

5-YEAR REVIEW

Short Form Summary

Species Reviewed: *Psychotria malaspinae* (Aplokating-palaoan)

Current Classification: Endangered

Federal Register Notice announcing initiation of this review:

[USFWS] U.S. Fish and Wildlife Service. 2022. Endangered and Threatened Wildlife and Plants; Initiation of 5-Year Status reviews for 167 Species in Oregon, Washington, Idaho, Montana, California, Hawaii, Guam, and the Northern Mariana Islands . Federal Register 87(90): 28031–28034, May 10, 2022.

Lead Region/Field Office:

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

Name of Reviewer:

Laura Alexandria Gombar, Biologist, PIFWO

Lauren Weisenberger, Plant Recovery Coordinator, PIFWO

Megan Laut, Recovery Program Manager, PIFWO

Methodology used to complete this 5-year review:

This review was conducted by staff of the Pacific Islands Fish and Wildlife Office (PIFWO) of the U.S. Fish and Wildlife Service (Service) beginning in October 2023. The review was based on a review of current, available information since the last 5-year review for *Psychotria malaspinae* (USFWS 2020). The evaluation by Laura Alexandria Gombar, Biologist, was reviewed by Lauren Weisenberger, Plant Recovery Coordinator, and Megan Laut, Recovery Program Manager.

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/ecp/species/9759>).

Review Analysis:

Please refer to the previous 5-year review for *Psychotria malaspinae* published in the Federal Register on December 15, 2020 (available at https://ecos.fws.gov/docs/tess/species_nonpublish/3219.pdf) for a complete review of the species' status, threats, management efforts, and references cited. We are not aware of any significant new information regarding the species' biological status since listing to warrant a change in the Federal listing status of *P. malaspinae*.

This long-lived perennial tree in the Rubiaceae (coffee) family is endangered and is known from the island of Guam. The status and trends for *Psychotria malaspinae* are provided in the tables below.

New Status Information:

- Currently, there are five populations in five locations, with approximately eight wild (naturally occurring) individuals (USFWS 2023, p. 18; ARC Environmental Services Inc. 2018, p. 5).
- The Ritidian Point Ungulate AAFB population, last observed in 2018 consisting of five individuals, has since been identified as *Psychotria hombroniana* and cleared for development (DON 2017, p. 2).
- As of May 2019, GPEPP propagated 22 individuals and translocated 12 of these individuals (USFWS 2023, p. 16). However, the most recent GPEPP report shows only *P. hombroniana* in both propagules and transplanting efforts. (GPEPP 2023, p. 2-3).
- In 2018, ARC Environmental Services Inc. conducted a tree snail survey in the Marbo cave area and observed two *P. malaspinae* individuals being used as perch taxa for *Samoana fragilis* (ARC Environmental Services Inc. 2018, p. 5).
- Currently, there are no founder lines represented in *ex situ* storage and propagation collections, including seeds in seed banks, explants in tissue culture, vegetative material, seeds, spores, or embryos in cryopreservation, plants in a nursery or living collection. There are 17 propagules of a congener, *Psychotria hombroniana*, in the Guam Plant Extinction Prevention Program (GPEPP) nursery (GPEPP 2023, p.2).
- There is some difficulty in identifying and taxonomic confusion between *P. malaspinae* and *P. hombroniana*.

New Threats:

- No new threats.

New Management Actions:

- Joint Region Marianas (JRM) surveyed for ESA-listed species, including *P. malaspinae*, at the Naval Munitions Site (NMS) and Naval Base Guam Telecommunication Site, Tarague Triangle, MSA Igloos, THAAD, and other projects to document locations and estimate population densities in sites that are proposed for ungulate exclusion and forest restoration (JRM 2019 and 2020).

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

Date	No. wild individuals	No. Outplanted	Preventing Extinction Goals identified in Recovery Plan	Preventing Extinction Goals Completed?
2015 (Listing)	6 mature plants (no seedlings)	0	All threats managed in all three populations	No
			Complete genetic storage	No
			Three populations with 25 mature individuals each	No
2020 (5-year review)	8-12	12	All threats managed in all three populations	Partial: One population is within an ungulate-fenced area (Ritidian Point)
			Reproduction (i.e., viable seeds, seedlings, saplings) at all three populations	No
			Complete genetic storage	No
			Three populations with 25 mature individuals each	No
2024 (5-year review)	8	12*	All threats managed in all three populations	No
			Complete genetic storage	No
			Natural reproduction at all three populations	No
			Three populations with 25 mature individuals each	No

*It is unknown whether the 12 individuals that were transplanted by GPEPP are identified as *P. malaspinae* or *P. hombroniana*

Table 2. Threats to *Psychotria malaspinae* and ongoing conservation efforts.

Threat	Listing factor	Current Status	Conservation/ Management Efforts
Agricultural, military training and urban development loss of degradation of habitat	A	Ongoing	Partial, Efforts to assure conservation of native limestone forest initiated: preparation of HCP, REPI habitat protections
Ungulate destruction and degradation of habitat	A	Ongoing	None
BTS degradation of habitat	A	Ongoing	DoD, USGS, USDA-APHIS, DOI, USFWS, and local collaborations to develop and implement brown treesnake control measures.
Rodent degradation of habitat	A	Ongoing	None
Ecosystem altering invasive plant species degradation of habitat	A	Ongoing	Partial; Invasive plant removal is ongoing at Ritidian Point and similar limestone forest sites, such as the Habitat Management Unit (HMU) on Andersen AFB, where this species may be conserved.
Typhoons and climate change degradation or loss of habitat	A	Ongoing	Partial; propagation is ongoing for the species and a congener, <i>P. hombroniana</i> .
Herbivory by ungulates, rodents	C	Ongoing	None
Inadequate existing regulatory mechanisms	D	Ongoing	Partial, Proposed local legislation to reduce human-caused wildfire ignitions.
Direct impact from military ordnance	E	Ongoing	Partial; DoD firing ranges are designed to reduce potential impacts to remaining plants and their habitat
Reduced viability due to low numbers	E	Ongoing	Partial; translocation efforts ongoing

Synthesis:

Currently there are 8 wild individuals of *Psychotria malaspinae* on Guam. Some individuals are provided partial protection by propagation of the species and a congener, *P. hombroniana*, BTS control measures, preparation of a HCP, and nonnative plant control. It is unclear if seed collections, propagation, and outplanting that are ongoing are for *P. malaspinae* or *P. hombroniana* represent unique populations of each species, or if some programs have adopted different taxonomy and some collections that were previously recognized as *P. malaspinae*, for example, are now being inventoried as *P. hombroniana*. There is potential for more individuals or populations to exist; the sites where vouchers for these individuals were collected have not been visited or surveyed in over ten years.

Preventing extinction and Interim Stabilization targets, and downlisting, and delisting criteria are provided in the Recovery Plan for 23 Species in the Mariana Islands that has been developed from the draft revised recovery objective guidelines developed by the Hawai'i and Pacific Plants Recovery Coordinating Committee (HPPRCC 2011). The life history traits such as breeding system, population size fluctuation or decline, and reproduction type (sexual or vegetative), have been included in the calculation of goals for the number of populations and reproducing individuals for each stage. The goals for each stage remain grouped by life span defined as annual, short-lived perennial (fewer than 10 years), or long-lived perennial.

Psychotria malaspinae is a long-lived perennial tree. To prevent extinction, which is the first milestone in recovering the species, the taxon must be managed to control threats (e.g., fenced) and have 50 individuals (or the total number of individuals if fewer than 50 exist) from each of three populations represented in *ex situ* (secured off-site, such as a nursery or seed bank) collections that are well managed. In addition, a minimum of a total of three populations should be documented on Guam where they now occur or occurred historically and each of these populations must be naturally reproducing (i.e., viable seeds, seedlings, saplings) with a minimum of 25 mature, reproducing individuals per population.

The preventing extinction goals for this species have not been met. The status of genetic storage is unclear due to taxonomic confusion between *P. malaspinae* and *P. hombroniana*. There are no populations totaling at least 25 reproducing individuals, and all threats are not being managed (Table 1, Table 2). Therefore, *Psychotria malaspinae* meets the definition of Endangered as it remains in danger of extinction throughout its range.

Recommendations for Future Actions:

No significant new information regarding the species' biological status has been reported since the last 5-year review in 2020. Thus, the following recommendations for future actions are updated or reiterated for the 5-year review for 2024.

- Surveys and monitoring—
 - The USFWS recommends all historic sites as well as sites containing suitable habitat be surveyed and monitored for *Psychotria malaspinae*.

- Captive propagation for genetic storage and reintroduction—
 - Continue to collect and propagate all populations of *Psychotria malaspinae* and populations of *Psychotria hombroniana* if there is uncertainty in identification.
 - Develop protocols for captive propagation, including seed storage and clonal propagation.
- Habitat protection—
 - Develop and implement effective control measures to reduce the impact of illegal collection, over-visitation, or habitat degradation.
 - Develop and implement effective control measures to reduce impacts from BTS and herbivory by rodents.
- Ungulate monitoring and control—
 - Ungulate exclusion fence installation around known populations and eradication efforts may help protect the habitat of *Psychotria malaspinae*
- Invasive nonnative plant monitoring and control—
 - Continue control of established ecosystem-altering nonnative invasive plant species in areas where *P. malaspinae* is found or where potential habitat occurs.
- Typhoons and climate change degradation or loss of habitat—
 - Continue propagation and transplanting efforts of both *P. malaspinae* and its congener, *P. hombroniana*.
 - Research suitability of habitat for viability of species, including where to conduct translocations in the future due to the impacts of climate change.
- Research—
 - Conduct studies to understand the relationship between *P. malaspinae* and *P. hombroniana*.
- Alliance and partnership development—
 - Continue to work with partners and other land managers in planning and implementation of ecosystem-level restoration and management to benefit this species.
 - Continue efforts toward developing an island-wide HCP for Guam, that would provide a collaborative and comprehensive approach to endangered species conservation on non-federal lands.

References:

ARC Environmental Services Inc. 2018. Focused Tree Snail Survey Portion of Lot No. 1 TRACT 1541 Mangilao, Guam. 6pp.

[DoN] Department of the Navy and U.S. Fish and Wildlife Service (USFWS). 2017. Revised Biological Assessment for the Marine Corps Relocation from Okinawa to Guam. 205 pp.

[GPEPP] Guam Plant Extinction Prevention Program. 2023. Annual Report for Recovery Permit TE-78405C-0.

- [HPPRCC] Hawai'i and Pacific Plants Recovery Coordinating Committee. 2011. Revised recovery objective guidelines. 8 pp.
- [JRM] Joint Region Marianas. 2019. Final Environmental Assessment. Joint Regional Marianas Integrated Natural Resources Management Plan for Joint Region Marianas-administered and Leased Lands on Guam, Tinian, and Farallon de Medinilla.
- [USFWS] 2020. *Psychotria malaspinae* 5-year review summary and evaluation. USFWS Pacific Islands Fish and Wildlife Office, Honolulu, HI.
https://ecos.fws.gov/docs/tess/species_nonpublish/3219.pdf
- [USFWS] 2020. Endangered and threatened wildlife and plants; initiation of 5-year status reviews for 129 Species in Oregon, Washington, Idaho, Hawaii, Montana, California, and Nevada. Federal Register 85(48): 14240–14243, March 11, 2020.
- [USFWS] 2023. Species Report for *Solanum guamense*. Pacific Island Fish and Wildlife Office, Pacific Islands Interior Region 12. Portland, OR. 22 pages.
- [USFWS] 2023. Recovery Plan for 23 Species in the Mariana Islands. Portland, Oregon. xiv+102 pp.

U.S. FISH AND WILDLIFE SERVICE
SIGNATURE PAGE for 5-YEAR REVIEW of *Psychotria malaspinae* (Aplokating-palaoan)

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

For Field Supervisor, Pacific Islands Fish and Wildlife Office

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