

A Checklist of the Birds and Mammals of Micronesia

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Abstract—This paper lists a total of 279 bird and 44 mammal species from Micronesia through March 2005, with listings provided for nine island groups or islands, including Palau, Yap, Guam, the Commonwealth of the Northern Mariana Islands, Chuuk, Pohnpei, Kosrae, the Marshall Islands, and Wake Atoll. The region's avifauna currently comprises 167 visiting species, 81 native breeding species, 13 introduced breeding species, four extinct species, one species extinct in the wild, and 13 hypothetical species. Its mammal fauna contains 18 visiting species, eight native breeding species, 14 introduced breeding species, two extinct species, and two hypothetical species. Species counts are highest for birds at Palau (148 species), the CNMI (144), and Guam (128), and for mammals at Guam (25), Palau (19), and the CNMI (19). These numbers reflect both the closer proximity of these islands to eastern Asia, New Guinea, and the East Asian-Australasian Flyway, and the greater number of observers present. Thirty-eight new bird species have been reported for Micronesia since the last region-wide checklist was published in 1985, whereas the mammal list is the first ever compiled for the region. Species entries in the checklist are annotated with information on status and a documenting reference that is often the first published record. Additional background information on occurrence or taxonomy is given for some species.

Introduction

This paper provides a complete listing of the birds and mammals recorded in Micronesia through March 2005. It succeeds previous regional checklists for birds prepared by Baker (1951), Owen (1977a), and Pyle & Engbring (1985), and draws heavily on Reichel & Glass's (1991) well-researched list of birds of the Mariana Islands. The mammal checklist is the first comprehensive listing compiled for Micronesia.

Micronesia occupies a vast segment of the tropical western Pacific Ocean, which is defined here as the area occurring from approximately 1°–23°N and 131°–178°E. The region covers roughly 12 million km² and comprises more than 2,200 islands, which have a combined land area of just 2,400 km². An estimated human population of 430,000 people inhabits the area. Although the Gilbert

Islands (western Kiribati) and Nauru are usually considered part of Micronesia, I follow Baker (1951) and Pyle & Engbring (1985) in discussing only the three largest island groups, the Caroline (including Palau), Mariana, and Marshall Islands. Wake Atoll, lying north of the Marshalls, is also included, but the Japanese island of Okino-Tori-shima (also known as Parece Vela; 21°24'N, 136°02'E) is excluded. For this checklist, the region is subdivided into nine geographic units, based on modern political boundaries, as follows: Palau; Yap, Chuuk (formerly Truk), Pohnpei, and Kosrae, which are the four member states of the Federated States of Micronesia; Guam; the Commonwealth of the Northern Mariana Islands (CNMI); the Marshall Islands; and Wake Atoll.

A total of 279 bird species are currently listed for Micronesia, including 167 visiting species, 81 native breeding species, and 13 introduced breeding species (Appendix 1). Four species have become extinct, while a fifth, the Guam Rail (scientific names of most species appear in Appendices 1 and 2), is extinct in the wild, although conservation programs are currently underway to establish new populations on Rota and Guam. Thirteen bird species are treated as hypothetical records because of an absence of definitive documentation. Micronesia's mammal fauna is considerably smaller, with 44 species recorded thus far (Appendix 2). Included are 18 visiting species, eight native breeding species, 14 introduced breeding species, and two extinct species. Two species are considered hypothetical, including an unidentified seal(s) listed at the family level only. Forty-four birds and five mammals are endemic to the region.

Taxonomy, sequence, and nomenclature largely follow Wilson & Reeder (1993), Rice (1998), the American Ornithologists' Union (1998, 2000), and Banks et al. (2002, 2003, 2004), although they differ in some details. Pratt et al.'s (1987) taxonomic classification is used for endemic birds, but has been updated to reflect recent changes pertaining to several taxa. Additional bird information is drawn from Inskipp et al. (1996), King (1997), and a variety of other references for species with primarily Asian or Australasian distributions. Although English names are sometimes a contentious issue, I have attempted to follow the general trend toward the use of standardized names. Thus, for non-endemic bird species that occur outside the geographic coverage of the American Ornithologists' Union (1998), I have adopted many of the names given in Inskipp et al. (1996), *Birds Australia* (2003), and Gill & Wright (in prep.). Common names for some Micronesian mammals remain problematic. Some of the names used by Flannery (1995) and Wilson & Cole (2000) are poor choices for Micronesian species and I have used names that are more appropriate and modern. Vernacular names have been updated to reflect current island names (e.g., Chuuk Monarch and Pohnpei Flying Fox rather than Truk Monarch and Ponape Flying Fox).

This checklist relies on listing criteria for birds that are somewhat more stringent than those of previous regional compilations (Pyle & Engbring 1985, Reichel & Glass 1991, Stinson 1994), whereby a species' occurrence for an island group or island is accepted based on a catalogued museum specimen, published photograph, or sufficiently documented sighting published in a peer-reviewed journal.

In preparing this list, I have attempted to evaluate the validity of all bird records made since Pyle & Engbring (1985), plus some made earlier. Occurrence is treated as hypothetical when satisfactory documentation is lacking (see below under Status Codes and Definitions), even for some species reported in journal articles. Observations from unpublished reports and other unpublished sight records (e.g., Christmas bird count results and records by visiting birdwatchers) are excluded because they have not been critically assessed by knowledgeable experts.

Acceptance of mammal records is more troublesome than for birds because mammal reports often do not contain descriptive remarks, as found in the bird literature, or references to catalogued museum specimens. As a result, I have been more lenient in accepting a number of mammal records from various island groups or islands, especially those for marine and feral mammals. Nevertheless, I have attempted to maintain some listing standards for mammal records and rely almost entirely on published accounts. These records have also been reviewed for accuracy. Many of the listed marine mammals and pelagic seabirds have broad geographic ranges that are commonly depicted in references as including large portions of Micronesia. These types of sources have not been used as a basis for establishing a species' presence in the region. The geographic boundaries of each major island group or island are defined as extending 320 kilometers (200 miles) offshore or half the distance to a neighboring geographic unit, whichever is smaller.

Checklist entries consist of two sets of reference codes. The first is usually a one-letter abbreviation summarizing a species' occurrence status at an island group or island, as defined below and determined from literature records or other sources. Accompanying this is a letter-number code that almost always refers to a publication in the References, where the abbreviations appear in front of the corresponding references. Baker (1951) is cited as the standard reference for nearly all pre-1950 bird records, except in a few instances where an earlier original author is instead cited for an overlooked or questionable record. Similarly, Amerson (1969) is used as the primary source of bird records for the Marshall Islands between 1950 and the late 1960s, whereas Kuroda (1938), Marshall (1962), Eldredge (1991), and Reeves et al. (1999) serve as baseline references for bats, most small mammals, and many marine mammals. Newer references appearing in the bird checklist are those that first adequately documented a species for an island group or island. Some of these replace older hypothetical or otherwise inadequate references that first named a species at a location. Citations for the remaining mammal records have required more flexibility because of the problems associated with locating and interpreting initial reports, some of which date back to the 1600s or 1700s. In these cases, I have instead cited newer and easier-to-locate references. Five bird records from Wake are based only on museum specimens and are so noted. Another species, Fraser's Dolphin, has only been recorded pelagically outside the 320-km boundaries of all islands and is therefore listed without reference to any island group.

STATUS CODES AND DEFINITIONS

- R = Native resident, breeding.
- X = Extirpated or extinct native resident, formerly bred.
- C = Native resident now extinct in the wild, but maintained in captivity.
- I = Introduced resident, breeding in the wild. Domestic and semi-feral species are excluded from the checklist.
- M = Migratory or wintering species, non-breeding. For most migrants, this status is assigned regionwide whenever a total of four or more records are known, rather than on an island-by-island basis.
- S = Species regularly attracted to nearshore waters. These may roost on land, but are not known to breed locally.
- P = Pelagic species occurring primarily farther offshore, non-breeding.
- V = Vagrant species found outside of normal range. In most cases, these species have been reported only one to three times for all of Micronesia. However, in a few instances where a migrant's occurrence declines greatly in a directional gradient across the region, vagrant status may be assigned at locations where only one or two records are known. This status code has not been assigned to pelagic species because frequency of occurrence remains poorly known for many of them.
- H = Hypothetical species whose occurrence is based on questionable documentation. These include: 1) species reported as hypothetical or of uncertain identification in the original published account, 2) species listed without identification remarks in a reference, or 3) difficult-to-identify species where the descriptive account fails to eliminate other potentially occurring species. The Annotated Species Accounts contain further comments on the hypothetical status of a number of species.
- [] = Species known in the region only on the basis of hypothetical records.
- = Additional remarks appear in the Annotated Species Accounts.
 - + = Species endemic to Micronesia.
- EW = Threatened species designated as extinct in the wild (EW), critically endangered (CR), endangered (EN), vulnerable (VU), near threatened (NT), conservation dependent (CD), or data deficient (DD) (World Conservation Union 2004).
- * = Breeding formerly occurred at an island group or island, but the species is now represented by visiting individuals only.
- sp = Species presence for an island group or island is based on an unpublished museum specimen, as detailed in the Annotated Species Accounts.

Excluding increases due to taxonomic revisions, 38 species have been added to Micronesia's bird list since the publication of Pyle & Engbring (1985). New records obtained at each island group or island during this period number as follows: Guam (44 new species), the CNMI (40 species), Yap (25 species), Wake (13 species), the Marshalls (12 species), Palau (9 species), Pohnpei (9 species), Kosrae (9 species), and Chuuk (5 species). In general, a greater diversity of birds

is to be expected in western Micronesia because of the closer proximity of Asia, New Guinea, and the East Asian-Australasian Flyway (Baker 1951). However, the volume of records reported during the past 20 years also reflects the amount of viewing effort made at each location. Researchers and birdwatchers were present at Guam and the CNMI throughout the 1980s, 1990s, and early 2000s and produced a steady flow of records. Coverage of other islands has been more sporadic or, in the case of Kosrae and Chuuk, almost entirely lacking. Yap is also underwatched and likely has a visiting bird fauna similar to that of Palau and the Marianas. Micronesia's terrestrial mammal fauna is already fairly well known in terms of species occurrence and it is doubtful that many more species will be documented. However, marine mammals, as well as pelagic seabirds, offer great opportunity for making new discoveries throughout the region.

I hope that this checklist will stimulate readers in the future to publish their sightings with sufficient descriptive remarks and, whenever possible, to obtain voucher specimens for museum collections. Publication of observations not only helps to document the occurrence of species, but also contributes greatly to understanding their seasonal abundance and overall natural history.

Micronesia hosts 65 bird and mammal species categorized as threatened or near threatened (World Conservation Union 2004). Of these, one is extinct in the wild, seven are critically endangered, 16 are endangered, 12 are vulnerable, 16 are near threatened, five are conservation dependent, and eight are data deficient. However, several of these species clearly should be downgraded to lower risk categories, including the Mariana Fruit-Dove, Bridled White-eye, Golden White-eye, and three flying foxes from Chuuk and Pohnpei. Major threats to the region's birds and mammals are the impacts of introduced species, especially the Brown Tree Snake (*Boiga irregularis*), overhunting, and the loss or degradation of forests and wetlands (Mickleburgh et al. 1992, Marsh et al. 1995, Buden 2000, Stattersfield & Capper 2000). Based on distributional analyses of birds with small geographic ranges, BirdLife International has identified more than 200 priority areas, known as Endemic Bird Areas, that are considered important in preserving the world's avian diversity (Stattersfield et al. 1998). Four of these areas (Palau, Yap, the Marianas, and the eastern Carolines) and two secondary ones (the Marshalls and Wake) have been identified in Micronesia and encompass virtually the entire region.

Recent archaeological studies indicate that Micronesia supported a substantially larger and more diverse avifauna before the arrival of humans about 3,500 years ago, with many species more widely distributed (Steadman & Intoh 1994, Steadman 1999). Although the fossil record has been investigated at only a few islands, findings resemble a general pattern seen throughout Oceania (Steadman 1995, 1997). In the southern CNMI, Steadman (1999) discovered 14 or more species of birds that are now extinct or extirpated from the archipelago, including undescribed species of a flightless duck, a parrot, a large ground-dove (*Gallicolumba* sp.), and a parrotfinch (*Erythrura* sp.). Archaeological evidence suggests that most Pacific islands may have each formerly held one or several

endemic rail species (Steadman 1995). A few additional birds, such as the Kosrae Crane, Kosrae Starling, and possibly a never-identified rail or megapode at Bokaak Atoll in the Marshalls (Spennemann 1998), survived until as late as the 1800s or early 1900s, only to be lost to problems presumably related to European or Japanese contact, such as the introduction of Asian House Rats.

Annotated Species Accounts

This section gives brief comments on taxonomy, occurrence, or other topics of interest for various species at particular island groups or islands. Remarks are also provided for six species that do not appear in the checklist. Museum acronyms used in the text are as follows: MNHP, Muséum National d'Histoire Naturelle, Paris; MVZ, Museum of Vertebrate Zoology, Berkeley, California; SDNHM, San Diego Natural History Museum, San Diego, California; USNM, National Museum of Natural History, Washington, D.C.; YIO, Yamashina Institute for Ornithology, Abiko, Chiba Prefecture, Japan; and YPM, Peabody Museum of Natural History, New Haven, Connecticut.

BIRDS

Cackling Goose. Formerly treated as part of the Canada Goose (*Branta canadensis*) (Banks et al. 2004). Two banded birds recorded in the Marshalls belonged to the subspecies *B. hutchinsii leucopareia* and were captive-reared in the Aleutian Islands off Alaska (Schipper 1985, Springer et al. 1986).

Tundra Swan. Both records from the Marianas are of the subspecies *Cygnus columbianus bewickii* (Stinson et al. 1991, Wiles et al. 2004).

Gadwall. The rarity of Gadwalls in Micronesia suggests that Yocom's (1964) secondhand report of a large number at Kwajalein Atoll, Marshall Islands, may be a misidentification (Pyle & Engbring 1985). I list this record as hypothetical because subsequent sightings in the Marianas indicate that the species could reach the Marshalls.

Mallard. This species occurs in Micronesia as both a rare migrant and a now extinct endemic form, *Anas platyrhynchos oustaleti*, which is considered a stabilized Mallard×Pacific Black Duck hybrid (Yamashina 1948). Yocom's (1964) record for the Marshalls, which consisted of two flocks numbering about a dozen birds each, has been questioned (Pyle & Engbring 1985), but a flock of at least 40 Mallards reported from Pagan, CNMI (Glass et al. 1990), gives credence to the record. Clapp (1990) noted a more recent sighting of a male in breeding plumage at Kwajalein, but it too was secondhand and was given to R. B. Clapp (pers. comm.) without adequate details. Thus, I continue to treat the species as hypothetical for the Marshalls.

Pacific Black Duck. Fisher's (1950) sighting of a possible bird at Yap is inadequate to rule out other ducks with similar facial markings, such as Garganey and Spot-billed Duck.

- Northern Shoveler. Johnston & McFarlane's (1967) report of this species at Wake was given without details, but was based on a specimen (USNM 493469) collected by R. McFarlane on 14 April 1964.
- Green-winged Teal. Many authorities consider the two subspecies (Common Teal, *Anas crecca crecca*, and Green winged Teal, *A. c. carolinensis*) as separate species. Baker (1951) listed both as present in Micronesia, with a record of *A. c. crecca* from Pagan, CNMI, and one of *A. c. carolinensis* from Jaluit Atoll, Marshalls. None of the more recent records of the species have determined subspecies, but those from the Carolines and Marianas are far more likely to be *A. c. crecca*.
- Greater Scaup. An unidentified scaup photographed on Guam (Wiles et al. 2004) is listed under this species, which occurs more commonly in the Marianas than Lesser Scaup.
- Micronesian Megapode. Populations in Palau (Palau Megapode, *Megapodius laperouse senex*) and the Marianas (Mariana Megapode, *M. l. laperouse*) will likely be divided as full species (H. D. Pratt, pers. comm.).
- Red Junglefowl. Free-ranging junglefowl occur on Guam, but there is no evidence of a self-sustaining breeding population (G. J. Wiles, pers. obs.).
- Laysan Albatross. Listed as breeding on Wake, based on recent observations of egg laying (Jones 1995; M. J. Rauzon, pers. comm.).
- Black-footed Albatross. Reichel & Glass (1991) cited Safford (1904) as the source of a hypothetical record for Guam. However, Safford's (1904) brief remark about the species appears to be based on two earlier reports that mentioned it for the northern Marianas only (Oustalet 1896) or the Marianas as a whole (Hartert 1898), with no records presented for Guam. I have therefore removed *Phoebastria nigripes* from the island's bird list. Breeding occurred in the northern Marianas until perhaps the early 1900s (Reichel 1991). Subsequent records from the CNMI are inadequate to confirm the continued presence of this species, thus I follow Reichel & Glass (1991) in listing its current status as hypothetical. Black-footed Albatrosses possibly nested at Bokaak Atoll, Marshall Islands, and Wake during the 1800s (Rice & Kenyon 1962, Olson 1996), but Amerson (1969) discounted the Bokaak report (contra Pratt et al. 1987). Courtship behavior and egg laying by a few birds have recently resumed at Wake (Jones 1995; M. J. Rauzon, pers. comm.).
- Tahiti Petrel. The only record for the Caroline Islands is a specimen collected at an unspecified site in the late 1830s by J. Hombron and H. Jacquinot during Dumont d'Urville's second voyage into Micronesia (Baker 1951). The expedition stopped at Chuuk in December 1838 and passed through Yap and Palau in January 1839 (Dumont d'Urville 1987). Because some other birds were collected at Chuuk (Baker 1951) and more time (about a week) was spent there, I continue to follow Pyle & Engbring (1985) in assigning this record to that island group. However, Yap and Palau cannot be ruled out as the source.

- Juan Fernandez Petrel. Pratt et al.'s (1987) record for the Marshalls is excluded; see comments for White-necked Petrel.
- White-necked Petrel. A single record for the Marshalls was listed by Amerson (1969) as *Pterodroma externa*, which has become the Juan Fernandez Petrel after being split from *P. cervicalis*. The record is based on an apparent sighting with no descriptive details published, causing Owen (1977a) and Pyle & Engbring (1985) to treat it as hypothetical. Without a description, it is impossible to know which of the two species was observed. Pratt et al. (1987) appear to have listed the record under Juan Fernandez Petrel, but I continue to place it under White-necked Petrel, which is more likely to occur in Micronesia (Tanaka & Inaba 1981).
- Bonin Petrel. Tanaka & Kaneko (1983) reported sightings near the northern 320-km limits of Palau and Yap, and near the northwestern 320-km limit of Guam.
- Black-winged Petrel. Presence at Wake is based on a specimen (SDNHM 50794) collected on 3 July 2003 (P. Unitt, pers. comm.).
- Bulwer's Petrel. Amerson (1969) believed that nesting was likely at Bokaak Atoll, Marshalls, but this is disputed by R. B. Clapp (pers. comm.) because of a lack of appropriate habitat. Unlike Pyle & Engbring (1985), I accept Bruyns' (1964) records for Chuuk and Pohnpei because of his previous familiarity with the genus and the occurrence of the species elsewhere in the Carolines (Kepler et al. 1992).
- Wedge-tailed Shearwater. Nesting may have once occurred on Guam (Coultas 1931). Murphy (1951) and King (1967) listed this species as breeding in the Carolines, but did not document specific localities.
- Townsend's Shearwater. All Micronesian records are of the subspecies *Puffinus auricularis newelli* (Jouanin 1956; Drahos 1977; G. J. Wiles, unpubl. data; R. C. Banks, pers. comm.), which is also known as Newell's Shearwater. Presence at Wake is based on two specimens (USNM 496561, 496562) collected on 15 June 1966 (R. C. Banks, pers. comm.).
- Audubon's Shearwater. Reports of breeding in the Marianas (King 1967, Pratt et al. 1987) are erroneous (Reichel & Glass 1991).
- Leach's Storm-Petrel. Presence at Wake is based on a partially decomposed specimen (USNM 494112) collected in December 1964 (R. C. Banks, pers. comm.).
- Tristram's Storm-Petrel. Reported without substantiation for the CNMI by Pratt (1984).
- Matsudaira's Storm-Petrel. Based on identification comments in Pratt et al. (1987), I follow Pyle & Engbring (1985) in placing Hayes' (1985) sightings near Pohnpei and Kosrae under this species rather than Tristram's Storm-Petrel. However, the dates of observation do not coincide with the main period of seasonal occurrence of *Oceanodroma matsudairae* in western Micronesia (Wiles et al. 2000).
- Red-billed Tropicbird (*Phaethon aethereus*). Finsch (1880a, 1881) reported an unspecified number of sightings of this species from the Marshalls and

Kosrae. Baker (1951) accepted these records as proof of occurrence for Micronesia, but Amerson (1969) considered them as probably erroneous identifications of Red-tailed Tropicbirds (*P. rubricauda*). Owen (1977a) chose to list *P. aethereus* as hypothetical for the region due to uncertainties in documentation and Pyle & Engbring (1985) deleted it entirely for similar concerns. Red-billed Tropicbirds occur rarely in the Hawaiian Islands as far west as French Frigate Shoals (R. L. Pyle, pers. comm.) and could conceivably reach eastern Micronesia. However, Finsch (1880b) reported *P. aethereus* as the most common tropicbird on his voyage from Hawaii to Jaluit, Marshall Islands, with no mention of Red-tailed Tropicbirds. This, plus the fact that both species have bright red bills and are similar in size, suggests that Finsch was indeed mistaken in his identifications. Thus, I concur with Pyle & Engbring (1985) that *P. aethereus* should be excluded from the region's bird list.

Darter. Pratt et al. (1987) questioned the accuracy of Ripley's (1948) record, which gave no descriptive remarks to verify identification. Because the species is occasionally known to wander (Beehler et al. 1986), I continue to list it as hypothetical for Palau.

Greater Frigatebird. Breeding in Yap is based on a previously overlooked account by Niering (1961). Nesting has not been detected at Wake since 1968 (M. J. Rauzon, pers. comm.).

Lesser Frigatebird. Owen's (1977b) sighting of a male on a nest at Helen Island, Palau, is insufficient proof of breeding (Pyle & Engbring 1985). More recent reports (Engbring 1988, 1992) mistakenly list the species as a resident (J. Engbring, pers. comm.). Two older accounts for Guam (Seale 1901, Baker 1951) are not definitive. Presence at Wake is based on a specimen (USNM 497832) collected on 15 June 1966 (R. C. Banks, pers. comm.).

Chinese Pond-Heron. An unidentified pond-heron seen at Tinian, CNMI (Wiles et al. 2004), is tentatively placed under *Ardeola bacchus*, which is the only species of *Ardeola* confirmed thus far in Micronesia.

Rufous Night-Heron. Fisher's (1950) sighting of two birds at Yap was given without differentiation from other night-heron species.

Osprey. Listed as a migrant for Palau (Pyle & Engbring 1985) rather than a breeding species (Mayr 1945).

Chinese Sparrowhawk. This common name follows Gill & Wright (in prep.) and is used rather than Chinese Goshawk because it more accurately describes the species' small leg size (Ferguson-Lees & Christie 2001).

Japanese Sparrowhawk. Listed as hypothetical for the region, despite a specimen (MNHP 1888-384) from Guam that is attributed to this species (Oustalet 1895, Baker 1951). The specimen, an immature, has been re-examined twice in recent years, with results suggesting that it may be another species. Wing characteristics indicate that it is possibly a Eurasian Sparrowhawk (*Accipiter nisus*) (Reichel & Glass 1991), but throat, back, and tail plumage characters point more toward *A. gularis* or Besra (*A. virgatus*) (J.-F. Voisin, pers.

comm.). Seale's (1901) report of a second specimen from Guam obtained by A. Owston's collectors in the 1890s is apparently erroneous. Owston's material was sent to the Rothschild collection (Hartert 1898) and was eventually transferred to the American Museum of Natural History. Neither this museum nor the Natural History Museum, Tring, hold an accipiter specimen from Guam (P. Capainolo, pers. comm.; R. Prys-Jones, pers. comm.), which corroborates Hartert's (1898) remark that Owston's men failed to find any raptors while in the Marianas.

Common Buzzard. A small resident population was discovered on Anatahan, CNMI, in the 1980s (Reichel et al. 1992). Buteo-like hawks suspected to be this species are rare migrants to Palau, Guam, and the CNMI (Pratt et al. 1977, Wiles et al. 1993, 2000). However, observers have failed to obtain positive identifications of such individuals, in part because of the highly variable appearance of *B. buteo* (Ferguson-Lees & Christie 2001).

Eurasian Hobby. Records for Guam (Jenkins 1983) and the CNMI (Pratt 1984) appeared without documentation.

Slaty-legged Crake. N. Vander Velde (pers. comm.) reports that the listing of this species for the Marshalls by the National Biodiversity Team (2000) was erroneous.

Guam Rail. An on-going program to establish this species on Rota, CNMI, resulted in some nesting by released birds between 1995 and 2002 (Beauprez & Brock 1999, Medina & Aguon 2000, Wenninger 2002). However, it is premature to consider the population as successfully established (S. Medina, pers. comm.).

Rufous-tailed Bush-hen. Examination of the Palau specimen (USNM 582225) indicates that it is *Amaurornis moluccanus* (R. C. Banks, pers. comm.), which was formerly considered conspecific with the Plain Bush-hen (*A. olivaceus*).

White-browed Crake. This species is placed in the genus *Poliolimnas* rather than *Porzana*, based on unpublished genetic evidence (S. Olson, pers. comm.).

Snowy Plover. N. Vander Velde (pers. comm.) reports that the listing of this species for the Marshalls by the National Biodiversity Team (2000) was erroneous.

Semipalmated Plover. Several sightings of ringed plovers have occurred in the Marshalls (Finsch 1880a, Anonymous 1945, Baker 1951, Clapp 1990; see comments for Little Ringed Plover), but none have been described in sufficient detail to verify identification. Pyle & Engbring (1985) believed that both *Charadrius semipalmatus* and *C. hiaticula* were equally likely to appear in this island group and listed Finsch's record as hypothetical under the latter species. However, specimen records of *C. semipalmatus* from Baker Island, Johnston Atoll, and the northwestern and main Hawaiian Islands (Clapp 1990) suggest that this species is more likely to reach the central Pacific than *C. hiaticula*, which is known only from several sightings in the northwestern Hawaiian Islands (Pratt et al. 1987; R. L. Pyle, pers.

comm.). I have therefore tentatively placed the Marshall Islands records under *C. semipalmatus*. Buden's (1995) sightings from Pingelap Atoll, Pohnpei, are similarly difficult to link to either species, but are listed under *C. hiaticula* because this site is closer to western Micronesia than to any of the islands with confirmed records of *C. semipalmatus*.

Little Ringed Plover. A report of four "Papuan Ring-Necked" Plovers (*Charadrius dubius dubius*) at Enewetak Atoll, Marshall Islands, was published without descriptive remarks (Anonymous 1945). This identification was perhaps influenced by Mayr's (1945) now incorrect remark that this was the only taxa of small plover with a well-defined black upper breast band occurring in the tropical western Pacific. Recent information suggests that breeding populations of *C. d. dubius* in New Guinea, New Britain, and New Ireland almost never wander (Doughty et al. 1999). In addition, migrant *C. dubius* rarely visit western Micronesia (Engbring 1988, Stinson et al. 1997, Clements 2003) and have not been otherwise recorded east of the Marianas. I therefore consider this record as most likely involving *C. semipalmatus* or *C. hiaticula*.

Black-winged Stilt. I follow Inskipp et al. (1996) in retaining *Himantopus himantopus leucocephalus* as a subspecies of *H. himantopus*. Thus, Clements' (2003) report of a Pied Stilt (*H. h. leucocephalus*) from Yap is placed under *H. himantopus*. Furthermore, Clements (2003) did not provide adequate descriptive details of a photographed bird, which appears doubtfully to be *H. h. leucocephalus*.

Greater Yellowlegs. Johnston & McFarlane's (1967) report for Wake had no description and did not distinguish this species from the similar Lesser Yellowlegs.

Spotted Redshank. Both reported sightings for Guam (Jenkins 1981, Reichel & Glass 1991) lacked descriptive details.

Common Sandpiper. Considered hypothetical for Pohnpei and Kosrae until future records can rule out the less likely Spotted Sandpiper (Pyle & Engbring 1985).

Whimbrel. All Micronesian records appear to represent *Numenius phaeopus variegatus*, although subspecific identity is not provided in most reports. The subspecies *N. p. hudsonicus* occurs in small numbers in Hawaii and New Zealand (Pratt et al. 1987), and therefore could reach Micronesia, especially the Marshalls.

Little Stint. Presence in the Marshalls is based on two specimens (USNM 544202, 606023) collected at Enewetak Atoll on 11 September 1968 and 11 December 1968 (Glass et al. 1990; R. C. Banks, pers. comm.).

Dunlin. Reported without details for Wake (Johnston & McFarlane 1967).

Common Snipe. Johnston & McFarlane's (1967) report for Wake did not contain descriptive remarks, but was based on an individual (USNM 494111) collected by R. McFarlane on 6 January 1965. Examination of this specimen indicates that it is the nominate subspecies *Gallinago gallinago gallinago*

(R. B. Clapp, pers. comm.) rather than the recently separated Wilson's Snipe (*G. delicata*), which reaches Hawaii (Pratt et al. 1987). I assume that birds from the Marianas also represent *G. gallinago*, although this should be verified with future records.

Pomarine Jaeger. Jaegers have been identified to species only a few times in Micronesia, giving little clue as to which species occurs most commonly in the region. Two unidentified birds seen near Chuuk (Bruyns 1964) are tentatively listed under *Stercorarius pomarinus*, which is the most common species in Japan and Hawaii (King 1967, Pratt et al. 1987, Brazil 1991, Malling Olsen & Larsson 1997). However, Micronesian birds are perhaps equally likely to be Parasitic Jaegers or Long-tailed Jaegers.

Parasitic Jaeger. Kepler et al. (1992) incorrectly reported a sighting as being north of the Hall Islands, Chuuk, but based on coordinates provided in the account, the bird was closer to Oroluk Atoll, Pohnpei.

Common Black-headed Gull. This common name follows Gill & Wright (in prep.).

Herring Gull. A first-winter gull (MNHP 1889-587) collected at Agrihan, CNMI, was originally reported as *Larus argentatus vegae* (Oustalet 1896, Baker 1951), but was later thought to be more likely a Lesser Black-backed Gull (*L. fuscus*) (C. Jouanin in Reichel & Glass 1991). Recent re-examination of the bird has confirmed that it possesses a number of characters consistent with *L. a. vegae* (F. Jiguet, pers. comm.).

Gull-billed Tern. Reported without documentation for the CNMI (Pratt 1984).

Little Tern. Occurs as both a breeder and migrant in the CNMI (Reichel et al. 1989, Glass et al. 1990).

Spectacled Tern. This common name follows Gill & Wright (in prep.). Pratt et al. (1987) expressed some question over two records from Palau and Yap, considering them as extralimital. However, more recent information indicates that *Sterna lunata* may regularly occur as far west as the northern Moluccas (Coates & Bishop 1997). I was unable to locate Fisher's (1950) specimen to confirm the Yap record. This species has been recorded at sea southeast of Pohnpei's 320-km limit (Baker 1951). Reports of breeding at Wake (King 1967, Pratt et al. 1987, Clapp et al. 1993) appear to be unsubstantiated (Jones 1995, Olson 1996).

Bridled Tern. This species was reported from the Marshalls based on a juvenile (YIO 13562) collected at Bikar Atoll in 1933 (Baker 1951, Amerson 1969). However, re-examination of the specimen has revealed it to be a Sooty Tern (T. Hiraoka, pers. comm.).

Black Noddy. Nesting at Wake is based on recent reports (M. J. Rauzon, pers. comm.).

Blue Noddy. I follow Gochfeld & Burger (1996) in separating this species from the Gray Noddy (*Procelsterna albivitta*).

White Tern. Same comment as for Black Noddy.

Rock Pigeon. Although free-flying birds have been reported from Chuuk, Pohnpei, Kosrae, and the Marshalls (Hayes 1985, Pyle & Engbring 1985,

Engbring et al. 1990, Buden 2000, National Biodiversity Team 2000), there has been no confirmation that the populations are truly feral. These records are therefore listed as hypothetical. M. J. Rauzon (pers. comm.) reports that the population on Wake is self-sustaining.

White-throated Ground-Dove. Although the Guam population was extirpated by Brown Tree Snake predation in the mid-1980s, individuals continue to be documented there once every few years (Wiles et al. 1995, Wiles & Aguon 1998). These birds are best categorized as migrants under the checklist's definitions, but in fact are almost certainly individuals dispersing from Rota, CNMI. The brevity of the sightings suggests that the birds probably survive no more than a few weeks or months.

White-fronted Ground-Dove. This common name follows Gill & Wright (in prep.). Mariana Fruit-Dove. Same comments as for White-throated Ground-Dove.

Crimson-crowned Fruit-Dove. Current taxonomy combines Micronesian and Polynesian taxa into a single species, which is commonly given the name Crimson-crowned Fruit-Dove (Gill & Wright, in prep.). Populations in Micronesia (*Ptilinopus porphyraceus ponapensis* and *P. p. hernsheimi*) will probably be split off as a distinct species known as the Purple-capped Fruit Dove (H. D. Pratt, pers. comm.).

Micronesian Imperial-Pigeon. The population on Yap is considered introduced (Engbring et al. 1990).

Rufous Hawk-Cuckoo. I follow King (2002) and Payne (2005) in placing this species in the genus *Hierococcyx* and in separating it from the Javan Hawk-Cuckoo (*H. fugax*). The Palau specimen (YPM 12390), which was collected on 12 February 1950, has wing and tail measurements of 207 mm and 162 mm, respectively, and a pale rufous breast and upper belly (K. Zyskowski, pers. comm.). These traits confirm the bird as *H. hyperythrus* (King 2002; R. B. Payne, pers. comm.).

Oriental Cuckoo. A bird sighted at Pingelap Atoll, Pohnpei (Buden 1995), was not adequately separated from a Common Cuckoo.

Island Cuckoo. This common name follows Gill & Wright (in prep.). Placed in the genus *Urodynamis* based on genetic evidence (Payne 2005). Listed as a vagrant for Yap, where only one record is known (Baker 1951). Better information on the species' presence in the eastern outer atolls of Yap State may reveal it to be a regular migrant there, as in Chuuk. Presence at Wake is based on a specimen (MVZ 79443) collected on 16 July 1939.

Brown Hawk-Owl. A hypothetical record for Rota, CNMI (Pratt et al. 1987), was based on a second or thirdhand report (H. D. Pratt, pers. comm.) and further documentation has never appeared. I consider this record unsatisfactory and disregard it.

Gray Nightjar. Occurs as both a breeder (*Caprimulgus indicus phalaena*) and migrant (*C. i. jotaka*) in Palau (Baker 1951).

Palau Swiftlet. Micronesia's three species of swiftlets are placed in the genus *Aerodramus*, following Lee et al. (1996).

Island Swiftlet. This common name follows Gill & Wright (in prep.). Kubary's questionable observation of a swiftlet on Yap (Hartlaub & Finsch 1872, Wigglesworth 1891, Engbring et al. 1990) was linked to this species by Baker (1951). Because it is much more likely that the bird was a migratory swift (e.g., a Fork-tailed Swift), I have chosen to delete this record for Yap rather than to continue listing it as hypothetical (Pyle & Engbring 1985, Engbring et al. 1990).

Common Kingfisher. Sightings of single unidentified kingfishers at Helen Island, Palau (R. P. Owen in Pyle & Engbring 1985), and Ulithi Atoll, Yap (Baker 1951), have been previously reported as most likely Sacred Kingfishers (Pyle & Engbring 1985, Pratt et al. 1987). The only descriptive remark given for both birds was that each had cinnamon underparts. This coloration better matches the appearance of *Alcedo atthis* than *Todiramphus sanctus*, which typically has light buffy underparts. Common Kingfishers are a common migrant to the Philippines (Kennedy et al. 2000) and thus might wander into western Micronesia more often than indicated by the lone record for Guam. These sightings are therefore tentatively placed under this species (Wiles et al. 1993).

Micronesian Kingfisher. Future taxonomic revision may recognize subspecies at Guam (Guam Kingfisher, *Todiramphus cinnamominus cinnamominus*), Palau (Rusty-capped Kingfisher, *T. c. pelewensis*), and Pohnpei (Pohnpei Kingfisher, *T. c. reichenbachii*) as full species (H. D. Pratt, pers. comm.).

Collared Kingfisher. Mariana populations (*Todiramphus chloris orii*, *T. c. albicilla*, and *T. c. owstoni*) may be split off as a new species, Mariana Kingfisher (H. D. Pratt, pers. comm.).

Sacred Kingfisher. See comments for Common Kingfisher. Single birds seen at Kapingamarangi Atoll, Pohnpei (Buden 1998), and Kosrae (Lauret 1990) are most likely *Todiramphus sanctus*, based on plumage descriptions and geographic range.

Rainbow Bee-eater. The sole record for the region was listed as tentative by Engbring (1983a), contrary to other reports (Engbring & Owen 1981, Pyle & Engbring 1985, Engbring 1988). Based on field notes written at the time, J. Engbring (pers. comm.) confirms that he had excellent views of the birds and saw many key characteristics. He considers the identification as positive.

Micronesian Honeyeater. Some newer references use the vernacular name Micronesian Myzomela.

Common Cicadabird. This common name follows Gill & Wright (in prep.). Populations in Palau (Palau Cicadabird, *Coracina tenuirostris monachum*), Yap (Yap Cicadabird, *C. t. nesiotis*), and Pohnpei (Pohnpei Cicadabird, *C. t. insperatum*) may eventually be recognized as full species (H. D. Pratt, pers. comm.).

Palau Flycatcher. This species is commonly found in all forested habitats in Palau (G. Wiles, pers. obs.), making this common name preferable over Mangrove Flycatcher.

- Oriental Reed-Warbler. This species has been separated from the Great Reed-Warbler (*Acrocephalus arundinaceus*) (Shirihai et al. 1995).
- Carolinian Reed-Warbler. This common name follows Gill & Wright (in prep.). Listed as hypothetical for Kosrae because of uncertainty over Hartlaub's (1852) report (Engbring et al. 1990).
- Citrine White-eye. This common name follows Gill & Wright (in prep.).
- Olive-colored White-eye. This vernacular name is used instead of Olive White-eye (Pratt et al. 1987) or Yap Olive White-Eye (Stattersfield & Capper 2000) to avoid an implied relationship with the Réunion Olive White-eye (*Zosterops olivaceus*) and Mauritius Olive White-eye (*Z. chloronothus*). Independent genetic investigations link this species to the genus *Zosterops* rather than *Rukia* (Sibley & Ahlquist 1990, Slikas et al. 2000).
- Bridled White-eye. The two subspecies (Bridled White-eye, *Zosterops conspicillatus conspicillatus*, on Guam and Saipan White-eye, *Z. c. saypani*, on Saipan, Tinian, and Aguiguan) may be separated as full species based on plumage and vocal differences (H. D. Pratt, pers. comm.).
- Rota White-eye. Listed as distinct from the Bridled White-eye because of differences in plumage, vocalizations, and genetic traits (Pratt et al. 1987, Slikas et al. 2000).
- Gray-brown White-eye. This common name follows Gill & Wright (in prep.). The two subspecies (Gray-brown White-eye, *Zosterops cinereus ponapensis*, at Pohnpei and Kosrae White-eye, *Z. c. cinereus*, at Kosrae) may be separated as full species (H. D. Pratt, pers. comm.).
- Teardrop White-eye. This common name follows Gill & Wright (in prep.).
- Pohnpei Starling. This common name follows Gill & Wright (in prep.).
- Kosrae Starling. I follow Hume (2002) and Gill & Wright (in prep.) in using this common name.
- Eastern Yellow Wagtail. The former Yellow Wagtail (*Motacilla flava*) was recently divided into multiple species, but species limits of the new taxa remain inadequately known (Voelker 2002, Alström & Mild 2003, Pavlova et al. 2003, Banks et al. 2004, Tyler 2004). Subspecies occurrence in Micronesia is poorly substantiated. Clements (2003) listed the races *simillima* and *macronyx* for Yap without providing details of records, and in separate correspondence, J. F. Clements (pers. comm.) admitted that neither taxa was sufficiently documented to verify presence. Some of Owen's (1974) birds from Palau and perhaps Yap had blue-gray heads with white eye-stripes and were likely *simillima*, and Engbring's (1988) illustration of *M. flava* for Palau appears to show *simillima*. This race is now considered part of the newly established Eastern Yellow Wagtail (*M. tschutschensis*), whereas *macronyx* and the race *taivana* may comprise a third species, the Green-headed Wagtail (*M. taivana*) (Banks et al. 2004). Based on this information and because *simillima* is the most common subspecies to visit the Philippines (Kennedy et al. 2000), I list these records under Eastern Yellow Wagtail pending taxonomic clarification. Mariana records have been imma-

tures or females in winter plumage and are not attributable to subspecies, thus I list these as hypothetical under Eastern Yellow Wagtail.

White Wagtail. See comments for Black-backed Wagtail.

Black-backed Wagtail. Close scrutiny is required to distinguish *Motacilla lugens* from *M. alba* (Howell 1990). Of the three sightings of this species pair on Guam, one was *M. lugens* while the other two did not yield positive identifications (Wiles et al. 1987, 2004). Two records from Palau both represent *M. alba* (Owen 1977b with supplemental information in Pyle & Engbring 1985, Wiles et al. 2004). Recent genetic evidence suggests that *M. lugens* may be conspecific with at least part of the *M. alba* superspecies complex (Voelker 2002). Alström & Mild (2003) and Tyler (2004) both considered *M. lugens* to be a subspecies of *M. alba* in their recent reviews of the family Motacillidae.

Black-headed Bunting. Re-examination of the specimen (USNM 536692) confirms the identity of this surprising vagrant to Palau (R. C. Banks, pers. comm.).

Eurasian Tree Sparrow. Up to five birds were seen on Peleliu, Palau, in 2000 and 2002 (Wiles et al. 2004), but breeding has not yet been confirmed.

Orange-cheeked Waxbill. I consider this species established on Saipan, CNMI, because of the large numbers of birds, including many immatures, seen at multiple locations since 2001 (Wiles et al. 2004). However, nesting remains unobserved (N. C. Johnson, pers. comm.).

Mottled Munia. Considered as introduced to Pohnpei (Engbring et al. 1990).

MAMMALS

Micronesian Flying Fox. Based on similarities among examined specimens, Koopman (1993, pers. comm.) elected to retain the subspecies *Pteropus mariannus pelewensis* (Palau), *P. m. yapensis* (Yap), and *P. m. ualanus* (Kosrae) within *P. mariannus*, which I follow here. Flannery (1995) split these subspecies off as separate species without explanation. Because of the wide distribution of this species in the Caroline and Mariana Islands, the English name Micronesian Flying Fox is more appropriate than the often-used name of Mariana Flying Fox.

Chuuk Flying Fox. See comments for Mortlock Flying Fox.

Mortlock Flying Fox. Recent unpublished taxonomic work by D. W. Buden (pers. comm.) indicates that the species name *Pteropus pelagicus* has precedence over *P. phaeocephalus*. Furthermore, morphological similarities between this species and *P. insularis* from the main Chuuk islands and Namonuito Atoll suggest that the two taxa should be merged to form a single species comprised of two subspecies, *P. pelagicus pelagicus* and *P. p. insularis* (D. W. Buden, unpubl. data).

Pohnpei Flying Fox. An old specimen record from the Mortlock Islands, Chuuk (Thomas 1882, Andersen 1912), is considered erroneous (Rainey & Pierson 1992). Recent bat surveys in the Mortlocks confirm the absence of this species (D. W. Buden, unpubl. data).

- Pacific Sheath-tailed Bat. I follow Koopman (1997) in retaining the three Micronesian subspecies (*Emballonura semicaudata palauensis*, Palau; *E. s. rotensis*, Marianas; and *E. s. sulcata*, Chuuk and Pohnpei) as part of this species.
- Feral Dog (*Canis familiaris*). Semi-feral dogs occur commonly on many Micronesian islands, but evidence is lacking for self-sustaining wild populations.
- Feral Cat. Breeding populations of feral cats likely occur on additional islands, but these are inadequately substantiated in the literature.
- Seal sp. Four sightings of unidentified seals in the eastern Marshalls may represent Hawaiian Monk Seals (*Monachus schauinslandi*) or Northern Elephant Seals (*Mirounga angustirostris*) (Eldredge 1991, National Biodiversity Team 2000).
- Gray Whale (*Eschrichtius robustus*). Gray Whales were listed as one of several species harvested illegally by a whaling ship operating north of Palau and Yap during the 1970s (Eldredge 1991). However, I disregard this record because *E. robustus* was excluded from Eldredge's species accounts, has a greatly reduced eastern Asian population that makes it highly unlikely to visit Micronesia (Reeves et al. 1999), and does not visit tropical waters elsewhere in its range.
- Humpback Whale. Not listed for Palau and Yap, although illegal kills in the 1970s were reported near or within their northern 320-km boundaries (Eldredge 1991). Better location information is needed before these records are accepted.
- Common Minke Whale. Recorded east of the CNMI's 320-km boundary (Miyashita et al. 1995).
- Bryde's Whale. The taxonomy and nomenclature of Bryde's Whales are unsettled, with two species tentatively recognized by Rice (1998), these being the Pygmy Bryde's Whale (*Balaenoptera edeni*) and Common Bryde's Whale (*B. brydei*). The distribution of the two forms is incompletely understood, but both may occur in Micronesia (Kato 2002). Because no attempt has been made yet to sort records from Micronesia according to the criteria of the new species, I continue to lump all records under the former species known as Bryde's Whale (*B. edeni*). I do not list this whale for Palau, although illegal kills in the 1970s may have occurred within its northern 320-km boundary (Eldredge 1991). Better location data are needed before this record is accepted. Kishiro (1996) reported an observation from south of Palau's 320-km limit. Listed as hypothetical for Kosrae, based on the sighting of a whale considered as probably this species (Reeves et al. 1999). Animals encountered in the general vicinities of Palau and Kosrae (Miyashita et al. 1995, Kishiro 1996) were not reported with enough specific locality information to verify records for either site.
- Sei Whale. Horwood (1987) reported two Sei Whales tagged at 15°N, 143°E, a site located a few kilometers closer to Guam than Rota, CNMI. However,

both were members of a group of 13 animals placed more accurately by Masaki (1972) at 15°25.2'N, 143°00'E (Eldredge 1991), which is nearer to Rota. Thus, I do not list the species for Guam. Horwood (1987) also presented rounded-off coordinates for three other tagging locations that correspond to sites inside the CNMI's northern boundary. However, the actual positions, reported in Masaki (1972), fall just beyond the 320-km limit. Sightings north of Wake from 20–25°N, 165–170°E (Wada 1981, Miyashita et al. 1995) are not exact enough to substantiate occurrence near this island.

Fin Whale. Northrop et al. (1968) detected low frequency sounds on underwater hydrophones at Enewetak Atoll, Marshalls Islands, and Wake that closely resembled the vocalizations of *Balaenoptera physalus*. Watkins et al. (1987) later reported that these calls matched those of this species. Fin whale signals have since been verified near Wake (McDonald 2003, pers. comm.). However, based on commentary from M. A. McDonald (pers. comm.), I list this species as hypothetical for the Marshalls because observations confirming its occurrence at such low latitudes are lacking for the rest of the North Pacific. Calls heard on hydrophones would have originated from animals occurring within 200 km of the devices' locations (Northrop et al. 1968; M. A. McDonald, pers. comm.).

Blue Whale. Vocalizations detected on a hydrophone near Wake (Stafford et al. 2001) would have come from whales located within 200 km of the device (K. M. Stafford, pers. comm.; M. A. McDonald, pers. comm.).

Sperm Whale. Listed as a resident of Guam, based on Eldredge's (2003) report of a newborn calf seen near the island. It is unknown to what extent this species remains in Guam's waters throughout the year. Many sperm whales occurring in the tropical Pacific may migrate seasonally to temperate seas, whereas others apparently remain present year-round (Townsend 1935). Sightings northwest of Wake from 20–25°N, 160–165°E (Wada 1981) are not exact enough to substantiate occurrence near this island. Ohizumi et al. (2002) reported this species just east of the 320-km limit for Wake.

Cuvier's Beaked Whale. Eldredge (1991) and Reeves et al. (1999) incorrectly interpreted Masaki (1972) as reporting this species from the Marianas. However, Masaki's (1972) only observation of this whale occurred well north of the Marianas at 26°06'N, 143°44'E. Reported well south of Yap's 320-km limit and just outside of Kosrae's southern limit (Myazaki & Wada 1978). Unidentified beaked whales recorded near Palau (Owen 1977c) and Wake (Ohizumi et al. 2002) are listed hypothetically as this species.

Rough-toothed Dolphin. Reported northeast of the CNMI's 320-km boundary (Miyashita et al. 1996).

Common Bottlenose Dolphin. The record for Guam (Trianni & Kessler 2002) was reported without descriptive remarks and was based on aerial observations. I consider this a hypothetical record until better proof of occurrence is provided.

- Pantropical Spotted Dolphin. Same comments as for Common Bottlenose Dolphin. Reported just east of the 320-km limit for the CNMI (Gilpatrick et al. 1987).
- Spinner Dolphin. Reported just south of the 320-km limit for Yap (Miyazaki & Wada 1978). Although this species is probably a year-round resident in the CNMI, as on Guam (G. J. Wiles, pers. obs.), it is listed as non-breeding due to an absence of reproductive documentation.
- Striped Dolphin. Reported south of Yap's 320-km limit (Wilson et al. 1987). Based on Eldredge's (1991) account, a listing of this species for the CNMI by Stinson (1994) is erroneous. However, several sightings have occurred east of the 320-km limit for the CNMI (Masaki 1972, Reeves et al. 1999).
- Short-beaked Common Dolphin (*Delphinus delphis*). Eldredge (1991) mistakenly cited Masaki (1972) as providing a record of this species from the Marianas. However, Masaki's (1972) only reference to this dolphin was a group of 20 animals sighted at 31°42'N, 140°02'E, which is far to the north. Eldredge's (2003) statement that this species is "broadly observed" in Micronesia also appears to be incorrect, based on the absence of documented records for the region.
- Fraser's Dolphin. Reported south of the 320-km limits for Yap and Kosrae (Eldredge 1991).
- Risso's Dolphin. A record listed as near Guam (Eldredge 1991, Reeves et al. 1999) is in fact closer to Rota, CNMI.
- Melon-headed Whale. Stinson's (1994) listing of this species for Saipan, CNMI, is treated as a hypothetical record due to a lack of accompanying background information. The record apparently originates from unpublished notes held at the CNMI Division of Fish & Wildlife. Reported beyond Kosrae's southern 320-km limit (Miyazaki & Wada 1978).
- Pygmy Killer Whale (*Feresa attenuata*). Eldredge (2003) mentioned this whale as "broadly observed" in Micronesia without providing supporting evidence. I am not aware of any documented records for the region (e.g., Eldredge 1991, Reeves et al. 1999) and therefore exclude this species from the checklist.
- False Killer Whale. Reported south of Yap's 320-km limit by Eldredge (1991), who erroneously listed this record as west of Palau.
- Killer Whale. Sightings northwest of the CNMI from 20–25°N, 140–145°E (Miyashita et al. 1995) are not exact enough to substantiate occurrence for this island group.
- Short-finned Pilot Whale. Sightings have been reported north of the CNMI from 23–25°N, 142–144°E (Reeves et al. 1999).
- Feral Pig. Dybas (1948) reported feral pigs as becoming increasingly common on Pohnpei in the 1940s and noted the ecological damage that they caused to native forest. Current information suggests that this population may be extirpated (D. W. Buden, pers. comm.). Listed as present on Kosrae by Long (2003), who did not reference a source of information. Recent tourist information verifies that feral pigs can be hunted in the interior of the island (Kosrae Village 2005).

Asian House Rat. Although *Rattus rattus* is widely reported throughout Micronesia (Marshall 1962), nearly all populations are now recognized as *R. tanezumi* (Flannery 1995). Differences in chromosome counts, morphology, and biochemistry distinguish the two species (Musser & Carleton 1993).

Black Rat. See comments for Asian House Rat. The only accepted Micronesian record of *Rattus rattus* is noted by Musser & Carleton (1993).

Ryukyu Mouse (*Mus caroli*). Kuroda (1939) described this species as abundant and much more numerous than *M. musculus* on Saipan, CNMI, whereas Marshall (1962) listed only *M. musculus* as present. Ten purported specimens of *M. caroli* (YIO 334-343) were collected from the island in 1931 (Kuroda 1938), but identification was based chiefly on external physical characters rather than skull morphology (T. Hiraoka, pers. comm.; Y. Kaneko, pers. comm.). Recent examination of the skulls from three of the specimens reveals the lack of proodont upper incisors, which identifies the animals as *M. musculus* rather than *M. caroli* (Y. Kaneko, pers. comm.).

REMARKS ON OTHER SPECIES

The following species have been omitted for the region or particular island groups or islands, based on re-evaluations of occurrence as discussed in Pyle & Engbring (1985), Reichel & Glass (1991), and Clapp et al. (1983): Short-tailed Albatross (*Phoebastria albatrus*), Pink-footed Shearwater (*Puffinus creatopus*), Hardhead (*Aythya australis*), Upland Sandpiper (*Bartramia longicauda*), Small Pratincole (*Glareola lactea*), Arctic Tern (*Sterna paradisaea*), Pohnpei Lorikeet at Chuuk, and Chestnut Munia from the CNMI. A specimen of a Little Shearwater (*Puffinus assimilis*) reported from the Marshalls (Amerson 1969) was reidentified as a Stejneger's Petrel (R. B. Clapp in Pyle & Engbring 1985).

The following introduced species established temporary breeding populations at various locations in Micronesia, but have since died out. These include the Gray Francolin (*Francolinus pondicerianus*) on Guam from 1961-1972 (Reichel & Glass 1991), Rosy-faced Lovebird (*Agapornis roseicollis*) on Guam during the early 1990s (Aguon & Wiles 1991, 1992), Common Myna (*Acridotheres tristis*) on Kwajalein Atoll, Marshall Islands, from about 1950-1956 (Marshall 1957, Fosberg 1966, Amerson 1969, Clapp 1990), Scaly-breasted Munia in Palau from the early 1930s to the 1950s (Baker 1951, Ripley 1951, Pratt et al. 1980), Chestnut Munia on Guam from the 1950s to the 1990s (Wiles et al. 2000), and Java Sparrow (*Padda oryzivora*) on Guam from 1956-1962 (Marshall 1957, Hartin 1961, Reichel & Glass 1991). House Sparrows (*Passer domesticus*) were present on Kwajalein Atoll during the 1960s (Amerson 1969, Clapp 1990) and on Wake in the 1950s (Marshall 1957), but breeding was not confirmed and neither population became established.

Two vespertilionid bat species, the Little Brown Bat (*Myotis lucifugus*) and Eurasian Noctule (*Nyctalus noctula*), have each been recorded once on Guam (Wiles & Hill 1986, Wiles 1999). Both arrived via human conveyance aboard an airplane and ship, respectively. Similarly, a pair of Common Mynas was briefly

seen near the commercial shipping port on Guam in 1995, having likely arrived by ship (Wiles & Aguon 1995). None of these species are included in the checklist.

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Appendix 1. Checklist of Micronesian birds, with status information and references presented for 279 species at nine island groups or islands. See text for explanations of abbreviations and symbols. Island abbreviations in column headings are as follows: Pal, Palau; CNMI, Commonwealth of the Northern Mariana Islands; Chu, Chuuk; Pohn, Pohnpei; Kosr, Kosrae; and Mars, Marshall Islands.

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Appendix 1. Continued

Species	PAL	YAP	GUAM	CNMI	CHU	POHN	KOSR	MARS	WAKE
TROPICBIRDS									
White-tailed Tropicbird	R-B1	R-B1	S*-B1	R-B1	R-B1	R-B1	R-B1	R-B1	R-F3
Red-tailed Tropicbird	R-B7		S-W1	R-B1	S-B1	R-B1	S-L1	R-B1	R-F3
BOOBIES									
Masked Booby	S-E4	R-W3	P-W2	R-B1	S-W4			R-A1	R-F3
Brown Booby	R-B1	R-B1	S*-B1	R-B1	R-B1	R-B1	S-B1	R-B1	R-F3
Red-footed Booby	R-B1	R-N2	S-B1	R-B1	R-B1	R-P8		R-B1	R-F3
PELICANS									
Australian Pelican	V-E4								
CORMORANTS									
Little Pied Cormorant	R-B1	V-W2		V-G3					
Little Black Cormorant	V-W3								
Great Cormorant		V-W2	H-W1	V-G3					
DARTERS									
[Darter] ^{a,ST}	H-R4								
FRIGATEBIRDS									
Great Frigatebird ^b	R-O4	R-B1	S-B1	R-B1	R-B1	R-B1	S-B1	R-B1	S*-F3
Lesser Frigatebird ^c	S-O4	S-B1	H-B1	S-B1			S-P8	S-A1	S-sp
HERONS, EGRETS, BITTERNS									
Yellow Bittern	R-B1	R-B1	R-B1	R-B1	R-B1				
Von Schrenck's Bittern	V-B1								
Cinnamon Bittern		V-W4	V-B1						
Black Bittern									
Gray Heron	H-W4	M-W4	M-W1	M-G3					
Great Egret	M-W3	M-W4	M-W1	M-G3					
Intermediate Egret	M-B1	M-B1	M-B1	M-B1	M-O4				

Appendix 1. Continued

Species	PAL	YAP	GUAM	CNMI	CHU	POHN	KOSR	MARS	WAKE
Little Egret	M-O4	M-P3	M-W1	M-E4					
Pacific Reef-Heron	R-B1	R-B1	R-B1	R-B1	R-B1	R-B1	R-B1	R-B1	
Cattle Egret	M-B1	M-P3	M-D2	M-P3	M-O4	M-E4	M-L1	M-S1	M-J7
Chinese Pond-Heron•			V-W1	H-W3					
Striated Heron	M-B1	M-W4	M-W1	M-E4	M-P8				
Black-crowned Night-Heron	M-B1	M-B1	M-W1	M-B1	M-B1	M-B5			
Rufous Night-Heron•	R-B1	H-F2		V-G3	R-B1				
Japanese Night-Heron ^{EN}	V-B1								
Malayan Night-Heron	V-B1								
	<i>Gorsachius melanolophus</i>								
HAWKS									
Osprey•									
Black Kite	M-B1	M-W4	M-B1	M-W2		M-B8			V-J7
Brahminy Kite	M-W4		M-W4	M-G3					
Eastern Marsh-Harrier	V-E4								
Chinese Sparrowhawk•				V-W4					
[Japanese Sparrowhawk]•	M-E4	M-B1	M-W1	M-B1					
Gray-faced Buzzard	V-W3	V-C4	H-B1						
Common Buzzard•	H-P3		V-W4						
	<i>Buteo buteo</i>		H-W1	R-G3					
FALCONS									
Eurasian Kestrel									
Amur Falcon			M-W4	M-G3					
[Eurasian Hobby]•				V-G3					
[Oriental Hobby]			H-J3	H-P6					
Peregrine Falcon	H-O3								
	M-B1	M-B1	M-B1	M-W1					
	<i>Falco peregrinus</i>								
RAILS, MOORHENS, COOTS									
Red-legged Crane									
Slaty-legged Crane•	V-B1								
Buff-banded Rail	R-B1								
Guam Rail•+ ^{EW}	R-B1								
Wake Rail+			C-B1						X-R6
	<i>Gallirallus owstoni</i>								
	<i>Gallirallus wakensis</i>								

Appendix 1. Continued

Species	PAL	YAP	GUAM	CNMI	CHU	POHN	KOSR	MARS	WAKE
Rufous-tailed Bush-hen•	V-E4								
White-browed Crane•	R-B1	R-B1	X-B1		R-B1	R-M2	X-B1	V-B1	
Kosrae Crane+									
[Watercock]	H-O3								
Purple Swamphen	R-B1								
Common Moorhen	R-B1	R-W4	R-B1	R-B1					
Eurasian Coot			V-B1	V-B1					
PLOVERS									
Black-bellied Plover	M-O4	M-P4	M-B1	M-B1	M-B1	M-B8		M-B1	M-F3
Pacific Golden-Plover	M-B1	M-B1	M-B1	M-B1	M-B1	M-B1	M-B1	M-B1	
Lesser Sand-Plover	M-B1	M-B1	M-B1	M-P8	M-B1	M-P8	M-B1	M-B1	
Greater Sand-Plover	M-B1	M-B1	M-W6	M-K7	M-P8	M-W4	M-B1		
Snowy Plover•	M-B1	M-W2	M-W2	M-E4					
Common Ringed Plover	M-E4		M-W6	M-G3		H-B8			
[Semipalmated Plover]•								H-F1	
Little Ringed Plover•	M-O4	M-B1	M-W1	M-W3					
Oriental Plover	V-E4								
Red-kneed Dotterel	V-R1								
OYSTERCATCHERS									
Eurasian Oystercatcher			V-M1						
STILTS									
Black-winged Stilt•	M-E4	M-W2	M-W1	M-G3					
SANDPIPERS, SNIPE									
Common Greenshank	M-B1	M-B1	M-W6	M-G3	M-B1				
[Nordmann's Greenshank] ^{JEN}			H-W5						
Greater Yellowlegs•				V-G3				V-B1	H-J6
Lesser Yellowlegs								V-C3	
Marsh Sandpiper	M-O4	M-P8	M-B3	M-E4		M-P8		V-C3	
Common Redshank	M-O4	M-P3	M-W2	M-G3					

Appendix 1. Continued

Species	PAL	YAP	GUAM	CNMI	CHU	POHN	KOSR	MARS	WAKE
Spotted Redshank•	M-B1	M-F2	H-J2		V-O4				
Wood Sandpiper	H-O3		M-B1	M-G3	M-P8			M-T5	
Green Sandpiper	M-B1	M-B1	M-B1	V-S6	M-B1	M-B1	M-B1	M-B1	M-F3
Wandering Tattler	M-B1	M-B1	M-B1	M-B1	M-B1	M-B1	M-B1	M-A1	M-J7
Gray-tailed Tattler	M-B1	M-B1	M-B1	M-B1	M-B1	H-E4	H-H4		
Common Sandpiper•								V-A1	
Spotted Sandpiper	M-O4	M-P8	M-W6	M-E4					
Terek Sandpiper	M-O4		M-W6	M-G3	M-W3				
Little Curlew	M-B1	M-B1	M-B1	M-S7	M-B1	M-B1	M-B1	M-B1	
Whimbrel•									
Bristle-thighed Curlew ^{VU}		M-C4	M-K6	M-B1	M-P3	M-B1			M-F3
Eastern Curlew	M-B1	M-P8	M-B1	M-S6	M-P8				
Eurasian Curlew			M-W1	M-E4					
Black-tailed Godwit	M-O4	M-P4	M-J1	M-G3	M-P8	M-B8	M-H4	M-S1	
Hudsonian Godwit								V-C3	
Bar-tailed Godwit	M-B1	M-C4	M-B1	M-G3	M-B1	M-B5	M-H4	M-A1	
Ruddy Turnstone	M-B1	M-B1	M-B1	M-B1	M-B1	M-B1	M-B1	M-B1	M-F3
Great Knot	V-O4		M-W1	M-S6	M-P8				
Sanderling	M-O4	M-B1	V-W4						
Red-necked Stint	M-B1	M-B1	M-B1	M-G3	M-P8	M-P8	M-H4	M-B1	M-J6
Little Stint•			M-W6	M-B1	M-P8			V-J5	
Temminck's Stint				V-G3				V-G3	
Long-toed Stint	M-B1	M-P8	V-W4	V-G3					
Pectoral Sandpiper	M-O4		M-W1	M-S6	M-P8				
Sharp-tailed Sandpiper	M-B1	M-P4	M-W6	M-P8		M-B1		M-A1	
Dunlin•	M-O4		M-B1	M-B1	M-B1	M-B1	M-H4	M-B1	M-J6
Curlew Sandpiper	M-B1	M-P8	M-W6	M-E4		M-O4		V-C3	H-J6
Broad-billed Sandpiper	V-B1		M-W2						
Buff-breasted Sandpiper ^{NT}						V-P8		V-A1	
Ruff	M-O4	M-W2	M-A4	M-G3	M-P8			M-T5	
Long-billed Dowitcher			M-W4	M-W4					
Latham's Snipe				H-S6				V-A1	

Appendix 1. Continued

[illegible]

Appendix 1. Continued

Species	PAL	YAP	GUAM	CNMI	CHU	POHN	KOSR	MARS	WAKE
SWIFTS									
<i>APODIDAE</i>									
<i>Hirundapus caudacutus</i>			V-W4						
<i>Aerodramus pelewensis</i>	R-B1		R-B1	R-B1					
<i>Aerodramus bartischi</i>					R-B1	R-B1	R-B1		
<i>Aerodramus inquietus</i>									
<i>Apus pacificus</i>			M-W1	M-G3					M-S1
HOOPES									
<i>UPUPIDAE</i>									
<i>Upupa epops</i>				V-S6					
KINGFISHERS									
<i>ALCEDINIDAE</i>									
<i>Alcedo atthis</i>	H-P7	H-B1	V-W1						
<i>Todiramphus cinnamominus</i>	R-B1		C-B1			R-B1			
<i>Todiramphus chloris</i>	R-B1			R-B1					
<i>Todiramphus sanctus</i>						H-B9	H-L1		V-S1
BEE-EATERS									
<i>MEROPIIDAE</i>									
<i>Merops ornatus</i>	V-E4								
ROLLERS									
<i>CORACIIDAE</i>									
<i>Eurystomus orientalis</i>	M-B1	M-P4				V-E3			
HONEYEATERS									
<i>MELIPHAGIDAE</i>									
<i>Myzomela rubratra</i>	R-B1	R-B1	X-B1	R-B1	R-B1	R-B1	R-B1		
WOODSWALLOWS									
<i>ARTAMIDAE</i>									
<i>Artamus leucorhynchus</i>	R-B1								
CUCKOO-SHRIKES									
<i>CAMPEPHAGIDAE</i>									
<i>Coracina tenuirostris</i>	R-B1	R-B1						R-B1	
WHISTLERS									
<i>PACHYCEPHALIDAE</i>									
<i>Colluricincla tenebrosa</i>	R-B1								

Appendix 1. Continued

Species	PAL	YAP	GUAM	CNMI	CHU	POHN	KOSR	MARS	WAKE
SHRIKES									
Brown Shrike	V-E4								
DRONGOS									
Black Drongo			I-H2	I-B1					
FANTAILS									
Palau Fantail+	R-B1								
Rufous Fantail		R-B1	X-B1	R-B1					
Pohnpei Fantail+						R-B1			
MONARCHS									
Yap Monarch+ ^{NT}		R-B1							
Tinian Monarch+ ^{VU}				R-B1					
Chuuk Monarch+ ^{EN}					R-B1				
Palau Flycatcher+•+	R-B1								
Guam Flycatcher+			X-B1		R-B1				
Oceanic Flycatcher+									
Pohnpei Flycatcher+					R-B1				
CROWS, JAYS									
Mariana Crow+ ^{EN}			R-B1	R-B1					
SWALLOWS									
Barn Swallow	M-B1	M-B1	M-B1	M-B1	M-B4	M-E4		M-A3	
Asian House-Martin	V-E4								
OLD WORLD WARBLERS									
Palau Bush-Warbler+	R-B1								
Lanceolated Warbler	V-E4								
[Oriental Reed-Warbler]•	H-P8	H-W4							
Nightingale Reed-Warbler+ ^{EN}			X-B1	R-B1					
Carolinian Reed-Warbler+•+	R-B1	R-B1			R-B1	R-B1		H-H3	

Appendix 1. Continued

Species	PAL	YAP	GUAM	CNMI	CHU	POHN	KOSR	MARS	WAKE
OLD WORLD FLYCATCHERS									
MUSCICAPIDAE									
Narcissus Flycatcher	V-B1								
Gray-streaked Flycatcher	M-B1								
THRUSHES									
TURDIDAE									
Siberian Rubythroat	V-B1								
Blue Rock Thrush	V-B1								
Eyebrowed Thrush	V-B1								
Dusky Thrush				V-G3					
Turdus naumanni									
ZOSTEROPIDAE									
Zosterops semperi	R-B1				R-B1	R-B1			
Zosterops finschii	R-B1								
Zosterops hypoleis		R-B1							
Zosterops oleagineus		R-B1							
Zosterops conspicillatus			X-B1	R-B1					
Zosterops rotensis				R-B1					
Zosterops cinereus					R-B1	R-B1	R-B1		
Megazosterops palauensis	R-B1								
Rukia longirostra					R-B1	R-B1			
Rukia ruki									
Cleptornis marchei				R-B1					
STURNIDAE									
Aplonis opaca	R-B1	R-B1	R-B1	R-B1	R-B1	R-B1	R-B1		
Aplonis pelzelni									
Aplonis corvina								X-B1	
Sturnus philippensis	V-B1								
Sturnus cineraceus				V-B1					
MOTACILLIDAE									
Motacilla tschutschensis	M-O4	M-O4	H-W4	H-G3					
Motacilla cinerea	V-E4		V-M1	V-W3		V-B10			

Appendix 1. Continued

Species	PAL	YAP	GUAM	CNMI	CHU	POHN	KOSR	MARS	WAKE
White Wagtail•	V-O4		H-W2						
Black-backed Wagtail•			V-W3	V-S5					
Red-throated Pipit	V-E4	V-W2							
BUNTINGS,									
NEW WORLD SPARROWS									
Black-headed Bunting•	V-O4								
<i>Emberiza melanocephala</i>									
EMBERIZIDAE									
OLD WORLD SPARROWS									
Eurasian Tree Sparrow•	I-W3	I-P8	I-M2	I-P5				I-E4	
PASSERIDAE									
<i>Passer montanus</i>									
ESTRILDID FINCHES									
Orange-cheeked Waxbill•									
Blue-faced Parrotfinch	R-B1			I-W3	R-B1	R-B1	R-B1		
Scaly-breasted Munia		I-B1							
Chestnut Munia	I-R5								
Mottled Munia•						I-B1			
<i>Lonchura punctulata</i>									
<i>Lonchura atricapilla</i>									
<i>Lonchura hunsteini</i>									
Total land area (km ²)	494	119	541	478	127	345	110	181	7
Total resident native land and wetland birds	32	13	6	18	17	20	8	2	0
Total introduced land and wetland birds	5	4	6	6	1	2	1	2	1
Total breeding seabirds	13	9	2	13	11	12	5	15	12
Total extinct native birds	0	0	9	0	0	0	2	1	1
Total migrant and vagrant birds	98	67	105	107	46	33	30	65	22
Total current known bird species	148	93	128	144	75	67	46	85	36
Total hypothetical birds	14	6	10	9	2	6	5	5	2

See text for explanations of abbreviations and symbols. Island abbreviations in column headings are as follows: Pal, Palau; CNMI, Commonwealth of the Northern Mariana Islands; Chu, Chuuk; Pohn, Pohnpei; Kosr, Kosrae; and Mars, Marshall Islands.

[illegible]

Appendix 2. Continued

Species	PAL	YAP	GUAM	CNMI	CHU	POHN	KOSR	MARS	WAKE
SPERM WHALE Sperm Whale ^{•vu}	P-O5	P-T6	R-E1	P-E1	P-R2	P-E1	P-E1	P-R2	
PHYSETERIDAE <i>Physeter macrocephalus</i>									
PYGMY SPERM WHALES Pygmy Sperm Whale Dwarf Sperm Whale			P-E1 P-E1						
KOGIIDAE <i>Kogia breviceps</i> <i>Kogia sima</i>									
BEAKED WHALES Cuvier's Beaked Whale ^{•dd}	H-O5					P-R2			H-O1
ZIPHIIDAE <i>Ziphius cavirostris</i>									
MARINE DOLPHINS Rough-toothed Dolphin ^{•dd} [Common Bottlenose Dolphin] ^{•dd} Panropical Spotted Dolphin ^{•cd} Spinner Dolphin ^{•cd} Striped Dolphin ^{•cd} Fraser's Dolphin ^{•dd} Risso's Dolphin ^{•dd} Melon-headed Whale [•] False Killer Whale [•] Killer Whale ^{•cd} Short-finned Pilot Whale ^{•cd}	P-G2 P-G2 P-R2	P-G2 P-G2 P-G2 P-E1	H-T7 H-T7 R-E1 P-E1	S-S4	P-G2 P-G2 P-G2 P-E1	P-G2 P-G2 P-G2 P-E1	P-G2 S-G2 P-E1	P-R2	
<i>Lagenodelphis hosei</i> <i>Grampus griseus</i> Risso's Dolphin ^{•dd} Melon-headed Whale [•] False Killer Whale [•] Killer Whale ^{•cd} Short-finned Pilot Whale ^{•cd}	P-E1		P-M8 P-E1	P-E1 H-S4 P-M5			P-E1		
<i>Peponocephala electra</i> <i>Pseudorca crassidens</i> <i>Orcinus orca</i> <i>Globicephala macrorhynchus</i>	P-I1 P-R2	P-I1	P-E1 S-E1		P-I1 P-R2	P-I1	P-I1	P-I1	
DUGONG, SEA-COW Dugong ^{vu}	R-E1	V-E1	V-E1						
DUGONGIDAE <i>Dugong dugon</i>									
PIGS Feral Pig [•]	I-O5		I-C5	I-S4		I-D3	I-L3		
SUIDAE <i>Sus scrofa</i>									
CERVIDAE Philippine Deer ^{•dd}			I-C5	I-S4		I-J4			

Appendix 2. Continued

Species	PAL	YAP	GUAM	CNMI	CHU	POHN	KOSR	MARS	WAKE
CATTLE, GOATS, SHEEP, ANTELOPE									
Feral Water Buffalo			I-C5						
Feral Cattle				I-S4					
Feral Goat			I-C5	I-S4					
RATS, MICE									
Pacific Rat	I-M3	I-M3	I-M3	I-M3	I-M3	I-M3	I-M3	I-M3	I-S2
Asian House Rat•	I-M3	I-M3	I-M3	I-M3	I-M3	I-M3	I-M3	I-M3	I-S2
Black Rat•									
Norway Rat	I-M3		I-B2	I-M3		I-M3			I-S2
Himalayan Rat	I-B2								
House Mouse	I-M3	I-K8	I-M3	I-M3	I-M3	I-M3		I-M3	
Total land area (km ²)	494	119	541	478	127	345	110	181	7
Total resident native mammals	3	1	3	2	3	2	1	0	0
Total resident introduced mammals	8	3	10	10	4	7	3	6	3
Total non-resident marine mammals	7	6	10	7	6	7	3	11	3
Total extinct native mammals	1	0	2	0	0	0	0	0	0
Total current known mammal species	19	10	25	19	13	16	7	17	6
Total hypothetical mammals	1	0	2	1	0	0	1	1	1