

5-YEAR REVIEW

Short Form Summary

Species Reviewed: Hawaiian Common Gallinule (*Gallinula chloropus sandvicensis*)

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, Hawaii

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 Common Gallinule (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 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).

Review Analysis:

Please refer to the second revision of the recovery plan for Hawaiian waterbirds (USFWS 2011) and the previous 5-year review for the `alae `ula or Hawaiian Common Gallinule (called the Hawaiian Common Moorhen at the time) published on August 27, 2010 (available at http://ecos.fws.gov/docs/five_year_review/doc3340.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 Common Gallinule as endangered.

The Hawaiian Common Gallinule or `alae `ula currently occurs only on the islands of Kauai and Oahu having been extirpated from Molokai (sometime after the 1940s), from

Maui (after the late 1940s), and from Hawaii in 1887 (USFWS 2011). One of the main priorities in the revised recovery plan is to reintroduce this species to at least two additional islands (USFWS 2011). Because this species is so secretive and difficult to census, current survey data are considered inadequate. The state-wide biannual waterbird counts provide a rough idea of recent population trends, but an accurate population estimate is not available (Hawaii Division of Forestry and Wildlife 1976-2008, USFWS 2011). The current status for the `alae `ula, as known, is provided in Table 1 below. Threats to the species continue, including predation, degradation of wetlands, and avian disease.

New status information:

- The scientific and common names of this species have been changed from Hawaiian Common Moorhen (*Gallinula chloropus sandvicensis*) to Hawaiian Common Gallinule (*Gallinula galeata sandvicensis*) due to recent research indicating that the New World and Old World populations are separate species (Chesser *et al.* 2011; T. Chesser, U.S. Geological Survey, *in litt.* 2012). This taxonomic change has been accepted by USFWS (2015) and will be used subsequently.
- Counts of `alae `ula have been stable, but remain low, with average totals of 287 birds over 10 years from 1998 to 2007 (HDOFAW 1976-2008, USFWS 2011). The inaccuracy of current methodology used in the statewide waterbird counts for this species is demonstrated by the extreme differences in numbers between summer and winter counts of lotus fields on Oahu. Updating and increasing the accuracy of surveys for this species is an important action in the recovery plan (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 revised 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 `ula 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. In addition, an improved survey technique has been developed and implemented.

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 `ula meets the definition of endangered as it remains in danger of extinction throughout its range.

Recommendations for Future Actions:

- Protect all core and at least 50 percent of supporting wetlands. Develop management plans for core and supporting wetlands.
- Reintroduce the `alae `ula to a protected and managed site on at least two additional islands (Maui, Moloka`i, Lāna`i, Hawai`i) and monitor survival, dispersal, and reproduction.
- Continue predator control and implement improved methods as they become available.
- 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.
- Continue biannual 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 `ula as well as other endangered waterbirds.
- Incorporate improved survey techniques for this species into the biannual state-wide waterbird surveys.
- 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 Common Gallinule from listing through current 5-year review.

Date	No. adult wild individuals	Downlisting Criteria identified in Recovery Plan	Downlisting Criteria Completed?
1967 (listing)	16 counted (USFWS 1985)*	No recovery plan developed yet.	N/A
1978 (recovery)	750: 500 on Kauai and	1. The preservation and enhancement of	No

plan, USFWS 1978)	250 on Oahu (USFWS 1978)	primary habitat areas on all the islands indicate the species' habitats have become secure and their populations become self-sustaining.	
		2. The biannual winter 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)	334 - 1984 winter count (USFWS 1985)*	1. Provide and maintain populations of at least 2,000 Hawaiian Common Gallinule 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 biannual (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
2010 (5-year review)	Hawaiian Common Gallinule numbers have fluctuated under 450 during winter counts and under 400 for summer counts for the past five years (USFWS 2010)	1. Provide and maintain populations of at least 2,000 Hawaiian Common Gallinule 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 biannual 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)	Over 10 years, average totals of 287 birds from surveys between 1998 to 2007 (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 Common Gallinule 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)	Over 10 years, average totals of 287 birds from surveys between 1998 to 2007 (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 Common Gallinule 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 Common Gallinule 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 Statewide biannual 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.

Chesser, R.T., R.C. Banks, F.K. Barker, C. Cicero, J.L. Dunn, A.W. Kratter, I.J. Lovette, P.C. Rasmussen, J.V. Remsen, J.D. Rising, D.F. Stotz, and K. Winker. 2011. Fifty-second supplement to the American Ornithologists' Union checklist of North American Birds. *Auk* 128: 600-613.

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. 1978. Hawaiian waterbirds recovery plan. U.S. Fish and Wildlife Service, Portland, Oregon. 93 pages + comment letters.

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 Common Moorhen or `alae `ula 5-year review. U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office, Honolulu, HI. 10 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.

U.S. Fish and Wildlife Service. 2015. Endangered and threatened wildlife and plants; Technical corrections for 54 wildlife and plant species on the list of endangered and threatened wildlife and plants. *Federal Register* 80(120):35860-35869.

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Chesser, Terry. 2012. U.S. Geological Survey-Biological Resources Division, Patuxent Wildlife Research Center, National Museum of Natural History, Washington D.C. E-mails to Annie Marshall, U.S. Fish and Wildlife Service, November 21, and 22, 2012. Subject: question on name change for Hawaiian Common Moorhen in light of Chesser *at al.* 2011 AOU publication.

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U.S. FISH AND WILDLIFE SERVICE
5-YEAR REVIEW of Hawaiian Common Gallinule (*Gallinula galeata sandvicensis*)

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: _____

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