

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES  
OF WILD FAUNA AND FLORA

---



Fifteenth meeting of the Conference of the Parties  
Doha (Qatar), 13-25 March 2010

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Delist *Anas oustaleti* from Appendix I [the species does not meet the biological (Annex 1) and trade criteria (Annex 5) established in Conf. 9.24 (Rev. CoP14), but satisfies the “possibly extinct” criteria (Annex 5)].

B. Proponent

Switzerland, as Depositary Government, at the request of the Animals Committee (prepared by the United States of America)

C. Supporting statement

1. Taxonomy

- |     |   |                                       |
|-----|---|---------------------------------------|
| 1.1 | Class:  | Aves                                  |
| 1.2 | Order:  | Anseriformes                          |
| 1.3 | Family:   | Anatidae                              |
| 1.4 | Genus, species or subspecies,<br>including author and year: | <i>Anas oustaleti</i> Salvadori, 1894 |
| 1.5 | Scientific synonyms:  | <i>Anas platyrhynchos</i> "oustaleti" |

[Note: This species was previously considered by some as a subspecies *Anas platyrhynchos oustaleti* (Salvadori, 1894) that originated as a hybrid between *Anas platyrhynchos* and *Anas superciliosa*.]

According to ITIS (2009), *Anas oustaleti* Salvadori, 1894, is an invalid name and is considered a hybrid of *Anas platyrhynchos* Linnaeus, 1758, and *Anas superciliosa* Gmelin, 1789.

IUCN does not include *Anas oustaleti* in its Red List.

---

\* The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat or the United Nations Environment Programme concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.

- 1.6 Common names: English: Mariana Islands Duck; Mariana Mallard; Marianas Mallard; Oustalet's Grey Duck
- French: Canard aberrant; Canard des Mariannes; Canard d'Oustalet
- Spanish: Pato de Oustalet; Pato real marismeno
- Local name: ngānga' (palao) (in Chamorro); ghereel'bwel (in Carolinian)
- 1.7 Code numbers: A-212.002.012.023f (CITES 1984a)

## 2. Overview

The Mariana Mallard (*Anas platyrhynchos oustaleti*) (Salvadori 1894) was first described by Salvadori based on six specimens collected from Guam in 1887 and 1888 (Yamashina 1948; Reichel and Lemke 1994). The species is believed to have been a subspecies that originated as a hybrid between the Common Mallard (*Anas platyrhynchos*) and the Grey Duck (*Anas superciliosa*). These two species have been reported to hybridize in New Zealand (Gillespie 1985:459 & 465-466).

The Marianas Mallard (*Anas oustaleti*; Marianas spelled with an "s" in this instance) was listed in Appendix I at the Plenipotentiary Conference [Washington, D.C., 1973; U.S. Fish and Wildlife Service (Service) 1975; UNEP-WCMC 2009a].

*Anas oustaleti* is endemic to the Mariana Archipelago and has been recorded in the Territory of Guam (United States of America) and in the Commonwealth of the Northern Mariana Islands (CNMI; United States of America; Owen 1977; Stinson et al. 1997). No confirmed sightings of the species in the wild have been made since 1979.

At its 14th meeting (The Hague, 2007), the Conference of the Parties (CoP) adopted the taxonomic and nomenclatural references listed in the Annex to Resolution Conf. 12.11 (Rev. CoP14) as the official standard references for species included in the CITES Appendices (CITES 2007).

In June 2008, the Management Authority of the United States of America wrote to the Secretariat regarding some inconsistencies between nomenclature in the CITES Appendices and the taxonomic and nomenclatural references adopted at CoP14. The United States of America indicated that *Anas oustaleti* is not found in the reference for birds.

*Anas oustaleti* was federally listed as endangered by the United States of America on 2 June 1977 [U.S. Endangered Species Act of 1973 (ESA; Service 1976, 1977)].

*Anas oustaleti* was removed from the ESA List of Endangered and Threatened Wildlife on 23 February 2004 (Service 2002, 2004a), because it was considered extinct (see, for example: Jenkins 1983:8; Engbring and Pratt 1985:74 & 87; Reichel and Glass 1991; Stinson et al. 1991:38; Reichel and Lemke 1994:201; Fuller 2002; Environment News Service 2004).

At the 24th meeting of the Animals Committee in 2009, the Committee discussed a proposal to delete *Anas oustaleti* from Appendix I because it is extinct (AC24 Doc. 18.1; CITES 2009a). The Committee agreed that a proposal to delete this taxon from the Appendices would be prepared and that the depositary government would be requested to submit it to CoP15 on behalf of the Committee (AC24 Summary Record – p. 38; CITES 2009b).

The most recent comprehensive scientific compilation of information about this species was made by the Service when the Mariana Mallard was delisted from the ESA. This document is based largely on that compilation (Service 2002, 2004a), but additional Service resources were also consulted (Service 1990, 2003, 2004b, 2009; Fish and Wildlife Exchange Division 1996).

### 3. Species characteristics

#### 3.1 Distribution

The Mariana Mallard is known only from the islands of Guam, Tinian, and Saipan of the Mariana Archipelago in the western portion of the Pacific Ocean (Kuroda 1941, 1942; Stophlet 1946; Yamashina 1948; Kibler 1950). There is an unverified sighting of two "unidentified ducks" on Rota on October 20, 1945 (Baker 1948:45), and one specimen of *Anas* sp. found during a 1990 excavation of a late Holocene deposit in Payapai Cave, Rota (Steadman 1992). Other than these records, the Mariana Mallard has never been reported on Rota. Freshwater wetlands occur on the island of Pagan, in the northern islands of the archipelago. However, there are no records of this species from this island or the other northern islands in the archipelago (Tenorio and Associates 1979:22).

#### 3.2 Habitat

The Mariana Mallard utilized small freshwater marshes and swamps, and was less common in large open bodies of freshwater such as a large lake (Yamashina 1948:121; Tenorio and Associates 1979:173).

#### 3.3 Biological characteristics

First collected by the early explorers in the late 1800s, only sporadic notes and observations have been made on this species. Marche (Baker 1951) collected six specimens from Guam in 1888. Collections from the time of Marche showed that the Mariana Mallard concurrently inhabited the islands of Saipan and Tinian. A total of 38 specimens was collected from Tinian and Saipan by Japanese collectors between 1931 and 1940 (Baker 1951). There are probably fewer than 50 specimens of the Mariana Mallard in collections in France, Japan, United States of America, and elsewhere. Reichel and Lemke (1994) were able to locate 37 specimens. Most of these specimens were collected by the Japanese in the 1930s and 1940s.

Marshall (1949:203) indicated that the Mariana Mallard fed on green vegetation and seeds by plucking at grass in shallow water. No "tip-up" feeding, characteristic of many waterfowl species, was observed.

The Mariana Mallard, based on field observations of nests and young ducks, seemed to breed throughout the year (Yamashina 1948:121; Marshall 1949:219; Engbring and Pratt 1985:87).

#### 3.4 Morphological characteristics

Total length approximately 51 cm; weight approximately 1 kg. There were two forms or morphs: the *platyrhynchos* type and the *supercilliosa* type (Yamashina 1948:122):

*Platyrhynchos* type: Head.—dark green with buff feathers intermingled and dark brown stripe through the eye, and a faint white ring around the neck. Upper part.—dark brown with lighter feather edges. Under part.—upper breast reddish chestnut with dusky spots, lower parts brownish with lighter feather edges. Wings.—speculum purplish with black and white bordering lines anteriorly and black and buff lines posteriorly. Tail.—grey and white with black coverts, of which the central ones are more or less curled up.

*Supercilliosa* type: Head.—buffish with dark brown stripes on upper head through the eye and along the lower neck. Upper part.—dark brown with lighter feather edges. Under part.—dark brown with lighter feather edges broadest on flanks and upper breast. Wings.—speculum purplish to dark green, bordered black and white on both sides. Tail.—dark brown.

Both types: Bill.—olive coloured with black tip. Legs.—reddish orange with darker webs.

Male in eclipse: Descriptions not available, but probably similar to those of *A. platyrhynchos* or *A. supercilliosa*.

Adult female: Descriptions not available, but probably similar to those of *A. platyrhynchos* or *A. superciliosa*.

### 3.5 Role of the species in its ecosystem

The role of this species in its ecosystem has not been well studied. Like other waterfowl, the Mariana Mallard consumed plant matter and small invertebrates. It may have had a role in the distribution of wetland plants through the dispersal of seeds. Initially, the species was not subject to predators, but following the colonization of the islands by humans and associated animals (Wheeler 1980:74), the Mariana Mallard was preyed upon by several small mammalian predators, including rats and cats (Reichel and Lemke 1994:203-204).

## 4. Status and trends

### 4.1 Habitat trends

Over the past 50-100 years, freshwater wetlands, the natural habitat of the Mariana Mallard, have been greatly reduced and fragmented (Wheeler 1980; Guam Division of Aquatic and Wildlife Resources 2005; CNMI 2005).

### 4.2 Population size

Natural history accounts have always suggested that populations were small. According to Yamashina (1948:121), the Mariana Mallard was relatively more abundant on Tinian, less abundant on Saipan, and least abundant on Guam. The largest number of Mariana Mallards ever recorded was by Kuroda (1942) who reported that his collector saw two flocks of 50 to 60 Mariana Mallards at two locations on Lake Hagoi, Tinian. The first quantitative assessment of the Mariana Mallard population throughout its known range was conducted by Tenorio and Associates in 1978 and 1979 (1979:2). Based on this survey they estimated a total population of 20 individuals (1979:22). The last confirmed sighting of this species was in 1979 by Eugene Kridler of the Service who estimated that there were probably fewer than a dozen Mariana Mallards remaining (Kridler 1979).

### 4.3 Population structure

We are not aware of any technical characterization of population structure.

### 4.4 Population trends

The Mariana Mallard probably was never abundant (Baker 1951) due to limited habitat availability. Even as long ago as 1923, for example, the Mariana Mallard was categorized as rare or uncommon in Guam (Tenorio and Associates 1979:171). There have never been extensive freshwater marshes or swamps in the Mariana Archipelago that could support large populations of the species. The largest number of Mariana Mallards ever recorded – as indicated above -- was by Kuroda (1942) who reported that his collector saw 2 flocks of 50 to 60 Mariana Mallards at 2 locations on Lake Hagoi, Tinian. Gleize (1945) estimated a population of 12 mallards on Tinian after the United States captured the island during WWII. Marshall (1949:202) recorded their presence at Lake Susupe, Saipan, and Lake Hagoi, Tinian. However, he speculated that they flew between the two islands as he never saw them at "both the lakes during any one month." The last recorded sighting of the Mariana Mallard on Guam was made by G.S.A. Perez on February 25, 1967 (Drahos 1977), while small populations persisted on Tinian and Saipan until the late 1970s (Pratt et al. 1979, 1987; Stinson et al. 1995). The last confirmed sighting of this species was in 1979 by Eugene Kridler of the Service who estimated that there were probably fewer than a dozen Mariana Mallards remaining (Kridler 1979). At that time, Mr. Kridler collected a pair of birds for captive propagation. Unfortunately, all attempts at captive breeding failed and the last known Mariana Mallard died at Sea World, San Diego in 1981 (Engbring and Pratt 1985).

No confirmed sightings of the Mariana Mallard have been made since 1979 despite extensive surveys. On Guam, wetland surveys were conducted from the late 1960s through the 1980s; however, no Mariana Mallards were observed (Engbring and Fritts 1988, Stinson et al. 1991, Reichel et al. 1992). All known wetland habitat in the CNMI was surveyed intermittently from 1982 through 1984 by the Service and staff from the Division of Fish and Wildlife (DFW) of the

Commonwealth of the Northern Mariana Islands (CNMI). There were no confirmed sightings or vocalizations (Service 2003).

During the period from May 1983 through December 1989, biologists from the DFW of the CNMI also conducted 5 to 79 surveys of each permanent wetland and each seasonal wetland greater than 0.5 hectares (1.2 acres) in the CNMI (230 surveys). Wetlands that contained better mallard habitat were surveyed more often. Surveys occurred year round and the greatest frequency occurred from May through September (112 surveys) to coincide with the historical nesting season of the Mariana Mallards. No Mariana Mallards were seen during these intensive and systematic searches. The determination of the investigators at the conclusion of these surveys was that the Mariana Mallard was extinct (Reichel and Lemke 1994). Researchers and managers currently in Guam and the CNMI concur that the Mariana Mallard is probably extinct, as it has not been seen since 1979 despite frequent and intensive surveys of wetlands for water birds such as the endangered Mariana Common Moorhen (*Gallinula chloropus guami*) (Takano and Haig 2004; Susan M. Haig, U.S. Geological Survey, in litt., September 16, 2009; Leilani Takano, U.S. Fish and Wildlife Service, in litt., September 16, 2009).

#### 4.5 Geographic trends

Southern reaches of the CNMI in the western portion of the Pacific Ocean: Guam, Tinian, and Saipan; perhaps formerly Rota.

### 5. Threats

The Mariana Mallard's reduction in range and eventual extinction has been attributed to habitat loss and overhunting, especially during and immediately after World War II (WWII) (Engbring and Fritts 1988, Reichel and Lemke 1994). Evolving without predators, the mallard was not wary of humans and as a result was easily caught (Kuroda 1942, Stott 1947:525). They were hunted and trapped for food by local residents and visitors (Fritz 1904, Safford 1904). Safford (1904) reported that the Mariana Mallard was "the best game bird" and "very highly esteemed for food." Kuroda (1942) reported that there was a hunting season on Saipan from July through December, but no hunting was allowed on Tinian. However, it is unknown if these regulations were enforced. After WWII, islanders were allowed to own firearms and hunting of the birds persisted. Even with the designation of the species as endangered by the Trust Territories and the Service, there was little enforcement of the regulations (Drahos 1977). Habitat loss due to draining and fragmentation of wetlands has greatly reduced the quantity and quality of wetlands on Guam, Tinian, and Saipan (Stinson et al. 1991, Reichel et al. 1992, Reichel and Lemke 1994). Though early reports on Tinian mention two lakes, Lake Hagoi is the only lake currently found on the island. It is probable that the second lake referenced is now known as Makpo Swamp. It is currently too overgrown with woody vegetation to be mallard habitat. Additionally, this wetland has been drained for water for San Jose village and converted into farmland (Bowers 1950, Reichel and Lemke 1994). During the Japanese occupation of Saipan and Tinian between 1914 and 1945, most wetlands were channelized and converted to rice paddies. Also during this time, sugar mill wastes were discharged into Lake Susupe on Saipan. Since 1945, many wetlands have been drained or filled in the course of urban development on all three islands (Stinson et al. 1991, Reichel et al. 1992, Reichel and Lemke 1994). The Mariana Mallard, never great in number, lost most of its limited habitat with the decimation of the wetlands, while being hunted with little to no restriction.

Disease or predation is not known to have been a factor in the decline of the Mariana Mallard. While the brown tree snake (*Boiga irregularis*) is believed to have been accidentally introduced to Guam between 1945 and 1952 (Savidge 1987:662; Rodda et al. 1992), it is not believed to have been a factor in the decline of the mallard because the snake prefers forest habitat (Engbring and Fritts 1988:31-33; Rodda et al. 1997; USGS 2009). While a population of this voracious predator may now be established on Saipan, it is not believed to have been present on the island during the 1970s, when the last sighting of the Mariana Mallard was made. The brown tree snake is not known to be established on Tinian.

## 6. Utilization and trade

### 6.1 National utilization

Current data are not readily available, but any national utilization is unlikely. Historical data suggest that the Mariana Mallard was frequently hunted by local residents and visitors (Kuroda 1942; Drahos 1977).

### 6.2 Legal trade

During 1975-2007, according to UNEP-WCMC (2009b, 2009c), a single shipment of 1 specimen in 1993 and a single shipment of 10 feathers in 2005 have been reported in international trade (UNEP-WCMC 2009b, 2009c). These two shipments most likely represent dead biological specimens.

### 6.3 Parts and derivatives in trade

Specimens and feathers. These two shipments most likely represent dead biological specimens.

### 6.4 Illegal trade

Current data are not readily available; no indication of illegal trade.

### 6.5 Actual or potential trade impacts

Current data are not readily available; no indication of illegal trade. Potential trade (purpose of trade = scientific) in dead biological specimens between natural history museums and scientific collections, but no trade impacts anticipated.

## 7. Legal instruments

### 7.1 National

The Mariana Mallard was listed as an endangered species by the Trust Territory of the Pacific Islands in 1976 and by the Service in 1977. It is not currently protected under Guam's Endangered Species Act (Pub. L. 15-36; see: Guam Endangered Species List Number 7; Guam Division of Aquatic and Wildlife Resources 2005:213; Guam 2008). The Mariana Mallard was not listed as a threatened or endangered species by the Government of CNMI (CNMI 1991). Protection as endangered species by the Government of the United States of America, as well as the Governments of Guam and the Trust Territory of the Pacific Islands was probably too late to compensate for the earlier effects of unrestricted hunting and habitat loss.

### 7.2 International

The Marianas Mallard (*Anas oustaleti*; Marianas spelled with an "s" in this instance) was listed in Appendix I of CITES at the Plenipotentiary Conference [Washington, D.C., 1973; U.S. Fish and Wildlife Service (Service) 1975; UNEP-WCMC 2009a].

Other than the CITES listing, we are not aware of any international legal instruments.

## 8. Species management

### 8.1 Management measures

We are not aware of any specific management measures in place at this time for the Mariana Mallard.

### 8.2 Population monitoring

We are not aware of any specific population monitoring measures in place at this time for the Mariana Mallard. Recent, island-wide surveys (2 weeks per island during 2001; essentially all

wetlands were surveyed during both the dry and wet seasons) for another wetland species, the Common Moorhen (*Gallinula chloropus guami*) did not detect the Mariana Mallard (Takano and Haig 2004; Susan M. Haig, U.S. Geological Survey, in litt., September 16, 2009; Leilani Takano, U.S. Fish and Wildlife Service, in litt., September 16, 2009).

### 8.3 Control measures

#### 8.3.1 International

Other than CITES, we are not aware of any specific international control measures in place at this time for the Mariana Mallard.

#### 8.3.2 Domestic

Other than the wildlife conservation strategies for the CNMI (2005) and by the Guam Division of Aquatic and Wildlife Resources (2005), we are not aware of any specific domestic control measures in place at this time for the Mariana Mallard.

### 8.4 Captive breeding and artificial propagation

There are no reports of any captive breeding at this time. The last captive specimen died in 1981 (Engbring and Pratt 1985).

### 8.5 Habitat conservation

Given that the species was not included in the wildlife conservation strategies for either the CNMI or Guam (CNMI 2005; Guam Division of Aquatic and Wildlife Resources 2005), no specific habitat conservation measures are underway at this time. No habitat conservation measures are anticipated in the future.

### 8.6 Safeguards

Given that the species was not included in the wildlife conservation strategies for either the CNMI (2005) or Guam Division of Aquatic and Wildlife Resources (2005), no specific safeguards for the Mariana Mallard are in place at this time in the area formerly occupied by the Mariana Mallard. No safeguards are anticipated in the future.

## 9. Information on similar species

Several species have been identified or categorized as similar in appearance to the Mariana Mallard. Given the absence of live specimens in the wild, however, as well as the paucity of museum specimens, precise similarities and differences are difficult to characterize. The following species are similar to the Mariana Mallard: Laysan Duck or Laysan Teal (*Anas laysanensis*; see sheet A-212.002.012.023d; CITES 1984b); Australian Grey Duck (*Anas superciliosa*); Common Mallard (*Anas platyrhynchos*); and Meller's Duck (*Anas melleri*). The Common Mallard is a very rare winter visitor to the Marianas, but has been observed recently at several locations (e.g., Pagan, Sarigan, Tinian, and Saipan; Stinson et al. 1997). At least four other species of waterfowl also occur in this region, but are not physically similar to the Mariana Mallard (Marshall 1949:221).

## 10. Consultations

The Scientific Authority of the United States of America consulted with the Secretary of the Department of Lands and Natural Resources, as well as the Director of the Division of Fish and Wildlife of the CNMI. In addition, the US Scientific Authority also consulted with the Secretary of the Department of Agriculture, as well as the Chief of the Division of Aquatic and Wildlife Resources of Guam. As of 5 October 2009, those officials had not responded with any information to contradict the presumption of extinction.

## 11. Additional remarks

In summary, all available information indicates that the Mariana Mallard is extinct. Previous population estimates made on Guam (1944 surveys), Tinian (1945 surveys), and Saipan (1947 surveys) for the Mariana Mallard reported 12 or fewer individuals on each of these islands (Baker 1951). No confirmed

sightings or vocalizations have been reported for this bird since 1979, and the last captive bird died in 1981. The Government of the United States of America, in response to the presumed extinction of the species, removed the Mariana Mallard from the Federal List of Endangered and Threatened Wildlife in 2004 (Service 2002, 2004a).

## 12. References

- Baker, R. H. 1948. Report on collections of birds made by United States Naval Medical Research Unit No. 2 in the Pacific war area. Smithsonian Miscellaneous Collections 107:1-74.
- Baker, R.H. 1951. The avifauna of Micronesia, its origin, evolution, and distribution. University of Kansas Publication, Museum of Natural History 3:1-359.
- Bowers, N. M. 1950. Problems of resettlement on Saipan, Tinian and Rota, Mariana Islands. Ph.D. Dissertation. University of Michigan, Ann Arbor. 480 pp.
- CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora). 1984a. *Anas oustaleti*. CITES Identification Manual. Order Anseriformes; Family Anatidae. CITES Secretariat, Geneva, Switzerland. 2 pp. Available on the internet at: [http://www.cites.org/eng/resources/ID/fauna/Volume2/A-212.002.012.023d%20Anas%20oustaleti\\_E.pdf](http://www.cites.org/eng/resources/ID/fauna/Volume2/A-212.002.012.023d%20Anas%20oustaleti_E.pdf). Downloaded on September 21, 2009.
- CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora). 1984b. *Anas laysansensis*. CITES Identification Manual. Order Anseriformes; Family Anatidae. CITES Secretariat, Geneva, Switzerland. 2 pp. Available on the internet at: [http://www.cites.org/eng/resources/ID/fauna/Volume2/A-212.002.012.023d%20Anas%20laysansensis\\_E.pdf](http://www.cites.org/eng/resources/ID/fauna/Volume2/A-212.002.012.023d%20Anas%20laysansensis_E.pdf). Downloaded on September 21, 2009.
- CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora). 2007. Standard nomenclature [Conf. 12.11 (Rev. CoP14)]. CITES Secretariat, Geneva, Switzerland. 8 pp. Available on the internet at: <http://www.cites.org/eng/res/12/12-11R14.shtml>. Downloaded on September 21, 2009.
- CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora). 2009a. Possible deletion of *Anas oustaleti* from Appendix I. Twenty-fourth meeting of the Animals Committee (AC24 Doc. 18.1). CITES Secretariat, Geneva, Switzerland. 1 p. Available on the internet at: <http://www.cites.org/eng/com/AC/24/E24-18-01.pdf>. Downloaded on September 21, 2009.
- CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora). 2009b. Possible deletion of *Anas oustaleti* from Appendix I. Draft: Summary Record: Twenty-fourth meeting of the Animals Committee (Agenda Item 18.1, page 38). CITES Secretariat, Geneva, Switzerland. Available on the internet at: <http://www.cites.org/eng/com/AC/24/E-AC24-SumRec.pdf>. Downloaded on September 21, 2009.
- CNMI (Commonwealth of the Northern Mariana Islands). 1991. Notice of Adoption of the CNMI Endangered Species List. Commonwealth Register 13(3):7663.
- CNMI (Commonwealth of the Northern Mariana Islands). 2005. Comprehensive Wildlife Conservation Strategy for the Commonwealth of the Northern Mariana Islands. Available on the internet at: [http://www.wildlifeactionplans.org/pdfs/action\\_plans/cnmi\\_action\\_plan.pdf](http://www.wildlifeactionplans.org/pdfs/action_plans/cnmi_action_plan.pdf). Downloaded on September 21, 2009.
- Drahos, N. 1977. Population dynamics of Guam birds. Unpublished Report. Guam Division of Aquatic and Wildlife Resources, Department of Agriculture, Mangilao, GU. 236 pp.
- Engbring, J., and T.H. Fritts. 1988. Demise of an insular avifauna: the brown tree snake on Guam. 1988 Transactions of the Western Section of The Wildlife Society 24:31-37.
- Engbring, J., and H. D. Pratt. 1985. Endangered birds in Micronesia: their history, status, and future prospects. Pages 71-106 in S. A. Temple, ed. Bird Conservation 2. University of Wisconsin Press, Madison, Wisconsin.



- Environment News Service. 2004. Two Mariana Island Birds Declared Extinct. Available on the internet at: <http://www.ens-newswire.com/ens/feb2004/2004-02-27-09.asp>. Downloaded on September 21, 2009.
- Fish and Wildlife Information Exchange Division. 1996. Mariana Mallard (Draft; Species Id ESIS101048; Date: 14 Mar 96). Conservation Management Institute, Virginia Polytechnic Institute and State University, Blacksburg, Virginia. 12 pp. Available on the internet at: <http://fwie.fw.vt.edu/WWW/esis/lists/e101048.htm>. Downloaded on September 21, 2009.
- Fritz, G. 1904. (A history and ethnography of the Marianas.) Translation by E. Craddock. *Ethnologisches Notizblatt* 2(3):25-110.
- Fuller, E. 2002. HBW – 7 – Foreword on extinct birds by Errol Fuller. Handbook of the Birds of the World. Vol. 7. Available on the internet at: <http://www.lynxeds.com/sites/default/files/forewords/foreword-HBW-07.pdf>. Downloaded on September 21, 2009.
- Gillespie, G. D. 1985. Hybridization, introgression, and morphometric differentiation between Mallard (*Anas platyrhynchos*) and Grey Duck (*Anas superciliosa*) in Otago, New Zealand. *The Auk* 102:459-469.
- Gleize, D.A. 1945. Birds of Tinian. *Bulletin of the Massachusetts Audubon Society* 29:220.
- Guam. 2008. Endangered Species Act of Guam - Article 2 of Chapter 63 "Fish, Game, Forestry & Conservation." Available on the internet at: <http://faolex.fao.org/docs/pdf/gum69520.pdf>. Downloaded on September 21, 2009. [Date of original text: ?; Date of consolidation/reprint: May 9, 2008].
- Guam Division of Aquatic and Wildlife Resources. 2005. Guam Comprehensive Wildlife Conservation Strategy (GCWCS; September 26, 2005). Department of Agriculture, Government of Guam, Mangilao, Guam 96913. Available on the internet at: <http://www.guamdawr.org/Conservation/gcwcs2/>. Downloaded on September 21, 2009.
- Haig, S. M. 2009. Electronic mail dated September 16, 2009, to Jeffrey P. Jorgenson, U.S. Fish and Wildlife Service, Arlington, VA USA. [in litt.]
- ITIS (Integrated Taxonomic Information System). *Anas oustaleti* Salvadori, 1894. ITIS Report. Available on the internet at: [http://www.itis.gov/servlet/SingleRpt/SingleRpt?search\\_topic=TSN&search\\_value=202228](http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=202228). Downloaded on September 21, 2009.
- Jenkins, J. M. 1983. The native forest birds of Guam. *Ornithological Monographs* 31:1-61.
- Kibler, L. F. 1950. Notes on the birds of Guam. *Auk* 67:400-403.
- Kridler, E. 1979. Saipan: Field trip notes. Tinian wetland observations. U.S. Fish and Wildlife Service. Honolulu, HI. 5 pp.
- Kuroda, N. 1941. Research on the Marianas mallard, *Anas oustaleti* Salvadori. *Tori* 11:99-119 [in Japanese].
- Kuroda, N. 1942. Research on the Marianas mallard, part 2. *Tori* 11:443-448 [in Japanese].
- Marshall, J. T., Jr. 1949. The endemic avifauna of Saipan, Tinian, Guam, and Palau. *Condor* 51:200-221.
- Owen, R. P. 1977. A checklist of the birds of Micronesia. *Micronesica* 13:65-81.
- Pratt, D. H., P. L. Bruner, and D. G. Berrett. 1979. America's unknown avifauna: the birds of the Mariana Islands. *American Birds* 33:227-235.
- Pratt, D. H., P. L. Bruner, and D. G. Berrett. 1987. A field guide to the birds of Hawaii and the tropical Pacific. Princeton University Press, Princeton, NJ. 409 pp.

- Reichel, J. D., and P. O. Glass. 1991. Checklist of the birds of the Mariana Islands. 'Elepaio 51:3-11.
- Reichel, J. D., and T. O. Lemke. 1994. Ecology and extinction of the Mariana mallard. Journal of Wildlife Management 58(2):199-205.
- Reichel, J. D., G. J. Wiles, and P. O. Glass. 1992. Island extinctions: the case of the endangered Nightingale Reed-warbler. Wilson Bulletin 104(1):44-54.
- Rodda, G. H., T. H. Fritts, and D. Chiszar. 1997. The disappearance of Guam's wildlife. BioScience 47(9):565-574.
- Rodda, G. H., T. H. Fritts, and P. J. Conry. 1992. Origin and population growth of the brown tree snake, *Boiga irregularis*. Pacific Science 46:46-57.
- Safford, W. E. 1904. Extracts from the note-book of a naturalist on the island of Guam. XXIV. Plant World 7:261-268.
- Salvadori, T. 1894. *Anas oustaleti* and *Nyroca innotata* spp. Nov. Brit. Ornith. Club, Bul. 4(20):1.
- Savidge, J. A. 1987. Extinction of an island forest avifauna by an introduced snake. Ecology 68:660-668.
- Steadman, D. W. 1992. Extinct and extirpated birds from Rota, Mariana Islands. Micronesica 25(1):71-84.
- Stinson, D. W., M. W. Ritter, and J. D. Reichel. 1991. The Mariana Common Moorhen: decline of an island endemic. Condor 93:38-43.
- Stinson, D. W., G. J. Wiles, and J. D. Reichel. 1997. Migrant land birds and water birds in the Mariana Islands. Pacific Science 51(3):314-327.
- Stinson, D. W., R. E. Johnson, M. R. Lusk, C. G. Rice, and D. T. Aldan. 1995. New bird records in the Mariana Islands. Micronesica 28:109-117.
- Stophlet, J. J. 1946. Birds of Guam. Auk 63:534-540.
- Stott, K., Jr. 1947. Notes on Saipan birds. Auk 64:523-527.
- Takano, L. L., and S. M. Haig. 2004. Distribution and abundance of the Mariana subspecies of the Common Moorhen. Waterbirds 27(2):245-250.
- Takano, L. L. 2009. Electronic mail dated September 16, 2009, to Jeffrey P. Jorgenson, U.S. Fish and Wildlife Service, Arlington, VA USA. [in litt.]
- Tenorio and Associates. 1979. Ornithological survey of wetlands in Guam, Saipan, Tinian, and Pagan. U.S. Army Corps of Engineers, Pacific Ocean Division. 202 pp.
- UNEP-WCMC. 2009a. CITES species database (*Anas oustaleti* Salvadori, 1894). Available on the internet at: <http://www.cites.org/eng/resources/species.html>. Downloaded on March 19, 2009.
- UNEP-WCMC. 2009b. CITES Trade Database: comparative tabulation report (*Anas oustaleti*). Available on the internet at: <http://www.unep-wcmc.org/citestrade/report.cfm>. Downloaded on September 16, 2009.
- UNEP-WCMC. 2009c. CITES Trade Database: gross export trade report (*Anas oustaleti*). Available on the internet at: <http://www.unep-wcmc.org/citestrade/report.cfm>. Downloaded on September 16, 2009.
- U.S. Fish and Wildlife Service (Service). 1975. Proposed endangered status for 216 species appearing on Convention on International Trade. Federal Register 40(188):44329-44333.
- U.S. Fish and Wildlife Service (Service). 1976. Endangered status for 159 taxa of animals. Federal Register 41(115):24062-24067.

- U.S. Fish and Wildlife Service (Service). 1977. Determination that the Marianas Mallard is an endangered species. Federal Register 42(106):28136-28137.
- U.S. Fish and Wildlife Service (Service). 1990. Native forest birds of Guam and Rota of the Commonwealth of the Northern Mariana Islands Recovery Plan. U.S. Fish and Wildlife Service, Portland, OR. 86 pp.
- U.S. Fish and Wildlife Service (Service). 2002. Endangered and threatened wildlife and plants; proposed rule to remove the Mariana Mallard and the Guam Broadbill from the Federal List of Endangered and Threatened Wildlife. Federal Register 67(17):3675-3679.
- U.S. Fish and Wildlife Service (Service). 2003. Guam Broadbill and Mariana Mallard survey summary. Unpublished report by Fred Amidon, Pacific Islands Fish and Wildlife Office. Honolulu, Hawai'i. 2 pp. [in litt.]
- U.S. Fish and Wildlife Service (Service). 2004a. Endangered and threatened wildlife and plants; removing the Mariana Mallard and the Guam Broadbill from the Federal List of Endangered and Threatened Wildlife. Federal Register 69(35):8116-8119.
- U.S. Fish and Wildlife Service (Service). 2004b. Mariana mallard *Anas oustaleti*. Available on the internet at: [http://ecos.fws.gov/docs/life\\_histories/B059.html](http://ecos.fws.gov/docs/life_histories/B059.html). Downloaded on March 17, 2009.
- U.S. Fish and Wildlife Service (Service). 2009. Species profile: Mariana mallard (*Anas oustaleti*). Environmental Conservation Online System. Available on the internet at: <http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B059>. Downloaded on September 15, 2009.
- U.S. Geological Survey (USGS). 2009. Extinctions and loss of species from Guam: birds. Available on the internet at: <http://www.fort.usgs.gov/resources/education/bts/impacts/birds.asp>. Downloaded on September 18, 2009.
- Wheeler, M. E. 1980. Man-Wildlife relationships on Guam. *Cal-Neva Wildlife Transactions* 1980:71-77. <http://www.tws-west.org/transactions/Wheeler.pdf>. Downloaded September 22, 2009. [The Wildlife Society: Western Section]
- Yamashina, Y. 1948. Notes on the Marianas Mallard. *Pacific Science* 2:121-124.