

## **5-YEAR REVIEW**

Short Form Summary

**Species Reviewed:** Hawaiian Coot (*Fulia alai*)

**Current Classification:** Endangered

### **Federal Register Notice announcing initiation of this review:**

[USFWS] U.S. Fish and Wildlife Service. 2013. Endangered and threatened wildlife and plants; initiation of 5-year status reviews of 44 species in Oregon, Hawaii, Guam, and the Northern Mariana Islands. Federal Register 78(24):8185-8187.

### **Lead Region/Field Office:**

Region 1/Pacific Islands Fish and Wildlife Office (PIFWO), Honolulu, Hawai'i

### **Name of Reviewer(s):**

Joy Hiromasa Browning, Fish and Wildlife Biologist, PIFWO

Annie Marshall, Fish and Wildlife Biologist, PIFWO

Marie Brueggemann, Recovery Plant Coordinator, PIFWO

Kristi Young, Programmatic Deputy Field Supervisor, PIFWO

### **Methodology used to complete this 5-year review:**

This review was conducted by staff of the Pacific Islands Fish and Wildlife Office of the U.S. Fish and Wildlife Service (USFWS), beginning on March 6, 2013. The review was based on a review of current, available information since the last 5-year review for the Hawaiian Coot (USFWS 2010) as well as information from the revised recovery plan (USFWS 2011) and updates obtained from researchers currently working on this species. The evaluation, coordinated by Annie Marshall, Fish and Wildlife Biologist, was reviewed by the Recovery Plant Coordinator before submission to the Programmatic Deputy Field Supervisor for approval.

### **Background:**

For information regarding the species listing history and other facts, please refer to the Fish and Wildlife Service's Environmental Conservation On-line System (ECOS) database for threatened and endangered species ([http://ecos.fws.gov/tess\\_public](http://ecos.fws.gov/tess_public)).

### **Review Analysis:**

Please refer to the Recovery Plan for Hawaiian Waterbirds, Second Revision (USFWS 2011) and the previous 5-year review for the 'alae ke'oke'o or Hawaiian Coot published on August 27, 2010 (available at [http://ecos.fws.gov/docs/five\\_year\\_review/doc3337.pdf](http://ecos.fws.gov/docs/five_year_review/doc3337.pdf)) for a complete review of the species' status, threats, and management efforts. No new threats or no new information regarding the species biological status have come to light since listing to warrant a change in the Federal listing status of the Hawaiian Coot as endangered.

The Hawaiian Coot, or 'alae ke'oke'o occurs statewide although Kauai, Oahu, and Maui collectively support 80 percent of birds detected during the annual waterbird surveys (Hawaii Division of Forestry and Wildlife [HDODFAW] 1976-2008, USFWS 2011).

The survey data do show some variability, but because ‘alae ke‘oke‘o are fairly conspicuous, the waterbird count data are considered fairly accurate minimum population estimates for this species. In addition, this species disperses readily and exploits seasonally flooded wetlands and their populations will naturally fluctuate according to climactic and hydrologic conditions (Engilis and Pratt 1993). The current status for the ‘alae ke‘oke‘o is provided in Table 1 below. Threats to the species continue, including predation, degradation of wetlands, and avian disease. It is thought that a population viability analysis may indicate that this species may close to being recovered, if some additional recovery actions are taken as per the 2011 recovery plan (USFWS 2011).

New status information:

- The most recent population estimate of ‘alae ke‘oke‘o is 1,500 to 2,800 birds (HDOFAW 1976-2008, USFWS 2011).

New threats:

- There are no new threats known at this time, although avian botulism is increasing (USFWS 2011).

New management actions:

- Climate change degradation of habitat – Climate change is believed to pose a threat to this species. However, current climate change analyses in the Pacific Islands lack sufficient spatial resolution to make predictions on impacts to this species. The Pacific Islands Climate Change Cooperative (PICCC) has currently funded climate modeling that will help resolve these spatial limitations. We anticipate high spatial resolution climate outputs by 2015.

### **Synthesis:**

Downlisting and delisting objectives are provided in the recovery plan for Hawaiian waterbirds (USFWS 2011). To be downlisted, all core wetlands and at least 50 percent of supporting wetlands must be protected and managed in accordance with management practices outlined in the 2011 recovery plan, a population viability analysis (PVA) has been conducted to determine the population size necessary for long-term viability of the species. The statewide surveyed number of ‘alae ke‘oke‘o has shown a stable or increasing trend and has not declined below 2,000 birds (or an alternative target based on the PVA) for at least 5 consecutive years, and there are multiple self-sustaining breeding populations, including multiple populations present on at least Kauai/Niihau, Oahu, Maui, and Hawaii.

The downlisting goals for this species have not been met (Table 1), not all threats are being managed, and some threats may be increasing, including avian botulism (Table 2). Therefore, the ‘alae ke‘oke‘o meets the definition of endangered as it remains in danger of extinction throughout its range.

**Recommendations for Future Actions:**

- Habitat and natural process management and restoration – Protect all core and at least 50 percent of supporting wetlands. Develop management plans for core and supporting wetlands.
- Predator / herbivore monitoring and control – Continue predator control and implement improved methods as they become available.
- Invasive plant monitoring and control – Remove nonnative, invasive plants and improve altered wetland hydrology as appropriate.
- Disease monitoring and control – Continue to monitor for botulism and if detected, implement actions to minimize the immediate threat. Research and develop new tools to prevent botulism related mortality.
- Surveys / inventories – Continue annual State-wide waterbird counts. These data are not analyzed for other than basic status of the species. Directed analysis of the waterbird count data could identify correlations, including use of specific wetlands, time of year, and state of the wetlands, that could improve our ability to manage for the ‘alae ke‘oke‘o as well as other endangered waterbirds.
- Population viability monitoring and analysis – Conduct a population viability analysis to identify population numbers and time spans to serve as predictors of long term recovery for this species.

**Table 1. Status and trends of Hawaiian Coots from listing through current 5-year review.**

| <b>Date</b>                      | <b>No. adult wild individuals</b>     | <b>Downlisting Criteria identified in Recovery Plan</b>   | <b>Downlisting Criteria Completed?</b> |
|----------------------------------|---------------------------------------|---|--|
| 1967 (listing)                   | 275 counted (USFWS 1985)*             | No recovery plan developed yet.   | N/A                                    |
| 1978 (recovery plan, USFWS 1978) | 2,500 in 1977 (USFWS 1978)            | 1. The preservation and enhancement of primary habitat areas on all the islands indicate the species’ habitats have become secure and their populations become self-sustaining.                                   | No                                     |
|                                  |                                       | 2. The annual and midsummer population censuses indicate the population is maintaining its minimum numbers, as stated in the primary objective of the recovery plan for 3 consecutive years (1976) as base year). | No                                     |
| 1985 (recovery plan, USFWS 1985) | 2,823 1984 winter count (USFWS 1985)* | 1. Provide and maintain populations of at least 2,000 Hawaiian Coots in the habitats and with the island distribution existing in 1976.   | Partially.                             |
|                                  |                                       | 2. The preservation and enhancement of primary habitat areas on all islands indicate the species’ habitats have become legally secure and their   | No                                     |

|                                       |  |  |    |
|---------------------------------------|--|--|----|
|                                       |  | populations become self-sustaining.  |    |
|                                       |  | 3. The annual winter and midsummer population censuses indicate these populations are maintaining their minimum numbers, as stated in the primary objective of the recovery plan, for 3 consecutive years.   | No |
| 2009 (5-year review)                  | Hawaiian Coot numbers have fluctuated below 2,000 birds for the past five years during summer and winter counts (USFWS 2010) | 1. Provide and maintain populations of at least 2,000 Hawaiian Coots in the habitats and with the island distribution existing in 1976.  | No |
|                                       |  | 2. The preservation and enhancement of primary habitat areas on all islands indicate the species' habitats have become legally secure and their populations become self-sustaining.  | No |
|                                       |  | 3. The annual winter and midsummer population censuses indicate these populations are maintaining their minimum numbers, as stated in the primary objective of the recovery plan, for 3 consecutive years.   | No |
| 2011 (recovery plan, second revision) | 1,500 to 2,800 Hawaiian Coots (HDOFAW 1976-2008, USFWS 2011)   | 1. All core wetlands are protected and managed in accordance with management practices outlined in recovery plan.  | No |
|                                       |  | 2. At least 50 percent of all supporting wetlands are protected and managed in accordance with management practices outlined in recovery plan.   | No |
|                                       |  | 3. A population viability analysis (PVA) has been conducted to determine the population size necessary for long-term viability of the species. The statewide surveyed number of Hawaiian Coots shows a stable or increasing trend and has not declined below 2,000 birds (or an alternative target based on the PVA) for at least 5 consecutive years. | No |
|                                       |  | 4. There are multiple self-sustaining breeding populations, including multiple populations present on at least Kauai/Niihau, Oahu, Maui, and Hawaii.   | No |
| 2015 (5-yr review)                    | 1,500 to 2,800 Hawaiian Coots (HDOFAW 1976-2008, USFWS 2011)   | 1. All core wetlands are protected and managed in accordance with management practices outlined in recovery plan.  | No |
|                                       |  | 2. At least 50 percent of all supporting wetlands are protected and managed in accordance with management practices outlined in recovery plan.   | No |

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|--|--|--|----|
|  |  | 3. A population viability analysis (PVA) has been conducted to determine the population size necessary for long-term viability of the species. The statewide surveyed number of Hawaiian Coots shows a stable or increasing trend and has not declined below 2,000 birds (or an alternative target based on the PVA) for at least 5 consecutive years. | No |
|  |  | 4. There are multiple self-sustaining breeding populations, including multiple populations present on at least Kauai/Niihau, Oahu, Maui, and Hawaii.   | No |

**Table 2. Threats to the Hawaiian Coot and ongoing conservation efforts.**

| Threat  | Listing factor | Current Status | Conservation/ Management Efforts   |
|---|----------------|----------------|--|
| Loss and degradation of wetland habitat                               | A              | Ongoing        | Partial: Restoration efforts in place for some wetlands                              |
| Alteration of hydrology   | A              | Ongoing        | Partial: Restoration efforts in place for some wetlands                              |
| Invasion of habitat by non-native plants                              | A              | Ongoing        | Partial: Restoration efforts in place for some wetlands                              |
| Alien predators   | C              | Ongoing        | Partial: Predator control measures in place for some wetlands                        |
| Avian Disease   | C              | Ongoing        | Partial: Monitoring of wetland areas and removal of carcasses for botulism outbreaks |
| Contaminants  | E              | Ongoing        | No   |
| Human Disturbance   | E              | Ongoing        | Partial: Education of personnel on islands   |
| Small population size/genetic diversity loss/stochastic vulnerability | E              | Ongoing        | Partial: Habitat restoration to increase population size.                            |
| Climate change and sea level rise                                     | A, E           | Increasing     | No   |

\*Census data from annual Hawaiian Waterbird Count (USFWS 1985).

**References:**

**See previous 5-year review for a full list of references (USFWS 2010). Only references not listed in that document are provided below.**

Engilis, A. Jr. and T.K. Pratt. 1993. Status and population trends of Hawaii’s native waterbirds, 1977-1987. *Wilson Bulletin* 105: 142-158.

[HDOFAW] Hawaii Division of Forestry and Wildlife. 1976-2008. Biannual Hawaiian waterbird survey data. Summarized by Hawaii Natural Heritage Program and Pacific Islands Fish and wildlife Office, Honolulu, Hawaii.

- U.S. Fish and Wildlife Service. 1985. Recovery plan for the Hawaiian waterbirds. U.S. Fish and Wildlife Service, Portland, Oregon. 99 pages.
- U.S. Fish and Wildlife Service. 2010. Hawaiian Coot or 'alae ke'oke'o (*Fulica alai*) 5-year review summary and evaluation. U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office, Honolulu, Hawaii. 9 pages.
- U.S. Fish and Wildlife Service. 2011. Recovery plan for Hawaiian waterbirds, second revision. U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office, Portland, Oregon. xx + 233 pages.
- U.S. Fish and Wildlife Service. 2013. Endangered and threatened wildlife and plants; initiation of 5-year status reviews of 44 species in Oregon, Hawaii, Guam, and the Northern Mariana Islands. Federal Register 78(24):8185-8187.

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**U.S. FISH AND WILDLIFE SERVICE**  
**5-YEAR REVIEW of Hawaiian Coot (*Fulica alai*)**

Pre-1996 DPS listing still considered a listable entity? N/A

Recommendation resulting from the 5-year review:

- Delisting
- Reclassify from Endangered to Threatened status
- Reclassify from Threatened to Endangered status
- No Change in listing status

Appropriate Listing/Reclassification Priority Number, if applicable: \_\_\_\_\_

*for* Programmatic Deputy Field Supervisor, Pacific Islands Fish and Wildlife Office

*Maria M. Buegman*

Date *2015-07-06*