarizes some of the key plans that were reviewed by members of the planning team during CCP development.

Hawai'i's Comprehensive Wildlife Conservation Strategy, 2005. With passage of the Commerce, Justice, and State Appropriations Act of 2001, Congress mandated each State and Territory to develop its own comprehensive wildlife conservation strategy. *Hawai'i's Comprehensive Wildlife Conservation Strategy* thoroughly reviews the status of the full range of the State's native terrestrial and aquatic species, over 10,000 of which are found nowhere else on Earth. Hawai'i's Species of Greatest Conservation Need include all native terrestrial animals, all endemic aquatic animals, additional indigenous aquatic animals identified as in need of conservation attention, a range of native plants identified as in need of conservation attention, and all identified endemic algae. This list includes: a terrestrial mammal (1), birds (77), terrestrial invertebrates (~5,000), freshwater fishes (5), freshwater invertebrates (12), anchialine pond-associated fauna (20), marine mammals (26), marine reptiles (6), marine fishes (154), marine invertebrates (197), and flora (over 600). Details on all the listed wildlife taxa are provided in fact sheets that contain information for taxa, closely related groups of species, and species facing similar threats.

Hawai'i Nongame Management Program (Draft), 2000. The goal of the Hawai'i Nongame Management Program is to manage, preserve, and protect the native avifauna and their habitats for their intrinsic, recreational, scientific, and educational values and to provide opportunities for the residents and visitors to Hawai'i to use and enjoy these resources. A major focus of the program is on management and recovery of endangered species, including projects to monitor, manage habitat, and recover populations and control of predators affecting endangered species. Other nongame projects include increased surveillance of nonnative pests, construction of facilities and infrastructure to promote management or recreational opportunities to enjoy nongame resources, and maintenance of those facilities.

Draft Revised Recovery Plan for Hawaiian Waterbirds, (Second Draft of Second Revision), May 2005. The ultimate goal of the recovery program is to restore and maintain multiple self-sustaining populations of Hawaiian waterbirds within their historic ranges. The recovery of the endangered waterbirds focuses on the following objectives:

- Increasing population numbers to Statewide baseline levels (consistently stable or increasing with a minimum of 2,000 birds for each species);
- Establishing multiple, self-sustaining breeding populations throughout each species' historic range;
- Establishing and protecting a network of both core and supporting wetlands that are managed as habitat suitable for waterbirds, including the maintenance of appropriate hydrological conditions and control of pest plants;
- For all four species, eliminating or controlling the threats posed by introduced predators, avian diseases, and contaminants; and
- For the koloa maoli (Hawaiian duck), removing the threat of hybridization with feral mallards.

U.S. Pacific Islands Regional Shorebird Conservation Plan, 2004. Conservation and restoration of shorebird habitats is essential for the protection of endangered and declining shorebird populations. Wetlands, beach strand, coastal forests, and mangrove habitats are particularly vulnerable on Pacific islands due to increasing development pressures and already limited acreage. Monitoring and research needs include assessment of population sizes and trends; assessment of the timing and abundance of birds at key wintering and migration stopover sites; assessment of habitat use and requirements at wintering and migration areas; exploration of the geographic linkages between wintering, stopover, and breeding areas; and evaluation of habitat restoration and management techniques to meet the needs of resident and migratory species. Education and public outreach are critical components of this plan. Resource management agencies of Federal, Territorial, Commonwealth, and State governments will need to work together with military agencies, nongovernmental organizations, and the scientific community. On a larger scale, coordination at the international level will be key to the conservation of vulnerable species, both migratory and resident.

Pacific Coast Joint Venture, Hawai‘i, 2006. This strategic plan for waterbirds and wetlands identifies management strategies for a diversity of resident and migratory species with varying life history requirements across multiple sites to fulfill archipelago-wide conservation goals to “protect, restore, increase, and enhance all types of wetlands, riparian habitats, and associated uplands throughout the Pacific Coast region to benefit birds, fish and other wildlife” (Henry 2006). To accomplish this goal, six strategies are employed: protection, restoration, enhancement and management advocacy, outreach, and research.

Habitat goals for the Pacific Coast Joint Venture (PCJV) strategic conservation plan in Hawai‘i represent long ranging concepts that provide direction for conservation objectives and actions. They are based on the strategies identified by the PCJV and support goals identified by other avian conservation plans for Hawai‘i.

Moloka‘i Community Plan, 2001. One of nine community plans for the County of Maui describing planning goals, objectives, policies and implementation strategies to guide decision-making, this plan is currently under revision. It provides specific direction in addressing the goals, objectives and policies contained in the County’s General Plan, while recognizing the values and unique attributes of Moloka‘i in order to enhance the region’s overall living environment. The environmental goal is to “*Preserve, protect and manage Moloka‘i’s exceptional natural land and water resources to ensure that future generations may continue to enjoy and protect the island environment.*” Many of the Moloka‘i Community Plan objectives apply to the Refuge, including:

- *Protect and encourage the restoration of native habitats through government and private conservation, land management and educational programs.*
- *Restore the environmental integrity of Moloka‘i’s land resources through development of a comprehensive reforestation program utilizing native species.*
- *Manage, protect and preserve shoreline dune formations throughout the region.*
- *Manage, protect, and where appropriate, restore reef habitats, fish ponds and other coastal resources unique to the Island of Moloka‘i.*
- *Protect and manage coastal water quality through best management land treatment practices.*
- *Recognize and preserve traditional access and uses of the environment to address subsistence needs of the residents of Moloka‘i.*

- *Encourage the development of environmentally sensitive drainage master plans which consider development opportunities and constraints in flood prone areas, stream channels and gulches.*
- *Encourage alternative means of pest control in order to limit the use of chemical pesticides.*
- *Require fire prevention and suppression strategies as a means of protecting and preserving Moloka‘i’s land and coastal water resources.*
- *Promote the inclusion of environmental education within the curriculum at all educational levels to foster respect for Moloka‘i’s land, water and marine resources.*

1.7 Planning and Issue Identification

In September 2009, approximately 250 copies of Planning Update 1 were mailed and hand-distributed to interested individuals, local conservation groups, research organizations; County, State, and Federal government agencies; and the Office of Hawaiian Affairs (OHA).

Planning Update 1 described the planning process, Refuge purpose, and draft wildlife and habitat, and public use goals, and preliminary issues to be considered in the CCP.

1.7.1 Public Scoping Sessions

The public scoping period for this CCP opened November 2009. A public meeting was held in Kaunakakai, Moloka‘i on November 4, 2009. At the meeting, the Refuge staff explained the CCP planning process; the Refuge purpose(s), vision, and management; and preliminary management issues, concerns, and opportunities. We received written comments and answered questions that addressed a number of issues and concerns from residents. Planning Update 2 (mailed February 2010) summarized the comments we received and listed preliminary management issues we used to draft alternatives and refine goals and objectives.

The core planning team evaluated the issues and the topics documented during scoping. Issues (defined as matters of controversy, dispute, or general concern over resource management activities, the environment, land uses, or public use activities) are important to the planning process to help identify topics to be addressed in the plan, pinpoint the types of information to gather, and help define alternatives for the plan. In Planning Update 3 (mailed March 2011), we described the three alternatives being considered with the preferred alternative identified.

Planning Update #4 and the Draft CCP and Environmental Assessment (EA) were published in August 2011 with a public comment period running from August 19-September 19, 2011. A public meeting on the Draft CCP/EA was held in Kaunakakai, Moloka‘i on September 7, 2011. Concurrent with mailing, Planning Updates 1-4 were also posted on the Refuge Website (<http://www.fws.gov/Kakahaia>).

1.7.2 Issues Addressed in the CCP

Restoration of the Wetlands: The continuous encroachment of pest plants, particularly California bulrush, has been a serious dilemma. Strategic planning is needed to efficiently remove and restore the wetlands and provide for endangered waterbirds and migratory species that once thrived. The Refuge will prepare a comprehensive Habitat Management Plan that will outline the restoration

activities needed to remove and reconfigure Old Pond back to an open water pond that is naturally fed by springs. This work is likely to include deconstruction of the radial levees that were constructed in 1983; these levees pose a threat to the integrity of the pond by limiting water flow, capturing sediment, and are host to non-wetland vegetation.

New Pond was intended to provide shallow water habitat for wading birds, primarily ae‘o; however, the original plan to receive water from Old Pond is not ideal and requires a separate source of water. Prior to construction of a water source, we need to identify the soil type and New Pond’s capability to hold water.

Staff Presence on the Refuge and in the Community: Refuge staff, operation, and management of Kakahai‘a NWR are based at Keālia Pond NWR on Maui. A Maintenance Worker makes a day trip to Moloka‘i every other week to check on the property and perform work, primarily pest plant control (fence line, New Pond). When the wetland is restored, the Refuge will need on-site staff or increased visits to maintain the wetlands and ensure the habitat does not revert to its existing condition. Strategic and efficient planning to restore Old Pond is necessary given the year-round growing season for California bulrush and natural source of underground springs.

Wildlife and Habitat Resources: In the absence of quality habitat, endangered waterbirds are no longer present on the Refuge, except after heavy rains when water pools in New Pond for a short period of time (typically less than 1 week). The Service is concerned with threats posed to native habitats and wildlife at Kakahai‘a from pest plants like California bulrush and pickleweed, and pest animals such as rats, Indian mongooses, and cats.

Coastal Erosion: The coastal property within the Refuge has undergone heavy erosion over the past decade. The reasons are unknown and emphasize the need to consult with coastal geologists and identify methods of securing the integrity of the coastal property without impacts to other adjacent areas. Refuge staff will seek partnerships to address effects of climate change.

Information about unlawful removal of sand at the culvert adjacent to the Refuge road was revealed at the scoping meeting. Whether or not the removal is being performed by the State, County, or individuals, the Refuge will investigate this to ensure the proper information is distributed and install signs along the Refuge’s coastal property citing County ordinance.

Visitor Services Activities: The absence of staff at Kakahai‘a NWR makes it difficult to allow public access on a daily basis and the Refuge will continue issuing Special Use Permits (SUP) to allow non-government educational organizations to provide school group access. Within the past number of years, these groups have decreased due to the absence of waterbirds.

Figure 1.1 – Main Hawaiian Islands



To preserve the quality of the map, this side was left blank intentionally.

Figure 1.2 – Refuge Land Status & Boundary



To preserve the quality of the map, this side was left blank intentionally.