5-YEAR REVIEW

Short Form Summary

Species Reviewed: ʻAlae ʻula (Hawaiian gallinule; *Gallinula galeata sandvicensis*)

Current Classification: Endangered

FR Notice announcing initiation of this review:

[USFWS] U.S. Fish and Wildlife Service. 2024. Endangered and Threatened Wildlife and Plants; Initiation of 5-Year Status Reviews for 100 Species in American Sāmoa, California, Hawaiʻi, Idaho, Oregon, and Washington. Federal Register 89(55):19861–19864.

Lead Region/Field Office: Region 1/Pacific Islands Fish and Wildlife Office (PIFWO), Honolulu, Hawaiʻi

Name of Reviewer(s):

James Breeden, Fish and Wildlife Biologist, PIFWO
John Vetter, Animal Recovery Coordinator, PIFWO
Megan Laut, Recovery Team Manager, PIFWO

Methodology used to complete this 5-year review: This review was conducted by staff of the PIFWO of the U.S. Fish and Wildlife Service (USFWS), beginning in May 2026. The review was based on a review of current, available information since the last 5-year review for the ʻalae ʻula (Hawaiian common gallinule, *Gallinula galeata sandvicensis*) (USFWS 2021, entire). The evaluation by James Breeden, Fish and Wildlife Biologist, was reviewed by John Vetter, the Animal Recovery Coordinator, and Megan Laut, the Recovery Program Manager.

Background:

For information regarding the species' listing history and other facts, please refer to the USFWS Environmental Conservation Online System database for threatened and endangered species at *http://ecos.fws.gov/ecp/species/6612*).

Review Analysis:

Please refer to the Recovery Plan for Hawaiian Waterbirds (USFWS 2011, entire) and the previous 5-year reviews for the ʻalae ʻula published on August 27, 2010; August 03, 2015; and August 25, 2021 (available at https://ecos.fws.gov/docs/tess/species_nonpublish/1648.pdf, https://ecos.fws.gov/docs/tess/species_nonpublish/2283.pdf, and https://ecos.fws.gov/docs/tess/species_nonpublish/3476.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 ʻalae ʻula as endangered.

The ʻalae ʻula (Hawaiian common gallinule, *Gallinula galeata sandvicensis*) is a subspecies of the widespread common gallinule that is endemic to the Hawaiian Islands. Currently restricted to the islands of Kauaʻi and Oʻahu, ʻalae ʻula were historically found

on all the main Hawaiian Islands except Lānaʻi and Kahoʻolawe (Paxton et al., 2021, p. 426; HDLNR 2025, p. 357). Although there have been unconfirmed reports from the Keʻanae Peninsula on Maui and from the island of Hawaiʻi (HDLNR 2025, p. 357). They use natural ponds, marshes, streams, springs or seeps, lagoons, grazed wet meadows, taro and lotus paddies, shrimp-aquaculture ponds, reservoirs, sedimentation basins, sewage ponds, drainage ditches, and brackish water habitats (HDLNR 2025, p. 358).

Most ʻalae ʻula nests are inconspicuously placed within dense emergent vegetation over in areas with standing freshwater less than 60 centimeters (24 inches) deep (USFWS 2011, p. 43). The emergent vegetation is folded over into a platform nest (Shallenberger 1977, cited in USFWS 2011, p. 43). Where emergent aquatic vegetation is insufficient, nests may be placed on the ground, but most have tall cover nearby (USFWS 2011, p. 43).

New status information:

- Population estimates declined from approximately 927 individuals (2012–2016 average) to about 737 individuals in 2022 (Paxton et al. 2021, p. 430; Gorresen et al. 2024, p. 12). The global five-year average population estimate (2019–2023) for the ʻalae ʻula was 712 (573–876; Table 1) (Gorresen et al. 2024, pp. 3–4). The species is distributed across two populations: one on Kauaʻi, estimated at 485 individuals (383–611), and one on Oʻahu, estimated at 230 individuals (108–437) (Gorresen et al. 2024, p. 12).
- Recent ʻalae ʻula counts indicate a reversal of the long-term population increase observed over the past 38 years, with declines from 2013–2023, especially on Kauaʻi, which had previously shown strong growth (Paxton et al. 2021, pp. 430–435; Gorresen et al. 2024, p. 12). Core wetlands still support about half of the global population (2022 mean = 737), but declines in these areas are more pronounced than in non-core sites, suggesting faster decreases in key habitats (Gorresen et al. 2024, p. 12). Population estimates may also be incomplete because the species is cryptic and under-sampled in lotic habitats like streams and drainage systems (Gorresen et al. 2024, p. 12). Additionally, wide credible intervals and survey limitations indicate that counts likely underestimate true population size (DesRochers et al. 2008, entire; Gorresen et al. 2024, p. 12).
- A recent study monitored waterbird movements using a tracking station and automated radio-telemetry at Ford Island on the island of Oʻahu occurred within core (i.e., James Campbell NWR**,** Hāmākua Marsh, Kawainui Marsh, Honouliuli, Pouhala) and supporting (i.e., Āhua Reef, Loko Paʻaiau, Pearl City Peninsula wetlands) wetlands shows that ʻalae ʻula have very limited movement among monitored wetlands, with 13 tracked individuals remaining at a single wetland for an average residency of 0.93 over an average of 135 days. Although occasional gaps in detections (2–25 days) suggest some temporary movements outside monitored wetlands, no regular inter-wetland dispersal was detected. Urban development surrounding wetlands in the Pearl Harbor area likely restricts dispersal and may negatively affect long-term metapopulation dynamics and gene flow (Paxton et al. 2023, pp. 17–18).

- Data collected from 2017–2023 show that early brood survival was lower on Kauaʻi (0.82) than on Oʻahu (0.98) (van Rees et al. 2024, p. 106). Lower hatching success and chick survival on Kauaʻi suggest that the Kauaʻi population is nearing carrying capacity, which increases reproductive competition and nest abandonment (van Rees et al. 2024, p. 110).
- Research from 2020–2021 at the Hanalei National Wildlife Refuge on the island of Kauaʻi found that camera monitoring doesn't impact nest survival (Webber 2022, pp. 8–20, Webber et al. 2025, pp. 4–5). Impacts of farming practices (e.g., harvesting and weeding) on overall nest success were small, but showed that water-level manipulations may be linked to an increase in nest failure (Webber 2022, p. 38), and nest abandonment was the leading cause of nest failure, although the cause of nest abandonment was unclear (Webber 2022, p. 40).
- Recent restoration efforts to restore wetland agroecology systems at Heʻeia National Estuarine Research Reserve on the island of Oʻahu (e.g., loʻi kalo) show that invasive dominated wetlands that have displaced native waterbirds can be managed to create suitable ʻalae ʻula nesting and foraging habitat (Harmon et al. 2022, entire).
- Recent analysis comparing measurements of ʻalae ʻula and the North American common gallinule (*Gallinula galeata cachinnans*) show that ʻalae ʻula have smaller wing chord, larger culmen, larger tarsi, and larger body masses than the North American common gallinule (van Rees 2020, p. 345).
- A genetic study comparing ʻalae ʻula from the island of Oʻahu at James Campbell NWR and the island of Kauaʻi at Hanalei NWR showed genes to be highly structured at the microsatellite loci across all markers, with restricted gene flow (Sonsthagen et al. 2018, p. 869). Gene flow is restricted between the two islands, indicating that genetic drift likely influenced genetic diversity (Sonsthagen et al. 2018, pp. 869–870).

New threats:

- Recent studies show that the small Indian mongoose (*Urva auropunctata*) is the primary nest predator for three endemic Hawaiian waterbirds (Rodriguez 2026, p. 22, Works et al. 2024, entire; Works et al. 2025, p. 606). Mongoose foraging activity displays distinct temporal variations, with nest predation escalating significantly during the dry season and peaking during warm afternoon hours rather than cooler mornings (Works et al. 2025, p. 607). This diurnal pattern strongly indicates that elevated predation rates are a function of increased incubation swapping among adult waterbirds in the afternoon, which ultimately enhances visual detection by mongooses (Works et al. 2025, p. 607).
- Powerlines and roads together create a significant source of mortality for the ʻalae ʻula, with birds frequently colliding with wires or being struck by vehicles in the same areas (Travers et al. 2023, p. 7, 10). Most grounded or injured birds are found along roadways where powerlines are present, showing that these overlapping infrastructures concentrate risk (Travers et al. 2023, p. 7). Even when powerline collisions occur first, many birds are subsequently hit by vehicles, making secondary impacts a major contributor to death (Travers et al. 2023, p. 7). In some locations, such as highways near key wetland habitats on Kauaʻi, both threats interact so strongly that the primary cause of mortality is often difficult to determine and

effective conservation must address both powerline collisions and vehicle strikes together rather than treating them as separate threats (Travers et al. 2023, p. 10).

- Highly pathogenic avian influenza (caused by *Influenza A virus*) is an emerging threat in Hawai‘i that could have negative implications for ‘alae ‘ula. The virus was first detected in the state in 2024 and has since been confirmed in both domestic and wild birds, likely introduced via migratory species along the Pacific flyway (USDA APHIS 2024; Hawai‘i Wildlife Center 2024). Waterbirds—including gallinules, coots, ducks, and herons—are considered particularly high-risk for infection due to their ecology and frequent contact with other birds in wetland habitats (Hawai‘i Wildlife Center 2024). Avian influenza is highly infectious and often causes rapid mortality in birds, raising concern that outbreaks could significantly reduce already small and declining populations of native waterbirds (HDAB 2026). Because ‘alae ‘ula are concentrated in a limited number of wetlands on O‘ahu and Kaua‘i, the spread of the disease within or between these sites could lead to substantial population losses in a short period. Additionally, the presence of carcasses in wetlands can facilitate further disease transmission and secondary outbreaks (e.g., botulism), compounding impacts on ‘alae ‘ula.

New management actions:

- The Hawai‘i Department of Land and Natural Resources recently completed a 20-hectare (ha, 50-acre [ac]) wetland restoration project in the Mānā Plains Forest Reserve on Kaua‘i and plans to restore an additional 20 ha (50 ac; Siddiqi 2026, in litt., entire). To improve habitat functionality, restoration activities included dredging to establish open-water ponds, installing water-control pumps, removing invasive vegetation, and outplanting native species (Siddiqi 2026, in litt., entire).
- A new technique was developed to more safely capture ‘alae ‘ula by modifying a previous trap design with a baited, remote-operated cage trap, offering a highly selective method with low injury rates and minimal training required. This technique successfully captured multiple individuals at once including both adult and juvenile birds and may be adaptable for other wetland bird species with similar behaviors (Ziegler and Works 2025, entire).
- James Campbell NWR is conducting research trials to enhance habitat security and quality. Construction is currently underway on a comprehensive predator-proof fence designed to minimize small mammal depredation, with completion anticipated in October 2026 (Goodale 2026, in litt., entire). In addition, the refuge is conducting targeted salinity trials to determine the ecological effectiveness of salinity manipulation as a long-term management strategy for managing bullfrogs (*Lithobates catesbeianus*) (Goodale 2026, in litt., entire).
- Two recent studies were conducted to look at the feasibility of reintroducing ‘alae ‘ula to a third Hawaiian island (van Rees and Reed 2024, entire; VanderWerf 2024, entire). The analysis identified Hōkūala Resort and Hanalei National Wildlife Refuge on Kaua‘i, alongside James Campbell National Wildlife Refuge and Hamakua Marsh on O‘ahu, as the optimal source sites to capture existing genetic variation (van Rees and Reed, p. 3; VanderWerf 2024, pp 15–22). For release locations, ‘Aimakapā Pond on the island of Hawai‘i scored as the top immediate option, while Kanahā Pond, Keālia Pond, Nu‘u, and Waihe‘e on Maui represent the best long-term sites once

extensive habitat restoration is completed (VanderWerf 2024, pp. 22–45). Furthermore, translocations of ‘alae ‘ula to areas within their former range aligns with Hawaiian culture and values (Gomes 2024, entire).
    - VanderWerf 2024 (p. 61) recommends a two-year translocation timeline, using cohorts of no more than 10 birds per year per site released during the winter months. Similarly, modeling by van Rees and Reed 2024 (p. 6) indicate that gradual (3 smaller translocations, once every 3 years, over a 9-year period) are more successful than moving birds all at one time.
    - To maximize successful colonization, founding sites should have a minimum carrying capacity of 30 individuals and source sites should not be reduced lower than 50 individuals (van Rees and Reed 2024, pp. 6–7).
    - Long-term translocation success hinges on predator exclusion or control, active wetland water-level management, and securing Hawaiian and local community support (VanderWerf 2024, p. 25).
- ‘Alae ‘ula population modeling for the island of O‘ahu show that the likelihood of the extirpation in approximately 160 years is near-zero (van Rees and Reed 2018, p. 28). Although overall population declines would lead to decreased genetic diversity (van Rees and Reed 2018, p. 28). Modeling showed that the primary driver affecting population growth and extirpation probabilities is juvenile survival (van Rees and Reed 2018, p. 28).
- To mitigate avian powerline collision risks to waterbirds, local utility management used line-strike data to modify infrastructure (Travers et al. 2023, p. 9). These avian protection efforts centered on consolidating lines, lowering wires, removing top static lines, and installing bird diverters (Travers et al. 2023, p. 9; Table 2).

Table 1. Status and trends of ‘alae ‘ula 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, p. 29)	No recovery plan developed yet.	N/A
1978 (recovery plan, USFWS 1978)	750: 500 on Kaua‘i and 250 on O‘ahu (USFWS 1978, p. 9)	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 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, using 1976 as the base year.	No

1985 (recovery plan, USFWS 1985)	334 - 1984 winter count (USFWS 1985, p. 29)	1. Provide and maintain populations of at least 2,000 ‘alae ‘ula in their 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)	‘Alae ‘ula numbers have fluctuated under 450 during winter counts and under 400 for summer counts for the past five years (USFWS 2010, p. 5).	1. Provide and maintain populations of at least 2,000 ‘alae ‘ula 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	1. All core wetlands are protected and managed in accordance with management practices outlined in recovery plan.	No

	1976–2008, entire; USFWS 2011, p. 37)		
		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 PVA has been conducted to determine the population size necessary for long-term viability of the species. The statewide surveyed number of ʻalae ʻula 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 Kauaʻi /Niʻihau, Oʻahu, Maui, and the island of Hawaiʻi.	No
2015 (5-yr review)	Over 10 years, average totals of 287 birds from surveys between 1998 to 2007 (HDOFAW 1976–2008, entire; USFWS 2011, p. 37)	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 PVA has been conducted to determine the population size necessary for long-term viability of the species. The statewide surveyed number of ʻalae ʻula 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	No

		least Kauaʻi /Niʻihau, Oʻahu, Maui, and the island of Hawaiʻi.	
		5. An improved survey technique has been developed and implemented.	No
2021 (5-yr review)	A minimal 5-yr average of 927 (678–1,235) birds from surveys between 2012 and 2016 (Paxton et al. 2021, p. 12).	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 PVA has been conducted to determine the population size necessary for long-term viability of the species. The statewide surveyed number of ʻalae ʻula 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 Kauaʻi /Niʻihau, Oʻahu, Maui, and the island of Hawaiʻi.	No
		5. An improved survey technique has been developed and implemented.	No
2026 (5-yr review)	The 5-yr average of birds from 2019–2023 was 712 (573–876) (Gorresen et al. 2024, pp. 3–4).	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 PVA has been conducted to determine the population size necessary for long-term viability of	No

		the species. The statewide surveyed number of ʻalae ʻula 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.	
		4. There are multiple self-sustaining breeding populations, including multiple populations present on at least Kauaʻi /Niʻihau, Oʻahu, Maui, and the island of Hawaiʻi.	No
		5. An improved survey technique has been developed and implemented.	No

Table 2. Threats to the ʻalae ʻula 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 nonnative 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	C	Ongoing	No
Human Disturbance	E	Ongoing	Partial: Efforts to reduce waterbird collisions with utility lines are occurring in some areas which include consolidating power lines, lowering wire heights, removing overhead static lines, and installing bird diverters.
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

Synthesis:
The current global population of ʻalae ʻula is approximately 712 individuals (Gorresen et al. 2024, pp. 3–4), decreasing from the estimated 927 individuals from surveys in 2012–2016 (Paxton et al. 2021, p. 430). The species is currently distributed across two populations: one on Kauaʻi, estimated at 485 individuals (383–611), and one on Oʻahu, estimated at 230 individuals (108–437) (Gorresen et al. 2024, pp. 3–4).

ʻAlae ʻula are primarily threatened by habitat loss and degradation, as historic wetland drainage and ongoing urban development have reduced and fragmented its available habitat. Introduced predators such as mongooses, rats (*Rattus* spp.), feral cats (*Felis catus*), and dogs (*Canis lupus familiaris*) significantly lower nesting success by preying on eggs and chicks. Invasive plants further degrade wetlands by altering the structure of feeding and nesting areas. Additional pressures include human disturbance, powerline strikes, and vehicle collisions near urban wetlands. Climate change, particularly sea level rise and increased flooding, poses a growing long-term threat by reducing the extent and quality of low-lying coastal wetlands, while small and isolated populations increase the species' vulnerability to stochastic events and limit recovery potential. To counter these pressures, conservation agencies implement partial management efforts within select high-priority wetlands. These actions include localized hydrological restoration and invasive vegetation removal to improve habitat quality, installation of predator proof fencing, salinity management trials to control bullfrogs, alongside targeted trapping to suppress mammal populations. Regular wetland monitoring and rapid carcass removal are deployed to mitigate botulism outbreaks, while infrastructure modifications—such as consolidating utility lines, lowering wire heights, removing overhead static lines, and installing bird diverters—are utilized in key areas to reduce fatal waterbird collisions (Table 2).

Downlisting and delisting objectives are provided in the recovery plan for Recovery Plan for Hawaiian Waterbirds (USFWS 2011, pp. vii–viii, ix). To be downlisted, 1) all core wetlands on the islands of Kauaʻi and Oʻahu must be protected and managed in accordance with the management practices outlined in this recovery plan; 2) of the supporting wetlands on the islands of Kauaʻi and Oʻahu, at least 50 percent are protected and managed in accordance with the management practices outlined in this recovery plan; and 3) a population viability analysis has been conducted, incorporating surveys that can effectively detect secretive individuals in dense vegetation, to determine the population size necessary for long term viability of the species and the statewide population shows a stable or increasing trend with more than 2,000 birds (or an alternative target based on the population viability analysis) for at least 5 consecutive years; 4) there are multiple self-sustaining breeding populations, including multiple populations present on Kauaʻi and Oʻahu and on at least two additional islands (Maui, Molokaʻi, Lānaʻi, or Hawaiʻi); and 5) an improved survey technique has been developed and implemented. Given the low numbers, current population trends and ongoing threats that are only partially managed along with new and emerging threats, the overall status of the species is declining. Therefore, the ʻalae ʻula continues to meet the definition of endangered as it remains in danger of extinction throughout its range.

Recommendations for Future Actions:

- Protect all core wetlands and at least 50 percent of supporting wetlands. Develop management plans for core and supporting wetlands.
- Reintroduce the ʻalae ʻula to a protected and managed site on at least two additional islands (Maui, Molokaʻi, Lānaʻi, Hawaiʻi) 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, particularly in core wetlands that are critical for stabilizing populations.
- 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. Directed analysis of the waterbird count data can be used to identify correlations, including use of specific wetlands, time of year, and state of the wetlands, that could improve management for the ʻalae ʻula and other endangered waterbirds: incorporate double observer surveys into current methods, use replicated sampling methods to correct for missed birds and remove bias, and standardize the recording of specific survey conditions that alter detectability.
- 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.
- Maintaining habitat connectivity among wetlands may support movement and persistence of subpopulations across the ʻalae ʻula limited range.
- Reduce the attractiveness of roadside habitats by modifying vegetation management practices (e.g., limiting low-cut grass that encourages foraging near roads), preventing the growth of palatable vegetation, and installing physical barriers.
- Develop integrated management approaches that address both powerline collisions and vehicle strikes simultaneously rather than treating them as separate threats.

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See previous 5-year reviews for additional references.

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U.S. FISH AND WILDLIFE SERVICE

SIGNATURE PAGE for 5-YEAR REVIEW on ‘Alae ‘ula (Hawaiian 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
____X____	No Change in listing status

Review Conducted By: James Breeden, Fish and Wildlife Biologist, PIFWO
John Vetter, Animal Recovery Coordinator, PIFWO
Megan Laut, Recovery Team Manager, PIFWO

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

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