

## Wildfowl at Risk, 1993



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*Complete reviews are given of the status of 25 wildfowl taxa (Anseriformes) thought to be candidates for globally threatened status, along with brief updates on the status of 40 taxa that were reviewed in detail in the previous issue of WILDFOWL. Each taxon is assigned a provisional category of threat in line with recent proposals for the re-evaluation of IUCN categories made by Mace & Lande (1991).*

Following publication of the recent review (Green 1992) of the status of the world's globally threatened Anseriformes (families Anatidae and Anhimidae), this paper contains updated information. In addition, reviews are included of the status of taxa that were identified as threatened or potentially threatened during the preparation of a Conservation Assessment and Management Plan (CAMP, Foose *et al.* 1992) for the Anseriformes (Ellis-Joseph *et al.* 1992). The status of each taxon is evaluated against criteria proposed by Mace & Lande (1991). These criteria are currently under further review (Mace *et al.* 1993) prior to adoption by IUCN. The criteria used here follow the modified Mace-Lande criteria presented by Green (1992):

CRITICAL (C): Population of fewer than 250 mature individuals.

ENDANGERED (E): Population of 250 to 2500 mature individuals.

VULNERABLE (V): Population of 2500 to 10,000 mature individuals with current or projected causes of decline OR population of 10,000 to 100,000 in current or projected rapid and widespread decline.

SAFE (S): when a taxon has been evaluated against the above criteria, and found not to qualify for any of the categories.

These categories are assigned in a conservative way on the basis of the most pessimistic view within the bounds of current knowledge. For example, if a population is estimated at 200-2000 individuals, it is assumed to be 200. If the evaluation of a particular taxon has been strongly limited by available information, a category has been assigned but with a question mark to indicate the wide margin of error. The list of threatened taxa presented here is under constant review, and further

changes are likely to be made when the final version of revised IUCN categories is adopted and applied. Taxonomy follows that of Livezey (1986), other than for the dabbling ducks (tribe Anatini) which follows Livezey (1991), and the placement of *Salvadorina waiguensis* in a monotypic genus which follows Madge & Burn (1988).

West Indian Whistling Duck *Dendrocygna arborea* M-L V

The status of this species has been reviewed recently in detail by Collar *et al.* (1992). In addition to this information, about 300 were observed on a small cay (exact location unknown) just off Long Island in the Bahamas in summer 1992 (van Liefde *in litt.* 1992). The population has been estimated recently at fewer than 1000 pairs (Jones 1993), with the total population likely to be in the range of 2500-10,000 individuals. It is undergoing a rapid and widespread decline (del Hoyo *et al.* 1992).

African White-backed Duck *Thalassornis leuconotus leuconotus* M-L S

There are two populations of this wide-ranging duck in Africa. The western population occurs in Senegal, Nigeria, Cameroon, Chad, Mali and Congo (Giullou 1987, Muffet 1948, Roux 1973, Perennou 1991, Serle *et al.* 1977). The southern/eastern population occurs in Ethiopia, Uganda, Kenya, Tanzania, Zambia, Zimbabwe, Malawi, Namibia, Republic of South Africa, Lesotho, Sudan, Rwanda, Burundi, Zaire, Angola, Mozambique, Botswana, Swaziland and Somalia (A.J. Tree *in litt.* 1989, Ash & Miskell 1983, Delacour 1959, Britton 1980, D.A. Turner *in litt.* 1991, Hughes

& Hughes 1992, Douthwaite 1977, Schulten 1974, Winterbottom 1968, Brown *et al.* 1982, Milstein 1975, Clark 1979, D. Allan *in litt.* 1992, Siegfried 1969, MacDonald 1986, Berruti 1983, Osborne & Tigar 1992, V. Parker *in litt.* 1992). It prefers to inhabit permanent freshwater lakes with surface vegetation, up to 3000 m (Britton 1980).

The southern/eastern population is still locally common, for example 550 individuals were recorded on Kuti Ponds in Malawi in 1992 (B. Medland *in litt.* 1992), and in Zambia, 133 birds were counted at Miengwe in November 1992 and 174 at Luanshya in November 1985 (D.R. Aspinwall *in litt.* 1993). The construction of artificial dams is thought to have resulted in local increases of this duck in several areas, such as in Zambia (D.R. Aspinwall *in litt.* 1993), the Transvaal region of South Africa (W. Tarboton *in litt.* 1993), Zimbabwe (A.J. Tree *in litt.* 1989, D.A. Ewbank *in litt.* 1993) and Malawi (B. Medland *in litt.* 1993). The Zimbabwe population was estimated to be in the thousands in the 1970s (D.A. Ewbank *in litt.* 1993), and the South African population is estimated to be in the thousands (W. Tarboton *in litt.* 1993). However, in the southern Rift Valley, numbers have declined sharply due to the widespread, illegal use of gill nets (L. Bennun *in litt.* 1992, D.A. Turner *in litt.* 1992), and the duck is generally uncommon or rare in a number of range countries, such as the Cape Province of South Africa (C.W. Heyl *in litt.* 1993), Namibia (R. Simmons *in litt.* 1993), Swaziland (V. Parker *in litt.* 1992) and Lesotho (Osborne & Tigar 1992). The Swaziland population has been estimated at ten breeding adults (V. Parker *in litt.* 1992) and the Lesotho population at under 100 individuals (Osborne & Tigar 1992). Overall, the southern/eastern population has been estimated to consist of fewer than 25,000 individuals (IWRB in prep.), but seems certain to exceed 10,000 individuals. Despite local decreases, overall numbers seem to be stable and maybe increasing. This population is known to undergo large seasonal movements and numbers can vary greatly from year to year in certain areas. For example, the total population estimated for the Cape Province in 1991 was 1300 individuals, whereas in 1992 it was only 60 (C.W. Hayl *in litt.* 1993).

The western population appears to be largely sedentary (Tarboton *et al.* 1987, C.W. Heyl *in litt.* 1993, Serle *et al.* 1977), and has been estimated to consist of fewer than 1000 individuals and decreasing (IWRB in prep.).

Recherche Cape Barren Goose *Cereopsis novaehollandiae griseus* M-L E

This largely sedentary goose has in the past been recorded from 44 islands in the Recherche Archipelago, and as breeding on 11 of them (Storr 1987), as well as from some mainland promontories near Esperance, south-western Western Australia (Garnett 1992a). Previously it occurred in small numbers as far west as Busselton (Blakers *et al.* 1984) and east to the Nullarbor Plain (Storr 1987), but there have been no records away from the southern coast for more than 30 years (Blakers *et al.* 1984).

The population appears to have declined steadily since at least the 1930s with current flock sizes considerably smaller than those recorded last century and earlier this century (Flinders 1814, Serventy 1952, Garnett 1992a, 1992b). The initial decline was undoubtedly due to shooting, but this was made illegal in 1937 (Serventy & Whittell 1976). Nonetheless, the population has continued to decline for reasons as yet unknown (Garnett 1992a). By the 1980s, the total population was thought to consist of fewer than 1000 individuals, with the largest flocks being about 40 birds on Cull Island (Storr 1987), 30 on Wickham Island (Johnstone *et al.* 1990) and 13 on Bellinger Island (Smith & Johnstone 1987). However, in 1990-91 a local drought apparently caused a shortage of food resulting in the death, apparently through starvation, of at least 40% of the population. A subsequent survey in February 1992 recorded 232 live and 19 dead geese from 38 out of 56 islands searched and one site on the mainland (Garnett 1992b). The total population estimate is revised to 250-500 individuals (Garnett 1992a).

All of the islands in the Recherche Archipelago, where the species presently occurs, are conservation reserves (Garnett 1992b).

Swan Goose *Anser cygnoides* M-L V

On the basis of 1990-92 census data, there are an estimated 5000 breeding pairs in north-east China and, on the basis of census data from the late 1980s, an estimated 1000 breeding pairs in Mongolia (J. Lu *in litt.* 1992). In Russia, there are an estimated 500 individuals, including no more than 100 breeding pairs (Poyarkov 1992). These figures indicate a total world breeding population of about 6100 pairs. In January 1992, the mid-winter

Asian Waterfowl Census (AWC) recorded 11,342 wintering individuals (Perennou & Mundkur 1992), with the total population estimated at 50,000 individuals (IWRB in prep., J. Lu *in litt.* 1992). This latter figure would suggest that breeding population numbers have been underestimated. Intense hunting on the wintering grounds is thought to be causing a very rapid decline in some areas (J. Lu *pers. comm.* 1992).

Middendorf's Bean Goose *Anser fabalis middendorfi* M-L V  
 Thick-billed Bean Goose *Anser fabalis serrirostris* M-L V

*A. f. middendorfi* seems to be significantly more threatened than *A. f. serrirostris*. Following recent surveys, the total winter population of *A. f. serrirostris* in China is thought to exceed 20,000 individuals with major concentrations on the lower course of the Yellow River, the Yancheng Coast, and Dongting Lake (J. Lu *in litt.* 1992). In South Korea, *A. f. middendorfi* is now an extremely rare winter visitor. However, *A. f. serrirostris* does not seem to have declined in this country since the 1960s with winter populations currently reaching several thousand individuals (C.M. Poole *in litt.* 1992). In January 1992, the AWC recorded 16,869 wintering Bean Geese of these two races in East Asia (Perennou & Mundkur 1992).

An estimated 25,000 moulting and breeding Bean Geese of these two races, were present in West Kamchatka, Russia, in 1992. Bean Geese numbers on the Kamchatka Peninsula have declined dramatically in the past 30 years. Conservation measures have been implemented in the Peninsula but these have resulted in limited success with illegal hunting and disturbance within protection areas thought to be contributing to the decline (Gerasimov 1992). The populations of these two taxa have recently been estimated at 10,000-25,000 and declining for *A. f. middendorfi*, and 25,000-100,000 and declining for *A. f. serrirostris* (Rose & Scott 1993).

Tule White-fronted Goose *Anser albifrons gambelli* M-L V

The population of this goose continues to increase following shooting restrictions introduced in 1978-1979, with the 1991-1992 winter population estimated at 8000 individuals (Orthmeyer *et al.* 1992). The population is

still recovering from a major decline, and so is treated as Vulnerable.

Lesser White-fronted Goose *Anser erythropus* M-L V

An interview survey of local people in Swedish Lapland in autumn 1992 revealed no records of this goose (L. von Essen *in litt.* 1993). Also, no individuals of the Scandinavian breeding population were found on their wintering grounds in Romania and Bulgaria in 1993 (IWRB in prep.). It now seems likely that the original wild Scandinavian birds will become extinct, if they are not so already (L. von Essen *in litt.* 1993). However, the continued reintroduction of captive-bred *Anser erythropus* into a former breeding area in Sweden seems to have established a small breeding population (20-30 individuals) of this goose, with a total of nine nesting attempts observed between 1987 and 1992, of which at least five have been successful. A new wintering range for some of these geese has been established in the southern part of The Netherlands near Strijen, and a spring and autumn staging and moulting area has been established near Hudiksvall, along the coastal region of mid-Sweden (L. von Essen *in litt.* 1993).

The Caspian wintering population has been estimated recently to consist of 25,000-30,000 individuals, almost entirely in the west Caspian, and decreasing (IWRB in prep.). This is considerably fewer than a previous estimate of 110,000 for this population (Madsen 1991). In January 1992, the AWC recorded 4570 wintering individuals in China (Perennou & Mundkur 1992), and the East Asian population has recently been estimated at 6000 individuals and declining (Rose & Scott 1993).

Bar-headed Goose *Anser indicus* M-L S

In January 1992, the AWC recorded 23,113 individuals of this species (Perennou & Mundkur 1992). The total population has been estimated at approximately 50,000 birds, and possibly increasing (IWRB in prep., Rose & Scott 1993).

Dusky Canada Goose *Branta canadensis occidentalis* M-L V

Following exceptionally poor reproductive success between 1985 and 1989, this taxon

has bred more successfully in 1990 and 1991. Nest success averaged 47.8%, and young production exceeded 20% in both years. The total population of this goose may have exceeded 17,000 individuals in the 1991-1992 winter, for the first time in a decade. This increase in reproductive success is thought to be a result of habitat changes on the nesting ground in the Copper River Delta, Alaska. Much of the low lying habitat that was used for nesting is now inundated and many *Alnus/Salix* thickets (the preferred nesting areas) have been cut or flooded out. This has resulted in the geese nesting in more open, elevated areas where the nests are thought to be less vulnerable to predation by brown bear *Ursus actos* and coyote *Canis latrans* (Campbell 1992).

Aleutian Canada Goose *Branta canadensis leucopareia* M-L V

The recovery programme initiated for this species continues to be successful and the total population in the 1991-1992 winter period was estimated at 7800 individuals, and increasing (P. Springer *in litt.* 1993).

The reintroduced population on the Semidi Islands (currently 150 birds) has established its wintering grounds on the northern Oregon coast, separate from the main wintering grounds in the Sacramento and San Joaquin Valleys of California (P. Springer *in litt.* 1993).

A large population of this goose bred formerly in the Commander and Kurile Islands and wintered in Japan (P. Springer *in litt.* 1992). Very small numbers still winter in Japan, and attempts are now being made to restore this population (M. Kurechi *in litt.* 1992). There are proposals to use individuals of *Anser fabalis serrirostris* (also a threatened taxon), nesting in southwestern Kamchatka and migrating along the Kurile Islands to Japan, as foster parents for Aleutian Canada Geese in a reintroduction programme (Gerasimov 1992).

Red-Breasted Goose *Branta ruficollis* M-L S

Winter counts of this goose in Bulgaria and Romania during the 1991-92 winter suggested a minimum estimate of 68,000 geese for these two countries (Owen 1992), considerably higher than the previous estimate of 35,000 geese (Vinokurov 1990). This was confirmed when 75,000 birds were counted in Bulgaria (59,000 at Shapla-Durankula lakes) during an

IWRB expedition in January 1993 (IWRB in prep.). There is now no evidence of a population decline.

Freckled Duck *Stictonetta naevosa* M-L V?

In 1991 there was a count of approximately 12,000 Freckled Duck in an area of Queensland which had not been censused before. The total population may fluctuate naturally and periodically by as much as 10,000 to 19,000 individuals (D. Rogers *in litt.* 1992), probably due to periods of major flooding in inland Australia (Fullagar 1990). The duck's preferred breeding habitat (*Lignum* swamps) may be under threat of degradation by the grazing of cattle in the dry season, although the extent of this damage and its effect on the Freckled Duck is not known. Threats to this duck from over-hunting seem to have been overcome through hunting bans and increased conservation awareness amongst hunters (D. Rogers *in litt.* 1992). Due to the extreme population fluctuations of this taxon, long term population trends are unclear.

South American Comb Duck *Sarkidiornis melanotos sylvicola* M-L V?

A total of at least 20,000 individuals of this species has been reported from Brazil, with 5000 individuals seen on one site alone in 1992 (J. Nascimento *pers. comm.* 1992). The population has been recently estimated at 100,000 individuals, and declining (Rose & Scott 1993). Recently, it has declined rapidly in Argentina (A. Serret *pers. comm.* 1992), but the extent and rate of an overall decline is unclear.

Crested Shelduck *Tadorna cristata* M-L C

A recent survey organised by the Waterbird Specialist Group of the China Ornithological Association (WSG/COA) was carried out in the Zhaotong area, but no confirmation of the species's presence was found (J. Lu *in litt.* 1992).

Black-backed Radjah Shelduck *Tadorna radjah radjah* M-L S

Red-backed Radjah Shelduck *Tadorna radjah rufitergum* M-L S

Both races of the Radjah Shelduck *T. radjah* remain fairly abundant. There is reported to

be a very large population of *T. radjah radjah* in Papua New Guinea and Irian Jaya well in excess of 10,000 individuals (D.A. Scott *pers. comm.* 1992). This race also occurs in the Moluccas, the Aru Islands and Fergusson Island (Madge & Burn 1988). In Australia, there is a population of 30,000 *T. radjah rufitergum* in the Alligator Rivers Region of the Northern Territory alone (Morton *et al.* 1990), with a total population possibly several times higher (H. Phillips *in litt.* 1992).

Orinoco Goose *Neochen jubatus* M-L V?

This aberrant goose is thought to be in danger of extinction in Peru where it is protected legally and occurs only in one protected area, Manu National Park (Pulido 1991). The total population has recently been estimated at 100,000 individuals (Rose & Scott 1993), but there is little information on overall population trends.

Falkland Kelp Goose *Chloephaga hybrida malvinarum* M-L S  
Patagonian Kelp Goose *Chloephaga hybrida hybrida* M-L S

The taxonomic separation of these races described by Phillips (1916) is very tenuous and deserves urgent re-evaluation. The Falkland Kelp Goose is a resident of the Falkland Islands (to UK) where it is largely restricted to the rocky shores and shingle beaches and is less common in inlets (Johnsgard 1978, Woods 1975, R. Summers *in litt.* 1992). The goose does not seem to have undergone any major decline in numbers (Weller 1967, Woods 1975, Gladstone & Martell 1968, Martins & Tomlinson 1990), and the total population has been estimated to be in the order of 100,000 individuals (Standring 1982). The goose is not persecuted by man (R. Summers *in litt.* 1992).

The Patagonian Kelp Goose inhabits the coasts of Chile, Argentina, Tierra del Fuego and adjacent archipelagos. In Chile, it breeds on the coasts and islands from 42°S southwards, occasionally wandering as far north as 33°S (Woods 1975). The Chilean Fjordland is a particularly important breeding area (Scott & Carbonell 1986). In Argentina, it occurs mainly from Santa Cruz and Chubut southwards, but occasionally wanders as far north as 39°S (Johnsgard 1978, Woods 1975). In Tierra del Fuego, Humphrey *et al.* (1970) described the goose as a common breeding

bird on the south and east coasts, where it occurs in the Tierra del Fuego National Park (E. Ramilo *in litt.* 1992). On the Chilean coast, the goose has been described as abundant, but on the Argentine coast it is much less common (Woods 1975). The total population of this taxon has recently been estimated at between 25,000 and 100,000 individuals, and stable (Rose & Scott 1993).

Oil spills are presumably the principal threat to both of these largely marine taxa.

Ruddy-headed Goose *Chloephaga rubidiceps* M-L S

The mainland population now seems close to extinction (Conaf 1988, Araya & Millie 1988, Rottman & Lopez-Calleja 1992), with an estimated 300 individuals and declining (Rose & Scott 1993). However, the Falkland Islands population has been estimated at 40,000 individuals and stable (Rose & Scott 1993), and so the taxon is regarded as Safe.

Abyssinian Blue-winged Goose *Cyanochen cyanopterus* M-L S

This goose is endemic to the highlands of Ethiopia above c.1800 m (Brown *et al.* 1982) and remains common and widespread. Agricultural intensification, droughts and human expansion are possible threats, but there have been no obvious changes in distribution and status (J. Ash *in litt.* 1989, Brown *et al.* 1982). The species is not threatened by hunting as, for religious reasons, it is not eaten (Brown *et al.* 1982). Important concentrations occur on the Sululta plain area during the rains and post-rains period, with 240 birds recorded on the 10 July 1992 and 350+ on the 5 October 1992 (J. Atkins *in litt.* 1993). The total population seems certain to exceed 5000 individuals, with no evident decline in numbers (J. Atkins *in litt.* 1993).

Blue Duck *Hymenolaimus malacorhynchos* M-L E

As a result of the recovery plan prepared for this duck by the New Zealand Department of Conservation, four key areas for the species have now been protected by conservation orders (M. Williams *in litt.* 1992).

Chilean Torrent Duck <i>Merganetta armata armata</i>	M-L V?
Peruvian Torrent Duck <i>Merganetta armata leucogenis</i>	M-L V
Colombian Torrent Duck <i>Merganetta armata colombiana</i>	M-L V

The subspecific distinction of this group of ducks is very problematic, mainly due to the central Andean polymorphic population now recognised as *leucogenis* (Johnsgard 1966), but previously split into three other races (*turneri*, *garleppi*, and *berlepschi*). The present classification is still tentative and deserves research.

The torrent ducks inhabit cascading mountain streams with cold, clear and well-oxygenated water (Hilty & Brown 1986, Johnsgard 1978). Submerged and emergent rocks, producing falls, rapids and pools, seem to be of crucial importance (Johnsgard 1966). Density is low, a single pair occupying a section of stream at least 1-3 km in length (Borrero 1952, Moffett 1970, Johnsgard 1966).

Throughout their range these ducks are threatened by river pollution and degradation through contamination with heavy metals and acids from the mining industry, domestic sewage input, increasing turbidity of the rivers (through deforestation and overgrazing resulting in soil erosion), and hydroelectric dam construction (E. Tabilo Valdivieso *in litt.* 1992, Scott & Carbonell 1986). They are hunted locally and potentially threatened by the introduction of trout to many rivers (Madge & Burn 1988, Humphrey *et al.* 1970, J. Fjeldsa *in litt.* 1993).

The Chilean Torrent Duck is a resident of the Chilean and Argentinian Andes, and Tierra del Fuego. In Chile, the duck is a resident from Atacama (27°20'S), southwards, and is also found on the isolated coastal massif of Nahuelbuta (Johnson 1963, 1972, Araya & Millie 1988, Goodall *et al.* 1951). In Argentina, the duck is known from Mendoza (33°S), southwards to Tierra del Fuego (Delacour 1956). Small numbers still occur in Tierra del Fuego, and the taxon is present in Tierra del Fuego National Park (E. Ramilo *in litt.* 1992), where it is probably a summer visitor. A network of Forest Reserves and National Parks in Chile is an important breeding area (Scott & Carbonell 1986). It is included in the Chilean Red Data Book as "vulnerable" (Conaf 1988, Rottmann & Lopez-Calleja 1992). In Argentina, there have been observations in six National Parks since 1986: Lanin, Nahuel

Huapi, Lago Puelo, Los Alerces, Perito Moreno, and Los Glaciares (E. Ramilo *in litt.* 1992). The density of birds found in recent surveys in Lanin and Nahuel Huapi National Parks suggests a population of 800-1000 in Argentine Patagonia and over 2000 for the whole of Argentina (Christie *et al.* *in prep.*). This supports a total population estimate in the region of 5000 individuals (Ellis-Joseph *et al.* 1992, M.I. Christie *in litt.* 1992), with overall trends unclear.

The Peruvian Torrent Duck is known from Ecuador, Peru, Bolivia, Argentina and Chile. In Ecuador, it ranges from the central Ecuadorian Andes south (Madge & Burn 1988). In Peru, it is resident throughout the south, north to the Amazonas Province (3°S) (Delacour 1956). In Chile, it occupies the extreme north, being restricted to Arica Province (18°30'S) (Goodall *et al.* 1951). This constitutes a break in range of about 900 km in Chile between the races *leucogenis* and *armata*. Johnson (1963) explains this by "...the extreme aridity of the climate and consequent absence of any suitable habitat...". However, such a latitudinal gap does not seem to occur in Argentina, where *M. a. leucostigma* has been recorded from the Tucuman area (26°S-28°S), which is the same latitude as the supposed northern limit of *M. a. armata* in Chile (Johnson 1963). The races seem to inhabit opposite sides of the Andes where they share the same latitude, *M. a. armata* on the west and *M. a. leucogenis* on the east slopes.

The Peruvian Torrent Duck is listed in the Peruvian Red Data Book as "vulnerable" and occurs in the Peruvian National Parks of Rio Abiseo, Huascaran, Salinas, and Aguada Blanca (Pulido 1991). In Bolivia, the duck has disappeared from many rivers in the La Paz Department due to increasing turbidity and pollution of the rivers (Scott & Carbonell 1986), and is known to be hunted in areas of central Chuquisaca (J. Fjeldsa *in litt.* 1993). It occurs within the Ulla-Ulla National Reserve and Biological Reserve (Scott & Carbonell 1986). The total population is likely to be in the range of 2500 and 10,000 individuals, and declining.

The Colombian Torrent Duck is restricted to the Andes of Venezuela, Colombia and Ecuador, and is probably the most threatened of the torrent ducks owing to greater human development pressure in its range (P. Canevari *pers. comm.* 1992) and its more restricted distribution. In Venezuela, the duck

ranges from northern Merida, south through Nevados and Tachira Provinces, throughout the Colombian Andes (Gomez-Dallmeier & Cringan 1989, Phelps & Phelps 1958), and into northern Ecuador, to Chimborazo (1°55'S) and Rio Pastaza (Gomez-Dallmeier & Cringan 1989, Delacour 1956). In Venezuela, Gomez-Dallmeier & Cringan (1989) suggested that 1000-2000 individuals occur, an estimated 10-20% of the population, indicating a minimum total population of 5000 individuals. However, no data are presented to justify these estimates. There is a decline in numbers in Venezuela, thought to be caused by pollution and competition for food with introduced insectivorous fish (Gomez-Dallmeier & Cringan 1989). In Colombia, many populations of the duck have been eliminated through deforestation and resulting siltation, although it still occurs within Purace National Park (Hilty & Brown 1986).

Falkland Islands Steamer Duck *Tachyeres brachypterus* M-L S  
 White-headed Steamer Duck *Tachyeres leucocephalus* M-L E?

The Falkland Islands Steamer Duck is endemic to the Falkland Islands. The duck is primarily a marine species (Weller 1967), and Pettingill (1965) found that each pair occupied about 300 m of shore around Kidney Island. The species still seems to be very widespread and common around the islands (Johnsgard 1978, Woods 1975, Pettingill 1965, Weller 1967, Wolsey 1990, Livezey & Humphrey 1992). Large numbers of eggs are collected for human consumption but this is not thought to have a significant effect on the species's numbers (Wolsey 1990). The total population has been estimated to be in the order of 100,000 individuals (Standring 1982), and is apparently stable.

The White-headed Steamer Duck is restricted to the Chubut coast of Argentina, from the north end of Valdez Peninsula (42°10'S) south to the northernmost regions of the Golfo San Jorge (45°15'S) (Livezey & Humphrey 1992). The species inhabits the rocky shores of the mainland and off-shore islands but is thought to nest mainly on suitable off-shore islands (P. Humphrey *in litt.* 1992). No census data are available, but within its limited range it is said to be very abundant, sometimes occurring in "...huge flocks..." (P. Humphrey *in litt.* 1992, Livezey & Humphrey 1992). However, these may be iso-

lated observations of non-breeding or moulting flocks. The total population is estimated at 1000 to 10,000 individuals, and stable (Rose & Scott 1993, W. Conway *in litt.* 1993).

Both the Falkland Islands and White-headed Steamer Ducks have very small ranges and it seems that the availability of nesting sites within these areas is also very limited. Oil-tankers frequently pass along the coasts, and so oil spills are a major potential threat to both species (P. Humphrey *in litt.* 1993).

It is now apparent that several populations of Flying Steamer Duck (*T. patachonicus*) may represent as many as three or four allospecies, but further research is needed (P. Humphrey *in litt.* 1992). If this is so, some of these may prove worthy of threatened status.

Salvadori's Duck *Salvadorina waiguensis* M-L V?

This duck is found throughout the mountain areas of northeastern, central and south-eastern New Guinea, usually between 500-4000 m, and commonly around 3700 m (Kear 1975, Rand 1942). The species may also occur on Waigeo Island where the type specimen was said to have been collected, although the mountains of Vogelkop are more likely to be the locality of the collection (Mayr 1941). It has been recorded on rushing mountain streams, sluggish muddy streams and alpine lakes. However, breeding has only ever been recorded on rushing mountain streams, where territory length seems to vary from 160-1500 m (Bell 1969, Kear 1975).

Trout and other insectivorous fish have been introduced to various river systems which may affect the species adversely. Hunting with guns may increasingly pose a threat, and local extinctions have already been caused. Also, human activity in the watersheds may increasingly pose a threat (Kear 1975), particularly through the current rapid deforestation in Irian Jaya. However, large areas of suitable habitat remain remote and undisturbed by human activities (A. Owen *pers. comm.* 1992, P. Hurrell *pers. comm.* 1993). This species has been fully protected throughout Papua New Guinea since November 1968 (Shaw 1969).

Beehler *et al.* (1985) describe the species as "...widespread but uncommon, especially at lower altitudes..." but also "...unobtrusive...". Coates (1985) describes it as "...often scarce

but locally fairly common..." and suggests it is "...largely nocturnal...". The secretive nature of this duck and the sparse information available make it difficult to estimate the population size. The total population seems likely to be in the range of 2500-10,000 individuals, and stable or slowly declining.

Hartlaub's Duck *Pteronetta hartlaubi* M-L V?

Little information exists on this secretive duck. It is widespread, occurring in Cameroon, Zaire, Uganda, Sudan, Sierra Leone, Guinea, Liberia, Ivory Coast, Ghana, Togo, Benin, Gabon, Nigeria, African Central Republic, Angola, Equatorial Guinea and Congo (D. Turner *in litt.* 1991, Madge & Burn 1988, Brown *et al.* 1982, Serle *et al.* 1977, Perennou 1992, Schepers & Marteiijn *in prep.*).

This taxon has, in the past, been split into two subspecies. Neumann (1908) recognised *P. h. albifrons*, from specimens obtained in the vicinity of Irumu or Kilo in Zaire, by the more extensive white frontal patches on the head. The race was said to be restricted to the Ituri and Aruwimi Valleys, and the Congo River near Coquilhetville in Zaire (Chapin 1932). However, the validity of this race has been largely discredited (Chapin 1932) and it is now believed that there is merely a tendency towards partial albinism in certain populations (Madge & Burn 1988). This needs verification.

The duck is thought to be largely sedentary, being recorded in pairs and small groups, and inhabits streams, ponds and rivers in rain- and gallery forests and well-wooded savannas (Serle *et al.* 1977, Madge & Burn 1988, Brown *et al.* 1982). It seems to be most numerous in Cameroon, Gabon, Congo and Zaire (D. Turner *in litt.* 1992), although Serle *et al.* (1977) describe it as "...quite common..." where suitable habitat exists. It is an uncommon breeding resident in Liberia and Sudan, and a widespread but scarce resident in Sierra Leone (del Hoyo *et al.* 1992). Numbers seem certain to be declining because of deforestation in parts of its range, but the extent and rate of any decline are unclear. The total population seems likely to be in the range of 10,000-100,000 individuals.

White-winged Wood Duck *Cairina scutulata*

M-L E

Local information collected by a joint Wildfowl & Wetlands Trust/Royal Forest Department survey team in Thailand from August 1992 to March 1993 has increased the minimum estimate for the Thai population from 27 to 112 birds, including at least 66 birds in four adjacent reserves in the extensive Phanom Dongrak hills on the Cambodian border. This hill range supports the largest population identified anywhere in the world, although intense poaching seems to be limiting the population density here. From September to November 1992 a joint Bristol University/Wildfowl & Wetlands Trust/Asian Wetland Bureau survey in Sumatra made 100 sightings of at least 20 different birds in five sites (four new) in Riau and Jambi Provinces. Another population was discovered in Aceh province in Sumatra in February 1992, and the coastal plains of Aceh and North Sumatra on the Sumatran west coast may be of great importance (D.A. Holmes *in litt.* 1993).

Mandarin Duck *Aix galericulata*

M-L S

The total population of this duck has been estimated recently at 70,000 individuals, of which 15,000 occur in China, 5000 in Russia and Korea and 50,000 in Japan (J. Lu *in litt.* 1992). In Japan, the species seems to have recovered from a decline earlier this century (Brazil 1990) and analysis of recent midwinter counts suggests that this population is now stable. Although the peak winter count in Japan is 16,163, many birds occur on small forest wetlands and are overlooked during censuses. Hence the total Japanese population is more likely to be in the region of 50,000 (C.D. Savage *pers. comm.* 1993).

Australian Cotton Pygmy Goose *Nettapus*

*coromandelianus albipennis*

M-L E?

The total population estimate of 1500 individuals in the early 1960s (Green 1992) seems certain to have been exceeded, as recent concentrations have been seen of at least 300 birds at Ross River Dam near Townsville and 350 at Lake Powlathanga near Charters Towers. It is also considered "common" near Rockhampton and Bundaberg (Garnett 1992a). The total population may still be fewer than 2500 individuals.



Bronze-winged Duck *Specularis* (*Anas*)  
*specularis* M-L S

This duck is a partial migrant, occurring in Chile, Argentina, Tierra del Fuego and adjacent archipelagos. In Tierra del Fuego, it has never been recorded southwards of the Beagle Channel (Humphrey *et al.* 1970). In Chile, it breeds from approximately 35°S southwards (Johnsgard 1978), and has been known to move as far north as Valparaiso (33°10'S) in winter (Delacour 1956). In Argentina, it occurs from Neuquen (39°S) southwards (Schauensee 1971), but has been recorded as far north as Mendoza (33°S) and Buenos Aires (35°S) in the winter (Johnsgard 1978, Madge & Burn 1988).

This species seems to prefer heavily forested rivers which are relatively swift flowing (Johnsgard 1978), but is often recorded on rivers in more open country (Schauensee 1971) and also on lagoons and lakes (Bernath 1965, A. Johnson *pers. comm.* 1992). It is very sparsely distributed with pairs holding extensive territories (A. Johnson *pers. comm.* 1992). However, much of its habitat is very remote, particularly along the southern Andes and, in Chile, it is well protected within National Parks and Forest Reserves (A. Johnson *pers. comm.* 1992, A. Serret *pers. comm.* 1992, Scott & Carbonell 1986). In Argentina, it has been recorded in five National Parks since 1982: Lanin, Nahuel Huapi, Perito Moreno, Los Glaciares and Tierra del Fuego (E. Ramilo *in litt.* 1992), and also occurs in Copahue Provincial Reserve (M.I. Christie *in litt.* 1993). Recent surveys in Lanin and Nahuel Huapi National Parks and the surrounding area found a population of about 700, suggesting a total population of 3000-3500 for the whole of Argentine Patagonia (Christie *et al.* in prep.). The only available total population estimate is 10,000-100,000, and stable (Rose & Scott 1993).

South African Black Duck *Anas sparsa*  
*sparsa* M-L S

Abyssinian Black Duck *Anas sparsa*  
*leucostigma* M-L S

These two taxa occur across a wide expanse of Africa, including Ethiopia, Sudan, Cameroon, Kenya, Uganda, Nigeria, Zaire, Tanzania, Angola, Zambia, Malawi, Mozambique, Swaziland, Zimbabwe, Lesotho, Botswana, Namibia and South Africa, where they are thinly distributed (Urban & Brown 1971, Moreau 1966,

L. Bennun *in litt.* 1992, Britton 1980, Madge & Burn 1988, Vincent 1984, D.A. Allan *in litt.* 1992, Beesley 1976, McLachlan & Liversidge 1965). *A. s. leucostigma* is generally regarded as occurring in those countries to the north of Mozambique and Zambia (including Angola), but the geographical isolation of the two races is unsure and they probably intergrade in the centre of their distribution (Johnsgard 1978). An isolated population of *A. s. leucostigma*, which was recognised formerly as *A. s. maclatchyi* (see Louette 1981 and Livezey 1991 for evaluation of taxonomic status), occurs in Cameroon and Gabon (Louette 1981).

Both races inhabit streams and rivers in well-wooded, hilly country, up to 4000 m, but they are also known locally to inhabit more open country (Madge & Burn 1988, Siegfried 1968) and natural lakes and marshes (Serle *et al.* 1977). Territory size varies between 200 m - 1000 m of river (Brown *et al.* 1982, Osborne & Tigar 1990). They have also been frequently recorded in pairs and small groups on artificial impoundments, which may be seasonally important during the dry season when many of the rivers dry up (A.J. Tree *in litt.* 1989). Breeding has been recorded regularly at Blantyre dams in Malawi (Benson & Benson 1977) and Monzuma Dam in Zambia (D.R. Aspinwall *in litt.* 1993).

The major threats to the species in South Africa come from destruction of rivers by damming and water extraction, either directly for irrigated crop farming or indirectly through commercial afforestation of grasslands (D. Allan *in litt.* 1992). However, the frequent records from artificial impoundments suggest that this duck can adapt to these new habitats (D.A. Allan *in litt.* 1992), and may be increasing locally in southern Africa as a result (D.A. Ewbank *in litt.* 1993). Chemical contamination and siltation of rivers may be a significant threat, but few data exist on the impact of these factors (D. Allan *in litt.* 1992). Deforestation is known to be a major threat to the duck in Kenya (L. Bennun *in litt.* 1992) and this may also be the case in some other range countries.

The southern race is thought to be commoner than the northern form (Delacour 1956), and is still relatively plentiful in southern Africa (Johnsgard 1978). In the 1970s, the population of *A. s. sparsa* on artificial impoundments in Zimbabwe was estimated to be in the thousands but the total population including those on rivers was not thought to exceed 10,000 (D.A. Ewbank *in litt.* 1993). It is

considered to be an uncommon breeding resident in Lesotho, with an estimated population of 1000-10,000 individuals (D. Allan *in litt.* 1992, Osborne & Tigar 1992). Swaziland has an estimated population of 500 breeding adults (V. Parker *in litt.* 1992), and it is scarce in Angola and Namibia (del Hoyo *et al.* 1992). The total population seems certain to exceed 20,000 individuals.

In Ethiopia, *A. s. leucostigma* is said to be "...frequent to common..." on highland streams (Urban & Brown 1971), and in 1987 was reported to be a fairly common resident in Sudan (del Hoyo *et al.* 1992). Louette (1981) described it as a rare resident in Gabon and Cameroon. The total population is certain to consist of over 2500 individuals.

There is no evidence of any widespread decline of either taxa, only localised increases and decreases.

American Black Duck *Anas rubripes* M-L S

A widespread duck, ranging over eastern North America. It breeds from Manitoba east to Labrador and Newfoundland, south over the Great Lakes region and along the Atlantic coast to North Carolina. Northern populations move south to winter over the eastern seaboard of USA south to Florida and the Gulf coast, with small numbers into Texas (Madge & Burn 1988).

This duck and the closely related Mallard *Anas p. platyrhynchos* have come into increasing contact this century after land use changes by man, which have facilitated colonization by Mallards of extensive areas of the eastern USA that were formerly occupied by Black Ducks. The propagation and release of Mallard by gamekeepers has also played a major role in the expansion of the Mallard. Numbers of Black Ducks are declining rapidly due to habitat loss and growing hybridisation with and possibly competitive exclusion by the more numerous Mallards. It has been suggested that the Mallard will eventually cause the extinction of this taxon (Brodsky & Weatherhead 1984, Davison Ankney *et al.* 1987, Hepp *et al.* 1988). Black Duck numbers have recently been estimated at 277,800 (Rose & Scott 1993).

Mexican Duck *Anas diazi* M-L V?

This duck's range traditionally included the extreme southern USA and central Mexico, extending from the Rio Grande and Pecos val-

leys of New Mexico and adjacent Arizona and west Texas, south locally through the central uplands of Mexico to Puebla. Northern populations used to move south to winter in central Mexico, while others remained in southern USA in winter (Madge & Burn 1988). The population of 5000 individuals in the USA has in the past been reported as extinct due to hybridisation with the feral Mallard (Grieg 1980), although the taxonomic distinction between *A. diazi* and *A. fulvigula* is still unclear (Green 1992, C. Hayes *pers. comm.* 1992). In 1986, the total population of *A. diazi* was estimated at 55,500 individuals (Scott & Carbonell 1986), which is presumably declining due to hybridisation with Mallards.

Hawaiian Duck *Anas wyvilliana* M-L E

The population of this duck is now thought to be stable, with an estimated 2500 individuals, including 2000 on Kauai, 300 on Oahu, and 200 on Hawaii (Engilis & Pratt 1993). Hybridisation with feral Mallard is not as widespread as reported previously (Griffin & Browne 1990), as the two species are largely naturally isolated, with most feral Mallard inhabiting urban wetlands, such as hotel ponds, and the Hawaiian Duck preferring to breed on remote stock ponds, montane bogs and mountain rivers. The Hawaiian Department of Forestry and Wildlife (DOFAW) has recently increased its efforts to control and eradicate feral Mallard and hybrids from all the islands (Engilis & Pratt 1993).

Philippine Duck *Anas luzonica* M-L V?

A survey of hunting pressure on waterbirds in Luzon, carried out by the Asian Wetland Bureau Philippines Foundation, found that hunting was largely unchecked and unregulated in the areas visited (Cagayan, Nueva Vizcaya, Pampanga and Laguna Provinces). Hunting is mainly for subsistence, not recreation, and *Anas luzonica* was found to be an important quarry species. Hunting pressure is greatest from August-October and January-March, when thousands of Philippine Duck are taken every week and mainly sold in the numerous available markets. Weak enforcement of conservation laws and lack of alternative sources of income for the local people hinder efforts to improve the situation (Alonzo-Pasicolan 1990). The total population seems likely to be in the range of 10,000-100,000 individuals, and declining.

New Zealand Grey Duck *Anas superciliosa superciliosa* M-L V  
 Australian Black Duck *Anas superciliosa rogersi* M-L S

The distinction of these two taxa must be questioned as there is documented exchange of birds across the Tasman Sea (based on movements of a few banded birds), which could quite possibly be more extensive (M. Williams *in litt.* 1992). Also, Marchant & Higgins (1990) found no differences in size or plumage as described by Amadon (1943).

The problem of hybridisation with the introduced Mallard is a continuing major problem for the New Zealand population. It is now estimated that as many as 40% of the Mallard/Grey Duck population in New Zealand are hybrids, and it is likely that the Mallard is outcompeting the Grey Duck in the agricultural environment (M. Williams *in litt.* 1992). Recently, the population has been estimated at 80,000-150,000 individuals (Rose & Scott 1993), indicating an exponential decline since the 1981 estimate of 1.2 million (see Green 1992).

The Australian Black Duck population currently greatly exceeds 100,000 individuals (Marchant & Higgins 1990), but a similar process of hybridisation with feral Mallard is at an earlier stage in Australia (Braithwaite & Miller 1975).

Lesser Grey Duck *Anas superciliosa pelewensis* M-L V?

This third race of *A. superciliosa*, also known as the Pelew Island Grey Duck, is also poorly defined. Its range is restricted to certain islands of the southwest Pacific, including the Society Islands (Tahiti, Moorea and Maa), the Cook Islands (Aitutaki, Atiu, Mitiaro, Mauke, Rarotonga and Mangaia), Tonga, Samoa, Fiji, the Tubuai Islands (Rapa, Tubuai and Raivavae), New Caledonia, Loyalty Islands, Vanuatu, Santa Cruz, Solomon Islands, the Bismarck Archipelago, Palau, Truk and northern lowland New Guinea (Pratt *et al.* 1987, Madge & Burn 1988, Marchant & Higgins 1990). Pratt *et al.* (1987) describe this duck as declining in some parts of Polynesia, and as being rare on Palau, Truk and the Cook Islands (including Aitutaki, Atiu, Mitiaro, Mauke, Mangaia, and possibly extirpated on Rarotonga). Watling (1983) describes it as "...widespread, but never particularly abundant..". In Fiji, it has declined rapidly on the

islands of Viti Levu and Vanua Levu, probably due to nest- and duckling predation by the introduced mongoose *Herpestes auropunctatus* (Watling 1983). It is uncommon on Samoa, but can be seen commonly along the coastlines of the Fiji-Tonga-Samoa area (Watling 1983). Threats include hunting and habitat loss, and there are unconfirmed reports from the interior of Efate Island (Vanuatu) of the death of "...considerable numbers..." of this duck caused by bacterial poisoning, possibly botulism (Bregulla 1992). Hunting is controlled in Vanuatu, where the bird is still common locally (Bregulla 1992). Further evaluation of this taxon is needed urgently. The total population seems likely to be in the range 10,000-100,000 individuals, and declining.

Meller's Duck *Anas melleri* M-L E

The total population has recently been estimated at 2000-5000 individuals, and declining (Rose & Scott 1993).

Borrero's Cinnamon Teal *Anas cyanoptera borroeri* M-L C?  
 Tropical Cinnamon Teal *Anas cyanoptera tropica* M-L C?

As well as Sabana de Bogota (2600 m), small numbers of resident Cinnamon Teal have been described recently from the range of *Anas cyanoptera borroeri* at Sibundoy Valley (2200 m) and La Florida Marshes (2550 m) in Colombia (Hilty & Brown 1986, Scott & Carbonell 1986).

The population of *A. c. tropica* has been estimated recently at fewer than 10,000 individuals, and declining (Rose & Scott 1993).

East Indian Grey Teal *Anas gibberifrons gibberifrons* M-L V?

The current status and distribution of this taxon are uncertain due to the possible confusion and overlap with the Australian Grey Teal *A. gibberifrons gracilis*. Ripley (1942) described the most notable feature of the East Indian Grey Teal as being the enlargement of the frontal sinus on the cranium.

*Anas g. gibberifrons* is described currently from southern Sumatra, Java, Bali, Lombok, Sumba, Sumbawa, Flores (and offshore islands), Karompa, Timor, Roti, Wetar, Sulawesi, Muna, Buntung, Peleng and Salayer. In 1987 50-70 birds were recorded from newly

reclaimed tambaks in Pulau Jawa, Kalimantan, which were the first records for this species in Borneo. In Indonesia, *A. g. gracilis* has been described from Maluku (Moluccas), Irian Jaya, Ambon, Aru and Kai Islands. Grey Teal also occur on Tanimbar and Oer Islands but it is uncertain which subspecies is concerned (Eve & Guigue 1989, Andrew 1992, Marle & Voous 1988, White & Bruce 1986, D.A. Holmes *in litt.* 1992, B. van Balen *in litt.* 1992, Y. Rusila Noor *in litt.* 1992).

The typical habitat of *A. g. gibberifrons* appears to be coastal wetlands, which include muddy offshore, mangrove edges, brackish fish-ponds, and shallow freshwater swamps and lakes which may extend some distance inland. In the east of its range, the habitat extends to inland rice fields and shallow rivers in Sulawesi (D.A. Holmes *in litt.* 1992, B. van Balen *in litt.* 1992). The Australian Grey Teal is highly dispersive from breeding sites and responds to climatic changes with movements over great distances (Marchant & Higgins 1990). In contrast, the East Indian Grey Teal seems to be sedentary (Fullagar 1992, D.A. Holmes *in litt.* 1992). It is possible that the Australian race undertakes seasonal movements to islands in southern and eastern Indonesia, within the range of the East Indian Grey Teal (particularly Timor and Nusa Tenggara). However, these seasonal movements of the Australian race are not usually associated with any breeding attempts in these sub-equatorial regions (Fullagar 1992) and so it is possible that the two taxa remain genetically isolated.

*A. g. gibberifrons* is "...quite common..." around the coasts of Sulawesi and the Lesser Sundas. Also, large populations continue to be discovered in southeast Sumatra, and the taxon may prove to be resident on the east coast of Kalimantan. Furthermore, it is still common around the coasts of Java and Bali, despite the widespread conversion of mangroves to fishponds, indicating a certain degree of adaptability to habitat changes (D.A. Holmes *in litt.* 1993). Criteria for distinguishing these two taxa in the field are required to allow a clear understanding of the range and status of the two taxa in Indonesia. If the distribution outlined above is accurate and the Australian race is no more than an uncommon migrant within the range of the East Indian Grey Teal, it is unlikely that the latter is threatened (D.A. Holmes *in litt.* 1992). The total population seems likely to be in the range of 10,000-100,000 individuals.

#### Brown Teal *Anas chlorotis*

M-L E

In addition to the distribution outlined by Green (1992) there are also scattered, tiny numbers of this duck on several small islands in the Hauraki Gulf and on Kapiti Island (M. Williams *in litt.* 1992). The estimate of total population size has been reduced to 1500-2000 individuals. Annual fluctuations of 20% of population size have been recorded (G. Dumbell *in litt.* 1992, M. Williams *in litt.* 1992).

The Northland population of approximately 500 individuals is declining despite continuous re-introductions of captive-bred birds over the last ten years, the main threats being habitat destruction and predators. A Department of Conservation Recovery Plan is in preparation (M. Williams *in litt.* 1992).

#### Auckland Island Teal *Anas aucklandica aucklandica*

M-L E

This duck is known from the islands of Adams, Monumental, Dundas, Disappointment, Rose, Ocean, Ewing and Enderby. Occasionally it also occurs on French and Friday Islands. Fieldwork in the 1991-1992 summer has found this taxon to be more abundant on Ewing and Rose Islands than thought previously, which may also be the case on Adams and Disappointment Islands (M. Williams *in litt.* 1992). The total population has recently been estimated at 2000 individuals, and stable (Rose & Scott 1993).

Most suitable habitat for the Teal on Enderby Island has been eaten away by feral rabbits and cattle, but both of these mammals are targets of current eradication programmes (M. Williams *in litt.* 1992). The Department of Conservation is currently drafting a management plan, the main aim of which is to eradicate feral mammals in the Auckland Islands group and eventually re-establish this duck on Auckland Island itself (M. Williams *in litt.* 1992).

#### Campbell Island Teal *Anas aucklandica nesiotis*

M-L C

The New Zealand Department of Conservation is currently drafting a management plan for this taxon (G. Dumbell *in litt.* 1992). The population is now estimated at 30-100 individuals (M. Williams *in litt.* 1992).

Andean Speckled Teal *Anas andium andium*  
M-L V?

The Andean Speckled Teal is a sparsely distributed resident of lakes, ponds, marshes, and sulphur springs in the paramo zone (humid grass-shrub association that borders the upper limits of the temperate forests in the Andes) of the central and western cordilleras of the Andes, in Colombia and northern Ecuador. It is seldom seen below 3500 m and ranges up to the snow-line (Delacour 1956, Hilty & Brown 1986).

This taxon has probably declined due to development pressures in the Colombian Andes (P. Canevari *pers. comm.* 1992); also, illegal hunting is widespread in Colombia and Ecuador (Scott & Carbonell 1986). However, populations of this duck are present in reserves in Colombia (Purace National Park and Los Nevados National Park) and Ecuador (Cayanmbe-Coca Ecological Reserve and Cotopaxi National Park) (Scott & Carbonell 1986). Between 27 and 30 December 1992, 124 individuals were counted at Laguna de Otun, a 150 ha lake within Los Nevados National Park, during which time breeding was observed (J.E. Botero *in litt.* 1993). The total population is likely to be under 10,000 individuals and declining.

Merida Speckled Teal *Anas andium altipetens*  
M-L V?

This duck is resident in the paramo zone of the northern Andes, in Venezuela (Provinces of Merida, Tachira, and Trujillo) and Colombia (eastern cordilleras south to Bogota). Like *A. a. andium* it is a high altitude species, inhabiting small lakes, ponds and bogs between 3200-4000 m (Gomez-Dallmeier & Cringan 1989, Hilty & Brown 1986). Scott & Carbonell (1986) recorded breeding populations of this duck in the Chingaza National Park, Colombia, and the Sierra Nevada National Park, Venezuela.

Although Todd (1979) described this duck as "...apparently not abundant anywhere...", Gomez-Dallmeier & Cringan (1989) describe it as common in Laguna Negra, Merida Province, and estimate that Venezuela holds 2500-17,500 individuals which they suggest constitutes 25-45% of the total population. This suggests a minimum total population of about 5500 individuals. However, no data are presented to justify these estimates and they must be treated with some scepticism. In Colombia the duck is considered a scarce resident (Hilty & Brown 1986).

Baikal Teal *Anas formosa* M-L V

This duck is now listed on CITES Appendix II (C.M. Poole *in litt.* 1992), which should help to combat the export of birds from China to Hong Kong and Japan. The Chunam Lakes in South Korea, where a large proportion of the known world population winters, has been designated a Game Sanctuary by the local county (Anon. 1992). Sapkyo Lake, located within Asan Bay on the west coast of central Korea, has been identified recently as an important non-breeding site for this species, where an estimated 30,000-35,000 individuals were present on 16 February 1993. A simultaneous count at Chunam Reservoir revealed an additional 20,000 birds (Pyong-Oh 1993).

Marbled Teal *Marmaronetta angustirostris*  
M-L V

A full review of the status and conservation of Marbled Teal has been completed recently (Green 1993). The current world wintering population peaks at 33,000-40,000, with at least 25,000 birds in Iran, 5000 in Pakistan and 3000 in the Mediterranean region (the majority wintering in Morocco). The world population has declined by at least 50% this century, with larger declines indicated where quantitative historical data are available. Breeding populations in Spain and the Commonwealth of Independent States have declined by over 90% since 1900, while IWRB mid-winter counts show that the Turkish population has declined by over 60% since 1970.

Destruction of breeding habitat and hunting pressure during the breeding season are the main threats, and are continuing across the range. Only 37% of 140 sites of current importance for the species have been granted any kind of protection status. A large proportion of the major population wintering in Iran is thought to breed in the wetlands of the lower Tigris and Euphrates in Iraq which are seriously threatened by a large new irrigation canal constructed to drain the southern marshes (Pearce 1993). These wetlands are also threatened by the construction of new dams upstream in Turkey and Syria (D.A. Scott *in litt.* 1992).

South American Pochard *Netta erythroptalma erythroptalma*  
M-L V

This duck is considered to be in danger of extinction in Peru. It occurs along the coast of Peru, where it is hunted sporadically, and is

present in just two protected areas, Paracas National Reserve and the National Sanctuary of Lagunas de Mejia (Pulido 1987, 1991). The population has been estimated recently at 25,000-50,000 and declining (Rose & Scott 1993).

Baer's Pochard *Aythya baeri* M-L V

In 1991, the Khanka Nature Reserve was established on Khanka Lake, Far East Russia, in an area of the lake where a majority of this duck's favoured habitat occurs (Nechaev & Gluschenko 1993). In February 1992, the AWC recorded a total of 4031 individuals (Perennou & Mundkur 1992). The population has been estimated at over 10,000 individuals, and declining (IWRB in prep.).

Madagascar Pochard *Aythya innotata* M-L C

The one known individual held in captivity (Green 1992) has now died (H.G. Young *pers. comm.* 1993). Missouri Botanical Gardens are conducting further surveys of the Lake Alaotra area in the hope of finding more individuals to establish a captive breeding programme (L. Wilmé *in litt.* 1992).

Steller's Eider *Polysticta stelleri* M-L V

The population of this duck wintering in northeast Europe has been estimated to total 15,000 individuals. Numbers wintering in the Baltic (Estonia, Lithuania and Poland) have increased rapidly in recent years, to 3500 (IWRB in prep.).

Spectacled Eider *Somateria fischeri* M-L V

The eastern Siberian population has been estimated to consist of a minimum of 100,000 individuals from the evidence of breeding population densities (Kistchinski 1981). However, it is not known whether the recent major decline in Alaska (see Green 1992) has also occurred in Siberia.

Oriental Merganser *Mergus merganser orientalis* M-L V?

This partially migratory duck inhabits mainly mountain rivers and lakes, especially of wooded regions, in eastern Asia. Its exact range and status are uncertain, due the confusion and overlap with *M.m. merganser* (Q.

Fawen *in litt.* 1992, F. Dian Jin *in litt.* 1992, V.G. Vinogradov *in litt.* 1992).

During the breeding season (March to November), its range includes Kirgizistan, Tadzhikistan, Uzbekistan, northeast Afghanistan, Pakistan, India (Kashmir-Ladakh), China (south and west Xizang, Tibet, northeast and southern Qinghai, Tsinghai, west Kansu, Turkestan, and Sinkiang Provinces) and Mongolia. During the non-breeding season (December to mid-February) most of the population migrates to lower altitudes, including Tadzhikistan, Kirgizistan, India (southern foothills of the Himalayas, particularly northern Punjab), China (Heilungkiang, Sinkiang, Yunnan and northern Szechwan Provinces) and northern Burma (Abdusalyamov 1971, V.G. Vinogradov *in litt.* 1992, Dement'ev *et al.* 1952, Ivanov 1949, Johnsgard 1978, Paludan 1959, Q. Fawen *in litt.* 1992, F. Dian Jin *in litt.* 1992, Bangs & Peters 1928, Ali & Ripley 1983, Smythies 1986, Sushkin 1938).

No data are available on population numbers, trends or threats, although the population size is almost certainly higher than 2500 individuals. Criteria for the field identification of this taxon and *M. m. merganser* are urgently required.

Scaly-sided Merganser *Mergus squamatus* M-L V

Plans to log the major breeding site of this merganser in the Bikin River, Russian Far East, by the South Korean conglomerate Hyundai were stopped by a order from the Russian Supreme Court in early December 1992. This followed an appeal by local environmentalists on the grounds that there was no Environmental Impact Assessment and no consultation on a local level (Survival International *pers. comm.* 1993).

Brazilian Merganser *Mergus octosetaceus* M-L C

The status of this species has been reviewed recently in detail by Collar *et al.* (1992), and it is now regarded as one of the rarest birds in South America. Regular reports of this duck continue to be made in Serra da Canastra National Park, Minas Gerais, Brazil (W. Bartman *in litt.* 1992, B. Forrester *in litt.* 1992). However, it is becoming increasingly likely that the species is extinct or very close to extinction in Paraguay, where surveys of parts of the Piratuy and Jejui-mi Rivers in 1992 failed to

find it. There are very few rivers left in eastern Paraguay with good quality forest surrounding them (T. Brooks *in litt.* 1992). Also, it seems that the Argentine and Brazilian populations of the species are now isolated from each other due to extensive logging operations in the Parana Province of southeast Brazil.

Maccoa Duck *Oxyura maccoa* M-L S

There are thought to be two subpopulations of this duck. The eastern population occurs in Ethiopia, Kenya, Tanzania, Zaire, Sudan, Uganda, Rwanda and Burundi (J.S. Ash *in litt.* 1992, Britton 1980, Short *et al.* 1990, Brown *et al.* 1982, Williams 1963, Hughes & Hughes 1992, Delacour 1959). The southern population occurs in Mozambique, Malawi, Republic of South Africa, Botswana, Lesotho, Zimbabwe and Namibia (Brown *et al.* 1982, Benson 1982, Milstein 1975, Johnsgard 1978). The duck prefers shallow, nutrient-rich waters with extensive emergent vegetation, up to 3000 m (Clark 1964, Johnsgard 1978). Birds are largely sedentary, with some local movements in southern Africa (IWRB *in prep.*).

Although it is a widespread species, it is uncommon or rare in a number of range countries, for example in Kenya, Malawi, Zimbabwe, Lesotho and Tanzania (Osborne & Tigar 1990, R.D. Medland *in litt.* 1993, Britton 1980, L. Bennun *in litt.* 1992, Brown *et al.* 1982). The population of Zimbabwe was estimated to be in the hundreds in the 1970s (D.A. Ewbank *in litt.* 1993), and, in Lesotho, there are an estimated 10-100 individuals (Osborne & Tigar 1990). In the southern Rift Valley numbers have declined sharply due to the widespread illegal use of gill nets (L. Bennun *in litt.* 1992).

However, the species is still common in certain areas. Up to 1000 individuals have occurred seasonally in Arusha National Park in Tanzania (Britton 1980), and a total of 899 was counted in the Namibian Waterfowl Census in July 1992 (R. Simmons *in litt.* 1993). The total population in the Cape Province of South Africa is estimated at 2400 (C.W. Heyl *in litt.* 1993). In Ethiopia, Urban & Brown (1971) described the species as "...common to locally abundant..." on alkaline lakes. In South Africa and Namibia, the numbers may have increased following the widespread construction of dams and sewage settlement lagoons (W. Tarboton *in litt.* 1993, R. Simmons *in litt.* 1993). In May 1980, a concentration of 1024 birds was observed on Strandfontein

Sewage Works in the Cape Town area of South Africa (C.W. Heyl *in litt.* 1993). The total population seems certain to exceed 10,000 individuals, with localised increases and decreases evident.

Colombian Ruddy Duck *Oxyura jamaicensis andina* M-L V?

This race of the Ruddy Duck is a resident of the Andes of central and east Colombia (Johnsgard 1978). All records occur between 2500 and 4000 m (Hilty & Brown 1986), although there may be some altitudinal movement within this range. The southern limit of its range is the Purace region (2°00'N, 76°30'W) and its northern limit is Laguna de Fuquene (5°15'N, 73°30'W), Cundinamarca and Boyaca (Lehmann 1946).

The duck inhabits the lakes and lagoons of the paramos. Breeding populations occur on Lagunas del Paramo de Boca-Grande, Laguna de Tota, Laguna de San Rafael, Embalse de Neusa, Laguna de Otun, and Laguna de San Ramon (Borrero 1952, Lehmann 1946, Scott & Carbonell 1986). In December 1992, 82 individuals were counted on Laguna de Otun, within Los Nevados National Park (J.E. Botero *in litt.* 1993).

The duck is encountered in groups typically of five to ten individuals, but has been recorded in flocks of 30-500 birds (Todd 1979). Hilty & Brown (1986) describe it as locally common but, following the high development pressures in the Colombian Andes, numbers are thought to have declined considerably (L. Naranjo *pers. comm.* 1992). Scott & Carbonell (1986) describe it as "...scarce and local...". The population is likely to be in the range of 2500-10,000 and declining.

White-headed Duck *Oxyura leucocephala* M-L V

Concern about the threat to this species from hybridisation and competition with the rapidly spreading, introduced North American Ruddy Duck *O. jamaicensis* is growing. The Ruddy Duck has now been recorded from Morocco, where six birds were seen in November 1992 (Sherif Baha El Din *pers. comm.* to G. Allport). The numbers seen on Andalusian wetlands with White-headed Duck have increased rapidly since 1985 with 57 sightings in 1990 (Pintos Martín & Rodriguez de los Santos 1992) and breeding was first confirmed in 1991. Hybrids were

first seen in Spain in 1991 and at least 18 hybrids had been shot by March 1993, including some that were at least second generation (AMA Andalucía *pers. comm.* 1993). Failure to address this problem quickly is likely to result in the extinction of the White-headed Duck over the next century.

The following taxa may have a population of under 100,000 individuals and are declining; they are currently under review: *Mareca (Anas) falcata*, *Netta erythrothalma brunnea*

and *Somateria mollissima sedentaria*. The authors request updated information from readers on any of the taxa listed in this review or the additional taxa covered in Green (1992). Information in the form of a short article is welcomed for submission to the newsletter of the IWRB Threatened Waterfowl Research Group. All readers submitting information will be included on the mailing list for future issues of the newsletter.

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