

Micronesian Megapode
(*Megapodius laperouse*)

5-Year Review
Summary and Evaluation

U.S. Fish and Wildlife Service
Pacific Islands Fish and Wildlife Office
Honolulu, Hawaii

5-YEAR REVIEW

Species reviewed: Micronesian Megapode (*Megapodius laperouse*)

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5-YEAR REVIEW
Micronesian Megapode / *Megapodius laperouse*

1.0 GENERAL INFORMATION

1.1 Reviewers

Lead Regional Office:

Region 1, Endangered Species Program, Division of Recovery, Jesse D`Elia,
(503) 231-2071

Lead Field Office:

Pacific Islands Fish and Wildlife Office, Loyal Mehrhoff, Field Supervisor, (808)
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Cooperating Field Office(s):

N/A

Cooperating Regional Office(s):

N/A

1.2 Methodology used to complete the review:

This review was conducted by staff of the Pacific Islands Fish and Wildlife Office (PIFWO) of the U.S. Fish and Wildlife Service (USFWS) between June 2008 and June 2009. The recovery plan for the Micronesian megapode (*Megapodius laperouse laperouse*) was a primary source of information for this five-year review (USFWS 1998). However, updates on the status and biology of this species were also obtained from additional sources, especially from local agencies and researchers recently or currently working on this species. The draft five-year review was then reviewed by the Vertebrate Recovery Coordinator, the Assistant Field Supervisor for Endangered Species, and the Acting Deputy Field Supervisor before submission to the Field Supervisor for approval.

1.3 Background:

1.3.1 FR Notice citation announcing initiation of this review:

U.S. Fish and Wildlife Service. 2008. Endangered and threatened wildlife and plants; initiation of 5-year status reviews for 70 species in Idaho, Montana, Oregon, Washington, and the Pacific Islands. Federal Register 73(83): 23264-23266.

1.3.2 Listing history

Original Listing

FR notice: U.S. Fish and Wildlife Service. 1970. Conservation of endangered species and other fish and wildlife. Federal Register 35 (106): 8491-8498.

Date listed: June 2, 1970

Entity listed: Species

Classification: Endangered

Revised Listing, if applicable

FR notice: N/A

Date listed: N/A

Entity listed: N/A

Classification: N/A

1.3.3 Associated rulemakings: None

1.3.4 Review History:

Species status review [FY 2009 Recovery Data Call (September 2009)]: Stable between 2008 and 2009.

Recovery achieved:

1 (0-25%) [FY 2007 Recovery Data Call] (last year reported)

1.3.5 Species' Recovery Priority Number at start of this 5-year review: 9

1.3.6 Current Recovery Plan or Outline

Name of plan or outline: Recovery plan for the Micronesian megapode (*Megapodius laperouse laperouse*)

Date issued: April 10, 1998

Dates of previous revisions, if applicable: N/A

Indicate if plan is being used: Yes, some of the recovery actions outlined in the recovery plan have been initiated. A large number of the recovery actions require long-term commitments (*e.g.*, predator control, habitat management and restoration, surveys, and monitoring).

2.0 REVIEW ANALYSIS

2.1 Application of the 1996 Distinct Population Segment (DPS) policy

2.1.1 Is the species under review a vertebrate?

Yes

No

2.1.2 Is the species under review listed as a DPS?

Yes

No

2.1.3 Was the DPS listed prior to 1996?

Yes

No

2.1.3.1 Prior to this 5-year review, was the DPS classification reviewed to ensure it meets the 1996 policy standards?

Yes

No

2.1.3.2 Does the DPS listing meet the discreteness and significance elements of the 1996 DPS policy?

Yes

No

2.1.4 Is there relevant new information for this species regarding the application of the DPS policy?

Yes

No

2.2 Recovery Criteria

2.2.1 Does the species have a final, approved recovery plan containing objective, measurable criteria?

Yes

No

2.2.2 Adequacy of recovery criteria.

2.2.2.1 Do the recovery criteria reflect the best available and most up-to date information on the biology of the species and its habitat?

Yes

No

2.2.2.2 Are all of the 5 listing factors that are relevant to the species addressed in the recovery?

Yes

No

2.2.3 List the recovery criteria as they appear in the recovery plan, and discuss how each criterion has or has not been met, citing information:

The recovery plan for the Micronesian megapode (USFWS 1998) includes the following criteria for downlisting and delisting:

Downlisting criteria

The following steps must be accomplished for downlisting: 1) an interdiction and control plan for the brown treesnake (*Boiga irregularis*) must be in place and implemented throughout the Mariana Islands; 2) current threats to all extant megapode populations must be assessed and controlled; and 3) the comparatively large populations on Anatahan, Sarigan, Guguan, Pagan, and Maug must remain at their current population levels or be increasing for a period of 5 consecutive years.

Delisting criteria

The total number of Micronesian megapodes in the Mariana Islands should be at least 2,650 birds distributed over 10 islands, including at least 2 populations of 600 birds or greater, 3 populations of 300 or greater, 2 populations of 200 or greater, and 3 populations of 50 or greater. All populations must be stable or increasing for 5 consecutive years after achieving these levels.

At this time, none of the recovery criteria in the recovery plan have been met. Of particular concern is the lack of an archipelago-wide brown treesnake interdiction and control plan. In addition, the current status of the archipelago-wide Micronesian megapode population is unknown and population estimates of megapodes on some of the islands are not based on actual surveys.

2.3 Updated Information and Current Species Status

2.3.1 Biology and Habitat

2.3.1.1 New information on the species' biology and life history:

The territory size in limestone forest for megapodes on Aguiguan island was recently estimated at 3.76 ha (Kessler and Amidon 2009).

2.3.1.2 Abundance, population trends (e.g. increasing, decreasing, stable), demographic features (e.g., age structure, sex ratio, family size, birth rate, age at mortality, mortality rate, etc.), or demographic trends:

The recent information on territory size of megapodes on Aguiguan (Kessler and Amidon 2009) indicates a larger population (around 150 megapodes) occurs on Aguiguan than has been estimated in the past

based on VCP surveys by Engbring *et al.* (11 megapodes; 1986), Cruz *et al.* (51 megapodes; 2000) and Esselstyn *et al.* (72 megapodes; 2003).

Recent surveys of megapodes on FDM indicate the population is also larger there than previously estimated (S. Vogt, PACNAVFACENGCOM, pers. comm.).

2.3.1.3 Genetics, genetic variation, or trends in genetic variation (e.g., loss of genetic variation, genetic drift, inbreeding, etc.):

No new information.

2.3.1.4 Taxonomic classification or changes in nomenclature:

No new information.

2.3.1.5 Spatial distribution, trends in spatial distribution (e.g. increasingly fragmented, increased numbers of corridors, etc.), or historic range (e.g. corrections to the historical range, change in distribution of the species' within its historic range, etc.):

We believe megapodes were extirpated from Anatahan Island due to volcanic activity in 2005 (Kessler and Amidon 2009). Recent surveys indicate that megapodes have recolonized Anatahan (USFWS, 2010 unpublished data).

2.3.1.6 Habitat or ecosystem conditions (e.g., amount, distribution, and suitability of the habitat or ecosystem):

Sightings of the brown treesnake on Saipan suggest it may be in the process of becoming established there (Rodda and Savidge 2007). The brown treesnake was accidentally introduced to Guam around 1949 causing the extirpation or extinction of 13 of Guam's 22 native breeding birds (Rodda and Savidge 2007), including the Micronesian megapode. The establishment of a breeding population of the brown treesnake on Saipan would likely eventually lead to the extirpation of megapodes there as occurred on Guam.

An additional concern is that the proposed expansion of military training on Guam and in the CNMI may result in the loss, degradation, or fragmentation of megapode habitat (occupied or unoccupied). In addition, increased training on Guam and in the CNMI may increase the chance of brown treesnake introductions to other islands.

2.3.1.7 Other:

The possibility of avian flu or West Nile virus reaching the Mariana Islands from Asia or the U.S. mainland is a recent concern. The impact these two diseases may have on the Micronesian megapode is not known at this time, but both diseases have had deleterious impacts to many avian species elsewhere, and could negatively affect the Micronesian megapode if they reach the Mariana Islands.

Another unknown is the potential impact of climate change to resources in the Mariana Islands.

2.3.2 Five-Factor Analysis (threats, conservation measures, and regulatory mechanisms)

2.3.2.1 Present or threatened destruction, modification or curtailment of its habitat or range:

See synthesis below.

2.3.2.2 Overutilization for commercial, recreational, scientific, or educational purposes:

See synthesis below.

2.3.2.3 Disease or predation:

See synthesis below.

2.3.2.4 Inadequacy of existing regulatory mechanisms:

See synthesis below.

2.3.2.5 Other natural or manmade factors affecting its continued existence:

See synthesis below.

2.4 Synthesis

The Micronesian megapode, known as *sasangat* in Chamorro and *sasangal* in Carolinian, is a pigeon-sized bird of the forest floor. It has been extirpated from several of the large southern Mariana islands (Guam, Rota, and possibly Tinian). In addition, the species was believed extirpated from Anatahan due to volcanic activity, and relatively large populations are thought to occur on only a few of the uninhabited northern islands (Sarigan, Guguan, and Asuncion). Surveys conducted in 2009 and 2010 show that megapodes have recolonized Anatahan, may have declined on Pagan, and may be close to extirpation on Agrihan. Results from the surveys are forthcoming and will provide us with an updated status of the species. The threats (Factors A, C, and E) affecting this species are discussed in Section 8 (Reasons for Decline and Current Threats) of the recovery plan (USFWS 1998). The main threat to the Micronesian megapode continues to be the loss and degradation of habitat mainly due to clearing and feral ungulates (Factor A). Military training may also lead to degraded habitat. The second greatest threat to the species is predation by introduced species. The predator of greatest concern is the brown treesnake. If the brown treesnake becomes established on Saipan, the Micronesian megapode would likely become extirpated there as it was on Guam. Increased military training in Guam and the CNMI may also increase the possibility of accidental introductions of the brown treesnake to other islands. Other predators of concern include monitor lizards (*Varanus indicus*) dogs, cats, and pigs (*Sus scrofa*). The impacts of disease are not known at this time (Factor C: predation and disease).

Volcanism (Factor E: other natural or manmade factors) constitutes a long-term threat to the species. Volcanic eruptions likely resulted in the extirpation of megapodes from Anatahan in 2005 and may have reduced the megapode population on Pagan (USFWS 1998). Guguan, Alamagan, and Agrihan Islands have experienced eruptions and megapode populations on these islands are also vulnerable. Poaching of megapode eggs was once a concern and may still be an issue on some of the northern islands, but it is uncertain if inadequacy of existing regulatory mechanisms (Factor D) is a threat at this time. However, there is a concern that landowners on Saipan may clear occupied habitat without appropriate permits from the CNMI and the USFWS. To date, overutilization (Factor B) has not been considered a significant threat to this species (USFWS 1998). However, recent surveys may indicate otherwise.

Because none of the threats have been addressed (in particular, little habitat is protected and no large-scale control of brown treesnakes or other predators occurs), the recovery goals for this species have not been met. Therefore, the Micronesian megapode meets the definition of endangered as it remains in danger of extinction throughout its range.

3.0 RESULTS

3.1 Recommended Classification:

Downlist to Threatened

Uplist to Endangered

Delist

Extinction

Recovery

Original data for classification in error

No change is needed

3.2 New Recovery Priority Number: N/A

Brief Rationale:

3.3 Listing and Reclassification Priority Number:

Reclassification (from Threatened to Endangered) Priority Number: _____

Reclassification (from Endangered to Threatened) Priority Number: _____

Delisting (regardless of current classification) Priority Number: _____

Brief Rationale:

4.0 RECOMMENDATIONS FOR FUTURE ACTIONS

- Survey, protect, and manage existing populations.
- Conduct essential research on the ecology and biology.
- Assess and control threats.
- Promote expansion of megapodes in suitable habitat.
- Monitor megapode populations.
- Continue implementation of brown treesnake interdiction and control plans and establish new plans as needed.

5.0 REFERENCES

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U.S. FISH AND WILDLIFE SERVICE
5-YEAR REVIEW of Micronesian Megapode (*Megapodius laperouse*)

Current Classification: E


Recommendation resulting from the 5-Year Review:

- Downlist to Threatened
- Uplist to Endangered
- Delist
- No change needed

Appropriate Listing/Reclassification Priority Number, if applicable: _____

Review Conducted By:

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Approved  Date AUG 27 2010
rw **Field Supervisor, Pacific Islands Fish and Wildlife Office**