

Report on the Conservation Status of Migratory Waterbirds in the Agreement Area



AGREEMENT ON THE CONSERVATION OF
AFRICAN-EURASIAN MIGRATORY WATERBIRDS

**Report on the Conservation Status of Migratory
Waterbirds in the Agreement Area**

Prepared by Wetlands International for the Agreement Secretariat

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1.

INTRODUCTION

In Article II of the Agreement on the Conservation of African-Eurasian Migratory Waterbirds, Parties agree, as a fundamental principle, to take co-ordinated measures to maintain migratory waterbird species in a favourable conservation status or to restore them to such a status. To this end, the Parties agree to apply within the limits of their national jurisdiction a number of general conservation measures prescribed in Article III of the Agreement, as well as a number of more specific actions determined in the Action Plan appended to the Agreement. While in the great majority of cases, successful implementation of the conditions and provisions of the Agreement can only be accomplished by the Parties themselves, either at national level or through bilateral or multi-lateral co-operative programmes, there are several areas in which a broad international approach is required. This is especially the case with respect to the compilation of international reviews of the conservation status of waterbird species covered by the Agreement.

If the populations of migratory waterbirds covered by the Agreement are to be conserved effectively, it is essential that reliable information be available on their current status. This will include information on the size of the various populations, their breeding ranges, wintering distributions and migration routes, and the long-term trends in their population levels. It is a requirement of the Agreement (Article VI, paragraph 8) that at each of its ordinary sessions, the Meeting of the Parties shall consider actual and potential changes in the conservation status of migratory waterbirds and the habitats important for their survival, as well as the factors which may affect them. The need for regular reviews of the conservation status of the species of waterbirds covered by the Agreement is therefore evident.

The present report constitutes the first such report on the status and trends of all waterbird populations covered by the Agreement since the text of the Agreement was finalised in June 1995. It is intended to serve two purposes; firstly to fulfil the requirement in paragraph 7.4 of the Action Plan for an international review of the status and trends of the populations included in the Action Plan, and secondly to provide the necessary information to facilitate amendment of the Action Plan to include all populations of waterbirds covered by the Agreement. The latest information on population sizes and trends is required to determine the appropriate classification of populations in Table 1 of the Action Plan, and hence to determine priorities for action.

The present report also considers all those species and populations of waterbirds occurring in the Agreement Area, but which are not covered by the Agreement (*i.e.* not listed in Annex 2 to the Agreement), in an attempt to identify any additional migratory populations which are now considered to have an unfavourable conservation status, and which would be appropriate for inclusion in the Agreement and Action Plan.

STATUS AND TRENDS OF WATERBIRD POPULATIONS

The Agreement on the Conservation of African-Eurasian Migratory Waterbirds currently covers the migratory populations of 170 species of waterbirds occurring in the Agreement Area. (Note that in many cases, only certain subspecies or populations are included). These 170 species were selected from an original list of 212 waterbird species which fulfil the basic criteria for inclusion in the Agreement. (These criteria are given in section 1.3 of the Draft Management Plan, which was prepared in 1993 as a supporting document for the Agreement, and revised in March 1994). The remaining 42 species were recommended for listing in Appendix II to the Bonn Convention at the Fourth Meeting of the Conference of the Contracting Parties in Nairobi in June 1994, but were rejected on the grounds that they had a favourable conservation status, and are therefore not included in the Agreement.

Information on the population sizes and trends of all 212 species was presented in the Draft Management Plan of September 1993. This information was compiled by IWRB (later to become part of Wetlands International) at the same time as IWRB was compiling the first edition of *Waterfowl Population Estimates* (Rose & Scott, 1994). The information on population sizes and trends presented in the Draft Management Plan agrees very closely with that given in the first edition of *Waterfowl Population Estimates*, the few discrepancies being a result of last minute improvements to the latter report, which post-dated the final version of the Draft Management Plan by some months.

The present report seeks to update the information given in the Draft Management Plan. A number of important initiatives have been undertaken in the four years since early 1994 which have greatly improved knowledge of the sizes and trends of many waterbird populations in the Agreement Area. Some of the more important are as follows:

1. *Birds in Europe: Their Conservation Status* was published by BirdLife International in 1994 (Tucker & Heath, 1994). This reviews the conservation status of all bird species breeding in Europe, and gives detailed information on all species which are considered to have an unfavourable conservation status. Fifty-eight of these species are covered by the Agreement.
2. *The Atlas of Anatidae Populations in Africa and Western Eurasia* was published by Wetlands International in 1996 (Scott & Rose, 1996). This includes a major revision of population limits for all species of Anatidae occurring in the Agreement Area, revised estimates of population sizes, and a considerable amount of new information on population trends.
3. The second edition of *Waterfowl Population Estimates* was published by Wetlands International in 1997 (Rose & Scott, 1997). This includes numerous revised population estimates, as well as many completely new estimates, and greatly improved information on trends. The information on the Anatidae agrees closely with that given in the *Atlas of Anatidae Populations*, although there are some discrepancies because of new information reaching Wetlands International between the two publication dates.
4. *The EBCC Atlas of European Breeding Birds* was published by the European Bird Census Council in July 1997 (Hagemeijer & Blair, 1997). This constitutes an invaluable source of information on the breeding populations of waterbirds in Europe, and the most up-to-date information on trends throughout the region.
5. *The Atlas of Southern African Birds* was published by BirdLife South Africa in 1997 (Harrison *et al.*, 1997). This summarises a huge amount of data on bird distribution and abundance gathered in Botswana, Lesotho, Namibia, South Africa, Swaziland and Zimbabwe between 1987 to 1992, and provides a great deal of new information on the movements of birds within the region and changes in status during the 20th century.
6. *The Concise Edition of the Birds of the Western Palearctic* was published in early 1998 (Snow & Perrins, 1998). This contains a great deal of information on the size of breeding populations and their trends for all waterbirds occurring in Europe, North Africa and the western part of the Middle East. Although much of the information for Europe agrees closely with that given by Tucker & Heath (1994) and Hagemeijer & Blair (1997), the *Concise Edition* includes some more recent information from Europe, and a considerable amount of new information from North Africa and the Middle East.
7. An Action Plan for the cranes of the world was published by IUCN in 1996 (Meine & Archibald, 1996). This Action Plan, compiled by the IUCN/SSC Crane Specialist Group, gives very detailed information on the current status and trends of crane populations throughout the world, and redefines the limits of many crane populations.
8. An Action Plan for the conservation of grebes has recently been compiled by O'Donnell & Fjeldså (1997)

for the Grebe Specialist Group of Wetlands International, BirdLife International, and the IUCN Species Survival Commission. This includes an up-to-date review of the population status and trends for all grebe species.

9. The African Waterfowl Census has grown enormously in recent years, and has greatly improved our knowledge of the status and abundance of many species of waterbirds in Africa. Twenty-three countries participated in the 1994 census, 21 in the 1995 census, 25 in the 1996 census, and 30 in the 1997 census. The reports of these four censuses (Taylor & Rose, 1994; Dodman & Taylor, 1995; Dodman & Taylor, 1996; Dodman *et al.*, 1997) contain many counts which suggest that some of the earlier population estimates may have been too low or too high, and also much useful information on threats to certain waterfowl populations and their recent trends.
10. In October 1996, the Wader Study Group held a workshop in Belgium to produce new provisional estimates for the populations of 12 species of waders wintering in coastal Europe (East Atlantic flyway). These estimates, based on counts in the early 1990s, provide the first new estimates since the early 1980s. Although still provisional, the new estimates suggest that major changes have occurred in the size of most populations, with increases in ten of the populations under review, and decreases in only three.
11. *Goose Populations of the Western Palearctic: A review of status and distribution* was published by the Danish National Environmental Research Institute and Wetlands International in early 1999 (Madsen *et al.*, 1999). The very comprehensive review of 23 populations of nine species of geese in the Western Palearctic provides revised population estimates based on censuses during the period 1994-97, and the latest information on population trends in the 1990s. In many cases, the new population estimates differ markedly from those given in the second edition of *Waterfowl Population Estimates*.

Extensive use has been made of these publications and reports, as well as a number of other more specific publications and unpublished reports, in an attempt to provide the latest information on population sizes and trends for all of the 170 species included in the Agreement.

The present report uses as its standard the population estimates and trends given in the published second edition of *Waterfowl Population Estimates*. Throughout the species accounts, tables and Annex 1, these estimates and trends are referenced as WPE2. However, in many cases, better information has become available since the publication of WPE2, and it has become apparent that the estimates and/or trends for certain populations require revision. All such proposed revisions are discussed in the species accounts, and identified separately in the accompanying tables.

Wetlands International and its Specialist Groups have recently begun compiling information for the third edition of *Waterfowl Population Estimates*, due for completion in mid-1999. Every effort is being made to ensure that the revised population estimates and trends given in this report match those that will appear in the third edition of *Waterfowl Population Estimates*, although again it is likely that discrepancies will arise as last minute changes are made to the population estimates report before it goes to press in early 2000.

The present report is divided into two sections. The first section, and the bulk of the report, reviews the current status of all 170 species currently included in the Agreement. The second section gives a brief review of all other species of waterbirds occurring in the Agreement Area, and identifies those species with migratory populations within the Agreement Area which are now considered to have an unfavourable conservation status and might be considered for inclusion in the Agreement and its Action Plan.

2.1.

WATERBIRD SPECIES INCLUDED IN THE AGREEMENT

In the species accounts that follow, the introductory text describing the subspecies and populations is taken from the Draft Management Plan, with some updating in the light of improved understanding. The sequence and composition of families follow Morony *et al.* (1975); the taxonomic treatment at species level and scientific nomenclature follow Sibley & Monroe (1990 & 1993). Each migratory population within the Agreement area is listed with an estimate of population size (or range category) followed by an indication of recent trends, where known. Population sizes and trends taken from the second edition of *Waterfowl Population Estimates* are indicated with the initials WPE2. Conventional references are given for all other population estimates and trends.

Populations are listed in one of four ways:

- (a) When the breeding grounds and the wintering areas of a population are well known and these are widely separated, the breeding grounds are given first, followed by a slash (/), followed by the wintering areas *e.g.* Western Siberia/Western Europe for the single population of *Branta bernicla bernicla*.
- (b) When the population has been identified largely or wholly on the basis of its winter distribution, and the breeding grounds are either poorly known or overlap extensively with those of other wintering populations (as is the case in many ducks, *Anas* spp. and *Aythya* spp., wintering in Western Eurasia), the population is described only by its winter distribution, and this is indicated with the abbreviation '(win)'.
- (c) Similarly, when a population has been identified largely or wholly on the basis of its breeding distribution, and the wintering grounds are either poorly known or overlap extensively with those of other breeding populations (as is the case in many herons and shorebirds breeding in Western Eurasia and wintering widely in Sub-Saharan Africa), the population is described only by its breeding distribution, and this is indicated with the abbreviation '(bre)'.
- (d) When there is a considerable amount of overlap between breeding and wintering ranges (*i.e.* when some individuals remain throughout the breeding range year round) or when both breeding and wintering ranges are poorly known (*e.g.* in many Afrotropical species), the population is described by its entire range.

Following the approach taken in the first two editions of *Waterfowl Population Estimates*, estimates of population size are given in two ways: either as the number of individuals present in the population (a 'best-guess figure' or a minimum-maximum range) or as being in one of five size categories, A to E. The size categories are as follows:

- A: Less than 10,000
- B: 10,000-25,000
- C: 25,000-100,000
- D: 100,000-1,000,000
- E: Over 1,000,000

In a relatively small number of cases (*e.g.* some species of Rallidae), it is impossible to give even a rough indication of total population size.

The section **Changes in status** summarizes recent information on population trends, especially when the latest information suggests that the actual trend in a particular population differs from that given in the second edition of *Waterfowl Population Estimates*. It should be noted that in many cases, the change in status is merely the result of improved knowledge of population trends, and does not reflect any real change in the long-term trend of the population concerned.

The section **Comments** includes a note on those species which are currently listed as globally threatened or near-threatened. It includes information on listing in the Appendices to the Bonn Convention, and draws attention to any special action plans or management plans which have been produced in recent years. This section also includes a discussion of any recent changes in population limits which have been necessary because of improved understanding of migration routes.

Finally, this section includes recent information on population size, especially when there is now evidence to suggest that the estimate given in the second edition of *Waterfowl Population Estimates* is no longer valid. Again it should be noted that in many cases, the new population estimate is derived from better census data, and does not imply that there has been any significant change in population size. Whenever the new estimate is believed to reflect a real change in population size, this is clearly stated.

The population sizes and trends of all relevant populations of the 170 species covered by the Agreement are summarized in Table 1.

GAVIIDAE

Red-throated Diver *Gavia stellata*

Monotypic. West Eurasian populations breed in Greenland, Iceland, Northern Europe and Western Siberia and winter on the Atlantic coast of Western Europe south to France (vagrant to Morocco), and less commonly in the Black and Caspian Sea (presumably West Siberian birds). Small numbers of birds winter on large lakes in Central Europe. No discrete populations are identifiable. Two main groups are recognised on the basis of their winter distributions.

- Northwest Europe (wintering): 75,000 (WPE2). D, based on estimates of breeding populations.

Trends: Decreasing (WPE2).

- Caspian Sea, Black Sea & East Mediterranean (wintering): Unknown.

Trends: Unknown.

Changes in status: The Northwest European population is thought to be declining. Tucker & Heath (1994) and Hagemeyer & Blair (1997) found that there has been a decline over much of the European breeding range since 1970, following the loss of breeding sites due to drainage and disturbance from recreational activities. Decreases have been reported in Russia (which holds the great majority of the breeding population), Finland, Sweden and Norway, although in Finland, the population seems to have stabilised in recent years (Hagemeyer & Blair, 1997). Populations in Greenland, Iceland and Svalbard are thought to be stable, and there has been a slight increase in the relatively small British breeding population (1,200-1,500 pairs).

Comments: Only the Western Palearctic populations of *G. stellata* are included in Appendix II of the Bonn Convention.

The breeding population in Europe excluding Russia is estimated at 7,150-10,500 pairs, and that in Russia at 50,000-100,000 pairs (Hagemeyer & Blair, 1997), suggesting a wintering population of at least 150,000 birds. Most of this population is believed to winter in ice-free marine and coastal waters off Northwest Europe, with only small numbers of birds reaching Central and Southeast Europe. Thus the *Waterfowl Population Estimates* figure of 75,000 for the Northwest European wintering population may be much too low.

Black-throated Diver *Gavia arctica*

Polypatric. Two subspecies occur in the Agreement Area. The nominate race breeds in Northern Europe and Northern Siberia east to the Lena River. Western populations (east at least as far as the Taymyr Peninsula) winter in Western and Southern Europe, south to Northwest Africa (scarce) and east to the Black Sea; small numbers of birds winter on large lakes in Central Europe. The Central Asian form *suschkini* (often lumped with *arctica*) breeds in southwestern Siberia and winters in Turkmenistan and the Caspian region. Two populations are recognised.

- Western Siberia/Europe (*arctica*): 120,000 (WPE2).

Trends: Stable (WPE2). Decreasing slightly (Tucker & Heath, 1994; Hagemeyer & Blair, 1997).

- Central Siberia/Caspian (*suschkini*): Unknown.

Trends: Unknown.

Changes in status: The West Siberian/European population was listed as stable in the first two editions of *Waterfowl Population Estimates*, but is now thought to be declining. Tucker & Heath (1994) and Hagemeyer & Blair (1997) have reported a decline in many parts of the European breeding range since 1970. Contributing factors include disturbance from recreational activities, increased fluctuations in water levels at some breeding lakes, a decline in fish stocks caused by acid rain, and increased pollution from mercury. Decreases have been reported in Russia (which holds the great majority of the breeding population), Finland, Latvia, Lithuania and Norway. There may also have been a slight decline in the small British breeding population since 1968-72 (Gibbons *et al.*, 1993).

Comments: Only the nominate form *arctica* and Central Asian form *suschkini* are included in Appendix II of the Bonn Convention.

The breeding population in Europe excluding Russia is estimated at 19,000-26,500 pairs, and that in Russia at 100,000-200,000 pairs (Hagemeyer & Blair, 1997), suggesting a wintering population of at least 350,000 birds. The *Waterfowl Population Estimates* figure of 120,000 for the entire European wintering population would, therefore, appear to be much too low.

Great Northern Diver *Gavia immer*

Monotypic. Primarily a Nearctic species, breeding in North America mostly between 48°N and the Arctic Circle, and also in Greenland, Iceland, Bear Island and very occasionally Scotland. It occurs as a winter visitor to the Atlantic coast of Northwest Europe (north Norway to northwestern France) from breeding grounds in Iceland (300 pairs), Greenland (200-2,000 pairs) and possibly also northeastern Canada. Only one population is recognised.

- Europe (wintering): 5,000 (WPE2).

Trends: Unknown.

Changes in status: None known. The breeding population in Iceland (estimated at 300 pairs in the late 1980s) is believed to be stable (Hagemeijer & Blair, 1997).

Comments: Only the Northwest European population is included in Appendix II of the Bonn Convention.

A minimum of 5,000 birds winter along the coasts of Northwest Europe, with some 3,500-4,500 of these in British and Irish waters. The population in North America is still large (in the order of 500,000 birds), but the species has decreased steadily in the southern parts of its range throughout much of the 20th century.

White-billed Diver *Gavia adamsii*

Monotypic. The species breeds sparingly in north European Russia and more commonly from the Yamal Peninsula east across Northern Siberia (north to 78°N) to the Chukostkiy Peninsula, and also in northern Alaska and northwestern Canada. Birds from western breeding areas winter along the coasts of Russia and Norway, and rarely southwest to the North Sea (to about 50°N). Only one population is recognised.

- Northern Europe (wintering): A or B (WPE2).

Trends: Unknown.

Changes in status: None known.

Comments: Only the Western Palearctic population is included in Appendix II of the Bonn Convention.

No distinction is made between West Eurasian and East Asian populations in *Waterfowl Population Estimates*. Very little is known about numbers, although the species is rather scarce in the western part of its Palearctic range. The breeding population in European Russia has been estimated at 50-100 pairs, and it is thought that 100-200 birds may winter in the North Sea, but the numbers wintering along the Russian and Norwegian coasts are unknown (Hagemeijer & Blair, 1997; Snow & Perrins, 1998). *G. adamsii* is almost certainly the least numerous of the four species of divers. However, most of the breeding areas are very remote, and it seems unlikely that populations have declined significantly in recent times.

PODICIPEDIDAE

Red-necked Grebe *Podiceps grisegena*

Polytypic. Only the nominate subspecies occurs with any frequency in Western Eurasia, although the subspecies *holboellii* of North America and Eastern Asia has been recorded as a vagrant in Greenland, Iceland and on the coast of Western Europe. *P. g. grisegena* breeds from Denmark and Germany east through North and Central Europe to West-central Asia, and winters from Norway and Britain south to the Bay of Biscay (vagrant to Northwest Africa), with smaller numbers wintering in the Caspian Sea, Black Sea and East Mediterranean. Birds breeding in the Lake Balkhash area in Central Asia (formerly assigned to the subspecies *balchashensis*) apparently winter in Pakistan and northwestern India (O'Donnell & Fjeldså, 1997), and are thus largely extralimital. Most European breeders are believed to winter in Northwest Europe; birds wintering in the Caspian are believed to originate from the Volga Basin and Western Siberia. The somewhat smaller numbers of birds wintering in the Black Sea and East Mediterranean presumably come from the breeding areas in Turkey, Bulgaria, Romania and Ukraine. Three main wintering groups are recognised.

- Northwest Europe (wintering): 15,000 (WPE2). C, based on recent estimates of breeding populations.

Trends: Stable (WPE2).

- Black Sea & Mediterranean (wintering): 10,000 (WPE2). C, based on recent estimates of breeding populations.

Trends: Unknown.

- Caspian (wintering): 15,000 (WPE2).

Trends: Unknown.

Changes in status: The species is thought to have increased and expanded towards the west in Europe during the second half of the 19th century, and is still increasing in some areas, although most populations now appear to be relatively stable. Tucker & Heath (1994) consider the European breeding population to be 'Secure', but report declines of over 20% in countries holding 29% of the breeding population. Hagemeyer & Blair (1997) report recent increases in Finland, Latvia and Denmark, and slight decreases in Ukraine and Romania.

In the first two editions of *Waterfowl Population Estimates*, the Caspian wintering population was said to be increasing, based on Perennou *et al.* (1994). Perennou *et al.* treated the Balkhash birds as part of a Caspian/South Asian population, and noted that there was some evidence of an increase in the wintering population in northwestern India (*i.e.* amongst the Balkhash birds). In the second edition of *Waterfowl Population Estimates*, these birds were treated as a separate population, but the increasing trend was retained, erroneously, for the Caspian birds.

Comments: Only the nominate form *grisegena* is included in Appendix II of the Bonn Convention. An action plan for the conservation of *P. grisegena* has been prepared by O'Donnell & Fjeldså (1997).

The second edition of *Waterfowl Population Estimates* gives new population estimates for the Northwest European wintering population (15,000 individuals) and Black Sea/Mediterranean wintering population (10,000 individuals). O'Donnell & Fjeldså (1997) give the Northwest European wintering population as 18,000 individuals. However, the breeding population in Europe excluding Russia is estimated at 19,800-25,700 pairs, and that in Russia at 10,000-100,000 pairs (Hagemeyer & Blair, 1997), suggesting a total wintering population in Northwest Europe and the Black Sea/Mediterranean region of at least 90,000 birds. This leaves at least 65,000 birds unaccounted for in winter. The 15,000 birds estimated to winter in the Caspian region and sparingly further east to northwestern India probably originate from breeding grounds east of the Urals. It is probable that in this species, which winters mainly at sea, estimates of breeding populations are likely to give a better indication of population size than mid-winter counts. If this is the case, the wintering populations in Northwest Europe and the Black Sea/Mediterranean region are both likely to exceed 25,000 individuals. Until better agreement is reached between estimates from the breeding areas and estimates from the wintering grounds, it is recommended that both European wintering populations be listed in Category C (25,000-100,000).

Slavonian Grebe *Podiceps auritus*

Polytypic. Only the nominate form occurs in Western Eurasia, but two distinct forms, separable on bill-size, are present. Large-billed birds breed in Iceland, the Faroes, Scotland and north Norway, and winter on the Norwegian coast and in Britain and Ireland. Small-billed birds breed from Sweden eastwards, and winter in the Baltic and on the Atlantic coast of Europe to Brittany (vagrant to NW Africa), with smaller numbers reaching the Black and Caspian Seas. Three main wintering groups are recognised.

- Northwest Europe (large-billed - breeding): 5,000 (WPE2).

Trends: Decreasing (WPE2). Stable/increasing (Tucker & Heath, 1994; Hagemeyer & Blair, 1997; Snow & Perrins, 1998).

- Northeast Europe (small-billed - breeding): B or C (WPE2). C, based on recent estimates of breeding populations.

Trends: Unknown (WPE2). Probably decreasing, at least in west (Tucker & Heath, 1994; Hagemeyer & Blair, 1997).

- Caspian & Southern Asia (wintering): B (WPE2).

Trends: Unknown.

Changes in status: The second edition of *Waterfowl Population Estimates* gives the trends in the large-billed birds breeding in Northwest Europe as decreasing. However, there has probably been an overall increase in numbers of large-billed *auritus* in the last three decades, as there has been a substantial increase in numbers in Norway, which holds over two-thirds of the population (Tucker & Heath, 1994; Hagemeyer & Blair, 1997; Snow & Perrins, 1998). The Norwegian population increased from about 500 pairs in the 1960s to 1,000-1,500 pairs in recent years (O'Donnell & Fjeldså, 1997). The small breeding population in Scotland increased from 52 pairs in 1971 to a peak of 80 pairs in 1978-80, but by the late 1980s had levelled off at about 60 pairs (Gibbons *et al.*, 1993). The Icelandic population has decreased from 500-750 pairs in the early 1970s to about 300-400 pairs in recent years (Snow & Perrins, 1998; O'Donnell & Fjeldså, 1997).

Although Tucker & Heath (1994) suggest that the European breeding population is probably 'Secure', they report declines of over 20% in countries holding 30% of the breeding population, and declines of over 50% in some areas. Recent decreases have been reported in the breeding populations of small-billed *auritus* in Finland, Sweden and Estonia. In Finland, the large breeding population was probably halved from 1950 to the late 1970s, but has apparently recovered somewhat since 1980 (Hagemeyer & Blair, 1997).

Comments: Only the Western Palearctic populations are included in Appendix II of the Bonn Convention. An action plan for the conservation of *P. auritus* has been prepared by O'Donnell & Fjelds  (1997).

The second edition of *Waterfowl Population Estimates* gives the population of small-billed birds breeding in Northeast Europe as 10,000-100,000 (size categories B or C). The total breeding population in Europe excluding Russia is estimated at 6,050-9,250 pairs, and that in Russia at about 30,000 pairs (Hagemeijer & Blair, 1997). The breeding population of the western large-billed form is estimated at only 1,360-1,960 pairs, suggesting that there are at least 35,000 pairs of small-billed *auritus* breeding in Northeast Europe, equivalent to a wintering population of over 100,000 birds (size category D). It is suggested that a conservative estimate of 25,000-100,000 (category C) be adopted, in view of uncertainties in the size of the Russian breeding population. O'Donnell & Fjelds  (1997) have estimated the total population of the nominate form at only 50,000-100,000 birds, but this estimate is clearly much too low, as the number of *auritus* breeding and wintering in Eastern Asia alone is estimated at between 25,000 and 100,000 birds.

PELECANIDAE

Great White Pelican *Pelecanus onocrotalus*

Monotypic. The species breeds patchily from Southeast Europe to West-central Asia and in Subsaharan Africa. Populations breeding in Africa are largely sedentary, undertaking irregular local movements related to changes in feeding conditions. The birds breeding in Southeast Europe, Turkey and the Caspian region are almost entirely migratory. The main wintering areas of European breeders are unknown; 1,000-3,000 birds have wintered in Israel in recent years, and large numbers have been recorded on passage, suggesting that the bulk of the population may winter in Eastern Africa. Birds breeding in Southwest Asia winter in the Mesopotamian Marshes in Iraq (many thousands in the late 1970s; Scott & Carp, 1982), southern Iran, neighbouring Afghanistan and probably also Pakistan. Only one large population is currently recognised in Western Eurasia:

- Europe & Western Asia (breeding): 70,000 (WPE2).

Trends: Decreasing (WPE2).

Changes in status: The European population underwent a considerable decline during the 20th century, mainly because of wetland drainage, and then appeared to stabilise in the late 1980s (Tucker & Heath, 1994). However, the largest breeding population in Europe (in Romania) decreased drastically from 2,500-3,000 pairs in the late 1980s to only 1,100 pairs in 1996 (Snow & Perrins, 1998). Recent decreases have also been reported in Greece and Turkey (Tucker & Heath, 1994), and the total European breeding population (including Russia and Turkey) is now estimated at only 3,400-4,300 pairs (Tucker & Heath, 1994; Hagemeijer & Blair, 1997). The trends in Western Asia are unknown.

Comments: Only the Palearctic populations of *P. onocrotalus* are listed in Appendix I of the Bonn Convention, and only the Western Palearctic populations are listed in Appendix II.

The first edition of *Waterfowl Population Estimates* recognised two populations in Western Eurasia: a population of about 80,000 birds breeding in Southeast Europe and western Turkey and wintering in Israel and Eastern Africa (formerly also the Nile Delta); and a population of at least 10,000 birds breeding in the Caspian region, eastern Turkey and northwestern Iran, and wintering from Iraq and southern Iran to Afghanistan and probably also Pakistan. On the recommendation of the Pelican Specialist Group, these were combined into a single Western Palearctic population of only 70,000 birds in the second edition of *Waterfowl Population Estimates*. This treatment is adopted here, although it is acknowledged that this is inconsistent with the treatment of other waterbirds with a wide breeding range across Southern Europe and Western Asia, and wintering areas extending from Eastern Africa to Afghanistan.

Dalmatian Pelican *Pelecanus crispus*

Monotypic. The species breeds at a number of widely scattered localities from Southeast Europe through Southwest Asia and Central Asia to Sinkiang Province in China, and winters south to the Mediterranean, Persian/Arabian Gulf, northern India and southern China. Two populations are recognised in Western Eurasia: a small population in the East Mediterranean/Black Sea region, wintering within this region, and a larger Southwest Asian population wintering in the South Caspian region and from Mesopotamia through southern Iran to Pakistan. (A third population, in Eastern Asia, numbers less than 500 individuals).

- Black Sea & Mediterranean (wintering): 2,000-3,000 (WPE2).

Trends: Increasing (WPE2). Stable (Hagemeijer & Blair, 1997).

- Southwest & Southern Asia (wintering): 10,000-13,000 (WPE2).

Trends: Stable (WPE2).

Changes in status: The breeding population in Europe has declined dramatically since the 19th century, principally through the loss of wetlands due to drainage, but in recent years this decline has halted. The breeding populations in Greece and Romania are increasing, and the species has started to breed again in Ukraine (Tucker & Heath, 1994; Hagemeyer & Blair, 1997), but the population in Albania has continued to decrease, from 200-300 pairs in the 1960s to only about 50 pairs in recent years, and the population in Turkey is also thought to be decreasing (Hagemeyer & Blair, 1997; Snow & Perrins, 1998). A. Crivelli and T. Michev (in Hagemeyer & Blair, 1997) consider that overall the European breeding population is now stable. This population, excluding Russia but including Turkey, is currently estimated at 560-700 pairs (Hagemeyer & Blair, 1997). The Southwest Asian breeding population is also thought to be relatively stable, although some increase has been reported in the Russian Federation (Hagemeyer & Blair, 1997).

Comments: *Pelecanus crispus* is a globally threatened species in the category 'Vulnerable' (IUCN, 1996), and is included in Appendix I of the Bonn Convention. An Action Plan for *P. crispus* in Europe has been compiled by Crivelli (in Heredia *et al.*, 1996).

PHALACROCORACIDAE

Pygmy Cormorant *Phalacrocorax pygmeus*

Monotypic. The species is confined to the Palearctic west of the Aral Sea, breeding from Southeast Europe (Albania, Bulgaria, Greece, Moldova, Romania and Ukraine) east through the Black Sea and Caspian regions to the Aral Sea and southeastern Kazakhstan. Populations breeding in Eastern Europe and the Black Sea winter south to Greece and Turkey; populations breeding in the Caspian region and Aral Sea winter mainly in the southwestern Caspian and lower Iraq. Two populations are recognised.

- Black Sea & Mediterranean: 25,000 (WPE2).

Trends: Unknown (WPE2). Stable or increasing slightly after a long period of decline (Tucker & Heath, 1994; Hagemeyer & Blair, 1997).

- Southwest Asia: 5,000 (WPE2). C (Paynter *et al.*, 1996).

Trends: Decreasing (WPE2). Unknown.

Changes in status: The numbers breeding in Europe have decreased considerably during the 20th century (and particularly during the 1950s), due to habitat loss, persecution by fishermen and destruction of breeding colonies, but in recent years the decline seems to have halted, and some breeding populations are now increasing (Tucker & Heath, 1994; Hagemeyer & Blair, 1997). Almost two-thirds of the Black Sea/Mediterranean population breeds in the Danube Delta in Romania, where numbers fell from about 8,000 pairs in the early 1960s to only 4,000 pairs in 1991. However, recent information suggests that this population is now increasing (Hagemeyer & Blair, 1997). A recent increase has also been reported in the large Turkish breeding population (Tucker & Heath, 1994). The species re-colonised Moldova in 1982, where there were 200-500 pairs by 1990 (Tucker & Heath, 1994), and has recently begun breeding in Hungary (since 1985), Slovakia (since 1992), Israel (since 1992) and Italy (regularly since 1993) (Snow & Perrins, 1998). Populations in Greece and Bulgaria are thought to be stable, and recent decreases have been reported only in the small populations breeding in Albania and Ukraine (Hagemeyer & Blair, 1997).

Trends in the Southwest Asian population are uncertain. Perennou *et al.* (1994) thought that numbers were declining in the South Caspian region, but recent high counts in Azerbaijan have indicated that the population is many times larger than was formerly supposed. As nothing is known of trends in Azerbaijan, the declining trend given in the second edition of *Waterfowl Population Estimates* seems unjustified.

Comments: *Phalacrocorax pygmeus* was formerly regarded as a globally threatened species in the category 'Insufficiently known' (IUCN, 1993), but is currently listed as 'Near-threatened' (Collar *et al.*, 1994). An Action Plan for *P. pygmeus* in Europe has been compiled by Crivelli *et al.* (in Heredia *et al.*, 1996).

The world population of the species has recently been estimated at about 13,000 pairs (Heredia *et al.*, 1996). The breeding population in Southeast Europe and Turkey is currently estimated at 6,850-10,300 pairs (Hagemeyer & Blair, 1997).

Recent counts indicate that the estimate of 5,000 for the Southwest Asian population, given in the second edition of *Waterfowl Population Estimates*, is much too low. Paynter *et al.* (1996) counted 10,468 *P. pygmeus* at five sites in Azerbaijan in January and February 1996. As the species favours the many hundreds of kms of irrigation channels which have never been surveyed, these authors concluded that the total population in Azerbaijan alone must be in the high tens of thousands (*i.e.* in category C).

Socotra Cormorant *Phalacrocorax nigrogularis*

Monotypic. The species breeds on islands off the Arabian Peninsula and southern Iran and disperses widely along adjacent coasts in winter south to the Gulf of Aden and southern Red Sea. Breeding is suspected in the Gulf of Aden and in Socotra. There is evidence of large-scale movements along the Oman coast, but these are poorly understood. Only one population is recognised, the entire population of the species.

- Gulf & Arabian Sea: 500,000-1,000,000 (WPE2).

Trends: Unknown (WPE2). Probably decreasing (Symens *et al.*, 1995).

Changes in status: No information is available on long-term trends, but it seems likely that numbers fell dramatically as a result of oil spills during the Gulf War in early 1991. Recent surveys have shown that from a total of at least 29 historical breeding sites in the Persian/Arabian Gulf, as few as 11 extant colonies now remain, while from the breeding population in the Arabian Sea, only one extant colony is known (Symens *et al.*, 1995).

Comments: *Phalacrocorax nigrogularis* is listed as 'Near-threatened' in Collar *et al.* (1994). It is highly localised throughout the year, and is therefore particularly vulnerable to oil pollution which has repeatedly had serious effects throughout much of its range.

The world population has been estimated at 500,000-1,000,000 birds (Symens *et al.*, 1993). About 95% of the breeding population in the Gulf is restricted to only three colonies: the Howar Islands off Bahrain (150,000 pairs), Siniyah Island in Umm al Quwain, United Arab Emirates (40,000 pairs), and Judhaym Island in the Gulf of Salwa, Saudi Arabia (15,000 pairs) (Symens *et al.*, 1995). Many of the present breeding sites, including the three main sites, are under threat from increasing disturbance and/or development (Symens *et al.*, 1995).

ARDEIDAE

Slaty Egret *Egretta vinaceigula*

Monotypic. *E. vinaceigula* was only confirmed as a distinct species in 1971. Until recently, the species was known to breed only in Botswana, mainly in the Okavango Delta, and northeastern Namibia (Caprivi Strip). However, it is now known to breed in the Zambezi Delta in Mozambique (Collar *et al.*, 1994), and breeding in Zambia also seems likely. The species undertakes extensive movements eastwards from Botswana during the wet season to wetlands around Lake Malawi and along the Shire and Zambezi Rivers in Malawi and northwestern Mozambique. Concentrations of up to 40 have been observed in the Okavango Delta, and parties of up to 30 have been recorded during the dry season at the Kafue Flats, Liuwa Plain and Bangweulu Swamp in Zambia. A colony of 26 nests was discovered in the Caprivi Strip in northeastern Namibia in 1988. Only one population is recognised, the entire population of the species.

- Southern Africa: 5,000-10,000 (WPE2).

Trends: Decreasing (WPE2).

Changes in status: Little information is available on the status of this species, but there are some indications of a decrease in some areas. Flood regulation has caused it to disappear from one area of the Kafue Flats in Zambia, and there are development plans that may seriously affect the ecology of the Okavango Delta, while in Namibia, rice cultivation and developments taking place in the tourist and livestock industries are likely to have a negative impact (Collar *et al.*, 1994).

Comments: *E. vinaceigula* is a globally threatened species in the category 'Vulnerable' (IUCN, 1996). The habitat that is thought to be suitable is widely available, and the rarity of the species is as yet unexplained (Collar *et al.*, 1994). It may be a relict species, declining naturally towards extinction through some unknown natural factor, *e.g.* unsuccessful competition with *E. ardesiaca* (Hancock & Elliott, 1978).

Purple Heron *Ardea purpurea*

Polytypic. Three subspecies occur in the Agreement Area. *A. p. madagascariensis* of Madagascar and *A. p. bournei* of the Cape Verde Islands are sedentary. The nominate subspecies occurs widely in Africa, Southern Europe and Southwest Asia east to Kazakhstan. The populations breeding in Subsaharan Africa appear to be mainly sedentary. North African and West Eurasian populations winter almost exclusively in Africa south of the Sahara south to the equator, with birds from the Western Europe and Northwest Africa wintering mainly in West Africa, and those from Eastern Europe and Southwest Asia wintering mainly in Northeast and East Africa. Two main migratory populations are recognised.

- West Mediterranean (breeding): B (WPE2).

Trends: Decreasing (WPE2).

- Eastern Europe & Southwest Asia (breeding): D (WPE2).

Trends: Unknown (WPE2). Probably decreasing; decreasing in Eastern Europe (Tucker & Heath, 1994; Hagemeyer & Blair, 1997), but status in Southwest Asia unknown.

Changes in status: *Ardea purpurea* is now decreasing across much of its range in Europe, after a period of increase in the 1950s and 1960s. It is listed as 'Vulnerable' by Tucker & Heath (1994), who recorded declines in 16 countries and stable populations in only three. They attribute these declines largely to the loss and degradation of habitat and possibly to climatic changes causing drought conditions on the winter quarters, at least in West Africa. In the West Mediterranean population, there have been major declines in Spain, the Netherlands and Austria, and smaller declines in France and Italy. In France, a marked decline in the south has to some extent been offset by increases in central and western regions. In Eastern Europe and Southwest Asia, there have been major declines in Bulgaria, Croatia and Ukraine, and smaller declines in Albania, Hungary, Moldova, Romania and Turkey. A. Bankovics (in Hagemeyer & Blair, 1997) believes that the large breeding population in Russia is also declining. No information is available on the status of the species further east, but as its reed-bed habitat is widely under threat in Southwest Asia, it seems likely that the species is also decreasing there.

Comments: Only the populations of the nominate form breeding in the Western Palearctic are included in Appendix II of the Bonn Convention.

The name 'West Mediterranean' for the population breeding in Western Europe and Northwest Africa is somewhat inappropriate as it includes birds breeding as far north and east as the Netherlands, Germany and Austria. The breeding population in Europe (excluding Russia) is estimated at 7,770-8,560 pairs, and that in Russia at 40,000-90,000 pairs (Hagemeyer & Blair, 1997). Of these, about 4,500-5,500 pairs breed in Western Europe (east to Germany, Austria and Italy). The Northwest African population is likely to number only a few hundred pairs at most, suggesting that the total population in Southwest Europe and Northwest Africa is in the region of 14,000-18,000 birds.

Great Egret *Casmerodius albus*

Polytypic. Three subspecies occur in the Agreement Area. The nominate race breeds in Eastern Europe and Southwest Asia, and winters west to France and south to Tunisia, Egypt and the Persian/Arabian Gulf. Birds breeding in Eastern Europe (excluding Russia) and Turkey winter mainly in the Black Sea and East Mediterranean; those breeding in Southwest Asia (including the Caspian region) appear to winter mainly in Kazakhstan, Iraq and Iran. Some birds from both these populations also winter in Africa south of the Sahara, but the numbers may be small. *E. a. melanorhynchus* breeds throughout Africa south of the Sahara and appears to be largely sedentary except for some post-breeding dispersal. *E. a. modesta* breeds from southern Iran east through Southern and Eastern Asia, and is largely extralimital. Two main migratory populations of the nominate form are recognised.

- Black Sea & Mediterranean (wintering): 7,000-17,000 (WPE2).

Trends: Decreasing (WPE2). Stable or increasing slightly (Tucker & Heath, 1994; Hagemeyer & Blair, 1997; Snow & Perrins, 1998).

- Southwest Asia (wintering): B or C (WPE2).

Trends: Unknown.

Changes in status: The first two editions of *Waterfowl Population Estimates* give the status of the Black Sea and Mediterranean population as decreasing. However, Tucker & Heath (1994) found only limited evidence of any recent declines, and considered the European breeding population (which includes part of the Caspian population) to be 'Secure'. Decreases have been reported in recent years in Albania, Bulgaria and Greece, but these countries together hold less than 20 pairs. A slight decrease has also been reported in Turkey, where the population is estimated at 100-500 pairs. However, increases have been reported in the large breeding populations in Hungary and Ukraine, and in the small populations in Italy and Slovakia, while the populations in Croatia and Moldova are thought to be stable. The Austrian population has fluctuated widely in the 1970s and 1980s, but has shown a steady increase since 1991 (Hagemeyer & Blair, 1997). In recent years, a few pairs have bred in the Netherlands (regularly since 1991) and Latvia (since 1977).

Overall trends in the Southwest Asian wintering population are unknown. However, there was a significant increase in the breeding population in European Russia in the 1970s and 1980s. This population, estimated at 8,000-10,000 pairs in the early 1990s, includes about 5,000 pairs in the Volga Delta (Snow & Perrins, 1998).

Comments: Only the Western Palearctic populations of the nominate form *albus* are included in Appendix II of the Bonn Convention.

The total breeding population in the Black Sea and Mediterranean region is estimated at 2,700-6,150 pairs (data from Snow & Perrins, 1998).

Madagascar Pond-Heron *Ardeola idae*

Monotypic. The species is confined as a breeding bird to Madagascar and Aldabra (where it has bred since 1967). Almost the entire population migrates to winter in East and Central Africa, mainly in the southern half of Kenya, Tanzania, Rwanda and eastern Zaire, but also less commonly in the eastern half of Zambia, northeastern Zimbabwe, northern Mozambique and southern Uganda. Only one population is recognised, the entire population of the species.
- Madagascar & Aldabra (breeding): A (WPE2). 5,000 (R. Rabarisoa, in litt.).
Trends: Decreasing (WPE2).

Changes in status: The species is apparently still fairly common within its restricted range, but numbers have declined dramatically in Madagascar over the past 50 years. It formerly ranged throughout the country, although it was rather rare in the south, but is now confined as a breeding species to the west (Langrand, 1990). Numbers at the best known breeding grounds at Antananarivo in central Madagascar dropped from 1,500 birds in 1945 to only 50 in 1970 (del Hoyo *et al.*, 1992). R. Rabarisoa (in litt.) has recently estimated the total population at about 5,000 birds. The dramatic decline in numbers in Madagascar is thought to be due to competition with *Ardeola ralloides*, which seems to be a recent colonist to the island and has adapted better to man's modification of the landscape, e.g. transformation of wetlands into rice fields and intensive deforestation (del Hoyo *et al.*, 1992).

Comments: *Ardeola idae* is listed as 'Near-threatened' in Collar *et al.* (1994).

Rufous-bellied Heron *Ardeola rufiventris*

Monotypic. The species breeds in Central and Southern Africa from southern Angola and Tanzania to South Africa. It is at least partially migratory over much of its range, but its movements are poorly understood. It has been recorded as a vagrant or rare migrant in Kenya and Nigeria. Only one population is recognised, the entire population of the species.

- Tropical Eastern & Southern Africa: B or C (WPE2).
Trends: Unknown.

Changes in status: There is some evidence that it is now less common in Southern Africa than previously (Harrison *et al.*, 1997), but overall trends are unknown.

Comments: *A. rufiventris* is generally a local and rather scarce bird, with strongholds in the floodplains of western and northern Zambia and the Okavango Delta in Botswana. A concentration of 1,000 birds at a large roost of herons and egrets on the Usangu Plains in southwestern Tanzania in January 1993 (R. Lansdown, pers. comm.) is much the largest concentration of the species hitherto recorded.

Little Bittern *Ixobrychus minutus*

Polytypic. Three subspecies have been described. *I. m. payesii* breeds widely in Africa south of the Sahara and appears to be mainly sedentary, although there is evidence of seasonal movements in Southern Africa. *I. m. podiceps* is almost confined to Madagascar (recorded once in Zanzibar). The nominate subspecies breeds widely across Southern Eurasia east to the Central Asian Republics, northwestern China and northwestern India, and winters mainly in Africa south of the Sahara, although the small population breeding in Pakistan and India apparently winters in Southern Asia. Two main migratory populations of the nominate form are recognised in the Agreement Area, although these overlap extensively on their main wintering grounds in Eastern Africa.

- Europe & North Africa (breeding): C (WPE2). D based on recent estimates of breeding populations.
Trends: Decreasing (WPE2).
- Western & Southwest Asia (breeding): C (WPE2).
Trends: Unknown.

Changes in status: The species has declined over much of its range in Europe since the middle of the 20th century, and this decline continues, particularly in Northwest and Central Europe. Tucker & Heath (1994) reported large decreases in ten countries and small decreases in 13 countries. No increases were reported, and only in Bulgaria, Portugal and Ukraine were the populations thought to be stable. During the period 1970-1990, declines of over 50% were reported in Latvia, the Netherlands, Germany, France, Austria, Czech Republic, Slovakia, Slovenia and Spain (Hagemeijer & Blair, 1997). It is thought that this widespread decline has been due largely to drought in the African passage and wintering quarters, rather than to habitat loss or pollution in the European breeding areas (Tucker & Heath, 1994).

Overall trends in the Southwest Asian population are unknown. However, the breeding population in the steppe zone of European Russia is reported to have decreased during the 1980s (Snow & Perrins, 1998).

Comments: Only the Western Palearctic populations of the nominate form *minutus* are included in Appendix II of the

Bonn Convention.

The breeding population in Europe excluding Russia is estimated at 30,000-41,000 pairs, that in Russia at 10,000-50,000 pairs, and that in Turkey at 1,000-10,000 pairs (Hagemeijer & Blair, 1997). The breeding population in Northwest Africa is unlikely to number more than a few hundred pairs, and many of the birds breeding in European Russia (*e.g.* in the Volga Delta) belong to the West and Southwest Asian population. Nevertheless, these figures suggest a minimum European/North African population of over 35,000 pairs or 105,000 birds. The estimate for this population has therefore been amended from Category C as given in the first two editions of *Waterfowl Population Estimates* to Category D (100,000-1,000,000).

Dwarf Bittern *Ixobrychus sturmi*

Monotypic. The species occurs widely in Africa south of the Sahara, and is a rains migrant. Populations breeding in equatorial regions are mainly sedentary, while those breeding to the north and south are seasonal migrants. The two migratory populations probably do not overlap with one another to any great extent, but until more information becomes available on the limits of these populations, no separation is possible. Thus only one population is recognised, the entire population of the species. This contains a mixture of sedentary as well as migratory birds.

- Subsaharan Africa: B or C (WPE2).

Trends: Unknown.

Changes in status: None known. The breeding population in South Africa, estimated at about 200 pairs, appears to be more or less stable (Harrison *et al.*, 1997). No other information is available on population trends.

Comments: Although widespread, *I. sturmi* is uncommon to rare throughout its extensive range. It appears to be commonest in northeastern Namibia and southern Angola during the breeding season.

Great Bittern *Botaurus stellaris*

Polytypic. Two subspecies occur in the Agreement Area. The nominate subspecies breeds widely in Western Eurasia and winters south to the Mediterranean, Egypt, Iraq, and occasionally in Africa south of the Sahara. Northern and eastern populations are migratory, while those in the south and west are more sedentary, movements generally being associated with hard weather conditions in winter. European breeders winter mainly within Europe and in North Africa; West Asian breeders probably winter mainly in Southwest Asia. Birds wintering in Turkmenistan and Seistan (Iran/Afghanistan border) may belong to the Southwest Asian wintering population or be a part of a South Asian population. *B. s. capensis* breeds from central Botswana and Natal south to southern South Africa, and appears to be mainly sedentary, although some seasonal movements have been recorded within South Africa. Two main migratory populations of the nominate form are recognised.

- Europe (breeding): C (WPE2).

Trends: Decreasing (WPE2).

- Southwest Asia (wintering): A or B (WPE2).

Trends: Unknown.

Changes in status: The widespread decline in the European breeding population, which began in the 19th century, continues. This has been attributed to the widespread loss and degradation of suitable reed-bed habitats almost throughout the region. Protection has eased the situation in some countries, but has not reversed the overall trend, and the species is now considered to be threatened throughout much of its range in Europe. Tucker & Heath (1994) and Hagemeijer & Blair (1997) report large decreases in Germany, the Netherlands, Spain, Sweden and Britain, and smaller decreases in 11 other countries. In Eastern Europe, populations have remained generally stable since the early 1970s, but increases have been reported in Denmark, Estonia and Finland (Hagemeijer & Blair, 1997). Tucker & Heath (1994) and Hagemeijer & Blair (1997) suggest that the European population may now merit classification as 'Vulnerable'.

Overall trends in the Southwest Asian population are unknown. However, it remains relatively common in parts of the Caspian region, and a slight increase has been reported in the steppe zone of European Russia (Snow & Perrins, 1998).

Comments: Only the Western Palearctic populations of the nominate form *stellaris* are included in Appendix II of the Bonn Convention.

The breeding population in Europe excluding Russia is estimated at 10,000-11,700 pairs (Hagemeijer & Blair, 1997). The breeding population in European Russia is estimated at 10,000-30,000 pairs, but many of these (*e.g.* birds breeding in the lower Volga) presumably winter in Southwest Asia.

CICONIIDAE

Yellow-billed Stork *Mycteria ibis*

Monotypic. The species occurs widely in Africa south of the Sahara. Central and Eastern African populations appear to be sedentary or locally dispersive. Populations in Southern Africa and West Africa are migratory, the species occurring in Southern Africa mainly as a non-breeding migrant during the wet season (October-April). The species is a common non-breeding visitor to Madagascar from Southern Africa, and has occurred as a vagrant in North Africa. Only one population is recognised, the entire population of the species.

- Sub-Saharan Africa: C (WPE2).

Trends: Stable (WPE2).

Changes in status: The species is common to locally abundant throughout its range, and numbers appear to be generally stable. It is a scarce breeder in Southern Africa (less than 25 pairs in South Africa), but there is no evidence of any decline in this small population. However, it may have decreased as a non-breeding visitor to Cape Province since the 1960s (Harrison *et al.*, 1997).

Black Stork *Ciconia nigra*

Monotypic. The species breeds widely across temperate Eurasia from Iberia to Eastern Siberia and China, and also in Southern Africa. Five populations are recognised: (1) a small population which breeds in Southwest Europe (Portugal and Spain) and is partly sedentary and partly migratory, with some birds wintering in North Africa (Morocco and Algeria) and at least formerly in West Africa (Senegal to Chad); (2) a much larger population which breeds in Central and Eastern Europe and is mainly migratory, wintering in Northeast and East Africa south to Ethiopia, Uganda and Tanzania (although some birds remain throughout the winter in Southeast Europe); (3) a population of unknown size which breeds in Western and Central Asia and winters from the Arabian Peninsula and southern Iran east into Southern Asia; (4) a very small population breeding in Eastern Siberia and China and wintering in China and Japan; and (5) a small population (<1,500 birds) which breeds in Southern Africa and is said to be mainly sedentary. Only the two migratory populations breeding in Europe are considered here. The relatively small number of birds breeding in Western Asia and the small number wintering in southern Iran are probably best treated as part of the Central Asian population which winters mainly in the Indian subcontinent and is thus largely outside the Agreement Area.

- Southwest Europe/West Africa: 1,000 (WPE2).

Trends: Unknown (WPE2). Now stable or increasing slightly after decreasing for many years (Tucker & Heath, 1994; Hagemeyer & Blair, 1997).

- Central & Eastern Europe (breeding): 20,000-30,000 (WPE2).

Trends: Unknown (WPE2). Apparently now increasing, especially in the west, after a long period of decline (Tucker & Heath, 1994; Hagemeyer & Blair, 1997).

Changes in status: The first two editions of *Waterfowl Population Estimates* give the status of the two European populations as unknown. The breeding populations in Western and Central Europe suffered a prolonged decline starting in the second half of the 19th century and continuing locally until the 1950s. Since then, the decline seems to have halted. Increases have been reported in many areas, and there has been some re-colonisation of former breeding areas (Hagemeyer & Blair, 1997). In Southwest Europe, the Spanish population increased slightly during the period 1970-1990, and this increase may be continuing (300 pairs were reported in 1992), although the decline has continued in the population of 30-50 pairs in Portugal (Tucker & Heath, 1994). In Central and Eastern Europe, population increases have been reported in Austria, Belarus, Bulgaria, Czech Republic, Estonia, Germany, Hungary, Latvia, Poland, Slovakia and Slovenia, and the species has appeared (or reappeared) as a breeding species in France (since 1976), Belgium (since 1989), Luxembourg (since 1993), Denmark (since 1982), Italy (since 1994) and Moldova (since 1976). Populations are reported to be stable in Romania, Russia and Ukraine, and are thought to be declining only in Albania, Croatia, Greece and Lithuania (Tucker & Heath, 1994; Hagemeyer & Blair, 1997; Snow & Perrins, 1998). Thus there is strong evidence to suggest that both the Southwest European and the Central/East European populations are now stable or increasing. Despite these recent increases, the European populations are considered to have an unfavourable conservation status because of the small population sizes and the continuing threats from loss of breeding sites, degradation of forest and wetland feeding areas, human disturbance, and hunting in winter (Tucker & Heath, 1994).

Comments: The Iberian population is currently estimated at 250-300 pairs (Hagemeyer & Blair, 1997). The population breeding in Central and Eastern Europe, excluding Russia, is estimated at 5,260-5,800 pairs, and that in Russia at 1,000-10,000 pairs (Hagemeyer & Blair, 1997). A further 500-2,000 pairs are believed to breed in Turkey.

Woolly-necked Stork *Ciconia episcopus*

Polytypic, with two subspecies in Asia and one in Africa. The subspecies *microscelis* occurs widely in Africa south of the Sahara, from Senegal west to Sudan and south to northeastern South Africa, Botswana, northern Namibia and Angola. It is known to be migratory, especially in the central and southern parts of its range, but the movements are poorly understood. In Southern Africa, there is a small resident breeding population in the east, and a larger non-breeding migratory population present during the wet season (November-April). Only one population is recognised, the entire population of *microscelis*.

- Tropical Africa: C (WPE2).

Trends: Unknown.

Changes in status: In Southern Africa, the species is adapting to human development and seems to have expanded its breeding range in Natal southward along the coast (Harrison *et al.*, 1997). Elsewhere, the trends in this widespread but generally rather uncommon species are unknown.

Comments: Only the subspecies *microscelis* is included in Appendix II of the Bonn Convention.

White Stork *Ciconia ciconia*

Two subspecies have been described; the nominate form in Western Eurasia and Africa, and *asiatica* in Central and Southern Asia. Four populations of the nominate form are recognised in Africa and Western Eurasia: (1) a tiny breeding population in South Africa; (2) a population breeding in Iberia and Northwest Africa and wintering mainly in West Africa (increasingly in southern Iberia in recent years); (3) a population breeding in Central and Eastern Europe and western Turkey, and wintering in Africa south of the Sahara; and (4) a population breeding in the Caucasus, eastern Turkey, Iraq and western Iran and wintering in southwestern Iran, Iraq, the Arabian Peninsula and probably also Eastern Africa. Breeding adults from the South African population remain in their breeding area throughout the year, but ringing results suggest that at least some of their offspring migrate to tropical Africa (Hockey *et al.*, 1989). Birds breeding in Central and Eastern Europe show two different migration strategies. Birds breeding in west-central Europe (east to about 11°E) migrate southwest to winter in West Africa (Senegal to Chad), while those breeding further east migrate southeast or south to winter in Eastern and Southern Africa. However, there is a broad region of overlap from which birds (even progeny of the same nest) may go either way. Probably less than 1,500 birds take the southwesterly route.

- Southern Africa: 30 (WPE2).

Trends: Increasing (WPE2).

- Iberia & Northwest Africa (breeding): 85,000 (WPE2). Recent surveys suggest that 100,000 would now be more appropriate.

Trends: Decreasing (WPE2). Probably now stable or increasing slightly after a long period of decline (Hagemeijer & Blair, 1997; Snow & Perrins, 1998).

- Central & Eastern Europe (breeding): 400,000 (WPE2).

Trends: Decreasing (WPE2).

- Southwest Asia (wintering): C (WPE2).

Trends: Unknown.

Changes in status: *C. ciconia* was first recorded breeding in South Africa in about 1933, and has bred regularly since 1961, but numbers have never exceeded about 10 pairs (Hockey *et al.*, 1989; Harrison *et al.*, 1997).

The Iberian and Northwest African population has been declining for much of the 20th century, and was listed as decreasing in the first two editions of *Waterfowl Population Estimates*. The breeding population in Spain halved between 1948 and 1984 (Hagemeijer & Blair, 1997). However, recent surveys suggest that this decline may now have halted, at least in Iberia, where the Spanish population has increased considerably in recent years. Tucker & Heath (1994) give the Spanish population as 7,901 pairs and increasing. However, in 1993, the population was estimated at about 14,000 pairs (Snow & Perrins, 1998). The population of 1,000-2,000 pairs in Portugal has fluctuated widely in recent years, without showing any significant trend; the population of 350 pairs in Tunisia is thought to be stable, and the population of 13,500 pairs in Morocco (in 1974) is thought to be stable or decreasing very slightly. Trends in the Algerian population of about 2,000 pairs are unknown. These data suggest a total breeding population of about 30,000 pairs that may now have stabilised or be increasing slightly.

The breeding population in Central and Eastern Europe and Turkey has been in decline throughout the 20th century, and the decline is continuing. Tucker & Heath (1994) found that nearly 40% of the European population was in countries that showed rapid declines during the period 1970-1990. The heaviest declines have occurred in Denmark, the Netherlands and Belgium, where the species is now almost extinct, and in Sweden where it last bred in 1954 (Tucker & Heath, 1994). Some local increases have been recorded, notably in Estonia, France, Latvia, Russia and Switzerland, and the large populations in Belarus, Hungary and Poland are thought to be stable, but declines are continuing in Albania, Austria, Bulgaria, Croatia, Germany, Lithuania, Romania, Slovakia, Slovenia, Turkey and Ukraine (Tucker & Heath, 1994; Hagemeijer & Blair, 1997).

Comments: Goriup & Schulz (1991) estimated that there were about 50,000 breeding adults and 35,000-40,000 non-breeders in the Iberian and Northwest African population, giving a total population of about 85,000 birds. The more recent estimates of breeding populations suggest that there are at least 100,000 birds in this population (60,000 adults and at least 40,000 non-breeders), an increase of at least 15,000 birds due largely to the recent large increase in the Spanish breeding population. The breeding population in Central and Eastern Europe and Turkey is estimated at 110,000-140,000 pairs (data from Tucker & Heath, 1994).

The population wintering in Southwest Asia is poorly known. There were 3,150-3,400 pairs breeding in Iran in mid-1970s (Scott, 1995), and some 20,000-24,000 birds have been recorded on passage in Azerbaijan (Goriup & Schulz, 1991), suggesting a population well in excess of 30,000 birds. However, mid-winter counts in Southwest Asia can account for only about 4,500 birds. Even allowing for large numbers missed in Iraq, it seems likely that many birds from this population continue on to wintering areas in Eastern Africa.

THRESKIORNITHIDAE

Glossy Ibis *Plegadis falcinellus*

Two subspecies have been described: the nominate form in most of Eurasia, Africa and North America, and the form *peregrinus* in Madagascar, Australia and Indonesia. The nominate form occurs widely but patchily in Sub-Saharan Africa, Southeast Europe and Southwest Asia. European breeders appear to winter mainly in the East Mediterranean and West Africa south of the Sahara, mostly in Mali. Birds breeding in Southwest Asia (east to the Caspian region) appear to winter mainly in the Middle East and Northeast Africa south to the equator. Populations breeding east of the Caspian appear to winter in Southern Asia, and are therefore extralimital. The populations breeding in West Africa, Eastern Africa and Southern Africa are partly sedentary and partly migratory, with extensive post-breeding dispersal from some colonies. The population of *peregrinus* in Madagascar appears to be sedentary. Three migratory populations of nominate *falcinellus* are recognised.

- Sub-Saharan Africa (breeding): Unknown.

Trends: Unknown.

- Black Sea & Mediterranean/West Africa: 25,000-40,000 (WPE2). 40,000-50,000 based on recent estimates of breeding populations.

Trends: Unknown (WPE2). Decreasing (Tucker & Heath, 1994; Hagemeyer & Blair, 1997).

- Southwest Asia/Eastern Africa: B (WPE2). C (25,000-100,000) based on recent estimates of breeding populations.

Trends: Unknown.

Changes in status: The overall status of the Sub-Saharan African population is unknown. However, in Southern Africa, the species has been expanding its range and increasing in numbers steadily since it first colonised the region in about 1950. Breeding was first recorded at Witwatersrand in about 1950, and this site now supports a population of about 1,800-2,000 birds. The increase has been attributed to species' adaptation to artificial wetland habitats (Harrison *et al.*, 1997).

The first two editions of *Waterfowl Population Estimates* gave the status of the European/West African population as unknown. However, Tucker & Heath (1994) and Hagemeyer & Blair (1997) have shown that the widespread decline in the European population during the first half of the 20th century has continued in recent decades, due to the destruction and degradation of wetlands, water pollution and local hunting. During the period 1970-1990, large decreases were reported in the important Romanian and Turkish populations, and smaller declines were reported in Albania, Bulgaria, Greece and Ukraine. The breeding population in the Danube Delta decreased from 12,000 pairs in 1976-77 to a maximum of only 2,000 pairs in 1995 (D. Munteanu, in Hagemeyer & Blair, 1997). The only substantial increase reported in recent years is on the Sea of Azov in European Russia where there has been a 50-fold increase in the last 30 years to 5,500 pairs (Snow & Perrins, 1998).

Comments: The differences between the nominate form and *peregrinus* are slight and are discounted by many recent authors, including Hancock *et al.* (1992), who consider the species to be monotypic.

The breeding population in Europe excluding Russia is estimated at 7,300-9,100 pairs (Hagemeyer & Blair, 1997). To these can be added about 5,500 pairs which breed on the Sea of Azov in Russia, 500-1,400 pairs breeding in Turkey, and 300 pairs breeding in Israel, giving a total population of 13,600-16,300 pairs, or about 40,000-50,000 individuals. This agrees with the estimate given in the first edition of *Waterfowl Population Estimates*, but is somewhat higher than the estimate given in the second edition (25,000-40,000).

Better estimates are now available for the breeding populations in Southwest Asia. These include 4,500-9,500 pairs in European Russia excluding the Sea of Azov, 12,000-18,000 pairs in Azerbaijan, and at least 500-1,000 pairs in Kazakhstan (Snow & Perrins, 1998). The Iranian breeding population was estimated at about 130-200 pairs in the late 1970s (Scott, 1995). The species also breeds in Turkmenistan, Uzbekistan, and possibly also Iraq. It seems likely,

therefore, that the Southwest Asian population numbers at least 17,000 pairs and perhaps as many as 30,000 pairs, or 50,000-90,000 individuals, *i.e.* towards the upper end of Category C, rather than in Category B (10,000-25,000 individuals), as given in the first two editions of *Waterfowl Population Estimates*.

Waldrapp *Geronticus eremita*

Monotypic. There are two widely separated populations: one in Northwest Africa and one in Southwest Asia. The Northwest African population now breeds only in Morocco, and disperses in winter largely within this country, but with some birds (at least formerly) regularly moving south to winter in Mauritania and Mali. The Southwest Asian population formerly bred in Turkey and wintered in Northeast Africa (mainly Ethiopia). The Turkish breeding population is now extinct in the wild (last breeding in the wild in 1989) although there is a small captive breeding population from which a few birds are released each year. A small number of birds have recently been discovered in Arabia; up to 14 have been seen in Yemen (in 1985), and at least 27 were found in the Asir Mountains of southwestern Saudi Arabia in 1991. It seems likely that these are birds from hitherto unknown breeding colonies in southwestern Arabia. Two populations are recognised

- Morocco: <250 (WPE2). The population had fallen to 200 birds by 1994 (Snow & Perrins, 1998).

Trends: Stable (WPE2). Decreasing.

- Southwest Asia: >27 (WPE2).

Trends: Decreasing (WPE2).

Changes in status: There has been a marked and continuous decrease in the Northwest African population since the mid-1970s (Snow & Perrins, 1998), and this decrease is apparently continuing (38 birds were found dead in Morocco in spring 1996). There were 200-250 pairs in 19 colonies (600-650 individuals) in Morocco and Algeria in 1975, but only 60 pairs in four colonies (200 individuals), all in Morocco, in 1994 (Snow & Perrins, 1998). The single breeding colony in Algeria, where breeding was first recorded in 1976, is now apparently extinct or almost so. The estimates of 400-450 and <250 in the first two editions of *Waterfowl Population Estimates*, respectively, reflect this decline, although both these publications give the status of the population as stable.

Comments: *G. eremita* is a globally threatened species in the category 'Critical' (IUCN, 1996), and is included in Appendix I of the Bonn Convention.

Small numbers of *G. eremita* continue to be located in the Arabian Peninsula in winter (*e.g.* two in Yemen in January 1992, six in Yemen in January 1993 and six in Yemen in January 1994). Five were found on the mainland coast of Eritrea in the winter of 1996/97 (Dodman *et al.*, 1997), and three birds were seen moving north in Israel in April 1995 (Snow & Perrins, 1998). However, the breeding areas, if any, of this tiny population remain unknown.

Sacred Ibis *Threskiornis aethiopicus*

Polytypic. Three subspecies have been described. *T. a. bernieri* and *T. a. abbotti* are confined to Madagascar and Aldabra, respectively. (The total population of *abbotti* was only 150-200 birds in 1968). The nominate race is widespread in Africa south of the Sahara, from Senegal east to Ethiopia and western Somalia and south to southern South Africa. It formerly occurred in Egypt, but is now extinct there. An isolated population of the nominate form breeds in the Mesopotamian Marshes of lower Iraq, and occurs in winter in neighbouring southwestern Iran. In Subsaharan Africa, the species is a rains migrant, regularly undertaking movements of up to several hundred kilometres to breed during the rains. Birds ringed as nestlings at Witwatersrand in South Africa have been recovered in Zambia, Botswana and Namibia. Two migratory populations are recognised.

- Subsaharan Africa: D (WPE2).

Trends: Stable (WPE2).

- Iraq & Iran: 200 (WPE2).

Trends: Decreasing (WPE2).

Changes in status: The large African population is thought to be more or less stable. However, in many areas the species has benefited from human activities, and it may be increasing in numbers locally (Harrison *et al.*, 1997). The species was apparently a fairly common bird in Mesopotamia in the first half of the 20th century, but surveys in the late 1960s and 1970s suggested that the species had by then become very scarce, with the total population possibly numbering no more than 200 birds (Scott & Carp 1982). Large-scale drainage of wetlands in Mesopotamia in the late 1980s and early 1990s is likely to have put even greater pressure on this tiny population. No recent information is available from Iraq, but the small wintering population in southwestern Iran, estimated at 50-100 birds in the late 1970s (Scott, 1995), continues to survive: 16 were recorded in January 1992, 20 in January 1993 and 57 in January 1994 (data from Asian Waterfowl Census).

Comments: Only the nominate form *aethiopicus* is included in Appendix II of the Bonn Convention.

Eurasian Spoonbill *Platalea leucorodia*

Polytypic. All four subspecies occur in the Agreement Area. The nominate subspecies breeds in Southern and Western Europe, Mauritania and Asia Minor and winters in Africa south to Senegal, Mali, Nigeria, Chad, Zaire and Sudan. Birds breeding in the Netherlands, France, Spain and Portugal winter mainly on the Atlantic coast of West Africa; birds breeding in Central and Eastern Europe and Turkey winter in the East Mediterranean, Northeast Africa and inland West Africa. The West Asian population of *P. l. major* breeds from the Caspian region and lower Iraq east to Lake Balkhash, and winters from Iraq and the Arabian Peninsula east to Southern Asia. (An East Asian population of *major* winters in China). *P. l. archeri* occurs on the coasts of the Red Sea in Egypt, Sudan, Ethiopia, Saudi Arabia and Yemen, and also in Somalia and possibly Socotra, and is to some extent dispersive. *P. l. balsaci* (5,000-15,000 birds) is confined to Mauritania and Senegal, where it is mainly sedentary. Four migratory populations are relevant.

- Eastern Atlantic (Western Europe/West African coast): <3,000 (WPE2). 6,500 based on censuses in 1998.
Trends: Unknown (WPE2). Increasing (Tucker & Heath, 1994; Hagemeyer & Blair, 1997; Snow & Perrins, 1998).
- Central & Southeast Europe (breeding): 5,000-15,000 (WPE2).
Trends: Decreasing (WPE2).
- Red Sea (*archeri*): 500-1,500 (WPE2).
Trends: Unknown.
- Southwest & Southern Asia (*major*): 23,000 (WPE2).
Trends: Unknown.

Changes in status: The first edition of *Waterfowl Population Estimates* gives the status of the East Atlantic population as <3,000 decreasing, while the second edition gives the same population estimate but states that the trends are unknown. This West European population was in decline during the first half of the 20th century, but as shown by Tucker & Heath (1994) and Hagemeyer & Blair (1997), there has been a substantial increase in recent decades, from about 670 pairs in 1963, to 1,075-1,200 pairs in the early 1990s (400-530 pairs in the Netherlands, 5-7 pairs in France, 675 pairs in Spain and 1-5 pairs in Portugal). A small French population, which became established in Loire-Atlantique in 1981, has increased to 10-15 pairs (Snow & Perrins, 1998), and recent range extensions have also been reported in Spain and Portugal (A. Green, pers. comm.). The most recent estimates, based on censuses in 1998, suggest that there are now over 6,500 individuals and over 2,500 breeding pairs in the population (C. de le Court, pers. comm.).

In contrast, the Central and Southeast European population is declining strongly throughout much of its range. This decline has been attributed to loss of nesting sites and foraging habitat due to drainage, deterioration and disturbance of wetlands (Tucker & Heath, 1994). Tucker & Heath (1994) and Hagemeyer & Blair (1997) report major declines in Romania and Turkey, and small declines in Albania, Bulgaria, Greece, Moldova, Russia and Ukraine. Increases were reported only in Hungary, Croatia and Slovakia. Overall, during the period 1970-1990, numbers in Central and Eastern Europe fell by about a third.

In the Southwest Asian/South Asian population, a major decline occurred in the lower Volga in Russia between the early 1950s and 1980, with the breeding population falling from 2,500 pairs to 500 pairs (Hagemeyer & Blair, 1997). However, the Russian population is now thought to be relatively stable, and there is no information on trends elsewhere in the range of this population, the size of which has been estimated on the basis of mid-winter counts (Perennou *et al.*, 1994).

Comments: The total breeding population in Central and Eastern Europe and Turkey is estimated at 4,350-7,800 pairs (data from Hagemeyer & Blair, 1997), but this includes about 500 pairs breeding in the lower Volga in European Russia, which probably belong to the Southwest Asian population. Nevertheless, the figures suggest a somewhat higher total population than the 5,000-15,000 individuals given in the second edition of *Waterfowl Population Estimates*. S. Newton (in litt.) has recently estimated the total population of *P. l. archeri* at about 500 pairs or 1,250 individuals, including 200 pairs in Saudi Arabia, 100 pairs in Yemen and 200 pairs on African coasts.

African Spoonbill *Platalea alba*

Monotypic. The species occurs widely in Africa south of the Sahara from Senegal east to Ethiopia, western Somalia and Madagascar, and south to southern South Africa, avoiding the dense forests of the Congo Basin and the Namibian and Kalahari Deserts. Most populations are to some extent nomadic, moving in response to seasonal rainfall and the condition of wetlands. Birds ringed at colonies in Southern Africa have been recovered over 1,000 km from the ringing site. The population on Madagascar is also to some extent nomadic, but there is no evidence of any movement between this island and the African mainland. Only one population is relevant: the entire population of the African mainland.

- Sub-Saharan Africa (excluding Madagascar): A or B (WPE2).
Trends: Unknown.

Changes in status: Overall trends are unknown. In South Africa, the species has expanded its breeding range southwestward in Cape Province since the first breeding record in 1957, possibly because of the increase in artificial wetlands in the area (Harrison *et al.*, 1997). It has also become more common in Zimbabwe in recent years (Harrison *et al.*, 1997).

Comments: Only the population on the mainland of Africa is included in Appendix II of the Bonn Convention. The species is generally uncommon and patchily distributed, but can be locally common, especially in the Rift Valley lakes of East Africa and parts of West Africa. Flocks of up to 1,000 birds and colonies of up to 300-400 pairs have been reported. N. Baker (in litt.) has suggested that the total population is considerably in excess of 10,000 birds, and that an estimate in category B would be more appropriate than the A or B given in *Waterfowl Population Estimates*.

PHOENICOPTERIDAE

Greater Flamingo *Phoenicopus ruber*

Two subspecies have been described: the nominate form in the Americas and *roseus* in Eurasia and Africa. Five relatively discrete populations of *roseus* can be identified, all of which are to some extent migratory: (1) a population breeding at the Banc d'Arguin in Mauritania and dispersing in winter along the coasts of Mauritania, Senegal and Gambia, occasionally to Liberia; (2) an Eastern African population (mainly Ethiopia to southern Tanzania); (3) a Southern African population centred on Etosha Pan in Namibia and the Makgadikadi Pans in Botswana, and occurring outside the breeding season from Angola and Zambia south to South Africa; (4) a West Mediterranean population, more or less confined to the western half of the Mediterranean Basin; and (5) a Southwest Asian population breeding from central Turkey to Kazakhstan and northwestern India and wintering widely from the East Mediterranean, Northeast Africa and the Arabian peninsula east to southern India and Sri Lanka. There is a considerable amount of mixing in winter between all breeding populations in Southwest Asia, but there appears to be very little mixing between these birds and the relatively small West Mediterranean population. However, birds from the West Mediterranean breeding colonies are known to occur at least occasionally south to Mauritania and Senegal, while birds from the Southwest Asian breeding colonies have been recovered in Sudan and Ethiopia, indicating some mixing between these birds and the Eastern African population.

- West Africa (Mauritanian breeders): 40,000 (WPE2).

Trends: Unknown.

- Eastern Africa: 35,000 (WPE2).

Trends: Decreasing (WPE2).

- Southern Africa: 50,000 (WPE2). 55,000, based on a recent mid-winter counts (R. Simmons, in litt.).

Trends: Decreasing (WPE2).

- West Mediterranean: 80,000 (WPE2).

Trends: Increasing (WPE2).

- East Mediterranean, Southwest Asia & South Asia: 500,000 (WPE2).

Trends: Stable (WPE2).

Changes in status: Trends in the West African population are unknown because of wide fluctuations in the breeding population at the principal sites on the Banc d'Arguin (1,000-13,000 pairs in the 1980s, 5,000 pairs in 1994, 4,730 pairs in 1995) (Snow & Perrins, 1998; Johnson, 1998).

According to Harrison *et al.* (1997), there is no evidence of any change in distribution or decrease in numbers of *P. ruber* in Southern Africa since the beginning of the 20th century. However, censuses of coastal areas in Southern Africa in the mid/late 1970s gave a total of at least 75,000 birds, while a comprehensive survey in July 1994 produced a total of only 54,567 birds, mainly in Namibia (Dodman & Taylor, 1995). This is much the highest count in recent years, suggesting that there has been a decline of over 25% in since the 1970s (R. Simmons, in litt.).

The West Mediterranean population is still thought to be increasing, although the complex pattern of movements in relation to season and hydrological factors make overall assessment of population size and trends difficult (Tucker & Heath, 1994). The breeding population in France showed a marked increase during the period 1970-1990, and a new colony with 1,600 pairs was established in Sardinia in 1993. This colony has been used regularly since then (with 2,000-2,100 pairs in 1996), and small numbers of flamingos have recently bred at two other sites in Italy (Johnson, 1998). The breeding population in Spain fluctuates widely (*e.g.* 400-10,500 in 1991-1993), and breeding in North Africa is irregular.

Comments: In West Africa, some 30,800 birds were counted in Banc d'Arguin National Park in April and June 1996 (Johnson, 1998). However, almost 60,900 birds were counted in Mauritania and Senegal in January 1997 (Dodman *et al.*, 1997), suggesting either that this population is considerably larger than was formerly supposed, or that large numbers of birds from the West Mediterranean population extend this far south in some years. In Eastern Africa, recent high counts have included 22,400 in January 1994 (Taylor & Rose, 1994) and 21,600 in January 1997 (Dodman *et al.*, 1997).

In Southern Africa, the comprehensive survey in July 1994 suggests a total population of about 55,000 birds (R. Simmons, in litt.), *i.e.* slightly higher than the 50,000 given in *Waterfowl Population Estimates*. The huge numbers of birds seen in northern Botswana in the early 1970s (65,000-100,000 in December 1971 and 300,000 in November 1974) almost certainly included large numbers of birds from the Eastern African population. Unusually large numbers of *P. minor* were found in northern Botswana at the same time, and these coincided with a period when numbers in Eastern Africa were unusually low (Harrison *et al.*, 1997).

Lesser Flamingo *Phoenicopus minor*

Monotypic. Three more or less discrete populations can be identified in the Agreement Area: (1) a population in West Africa centred on Mauritania and occurring east to Cameroon; (2) an Eastern African population centred on the lakes of the Rift Valley from Ethiopia to southern Tanzania; and (3) a population in Southern Africa centred on Etosha Pan in Namibia and the Makgadikgadi Pans in Botswana. All three populations are dispersive and probably to some extent migratory, although the movements are poorly understood. The species is a common non-breeding visitor to Madagascar, presumably from the Southern African population.

- West Africa: 15,000 (WPE2).

Trends: Stable (WPE2).

- Eastern Africa: 4,000,000 (WPE2).

Trends: Stable (WPE2). Decreasing (R. Simmons, in litt.).

- Southern Africa: <1,000,000 (WPE2). 40,000, based on recent counts (R. Simmons, in litt.).

Trends: Decreasing (WPE2).

Changes in status: Censuses in Eastern and Southern Africa suggest that both these populations declined by over 20% during the period 1975-95 (R. Simmons, in litt.). The declines have been attributed to poor breeding success in recent years, due in part to reduced rainfall and the drying out of some breeding sites, and possibly also to greater disturbance and degradation of flamingo habitat, especially in Eastern Africa (R. Simmons, in litt.).

Comments: *P. minor* is now listed as 'Near-threatened' in Collar *et al.* (1994), because of its high dependence on a relatively small number of sites.

Estimates of the West African population vary from 6,000 to 15,000-20,000 birds, but the largest colony ever found contained only 800-900 pairs. Over 11,650 were counted in January 1996 (Dodman & Taylor, 1996). Recent high counts in Eastern Africa have included over 1,500,000 in January 1994 (Taylor & Rose, 1994) and 1,900,000 in January 1995 (Dodman & Taylor, 1995).

There has been some confusion over the size of the population in Southern Africa. A million *P. minor* were recorded at Etosha Pan in 1971 and 1.5 million at Makgadikgadi in November 1974, but these high numbers occurred during particularly wet years, and in 1974 there was a corresponding decrease in the numbers in Eastern Africa (Harrison *et al.*, 1997). It is now known that there is a considerable amount of interchange between the Eastern and Southern African populations, with large numbers of birds from the East African population moving into Southern Africa to breed in some years (R. Simmons, in litt.). The estimate of <1,000,000 for the Southern African population, given in *Waterfowl Population Estimates*, is therefore very misleading, since it includes a large but unknown proportion of birds from the Eastern African population. Harrison *et al.* (1997) give an estimate of 60,000 for the resident Southern African population, but the highest counts in recent years have been much lower than this. Only 40,179 were recorded during a census in January 1995 (Dodman & Taylor, 1995) and only 35,987 in January 1996 (Dodman & Taylor, 1996). R. Simmons (in litt.) concludes that the resident Southern African population may now number as few as 40,000 birds.

A fourth population of *P. minor* occurs in Pakistan and northwestern India. There is no firm evidence to suggest any regular movement between this population and the Eastern African population, but the recent sightings of large numbers of *P. minor* in the southern Arabian Peninsula (*e.g.* 9,160 in the Aden Marshes in Yemen in April 1996, and 300 at the Salalah Khawrs in Oman in October 1995) suggest that some mixing may occur.

ANATIDAE

Fulvous Whistling-Duck *Dendrocygna bicolor*

Monotypic. The species is widespread in Africa south of the Sahara and in Madagascar. Many populations, including those in Madagascar, appear to be mainly sedentary. However, the species is known to be at least locally migratory in East Africa, and there may be a regular movement of birds southwards into Southern Africa during the wet season (austral summer). Scott & Rose (1996) recognise three discrete populations: (1) a West African population extending from Senegal and Gambia to Cameroon and Chad; (2) a large Eastern and Southern African population extending from Ethiopia and Sudan to South Africa; and (3) a population confined to Madagascar. Thus only two populations are relevant.

- West Africa: 100,000 (WPE2).
Trends: Unknown.
- Eastern & Southern Africa: 200,000-500,000 (WPE2).
Trends: Unknown.

Changes in status: *D. bicolor* may be decreasing in some areas in West Africa (Scott & Rose, 1996). It has increased its range in Southern Africa during the 20th century, but it remains uncommon and is confined to the north and east (Harrison *et al.*, 1997). Callaghan *et al.* (in prep.) give the status of the African population as a whole as decreasing.

Comments: These two populations were treated as a single large population in the Action Plan and first edition of *Waterfowl Population Estimates*.

White-faced Whistling-Duck *Dendrocygna viduata*

Monotypic. The species occurs widely in Africa south of the Sahara and in Madagascar. Some populations, including those in Madagascar, appear to be mainly sedentary, while others are migratory, undertaking long movements during the wet season, especially in West Africa and Southern Africa. Scott & Rose (1996) recognise three populations: (1) a West African population (extending east to Chad); (2) an Eastern and Southern African population; and (3) a population confined to Madagascar. There may be a considerable amount of interchange between the two populations on the mainland of Africa, and these are treated as separate populations primarily for practical reasons.

- West Africa: 250,000 (WPE2).
Trends: Increasing (WPE2).
- Eastern & Southern Africa: 1,000,000-2,000,000 (WPE2).
Trends: Increasing (WPE2).

Changes in status: Over much of Africa, the species has adapted well to man-made wetlands and locally has become a serious pest on rice-fields. It has probably benefited from the protection of extensive areas, and both populations appear to be increasing in many areas (Scott & Rose, 1996). There has been a considerable range expansion in Southern Africa during the 20th century, and a marked spread in eastern South Africa since the 1950s (Harrison *et al.*, 1997).

Comments: These two populations were treated as a single large population in the Action Plan and first edition of *Waterfowl Population Estimates*.

White-backed Duck *Thalassornis leuconotus*

Two subspecies have been described. The nominate form occurs widely in Africa south of the Sahara. *T. l. insularis* is confined to Madagascar. Some populations of *T. l. leuconotus* appear to be mainly sedentary, but others are at least partially migratory, with regular seasonal movements known to take place in Eastern, Central and Southern Africa. Two discrete populations of the nominate form are recognised: a small West African population extending from Senegal to Chad; and a relatively large Eastern and Southern African population extending from Ethiopia to South Africa.

- West Africa: 1,000 (WPE2).
Trends: Decreasing (WPE2).
- Eastern & Southern Africa: 10,000-25,000 (WPE2).
Trends: Stable (WPE2).

Changes in status: The very small West African population may now be on the verge of extinction (Perennou, 1991). The maximum mid-winter count has been only 20 birds in 1968. The species was recorded only once during mid-winter waterfowl counts in the 1980s (seven in 1986), and there have been no records during the waterfowl censuses since then. (A report of 27 in the Cote d'Ivoire in January 1994 has since proven to be erroneous). In Nigeria, the species was previously a not uncommon resident in wetlands in the north, but there have been no records in the past 20 years (Elgood *et al.*, 1994).

Despite local decreases, overall numbers in the population in Eastern and Southern Africa seem to be stable and may be increasing. The construction of artificial dams is thought to have resulted in local increases in several areas, *e.g.* in Zambia, the Transvaal region of South Africa, Zimbabwe and Malawi (Scott & Rose, 1996). According to Harrison *et al.* (1997), the range in Southern Africa has not changed in recent times, except perhaps in Zimbabwe and on the Zambezi River, where there appears to have been some range expansion.

White-headed Duck *Oxyura leucocephala*

Monotypic. A declining and threatened species with a highly fragmented breeding distribution from Southwest Europe and Northwest Africa to Central Asia. Three discrete populations can now be recognised in Western Eurasia and North Africa: (1) a small West Mediterranean population (Spain and formerly Morocco); (2) a small population in eastern Algeria and Tunisia; and (3) much the largest population of the species, breeding from Romania and Turkey to Kazakhstan and wintering mainly in Turkey and the Caspian region. The West Mediterranean population is now confined to Spain, but small numbers of birds, presumably from this population, formerly wintered in Morocco, and as the Spanish population continues to increase, it is possible that a migration route between Spain and Morocco will become re-established. There is good evidence of regular movements between Algeria and Tunisia, with many of the Algerian breeders apparently wintering in Tunisia. All three populations are therefore relevant.

- West Mediterranean (Spain): 700 (WPE2). 1,200 in recent years (A. Green, in litt.)

Trends: Increasing after a long period of decline (WPE2).

- Algeria & Tunisia: 400 (WPE2).

Trends: Stable (WPE2).

- East Mediterranean, Turkey & Southwest Asia: 8,000-15,000 (WPE2).

Trends: Declining (WPE2).

Changes in status: Recent trends are summarised in Scott & Rose (1996). The Spanish population increased from only 22 birds in 1977 to 786 in 1992, 697 in 1993 and 665 in 1995. Counts in 1997 and 1998 gave totals of 1,087 and 1,164 respectively, suggesting a current population of about 1,200 birds (A. Green, in litt.). The North African population is now apparently stable after a sharp decline in the mid-1970s (Scott & Rose, 1996).

The East Mediterranean/Southwest Asian wintering population was estimated at about 17,000 individuals in the early 1990s (15,500 counted in January 1991), but counts have been much lower in recent years, and it is believed that there may have been a substantial decline in numbers following the degradation of Burdur Golu in Turkey (much the most important wintering site for the species). A conservative estimate of 8,000-15,000 is therefore considered more appropriate than the figure of 17,000 given in the first edition of *Waterfowl Population Estimates*. Increasing numbers have been reported wintering in Greece in recent years, suggesting a westward shift in the wintering grounds following degradation of the main site in Turkey. Over 2,210 were present at Lake Vistonis in Greece in January 1997 (Handrinos, 1998).

Comments: *Oxyura leucocephala* is a globally threatened species listed in the category 'Vulnerable' by IUCN (1996) and in the category 'Endangered' by the Threatened Waterfowl Specialist Group of IUCN and Wetlands International (TWSG News No.11, July 1998). It is included in Appendix I of the Bonn Convention. The status and conservation of the species have been described in some detail by Anstey (1989), Green & Anstey (1992), Green (*in* Tucker & Heath, 1994) and van Vessem (1994), and an Action Plan for the species in Europe has been compiled by Green and Hughes (*in* Heredia *et al.*, 1996).

The Action Plan and first edition of *Waterfowl Population Estimates* treated the Spanish and North African populations as a single population. There has been no evidence of movement between these two populations in recent decades, and they would now appear to be entirely discrete (Scott & Rose, 1996). The small population wintering in Pakistan (about 300 birds) is likely to be a discrete population breeding at the extreme eastern limit of the species' range in the region of Novosibirsk. Birds occurring in Seistan, on the Iran/Afghanistan border, may belong to this population.

Mute Swan *Cygnus olor*

Monotypic. Five populations are recognised in Western Eurasia: (a) a large population which breeds in Northwest Europe from southern Scandinavia and the Baltic States south to France, Switzerland and Austria and is partly migratory and partly sedentary; (2) a resident population in Britain; (3) a resident population in Ireland; (4) a population breeding around the Black Sea, which winters southwest to Greece; and (5) a population breeding in Western and Central Asia (east to 90°E), which migrates southwest to winter in the Caspian region (Scott & Rose, 1996). The populations breeding in Britain and Ireland are very largely sedentary, as are birds breeding in the Low Countries, France and Central Europe. However, birds breeding in southern Scandinavia and the Baltic States are largely migratory, wintering mainly in Denmark. Three migratory populations are therefore relevant.

- Northwest Mainland & Central Europe: 210,000 (WPE2).

Trends: Increasing (WPE2).

- Black Sea: 45,000 (WPE2).

Trends: Increasing (WPE2).

- Western & Central Asia/Caspian: 250,000 (WPE2)
Trends: Increasing (WPE2).

Changes in status: All three populations continue to increase, as reflected in the revised population estimates given in the second edition of *Waterfowl Population Estimates*. A discussion of recent trends and justification for the revised population estimates are given in Scott & Rose (1996). Hagemeyer & Blair (1997) report rapid increases in numbers of breeding birds and range expansions in most areas of Europe, while Wieloch (1991) notes that the expansion of the Baltic population into western Ukraine now meets the expansion of the Black Sea population to the northwest. The widespread increases have been attributed to reduced hunting pressure, generally milder winters, and widespread artificial winter feeding (Hagemeyer & Blair, 1997).

Comments: The Northwest Mainland & Central European population includes a mixture of migratory and sedentary groups. The migratory element in southern Scandinavia and the Baltic region is estimated at 170,000 birds. Two main sedentary groups are recognised: a population in northwestern Germany, the Netherlands, Belgium and France, estimated at 20,000 individuals, and a population in Central Europe estimated at 16,000 individuals. The British and Irish populations are estimated at 25,000 and 10,000 individuals, respectively (Scott & Rose, 1996).

Whooper Swan *Cygnus cygnus*

Monotypic. Four populations are recognised in Western Eurasia: (1) a population which breeds in Iceland and winters mainly in Britain and Ireland; (2) a population which breeds in northern Scandinavia and northwestern Russia (east to Western Siberia) and winters in northwest continental Europe; (3) a population which breeds in extreme Northeast Europe and Western Siberia and winters in the Black Sea and East Mediterranean; and (4) a population which presumably breeds further east and winters in Southwest Asia from the Caspian Sea east to the region of Lake Balkhash.

- Iceland/U.K. & Ireland: 16,000 (WPE2).
Trends: Unknown (WPE2). Possibly now stable or decreasing slightly after a period of increase in the 1980s (Scott & Rose, 1996).
- Northwest Mainland Europe: 40,000 (WPE2). 59,000 (Laubeck *et al.*, 1999).
Trends: Increasing (WPE2).
- Northern Europe & Western Siberia/Black Sea & East Mediterranean: 17,000 (WPE2).
Trends: Decreasing (WPE2).
- Western & Central Siberia/Caspian: 20,000 (WPE2).
Trends: Decreasing (WPE2).

Changes in status: The status of the Icelandic breeding population is unclear. Numbers on the breeding grounds appear to be approximately stable or increasing slightly, while there has been a slight decline in the numbers wintering in Britain and Ireland since 1991 (Hagemeyer & Blair, 1997; Scott & Rose, 1996). At Myvatn in northern Iceland, the numbers of moulting birds showed no trend from 1974 to 1994, and numbers of wintering birds also remained stable (A. Gardarsson, in Hagemeyer & Blair, 1997).

The population wintering in Northwest Continental Europe continues to increase rapidly, and has now trebled since 1974. A census in January 1995 gave a total of approximately 59,000 birds (Laubeck *et al.*, 1999). There has been a marked increase in the breeding populations in Norway, Sweden and Finland since 1950, and re-colonisation of regions where the species had previously been eradicated by man (Hagemeyer & Blair, 1997). However, there has been a steady decline in the population wintering in the Black Sea/East Mediterranean since the late 1960s and early 1970s, and there is now some evidence of a decline in the Southwest Asian wintering population after a period of increase in the 1960s and 1970s.

Bewick's Swan *Cygnus columbianus*

Polytypic. Only the subspecies *bewickii* occurs in the Agreement Area. Two populations are recognised: a large population breeding in extreme Northeast Europe and Northwest Siberia and wintering in Northwest Europe (south in small numbers to the south of France); and a much smaller population which presumably breeds further east and winters in the Caspian region south to Iran. Small groups of *C. columbianus* occasionally appear in winter in intervening areas, especially in Ukraine, Bulgaria, Greece and Turkey, and a bird ringed in Britain has been recovered in the North Caspian, suggesting that there may be a considerable amount of interchange between these two populations.

- Western Siberia & Northeast Europe/Northwest Europe: 17,000 (WPE2). 29,000 (Beekman, 1997).
Trends: Increasing (WPE2).
- Northern Siberia/Caspian: 500 (WPE2).
Trends: Unknown.

Changes in status: The Northwest Europe wintering population appears to have been more or less stable (at about 17,000 individuals) during the 1980s. E. Rees (in Hagemeyer & Blair, 1997) gave an estimate of 18,000, and concluded that until recently there was no definite evidence for an increase in the population since the mid-1960s. However, very high counts in the 1990s have indicated that the population has increased considerably since the 1980s. Some 18,600 were counted in the Netherlands alone in November 1993, and 19,399 were found during the January census in 1995. Beekman *et al.* (1996) suggested a figure of 20,000-25,000, and more recently, Beekman (1997) has estimated the total population at approximately 29,000.

The status of the Caspian wintering population is poorly known. However, the population breeding in the Taymyr Peninsula (and the most likely source of the birds wintering in the Caspian) was reduced by about one third during a period of 12-13 years between 1966 and 1978/79 (Rogacheva, 1992).

Pink-footed Goose *Anser brachyrhynchus*

Monotypic. There are two discrete populations: one breeding in East Greenland and Iceland and wintering mainly in Scotland, and the other breeding in Svalbard and wintering mainly in Denmark, the Netherlands and Belgium.

- East Greenland & Iceland/UK: 225,000 (WPE2). 250,000 (Madsen *et al.*, 1999).

Trends: Increasing (WPE2).

- Svalbard/Northwest Europe: 34,000 (WPE2). 37,000 (Madsen *et al.*, 1999).

Trends: Increasing (WPE2).

Changes in status: The population estimates and trends in the second edition of *Waterfowl Population Estimates* follow Madsen *et al.* (1996). Madsen *et al.* (1999) have recently revised the population estimates on the basis of censuses in 1994-97. Both populations have been increasing since at least the 1950s, and these increases seem to be continuing. The increase in the population wintering in Scotland coincides with an expansion of the Icelandic breeding population into lowland areas (Hagemeyer & Blair, 1997).

Bean Goose *Anser fabalis*

Polytypic. Two subspecies occur in the Agreement Area: *A. f. fabalis* (Taiga Bean Goose) breeding in the taiga of northern Scandinavia, Russian Karelia and the Kola Peninsula; and *A. f. rossicus* (Tundra Bean Goose) breeding in the tundra from the Kanin Peninsula in European Russia east to the Khatanga River in Central Siberia. *A. f. fabalis* winters in Northwest Europe south to the Low Countries and Britain. *A. f. rossicus* winters in Central Europe southwest to central Spain (formerly also Morocco and Algeria). The two subspecies overlap extensively on their wintering grounds in northern Germany and the Low Countries.

- Western Siberia & Northeast Europe/Northwest Europe (*fabalis*): 80,000 (WPE2). 100,000 (Madsen *et al.*, 1999).

Trends: Increasing (WPE2). Stable (Madsen *et al.*, 1999; Callaghan *et al.*, in prep.).

- Western & Central Siberia/Northeast & Southwest Europe (*rossicus*): 300,000 (WPE2). 600,000 (Madsen *et al.*, 1999).

Trends: Unknown.

Changes in status: The wintering population of *A. f. fabalis* apparently increased in the 1960s and 1970s, but in recent years it appears that numbers have been relatively stable (Madsen *et al.*, 1999; Callaghan *et al.*, in prep). The breeding populations in Norway, Sweden and Finland (roughly 2,500-4,000 pairs) are thought to be relatively stable (Hagemeyer & Blair, 1997), but increases have been reported on some of the breeding grounds in Russia (Syroechkovski, 1996). The status of *A. f. rossicus* is uncertain; some increases have been reported on the wintering grounds in Western Europe, but sharp declines have been reported on the breeding and staging areas in Russia (Flint & Krivenko, 1990; Krivenko, 1993; Syroechkovski, 1996). Madsen *et al.* (1999) give the trends in this population as unknown, but state that the total numbers seem to have been more or less stable over the last 20 years.

Comments: Madsen (1991) noted that counts of *A. fabalis* were incomplete, and recognised that the population estimates were very imprecise and almost certainly too low. Pirot & Fox (1990) suggested that the population of *rossicus* could be as high as 500,000, and that of *fabalis* about 100,000, while J. van Impe *et al.* (in Hagemeyer & Blair, 1997) suggested that there were some 250,000-400,000 *rossicus* in the tundra of European Russia alone. Madsen *et al.* (1999) concluded that in recent years the population of *fabalis*, based on October counts, has been relatively stable at between 90,000 and 110,000 individuals. At this time of year, the birds are concentrated in southern Sweden (60,000-80,000) and Poland and northern Germany (20,000-30,000). Madsen *et al.* (1999) concluded that the estimate of 300,000 *rossicus* given in the second edition of *Waterfowl Population Estimates* was certainly too low. These authors give a revised estimate of 600,000 birds comprising two main groups: about 275,000 birds from western breeding areas travelling via the White Sea and Baltic to wintering areas in Western Europe, and about 325,000 birds from further east taking an inland route via Poland and Ukraine to wintering areas in Central Europe.

Greater White-fronted Goose *Anser albifrons*

Polytypic. Two subspecies occur in the Agreement Area. The nominate subspecies breeds in the Arctic tundra from the Kanin Peninsula in European Russia east to the Kolyma River; western populations winter in four main wintering areas: Northwest Europe, Central Europe, the Black Sea region and Turkey, and the Caspian region south to Iraq and east possibly as far as the Aral Sea. The birds wintering in Northwest Europe are believed to originate mainly from breeding grounds in European Russia, but there is a considerable amount of interchange between this population and the Central European wintering population (Y.U. Mineyev & J. van Impe, in Hagemeyer & Blair, 1997). *A. a. flavirostris* breeds in Greenland and winters in Britain and Ireland.

- Northwest Siberia & Northeast Europe/Northwest Europe: 600,000 (WPE2).

Trends: Increasing (WPE2).

- Western Siberia/Central Europe: 100,000 (WPE2).

Trends: Decreasing (WPE2).

- Western Siberia/Black Sea & Turkey: 650,000 (WPE2).

Trends: Unknown (WPE2). Probably stable.

- Northern Siberia/Caspian & Iraq: 15,000 (WPE2).

Trends: Decreasing (WPE2).

- Greenland/Ireland & U.K. (*flavirostris*): 30,000 (WPE2). 33,000 (Madsen *et al.*, 1999).

Trends: Increasing (WPE2).

Changes in status: The population estimates and trends in the second edition of *Waterfowl Population Estimates* follow Madsen *et al.* (1996). Madsen *et al.* (1999) give a total of 1,400,000 for the four main groups of *albifrons* combined (*c.f.* 1,365,000 from Madsen *et al.*, 1996). The Northwest European wintering population of *albifrons* and the population of *flavirostris* continue to increase, as reflected in the revised population estimates given in the second edition of *Waterfowl Population Estimates*. Some 34,600 *flavirostris* were counted during the winter of 1995/96 (Cranswick *et al.*, 1997), and Madsen *et al.* (1999) have recently revised the estimate up to 33,000. In contrast, the Central European wintering population continues to decline. Mooij (1996) has given an even higher estimate of 750,000 for the Northwest European population of *albifrons*, and a lower estimate of 60,000 for the Central European population for the period 1990-1993. This author suggests that the apparent increase in Northwest Europe and decrease in Central Europe could have been the result of a major shift in wintering distribution, in which case there may have been no significant increase in the numbers of *albifrons* wintering in Europe in recent decades.

The wintering population in the Black Sea region and Turkey is now believed to be considerably larger than was formerly supposed, *c.f.* 250,000 in the first edition of *Waterfowl Population Estimates* (Madsen *et al.*, 1996). The trends in this population remain uncertain, but the numbers wintering in Turkey appear to have been relatively stable between 1967 and 1988 (Madsen, 1991), and the numbers breeding on the Taymyr Peninsula also appear to have been stable in recent decades (Syroechkovski, 1996). Madsen *et al.* (1999) and Callaghan *et al.* (in prep) conclude that there may have been no real increase in the numbers of *albifrons* wintering in the Western Palearctic since the 1950s.

Comments: An international species conservation plan for the Greenland White-fronted Goose *A. a. flavirostris* has been compiled by the Joint Nature Conservation Committee, U.K. and the National Parks and Wildlife Service, Ireland (Stroud, 1992), but this remains a draft document.

Madsen *et al.* (1999) have shown that there is extensive overlap of all Western Palearctic wintering populations of *A. a. albifrons* on migration and on their breeding grounds. These authors therefore conclude that the treatment of these wintering concentrations as separate populations is untenable, and consider all *albifrons* wintering in the Western Palearctic to belong to a single population of about 1,600,000 birds.

Lesser White-fronted Goose *Anser erythropus*

Monotypic. West Eurasian populations breed from northern Scandinavia east to Western Siberia and winter in Southeast Europe (Black Sea to Greece) and the Caspian region.

- Northern Europe & Western Siberia/Black Sea & Caspian: 15,000-35,000 (WPE2). 15,000 (Madsen *et al.*, 1999).

Trends: Decreasing (WPE2).

Changes in status: There has been a drastic decline in the world population of *Anser erythropus* during the 20th century, accompanied by widespread contractions in breeding and wintering range. This decline has been attributed to heavy hunting pressure and habitat changes in the wintering areas in Southeast Europe and Southwest Asia. In Europe, the population size has probably been reduced by more than 90% since the 1940s. However, the extent of the decline in recent years is obscured by uncertainties in total population size and paucity of information from some of the species' key wintering areas in the Caspian region.

Comments: *Anser erythropus* is a globally threatened species in the category 'Vulnerable' (IUCN, 1996), and is included in

Appendix I of the Bonn Convention. The status and conservation of *A. erythropus* in Europe have recently been summarised by J. Madsen (in Tucker & Heath, 1994) and van Vessem (1994), and an Action Plan for *A. erythropus* in Europe has been compiled by Madsen (in Heredia *et al.*, 1996). Callaghan *et al.* (in prep) estimate the world population at no more than 25,000-50,000 birds.

Because of uncertainties in migration routes and wintering areas, all breeding and wintering groups in Western Eurasia are currently regarded as belonging to a single population. There are some indications that birds breeding in Fennoscandia winter mainly in Southeast Europe, while those breeding in the Taymyr winter mainly in the Caspian region, but there have been at least two recoveries of Finnish birds in Kazakhstan, and one recovery of a Swedish bird in the Manych River system north of the Caucasus (Madsen *et al.*, 1999). L. von Essen and V.V. Morozov (in Hagemeyer & Blair, 1997) suggest that the total population breeding in Russia west of the Urals may number less than 1,500 individuals, while the Fennoscandian breeding population is now thought to be no more than 30-50 pairs (Madsen *et al.*, 1999). Rogacheva (1992) estimated the total Russian population to be no more than 30,000-50,000 birds. Madsen *et al.* (1999) consider that even this estimate has not been confirmed by winter counts, and give a new estimate of 15,000 for the total population in the Western Palearctic.

The re-introduction of captive-bred birds into a former breeding area in Swedish Lapland since 1981 has resulted in the establishment of a small breeding population of about 50 individuals (von Essen, 1996). A new wintering area for some of these geese has been established in the southern Netherlands near Strijen, and a spring and autumn staging and moulting area has been established near Hudiksvall, along the coastal region of mid-Sweden (Callaghan & Green, 1993).

Greylag Goose *Anser anser*

Two subspecies have been described: the nominate form from West and Northwest Europe and *A. a. rubrirostris* from Southeast Europe and Asia. Birds in Central and Eastern Europe, which are somewhat intermediate, are usually lumped with the nominate form. Five relatively discrete migratory populations are recognised: (1) a population breeding in Iceland and wintering in Britain and Ireland (*anser*); (2) a population breeding in Norway, Sweden, Denmark and Germany and wintering from the Netherlands to southern Spain and Morocco (*anser*); (3) a population breeding in Central and Eastern Europe and wintering southwest to Tunisia and Algeria (*anser*); (4) a population breeding in the Black Sea region and Turkey and wintering within that region (*rubrirostris*); and (5) a population breeding in Western Siberia south to the Caspian region and wintering in the South Caspian, Iran and Iraq (*rubrirostris*). The small population of the nominate form breeding in the Outer Hebrides and on the northern mainland of Scotland (9,000 birds) is largely sedentary. Feral populations have become established from introduced birds in several parts of Western Europe, but these are largely sedentary.

- Iceland/UK & Ireland: 100,000 (WPE2). 80,000 (Madsen *et al.*, 1999).

Trends: Increasing (WPE2). Decreasing (Madsen *et al.*, 1999).

- Northwest Europe/Southwest Europe: 200,000 (WPE2).

Trends: Increasing (WPE2).

- Central Europe/North Africa: 20,000 (WPE2). 25,000 (Madsen *et al.*, 1999).

Trends: Stable (WPE2). Increasing (Madsen *et al.*, 1999).

- Black Sea & Turkey: 25,000 (WPE2). 85,000 (Madsen *et al.*, 1999).

Trends: Stable (WPE2). Unknown (Madsen *et al.*, 1999).

- Western Siberia/Caspian & Iraq: 100,000 (WPE2). Over 100,000 (Madsen *et al.*, 1999).

Trends: Increasing (WPE2).

Changes in status: The population estimates and trends in the second edition of *Waterfowl Population Estimates* mostly follow Madsen *et al.* (1996). The Icelandic population increased from about 25,000 individuals in 1952 to 110,000 in 1987, and averaged about 100,000 in the late 1980s and early 1990s (Madsen, 1991; Madsen *et al.*, 1996). However, counts in Britain from 1991/92 to 1995/96 suggested that the population had at least stabilised, if not declined slightly, by the mid-1990s (Cranswick *et al.*, 1997). Recent counts have confirmed that there has been a slight decline during the 1990s to about 80,000 (Madsen *et al.*, 1999).

The continental Northwest European wintering population increased from approximately 30,000 birds in 1967/68 to 120,000-130,000 in the 1980s, and has since increased to about 200,000 (Madsen, 1991; Madsen *et al.*, 1999). Increases have also been reported on the breeding grounds in Norway, Sweden and Denmark (Hagemeyer & Blair, 1997).

Madsen *et al.* (1996) thought that the Central European population had been relatively stable in recent decades. However, Madsen *et al.* (1999) report a considerable increase in this population during the period 1970-1982, and a modest increase in recent years. Recent increases have been reported on the breeding grounds in Estonia, Hungary and Poland (Hagemeyer & Blair, 1997).

Madsen *et al.* (1996) considered the Black Sea & Turkey population to be stable. However, recent evidence is conflicting. An increase has been reported in the numbers wintering in Ukraine, but numbers wintering in Bulgaria, Greece and Turkey appear to have declined since the 1970s (Madsen *et al.*, 1999). Decreases have also been reported in the breeding populations in Romania, Moldova, Bulgaria and Greece (Hagemeijer & Blair, 1997). Madsen *et al.* (1999) concluded that the available data for the population as a whole were inadequate to establish long-term trends, and gave the status of this population as unknown.

The population wintering in Southwest Asia is thought to be increasing, at least in some areas (Perennou *et al.*, 1994). Krivenko (1993) reports an increase in the numbers at the end of the breeding season in the middle regions of the former USSR. Because of uncertainties in the total number of birds in this flyway, Madsen *et al.* (1999) preferred to consider the status of the population as unknown.

Comments: Madsen *et al.* (1999) have recently revised the estimate for the Central European population to approximately 25,000 birds. The great bulk of these (23,000) winter in North Africa, and the remainder in the Balkans. There is some evidence to suggest that a further 3,000 or so *A. anser* from the Central European breeding population winter further west alongside birds from the Northwest European breeding population (Madsen *et al.*, 1999).

Pirot *et al.* (1989) estimated the Black Sea & Turkey population of *rubrirostris* at 20,000 birds, but this estimate was revised upwards to 25,000 in the first edition of *Waterfowl Population Estimates*. Madsen *et al.* (1996) also gave an estimate of 25,000. However, with improvements in censuses in the Black Sea region in the late 1980s, it became apparent that this figure was much too low. Some 52,000 birds were counted in Romania in 1989, and in 1994, there were simultaneous counts of 50,900 in Ukraine and 33,900 in Romania (Madsen *et al.*, 1999). Madsen *et al.* (1999) therefore concluded that the total population was in the region of 85,000 birds.

It is possible that the estimate of 100,000 for the Western Siberia/Caspian & Iraq population may be much too low. Late breeding season estimates give figures of 224,000 for the whole of the central part of the former U.S.S.R. (Krivenko, 1993) and about 230,000 for the Turgay Basin and North Caspian region alone (Finlayson *et al.*, 1993; Vinogradov & Auezov, 1990).

The large feral population of *A. anser* in the United Kingdom has recently been estimated at about 22,000 birds (Madsen *et al.*, 1999). This population is continuing to increase.

Barnacle Goose *Branta leucopsis*

Monotypic. Three discrete populations exist: one breeding in East Greenland and wintering mainly in Ireland and northwestern Scotland; one breeding in Svalbard, wintering in southwest Scotland and staging at islands off the west coast of Norway in spring; and one breeding in northern Russia (Novaya Zemlya and Vaigach Island) and wintering mainly in Germany and the Netherlands. The recently established breeding colonies in the Baltic are regarded as part of the Russian population.

- East Greenland/Scotland & Ireland: 32,000 (WPE2). 40,000 (Madsen *et al.*, 1999).

Trends: Stable (WPE2). Increasing (Cranswick *et al.*, 1997; Hagemeijer & Blair, 1997).

- Svalbard/Southwest Scotland: 12,000 (WPE2). 23,000 (Madsen *et al.*, 1999).

Trends: Stable (WPE2). Increasing (Madsen *et al.*, 1999).

- Russia/Germany & Netherlands: 176,000 (WPE2). 267,000 (Madsen *et al.*, 1999).

Trends: Increasing (WPE2).

Changes in status: Madsen *et al.* (1996) give the status of the East Greenland population as stable, but there is evidence that the long-term increase from as few as 5,000 in the 1950s is continuing (Cranswick *et al.*, 1997; Hagemeijer & Blair, 1997; Madsen *et al.*, 1999). The most recent complete census of the Greenland population was in April 1994, when 38,355 were counted. Since then, numbers at the single most important site on Islay in Scotland have increased from 25,600 to an average of 31,000 in the winters of 1995/96 and 1996/97. Madsen *et al.* (1999) conclude that the total population is currently at least 40,000, and may be as high as 45,000.

The Svalbard population was thought to have stabilised in the late 1980s and early 1990s at about 12,000-14,000 birds, after a long period of increase from a low of perhaps as few as 550 birds in 1950. However, recent counts at the principal wintering site in the Solway have shown that the increase is continuing. Some 13,700 birds were counted in 1993/1994, followed by 17,900 in 1994/95, 17,450 in 1995/96, 23,000 in 1996/97 and 23,500 in autumn 1997 (Cranswick *et al.*, 1997; Madsen *et al.*, 1999).

The Russian population continues to increase. Some 188,000 were counted in the Netherlands alone in January 1994, and a complete census in January 1997 produced a total of 267,000, including about 13,000 birds from the Baltic population (Madsen *et al.*, 1999). There has been an increase in numbers on the breeding grounds in Arctic Russia since the 1970s, and some westward expansion of the breeding range in recent years (Syroechkovski, 1996). The small

breeding population which became established in the Baltic as recently as 1975 has grown rapidly since then to about 2,000 pairs in 1993 (Hagemeijer & Blair, 1997) and over 3,600 pairs in 1997 (Madsen *et al.*, 1999).

Comments: A management plan for the Svalbard population of *B. leucopsis* has recently been prepared by the Wildfowl and Wetlands Trust, U.K. (Black, 1998a & 1998b).

Brent Goose *Branta bernicla*

Polytypic. Two subspecies occur in the Agreement Area. *B. b. bernicla* breeds in northern Russia (rarely as far west as the Kanin Peninsula) east to the Taymyr Peninsula, and winters along the coasts of Northwest Europe south to France and occasionally Iberia (vagrant to Morocco). There are two discrete populations of *B. b. hrota*, one breeding in northeast Canada and wintering mainly in Ireland, and one breeding in Svalbard, Franz Joseph Land and northeast Greenland and wintering in Denmark and northeast England. Although some *B. bernicla* from the Canada/Ireland population bred in Greenland in the early 20th century, the birds now breeding in northeast Greenland have been shown by satellite tracking to belong to the population wintering in Denmark and England (Madsen *et al.*, 1999).

- Western Siberia/Western Europe (*bernicla*): 300,000 (WPE2).

Trends: Increasing (WPE2). Possibly now stabilising after a long period of increase (Madsen *et al.*, 1999).

- Svalbard/Denmark & U.K. (*hrota*): 5,000 (WPE2).

Trends: Stable (WPE2).

- Canada/Ireland (*hrota*): 20,000 (WPE2).

Trends: Stable (WPE2).

Changes in status: The population estimates and trends given in the second edition of *Waterfowl Population Estimates* follow Madsen *et al.* (1996). These estimates and trends have been confirmed by Madsen *et al.* (1999), except that these authors suggest that numbers of *B. b. bernicla* may now have stabilised. The population of *B. b. bernicla* increased rapidly from a low of less than 20,000 in the 1950s to an average of 300,000 in the late 1980s and early 1990s. However, poor breeding results from 1992 to 1994 have reduced numbers somewhat (J. Madsen & B.S. Ebbinge, in Hagemeijer & Blair, 1997). This would explain the apparent stabilisation in numbers wintering in Britain in recent years, reported by Cranswick *et al.* (1997). There has been an increase in numbers on the breeding grounds and some westward expansion of the breeding range in Arctic Russia in recent years (Syroechkovski, 1996).

The Svalbard population increased from a low of around 2,000 birds in the late 1960s to between 4,000 and 5,000 birds in the late 1980s (Madsen, 1991). This population is now believed to have stabilised at about 5,000 birds (Wetlands International Goose Specialist Group, in Scott & Rose, 1996). It is estimated that approximately 1,000 birds in this population originate from the recently discovered breeding areas in northeast Greenland (Madsen *et al.*, 1999).

Comments: An international action plan for the Dark-bellied Brent Goose *B. bernicla bernicla* has recently been prepared for the Ministry of Agriculture, Nature Management and Fisheries, The Netherlands (van Nugteren, 1997).

Red-breasted Goose *Branta ruficollis*

Monotypic. The species breeds in the Taymyr, Gydan and Yamal regions of northern Russia (between 70°E and 100°E) and migrates southwest to winter in Southeast Europe, mainly in Romania and Bulgaria. *B. ruficollis* formerly wintered in the South Caspian region, Iraq and Egypt, but is now only a vagrant in these areas. Only one population is recognised, the entire population of the species.

- Northern Siberia/Black Sea & Caspian: 70,000 (WPE2).

Trends: Unknown (WPE2). Possibly still increasing (Madsen *et al.*, 1999).

Changes in status: There is believed to have been a dramatic decline in numbers during the middle of the 20th century, but population trends in recent decades are uncertain, because of inadequacies in the earlier population estimates. Madsen *et al.* (1996) gave an estimate of 70,000, and noted that although long-term trends were uncertain, numbers appeared to have been relatively stable in recent years. Hunter & Black (1995) estimated the wintering population at 70,000-74,000 birds. More recently, counts have indicated that there may be as many as 80,000 birds in some years. Some 88,000 were counted at the autumn staging areas in Kazakhstan in October 1996, and about 74,000 were found on the wintering grounds in Bulgaria and Romania in February 1997 (Dereliev, 1998). Madsen *et al.* (1999) retain the estimate of 70,000. These authors suggest that in the 1950s, the total population numbered about 50,000-60,000 birds. The population fell to a low of under 26,000 for a period after the mid-1970s, but since then has increased to an average of about 70,000 in recent years. These authors suggest that the increase may be continuing, possibly because of improved protection measures and the creation of vast tracts of cereal crops in the wintering grounds in Romania and Bulgaria in the 1960s and 1970s. However, the species remains extremely vulnerable because of its dependence on a small number of key sites during migration and in winter.

Comments: *Branta ruficollis* is a globally threatened species in the category 'Vulnerable' (IUCN, 1996), and is listed in Appendix I of the Bonn Convention. The status and conservation of the species have recently been summarised by Madsen (*in* Tucker & Heath, 1994) and Hunter and Black (*in* van Vesseem, 1994), and an Action Plan for *B. ruficollis* has been compiled by Hunter and Black (*in* Heredia *et al.*, 1996).

Egyptian Goose *Alopochen aegyptiacus*

Monotypic. The species occurs widely in Africa south of the Sahara and also in lower Egypt, and appears to be at least partially migratory over much of its range, although its movements are poorly understood. It undertakes considerable seasonal movements in Southern Africa (up to 1,100 km) and West Africa. It penetrates into the southern Sahara during the wet season, and there is some evidence of trans-Saharan migrations in Tunisia and Algeria. Scott & Rose (1996) recognised two populations: a West African population (extending east to Chad), and an Eastern and Southern African population.

- West Africa: 10,000-25,000 (WPE2).

Trends: Unknown.

- Eastern & Southern Africa: 200,000-500,000 (WPE2).

Trends: Unknown.

Changes in status: Trends in both populations are unknown. The species has shown a marked increase in Southern Africa during the 20th century as a result of the construction of farm dams and intensification of agriculture (Harrison *et al.*, 1997), but there has been some retraction of range in the north, notably in Egypt, and it is said to be decreasing in Gambia and Nigeria (Scott & Rose, 1996). Callaghan *et al.* (*in prep.*) give the status of the African population as a whole as stable.

Comments: These two populations were treated as a single large population in the Action Plan and first edition of *Waterfowl Population Estimates*. The species is abundant in Southern Africa, where it is the commonest and most widespread of the large Anatids. In the 1980s, there were estimated to be at least 30,000 birds on the Transvaal highveld in South Africa (Harrison *et al.*, 1997).

The species has been introduced into Britain and the Netherlands, and has recently expanded its range into Belgium and France.

Ruddy Shelduck *Tadorna ferruginea*

Monotypic. Three main migratory groups can be identified in the Agreement Area: (1) a discrete population in Northwest Africa (Morocco and Algeria); this is mainly dispersive or nomadic, with up to 200 birds formerly occurring in southern Spain in winter; (2) a population which breeds in Greece, west and central Turkey and the Black Sea area, and winters in the East Mediterranean and in small numbers in the Nile Delta; and (3) a large Southwest and Central Asian population which breeds from eastern Turkey to Afghanistan and the Central Asian Republics and winters mainly in Iran and Iraq. A discrete population of 200-500 birds in Ethiopia appears to be mainly sedentary.

- Northwest Africa: 2,500 (WPE2). Probably over 3,000 (A. Green, *in litt.*).

Trends: Decreasing (WPE2)

- East Mediterranean & Black Sea/Northeast Africa: 20,000 (WPE2).

Trends: Decreasing (WPE2).

- Western Asia & Caspian/Iran & Iraq: 35,000 (WPE2).

Trends: Increasing (WPE2).

Changes in status: Rose (1996) revised the Northwest African population upwards to 2,500 individuals on the basis of recent high counts in Morocco and Algeria, and A. Green (*in litt.*) suggests that the population is probably over 3,000, although numbers are still believed to be declining. Recent mid-winter counts in the East Mediterranean and Turkey suggest that this population is decreasing rapidly, although very large year to year fluctuations obscure the population trends (Rose, 1995). The breeding populations in Greece, Romania, Turkey and Ukraine are decreasing, although the population of 50-150 pairs in Bulgaria is reported to be increasing slightly after a former decline (Hagemeyer & Blair, 1997). In the West Asian population, a dramatic increase has been reported in the wintering areas in the last 15-20 years (Perennou *et al.*, 1994), and some increase has been reported on the breeding grounds in Russia (Krivenko, 1993).

South African Shelduck *Tadorna cana*

Monotypic. The species is confined to Southern Africa south of 19°S (South Africa, Lesotho, Namibia and Botswana),

and is most abundant in arid Free State and southern Cape Province. It undertakes seasonal movements related to the moult and to the availability of water, with birds moving northeast in November and December and returning to their breeding areas after the moult. Birds ringed in southwest Cape Province have been recovered in Namibia and Transvaal. Only one population is recognised, the entire population of the species.

- Southern Africa: 42,000 (WPE2).

Trends: Stable (WPE2).

Changes in status: The numbers are thought to have been relatively stable in recent years. However, the species has increased its range two-fold since the 19th century, when it was confined to Cape Province and the highveld of Free State and southern Transvaal. This range expansion has been attributed to the great increase in the number of large and small dams throughout the region (Harrison *et al.*, 1997).

Comments: The estimate of 42,000 individuals dates from 1981 (Brown *et al.*, 1982). Twenty-three wing-moult localities are known. These accommodate about 30,000 birds, of which about 25,000 gather in the Free State in South Africa (Harrison *et al.*, 1997).

Common Shelduck *Tadorna tadorna*

Monotypic. Scott & Rose (1996) recognised only three populations in Western Eurasia: (1) a Northwest European population extending from northern Norway and Finland to Britain, Ireland and the Atlantic coast of France; (2) a Black Sea/Mediterranean population, wintering south to the Nile Delta and Northwest Africa; and (3) a West Asian population breeding from eastern Turkey, northwestern Iran and the Caspian region eastwards through Kazakhstan, and wintering from the South Caspian through Iran and Iraq to Arabia. There is known to be some mixing between the Northwest European and Black Sea/Mediterranean populations in the West Mediterranean, with some of the birds breeding in the West Mediterranean moving to the Wadden Sea to moult, and there is probably a considerable amount of mixing between the West Asian and Black Sea/Mediterranean populations.

- Northwest Europe: 300,000 (WPE2).

Trends: Increasing (WPE2).

- Black Sea & Mediterranean: 75,000 (WPE2).

Trends: Increasing (WPE2). Probably stable or decreasing slightly (Hagemeijer & Blair, 1997; Snow & Perrins, 1998).

- Western Asia/Caspian & Middle East: 80,000 (WPE2).

Trends: Increasing (WPE2).

Changes in status: All three populations showed substantial increases during the 1980s, and the population estimate for Northwest Europe has been revised upwards to 300,000 to reflect this (Rose, 1996). However, there are some indications that the rate of increase in the Northwest European population has slowed down in recent years, and this population may now be stabilising (Rose, 1995 & 1996). Large increases have been reported in the breeding populations in Britain, France, Estonia and Finland, and smaller increases in the Netherlands, Norway, Belgium, Poland, Spain and Lithuania (Hagemeijer & Blair, 1997). There are also some indications that the Black Sea/Mediterranean population may now be stabilising. The large breeding populations in southeast European Russia and Turkey are thought to be stable, while the populations in Ukraine, Romania and Greece have declined by 20-50% since 1970 (Hagemeijer & Blair, 1997; Snow & Perrins, 1998).

Comments: The Black Sea and Mediterranean population was treated as two separate populations in the Action Plan and first edition of *Waterfowl Population Estimates*: a population of about 15,000 birds in the West Mediterranean, and a population of about 60,000 birds in the East Mediterranean/Black Sea region. Justification for the new treatment and revised population estimates is given in Scott & Rose (1996).

The total breeding population in Northwest Europe has recently been estimated at 34,200-47,400 pairs (Hagemeijer & Blair, 1997). Using a factor of three to derive total number of individuals from breeding pairs suggests a total population of only 100,000-150,000 birds, *i.e.* less than half the estimate derived from mid-winter counts. The reason for this discrepancy is unclear.

Spur-winged Goose *Plectropterus gambensis*

Two subspecies have been described: *P. g. gambensis* from Gambia to Sudan and south to Zimbabwe, and *P. g. niger* in Southern Africa. The species is subject to marked seasonal movements over most of its range, but these are poorly understood. Moulting migrations have been observed in the Niger Delta, Senegal Delta and South Africa, but there have been no long-distance recoveries of birds ringed in South Africa. Scott & Rose (1996) recognise three populations: (1) a West African population of *gambensis* (extending east to Chad); (2) an Eastern African population of *gambensis* (extending south to the Zambezi River); and (3) the entire population of *niger* in Southern Africa (south of the

Zambezi).

- West Africa (*gambensis*): 50,000 (WPE2).
Trends: Declining (WPE2).
- Eastern Africa (*gambensis*): 200,000-300,000 (WPE2).
Trends: Stable (WPE2).
- Southern Africa (*niger*): 50,000-100,000 (WPE2).
Trends: Stable (WPE2).

Changes in status: The West African population of *gambensis* is thought to have been affected by desiccation of the Sahel zone, and may now be decreasing (Scott & Rose, 1996).

The distribution of *niger* in Southern Africa has not changed significantly in the 20th century, although there may have been some spread into drier areas as a result of dam building, e.g. in southeastern Botswana. There has been some increase in numbers in Cape Province, South Africa, in recent years, probably because of the construction of dams and planting of grain crops (Harrison *et al.*, 1997). Numbers on the highveld in Transvaal may exceed 20,000, with concentrations of over 2,000 on the Nyl floodplain in wet years (Harrison *et al.*, 1997).

Comments: The two populations of the nominate form were treated as a single large population in the Action Plan and first edition of *Waterfowl Population Estimates*. Justification for the population estimates is given in Scott & Rose (1996).

Comb Duck *Sarkidiornis melanotos*

Polypitic. The nominate subspecies occurs widely in Africa south of the Sahara, and in Madagascar. The species is migratory over much of its range in Africa, the movements probably being linked with seasonal rains. Large concentrations of non-breeders have been observed in the Senegal Delta, Central Niger Delta (Mali), Cameroon, Sudan, Zaire, Kenya and Zambia. About 10% of those ringed in South Africa have been recovered over 2,000 km from the ringing site, at localities well north of the equator, while birds ringed in Zimbabwe have been recovered in South Africa, Swaziland, Mozambique, Zambia, Zaire, Sudan and Chad (Harrison *et al.*, 1997). Scott & Rose (1996) recognised three populations: a West African population (extending east to Chad), a Southern and Eastern African population, and a population confined to Madagascar. The Madagascan birds appear to be mainly sedentary.

- West Africa: 50,000 (WPE2).
Trends: Stable (WPE2).
- Southern & Eastern Africa: 500,000-1,000,000 (WPE2).
Trends: Stable (WPE2).

Changes in status: Both populations are thought to be relatively stable. The distribution of the species in Southern Africa has apparently not changed since the 19th century (Harrison *et al.*, 1997). It has adapted well to artificial wetlands, and there has been some increase in numbers in Zimbabwe in recent years (Harrison *et al.*, 1997).

Comments: These two populations were treated as a single large population in the Action Plan and first edition of *Waterfowl Population Estimates*. The recovery in Chad of a bird ringed in Zimbabwe indicates that there is some interchange between these populations. Justification for the population estimates is given in Scott & Rose (1996).

African Pygmy-goose *Nettapus auritus*

Monotypic. The species occurs widely in Africa south of the Sahara, and is nomadic and/or migratory over most of its range, but its movements are poorly understood. Scott & Rose (1996) recognised three populations: a West African population (extending east to Chad), a Southern and Eastern African population, and a population confined to Madagascar. The Madagascan birds appear to be mainly sedentary.

- West Africa: 20,000-30,000 (WPE2).
Trends: Unknown.
- Southern & Eastern Africa: 100,000-250,000 (WPE2).
Trends: Unknown.

Changes in status: Overall trends in both populations are unknown, although Callaghan *et al.* (in prep.) suggest that the African population as a whole is in decline. Local declines have been reported in Senegal, Kenya and Zimbabwe (Scott & Rose, 1996), and the species has suffered from habitat destruction in South Africa, but its overall distribution in Southern Africa has changed little, if at all, since the 19th century (Harrison *et al.*, 1997).

Comments: These two populations were treated as a single large population in the first edition of *Waterfowl Population Estimates*, but given separate treatment in the Action Plan. Justification for the population estimates is given in Scott & Rose (1996). *N. auritus* is the commonest duck in the Okavango Delta in Botswana, where the

population has been estimated at 15,000 birds.

Eurasian Wigeon *Anas penelope*

Monotypic. The species has a wide breeding distribution across northern Eurasia from Iceland eastwards, and winters south to Northwest Africa (rarely to West Africa), the Middle East and Northeast Africa. No discrete populations are identifiable. Three populations are recognised in the Agreement Area, based on the main wintering regions.

- Western Siberia & Northeast Europe/Northwest Europe: 1,250,000 (WPE2).
Trends: Increasing (WPE2).
- Western Siberia & Northeast Europe/Black Sea & Mediterranean (rarely to West Africa): 560,000 (WPE2).
Trends: Decreasing (WPE2).
- Western Siberia/Southwest Asia & Northeast Africa: 250,000 (WPE2).
Trends: Decreasing (WPE2).

Changes in status: The Northwest European wintering population has shown a significant increase over the last 20 years, with an apparent rate of increase of 7.48% per annum (Rose, 1995). This is reflected in the increased population estimate (1,250,000 in Rose, 1996, *cf.* 750,000 in Monval & Pirot, 1989). In contrast, the wintering population in the Black Sea and Mediterranean appears to be decreasing rapidly. The number of birds wintering in the West Mediterranean has probably decreased by 45% in the last 20 years, while the number wintering in the Black Sea and East Mediterranean may now be less than half the number in 1982 (Rose, 1995). Scott & Rose (1996) give a revised estimate of 560,000 for this population (*cf.* 600,000 in Monval & Pirot, 1989). The wintering population in Southwest Asia is also thought to be decreasing (Krivenko, 1993; Perennou *et al.*, 1994).

Comments: The breeding population in Europe, including European Russia, is estimated at about 265,000-345,000 pairs (Hagemeijer & Blair, 1997). These birds could account for between 65 and 80% of the birds wintering in Northwest Europe.

Gadwall *Anas strepera*

Polytypic. Only the nominate subspecies occurs in the Agreement Area. The species has a wide breeding distribution across northern Eurasia from Iceland eastwards, and winters south to North Africa (rarely to West Africa), the Arabian Peninsula (rarely to Northeast Africa) and southern Iran. No discrete populations are identifiable. Three populations are recognised on the basis of the main wintering regions.

- Northwest Europe: 30,000 (WPE2).
Trends: Increasing (WPE2).
- Northeast Europe/Black Sea & Mediterranean: 75,000-150,000 (WPE2).
Trends: Decreasing (WPE2).
- Western Siberia/Southwest Asia & Northeast Africa: 130,000 (WPE2).
Trends: Unknown.

Changes in status: The Northwest European wintering population has been increasing at a rate of between 8% and 10% per annum since counts began in 1967, and this increase is continuing (Rose, 1995). At the same time, breeding populations have increased in most countries in Central, Western and Southwest Europe, notably in the Netherlands, where the population increased from 80 pairs in 1970 to 1,600-2,400 pairs in 1994, and in France, where the population increased from less than 100 pairs in 1976 to 1,000-2,000 pairs in 1994 (Hagemeijer & Blair, 1997). These increases are reflected in the increased population estimates: 12,000 in Monval & Pirot (1989), 25,000 in the first edition of *Waterfowl Population Estimates*, and 30,000 in Rose (1996).

The limited data available for the Black Sea/East Mediterranean suggest that the number of birds wintering in this area has been decreasing by at least 1.88% per annum since counts began in the late 1960s (Rose, 1995). Decreases have also been reported in the breeding populations in European Russia, Ukraine, Moldova and probably Romania (Tucker & Heath, 1994). The revised population estimate of 75,000-150,000 (Rose, 1996) is derived from better count data, and does not infer any increase in population size since Monval & Pirot (1989) produced their estimate of 75,000.

Common Teal *Anas crecca*

Polytypic. The nominate subspecies has a wide breeding distribution across Western Eurasia from Iceland eastwards, and winters south to North Africa, the Arabian Peninsula and Iran, with small numbers of birds reaching West Africa and Northeast Africa. No discrete populations are identifiable. Three populations are recognised on the basis of the main wintering regions.

- Northwest Europe: 400,000 (WPE2).
Trends: Increasing (WPE2).
- Western Siberia & Northeast Europe/Black Sea & Mediterranean: 750,000-1,375,000 (WPE2).

- Trends: Stable (WPE2).
- Western Siberia/Southwest Asia & Northeast Africa: 1,500,000 (WPE2).
- Trends: Decreasing (WPE2).

Changes in status: The Northwest European wintering population appears to be undergoing a slow long-term increase, with numbers increasing at a rate of 2.54% per annum over the period 1967-1993 (Rose, 1995). Recent counts, however, suggest that the estimate of 400,000 for this population (Monval & Pirot, 1989) remains valid (Scott & Rose, 1996). The data for the Black Sea/Mediterranean population do not show any significant trend, although there is some indication of an increase in numbers wintering in the West Mediterranean (Rose, 1995). The former estimate of 1,000,000 for this population (Monval & Pirot, 1989) has been revised to 750,000-1,375,000 because of uncertainties in the numbers wintering in the Black Sea region (Scott & Rose, 1996). As a whole, the European breeding population appears to be stable or decreasing slightly (Hagemeijer & Blair, 1997). The Southwest Asian population appears to be decreasing rapidly (Krivenko, 1993; Perennou *et al.*, 1994).

Comments: The European breeding population is estimated at about 1,100,000-1,550,000 pairs (Hagemeijer & Blair, 1997), suggesting a total population of 3.3 to 4.6 million birds. This is considerably more than the Northwest European and Black Sea/Mediterranean wintering populations combined, and may indicate that the estimate of 750,000-1,375,000 for the number of birds wintering in the Black Sea, Mediterranean region and West Africa is much too low.

Cape Teal *Anas capensis*

Monotypic. The species is patchily distributed in Eastern and Southern Africa and is locally common to abundant, although it is scarce over much of its range. It is known to undertake considerable movements, presumably in response to changing water levels, especially in Southern Africa where 5% of ringing recoveries indicate movements of over 1,000 km (Harrison *et al.*, 1997). Birds ringed in southwest Cape Province, South Africa, have been recovered in Namibia and Mozambique. A scattering of records in West Africa (north to Libya) suggests that long-distance movements also occur in the north of the species' range, presumably in response to fluctuating water levels. Scott & Rose (1996) recognise two populations: a population in Eastern Africa, extending northwest to Chad; and a population in Southern Africa, extending north to Angola, southern Zambia and Zimbabwe.

- Eastern Africa (to West Africa): 100,000-250,000 (WPE2). A or B (from Baker, in press).
- Trends: Stable (WPE2). Unknown.
- Southern Africa: 100,000-250,000 (WPE2).
- Trends: Increasing (WPE2).

Changes in status: A recent review of the status and distribution of *A. capensis* in Eastern and West Africa (Baker, in press) suggests that the distribution of the species is far more restricted than was formerly supposed, and that the estimate of 100,000-250,000 given in Scott & Rose (1996) and the second edition of *Waterfowl Population Estimates* is much too high. Baker (in press) concludes that the total population in Eastern and West Africa is unlikely to exceed 10,000 individuals, and is probably in the region of 6,500, with 6,000 of these in the East African Rift Valley and about 500 centred on Lake Chad. Many earlier authors have described the species as common in East Africa (*e.g.* Britton, 1980; Brown *et al.*, 1982; Short *et al.*, 1990), and if Baker's estimates are reliable, it would seem likely that there has been a major decline in numbers in recent decades. However, in the absence of any reliable historical data on numbers, there is little evidence to suggest that such a decline has occurred, and the trends in this population are therefore best regarded as unknown.

The population in Southern Africa is believed to be stable or increasing slightly. The species has increased in Zimbabwe in recent years, and there may have been some range expansion elsewhere in Southern Africa, but according to Harrison *et al.* (1997), the numbers do not appear to have increased greatly since the beginning of the 20th century. Over 33,500 were recorded in Southern Africa during the waterfowl census in January 1997 (Dodman *et al.*, 1997).

Comments: The Eastern African and Southern African populations were treated as a single large population in the Action Plan and first edition of *Waterfowl Population Estimates*. Baker (in press) has pointed out that there is no direct evidence to link the birds in West Africa with those in Eastern African (Ethiopia to Tanzania), and has suggested that the West African birds comprise a separate population centred on Lake Chad. The highest recorded country totals in recent years have been 1,165 in Tanzania (1995), 2,792 in Kenya (1997), 181 in Ethiopia (1998), 60 in Chad, 80 in Nigeria and 6 in Sudan (Baker, in press). Baker's estimates of 6,000 birds in East Africa and 500 in West Africa seem very low, given the poor coverage of the African waterfowl censuses, especially in Kenya and Chad, and a population estimate in categories A or B (*i.e.* <25,000) would seem to be more appropriate for the time being.

Mallard *Anas platyrhynchos*

Polytypic. The nominate subspecies has a wide breeding distribution across Western Eurasia from Iceland eastwards,

wintering south to North Africa and the Middle East, with small numbers reaching Northeast Africa. *A. p. conboschas* is confined to Greenland, where it is said to be resident. No discrete populations of the nominate form are identifiable. Four main wintering groups are now recognised in Western Eurasia (Scott & Rose, 1996).

- Northwest Europe: 5,000,000 (WPE2).
Trends: Stable (WPE2).
- Northern Europe/West Mediterranean: 1,000,000 (WPE2).
Trends: Increasing (WPE2).
- Eastern Europe/Black Sea & East Mediterranean: 2,250,000 (WPE2).
Trends: Decreasing (WPE2).
- Western Siberia/Southwest Asia: 800,000 (WPE2).
Trends: Unknown.

Changes in status: No changes are known in the Northwest European and Southwest Asian populations. The number of birds wintering in the West Mediterranean appears to have doubled over the last 20 years, while during the same period there has been a significant decline in numbers wintering in the Eastern Europe and the Black Sea (Rose, 1995). The numbers wintering in east-central Europe have fallen by 60% since the mid-1970s, and numbers in the Black Sea/East Mediterranean have fallen by 75% since 1986 (Rose, 1995). The European breeding population remained relatively stable from 1970 to 1990 (Hagemeijer & Blair, 1997). The large breeding populations in the Netherlands, Ukraine, Sweden and Britain showed some increase, while populations in Romania, Spain and the Czech Republic decreased.

Comments: The West Mediterranean and Black Sea/East Mediterranean populations were treated as a single large population in the Action Plan and first edition of *Waterfowl Population Estimates*. Monval & Pirot (1989) gave a combined total of 4,000,000 for these two populations, cf. 3,250,000 in Rose (1996). Justification for the recent split and new population estimates is given in Scott & Rose (1996).

The European breeding population is estimated at about 2.7 to 3.2 million pairs (Hagemeijer & Blair, 1997), suggesting a total population of 8.1 to 9.6 million birds. This agrees well with the estimate of 8.25 million birds wintering in Europe and the Mediterranean region.

Yellow-billed Duck *Anas undulata*

Two subspecies have been described: *A. u. undulata* from Angola and Uganda south to South Africa, and *A. u. ruppelli* in Ethiopia and Sudan. *A. u. ruppelli* appears to be mainly sedentary. In Eastern Africa, the nominate race seems to be subject to only limited local movements, and is generally described as resident. However, birds breeding in Southern Africa are at least partially migratory, undertaking considerable movements in response to changes in water level (with birds travelling up to 1,100 km from Barberspan in Transvaal). Scott & Rose (1996) recognise two populations of the nominate race, a mainly sedentary population in Eastern Africa (north of the Zambezi), and a partially migratory population in Southern Africa (south of the Zambezi). Only the latter is relevant here.

- Southern Africa (*undulata*): 60,000 (WPE2). >100,000 (Harrison *et al.*, 1997).
Trends: Stable (WPE2).

Changes in status: The overall distribution in Southern Africa does not appear to have changed much in the past 100 years, except for a possible decrease in numbers in Zimbabwe. Elsewhere, the species has probably become more common, benefiting from artificial wetlands (Harrison *et al.*, 1997).

Comments: The population estimate of 60,000 in *Waterfowl Population Estimates* is taken from an estimate of 52,000-65,000 given by Brown *et al.* (1982). The highest count during the African Waterfowl Census in recent years has been only 15,152 in July 1995 (Dodman & Taylor, 1996). However, the population in southern Free State and southern Transvaal alone has recently been estimated at about 100,000 birds, with flocks of up to 5,000 birds during the moult or on large permanent wetlands which act as drought refuges (Harrison *et al.*, 1997). Thus an estimate of >100,000 would seem to be more appropriate.

Northern Pintail *Anas acuta*

Monotypic. The species has a wide breeding distribution at northern latitudes in Western Eurasia from Iceland eastwards, and winters south to West Africa, East Africa and the Middle East. No discrete populations are identifiable. Three populations are recognised in Western Eurasia and Africa on the basis of the main wintering regions.

- Northwest Europe: 60,000 (WPE2).
Trends: Unknown (WPE2). Decreasing slowly (Rose, 1995).
- Western Siberia, Northeast & Eastern Europe/Southern Europe & West Africa: 1,200,000 (WPE2).
Trends: Decreasing (WPE2).
- Western Siberia/Southwest Asia & Eastern Africa: 700,000 (WPE2).
Trends: Unknown.

Changes in status: The Northwest European wintering population has shown a pattern of slow decline over the past twenty years (Rose, 1995), and the estimate for this population has recently been revised from 70,000 to 60,000 (Rose, 1996). The population wintering in the Black Sea/Mediterranean region and West Africa is also thought to be declining. Nothing is known of trends in West Africa, but there is some evidence of a recent decline in the West Mediterranean, and numbers wintering in the Black Sea/East Mediterranean have shown a significant decline since counts began in 1967, with numbers falling at an average rate of 6.37% per annum (Rose, 1995). Decreases have also been reported in the breeding populations in many parts of Europe, notably in the large breeding populations in European Russia (particularly in southern and central regions) and in Finland, but also in the smaller populations in Denmark, Estonia, Poland and Ukraine (Tucker & Heath, 1994; Hagemeyer & Blair, 1997).

Comments: The population wintering in Southern Europe and West Africa was treated as two separate populations in the Action Plan and first edition of *Waterfowl Population Estimates*: a population of about 1,000,000 birds wintering in West Africa, and a population of about 300,000 birds wintering in the Black Sea and Mediterranean region. Justification for the new treatment and revised population estimates is given in Scott & Rose (1996). Recent high counts in West Africa have included 260,700 in January 1994 (Taylor & Rose, 1994) and 122,800 in January 1996 (Dodman & Taylor, 1996).

The breeding population in Europe excluding Russia is estimated at about 23,000-33,000 pairs, and that in European Russia at 150,000-300,000 pairs (Hagemeyer & Blair, 1997), suggesting a total European population of about 520,000-1,000,000 birds. European breeders are thought to account for most of the 60,000 birds wintering in Northwest Europe, and probably, therefore, some 50-75% of the birds wintering in the Mediterranean region and West Africa.

The revised estimate of 700,000 for the Southwest Asian/Northeast African wintering population is derived from an estimate of 650,000 for Southwest Asia (Perennou *et al.*, 1994), plus an additional 50,000 birds wintering in Northeastern Africa (Scott & Rose, 1996).

Red-billed Duck *Anas erythrorhyncha*

Monotypic. The species occurs widely in Eastern and Southern Africa and Madagascar, and is the most abundant duck in Southern Africa. It is partly sedentary and partly nomadic throughout its range, but also undertakes lengthy movements in the dry season. Birds ringed in South Africa have been recovered in Namibia, Angola, Zambia and Mozambique. Scott & Rose (1996) recognise three populations: (1) a population in Southern Africa extending north to Angola, Zambia and central Mozambique; (2) a population in Eastern Africa, from Ethiopia to Tanzania and northern Zambia; and (3) a population in Madagascar. The status of the birds occurring in Madagascar is uncertain. Although the species is common in Madagascar, there are only two confirmed breeding records, and it is likely that there is regular movement of birds between Madagascar and the African mainland. All three populations are therefore included here.

- Southern Africa: 500,000-1,000,000 (WPE2).

Trends: Stable (WPE2).

- Eastern Africa: 100,000-300,000 (WPE2).

Trends: Stable (WPE2).

- Madagascar: 15,000-25,000 (WPE2).

Trends: Decreasing (WPE2).

Changes in status: Both the Southern and Eastern African populations are thought to be relatively stable. There appears to have been no change in the distribution in Southern Africa in historical times, although densities have probably increased with dam building (Harrison *et al.*, 1997). The population in Madagascar is thought to be decreasing as a result of habitat alteration (Scott & Rose, 1996).

Comments: The Southern and Eastern African populations were treated as a single large population in the Action Plan and first edition of *Waterfowl Population Estimates*. Justification for the population estimates is given in Scott & Rose (1996). The Madagascan population was excluded from the Action Plan because it was thought to be confined to Madagascar, but the little evidence available suggests there is some movement of birds between Madagascar and the African mainland, and possibly on a large scale (Scott & Rose, 1996). If this is found to be the case, it might be more appropriate to include the Madagascan birds within an enlarged Eastern African population.

A. erythrorhyncha is the most abundant and widespread duck in Botswana and Zimbabwe. There is an old report of 500,000 at Lake Ngami in Botswana in October 1954, and recent reports of up to 26,000 at Kafue Flats in Zambia. The population on the highveld in Transvaal, South Africa, has been estimated at about 50,000 in wet years (Harrison

et al., 1997).

Hottentot Teal *Anas hottentota*

Monotypic. The species occurs widely in Eastern and Southern Africa, and also locally in West Africa and Madagascar. The Madagascan populations appear to be sedentary. Elsewhere, the species is partly sedentary and partly migratory, undertaking regular short-distance migrations in response to changing water levels. Scott & Rose (1996) recognise four populations, three of which are at least partially migratory: (1) a small isolated population in West Africa, confined to northern Nigeria, southern Niger, northern Cameroon and Chad; (2) a population in Eastern Africa, from Ethiopia to Tanzania and northern Zambia; and (3) a population in Southern Africa extending north to Angola, central Zambia and central Mozambique.

- West Africa: 5,000-10,000 (WPE2).

Trends: Decreasing (WPE2).

- Eastern Africa: 100,000-300,000 (WPE2).

Trends: Stable (WPE2).

- Southern Africa: 100,000-200,000 (WPE2). C (25,000-100,000).

Trends: Stable (WPE2).

Changes in status: The small West African population appears to be in decline. Up to 300 were recorded during mid-winter waterfowl censuses in West Africa in the early 1970s (Perennou, 1991), but despite good coverage by the African Waterfowl Census in recent years, very few birds have been located (none in 1994, only two in Niger in 1995; none in 1996; and only five in Nigeria in 1997). The species was thought to be increasing and becoming more widespread in Nigeria in the 1970s (Elgood, 1982), but by the late 1980s, a decline was evident in some areas (Elgood *et al.*, 1994).

Both the Eastern and Southern African populations are thought to be relatively stable. The distribution of *A. hottentota* in Southern Africa has probably changed little during the 20th century, although numbers may have increased in some areas because of the bird's ability to adapt to artificial water bodies (Harrison *et al.*, 1997). It has become increasingly widespread in the Transvaal highveld in South Africa, although it remains uncommon and localised in this region (Harrison *et al.*, 1997).

Comments: The Eastern and Southern African populations were treated as a single large population in the Action Plan and first edition of *Waterfowl Population Estimates*. Scott & Rose (1996) estimated the Southern African population at between 100,000 and 200,000 birds, and this figure is given in the second edition of *Waterfowl Population Estimates*. However, over most of its range in Southern Africa, the species is uncommon and localised. It appears to be common only in the north, *e.g.* in the Okavango-Chobe system in Botswana and at Kafue Flats in Zambia. Concentrations of up to 500 have been recorded at Kafue Flats, but elsewhere flocks seldom exceed 50 birds. The highest counts during the African Waterfowl Census in recent years have been 3,630 in January 1994 (including 3,193 in Zambia) and 1,433 in January 1995 (Taylor & Rose, 1994; Dodman & Taylor, 1995). Thus the estimate of 100,000-200,000 is probably too high, and an estimate in the category C range (25,000-100,000) might be more appropriate.

Garganey *Anas querquedula*

Monotypic. The species breeds widely across Western Eurasia, birds from this region wintering almost exclusively in Africa south of the Sahara. No discrete populations are identifiable. Two main passage and wintering populations are recognised.

- Western Siberia & Europe/West Africa: 2,000,000 (WPE2).

Trends: Unknown (WPE2). Decreasing (Tucker & Heath, 1994; Hagemeyer & Blair, 1997).

- Western Siberia/Southwest Asia, Northeast & East Africa: 100,000-200,000 (WPE2).

Trends: Unknown.

Changes in status: The first two editions of *Waterfowl Population Estimates* give the trends in both populations as unknown. However, Tucker & Heath (1994) and Hagemeyer & Blair (1997) have shown that breeding populations are declining in many parts of Europe, and there are reports of a sharp decline in numbers in the middle region of the former USSR between 1972 and 1989 (Krivenko, 1993). In Western Europe, the number of breeding pairs appears to have fallen from about 12,000-22,500 in 1970 to less than 8,000 in recent years (Tucker & Heath, 1994). Recent decreases have also been reported in the large breeding populations in Ukraine, the Baltic States and Poland (Hagemeyer & Blair, 1997). A decline has also been reported in the number of birds migrating through Western Europe (Hagemeyer & Blair, 1997). The general decrease in numbers has been attributed to widespread deterioration of breeding habitat, especially in Central Europe, where increasing aridity in the climate and subsequent lowering of the water-table, drainage of wetlands and transformation of wetlands to dammed reservoirs have resulted in the loss

and degradation of much former breeding habitat (Tucker & Heath, 1994). Loss of habitat may also now be a problem in West Africa, where large-scale river diversion and irrigation schemes pose a major threat to several of the most important wintering areas (Scott & Rose, 1996).

Comments: The total breeding population in Europe and Turkey is estimated at 650,000-1,050,000 pairs (Hagemeijer & Blair, 1997), suggesting a total population of 2.0-3.0 million birds. This could easily account for most if not all of the birds wintering in West Africa, although it is known that some of the West African birds originate from breeding grounds as far east as 90°E in Siberia (Scott & Rose, 1996). Recent high counts in West Africa have included 427,500 in January 1994 (Taylor & Rose, 1994) and 324,400 in January 1997 (Dodman *et al.*, 1997). Many birds from Western Siberia migrate southwest through Southwest Asia to winter in Eastern Africa while some birds from the same breeding areas migrate southeast through Iran to winter in Southern Asia. Recent high counts in Eastern Africa have included 19,800 in Sudan in March 1996 and 20,600 throughout the region in January 1997 (Dodman *et al.*, 1997).

Northern Shoveler *Anas clypeata*

Monotypic. The species has a wide breeding distribution across Western Eurasia from Iceland (since 1931) eastwards, and winters south to West Africa, East Africa and the Middle East. Birds breeding in Northern and Western Europe winter mainly in Northwest and Central Europe. Many of the birds breeding in Northeast Europe and Western Siberia pass through Western Europe on migration, but most of these birds apparently winter in the Mediterranean region and West Africa. Other West Siberian breeders take a more easterly route to winter in Southwest Asia and Northeast Africa. Three populations are recognised in Western Eurasia and Africa on the basis of the main wintering regions.

- Northwest & Central Europe (wintering): 40,000 (WPE2).

Trends: Stable (WPE2).

- Western Siberia, Northeast & Eastern Europe/Southern Europe & West Africa: 450,000 (WPE2).

Trends: Unknown (WPE2). Possibly decreasing.

- Western Siberia/Southwest Asia, Northeast & East Africa: 400,000 (WPE2).

Trends: Decreasing (WPE2).

Changes in status: The Northwest European wintering population appears to have remained relatively stable over the past 20 years (Rose, 1995). Recent trends in the breeding populations in Northern and Western Europe are to some extent masked by large annual fluctuations, but most populations appear to be relatively stable, including the two largest populations in the Netherlands and Finland (Hagemeijer & Blair, 1997).

Poor coverage of the major wintering concentrations in the Black Sea and East Mediterranean precludes the determination of trends for this population on the basis of winter counts. However, there has been a significant increase of almost 2.5% per annum in the number of birds wintering in the West Mediterranean in recent years, while there appears to have been a slight decline in the small number of birds wintering in Central Europe (Rose, 1995). A slight increase in the total estimate for the Black Sea/Mediterranean/West Africa population from 395,000 (*Waterfowl Population Estimates 1*) to 400,000-470,000 (Rose, 1996) or 450,000 (*Waterfowl Population Estimates 2*) is attributable to better count data, and does not imply an increase in this population. There is some evidence of a decline in this population on the breeding grounds. A slight decrease has been reported in the large European Russian breeding population, and decreases have been reported in the smaller breeding populations in the Czech Republic, Poland, Slovakia and Ukraine (Snow & Perrins, 1998).

Trends in the number of birds wintering in Southwest Asia and Northeast Africa are unknown. However, Krivenko (1993) reported a sharp decline in the numbers of birds in Western and Central Siberia between 1972 and 1989.

Comments: Justification for the new population estimates is given in Scott & Rose (1996). The 280,000 birds wintering in the West Mediterranean were treated as a separate population in the Action Plan and first edition of *Waterfowl Population Estimates*, following Monval & Pirot (1989). However, Monval & Pirot recognised separate West and East Mediterranean 'populations' purely because of a disparity in the quality of data from these two regions, and did not wish to imply that two different groups of birds were involved. Monval & Pirot (1989) also recognised a separate West African 'population', but these birds (about 20,000) were included in the Black Sea/East Mediterranean population in the first two editions of *Waterfowl Population Estimates*. For further discussion, see Scott & Rose (1996).

The total breeding population in Europe and Turkey is estimated at about 100,000-135,000 pairs (Hagemeijer & Blair, 1997), suggesting a total European population of 300,000-400,000 birds. These could account for all of the birds wintering in Northwest Europe, and perhaps 60-80% of the birds wintering in the Black Sea/Mediterranean region and West Africa.

The increased estimate for the population wintering in Southwest Asia and Northeastern Africa (400,000 *cf.* 300,000 in the first edition of *Waterfowl Population Estimates*) is due to the inclusion of some 100,000 birds wintering in Northeast Africa. Recent high counts in Eastern Africa have included 25,400 in January 1995 (Dodman & Taylor, 1995) and 26,100 in 1997 (Dodman *et al.*, 1997).

Marbled Teal *Marmaronetta angustirostris*

Monotypic. Three discrete populations are identifiable in the Agreement Area: (1) a small population in the West Mediterranean, some of which winter in subsaharan West Africa; (2) a small population in Turkey and the Levant, wintering south to Egypt and perhaps formerly Chad; and (3) a large population which breeds from eastern Turkey, Armenia, Iraq, northwestern Iran and the Caspian region east to Kazakhstan, and winters in Southwest Asia. The bulk of this population breeds in Iran and Iraq and winters in southwestern Iran. A fourth population (of about 5,000 birds) in western China, Afghanistan, Pakistan and northwestern India is extralimital.

- West Mediterranean/West Africa: 3,000 (WPE2).

Trends: Decreasing (WPE2).

- East Mediterranean (Turkey & Levant): 1,000 (WPE2).

Trends: Decreasing (WPE2).

- Southwest Asia: 5,000-15,000 (WPE2).

Trends: Decreasing (WPE2).

Changes in status: The discovery of over 2,400 in Morocco alone in 1993 has necessitated an increase in the estimate for the West Mediterranean population to 3,000, but the decline in Spain has continued until the early 1990s. Numbers in Spain in autumn fell from about 1,000 in the late 1980s to as few as 200-400 in 1993 (van Vesseem, 1994). In 1994 and 1995, the total Spanish breeding population was estimated at only 35 and 50 pairs, respectively (Green & Navarro, 1997). There may have been a slight recovery since then, as there have been counts of 480 in El Hondo National Park in September 1996 and 535 in September 1997 (TWSG News No.10, June 1997, and No.11, July 1998), and 800 were counted in Spain in October 1998 (A., Green, *in litt.*). Surveys in Morocco and Spain in 1997 suggested that there may be more than 3,000 birds in this population in some years, but the population is subject to wide fluctuations between years (Green & El Hamzaoui, 1998).

The East Mediterranean population is also still declining, with the Turkish population decreasing by over 60% since 1970 (Green, 1993).

The Southwest Asian population was estimated at 25,000 in the early 1990s (Green, 1993; Perennou *et al.*, 1994), but it appears that there has been a dramatic decline since then, following the drainage of a large proportion of the Mesopotamian Marshes in Iraq. It is now believed that this population may have fallen to as few as 5,000-15,000 individuals (A. Green *in litt.* in Scott & Rose, 1996). Most birds breeding in Iraq were thought to winter in Iran, and the extremely low mid-winter counts from Iran in 1993 (5,021) and 1994 (1,919) seem to provide evidence for such a population crash (Heredia *et al.*, 1996).

Comments: *M. angustirostris* is a globally threatened species in the category 'Vulnerable' (IUCN, 1996), and is listed in Appendix I of the Bonn Convention. The status and conservation of *M. angustirostris* have been described in some detail by Green (1993). The situation in Europe has been summarised by Green (*in* Tucker & Heath, 1994) and van Vesseem (1994), and an Action Plan for *M. angustirostris* in Europe has been compiled by Green (*in* Heredia *et al.*, 1996). Callaghan *et al.* (*in prep.*) have recently estimated the world population at only 10,000-20,000 birds.

Red-crested Pochard *Netta rufina*

Monotypic. The species has a very patchy breeding distribution from Iberia across Southern and Central Europe to Western and Central Asia, and winters south to North Africa (scarce), Turkey and the South Caspian region. Three more or less discrete populations are identifiable in Western Eurasia.

- Southwest & Central Europe/West Mediterranean: 25,000 (WPE2).

Trends: Stable (WPE2). Increasing slightly (Hagemeijer & Blair, 1997).

- Black Sea & East Mediterranean: 50,000 (WPE2).

Trends: Decreasing (WPE2).

- Western & Central Asia/Southwest Asia: 200,000 (WPE2).

Trends: Stable (WPE2).

Changes in status: Overall numbers wintering in Central and Southwest Europe and the West Mediterranean are

believed to have remained relatively stable over the last 20 years, although there has been a marked shift of birds within the wintering range in recent years, with more in Central Europe and fewer in Southern Europe (Rose, 1995). The population estimate has been increased from 20,000 in the first edition of *Waterfowl Population Estimates* to 25,000 (Rose, 1996) because of better data. However, the population shows very large fluctuations, and may reach 50,000 in some years. Trends in breeding populations are variable, but overall numbers appear to have increased slightly in recent decades. The slow expansion of the breeding range in Central Europe, which began in the late 19th century, is apparently continuing, and there has been a long-term increase in the numbers breeding in Spain, France, southern Germany and the Czech Republic (Hagemeyer & Blair, 1997). Recent increases have also been reported in Austria, Hungary, Poland, Portugal, Slovakia and Switzerland (Snow & Perrins, 1998).

The wintering population in the Black Sea/East Mediterranean region appears to be decreasing, but the data are inadequate to confirm this (Monval & Pirot, 1989; Rose, 1995). However, the breeding populations in Southeast Europe are known to have declined between 1970 and 1990, especially in the strongholds in Russia and Romania (Tucker & Heath, 1994).

There has been no evidence of any decline in the large breeding population in west-central Asia, and this population is thought to have been relatively stable throughout the 1970s and 1980s (Krivenko, 1993).

Comments: The total breeding population in Western and Central Europe and Northwest Africa is estimated at about 6,100-9,700 pairs (data from Snow & Perrins, 1998), suggesting a total population of 18,000-29,000 birds, which agrees well with the winter estimate of 25,000 birds.

Because of uncertainties in the data from the Black Sea/East Mediterranean region, Rose (1996) retains the population estimate of 50,000 from Monval & Pirot (1989). However, Scott & Rose (1996) consider this to be an upper limit, and suggest that the population may be as low as 23,000. This lower figure is supported by estimates of breeding populations. The total breeding population in Southeast Europe and Turkey is estimated at about 6,800-14,500 pairs (data from Snow & Perrins, 1998), suggesting a total population of between 20,000 and 43,500 birds.

Paynter *et al.* (1996) counted 179,000 *N. rufina* at five sites in Azerbaijan in February 1996. Over 62,000 were counted elsewhere in Southwest Asia during the International Waterfowl Census in January 1996, suggesting a total population of perhaps as many as 250,000, *i.e.* somewhat higher than the estimate of 200,000 given in the second edition of *Waterfowl Population Estimates*.

Southern Pochard *Netta erythrophthalma*

Polytypic. The nominate form is confined to South America; *N. e. brunnea* occurs widely in Eastern and Southern Africa from Ethiopia to Cape Province, South Africa, and undertakes both local and long-distance migrations. South African breeders have been recorded during the dry season north to Zimbabwe, Zambia, Malawi, Botswana, Mozambique and Kenya, *i.e.* virtually spanning the range of the species in Africa, and only one population can therefore be recognised.

- Southern & Eastern Africa: 30,000-70,000 (WPE2).

Trends: Stable (WPE2).

Changes in status: Overall numbers are thought to be relatively stable, although decreases have been reported in some areas, and local increases in Zambia and Zimbabwe (Scott & Rose, 1996). There are old records of flocks of up to 5,000 birds in southwestern Cape Province, South Africa (Harrison *et al.*, 1997).

Common Pochard *Aythya ferina*

Monotypic. The species has a wide breeding distribution across Western Eurasia, and winters regularly south to North Africa, the Arabian Peninsula and southern Iran, with small numbers reaching West Africa and the Nile Valley. No discrete populations are identifiable. Three populations are recognised in the Agreement Area on the basis of the main wintering regions.

- Northeast Europe/Northwest Europe: 350,000 (WPE2).

Trends: Decreasing (WPE2).

- Central & Northeast Europe/Black Sea & Mediterranean: 1,000,000 (WPE2).

Trends: Decreasing (WPE2).

- Western Siberia/Southwest Asia: 350,000 (WPE2).

Trends: Unknown (WPE2). Probably decreasing (Scott & Rose, 1996).

Changes in status: Both the Northwest European and Black Sea & Mediterranean wintering populations have been decreasing for the late 1970s (Monval & Pirot, 1989; Rose, 1995). However, there are some signs that the numbers in Northwest Europe might now be stabilising at levels close to those in the late 1960s (Scott & Rose, 1996), and the

estimate of 350,000 from Monval & Pirot (1989) still remains valid. Most breeding populations in Western and Northern Europe are currently thought to be stable or increasing slightly (Hagemeijer & Blair, 1997; Snow & Perrins, 1998).

In the Black Sea/Mediterranean region, the decline in wintering numbers has been most marked in the West Mediterranean, where the rate of decline implies a 70% reduction in numbers over a 20 year period. The new lower estimate of 1,000,000 for this population (*cf.* 1,250,000 in Monval & Pirot, 1989, and *Waterfowl Population Estimates I*) may in part reflect this decline, but is mainly a result of new statistical techniques and improvements in census coverage (Scott & Rose, 1996). Most breeding populations in Central and Eastern Europe appear to be relatively stable, although decreases have been reported in recent years in Romania and the Czech Republic (Hagemeijer & Blair, 1997).

Trends in the Southwest Asian population are unknown, although a decline seems likely. Krivenko (1993) reports a slight decline in post-breeding numbers in the middle region of the former USSR between 1972 and 1989, and the numbers wintering in Iran apparently decreased by 20-30% between the early 1970s and 1991 (Perennou *et al.*, 1994).

Comments: The total breeding population in Europe and Turkey is estimated at about 290,000-340,000 pairs (Hagemeijer & Blair, 1997), suggesting a total European population of 900,000-1,000,000 birds. These could account for all of the birds wintering in Northwest Europe, and perhaps 60% of the birds wintering in the Black Sea/Mediterranean region.

Ferruginous Duck *Aythya nyroca*

Monotypic. The species has a fragmented breeding distribution at temperate latitudes from the West Mediterranean (Spain, Morocco and Algeria) across Western and Central Eurasia to central China. Scott & Rose (1996) recognise three populations in Western Eurasia and Africa: a population breeding in Southwest Europe (few) and North Africa and wintering mainly in West Africa (Senegal to Chad); a population breeding in Eastern Europe and wintering in the Black Sea/East Mediterranean region south to Egypt and probably also in West Africa; and a Southwest Asian population wintering through the Arabian Peninsula to Northeast Africa. (A fourth population breeds in east-central Asia and winters in Southern and Eastern Asia).

- West Mediterranean/West Africa: 10,000 (WPE2). 2,000-3,000, based on recent estimates of breeding populations.

Trends: Decreasing (WPE2).

- Eastern Europe/East Mediterranean & Africa: 10,000-50,000 (WPE2).

Trends: Decreasing (WPE2).

- Western Asia/Southwest Asia & Northeast Africa: 5,000 (WPE2).

Trends: Decreasing (WPE2).

Changes in status: *A. nyroca* has declined markedly throughout much of its main breeding range in Europe and Western Asia in recent decades, and this decline is continuing. The decline in numbers and contraction in range have been especially pronounced in Western Europe, where the small breeding populations in Spain and France have decreased to the verge of extinction. In Central and Eastern Europe, Tucker & Heath (1994) have reported large decreases in the breeding populations in Belarus, the Czech Republic, Russia, Slovenia and Ukraine, and small decreases in nine other countries. Petkov (1998) has reported decreases of up to 90% at most of the breeding sites in Bulgaria, and Wieloch (1998) has reported a marked decrease in Poland, where the number of breeding pairs has fallen from 400-500 in the late 1980s to 250-300 in the early 1990s, and even fewer in the mid-1990s. There has been a massive decline in Moldova in recent years, from an estimated 1,000-1,300 pairs in the 1980s to "some tens of pairs" in the last few years (TWSG News No.11, July 1998).

In Western Asia, Krivenko (1993) reports a slight decline in numbers in Kazakhstan and the Caspian region between 1972 and 1989, and there has been a marked decline in the numbers wintering in Turkmenistan (Scott & Rose, 1996). The wintering population in Northeast Africa has also declined markedly in recent decades (Brown *et al.*, 1982).

Comments: *A. nyroca* is a globally threatened species in the category 'Vulnerable' (IUCN, 1996), and is listed in Appendix I of the Bonn Convention. An action plan for the conservation of the species in Europe has been compiled by Hecker (*in van Vessem*, 1994).

The migration routes and population limits of *A. nyroca* are very poorly understood. The first edition of *Waterfowl Population Estimates* treated the birds wintering in Southern Europe and the birds wintering in West Africa as separate populations, although there was no evidence that these birds came from different breeding areas. This was the treatment adopted in the Action Plan. More recently, however, A. Green (*in litt.* in Scott & Rose, 1996) has argued that the birds breeding in Southwest Europe and North Africa are now isolated from birds breeding further east, and probably therefore constitute a discrete population. On this basis, Scott & Rose (1996) recognised a West Mediterranean/West Africa population and an Eastern Europe/East Mediterranean population, and this treatment was

adopted in the second edition of *Waterfowl Population Estimates*. An estimated 10,000 birds wintered in West Africa in the 1980s (Monval & Piro, 1989), and this figure was retained in the second edition of *Waterfowl Population Estimates* in view of the poor coverage of some of the key wintering areas in recent years. However, it seems most probable that many of these birds were from breeding areas in Eastern Europe, as the breeding population in Southwest Europe and North Africa can account for only about 2,000-3,000 birds (1-10 pairs in Spain, 5-10 pairs in Morocco, and perhaps 600-1,000 pairs in Algeria). The total mid-winter counts in West Africa have been extremely low in recent years (128 in 1994, 92 in 1995, none in 1996, and only two in 1997), and there is no longer any evidence to suggest that there could be as many as 10,000 birds in the West Mediterranean/West African population. A conservative estimate of 2,000-3,000 individuals, based on estimates of the breeding populations, has therefore been adopted.

The total breeding population in Europe and Turkey has recently been estimated at about 16,000-28,000 pairs, with 6,000-15,000 of these in Romania (Hagemeijer & Blair, 1997). This suggests a total population of 48,000-84,000 birds, most of which are thought to winter in the Black Sea/East Mediterranean region. However, a workshop in 1995 to review the status of the species concluded that in the absence of any recent high counts in the wintering areas in the Black Sea/East Mediterranean region, an estimate of 10,000-50,000 was more appropriate (Scott & Rose, 1996). A possible explanation for the discrepancy between these two estimates is that large numbers of birds from this population winter in Africa south of the Sahara in areas that are poorly covered by the mid-winter censuses. There has recently been a report of 5,000 *nyroca* wintering in the Sudd in Sudan (TWSG News No.10, June 1997), and it is possible that these were some of the missing birds from the East European population.

Tufted Duck *Aythya fuligula*

Monotypic. The species has a wide breeding distribution across Western Eurasia from Iceland eastwards, and winters south to North Africa and the Middle East, with small numbers reaching West Africa and East Africa. No discrete populations are identifiable. Three main wintering populations are recognised in Western Eurasia and Africa.

- Northwest Europe (wintering): 1,000,000 (WPE2).

Trends: Increasing (WPE2).

- Central Europe, Black Sea & Mediterranean (wintering): 600,000 (WPE2).

Trends: Increasing (WPE2). Overall trends uncertain; increasing in the west (Scott & Rose, 1996).

- Western Siberia/Southwest Asia & Northeast Africa: 200,000 (WPE2).

Trends: Unknown.

Changes in status: The Northwest European wintering population has shown a significant increase over the past twenty years, and has been increasing at a rate of 3.33% per annum in recent years (Rose, 1995). This has necessitated an upward revision in the population estimate from the 750,000 of Monval & Piro (1989) to 1,000,000 (Rose, 1996). A similar increase has been reported in the breeding populations in Northern and Western Europe. Large-scale range expansions have taken place in Norway and France, and marked increases have been reported in Belgium, Britain, Germany, the Netherlands and Poland, although the populations in Fennoscandia and the Baltic States are apparently stable (Hagemeijer & Blair, 1997; Snow & Perrins, 1998).

Overall trends in the wintering population in Central Europe, the Black Sea and Mediterranean region are uncertain because of inadequacies in the data from the East Mediterranean and Black Sea. The numbers wintering in Central Europe have shown a significant increase over the past twenty years, although there is evidence of a slight decline within the last few years (Scott & Rose, 1996). The numbers wintering in the West Mediterranean have been increasing since 1983 (Rose, 1995), but the number of birds involved is not thought to be sufficient to influence the population as a whole, and the estimate of 600,000 from Monval & Piro (1989) is retained (Rose, 1996; Scott & Rose, 1996). It has been suggested that an exchange of wintering birds between Northwest Europe, Central Europe and the West Mediterranean is at least partially responsible for the population trends exhibited in these regions (Rose, 1995). There have been some range expansions and increases in the breeding populations in Central Europe, and an increase has been reported in Ukraine, but the large breeding population in European Russia is thought to be decreasing slightly (Hagemeijer & Blair, 1997).

Comments: The European breeding population is estimated at about 600,000-830,000 pairs (Hagemeijer & Blair, 1997), suggesting a total European population of 1.8-2.5 million birds. This agrees reasonably well with the estimate of 1.6 million for the total wintering population in Europe and the Mediterranean region.

Greater Scaup *Aythya marila*

Two subspecies have been described: the nominate form in Western Eurasia and *mariloides* in Northeast Asia and North America. Some authors treat the North American birds as a separate form, *nearctica*, while Callaghan & Kear (in press) consider the name *mariloides* to be invalid, and use *nearctica* for the Northeast Asian and North American

birds. The nominate form breeds in Iceland, Scandinavia and northern Russia east to about the Lena River, and winters south to the Atlantic coast of France, the Black Sea and the Caspian Sea. Two populations are recognised.

- Northern Europe/Western Europe: 310,000 (WPE2).

Trends: Unknown.

- Western Siberia/Black Sea & Caspian region: 100,000-200,000 (WPE2).

Trends: Unknown.

Changes in status: Trends in the Northwest European wintering population are unknown. The large breeding populations in Russia and Iceland are subject to wide fluctuations, and this has masked population trends. However, the populations in Norway and Sweden are thought to have been relatively stable in recent years, while the relatively small populations in Finland and Estonia have decreased (Hagemeijer & Blair, 1997). The new estimate of 100,000-200,000 for the Black Sea/Caspian Sea population is derived from better information, and does not indicate any increase in this population, the trends in which remain unknown.

Comments: The estimate of 310,000 for the Northwest European wintering population follows Laursen *et al.*, (1992) and Pihl & Laursen (1996). The total European breeding population is estimated at about 50,000-90,000 pairs (Hagemeijer & Blair, 1997), giving a total of 150,000-270,000 birds. This suggests that up to 50% of the birds wintering in Northwest Europe originate from Western Siberia.

The estimate of 100,000-200,000 for the Black Sea/Caspian Sea population is based on recent counts during the migration season and in winter in the Sea of Azov, Caspian Sea and Turkmenistan, and recent estimates of breeding populations in Western and Central Siberia (Scott & Rose, 1996). The figure of 50,000 given in the first edition of *Waterfowl Population Estimates* dates back to Szijj (1972), and includes only those birds wintering in the Black Sea and East Mediterranean.

Common Eider *Somateria mollissima*

Polytypic. Three subspecies occur in the Agreement Area: the nominate form in Northwest Europe east to Novaya Zemlaya; *S. m. faroensis* in the Faroe Islands; and *S. m. islandica* in East Greenland, Iceland, Svalbard and Franz Josef Land. Many authors, including Scott & Rose (1996), include *islandica* within *S. m. borealis* of Northeast Canada and West Greenland, although Callaghan & Kear (in press) have recently argued that this form is valid. Birds breeding in the Shetland Islands and Orkney Islands (Scotland) are somewhat intermediate between *faroensis* and *mollissima*, but are perhaps best included in *faroensis* (Cramp & Simmons, 1977). Many populations are mainly sedentary, but large numbers of birds from Russia, Finland, Sweden and Norway are migratory, wintering mostly on the Murman coast, along the north and west coasts of Norway, in the Baltic Sea and in the Wadden Sea, with a few birds reaching the large lakes of Central Europe and the West Mediterranean. Scott & Rose (1996) recognise nine populations in Western Eurasia, but six of these are mainly or entirely sedentary: East Greenland (*islandica* or *borealis*); Iceland (*islandica* or *borealis*); Faroe Islands (*faroensis*); Shetland and Orkney Islands (*faroensis*); the rest of Britain and Ireland (*mollissima*); and White Sea (*mollissima*). Three populations are migratory or include some migratory elements: (1) a population of *mollissima* breeding in the Baltic, Denmark and the Netherlands; (2) a population of *mollissima* breeding in Norway and Russia from the Kola Peninsula to Novaya Zemlaya; and (3) a population of *islandica* (*borealis*) breeding in Svalbard and Franz Joseph Land. Birds breeding in the Baltic, Denmark and the Netherlands winter mainly in the southern Baltic, Danish waters and the Wadden Sea, with smaller numbers reaching the south and east coasts of Britain and Normandy, France. Birds breeding in Norway and Russia winter mainly along the Murman and Norwegian coasts. Little is known about the wintering areas of the birds from Svalbard and Franz Joseph Land, although there have been recoveries of Svalbard birds from Iceland and Norway. A colony of *mollissima* was established on the Black Sea coast of Ukraine in 1975, and since then, numbers have increased steadily to 473 nests in 1989 (Ardamackaja, 1990). The species has also nested in Switzerland on several occasions since 1988 (Hagemeijer & Blair, 1997).

- Baltic, Denmark & Netherlands (*mollissima*): 1,350,000-1,700,000 (WPE2).

Trends: Stable (WPE2).

- Norway & Russia (*mollissima*): 300,000-550,000 (WPE2).

Trends: Stable (WPE2).

- Svalbard & Franz Joseph Land (*islandica*): 40,000-80,000 (WPE2).

Trends: Stable (WPE2).

Changes in status: The Svalbard population of *islandica* is thought to be stable, as are the numbers of nominate *mollissima* in Russia (Flint & Krivenko, 1990). Elsewhere in Europe, the numbers of *mollissima* have increased considerably in recent decades, with increases reported in Finland, Norway, Sweden, Denmark, Estonia, Germany, Britain and Ireland (Hagemeijer & Blair, 1997; Snow & Perrins, 1998). However, there are indications that over much

of the mainland of Northwest Europe, the numbers may now have stabilised (Wetlands International Seaduck Specialist Group, *in litt.* in Scott & Rose, 1996); there have been no reports of increases within the last few years, and a decrease has been reported in the Netherlands (Scott & Rose, 1996).

Comments: The first edition of *Waterfowl Population Estimates* treated all populations of *Somateria mollissima* in Europe as belonging to a single large population of about 3,000,000, and this was the treatment adopted in the Action Plan. Birds breeding in Canada and Greenland (mainly *borealis*) were treated as a separate population. This simple treatment ignores the existence of at least three morphologically distinct subspecies and a number of discrete, sedentary populations in Europe, and has therefore been abandoned. For a full discussion, see Scott & Rose (1996). The old estimate of 3,000,000 for the whole of Europe (excluding Greenland) falls within the range of the current estimates for the eight populations now recognised in this region (2,393,000-3,360,000).

Populations of *S. mollissima* breeding in the Arctic are included in a Circumpolar Eider Conservation Strategy and Action Plan prepared by the Circumpolar Seabird Working Group of CAFF (CAFF Circumpolar Seabird Working Group, 1997).

King Eider *Somateria spectabilis*

Monotypic. In Western Eurasia, the species breeds only in Greenland, Svalbard and Arctic Russia. Birds from Svalbard and Russia winter from the White Sea south to central Norway. A small number of birds, probably from Greenland and Svalbard, reach Iceland in winter. Only one population is recognised: a North Atlantic population, extending from East Greenland to the Taymyr Peninsula (Scott & Rose, 1996).
- East Greenland, Northeast Europe & Western Siberia: 300,000 (WPE2).

Trends: Unknown (WPE2). Probably stable.

Changes in status: Numbers appear to have been relatively stable in recent decades. The Russian breeding population is considered to be stable (Snow & Perrins, 1997), and the Svalbard population is probably stable after a slight decline since the 1950s (Hagemeijer & Blair, 1997).

Comments: The first edition of *Waterfowl Population Estimates* gave a figure of 100,000-300,000 for the Northeast European and West Siberian population. Recent estimates of breeding populations in Greenland (<30,000 pairs), Svalbard (2,500-5,000 pairs) and European Russia (40,000-60,000 pairs), and an estimate of 220,000 birds in autumn in Western and Central Siberia suggest a total North Atlantic population of at least 300,000 birds and possibly as many as 400,000 (Scott & Rose, 1996). About 45,000 birds are thought to winter along the Norwegian coast.

S. spectabilis is included in a Circumpolar Eider Conservation Strategy and Action Plan prepared by the Circumpolar Seabird Working Group of CAFF (CAFF Circumpolar Seabird Working Group, 1997).

Steller's Eider *Polysticta stelleri*

Monotypic. The species breeds on Arctic coasts from the Yamal Peninsula east to northern Alaska. Birds breeding west of the Khatanga Gulf (100°E) are believed to migrate west to winter on the coasts of Murmansk and Finnmark and in the Gulf of Finland and southeast Baltic; birds breeding further east winter mainly in the southern Bering Sea. Only one population is relevant.

- Western Siberia/Northeast Europe: 30,000 (WPE2). 40,000 (Pihl, 1997).

Trends: Increasing (WPE2).

Changes in status: There has been no evident trend in the numbers wintering at Varangerfjord in Norway since at least 1981, and trends in the large numbers wintering off the Kola Peninsula in Russia are unknown. However, numbers wintering in the Baltic have increased markedly since the first were recorded in the late 1960s and early 1970s. Mid-winter counts in the early 1990s produced totals of 3,500-6,500 birds in the Baltic, very largely off Saaremaa Island in Estonia and along the Palanga coast in Lithuania waters (Pihl & Laursen, 1996), but some 8,000 were recorded in 1996 (Pihl, 1997).

Comments: *Polysticta stelleri* is listed as a globally threatened species in the category 'Vulnerable' by IUCN (1996), and is listed in Appendix I of the Bonn Convention. However, the Threatened Waterfowl Specialist Group of IUCN and Wetlands International now considers the species to be 'Near-threatened' (TWSG News No.11, July 1998). *P. stellaris* is included in a Circumpolar Eider Conservation Strategy and Action Plan prepared by the Circumpolar Seabird Working Group of CAFF (CAFF Circumpolar Seabird Working Group, 1997), and an action plan focusing on the West Eurasian population has recently been prepared for Wetlands International and BirdLife International by S.

Pihl (Pihl, 1997).

Nygard *et al.* (1995) have estimated the total wintering population in Europe at between 30,000 and 45,000 birds. Scott & Rose (1996) adopted a conservative estimate of 30,000, following Pihl & Laursen (1996), although it was thought likely that the population was considerably higher than this. Pihl (1997) concluded that there were between 30,000 and 50,000 birds wintering in Europe, and recommended a figure of 40,000 as the population estimate.

The world population has recently been estimated at about 220,000 birds, as compared with an estimated 400,000-500,000 in the 1960s (Pihl, 1997). In Alaska, the species has ceased to breed on the west coast, and now breeds only in small numbers near Point Barrow and perhaps elsewhere on the North Slope (CAFF Circumpolar Seabird Working Group, 1997). There has been a dramatic decline in the population breeding in Eastern Siberia from an estimated 500,000 birds in the early 1970s to about 172,000 in 1993 and 1994 (Solovieva, 1997). The reasons for the decline are unknown, although Pihl (1997) identifies a number of negative factors affecting adult survival and breeding success which in combination may have been the cause.

Long-tailed Duck *Clangula hyemalis*

Monotypic. Circumpolar, in Western Eurasia breeding south to Iceland, northern Finland and the mountainous regions of Norway and Sweden, and wintering south to the southern North Sea. Small numbers (probably only stragglers) extend south to Central Europe, the Black Sea and the Caspian Sea. The majority of birds breeding in Scandinavia, European Russia and Western Siberia winter in the Baltic Sea. The large breeding population in Iceland is partly resident and partly migratory, some birds moving southwest to winter in Greenland, and others moving southeast to winter in Scotland. However, the movements of the species are poorly understood, and the origin of the bulk of the birds wintering in British and Irish waters remain unknown. Scott & Rose (1996) recognise two populations for practical purposes: a population breeding in Greenland and Iceland, and a population breeding in Northeast Europe and Western Siberia, although it is clear that there is considerable overlap between these two populations on their winter quarters.

- Iceland & Greenland: 150,000 (WPE2).

Trends: Stable (WPE2).

- Western Siberia/Northern Europe: 4,600,000 (WPE2).

Trends: Stable (WPE2).

Changes in status: The estimates for both populations have recently been revised on the basis of improved census data from the breeding grounds (Iceland and Greenland) and from main the wintering areas of the West Siberian/North European population in the Baltic Sea (Pihl *et al.*, 1995; Pihl & Laursen, 1996). Both populations are thought to be more or less stable. The breeding populations in Svalbard, Norway, Sweden, European Russia, and Western and Central Siberia are thought to be stable (Hagemeijer & Blair, 1997; Snow & Perrins, 1998; Krivenko, 1993), and the Icelandic breeding population is apparently now stable after a marked decline earlier this century (Koskimies, 1993). Only the Finnish breeding population has shown any signs of decline in recent years (Hagemeijer & Blair, 1997).

Comments: The first edition of *Waterfowl Population Estimates* included a small population of *C. hyemalis* wintering in the Caspian Sea, following Perennou *et al.* (1994), and this population was included in the Action Plan. However, there is no reason to believe that the species occurs in the Caspian Sea as anything other than a scarce straggler. (Small numbers of birds also occasionally reach the Black Sea and large lakes in Central Europe).

Common Scoter *Melanitta nigra*

Two subspecies have been described: the nominate form in Western Eurasia and *M. n. americana* in North America and Eastern Asia. The nominate form breeds in Iceland, Ireland, Scotland, northern Scandinavia and northern Russia east to the Lena (125°E), and winters south along the Atlantic seaboard to Morocco and occasionally Mauritania. Only one population is recognised.

- Western Siberia & Northern Europe/Western Europe & Northwest Africa: 1,600,000 (WPE2).

Trends: Stable (WPE2).

Changes in status: Population levels in the main breeding areas in Russia, Norway and Sweden appear to be relatively stable (Krivenko, 1993; Hagemeijer & Blair, 1997), and the small population in Iceland is also thought to be stable (Koskimies, 1993). There has been some contraction in range and reduction in numbers at the southern edge of the breeding range in recent years, especially in Britain, Ireland and Finland, but these local decreases have affected only a tiny proportion of the population (Scott & Rose, 1996).

Comments: The population estimate has been increased from 800,000 (as given in the first edition of *Waterfowl*

Population Estimates) to 1,600,000, following the discovery of far larger numbers in the Baltic than had previously been supposed (Pihl & Laursen, 1996). An estimated 1,200,000 birds were present in the Baltic in January 1993 (Pihl *et al.*, 1995).

Velvet Scoter *Melanitta fusca*

Polytypic. Three subspecies are generally recognised: the nominate form in Western Eurasia, *M. f. stejnegeri* in Eastern Asia, and *M. f. deglandi* in North America. (Some authors give full specific status to *stejnegeri* and *deglandi* under the name *deglandi*). The nominate form breeds from Scandinavia east to the Yenisey River (85°E), and winters south to Britain and France, with small numbers of birds reaching inland waters in southern Germany, Austria and Switzerland during hard winters. The small, isolated population breeding at lakes in eastern Turkey, Georgia and Armenia appears to winter mainly along nearby Black Sea coasts, although occasional records from Bulgaria, Romania, Egypt and the South Caspian suggest that some birds move further afield. Two populations are recognised.

- Western Siberia & Northern Europe/Northwest Europe: 1,000,000 (WPE2).

Trends: Stable (WPE2).

- Black Sea & Caspian: 1,500 (WPE2).

Trends: Unknown.

Changes in status: Population levels in the main breeding areas in Russia, Norway and Sweden appear to be relatively stable (Krivenko, 1993; Hagemeyer & Blair, 1997), and decreases have been reported only in the relatively small Finnish and tiny Estonian breeding populations (Hagemeyer & Blair, 1997).

Comments: The former estimate of 250,000 for the Northwest European wintering population (Pirot *et al.*, 1989) has recently been revised upwards to 1,000,000 with the discovery of important wintering areas in the Baltic Sea (Pihl & Laursen, 1996). An estimated 950,000 *M. fusca* were present in the Baltic Sea in January 1993 (Pihl *et al.*, 1995).

The size of the Black Sea population remains poorly known. The recent discovery of a flock of 750 moulting birds on the Black Sea in eastern Turkey, near the Georgian border (G. Magnin, *in litt.* in Scott & Rose, 1996), suggests that this population is in the region of 1,500 birds (S. Pihl *in litt.* in Scott & Rose, 1996).

Common Goldeneye *Bucephala clangula*

Two subspecies have been described: the nominate form from Eurasia and *B. c. americana* from North America. The nominate form has a wide breeding distribution at northern latitudes in Western Eurasia from Scotland (few) and western Norway eastwards. No discrete populations are identifiable. Scott & Rose (1996) recognise four populations in Western Eurasia, based on the main wintering regions.

- Northwest & Central Europe (wintering): 300,000 (WPE2).

Trends: Increasing (WPE2).

- Northeast Europe/Adriatic: 75,000 (WPE2).

Trends: Unknown.

- Western Siberia & Northeast Europe/Black Sea: 20,000 (WPE2).

Trends: Unknown.

- Western Siberia/Caspian: 25,000 (WPE2).

Trends: Unknown.

Changes in status: The number of *B. clangula* wintering in Northwest Europe has increased significantly since the mid-1980s, and the rate of increase seems to be rising steadily (Rose, 1995). However, the number of birds wintering in Central Europe has remained more or less stable for the last 20 years (Rose, 1995). Recent increases in breeding populations have been reported in Finland, Sweden, Denmark, Estonia, Poland and Britain, while a decrease has been reported only in the small population in Lithuania. Trends in the other three populations are unknown.

Comments: Previous authors (including the first edition of *Waterfowl Population Estimates*) have divided the birds wintering in south-central Europe (middle Danube) and the Adriatic between the Northwest and Central European population and a Black Sea/Mediterranean population, and this was the treatment adopted in the Action Plan. Recent census data indicate that far more *B. clangula* winter in the Middle Danube and Adriatic than was formerly supposed, and there seems to be good justification for treating the birds of the Danube catchment and Adriatic as a separate wintering group (Rose, 1996; Scott & Rose, 1996). The size of this population is estimated at about 75,000 birds. The populations wintering in the Black Sea and Caspian Sea remain poorly known, and the estimates for both these populations are highly tentative.

The European breeding population is estimated at about 255,000-330,000 pairs, including between 150,000 and 200,000 pairs in Finland (Hagemeijer & Blair, 1997). This suggests a total European population of 765,000-990,000 birds, which is considerably higher than the estimate of 375,000 derived from mid-winter counts. The most likely explanation for the discrepancy is that the winter counts are far too low.

Smew *Mergellus albellus*

Monotypic. The species has a wide breeding distribution at high latitudes in Western Eurasia from northern Sweden eastwards, and winters south to the southern North Sea, Central Europe, the Black Sea, the South Caspian and Turkmenistan. In hard winters, large numbers of birds may extend much further south, *e.g.* to North Africa (Algeria, Tunisia and Egypt) and central Iraq. Three populations are recognised on the basis of the main wintering areas.

- Northwest & Central Europe (wintering): 25,000-30,000 (WPE2).

Trends: Unknown (WPE2). Apparently now stable following long-term decline (Hagemeijer & Blair, 1997; Snow & Blair, 1998).

- Northeast Europe/Black Sea & East Mediterranean: 65,000 (WPE2). 35,000 (the earlier estimate of 65,000 includes the 30,000 birds wintering in Southwest Asia).

Trends: Stable (WPE2). Unknown (Rose, 1995).

- Western Siberia/Southwest Asia: 30,000 (WPE2).

Trends: Unknown (WPE2). Possibly decreasing (Krivenko, 1993; M. Patrikeev *in litt.* in Scott & Rose, 1996).

Changes in status: Because of the reliance of the species on a few very important wintering sites in Northwest Europe and the frequent movement of birds between these sites, calculation of trends has not been possible on the basis of winter counts (Rose, 1995). There was a marked fall in breeding numbers in Europe during the second half of the 19th century and first two-thirds of the 20th century, but by the mid-1970s, some populations had stabilised or were expanding slightly. The small Norwegian and Swedish populations are now thought to be stable, and the much larger Finnish population is increasing slightly (Hagemeijer & Blair, 1997; Snow & Perrins, 1998). Numbers fluctuate widely in European Russia, without any clear trend.

Rose (1995) concluded that because of poor coverage of the Black Sea by the International Waterfowl Census, estimation of trends in the Black Sea and East Mediterranean wintering population was not possible.

Trends in the Southwest Asian wintering population are unknown. However, Krivenko (1993) has reported a slight decline in post-breeding numbers in Western and Central Siberia between 1972 and 1989, and Patrikeev (*in litt.* in Scott & Rose, 1996) has reported a marked decline in the number of birds wintering in Azerbaijan during the 20th century.

Comments: The former estimate of 15,000 for the Northwest and Central European wintering population (as given in the first edition of *Waterfowl Population Estimates*) has been revised upwards to 25,000-30,000 with the discovery of much larger numbers of wintering birds in the Baltic than was formerly supposed (Pihl & Laursen, 1996; Rose, 1996). Almost 25,000 were counted in Northwest and Central Europe in January 1992, and Pihl *et al.* (1995) estimated that there were 20,000 in the Baltic area alone in January 1993. Svazas *et al.* (1994) reported a huge flock of about 30,000 at Szczecin Lagoon in Poland in December 1991, and suggested that the Northwest European population was likely to be in the range 35,000-40,000.

Not only is the population wintering in the Black Sea and East Mediterranean poorly known, but it has also been the subject of some confusion. The current estimate of 65,000 dates back to Atkinson-Willes (1976), who gave an estimate of 65,000 for the whole of the Black Sea region, the Caspian region and Turkestan combined. Monval & Pirot (1989) adopted this estimate, but listed it under the heading 'Black Sea-Eastern Mediterranean'. This heading has confused subsequent authors, who have taken the estimate of 65,000 to cover only the Black Sea/East Mediterranean region, and have provided a separate estimate of 30,000 for the birds wintering in the Caspian region and Turkestan (Perennou *et al.*, 1994; *Waterfowl Population Estimates 1 & 2*; Scott & Rose, 1996). Assuming that the estimate of 65,000 remains valid for the whole of Southeast Europe and Southwest Asia, the estimate for the Black Sea/East Mediterranean becomes 35,000. Isakov (1970) reported up to 57,000 birds wintering in the Black Sea in the 1960s, but in recent decades the International Waterfowl Census has only been able to account for about 5,000 birds in this

region (Rose, 1995). Helicopter surveys of the Black Sea coast of Ukraine in 1995 found only 1,350 *M. albellus*, and even allowing for potential numbers in adjacent Russia and Georgia, it had become clear that the current estimate of 65,000 was much too high (Pihl, 1996).

The European breeding population is estimated at 8,200-17,200 pairs (Hagemeijer & Blair, 1997), suggesting a total of 24,500-51,500 birds. These birds probably account for the whole of the Northwest European wintering population, and a substantial proportion of the birds wintering in the Black Sea and East Mediterranean region, as suggested by Svazas *et al.* (1994).

Red-breasted Merganser *Mergus serrator*

Two subspecies have been described: the nominate form with a circumpolar distribution, and *schioleari* in West Greenland. The nominate form has a wide breeding distribution at northern latitudes in Western Eurasia from East Greenland and Iceland eastwards, and winters south to Portugal, the Adriatic, the Black Sea and the Persian/Arabian Gulf. *M. s. schioleari* is confined to the west coast of Greenland, and apparently winters mainly along the southwest coast. There are three main wintering groups of the nominate form in Western Eurasia: (1) a population wintering from Iceland and the Baltic south on the Atlantic coast to Portugal and, in smaller numbers, in Central Europe; (2) a population wintering in the Black Sea and Northeast Mediterranean; and (3) a population wintering in the Caspian region and Central Asian Republics south in small numbers to the Persian/Arabian Gulf.

- Northwest & Central Europe (wintering): 145,000 (based on WPE2).

Trends: Stable (WPE2).

- Northeast Europe/Black Sea & Mediterranean: 50,000 (WPE2).

Trends: Unknown.

- Western Siberia/Southwest & Central Asia: <10,000 (WPE2).

Trends: Unknown.

Changes in status: The Northwest and Central European population is believed to be relatively stable; the large breeding populations in Norway, Sweden, Finland and Iceland are thought to be stable, and an increase has been reported in the breeding population in Denmark. There was a marked increase in the British breeding population until about 1980, associated with an expansion in the breeding range, but there appears to have been little change since then (Kirby *et al.*, 1993). Decreases have been reported only in some of the smaller marginal breeding populations (Hagemeijer & Blair, 1997).

Comments: Scott and Rose (1996) recognised that there were some grounds for treating the birds breeding in East Greenland, Iceland, Britain and Ireland as a separate population, and this treatment was adopted in the second edition of *Waterfowl Population Estimates*. However, there is some evidence, from ringing recoveries and systematic counts, of interchange between birds from this group and those from the rest of Northwest Europe (Robinson, in press). It has therefore been recommended that for the time being at least, all the birds wintering in Northwest and Central Europe be treated as a single population, although there is clearly a need for further study (Robinson, in press).

The former estimate of 100,000 for the Northwest and Central European wintering population (as given in the first edition of *Waterfowl Population Estimates*) has been revised upwards to 145,000 with the discovery of much larger numbers of wintering birds in the Baltic than was formerly supposed (Pihl & Laursen, 1996). The new figure includes an estimate of 15,000-25,000 in East Greenland, Iceland, Britain and Ireland, based on recent estimates of breeding populations (Scott & Rose, 1996). The European breeding population is estimated at 65,000-95,000 pairs (Hagemeijer & Blair, 1997). This suggests a total European population of 195,000-285,000 birds, which is somewhat higher than the estimate of 195,000 derived from mid-winter counts, especially as the latter includes some thousands of birds from East Greenland. The most likely explanation for the discrepancy is that the winter counts are too low.

The populations wintering in the Black Sea region and Southwest Asia are poorly known, and the estimates for both these populations are highly tentative.

Goosander *Mergus merganser*

Polytypic. Only the nominate subspecies occurs in Western Eurasia. This breeds in Iceland, in Britain, in Central Europe, and from Scandinavia and the Baltic region eastwards into Siberia. There is also a tiny isolated breeding population in the southern Balkans (Slovenia, Albania and Greece). Birds breeding in Northern Europe and Western Siberia are migratory, wintering south to western France, Central Europe, Turkey and the South Caspian region. The Icelandic breeding population is resident in Iceland, and the birds breeding in Central Europe (France, Switzerland, southern Germany and Austria) and the Balkans appear to be mainly sedentary. British breeding birds are also almost entirely resident within Britain, although there is some evidence of a moult migration of males to Norway. The second edition of *Waterfowl Population Estimates* recognises seven populations in Western Eurasia, but four of these are

mainly sedentary (the Icelandic, British, Central European and Balkan breeding populations). Thus only three migratory populations are relevant.

- Northwest & Central Europe (wintering): 200,000 (WPE2).

Trends: Stable (WPE2).

- Northeast Europe/Black Sea: 10,000 (WPE2).

Trends: Unknown.

- Western Siberia/Caspian: 20,000 (WPE2).

Trends: Unknown.

Changes in status: The Northwest and Central European population is believed to be relatively stable. An increase has been reported in the breeding population in Finland, but the Norwegian and Swedish breeding populations are thought to be stable (Hagemeijer & Blair, 1997), and a recent trend analysis based on mid-winter counts suggests long-term stability in the numbers wintering in Northwest Europe (Rose, 1995).

Comments: Only three populations of *M. merganser* were recognised in Western Eurasia in the Action Plan and first edition of *Waterfowl Population Estimates* (Northwest Europe, Black Sea/Mediterranean and Southwest Asia). Scott & Rose (1996) argued strongly for separate treatment of the isolated and largely sedentary populations in Iceland (900 birds) and the Balkans (50-100 birds), and noted that there was some justification for treating the British breeding population (5,000-8,000 birds) and Central European breeding population (about 3,000 birds) as separate populations. However, as some birds from Northern Europe are known to reach Britain and Central Europe during severe winters, Scott & Rose (1996) provisionally retained the British and Central European breeders as 'sub-populations' within the main Northwest European population. In the second edition of *Waterfowl Population Estimates*, these two 'sub-populations' are treated as separate populations.

The former estimate of 150,000 for the Northwest and Central European wintering population (as given in the first edition of *Waterfowl Population Estimates*) has been revised upwards to 200,000, with the discovery of much larger numbers of wintering birds in the Baltic region than was formerly supposed (Pihl & Laursen, 1996). Pihl *et al.* (1995) estimated that there were between 140,000 and 200,000 birds wintering in the Baltic in the early 1990s.

The total European breeding population is estimated at 56,000-81,000 pairs (Hagemeijer & Blair, 1997), giving about 170,000-240,000 birds. This agrees well with an estimate of about 220,000 birds based on the wintering populations in Europe (including the four small sedentary populations).

The Black Sea and Caspian populations remain poorly known. A reassessment of the meagre information available suggests that the Caspian population is likely to number around 20,000 individuals (Scott & Rose, 1996), rather than under 10,000 as given by Perennou *et al.* (1994) and the first edition of *Waterfowl Population Estimates*.

GRUIDAE

Siberian Crane *Grus leucogeranus*

Monotypic. The species has a fragmented breeding distribution in the lowland tundra and northern taiga of Western and Eastern Siberia, and winters south to the South Caspian, northern India and Yangtze Valley in China. Formerly much more widespread, the species is now reduced to three isolated populations, two of which are critically endangered. Much the largest population, currently estimated at 2,900-3,000 individuals, breeds in the Yakutia region of northeastern Siberia and winters at wetlands along the middle Yangtze River in south-central China. A second population, reduced to as few as four individuals by 1996, breeds in the lower basin of the Kunavat River (a tributary of the Ob) in Western Siberia, and migrates through Kazakhstan, Uzbekistan, Turkmenistan, Afghanistan and Pakistan to winter in Rajasthan in northern India (mainly in Keoladeo National Park near Bharatpur). The western population, which now contains only about nine individuals, occurs on migration in the Astrakhan Nature Reserve at the mouth of the Volga Delta and along the west coast of the Caspian Sea, and winters at wetlands near the southeast corner of the Caspian Sea in Iran. The breeding grounds of this tiny population remain obscure. In 1996, a paired male was tracked by satellite from the wintering area to a site on the Kunda River east of the Urals and about 630 km south of the breeding grounds of the central population. However, other recent information indicates that the western birds may also breed at scattered locations west of the Urals, between the Kanin Peninsula and Pechora River (Meine & Archibald, 1996). Only the western population is relevant.

- Iran (wintering): 9 (WPE2).

Trends: Stable since 1978, with only minor annual fluctuations.

Changes in status: Since its discovery in 1978, the tiny wintering population in northern Iran has fluctuated between

8 and 14 individuals.

Comments: *Grus leucogeranus* is a globally threatened species in the category 'Endangered' (IUCN, 1996). It is included in Appendix I of the Bonn Convention, and is the subject of a Memorandum of Understanding concluded under the Bonn Convention in 1993 (Memorandum of Understanding Concerning Conservation Measures for the Siberian Crane). The western and central populations, because of their extremely limited numbers, are critically endangered. The species is included in a Status Survey and Conservation Action Plan for the cranes compiled by the IUCN/SSC Crane Specialist Group for IUCN (Meine & Archibald, 1996).

Up to 300 birds occurred on migration in the Volga Delta in the 19th century, but the highest count in recent decades has been 21 in 1971.

Demoiselle Crane *Grus virgo*

Monotypic. The species breeds widely across the steppe zone of Eurasia from the Black Sea to northeastern China, and winters mainly in Northeast Africa and the Indian Subcontinent. There is also a disjunct resident population on the Atlas Plateau in Northwest Africa. Meine & Archibald (1996) recognise six main populations. Two of these, the Kazakhstan/Central Asian population and East Asian population winter in the Indian Subcontinent and are extralimital. The tiny population in Northwest Africa is now confined to Morocco, and is believed to be sedentary. Three migratory populations are distinguished in Southeast Europe and Southwest Asia: (1) a small Black Sea population, breeding mainly in the Kech Peninsula of Crimea and other parts of Ukraine and migrating through Turkey, Cyprus and Egypt to wintering grounds in Ethiopia and Sudan; (2) a tiny Turkish population, breeding in eastern Anatolia and probably wintering in the Sudan and other areas of Eastern Africa; and (3) a large 'Kalmykia' population breeding between the Black Sea and the Caspian Sea, and migrating through Georgia, eastern Turkey and the Middle East to wintering grounds in Sudan, Ethiopia and other areas of Eastern Africa. A few birds, presumably from this population, winter in the Arabian Peninsula.

- Black Sea (breeding): 500 (WPE2).
Trends: Decreasing (WPE2).
- Turkey (breeding): <100 (WPE2).
Trends: Unknown (WPE2). Possibly now extinct.
- Kalmykia (breeding): 30,000-35,000 (WPE2).
Trends: Stable (WPE2).

Changes in status: The population estimates follow Meine & Archibald (1996). The Black Sea population, concentrated in southeastern Ukraine, comprises only about 150-170 pairs (Hagemeijer & Blair, 1997). This population has declined steadily since the 1950s, as its natural steppe habitat has been converted to agricultural land. It no longer occurs as a breeding bird in Romania, Moldova or Bulgaria, nor as a wintering bird in Egypt (Meine & Archibald, 1996). Since the 1980s, however, the bird has begun to adapt to breeding in agricultural areas, and there are indications that this tiny population has now stabilised (V. Serebryakov, in Hagemeijer & Blair, 1997).

The status of the Turkish population is poorly known. According to Meine & Archibald (1996), it is believed to contain less than 100 individuals. However, according to Snow & Perrins (1998), there have been only two confirmed observations in the last fifteen years, following a drastic decline during the 20th century, and the population may now be extinct.

The large Kalmykia population is considered to be stable (Meine & Archibald, 1996), or increasing slightly (Hagemeijer & Blair, 1997).

Comments: *Grus virgo* is included in Appendix II of the Bonn Convention under the name *Anthropoides virgo*. The species is included in a Status Survey and Conservation Action Plan for the cranes compiled by the IUCN/SSC Crane Specialist Group for IUCN (Meine & Archibald, 1996). Under the IUCN Red List Categories, the Black Sea population is classified as Endangered and the Turkish population as Critically Endangered.

The three populations in the Western Palearctic were treated as a single large population in the first edition of *Waterfowl Population Estimates*. The Kalmykia population may be somewhat larger than Meine & Archibald (1996) suggest, as the breeding population in European Russia has recently been estimated at over 25,000 pairs (V. Serebryakov, in Hagemeijer & Blair, 1997).

The isolated population in Northwest Africa formerly occurred from Morocco to Tunisia, but the species last bred in Tunisia and Algeria in the early part of the 20th century. According to Meine & Archibald (1996), this population may now contain only 10-12 individuals, and may no longer be breeding. However, according to Snow & Perrins (1998),

there have been no confirmed sightings of the species in Morocco since 1985, and this population may now be extinct.

Blue Crane *Grus paradisea*

Monotypic. The species is confined to Southern Africa, with the main concentrations in South Africa and smaller breeding populations in Namibia and Swaziland. It is an occasional visitor to Botswana, Lesotho and Zimbabwe, and probably also Mozambique. The species undertakes some seasonal movements within Southern Africa, but these movements are poorly understood. Meine & Archibald (1996) recognise two populations: a small population of less than 100 individuals centred on Etosha Pan in Namibia; and the main population in South Africa, Lesotho, Swaziland and neighbouring Botswana. Only the latter population is relevant.

- Extreme Southern Africa: 21,000 (WPE2).

Trends: Decreasing (WPE2).

Changes in status: This population was considered to be healthy until as recently as 1980, but significant and rapid local declines have been reported over the last 20 years. Retractions in range have occurred in the Transkei region, Swaziland and Lesotho, and in some areas, populations may have declined by as much as 90%. Losses have been most pronounced in the grassland strongholds of the species' range, and have been attributed to accidental poisoning, afforestation, open-cast mining and urbanisation (Collar *et al.*, 1994; Harrison *et al.*, 1997). In the semi-desert habitats of the Karoo and agricultural land of southwest Cape Province, numbers appear to be stable or increasing (Meine & Archibald, 1996).

Comments: *G. paradisea* is a globally threatened species in the category 'Vulnerable' (IUCN, 1996). The species is included in a Status Survey and Conservation Action Plan for the cranes compiled by the IUCN/SSC Crane Specialist Group for IUCN (Meine & Archibald, 1996).

The Namibian and Southern African populations were treated as a single large population in the first edition of *Waterfowl Population Estimates*. A recent study of the distribution and abundance of *G. paradisea* in Southern Africa indicates a total population of about 21,000 individuals (Meine & Archibald, 1996). The great majority of these are in South Africa, and there are probably not more than about 12 birds in Swaziland, 10 in Lesotho and 10 in neighbouring Botswana (Harrison *et al.*, 1997). This estimate is considerably higher than the estimate of 12,000 given in the first edition of *Waterfowl Population Estimates*.

Wattled Crane *Grus carunculatus*

Monotypic. The species has a wide but rather patchy distribution in Eastern and Southern Africa from Ethiopia to South Africa. Meine & Archibald (1996) recognise three populations: (1) an isolated population of several hundred birds in the highlands of Ethiopia; (2) a much larger population in South-central Africa (Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Zaire, Zambia and Zimbabwe); and (3) a small population of about 250 birds in South Africa. The Ethiopian birds appear to undertake short seasonal migrations within Ethiopia, while the South African birds appear to be mainly sedentary. The population in South-central Africa is to some extent migratory, with birds undertaking extensive seasonal movements apparently linked to the availability of water. Only one population is relevant.

- Northernmost Southern Africa (South-central Africa): 13,000-15,000 (WPE2).

Trends: Decreasing (WPE2).

Changes in status: The species has been declining over much of its range for the last several decades, and this has been attributed to loss of habitat, disturbance and nest loss (Collar & Stuart, 1985). The greatest changes have occurred in the South African population, but in Zambia, which supports over half of the South-central African population, numbers are believed to have fallen from an estimated 11,000 birds in 1985 to 7,000-8,000 in 1994 (Meine & Archibald, 1996). A decline has also been reported in Zimbabwe during the droughts of the 1980s and 1990s (Harrison *et al.*, 1987). However, there is little evidence for any recent significant changes in Namibia and Botswana (Harrison *et al.*, 1997).

Comments: *G. carunculatus* is a globally threatened species in the category 'Vulnerable' (IUCN, 1996). The species is included in a Status Survey and Conservation Action Plan for the cranes compiled by the IUCN/SSC Crane Specialist Group for IUCN (Meine & Archibald, 1996).

The South African and South-central African populations were treated as a single large population in the first edition of *Waterfowl Population Estimates*. The total population of the species was estimated at only 6,000-7,500 individuals in the early in 1980s (Collar & Stuart, 1985), but more thorough field surveys in the main breeding areas since then, and the discovery of over 2,500 birds in the Zambezi Delta in Mozambique in the early 1990s, suggest that the

population is in the region of 13,000-15,000 birds (Meine & Archibald, 1996).

Common Crane *Grus grus*

Two subspecies have been described, the nominate form from Europe and *lilfordi* from Asia, but the validity of *lilfordi* is now under some doubt (Meine & Archibald, 1996). The breeding range extends from Northern and Central Europe across Eurasia to Eastern Siberia, northern Mongolia and northeast China, with isolated breeding populations in Asia Minor and Tibet. The winter range extends south to the Mediterranean Basin, Northeast Africa, the Middle East, northern India and southern China. Meine & Archibald (1996) recognise seven main breeding populations, five of which occur in Western Eurasia: (1) a Northwest European population breeding mainly in Scandinavia, Germany and Poland and wintering in Southwest France, Iberia and Morocco; (2) a Northeast and Central European population breeding in Finland, the Baltic States, eastern Poland, western Russia and Belarus, staging in Slovakia and Hungary, and wintering mainly in North Africa (Tunisia and Algeria) and Ethiopia, with some going to Iberia; (3) an East European population breeding in Russia west of the Urals, Belarus and Ukraine, and wintering in Turkey, the Middle East east to southwestern Iran, and Northeast Africa (listed as 'Black Sea/East Mediterranean' wintering population in *Waterfowl Population Estimates*); (4) a small isolated population breeding in Turkey and neighbouring Georgia, and believed to migrate with the East European population; and (5) a West Siberian population, breeding in Russia east of the Urals and in northern Kazakhstan, and wintering mainly in western and central India, with smaller numbers in eastern Iran and Afghanistan (listed as 'Southwestern Asia' wintering population in *Waterfowl Population Estimates*).

- Northwest Europe (breeding): 60,000-70,000 (WPE2).

Trends: Increasing (WPE2).

- Northeast & Central Europe (breeding): >60,000 (WPE2).

Trends: Increasing (WPE2). Stable or increasing (Meine & Archibald, 1996).

- Black Sea & East Mediterranean (wintering): 35,000 (WPE2).

Trends: Decreasing (WPE2).

- Black Sea & Turkey (breeding): 200-500 (WPE2).

Trends: Decreasing (WPE2).

- Southwest Asia (wintering): 55,000 (WPE2).

Trends: Decreasing (WPE2).

Changes in status: The revised population estimates follow Meine & Archibald (1996). The Northwest European population has been increasing since the 1960s. Counts at staging areas and in the wintering grounds show an increase from 40,000 in the 1960s to 70,000 in the late 1980s, while recent increases in breeding populations have been reported in Germany, Poland, Norway and Sweden (Tucker & Heath, 1994; Hagemeyer & Blair, 1997). H. Prange (in Hagemeyer & Blair, 1997) gives an estimate of 75,000 for the number of birds using the West European flyway.

The Central European population has also been increasing in recent decades, although there are now signs that this population may have stabilised (Meine & Archibald, 1996). Numbers of birds migrating through Estonia and Hungary have been increasing in recent years, but this may be due to western translocation of the Russian migration routes (Tucker & Heath, 1994). An increase has been reported in the breeding populations in Estonia and Latvia, but declines have been reported in the large population in Finland, and also in Belarus and Ukraine (Tucker & Heath, 1994; Hagemeyer & Blair, 1997). H. Prange (in Hagemeyer & Blair, 1997) gives an estimate of 70,000 for the number of birds using the Central European flyway.

The other three populations are all thought to be decreasing. Recent decreases have been reported in the breeding populations in European Russia and Turkey (Tucker & Heath, 1994), and according to many reports, the West Siberian population is declining in many regions (Meine & Archibald, 1996).

Comments: In the first edition of *Waterfowl Population Estimates*, the cranes wintering in Iran and Iraq (estimated at about 20,000 birds) were treated as a separate population (following Perennou *et al.*, 1994). It was thought that these birds originated from breeding areas in Western Siberia. Recent evidence suggests that the birds wintering in Iraq and southwestern Iran originate from breeding areas in Russia south and west of the Urals, and are therefore best treated as part of the East European population. Birds breeding in Western Siberia and northern Kazakhstan apparently migrate south to Afghanistan then southeast across Pakistan to wintering areas in western and central India. A smaller portion of this population migrates though Uzbekistan and Turkmenistan to wintering grounds in eastern Iran and southwestern Afghanistan (Meine & Archibald, 1996).

G. grus is included in a Status Survey and Conservation Action Plan for the cranes compiled by the IUCN/SSC Crane Specialist Group for IUCN (Meine & Archibald, 1996). The European breeding population is listed as 'Vulnerable' by Tucker & Heath (1994) and Hagemeyer & Blair (1997) because of the declines which have occurred in Eastern Europe.

RALLIDAE

Streaky-breasted Flufftail *Sarothrura boehmi*

Monotypic. The species occurs from Nigeria and Cameroon east to south-central Kenya and south to Zimbabwe and South Africa. Southern breeders are migratory, retreating towards the equator during the dry season, when the breeding habitat is liable to be burned. All records from the southern part of the range (Zambia, Malawi, Zimbabwe and South Africa) are during the rainy season, between November and April (Ripley, 1977; Urban *et al.* 1986; Harrison *et al.*, 1997; Taylor & van Perlo, 1998). In wet years, the breeding range may extend south to northern South Africa. Only one population is recognised, the entire population of the species.

- Central Africa: Unknown.

Trends: Unknown.

Changes in status: No information is available on population trends. However, in many parts of its range, the species is under threat from the widespread destruction of grassy plains and marshes through over-grazing by domestic livestock or conversion to agricultural land. Harrison *et al.* (1997) suggest that in Southern Africa numbers may have been affected by habitat loss.

Comments: A poorly known species; usually uncommon, but may be locally numerous in years of good rainfall, *e.g.* at least 100 were heard calling on a large grass plain in Zambia in January 1978 (Urban *et al.* 1986). In South Africa, where it apparently only occurs in seasons of unusually high rainfall, its maximum population (at known and predicted sites) may be as many as 130 birds (Taylor, 1997).

Little Crane *Porzana parva*

Now generally regarded as being monotypic, although birds in Central and Southern Asia have been given subspecific status (*illustris*). The species breeds widely at temperate latitudes in Western Eurasia and probably winters mainly in Africa south of the Sahara from Mauritania and Senegal east to Ethiopia and south to the equator in Kenya and Uganda, with some birds extending south at least to Zambia. However, small numbers of birds are known to winter in the Mediterranean Basin, and there are scattered winter records from further north in Europe, and also in Iraq and Arabia. Only one population is recognised in the Agreement Area, the entire population of Europe and Western Asia migrating to Africa. Birds breeding in Central Asia (*'illustris'*) are believed to winter mainly in Pakistan and northwestern India, and are therefore extralimital.

- Western Eurasia/Africa (*parva*): C or D (WPE2).

Trends: Decreasing (WPE2).

Changes in status: Tucker & Heath (1994) and Hagemeyer & Blair (1997) give the status of the European breeding population as provisionally 'Secure', although there is some evidence of a decline, especially in Central Europe. Tucker & Heath (1994) report declines of over 20% in countries holding 28% of the European breeding population, and declines of over 50% in countries holding 14% during the period 1970-1990. Declines have been reported in the large populations in Romania and Ukraine, and in the smaller populations in Estonia, Latvia, Czech Republic, Slovakia, Croatia, Slovenia and Moldova. Elsewhere in Europe, breeding populations appear to be stable or fluctuating, although a slight increase has been reported in Russia (Snow & Perrins, 1998). In Hungary, the species increased and spread with the introduction of rice cultivation and expansion of fish ponds (Cramp & Simmons, 1980), but the population has now apparently stabilised (Snow & Perrins, 1998).

Comments: Only the nominate form *parva* is included in Appendix II of the Bonn Convention. The total breeding population in Europe excluding Russia is provisionally estimated at 16,000-20,000 pairs, and that in Russia at between 10,000 and 100,000 pairs (Hagemeyer & Blair, 1997).

Baillon's Crane *Porzana pusilla*

Polytypic. Three subspecies have been described in the Agreement Area: *obscura* in Africa south of the Sahara and also in Madagascar; *intermedia* in Southern Europe and North Africa; and the nominate form in Eastern Europe and Western Asia. The validity of *obscura* has recently been questioned, as birds assigned to this form are doubtfully distinct from *intermedia* of Southern Europe and North Africa (Taylor & van Perlo, 1998). The populations breeding in Africa south of the Sahara (*'obscura'*) are often considered to be sedentary, but in some areas occurrences are seasonal, and it is apparent that regular movements occur, presumably in response to changing habitat conditions (Taylor & van Perlo, 1998). North of the Sahara, *intermedia* breeds patchily across Southern and Central Europe from Iberia to Romania, in Northwest Africa (Morocco) and, perhaps irregularly, in Turkey, Jordan, Israel and Egypt. These

birds apparently winter widely in Sub-Saharan Africa, although their distribution is poorly known because of overlap with resident '*obscura*'. Small numbers also apparently winter in Egypt, Israel and Iraq. Migrants occur in spring and autumn throughout the Mediterranean Basin and in Asia Minor, and there is considerable evidence of trans-Saharan migration (Cramp & Simmons, 1980). The nominate race is largely extralimital, breeding from eastern European Russia and Ukraine east across Asia to China and Japan and wintering widely in Southern Asia. Only one migratory population is relevant, the population of *intermedia* breeding in Southern Europe and North Africa.

- Europe (breeding) (*intermedia*): B (WPE2).

Trends: Decreasing (WPE2).

Changes in status: The status of this population is uncertain because of the paucity of good quantitative information. However, it is generally believed that the species was more numerous in Europe in the 19th century. Tucker & Heath (1994) and Hagemeyer & Blair (1997) report recent declines in the breeding populations in France, Croatia and Moldova and Romania. Elsewhere in Europe, population trends, although mostly uncertain, are believed to have been stable or fluctuating over the past two decades.

Comments: Only the form *intermedia* (excluding *obscura*) is included in Appendix II of the Bonn Convention. The total breeding population in Europe excluding Russia and Ukraine is provisionally estimated at 3,570-5,800 pairs (Hagemeyer & Blair, 1997). Most of these can presumably be assigned to *intermedia*. As very few *intermedia* (excluding *obscura*) breed outside Europe, the total population is likely to be in the range 10,000-25,000 (B).

Spotted Crake *Porzana porzana*

Monotypic. The species breeds widely across Western Eurasia east to northwestern China (Xinjiang). Birds breeding in Europe and Western Siberia winter mainly in Africa south of the Sahara, apparently sparingly in West and Eastern Africa and more commonly in Zambia, Malawi, Zimbabwe and probably also Mozambique, with a small number of birds continuing on south to South Africa. However, the species has recently been recorded as exceptionally common in winter in northwestern Senegal (Taylor & Perlo, 1998). A few birds also winter in Southwest Europe and North Africa. Migrants cross the Sahara on a broad front, and no discrete populations are identifiable. Central Asian populations winter in Southern Asia and are thus extralimital. Only one population is relevant, the entire population of Europe and Western Asia migrating to Africa.

- Europe/Africa: D (WPE2).

Trends: Decreasing (WPE2).

Changes in status: Tucker & Heath (1994) and Hagemeyer & Blair (1997) give the status of the European breeding population as 'Secure'. There were some signs of an increase in Northern Europe in the 19th century, but there have been marked declines in many parts of Europe during the 20th century, attributable to drainage and reclamation of freshwater wetlands, and this decrease appears to be continuing, especially in parts of Central and Eastern Europe. Tucker & Heath (1994) report declines of over 20% in countries holding 27% of the European breeding population, and declines of over 50% in countries holding 8% during the period 1970-1990. Recent declines have been reported in Austria, Albania, Bulgaria, Denmark, Czech Republic, France, Latvia, Lithuania, Moldova, Poland, Romania and Ukraine (Hagemeyer & Blair, 1997; Snow & Perrins, 1998). Elsewhere in Europe, population trends since 1970 are thought to have been mainly stable or fluctuating, although a slight increase has been reported in Finland (Koskimies, 1993).

Comments: Only the population breeding in the West Palearctic is included in Appendix II of the Bonn Convention. This population is listed as 'Europe/Africa' in *Waterfowl Population Estimates*, but 'Western Eurasia/Africa' would be more appropriate, as the population includes many birds breeding in Western Siberia and Southwest Asia. The total breeding population in Europe excluding Russia is estimated at 49,000-67,000 pairs, and that in Russia at between 10,000 and 100,000 pairs (Hagemeyer & Blair, 1997).

Striped Crake *Aenigmatolimnas marginalis*

Monotypic. The species is widely but patchily distributed throughout Africa south of the Sahara from Cote d'Ivoire, Ghana, Togo and Nigeria through Cameroon, Gabon and Congo to Zaire and Kenya, and south to Zambia, Zimbabwe, Botswana, Namibia and South Africa. It is an intra-African rains migrant, apparently with two largely discrete populations: one mainly north of the equator in West-central Africa (Nigeria, Cameroon Gabon and coastal Congo), and the other mainly south of the equator from eastern Zaire, Uganda and Kenya south to Namibia, Botswana, Zambia and Mozambique. The breeding range may extend to South Africa in years of good rainfall (Taylor & Perlo, 1998). Both populations migrate towards equatorial regions during the dry season. Vagrants have reached Aldabra, Algeria, Libya and extreme Southern Africa (Urban *et al.* 1986). Only one population is recognised (the entire population of the species), pending further study.

- Sub-Saharan Africa: Unknown.

Trends: Unknown (WPE2). Probably decreasing in some areas.

Changes in status: The species is widely distributed, but highly secretive and poorly known. It appears to be uncommon to rare throughout its range, and there are few breeding records (Ripley, 1977; Urban *et al.*, 1986; Harrison *et al.*, 1997). However, its range may be more extensive and continuous than the records suggest (Taylor & Perlo, 1998). It breeds in seasonally inundated grasslands such as those at temporary pans, riverine floodplains, short-grassed dambos and old rice fields, a habitat type which is widely under threat from over-grazing, the damming of rivers and wetland drainage. Its numbers are likely to have been affected in many parts of its range because of this habitat loss (Harrison *et al.*, 1997; Taylor & Perlo, 1998).

Common Coot *Fulica atra*

Four subspecies have been described: the nominate form in Eurasia, and *australis*, *lugubris* and *novaeguineae* in Australasia. The nominate form breeds widely across Eurasia from Western Europe and Northwest Africa to the Russian Far East, Korea and Japan. Populations breeding in Western Eurasia winter south to North Africa, Iraq and the Gulf States, with a few birds reaching West Africa (Senegal to Chad) and Northeast Africa (Sudan). No discrete populations are identifiable. Three main wintering populations are recognised in the Agreement Area (Northwest Europe, Black Sea & Mediterranean, and Southwest Asia), but only the population wintering in the Black Sea and Mediterranean region is covered by the Agreement.

- Black Sea & Mediterranean (wintering): 2,500,000 (WPE2).

Trends: Decreasing (WPE2). Possibly now stable after a period of decline.

Changes in status: This population, which includes birds wintering in Central Europe, has shown a substantial decline since the late 1960s. The decline has been most marked in Central Europe and the West Mediterranean. There has been some recovery in the West Mediterranean since the early 1980s, but the population wintering in Central Europe continues to decline, the rate of decline suggesting that this population decreased by 20% during the ten-year period from 1984-1993 (Rose, 1995). Insufficient data are available from the East Mediterranean to determine recent trends in this region. Birds wintering in the Black Sea & Mediterranean region are believed to originate mainly from Central and Eastern Europe and Turkey, which together hold a minimum of 500,000-750,000 breeding pairs (incomplete data from Snow & Perrins, 1998). In most parts of Central and Eastern Europe, breeding populations are believed to have been relatively stable in recent years. Recent decreases have been reported in the Czech Republic, Hungary and Romania, but increases have been reported in the populations in Ukraine and Belarus (Hagemeijer & Blair, 1997). It may be, therefore, that the Black Sea & Mediterranean population has now stabilised or even begun to recover after a long period of decline in the 1960s and 1970s.

Comments: Only the population wintering in the Black Sea and Mediterranean region is included in Appendix II of the Bonn Convention. In early 1994, when species and populations were being considered for inclusion in the Agreement, the Northwest European wintering population of *Fulica atra* was considered to have a favourable conservation status, and therefore excluded from the Agreement. The large wintering population in Southwest Asia (and less commonly to Northeast Africa) was also excluded from the Agreement, presumably because of the uncertainty in the status of this population. The status of the Northwest European wintering population remains favourable, but there is some evidence to suggest that the Southwest Asian/Northeast African population is now in decline.

DROMADIDAE

Crab Plover *Dromas ardeola*

Monotypic. The species is known to breed only in the Persian/Arabian Gulf, Gulf of Oman, Gulf of Aden and southern Red Sea, but probably also breeds in western India. In Africa, it is known to breed only on the islets of Zeyla, Saad Din and Aibat off northern Somalia, and in Eritrea (a colony with at least 200 pairs discovered in 1996), but breeding is suspected in the Suakim Archipelago, Sudan (Urban *et al.* 1986; Dodman *et al.*, 1997). Outside the breeding season, it disperses along coasts east in Asia to Pakistan, India and Sri Lanka (less commonly to Bangladesh,

Thailand and Malaysia), and south in Eastern Africa to Mozambique and Madagascar (less commonly to South Africa). Only one population is recognised, the entire population of the species.

- Northwest Indian Ocean, Red Sea & Gulf: 43,000 (WPE2).

Trends: Decreasing (WPE2). Unknown.

Changes in status: The overall status of the population is uncertain. The decreasing trend given in *Waterfowl Population Estimates* was based on reports of a decrease in the numbers of birds wintering in some areas in Southern Asia (Perennou *et al.*, 1994), and may not be applicable to the bulk of the population further west. del Hoyo *et al.* (1996) conclude that there is no evidence of any change in numbers in recent years. The most serious threat to the species is the extensive pollution of shorelines with oil and resulting destruction of the birds' food supplies (mainly crabs, other crustaceans, molluscs and marine worms). It seems likely that the species suffered badly as a result of massive oil slicks in the Persian/Arabian Gulf during the Gulf War in early 1991.

RECURVIROSTRIDAE

Black-winged Stilt *Himantopus himantopus*

Polytypic. Only the nominate subspecies occurs in the Agreement Area. This breeds widely in Southern Europe, Africa and Southwest Asia. Most populations breeding in Europe and Southwest Asia are migratory, wintering south to North Africa and across the Sahara to the northern tropics (Senegal, Chad and Sudan), but the populations breeding in southern Spain, Iraq and southern Iran may be at least partly sedentary. Some populations breeding in Sub-Saharan Africa appear to be migratory (*e.g.*, in Zambia and Madagascar), but the movements are poorly understood. Four main migratory groups are recognised: (1) a single large population in Sub-Saharan Africa; (2) a West Mediterranean population, breeding in Southwest Europe and Northwest Africa and wintering mainly in West Africa, although increasing numbers of birds have remained throughout the winter in Southwest Iberia in recent years; (3) a population breeding in Central Europe, the East Mediterranean, the Black Sea and Turkey, and wintering south to North-central Africa (to Chad); and (4) a population breeding in West and Southwest Asia and wintering in Iran, Iraq, the Arabian Peninsula and Northeast Africa (to Sudan).

- Sub-Saharan Africa (breeding): Unknown.

Trends: Unknown (WPE2). Increasing in Southern Africa (Harrison *et al.*, 1997)

- West Mediterranean (breeding): 40,000 (WPE2).

Trends: Increasing (WPE2). Perhaps relatively stable, with wide asynchronous fluctuations from region to region (Hagemeijer & Blair, 1987).

- Black Sea & East Mediterranean (breeding): 30,000-60,000 (WPE2).

Trends: Unknown (WPE2). Perhaps relatively stable, with wide asynchronous fluctuations from region to region.

- Southwest Asia (wintering): B (WPE2).

Trends: Unknown.

Changes in status: Overall trends of the Sub-Saharan African population are unknown. There has been a marked expansion in the breeding range and increase in numbers in much of Southern Africa during the 20th century, attributed to the creation of artificial water bodies (Harrison *et al.*, 1997). On the central plateau in Zimbabwe, the species has increased over the past two decades from an occasional visitor to a fairly common breeding and passage visitor, with concentrations exceeding 1,000 birds (Harrison *et al.*, 1997).

The first two editions of *Waterfowl Population Estimates* give the status of the West Mediterranean population as increasing. However, Hagemeijer & Blair (1997) and Snow & Perrins (1998) give no indication of any widespread increase in recent years. Rather, numbers fluctuate widely from year to year and region to region depending on water levels, with these asynchronous fluctuations masking any clear trends.

The first two editions of *Waterfowl Population Estimates* give the status of the Black Sea & East Mediterranean population as unknown. Hagemeijer & Blair (1997) report some contraction of breeding range and reduction in numbers in Eastern Europe, particularly in Ukraine and Greece, while Snow & Perrins (1998) report decreases only in the small populations in Albania, Bulgaria and Moldova, and increases in Romania, several parts of European Russia, and southern Ukraine. It is possible that this population, like the West Mediterranean population, has been relatively stable in the long term, but subject to wide fluctuations from year to year and region to region.

Comments: The size of the Sub-Saharan African population is unknown. However, the species is reported to be locally common to very abundant throughout much of its range. Recent African Waterfowl Censuses have included counts of

up to 13,300 in West Africa, 20,600 in Eastern Africa, and 3,900 in Southern Africa (over 16,100 in Tanzania alone in January 1995), while the total population in Southern Africa has recently been estimated at 10,000-20,000 birds (Harrison *et al.*, 1997).

The breeding population in the West Mediterranean (east to Italy and Tunisia) is estimated at a minimum of 13,600-16,800 pairs (data from Snow & Perrins, 1998, with no data from Morocco and Algeria). These figures suggest that the total population may be somewhat higher than the 40,000 given in *Waterfowl Population Estimates*.

The breeding population in the Black Sea/East Mediterranean region is estimated at between 10,000 and 20,000 pairs (data from Hagemeyer & Blair, 1997, and Snow & Perrins, 1998).

Pied Avocet *Recurvirostra avosetta*

Monotypic. The species is widely but patchily distributed in Western Eurasia, Northwest Africa, and Eastern and Southern Africa. Five main populations are identifiable: (1) a population breeding in Southern Africa in Namibia, Botswana and South Africa; (2) a population breeding in Eastern Africa in Ethiopia, Kenya and Tanzania; (3) a population breeding on the Atlantic coast of Northwest Europe, in the West Mediterranean and locally in Northwest Africa, and wintering south along the Atlantic coast to Mauritania, Senegal and Gambia; (4) a population breeding in Southeast Europe, the Black Sea region and Turkey and wintering in the East Mediterranean and eastern Sahel Zone (Chad); and (5) a population breeding in Southwest Asia (Caspian region, Kazakhstan and Iran) and wintering from Iran and Iraq through Arabia to Northeast Africa (to Sudan). The movements of birds in Southern Africa are complex, with birds apparently moving away from the coast to ephemeral wetlands inland when breeding conditions become suitable. The species appears to be a non-breeding dry season visitor to Zimbabwe, and an occasional visitor in small numbers to southern Zambia (Harrison *et al.*, 1997). The population breeding in Eastern Africa is partly sedentary, but some movements are known to occur, and non-breeding birds occasionally wander to Uganda, eastern Zaire, Burundi, Rwanda and northern Zambia.

- Southern Africa (breeding): 10,000-20,000 (Harrison *et al.*, 1997).

Trends: Increasing (Harrison *et al.*, 1997).

- Eastern Africa (breeding): Unknown.

Trends: Unknown.

- Western Europe & West Mediterranean (breeding): 67,000 (WPE2).

Trends: Stable (WPE2). Increasing (Tucker & Heath, 1994; Hagemeyer & Blair, 1997; Snow & Perrins, 1998; Davidson, in press).

- Black Sea & East Mediterranean (breeding): C (WPE2).

Trends: Unknown (WPE2). Probably decreasing (Tucker & Heath, 1994; Hagemeyer & Blair, 1997).

- Western & Southwest Asia/Eastern Africa: B (WPE2).

Trends: Unknown.

Changes in status: The species is believed to have increased considerably in Southern Africa during the 20th century following the construction of permanent water bodies such as sewage works and salt pans which provide drought refuges (Harrison *et al.*, 1997). Trends in the Eastern African population are unknown.

The first two editions of *Waterfowl Population Estimates* give the status of the West European population as stable, but there is considerable evidence to suggest that the increase which began in Western Europe in the early part of the 20th century has continued at least until the early 1990s. Breeding numbers along the North Sea coast increased from 1,800 pairs in 1924-25 to 10,000 pairs in 1969 and 16,400-19,700 in the 1980s (Tucker & Heath, 1994). Hagemeyer & Blair (1997) report recent increases in Belgium, Britain, Denmark, France, Germany, the Netherlands (where the population has doubled during the past 15 years) and Sweden. A recent analysis suggests that the numbers wintering in Western Europe and the West Mediterranean have increased by 15% since the 1980s, although some of this apparent increase may have been caused by problems in coverage (Davidson, in press).

The first two editions of *Waterfowl Population Estimates* give the status of the Black Sea/East Mediterranean population as unknown. However, breeding populations appear to be declining throughout much of Eastern and Southeast Europe. Large decreases have been reported in Russia and Bulgaria, and smaller decreases in Albania, Greece and Ukraine (Tucker & Heath, 1994; Hagemeyer & Blair, 1997; Snow & Perrins, 1998).

Comments: The Southern and Eastern African populations were treated as a single large population in *Waterfowl Population Estimates*. However, no interchange between the populations in Southern and Eastern Africa is suspected (Harrison *et al.*, 1997), and separate treatment therefore seems justified.

The total population in Southern Africa has recently been estimated at 10,000-20,000 birds (Harrison *et al.*, 1997). Over 3,200 were recorded during the African Waterfowl Census in January 1995 (Dodman & Taylor 1995).

The size of the Eastern African population is unknown, but seems likely to be in the range 25,000-100,000 birds. The species is reported to be common to locally abundant throughout its range, and 9,135 were recorded during the African Waterfowl Census in January 1995 (Dodman & Taylor 1995).

The breeding population in Western Europe and the West Mediterranean is estimated at a minimum of 22,500-26,000 pairs (data from Hagemeyer & Blair, 1997, and Snow & Perrins, 1998). These figures suggest that the total population may now be in the region of 67,500-78,000 individuals, and possibly, therefore, somewhat higher than the 67,000 given in *Waterfowl Population Estimates* (from Smit & Piersma, 1989).

The breeding population in the Black Sea/East Mediterranean region is poorly known because of uncertainties in the populations in European Russia (1,000-9,000 pairs) and Turkey (5,000-15,000 pairs). Using these rough estimates, the population would appear to be in the range 11,000-28,000 pairs, or 33,000-84,000 individuals (data from Hagemeyer & Blair, 1997, and Snow & Perrins, 1998).

The West and Southwest Asian population remains poorly known. Some 2,000-2,500 pairs breed in Iran, and up to 13,600 birds have been recorded on passage at Lake Uromiyeh in northwestern Iran (Scott, 1995).

GLAREOLIDAE

Collared Pratincole *Glareola pratincola*

Five subspecies have been described: *pratincola* in Southern Europe, Southwest Asia and North Africa; *boweni* from Senegal to Chad and Gabon; *limbata* in Sudan, Ethiopia, Somalia and southern Arabia; *erlangeri* in southern Somalia and northern Kenya; and *fuelleborni* from eastern Zaire and central Kenya to South Africa. (Some authors lump *boweni* with *fuelleborni* and consider *limbata* to be invalid). Almost the entire population of the nominate race, which breeds from Western Europe east to eastern Kazakhstan, winters in Africa south of the Sahara, although there is an isolated breeding population in Pakistan which probably winters in India (winter records south to Sri Lanka). West European and Northwest African breeders winter mainly along the south edge of the Sahara in West Africa, from Senegal and Gambia to Nigeria. Breeders from Southeast Europe, the Black Sea and Asia Minor winter mainly in the eastern Sahel zone. Breeders from the Caspian region, Iran and Iraq winter mainly in Northeast Africa south along the Nile Valley to Sudan and Ethiopia (possibly to about 5°N). The populations breeding in Subsaharan Africa appear to be mainly sedentary, although some seasonal movements have been observed, probably associated with changing water levels. Three relatively discrete migratory populations of nominate *pratincola* are recognised.

- West Mediterranean (breeding): B (WPE2). 16,000-20,000, based on recent estimates of breeding populations.

Trends: Unknown (WPE2).

- Black Sea & East Mediterranean (breeding): B (WPE2).

Trends: Unknown (WPE2). Decreasing (Tucker & Heath, 1994; Hagemeyer & Blair, 1997; Snow & Perrins, 1998).

- Southwest Asia (breeding): B or C (WPE2).

Trends: Unknown.

Changes in status: Overall trends in the West Mediterranean population are unclear. The large Spanish population and the small population in France are now thought to be relatively stable after a long period of decline, but nothing is known of trends in Northwest Africa, and a decrease has been reported in recent years in Portugal (Hagemeyer & Blair, 1997; Snow & Perrins, 1998).

The first two editions of *Waterfowl Population Estimates* give the status of the Black Sea/East Mediterranean population as unknown. However, there is evidence of a widespread decline throughout Southeast Europe in recent decades, with large decreases in Hungary and Ukraine, and smaller decreases in Albania, Bulgaria and Greece (Tucker & Heath, 1994; Hagemeyer & Blair, 1997; Snow & Perrins, 1998). In the Danube Delta in Ukraine, the population fell from 3,000 pairs in the 1960s to less than 100 pairs in the 1980s (Hagemeyer & Blair, 1997). Only the populations in Italy and Romania are thought to be relatively stable. Trends in the large Egyptian breeding population are unknown, but a decrease has been reported in Israel, and the numbers breeding in Jordan fell dramatically following desiccation of Azraq Oasis (Snow & Perrins, 1998).

Comments: The breeding population in Southwest Europe is estimated at about 4,000-4,800 pairs (data from Snow & Perrins, 1998). The population in Northwest Africa is thought to number about 1,400-2,000 pairs, with 200-300 pairs in Morocco, 200-250 pairs in Algeria and 1,000-1,500 pairs in Tunisia (del Hoyo *et al.*, 1996). These figures suggest a

total population of about 5,400-6,800 pairs or 16,000-20,000 birds.

The breeding population in the Black Sea/East Mediterranean region is poorly known because of uncertainties in the populations in European Russia (1,000-10,000 pairs) and Turkey (500-5,000 pairs). Excluding the Russian birds (most of which breed in the Caspian drainage and are probably best treated as part of the Southwest Asian breeding population), the population would appear to be in the range 5,000-10,000 pairs, or 15,000-30,000 individuals (data from Tucker & Heath, 1994, Hagemeyer & Blair, 1997, and Snow & Perrins, 1998).

The Southwest Asian breeding population remains poorly known. At least 4,000 pairs are known to breed in Southwest Asia, and flocks totalling 30,000 were seen moving north in southeast Sudan in April 1985.

Black-winged Pratincole *Glareola nordmanni*

Monotypic. The species breeds from Southeast Europe (Romania and Ukraine) east in the steppe zone across southern Russia and Kazakhstan to about 85°E, and appears to migrate almost non-stop over western Arabia and the East Mediterranean to Northeast Africa. It occurs on migration in Sudan, Ethiopia, Uganda and Central Africa, and winters mainly in northeastern Namibia, Botswana and South Africa; the main wintering area is on the highveld of the Transvaal and Free State in South Africa (Harrison *et al.*, 1997). Only one population is recognised, the entire population of the species.

- Western & Central Asia/Eastern & Southern Africa: Unknown (WPE2). D (Harrison *et al.*, 1997).

Trends: Decreasing (WPE2).

Changes in status: The species has declined throughout its European breeding range since the 1970s, especially in Ukraine, where there has been a ten-fold decline in 20 years (Hagemeyer & Blair, 1997). In southern European Russia, numbers increased following the irrigation of dry and desert steppe in the 1950s and this increase continued until the mid-1980s, but in recent years numbers have started to decline (Tucker & Heath, 1994; Hagemeyer & Blair, 1997). The breeding population to the east of the Volga (in Western Asia) is thought to be fairly stable (Tucker & Heath, 1994). The primary causes of the range contraction and decline in numbers in Europe are the cultivation of virgin steppes and intensive use of the remaining natural areas for livestock grazing (Belik, 1994; Hagemeyer & Blair, 1997). The species is also becoming increasingly scarce on its wintering grounds in South Africa, and no longer occurs in Natal (Harrison *et al.*, 1997).

Comments: *Glareola nordmanni* is listed as 'Near-threatened' by Collar *et al.* (1994), because of its relatively small total population size and the widespread threats to its steppe breeding habitat.

V.P. Belik & P.S. Tomkovich (in Hagemeyer & Blair, 1997) have recently estimated the world population at 15,000-45,000 breeding pairs, of which some 6,000-11,000 pairs breed in Southeast Europe. These figures suggest a total population of 45,000-135,000 individuals. However, there is a report of possibly a million birds in Zambia in the 1970s, and a single congregation of at least 250,000 birds, but perhaps as many as 800,000, was seen in Free State, South Africa, in December 1991 (Harrison *et al.*, 1997). It is probable that this concentration represented almost the entire world population of the species. A population estimate of 100,000-1,000,000 (category D) would therefore seem most appropriate.

CHARADRIIDAE

Eurasian Golden Plover *Pluvialis apricaria*

Two subspecies have been described. *P. a. altifrons* breeds widely at high latitudes in Western Eurasia from Iceland east to 100°E in Western Siberia, and winters south to North Africa (occasionally to Senegal) and the South Caspian. *P. a. apricaria* breeds at more southerly latitudes in the Britain, Ireland, Denmark and Germany, and is only a short-distance migrant, most birds wintering fairly close to their breeding areas. Considerable variation exists in most populations, and many authors consider the species to be monotypic. Four main breeding populations can be identified: (1) Icelandic and Faroese breeders (*altifrons*), wintering mainly in Ireland, with smaller numbers to western Britain, France and Iberia, and a few to Northwest Africa; (2) a population of *altifrons* breeding from northern Norway east to about 70°E, and wintering mainly in western and southern continental Europe and Northwest Africa (Morocco to Tunisia); (3) a population of *altifrons* breeding in Western Siberia east to 100°E, and wintering in the Caspian region and possibly also Asia Minor; and (4) southern breeders (*apricaria*) breeding in Britain, Ireland, Denmark and Germany, and wintering in Northwest Europe. Because of the extensive mixing of birds from populations (1), (2) and (4) on their wintering grounds, the first two editions of *Waterfowl Population Estimates* treated all these birds as a single large European population.

- Northwest Europe (breeding - *altifrons* & *apricaria*): 1,800,000 (WPE2).
Trends: Decreasing (WPE2). Mostly stable, but decreasing in the southern parts of its range (Hagemeijer & Blair, 1997; Snow & Perrins, 1998).
- Western Siberia (breeding - *altifrons*): Unknown.
Trends: Unknown.

Changes in status: The total European breeding population is currently estimated at 485,000-721,000 pairs (Hagemeijer & Blair, 1997). About half of this population (200,000-300,000 pairs) breeds in Iceland, where numbers are thought to be relatively stable. There have been some declines in southern Sweden and southern Norway, but the large populations further north in these countries are thought to be stable. In Finland, there was a marked increase between the 1950s and late 1970s, but there has been a slight decrease in recent years. Numbers in Estonia are thought to be more or less stable after an increase in the 1960s, while the small population in Latvia is increasing slightly. (Hagemeijer & Blair, 1997; Snow & Perrins, 1998). By contrast, there has been a long-term decline in the British and Irish breeding populations which is apparently continuing, and previously extensive populations in Denmark, Belgium, Luxembourg, Germany and Poland have gone extinct or are near extinction (Hagemeijer & Blair, 1997). The British population fell from an estimated 29,400 pairs in 1968-72 to 22,600 pairs in 1988-91, while the Irish population fell from 600 pairs to 400 pairs during the same period (Gibbons *et al.*, 1993). These declines have been attributed to extensive afforestation of uplands, changed management of moorlands and an increase in sheep grazing. The decreasing trend given in the first two editions of *Waterfowl Population Estimates* is somewhat misleading in that it relates almost entirely to the southernmost breeding populations (Britain, Ireland, Denmark and Germany) which together hold fewer than 4% of the total European breeding population.

Comments: Treatment of the 'Northwest European' population as three separate populations would seem to be more appropriate, because of morphological differences between the northern and southern breeders, the differences in population trends between the northern and southern breeders, and the very different migration routes of the Iceland/Faroes birds and the Scandinavia/Russia birds. The new treatment would be as follows:

- Iceland & Faroes/East Atlantic (*altifrons*): 750,000.
Trends: Probably stable.
- Northern Europe/West Continental Europe & Northwest Africa (*altifrons*): 1,000,000.
Trends: Mainly stable, with some local decreases in south.
- Britain, Ireland, Denmark & Germany (breeding - *apricaria*): 70,000.
Trends: Decreasing.

Very little is known about the West Siberian population. Substantial numbers of birds are thought to winter in Azerbaijan, but only about 500-1,000 birds reach the South Caspian littoral in Iran (Scott, 1995).

Grey Plover *Pluvialis squatarola*

Monotypic. The species breeds at high latitudes in Canada and in Russia from the Kanin Peninsula (45°E) eastwards, and winters south to South Africa, Sri Lanka and Australasia. Two main wintering populations are relevant; (1) an East Atlantic/West Mediterranean population, extending from the Wadden Sea, Britain and Ireland south to West Africa (to the Gulf of Guinea); this population includes birds from breeding areas as far east as the Taymyr Peninsula (80°E) and also apparently some birds (perhaps 10%) from Northeast Canada; (2) a west Indian Ocean population, extending from the Persian/Arabian Gulf and Arabian Peninsula south to South Africa and Madagascar. Birds wintering in South Africa and Namibia are believed to originate for the Taymyr Peninsula, with ringing recoveries suggesting a migration route that passes through the East Mediterranean and Black Sea (Harrison *et al.*, 1997). Very few birds winter in the East Mediterranean.

- Eastern Atlantic (wintering): 168,000 (WPE2).
Trends: Increasing (WPE2).
- Southwest Asia & Eastern Africa (wintering): 50,000 (WPE2).
Trends: Unknown.

Changes in status: There has been a western expansion in the breeding range and increase in numbers in northeast European Russia in recent years (Y.N. Mineyev & J. van Impe in Hagemeijer & Blair, 1987), and simultaneously a marked increase in the numbers of birds wintering in the Eastern Atlantic flyway. A recent analysis suggests that the numbers wintering in the European section of the Eastern Atlantic flyway have increased by 46% since the 1980s (Davidson, in press), while the numbers wintering in Britain increased by 103% (from 21,250 to 43,200) between 1981-85 and 1988-92 (Cayford & Waters, 1996). Provisional totals from Western Europe in the early 1990s suggest that about 123,000 *P. squatarola* winter in this region (N. Davidson, pers. comm.), compared with only 85,000 in the 1980s. However, a comprehensive survey of the Banc d'Arguin in Mauritania in early 1997 found only 15,200 *P.*

squatarola, a decrease of 50% on the 1980 total (Dodman *et al.*, 1997). Similarly, van der Have *et al.* (1997) found a 25% decrease in the numbers wintering in the Gulf of Gabes in Tunisia between 1984 and 1994. This suggests that some of the increase in Western Europe may be due to a northward shift in the distribution of wintering birds. Nevertheless, it seems likely that the total East Atlantic flyway population is now considerably higher than the 168,000 given in *Waterfowl Population Estimates* (from Smit & Piersma, 1989).

No change is known in the status of the Southwest Asian/Eastern African wintering population. There is no evidence that the numbers wintering in Southern Africa have increased in the last two decades, and counts at one of the most important sites have shown no trend (Harrison *et al.*, 1997).

Common Ringed Plover *Charadrius hiaticula*

Three subspecies have been described: the nominate form breeding in Northwest Europe from southern Scandinavia and the Baltic to Britain, Ireland and France; *psammodroma* breeding in northeastern Canada, Greenland, Iceland and the Faroes; and *tundrae* breeding from northern Scandinavia and Finland east across northern Russia to the Bering Strait. These subspecies are weakly defined, and many authors consider *psammodroma* to be invalid. The nominate form and *psammodroma* winter mainly on the Atlantic coast of Western Europe and Northwest Africa south to Mauritania, Senegal and Gambia, although birds assigned to *psammodroma* have been recorded as far south as South Africa. (Harrison *et al.*, 1997). The high arctic form *tundrae* appears to winter mainly in Eastern and Southern Africa and Southwest Asia east to Pakistan, although many probably reach the East Mediterranean and some apparently reach West Africa. (Very few birds winter in Asia east of Pakistan). Populations of the nominate form and *psammodroma* show the phenomenon of 'leap-frog' migration, with the northernmost breeding populations (in northeastern Canada and Greenland) wintering furthest south (mainly in West Africa), and the southernmost breeding populations (in Ireland, Britain and Brittany) being almost sedentary. Icelandic breeders winter mainly in France, Iberia, Morocco and West Africa. Birds breeding in southern Scandinavia and the Baltic winter along the Atlantic coast from Britain and Ireland to West Africa. Three 'populations' are recognised, corresponding to the main wintering distributions of the three subspecies, but it is clear that there is a considerable amount of mixing between all of the sub-populations of this species.

- Europe & North Africa (wintering – mainly *hiaticula*): 47,500 (WPE2).

Trends: Increasing (WPE2).

- West Africa (wintering – mainly *psammodroma*): 195,000 (WPE2).

Trends: Unknown.

- Southwest Asia, Eastern and Southern Africa (wintering - mainly *tundrae*): 200,000 (WPE2).

Trends: Unknown.

Changes in status: The large European breeding population of *C. hiaticula* appears to have remained more or less stable in recent decades. There has been an increase in inland breeding in some areas (*e.g.* in Britain and Germany), while at the same time, numbers breeding in some coastal areas have declined (Hagemeijer & Blair, 1997). Overall increases have been reported in Britain, Denmark and Germany, and decreases in Finland, Estonia and Poland, but the large breeding populations in Iceland, Sweden and Norway are thought to be stable (Hagemeijer & Blair, 1997).

A recent analysis suggests that the numbers of birds wintering in Europe and North Africa have increased by 25% since the 1980s (Davidson, in press), while the numbers wintering in Britain increased by 24% (from 23,040 to 28,600) between 1981-85 and 1988-92 (Cayford & Waters, 1996). Provisional totals from Western Europe and North Africa in the early 1990s suggest that about 60,000 *C. hiaticula* winter in this region, compared with only 47,500 in the 1980s. This increase may be a reflection of the recent increase in the breeding populations in Britain, Denmark and Germany.

The status of the population of *hiaticula* wintering in West Africa is unclear. A comprehensive survey of the Banc d'Arguin in Mauritania in early 1997 found only 58,000 *hiaticula*, a decrease of 42% on the 1980 total (Dodman *et al.*, 1997). Many of these birds originate from northeastern Canada and Greenland, where the trends on the breeding grounds are unknown.

No change is known in the status of the Southwest Asian and Eastern African wintering population.

Comments: The total world population of the species based on winter counts is only about 442,500. The European breeding population has recently been estimated at 84,000-116,000 pairs (Hagemeijer & Blair, 1997), representing some 250,000-350,000 birds. Meltofte (1985) has estimated the high Arctic breeding population in Greenland at

24,500 pairs, which would account for another 75,000 birds. These figures suggest that the total population breeding east of the Urals is only 17,500-117,500 birds, which seems remarkably low, given the vast extent of the breeding range east across Northern Siberia to the Bering Sea. It seems more likely that the total population of *tundrae* is considerably higher than the 200,000 given in *Waterfowl Population Estimates*.

Little Ringed Plover *Charadrius dubius*

Polytypic. Only the subspecies *curonicus* occurs in the Agreement Area. This breeds widely across Western Eurasia and in Northwest Africa, and winters mainly in Africa south of the Sahara, generally north of the equator but occasionally south to Zambia. Two main populations are recognised: (1) European and Northwest African breeders, wintering mainly in West Africa (Mauritania to Chad and northern Zaire); and (2) West Asian breeders, wintering through the Arabian Peninsula to Northeast Africa (south to northern Tanzania).

- Europe/West Africa: D (WPE2).

Trends: Unknown (WPE2). Perhaps mainly stable (Hagemeijer & Blair, 1997).

- Western & Southwest Asia/Eastern Africa: Unknown.

Trends: Unknown.

Changes in status: Populations in Europe declined in the late 19th and early 20th centuries, probably because of climate change, but there was then a rapid expansion in range, particularly in Northwest Europe, and increase in numbers during the middle and latter part of the 20th century, due in large part to the colonisation of man-made habitats, notably gravel pits. In recent years, most populations appear to have been relatively stable, although the increase appears to be continuing in Ukraine and some parts of Northwest Europe, while slight decreases have been reported in Finland, the Netherlands, Austria, Slovenia, Moldova and perhaps Germany (Hagemeijer & Blair, 1997; Snow & Perrins, 1998).

Comments: The breeding population in Europe excluding European Russia and Turkey is estimated at 66,000-87,000 pairs (Hagemeijer & Blair, 1997).

Kittlitz's Plover *Charadrius pecuarius*

Three subspecies have been described, but variation is slight, and some recent authors consider the species to be monotypic. *C. p. allenbyi* has been described from the Nile Valley in Egypt, and *C. p. tephricolor* from northern Namibia. The nominate form occurs widely in Africa south of the Sahara (south to South Africa) and in Madagascar. This subspecies is at least partly migratory, especially in Southern Africa (Botswana, Zimbabwe, Zambia, Namibia and South Africa) where birds desert many areas during rains and flooding. Only one population is identifiable, the entire population of *pecuarius*, excluding Madagascar.

- Sub-Saharan Africa (*pecuarius*): Unknown.

Trends: Unknown.

Changes in status: In Southern Africa, the construction of dams has enabled the species to expand its range and increase in numbers substantially (Harrison *et al.*, 1997).

Comments: The species is common to locally abundant throughout much of its range. This is one of the commonest *Charadrius* plovers recorded during the African Waterfowl Census, with recent January counts of up to 1,200 in West Africa, 6,300 in Eastern Africa and 3,400 in Southern Africa.

Three-banded Plover *Charadrius tricollaris*

Two subspecies have been described. The nominate race occurs patchily in West-central Africa in Niger, Chad, Nigeria and Cameroon, and widely from Sudan and Ethiopia south through Eastern Africa to South Africa. *C. t. bifrontatus* is confined to Madagascar. The nominate race is to some extent migratory. Substantial movements have been recorded in Ethiopia, Zaire, Rwanda, Zambia, Zimbabwe, Botswana, Namibia and South Africa, but these are poorly understood. Only one population is recognised, the entire population of *tricollaris*.

- Southern & Eastern Africa (*tricollaris*): Unknown.

Trends: Unknown.

Changes in status: In Southern Africa, where the total population is thought to be in the range 25,000-50,000, the construction of dams has enabled the species to expand its range and increase in numbers substantially (Harrison *et al.*, 1997).

Comments: The species is generally common throughout Southern Africa, and somewhat less common in the northern parts of its range. The highest counts during recent African Waterfowl Censuses (1994-1997) have been 1,223 in Southern Africa and 441 in Eastern Africa.

Forbes' Plover *Charadrius forbesi*

Monotypic. The species breeds from Ghana to northern Angola, southwestern Sudan, western Uganda, western Tanzania and central Zambia, and apparently occurs as a non-breeding visitor west to Senegal. It is known to be seasonally migratory in West Africa, moving to rocky hillsides during the rainy season to breed. Only one population is recognised, the entire population of the species.

- West & Central Africa: Unknown.

Trends: Unknown.

Changes in status: None known.

Comments: The species is said to be uncommon to locally common, especially in the western parts of its range, although very few are recorded during the African Waterfowl Census.

Chestnut-banded Plover *Charadrius pallidus*

Two subspecies have been described. The nominate race occurs in Southern Africa from southern Angola, Botswana and Mozambique to South Africa; *C. p. venustus* is confined to southern Kenya and Tanzania. Both subspecies are partly migratory. East African populations move up and down the Rift Valley; inland populations in Southern Africa move to the coast after breeding. Two populations are recognised, the entire populations of the two subspecies.

- Southern Africa (*pallidus*): Unknown (WPE2). 6,000-7,000 (Harrison *et al.*, 1997).

Trends: Unknown (WPE2). Apparently stable (Harrison *et al.*, 1997).

- Eastern Africa (*venustus*): Unknown (WPE2). Probably B.

Trends: Unknown.

Changes in status: In Southern Africa, there have been no apparent changes in the distribution of *pallidus* since the beginning of the 20th century, although the development of salt works may have led to an increase in the size of the coastal population (Harrison *et al.*, 1997). Trends in the population of *venustus* are unknown.

Comments: Both subspecies are common to locally abundant, but have very restricted ranges and are confined to a relatively small number of sites. The total population of *pallidus* has recently been estimated at possibly as few as 6,000-7,000 birds (Harrison *et al.*, 1997). The great bulk of the breeding population of *pallidus* is centred on Etosha Pan in Namibia and the Makgadikgadi Pans in Botswana. Outside the breeding season, these birds are concentrated on two coastal wetlands, Sandwich Harbour and Walvis Bay (Harrison *et al.*, 1997). Recent high counts have included 5,056 in Namibia in April 1996 and 260 in South Africa in July 1996 (Dodman *et al.*, 1997). In Eastern Africa, the species is confined to Rift Valley soda lakes on the border of Kenya and Tanzania. The highest count during recent African Waterfowl Censuses has been 1,370 in January 1995 (Dodman & Taylor, 1995), but in most years, far fewer than this are recorded. It seems unlikely, therefore, that the total population of *venustus* exceeds 25,000 birds, and it may be much lower than this.

Kentish Plover *Charadrius alexandrinus*

Polytypic. Only the nominate subspecies occurs in the Agreement Area. This breeds widely across Western Eurasia and North Africa. Populations breeding in Africa (on the Atlantic coast south to Senegal, in Egypt, and on the Red Sea coast south to northern Somalia) appear to be mainly sedentary. Populations breeding north of 40°N in Western Eurasia are migratory, wintering south to Senegal and the Gulf of Aden (rarely to the equator in West Africa); southern populations are sedentary or dispersive. Three main populations are recognised, although in all cases there is extensive overlap of migratory and sedentary populations in winter: (1) a population breeding in the West Mediterranean and on the Atlantic coast of Europe north to Denmark and Sweden, and wintering south to West Africa; (2) a population breeding in the Black Sea region and East Mediterranean, and wintering in the Near East and

eastern Sahel Zone; and (3) a population breeding in Southwest Asia and wintering from the South Caspian region through the Arabian Peninsula to Northeast Africa.

- Eastern Atlantic: 67,000 (WPE2).

- Trends: Decreasing (WPE2).
- Black Sea & East Mediterranean (breeding): C (WPE2).
Trends: Unknown (WPE2). Decreasing (Tucker & Heath, 1994; Hagemeyer & Blair, 1997; Snow & Perrins, 1998).
 - Southwest Asia & Northeast Africa (wintering): C or D (WPE2).
Trends: Unknown.

Changes in status: There has been a marked decline in most breeding populations in Europe since the early part of the 20th century, accompanied by a marked contraction in range in Northwest and Central Europe. This decline is continuing throughout much of Europe. In the west, recent decreases have been reported in Sweden, Germany, Denmark, the Netherlands, Belgium and Portugal, while in the east, decreases have been reported in Bulgaria, Hungary, Romania and Ukraine, and perhaps also in Albania and Greece (Tucker & Heath, 1994; Hagemeyer & Blair, 1997). This widespread decline has been attributed mainly to human activities such as disturbance at coastal breeding sites, and destruction of breeding habitat. A comprehensive survey of the Banc d'Arguin in Mauritania in early 1997 found only 5,670 *C. alexandrinus*, a decrease of 69% on the 1980 total (Dodman *et al.*, 1997).

Comments: The breeding population in the West Mediterranean and on the Atlantic coast of Europe is estimated at about 8,000-10,000 pairs (data from Tucker & Heath, 1994, Hagemeyer & Blair, 1997, and Snow & Perrins, 1998), but the size of the large population breeding in Northwest Africa (south to Senegal) is unknown. The total European breeding population (excluding European Russia and Turkey) is estimated at about 16,300-17,200 pairs. There are thought to be between 1,000 and 10,000 pairs in European Russia and between 5,000 and 15,000 pairs in Turkey (Hagemeyer & Blair, 1997), as well as at least 6,000-9,000 pairs in the Levant and North Africa. These figures suggest a Black Sea/East Mediterranean population of about 20,000-40,000 pairs or 60,000-120,000 individuals, *i.e.* probably in the upper part of the range 25,000-100,000 (C).

No new information is available on the population wintering in Southwest Asia and Northeast Africa. Partial winter counts in the 1980s gave a total of at least 66,000 birds.

White-fronted Plover *Charadrius marginatus*

Five subspecies are recognised by Hayman *et al.* (1986): the nominate race in Southwestern Africa from southern Angola to Cape Province, South Africa; *tenellus* in Eastern Africa from Ethiopia and Sudan south to Natal, South Africa, and also in Madagascar; *pons* in southern Somalia; *mechowi* from northern Angola and Cameroon to Central Africa and Zaire; and *hesperius* in West Africa. Some authors restrict *tenellus* to Madagascar, assigning the continental population to *mechowi*. Urban *et al.* (1986) include *pons* and *hesperius* within *mechowi*, but give subspecific status to the coastal population from Southwest Cape Province to southern Mozambique (*arenaceus*). Nominate *marginatus* and *pons* are coastal and sedentary; *mechowi*, *tenellus* and *hesperius* occur both in coastal and inland areas. The West African population of *hesperius* and the Madagascan population of *tenellus* are largely sedentary, but inland populations of *tenellus* and *mechowi* in Southern, Eastern and Central Africa are migratory, moving to the coast during the rainy season (December to May). Two migratory populations are recognised.

- Southern & Eastern Africa (*tenellus*): Unknown.

Trends: Unknown.

- West-central Africa (*mechowi*): Unknown (WPE2). Decreasing in Southern Africa (Harrison *et al.*, 1997).

Trends: Unknown.

Changes in status: Overall trends in both populations are unknown. However, there has been a considerable contraction of the breeding range of *mechowi* in Southern Africa during the 20th century, and a sharp decline in numbers was noted along the middle Zambezi River between 1981 and 1991 (Harrison *et al.*, 1997). This decline has been attributed in part to the loss of riverine sand bars following the construction of large dams.

Comments: The first two editions of *Waterfowl Population Estimates* give the range of *tenellus* as Southeastern Africa, which is unnecessarily restrictive, and the range of *mechowi* as Eastern Africa, which is clearly in error. The species is said to be locally common to common throughout much of its range, and abundant on the East African coast. The coastal population of nominate *marginatus* in South Africa and Namibia has been conservatively estimated at 18,000 birds (Harrison *et al.*, 1997).

Mongolian Plover *Charadrius mongolus*

Polypitic. Only the subspecies *pamirensis* occurs in the Agreement Area. This breeds in the mountains of west-central Asia (Pamirs, Karakoram, Ladakh, Kun Lun and Tien Shan), and winters from Southern and Eastern Africa through

Southwest Asia to western India, with small numbers reaching the Seychelles and Madagascar. Only one population is recognised.

- Southwest Asia & Eastern Africa (wintering): 25,000 (WPE2). At least 30,000 (del Hoyo *et al.*, 1996).

Trends: Unknown.

Changes in status: None known.

Comments: It has recently been estimated that 28,000 *pamirensis* winter along the Saudi Arabian Gulf coast, and the species is locally common to abundant from Ethiopia to Tanzania, with thousands wintering in Kenya (del Hoyo *et al.*, 1996). It seems likely, therefore, that the population estimate of 25,000 is much too low.

Greater Sand Plover *Charadrius leschenaultii*

Three subspecies have been described. *C. l. columbinus* breeds in Turkey, Syria and Jordan east to the Caspian region and southern Afghanistan, and winters mainly in the Red Sea and Gulf of Aden, with smaller numbers in the East Mediterranean west to Tunisia. *C. l. crassirostris* breeds in Transcaspia east to southeastern Kazakhstan, and winters from Eastern Africa (Somalia to South Africa) through Arabia and southern Iran to Southern Asia. The nominate form breeds in Central and Eastern Asia and is extralimital. Two populations are relevant, although they overlap extensively in their winter quarters and are then virtually inseparable in the field.

- Black Sea & East Mediterranean (breeding - *columbinus*): A (WPE2).

Trends: Unknown.

- Southwest Asia & Eastern Africa (wintering - *crassirostris*): 65,000 (WPE2).

Trends: Unknown.

Changes in status: Trends in the population of *columbinus* are unknown, but the Turkish breeding population is threatened by the destruction of breeding habitat through the drainage of lakes and marshes and conversion to agricultural land (Tucker & Heath, 1994). As such habitat conversion is widespread throughout the breeding range of this subspecies, the population as a whole may be under considerable pressure. No new information is available on the status of *crassirostris*.

Comments: *C. l. columbinus* appears to be a very scarce bird. It is known to breed only in Turkey (perhaps 50-200 pairs in recent years), Syria (20-30 pairs in 1967), Jordan (a few pairs in recent years), Iran (a few pairs in the 1970s) and central Afghanistan (unknown numbers) (data from Snow & Perrins, 1998). It may also have bred in Israel and Egypt. A few pairs of *C. leschenaultii* have recently been found breeding in Armenia, and the species probably also breeds in very small numbers in Azerbaijan, but the Armenian birds have been assigned to the Central Asian race *crassirostris* (Hagemeijer & Blair, 1997). The total population of *columbinus* therefore seems unlikely to exceed 10,000 individuals, and may be far fewer.

Caspian Plover *Charadrius asiaticus*

Monotypic. The species breeds from extreme Southeast Europe in the region of Volgograd (42°E) east through Kazakhstan to about 82°E, and migrates through Southwest Asia to winter in Africa south of the Sahara. There are two main wintering areas: in the uplands of southwestern Kenya and Tanzania, and in Botswana, northern Namibia and western Zimbabwe, but it is not known if this reflects the presence of two discrete breeding populations. Only one population is recognised, the entire population of the species.

- Western Asia/Eastern & Southern Africa: B or C (WPE2).

Trends: Unknown (WPE2). Decreasing in west, and possibly throughout breeding range (Tucker & Heath, 1994; Hagemeijer & Blair, 1997; Snow & Perrins, 1998); also decreasing on winter quarters in Southern Africa (Harrison *et al.*, 1997).

Changes in status: The small breeding population in European Russia (roughly estimated at 200-500 pairs), at the western extremity of the species' breeding range, is declining rapidly, mainly because of the loss of its arid steppe habitat through conversion to agriculture and overgrazing (Tucker & Heath, 1994; Snow & Perrins, 1998). Breeding populations further east are thought to be stable or decreasing only slightly (Tucker & Heath, 1994; Hagemeijer & Blair, 1997). There has been a contraction in the wintering range and a decline in numbers in Southern Africa during the 20th century (Harrison *et al.*, 1997).

Comments: Up to 12,500 have been recorded in Kenya and Sudan, and over 6,200 were recorded in Tanzania during the African Waterfowl Census of January 1995 (Dodman & Taylor, 1995). Flocks of 600-1,000 have been reported in Botswana, and up to 2,000 have been recorded at one locality in Zambia.

Eurasian Dotterel *Eudromias morinellus*

Monotypic. The species breeds across Northern Eurasia from northern Britain and Scandinavia to Alaska, and in the mountain ranges of Central Asia south to northwest China and northern Mongolia. (The species occasionally breeds in the mountain ranges of Central Europe and has bred in the Netherlands). All populations winter in the semi-arid belt from southwestern Iran across the Middle East and North Africa to Morocco. Western breeders generally winter further west than eastern breeders, with most winter recoveries of birds ringed in Britain and Scandinavia coming from Northwest Africa (Morocco to Libya). However, there appears to be considerable mixing between breeding areas. Only two main groups are recognised: European breeders, wintering mainly in North Africa; and Asian breeders, probably wintering mainly in the Middle East.

- Europe (breeding): D (WPE2).

Trends: Decreasing (WPE2).

- Asia (breeding): B or C (WPE2).

Trends: Unknown.

Changes in status: There has been a marked decline in the European breeding population since about 1850, and although most populations now appear to be relatively stable, the decline is continuing in some areas. Initially, this decline is thought to have been caused by over-hunting, but recent declines are probably due to the indirect effects of anti-locust pesticides in the wintering areas (Hagemeijer & Blair, 1997). A recent increase in the small British breeding population has been attributed to a cooling of spring climate since the early 1960s (Hagemeijer & Blair, 1997).

Comments: The breeding population in Europe excluding Russia is estimated at 18,000-39,000 pairs, and that in European Russia at 10,000-50,000 pairs. The total European population is therefore most likely to be in the range 100,000-200,000 birds.

Northern Lapwing *Vanellus vanellus*

Monotypic. The species breeds widely across Eurasia south to Morocco (few), Turkey and northwestern Iran, and winters throughout Southern and Western Europe, North Africa and the Middle East. No discrete populations are identifiable. Two main groups are recognised: European breeders, wintering in Europe, Asia Minor and North Africa; and West Asian breeders, wintering mainly in Southwest Asia.

- Europe (breeding): 7,000,000 (WPE2).

Trends: Stable (WPE2). Decreasing over much of its range, especially in Northwest Europe (Hotker, 1991; Hagemeijer & Blair, 1997; Snow & Perrins, 1998).

- Western Asia (breeding): C or D (WPE2).

Trends: Unknown.

Changes in status: While most breeding populations in Eastern Europe appear to be relatively stable or increasing slightly (*e.g.* in Ukraine), many countries elsewhere in Europe have experienced range contractions and decreasing numbers during recent decades. The very large Dutch population appears to have been relatively stable since the mid-1980s, but the large populations in Britain, Germany, Sweden, Finland, Norway, Denmark, the Baltic States and the Czech Republic have all been decreasing in recent years (Hagemeijer & Blair, 1997; Snow & Perrins, 1998). Hotker (1991) also concluded that the overall trend in the large population breeding in the European Union (571,000-634,000 pairs) was decreasing. The principal causes of the decline are drainage, more intensive use of grasslands, and greater use of agricultural chemicals (Hagemeijer & Blair, 1997).

Comments: The breeding population in Europe excluding Russia is estimated at 1,186,000-1,454,000 pairs, and that in European Russia at over 1,000,000 pairs (Hagemeijer & Blair, 1997). The West Asian population is poorly known. Mid-winter counts suggest that about 35,000 birds winter in Southwest Asia south of the Caspian.

Spur-winged Plover *Vanellus spinosus*

Monotypic. The species occurs in Southeast Europe, Asia Minor, Egypt and the Near East (east to western Iraq), and in Africa south of the Sahara from Mauritania and Senegal to Sudan, Ethiopia and Somalia, and south to Burundi and northern Tanzania. African breeders appear to be mainly sedentary. Birds breeding north of 35°N (*i.e.* in Greece, Turkey and Syria) are migratory, presumably wintering in the Levant and Egypt, but possibly also in Iraq. Birds breeding further south in Southwest Asia are mainly sedentary. Only one population is relevant, the population breeding in Southeast Europe, Southwest Asia and Egypt, and this contains a mixture of migratory and sedentary birds.

- Black Sea & Mediterranean (breeding): B (WPE2). C (on the basis of data from Snow & Perrins, 1998).
Trends: Unknown (WPE2). Increasing, particularly in Israel, but with a decrease in Greece (Snow & Perrins, 1998).

Changes in status: The small breeding population in Greece decreased from about 120-170 pairs in 1970 to 32-45 pairs in 1993, mainly due to the loss of wetland habitat. However, numbers seem to be stable in many parts of Turkey, and increases have been reported in Egypt and Israel during the last 30 years (Tucker & Heath, 1994). In Israel, the population increased from only 300 pairs in 1975 to 5,000-10,000 pairs in the 1980s (Snow & Perrins, 1998). This dramatic increase has been attributed to the considerable expansion of suitable habitat in the form of irrigated agricultural land. A few pairs have bred in Cyprus since 1988 (10-14 pairs in recent years).

Comments: The total breeding population probably numbers between 10,000 and 20,000 pairs, comprising several thousand pairs in Egypt, 1,000-5,000 pairs in Turkey, 5,000-10,000 pairs in Israel and probably less than 100 pairs elsewhere (data from Snow & Perrins, 1998). These figures suggest a total population of between 30,000 and 60,000 individuals, *i.e.* in the range 25,000-100,000 (C), rather than in the range 10,000-25,000 (B), as given in the first two editions of *Waterfowl Population Estimates*. Between 5,000 and 15,000 birds are thought to winter in Egypt (del Hoyo *et al.*, 1996).

White-headed Lapwing *Vanellus albiceps*

Monotypic. The species is widespread in Africa south of the Sahara from Senegal and Gambia to southwestern Sudan and south to northern Angola. Three relatively discrete populations can be identified: (1) a sedentary population of about 6,000-8,000 individuals in southeastern Tanzania; (2) an apparently sedentary population in Southeastern Africa (Zambia, Zimbabwe, Mozambique and South Africa); and (3) a partially migratory population in West and Central Africa (from Senegal and Southwest Sudan to central Zaire and northern Angola). The species is a regular migrant in most of West Africa, moving north during the rainy season. Only one migratory population is relevant.

- West & Central Africa: Unknown.
Trends: Unknown.

Changes in status: None known. The species is generally fairly common in West and Central Africa.

Wattled Lapwing *Vanellus senegallus*

Four subspecies have been described: *senegallus* from Senegal to Sudan, northeastern Zaire and Uganda; *solitaneus* from southern Zaire to northern Namibia; *lateralis* from eastern Zaire and Uganda to South Africa (Natal); and *major* in Ethiopia. Some authors lump *solitaneus* with *lateralis*, and *major* with *senegallus*. *V. s. major* is virtually confined to Ethiopia. Other populations are migratory, but the movements of the Southern African populations are complex and poorly understood. In West Africa, birds move north in the wet season. Three populations are relevant.

- West Africa (*senegallus*): Unknown.
Trends: Unknown.
- Southwest Africa (*solitaneus*): Unknown.
Trends: Unknown.
- Eastern & Southeastern Africa (*lateralis*): Unknown.
Trends: Unknown.

Changes in status: None known. The species is generally fairly common throughout much of its extensive range, although seldom very numerous. There have been no major changes in its distribution in Southern Africa during the 20th century, and in certain areas, it appears to have adapted well to man-modified habitats (Harrison *et al.*, 1997).

Senegal Lapwing *Vanellus lugubris*

Monotypic. The species is very patchily distributed in Africa south of the Sahara from Sierra Leone and southern Mali to southern Uganda and southern Kenya, and south in Eastern Africa to Mozambique and northeastern South Africa. It is migratory throughout much of its range, but the movements are complex and poorly understood. Only one population is recognised, the entire population of the species.

- Southwestern West Africa, & Central & Eastern Africa: Unknown.
Trends: Unknown.

Changes in status: The species is locally very common. It may have decreased in parts of South Africa as a result of a change in veld-burning practices (Harrison *et al.*, 1997).

Black-winged Lapwing *Vanellus melanopterus*

Two subspecies have been described: *melanopterus* in Sudan, Ethiopia and Somalia, and *minor* in Kenya, Tanzania and Southern Africa. *V. m. melanopterus* is mainly sedentary. There are two discrete populations of *minor*; a

population which breeds in the highlands of Kenya and northern Tanzania and undertakes short altitudinal migrations; and a population which breeds in the highlands of South Africa and winters mainly on the coastal plain from southern Mozambique to East Cape. Only the latter is relevant.

- Southern Africa (*minor*): Unknown.

Trends: Unknown (WPE2). Possibly decreasing (Harrison *et al.*, 1997).

Changes in status: The population of *minor* in Southern Africa is poorly known. It is nowhere abundant, and may be decreasing as a result of the loss of habitat through changes in grazing and burning practices (Harrison *et al.*, 1997). According to Harrison *et al.* (1997), the conservation status of this population deserves closer scrutiny.

Comments: del Hoyo *et al.* (1996) and Harrison *et al.* (1997) assign the Eastern African population to *melanopterus*.

Crowned Lapwing *Vanellus coronatus*

Three subspecies have been described: *coronatus* from southeastern Sudan and Ethiopia to Angola, Zimbabwe and South Africa; *demissus* in Somalia; and *xerophilus* in southwestern Angola, Namibia, Botswana, western Transvaal and extreme western Zimbabwe. *V. c. demissus* is sedentary. Other populations are migratory, undertaking regular seasonal movements in response to changes in habitat. Three relatively discrete migratory populations are recognised: (1) a population of *coronatus* in Eastern Africa south to eastern South Africa; (2) a Central African population of *coronatus* in Southwest Uganda, eastern Zaire, Rwanda and Burundi; and (3) the entire population of *xerophilus* in Southwestern Africa.

- Eastern Africa (*coronatus*): Unknown.

Trends: Unknown.

- Central Africa (*coronatus*): Unknown.

Trends: Unknown.

- Southwest Africa (*xerophilus*): Unknown.

Trends: Unknown.

Changes in status: Overall trends in all three populations are unknown. The species has expanded its range in Southern Africa as a result of human activities (*e.g.* the clearing of vast areas of bush and woodland), but improved grazing practices with lower stocking rates and hence longer grass may have had a negative impact on abundance in some areas (Harrison *et al.*, 1997).

Comments: The first two editions of *Waterfowl Population Estimates* give the range of *xerophilus* simply as 'Namibia', and the range of the Central African population of *coronatus* as Southwestern Africa. The species is common to abundant in Eastern Africa (*coronatus*), locally common in Central Africa (*coronatus*), and common in Southwest Africa (*xerophilus*).

Brown-chested Lapwing *Vanellus superciliosus*

Monotypic. The species has only been proven to breed in southern Nigeria, although it probably breeds in a narrow band from Togo to northeastern Zaire. It is a trans-equatorial migrant, occurring in the breeding range only during the dry season (late November to early June), and spending the non-breeding season in southern Zaire, Rwanda, Burundi, Uganda, southwestern Kenya and northwestern Tanzania. Only one population is recognised, the entire population of the species.

- West & Central Africa: Unknown.

Trends: Unknown.

Changes in status: None known. The species is very poorly known. It is generally uncommon to rare, although local concentrations have been recorded in a few areas in its non-breeding range (Urban *et al.*, 1986).

Sociable Lapwing *Vanellus gregarius* (*Chettusia gregaria*)

Monotypic. The species breeds in extreme Eastern Europe and Western Asia from the lower Volga east to eastern Kazakhstan. Most birds apparently migrate southwest to winter in Northeast Africa (mainly northern Ethiopia and Sudan) and possibly Iraq, although some birds (possibly a discrete population) migrate south to winter in northern India and Pakistan. It was formerly a regular winter visitor and passage migrant in Egypt, but there have been very few records in recent years. One population is relevant.

- Western Asia/Northeastern Africa: A (WPE2).

Trends: Decreasing (WPE2).

Changes in status: There has been a marked contraction of range and decline in numbers throughout Eastern Europe and parts of Western Asia during the 20th century, and this decline is apparently continuing (Tucker & Heath, 1994;

Hagemeijer & Blair, 1997; Snow & Perrins, 1998). The European breeding population, now confined to the steppes between the Volga and Ural Rivers in European Russia and western Kazakhstan, is now estimated at only 1,000-2,100 pairs, while in northern Kazakhstan, numbers fell by 40% between 1930 and 1960, and by a further 50% between 1960 and 1987 (Tucker & Heath, 1994). This decline has been attributed mainly to the conversion of grass steppes into arable land and the consequent increase in grazing pressure on remaining grasslands (Belik, 1994; Tucker & Heath, 1994; Hagemeijer & Blair, 1997; Snow & Perrins, 1998). Recent estimates of "several tens of thousands" appear to be based on old information, and no large concentrations have been reported in recent years. In northern Kazakhstan, the largest post-breeding flocks since 1970 have numbered only some tens of birds, while the largest wintering flocks reported in recent years (up to 270) have been in Eritrea and Israel (del Hoyo *et al.*, 1996).

Comments: *Vanellus gregarius* is a globally threatened species in the category 'Vulnerable' (IUCN, 1996). It is included in Appendix I of the Bonn Convention under the name *Chettusia gregaria*.

In *Waterfowl Population Estimates*, the population is listed under the heading 'Western Asia/Eastern Africa', but this is misleading, as the main wintering areas are in Sudan and Eritrea, and the species has not been recorded in East Africa. The heading 'Western Asia/Northeast Africa' is preferred.

White-tailed Lapwing *Vanellus leucurus*

Monotypic. The species breeds from central Iraq and Azerbaijan east across Southwest Asia to Lake Balkhash in Kazakhstan. Populations breeding in southern Iran and Iraq appear to be mainly sedentary, but populations breeding in Kazakhstan, Turkmenistan, Uzbekistan and Kyrgyzstan are migratory, some moving southwest to winter in the Middle East and Northeast Africa (south to northern Sudan), while others move southeast to winter in Pakistan and Northwest India. The migratory 'divide' between these two groups is unknown. However, birds migrating through the South Caspian region of Iran are believed to belong to the southwestern group, while those migrating through the Seistan Basin on the Iran/Afghanistan border clearly belong to the southeastern group. Only one population is relevant, and this comprises a mixture of migratory and sedentary birds.

- Southwest Asia & Northeast Africa (wintering): B (WPE2). B or C.

Trends: Unknown (WPE2). Probably increasing (Hagemeijer & Blair, 1997; Snow & Perrins, 1998).

Changes in status: There has been some expansion in range in the north and west since the mid-1960s, with recent breeding in the North Caspian, Azerbaijan (not more than 100 pairs in the early 1990s), Armenia and Turkey (Hagemeijer & Blair, 1997; Snow & Perrins, 1998). This range expansion is possibly linked to the spread of irrigated agriculture in these regions. Increasing numbers have also been reported in the deserts of Central Asia, where the bird has started to breed in cultivated areas (del Hoyo *et al.*, 1996). There are also recent breeding records from eastern Arabia (Snow & Perrins, 1998).

Comments: In *Waterfowl Population Estimates*, this population is listed under the heading 'Southwest Asia/Eastern Africa', but this is misleading, as in Africa the species occurs regularly only in Egypt and Sudan. The heading 'Southwest Asia & Northeast Africa' is preferred.

The population size is poorly known, as the main breeding and wintering areas are likely to be in Iraq. At least 2,500 birds winter in Southwest Asia outside Iraq, and up to 850 have been counted in Sudan. An estimate of 'B or C' may be more appropriate than the 'B' given in *Waterfowl Population Estimates*.

SCOLOPACIDAE

Great Snipe *Gallinago media*

Monotypic. The species breeds in Northern and Central Europe and Northwest Asia east to 90°E, and migrates southwest to winter in Africa south of the Sahara. Some birds winter in West Africa from Mali to Chad, but the majority winter in southern Zaire, western and southern Tanzania, Angola, Zambia and Malawi. The species occurs commonly on autumn passage in the Ethiopian Highlands, at the height of the rainy season in August-September. The relatively small breeding population in Norway and Sweden is thought to winter mainly in West Africa. The large population breeding in Western Siberia and Northeast Europe is thought to migrate south on a relatively narrow front through Ethiopia and East Africa to wintering areas mainly in Southeast Africa, and to return north in spring on a broad front across Central Africa, the central Sahel Zone and the Mediterranean (Massoli-Novelli, 1988). Two main breeding groups are recognised.

- Scandinavia (breeding): 5,000-10,000 (WPE2). 18,000-51,000 (Tucker & Heath, 1994; Hagemeijer & Blair, 1997; Snow & Perrins, 1998).

Trends: Decreasing (WPE2). Stable (Tucker & Heath, 1994; Hagemeijer & Blair, 1997; Snow & Perrins,

1998).

- Western Siberia & Northeast Europe (breeding): B or C (WPE2). D (based on data from Tucker & Heath, 1994, Hagemeyer & Blair, 1997, and Snow & Perrins, 1998).

Trends: Decreasing (WPE2).

Changes in status: The Scandinavian breeding population is thought to have been relatively stable since about 1945 (Tucker & Heath, 1994; Hagemeyer & Blair, 1997; Snow & Perrins, 1998). Decreases were reported in southern Norway and southern Sweden in the latter part of the 19th century, but there has been some recovery since then.

The population breeding in Northeast and Central Europe has been declining since the 19th century. There was a marked contraction in the breeding range in Central Europe in the second half of the 19th century and early 20th century, and a long-term decline in numbers since then. In recent decades, large decreases have been reported in the breeding populations in Belarus, southern European Russia and Ukraine, and smaller decreases in Estonia, Lithuania and Poland (Tucker & Heath, 1994; Hagemeyer & Blair, 1997). These recent declines have been attributed to the loss and deterioration of floodplain meadows and marshland (Tucker & Heath, 1994).

Comments: *G. media* is listed as 'Near-threatened' by Collar *et al.* (1994) because of the widespread decline of the species in Central and Eastern Europe.

Recent estimates indicate that the Norwegian breeding population is in the range 5,000-15,000 pairs, and the Swedish population in the range 1,000-2,000 pairs. These figures suggest a total Scandinavian population of 6,000-17,000 pairs or 18,000-51,000 individuals, *i.e.* considerable higher than the estimate of 5,000-10,000 individuals given in the first two editions of *Waterfowl Population Estimates* (derived from Koskimies, 1993).

The population breeding in Central and Eastern Europe (excluding Russia) is estimated at about 13,000-21,000 pairs, and that in Russia at 150,000-250,000 pairs. Thus, this population could easily exceed 500,000 individuals. This is considerably higher than the estimate of 10,000-100,000 individuals (B or C) given in the first two editions of *Waterfowl Population Estimates*. It is suggested that the range 100,000-1,000,000 (D) would be a more appropriate estimate. However, Massoli-Novelli (1988) estimated that approximately 10 million *G. media* passed through the Ethiopian Highlands on autumn migration. This estimate was based on extrapolation from a single small study area, and is therefore very unreliable, but nevertheless suggests that the species is considerably more abundant than was formerly supposed.

Common Snipe *Gallinago gallinago*

Three subspecies have been described, two of which occur in the Agreement Area (the third subspecies, *delicata*, occurs in the Americas). The nominate subspecies has a wide breeding distribution across Western Eurasia, wintering south to northern Zaire and western Tanzania (rarely to Zambia and Malawi). *G. g. faroensis* breeds in Iceland, the Faroes, Orkney and Shetland, and winters mainly in Ireland. Fennoscandian populations of the nominate race winter mainly in Ireland, Britain, France and Iberia. Central European populations winter mainly in Southwest Europe and Northwest Africa. West Siberian breeders winter mainly in Southwest Asia and Subsaharan Africa. Most British and Irish breeders are relatively sedentary. Three main breeding groups are recognised: (1) nominate *gallinago* breeding in Europe and wintering mainly in Southern and Western Europe and Northwest Africa; (2) *gallinago* breeding in Western Siberia and wintering in Southwest Asia and Subsaharan Africa; and (3) the entire population of *faroensis*, wintering mainly in Ireland.

- Europe (breeding): >20,000,000 (WPE2).

Trends: Decreasing (WPE2).

- Western Siberia (breeding): E (WPE2).

Trends: Decreasing (WPE2). Unknown (Perennou *et al.*, 1994).

- Iceland (breeding - *faroensis*): 750,000 (WPE2).

Trends: Unknown (WPE2). Stable (Koskimies, 1993; Hagemeyer & Blair, 1997; Snow & Perrins, 1998).

Changes in status: Determination of trends in this widespread and abundant species is difficult because of the paucity of detailed information from the main breeding areas in Eastern Europe (Devort, 1997). Many authors believe that populations in Europe have declined since the end of the last century, and have attributed this decline to the drainage and degradation of wetlands. In recent years, marked decreases have been reported in Britain and the Netherlands, and smaller decreases in the large populations in Sweden, Finland, Germany, Poland and Ireland (Hagemeyer & Blair, 1997; Snow & Perrins, 1998). Hotker (1991) concluded that the overall trend in the population breeding in the European Union (57,200-59,000 pairs) was decreasing, probably through loss of breeding habitat. In Finland, numbers more than doubled between the 1940s and the 1970s, but decreased by 33% during the 1980s, and have continued to decrease since then (Hagemeyer & Blair, 1997). However, breeding numbers are reported to be stable in Belarus, Norway, Estonia, Hungary, Spain and Croatia (Hagemeyer & Blair, 1997; Snow & Perrins, 1998). A recent analysis

of the numbers of snipe shot at a marsh in northwestern France revealed that although there was considerable fluctuation from year to year, the long-term trend from the early 1970s to the mid-1990s was more or less stable (Olivier, 1996). Numbers in European Russia are thought to have been relatively stable in recent decades, and there may have been some increase on the Kola Peninsula during the 20th century (Snow & Perrins, 1998).

According to the first two editions of *Waterfowl Population Estimates*, the West Siberian breeding population is decreasing. However, the source for this trend is given as Perennou *et al.* (1994), who in fact give the trend as 'unknown'.

The breeding population in Iceland (*i.e.* the bulk of the population of *faroeensis*) is thought to be stable (Koskimies, 1993; Hagemeyer & Blair, 1997; Snow & Perrins, 1998).

Comments: The breeding population of nominate *gallinago* in Europe excluding Russia is estimated at about 600,000-750,000 pairs, and that in European Russia at between 1,000,000 and 10,000,000 pairs. The total of over 20 million for this population comes from Beintema & Muskens (1983), who estimated that between 20 million and 30 million birds passed through Northwest Europe in late summer. This estimate has also been accepted by Kalchreuter (1994) and Devort (1997). Little is known of numbers breeding in Western Siberia. However, the wintering population in Eastern Africa (probably mainly West Siberian breeders) has been estimated at 1,500,000 birds. The population of *faroeensis* includes an estimated 200,000-300,000 pairs in Iceland and 800-2,000 pairs in the Faroes (Snow & Perrins, 1998).

Jack Snipe *Lymnocyptes minimus*

Monotypic. The species has a wide breeding distribution at northern latitudes in Western Eurasia from Sweden east to 160°E, wintering south to Senegal, southern Sudan, southern India and Southeast Asia. No discrete populations are identifiable. Two main breeding populations are recognised in Western Eurasia: a European breeding population wintering mainly in Southern and Western Europe and West Africa; and a West Siberian breeding population wintering mainly in Southwest Asia and possibly also in Northeast Africa.

- Europe (breeding): C or D (WPE2).

Trends: Decreasing (WPE2).

- Western Siberia (breeding): Unknown.

Trends: Unknown.

Changes in status: The breeding populations in Central and Eastern Europe declined significantly during the 19th century, and this trend is thought to have continued throughout much of the 20th century, due to the continuing loss and degradation of wetlands. Koskimies (1993) thought that the large Finnish breeding population was probably decreasing, and Kuresoo & Leibak (1994) reported a continuous decline in the small Estonian population since the 19th century. Tucker & Heath (1994) reported probable decreases in the large wintering populations in Denmark and Britain. However, estimates of breeding numbers for the period 1970-1990 suggest that some breeding populations may now have stabilised (Tucker & Heath, 1994; Snow & Perrins, 1998). M.B. Pedersen (in Hagemeyer & Blair, 1997) concluded that it was not yet possible to determine long-term population trends, but thought it likely that the decline of the 19th century has continued throughout the 20th century because of the continuing loss and degradation of suitable habitat both on the breeding grounds and in the winter quarters. The West Siberian population remains very poorly known, although it seems that the species is much less common east of the Urals than in European Russia (Rogacheva, 1992).

Comments: The breeding population in Europe excluding Russia is estimated at 13,500-24,000 pairs, and that in European Russia in the range 10,000-100,000 pairs (Hagemeyer & Blair, 1997). Tucker & Heath (1994) estimated the wintering population in Europe at a minimum of 44,000 birds.

Black-tailed Godwit *Limosa limosa*

Three subspecies have been described. *L. l. islandica* breeds mainly in Iceland and winters mainly in Britain, Ireland and western France south to Morocco. Nominate *limosa* breeds on continental Europe from France eastwards across temperate Asia to about 90°E, and winters from North and West Africa east through the Middle East to Pakistan and India. *L. l. melanuroides* breeds in Eastern Asia and is extralimital. Three main groups of nominate *limosa* can be identified in Western Eurasia and Africa: (1) birds which breed in Europe east to about 20°E and migrate southwest to winter mainly in Northwest and West Africa from Morocco and Senegal east to the Niger inundation zone in Mali; (2) birds which breed in Europe east of about 20°E and migrate south through the Black Sea region and East Mediterranean to winter in east-central Africa north of the equator, and (3) birds which breed in west-central Asia and winter in Southwest Asia and Northeast Africa (south to Kenya). Small numbers of birds, presumably from this

population, extent south to Zambia, Botswana, Zimbabwe, northern Namibia and South Africa, especially in years in which there is widespread drought in Africa (Harrison *et al.*, 1997). Four populations are relevant.

- Western Europe/West Africa (*limosa*): 350,000 (WPE2).

Trends: Decreasing (WPE2).

- Eastern Europe/Eastern Africa: D (WPE2).

Trends: Unknown (WPE2). Decreasing (Tucker & Heath, 1994; Hagemeyer & Blair, 1997; Snow & Perrins, 1998).

- Southwest Asia & Northeast Africa (wintering): C (WPE2).

Trends: Unknown.

- Iceland (breeding - *islandica*): 65,000 (WPE2).

Trends: Increasing (WPE2).

Changes in status: The West European population increased considerably in the early 20th century, but there has been a widespread decrease in recent decades, notably in the Netherlands, which supports the bulk of the population (120,000-135,000 pairs in 1969 falling to 85,000-100,000 pairs in 1989-1991). This decrease, which is apparently continuing, has been attributed to improved drainage and over-intensification of grasslands mainly affecting reproductive success (Hagemeyer & Blair, 1997).

The East European population also appears to be in decline. Some increase has been reported in the small breeding populations in Romania and Latvia, and the breeding populations in Belarus and Hungary are thought to be stable, but decreases have been reported during the past two decades in the Czech Republic, Estonia, Lithuania, Poland, Slovakia and Ukraine, and possibly also in the large breeding population in European Russia (Tucker & Heath, 1994; Hagemeyer & Blair, 1997; Snow & Perrins, 1998).

No change is known in the status of the population wintering in Southwest Asia and Northeast Africa.

The Icelandic breeding population (*islandica*), estimated at 5,000-15,000 pairs in the late 1980s, is thought to be stable or increasing slightly (Tucker & Heath, 1994; Snow & Perrins, 1998). The number of *islandica* wintering in Britain increased by 55% (from 4,770 to 7410) during the period 1981-85 to 1988-92 (Cayford & Waters, 1996), and there has been an apparent increase of 62% in the total wintering population of *islandica* since the 1980s (Davidson, in press). However, much of this apparent increase may be due to a big increase in the numbers of nominate *limosa* wintering in Portugal (Davidson, in press).

Comments: The breeding population of nominate *limosa* in Western Europe is estimated at about 95,000-120,000 pairs (data from Tucker & Heath, 1994; Snow & Perrins, 1998). van Dijk *et al.* (1989) gave a figure of 94,700-119,000 pairs in the late 1980s, including 78,000-102,000 pairs in the Netherlands. The population breeding in Eastern Europe excluding Russia is estimated at 25,000-30,000 pairs, and that in European Russia at between 10,000 and 100,000 pairs (data from Tucker & Heath, 1994; Snow & Perrins, 1998).

The first two editions of *Waterfowl Population Estimates* included the East Mediterranean in the range of the Southwest Asia/Northeast Africa wintering population. This was apparently in error. Approximately 20,000 birds winter in Southwest Asia excluding Iraq, and a further 23,000 in Sudan.

Bar-tailed Godwit *Limosa lapponica*

Two subspecies have been described: the nominate form breeding in Western Eurasia, and *baueri* breeding in Eastern Asia and Alaska. The nominate subspecies breeds from northern Norway east to the Khatanga River (105°E), and winters on the coasts of Western Europe, Africa and the Middle East east to Northwest India. Birds breeding in Scandinavia, northern Russia and Western Siberia winter mainly in Western Europe, while birds breeding further east in Central Siberia (east to the Taymyr) migrate southwest through Western Europe to winter in West Africa, abundantly south to Guinea Bissau and locally in the Gulf of Guinea, with some birds continuing on to Southwestern Africa (Namibia and South Africa). Birds breeding in eastern Taymyr are believed to migrate overland to winter on the coasts of the Arabian Peninsula and southern Iran east to northwest India, with rather few birds reaching the Indian Ocean coast of East Africa. Three main wintering populations are recognised.

- Western Palearctic (wintering): 115,000 (WPE2).

Trends: Increasing (WPE2). Stable or small decrease (Davidson, in press).

- West & Southwest Africa (wintering): 700,000 (WPE2).

Trends: Unknown.

- Southwest Asia & Eastern Africa (wintering): C or D (WPE2).

Trends: Unknown.

Changes in status: A provisional estimate for the number of birds wintering on the Atlantic coast of Europe in the early 1990s suggests that there has been a slight decrease (about 6%) since the mid-1980s (Davidson, in press). In Britain, which supports almost half of this population, numbers fell by 14% between 1981-85 and 1988-92 (Cayford & Waters, 1996), following an increase from 1971 to 1985. A marked decrease in numbers of wintering birds has also been reported in France (Tucker & Heath, 1994). The relatively small populations breeding in Norway and Finland are apparently increasing, but trends for the main breeding populations in European Russia and Western Siberia are unknown (Hagemeijer & Blair, 1997).

The status of the West African wintering population is unclear. Mid-winter counts at the Banc d'Arguin have been far lower in recent years than in the 1980s, and it is possible that this population may also now be in decline. A comprehensive survey of the Banc d'Arguin in early 1997 found only 342,000 *L. lapponica*, a decrease of 37% on the 1980 total (Dodman *et al.*, 1997). However, the numbers wintering in Southwest Africa have been increasing, although these represent only a small fraction of the total population. There were only two records of *L. lapponica* in Southern Africa prior to 1939, but since then it has become a regular winter visitor to the west coast (Harrison *et al.*, 1997), with numbers building up to an estimated 2,600 by the mid-1980s (Summers *et al.*, 1987).

No change is known in the status of the population wintering in Southwest Asia and Eastern Africa.

Comments: Birds wintering in Pakistan and western India are probably best treated as part of the same population as the birds wintering in Southwest Asia and Eastern Africa, in which case the total population probably exceeds 100,000 birds.

Whimbrel *Numenius phaeopus*

Polytypic. Three subspecies occur in the Agreement Area, although one of these, *variegatus*, is largely extralimital, and another, *alboaxillaris*, is somewhat questionable. The nominate subspecies breeds from northeastern Greenland (scarce), Iceland and Scotland east across Northern Europe and Asia to the Taymyr Peninsula and middle Yenisey (about 90°E), and winters from the coasts of Africa through the Middle East to Pakistan, western India and Sri Lanka. *N. p. alboaxillaris* was described from wintering birds in Mozambique and was believed to breed in the steppes of the lower Volga southeast of the Urals. However, some authors consider it to be no more than a colour morph of the nominate form. Two populations of the nominate form are relevant: (1) birds breeding in Iceland, the Faroes, Scotland, Fennoscandia, the Baltic States and northwest Russia, and wintering mainly in West Africa to the Congo River; and (2) birds breeding in Western Siberia and migrating through the Caspian region and Middle East to winter in Eastern and Southern Africa and Madagascar. *N. p. alboaxillaris* is treated as a separate population in *Waterfowl Population Estimates*, but further study may show that this is unwarranted. The population of *variegatus* which breeds in Western and Central Siberia and winters from eastern Arabia and southeastern Iran east to western India and Sri Lanka is largely extralimital. A fourth subspecies, *hudsonicus*, occurs in the Americas.

- Europe/West Africa (*phaeopus*): 600,000-700,000 (WPE2).

Trends: Unknown (WPE2). Increasing slightly, especially in Fennoscandia (Hagemeijer & Blair, 1997).

- Western Siberia/Southern & Eastern Africa (*phaeopus*): Unknown.

Trends: Unknown.

- Southwest Asia/Eastern Africa (*alboaxillaris*): Unknown (WPE2). A.

Trends: Unknown (WPE2). Probably on the verge of extinction, if indeed it ever existed as a distinct subspecies..

Changes in status: In recent years, there appears to have been an overall increase in numbers breeding in Europe. The Estonian population has increased by 20-50% and the Finnish population by 50% since the late 1960s, while in Britain, numbers increased from 200 pairs in 1969/70 to 434-495 pairs in the late 1980s (Hagemeijer & Blair, 1997; Gibbons *et al.*, 1993). However, the large breeding population in Iceland (over half the European total) appears to be relatively stable, while the small populations in the Faroes and Belarus are thought to be decreasing. No change is known in the overall status of the West Siberian breeding population, except that the small number of birds wintering in Southern Africa (currently estimated at about 3,300 birds) has been increasing during the 20th century (Harrison *et al.*, 1997).

Very little information is available on the status and abundance of *N. p. alboaxillaris*. However, the bird was evidently rare by the 1950s (Dement'ev & Gladkov, 1969), and was thought by Belik (1994) to be extinct. Widespread ploughing of the native steppe and intensification of grazing on the remaining virgin lands in the mid-20th century led

to a rapid decline in the Kazakhstan population of *Numenius arquata*, and are thought to have been responsible for the decline in *N. p. alboaxillaris*. However, a single bird showing the characteristics of *alboaxillaris* was seen in the

steppes of southern Western Siberia in May/June 1997 (Boere & Yurlov, 1998).

Comments: The breeding population of *phaeopus* in Northern Europe is believed to be in the range 180,000-290,000 pairs, of which 100,000-200,000 pairs are in Iceland, 50,000-70,000 pair in Fennoscandia, and 10,000-30,000 in European Russia (Hagemeijer & Blair, 1997). Less than 50 pairs breed in northeastern Greenland (Boertmann, 1994). These figures are the basis of the present estimate of 600,000-700,000 birds. Mid-winter counts give a total of only 66,000 birds, barely 10% of this, suggesting that the main wintering areas in West Africa remain to be discovered. Mid-winter counts in Southwest Asia and Eastern Africa give a total of 20,000.

N. p. alboaxillaris was described in 1921 from specimens collected in Mozambique, and believed by its describer to be a resident form in East Africa and on Mauritius (Peters, 1934). Peters (1934) did not give it subspecific status, but noted that if it was a valid form, its breeding range was likely to be somewhere in Western Siberia. Dement'ev & Gladkov (1969), quoting Portenko, give the breeding range as the steppes beyond the Volga River and on the Ural River, but these authors were unable to find any fully confirmed breeding records. They also noted that a number of specimens of nominate *phaeopus* had been obtained in summer in the supposed breeding grounds of *alboaxillaris*. According to Vaurie (1965), the form *alboaxillaris* represents rare individual variants of the nominate form. Hayman *et al.* (1986) also suggested that *alboaxillaris* was merely a colour morph of the nominate form, while Urban *et al.* (1986) questioned its validity, and Johnsgard (1981) disregarded it entirely. However, Cramp & Simmons (1983) accept it as a valid form, on the basis of size difference, but suggest that nominate *phaeopus* and *alboaxillaris* probably intergrade somewhere in southeastern European Russia, as birds with intermediate coloration sometimes occur on migration as far west as Central Europe. Clearly, further study is required.

Slender-billed Curlew *Numenius tenuirostris*

Monotypic. The only definite breeding records are in the Tara region near Omsk (75°E) in Russia. The species migrates southwest to winter in the Mediterranean Basin west to Morocco, and perhaps also in small numbers in Iraq and the Arabian Peninsula. In recent years, the species has only been found wintering regularly at one site in Morocco, where there were five birds in 1986, four in 1988, three from 1989 to 1992, two in 1993 and 1994, one in 1995, and none in the winter of 1995/96 (van der Have *et al.*, 1997). Only one population is recognised, the entire population of the species.

- Gulf, Mediterranean & Morocco (wintering): 100-400 (WPE2). 50-270 (Gretton, 1994).

Trends: Decreasing (WPE2).

Changes in status: Gretton (1991) estimated the total population at 100-400, but this may be optimistic, as since 1980, there have been on average only about 10 confirmed sightings of the species per year, involving only 15-22 individuals (A. Gretton in Heredia *et al.*, 1996). Gretton (1994) has therefore revised the population estimate to only 50-270 birds. The only substantial number of *N. tenuirostris* seen in recent years was a flock of 19 in Italy in the winter of 1994/95. The main cause of the decline appears to have been excessive hunting in the 19th century and early part of the 20th century.

Comments: *Numenius tenuirostris* is a globally threatened species in the category 'Critical' (IUCN, 1996). It is listed in Appendix I of the Bonn Convention, and is the subject of a Memorandum of Understanding concluded under the Bonn Convention in 1994 (Memorandum of Understanding Concerning Conservation Measures for the Slender-billed Curlew *Numenius tenuirostris*). The European Commission is financing a conservation and monitoring project for the Slender-billed Curlew under its LIFE Programme. An Action Plan for *N. tenuirostris* in Europe has been compiled by A. Gretton (*in Heredia et al.*, 1996).

It has recently been suggested that the main breeding grounds of the species were in wet areas in the forest-steppe and northern steppe zones of Western Siberia (Danilenko *et al.*, 1996). Some of the old summer records of *N. tenuirostris* on the steppes of Eastern Europe, Western Siberia and Kazakhstan perhaps relate to breeding birds. If this was the case, the widespread conversion of these steppes to agricultural land and intensification of grazing on the remaining virgin steppes may have been the principal cause for the near-disappearance of this species. A survey of many of the remaining steppe areas in May and June 1997 failed to locate any *tenuirostris* (Boere & Yurlov, 1998).

Eurasian Curlew *Numenius arquata*

Two subspecies have been described. The nominate form breeds widely in Western, Central and Northern Europe east to the Urals, and winters south commonly to Mauritania. *N. a. orientalis* breeds from Southeast Europe and the Urals east across Asia to about 120°E, the westernmost populations wintering through the Middle East to Eastern and Southern Africa, and occasionally also on the coast of Southwest Africa north to the Gulf of Guinea. There may be some mixing of the two subspecies in the Gulf of Guinea, but the Banc d'Arguin in Mauritania seems to be the usual

southern limit for birds of the nominate race. According to Harrison *et al.* (1997), there have been no definite records of nominate *arquata* in southern Africa. Only two populations are recognised.

- Europe (breeding - *arquata*): 348,000 (WPE2).

Trends: Decreasing (WPE2). Uncertain; perhaps relatively stable or increasing slightly.

- Southwest Asia & Eastern Africa (wintering - *orientalis*): C (WPE2).

Trends: Unknown (WPE2). Probably decreasing (Rogacheva, 1992; Belik, 1994; Harrison *et al.*, 1997).

Changes in status: The current status of the European population is uncertain. Tucker and Heath (1994) concluded that the species was declining both as a breeding bird and in winter, while Hotker (1991) thought that the breeding population in the European Union (about 60,000 pairs) was stable or decreasing slightly. Recent decreases have been reported in the breeding populations in many parts of Europe, notably in Sweden, Norway, Ireland, Germany, Latvia and Lithuania, and there is also some evidence of a slight decline in the large British population, especially in the south (Gibbons *et al.*, 1993). The decreases have been most pronounced near the edge of the species' breeding range in Southern and Central Europe. However, recent increase have been reported in France, the Netherlands, Belgium, Denmark and parts of Germany, and the large populations in Finland and Russia are thought to be relatively stable or increasing slightly (Tucker & Heath, 1994; Hagemeyer & Blair, 1997; Snow & Perrins, 1998). Tucker & Heath (1994) thought that there had been a recent decrease in the number of birds wintering in Western Europe, especially in France and Ireland, and decreases have been reported in the numbers of birds wintering at the Banc d'Arguin in Mauritania (Dodman *et al.*, 1997) and in the Gulf of Gabes in Tunisia (van der Have *et al.*, 1997). However, Cayford & Waters (1996) found that the number wintering in Britain increased by 26% (from 91,200 to 115,000) during the period 1981-85 to 1988-92, and a recent provisional estimate of the numbers wintering in Western Europe and Northwest Africa suggests that there has been a 22% increase between the mid-1980s and early 1990s (Davidson, in press). It may be that the widespread (and conspicuous) declines in the relatively small breeding populations at the edge of the species' range have been more than compensated by increases elsewhere, and that overall numbers have remained relatively stable or are increasing slightly.

N. a. orientalis is reported to have become rare in many parts of its breeding range in Central Siberia because of a loss of suitable habitat to development (Rogacheva, 1992), and has disappeared from much of its range in the steppe zone of Kazakhstan since the 1950s (Belik, 1994). The species has also become less abundant on its wintering areas in Southern Africa since the beginning of the 20th century (Harrison *et al.*, 1997), and it seems likely that the population as a whole is in decline.

Comments: The breeding population in Europe excluding Russia is estimated at 123,000-147,000 pairs and that in European Russia at between 10,000 and 100,000 pairs (Hagemeyer & Blair, 1997). van Dijk *et al.* (1989) estimated the European population, excluding Russia, at 122,000-128,000 pairs in the late 1980s. However, J. Bednorz and M. Grant (in Hagemeyer & Blair, 1997) think that many of the European breeding estimates are too low, and that the Russian breeding population is likely to be near the upper limit of the range given. If this is the case, the population estimate of 348,000 birds (from Smit & Piersma, 1989) is much too low.

Spotted Redshank *Tringa erythropus*

Monotypic. The species has a wide breeding distribution across northern Eurasia from central Sweden eastwards, with western populations wintering patchily in Southern and Western Europe, Northwest Africa and the Middle East and more commonly in Sub-Saharan Africa from Mauritania and Ethiopia south to northern Zaire, Burundi and northern Tanzania. No discrete populations are identifiable. However, European breeders apparently winter mainly in Southern Europe, Northwest Africa and West Africa east to the Gulf of Guinea, while West Siberian breeders winter mainly in the Middle East and Northeast and Eastern Africa. Two main groups are recognised.

- Europe/West Africa: 75,000-150,000 (WPE2).

Trends: Unknown (WPE2). Probably stable (Hagemeyer & Blair, 1997; Snow & Perrins, 1998).

- Southwest Asia & Eastern Africa (wintering): B or C (WPE2).

Trends: Unknown.

Changes in status: There has been some southward expansion in the breeding range in Sweden since the 1960s, but otherwise the breeding populations in Fennoscandia and European Russia are thought to be relatively stable (Hagemeyer & Blair, 1997; Snow & Perrins, 1998).

Comments: The breeding population in Fennoscandia is estimated at 26,000-36,000 pairs, and that in European Russia at between 1,000 and 10,000 pairs (Hagemeyer & Blair, 1997), suggesting a total population in Europe and

West Africa of 80,000-140,000 birds. Only about 6,500 can be accounted for in winter, and it is assumed that the great majority are widely dispersed at wetlands in Africa south of the Sahara.

The Southwest Asian and Eastern African wintering population remains poorly known. Partial mid-winter counts give 1,000 in Southwest Asia and 8,000 in Eastern and Southern Africa.

Common Redshank *Tringa totanus*

Polytypic. Three subspecies occur in the Agreement Area. *T. t. robusta* breeds in Iceland and the Faroes, and winters mainly in the British Isles, North Sea area and northwestern France, although stragglers reach Northwest Africa. *T. t. totanus* breeds from Britain and Ireland east to the Urals. The British and Irish populations (sometimes considered as a separate subspecies *britannica*) are partly sedentary, showing only limited movement to the Atlantic coast of France. Fennoscandian, Baltic and west-central European populations winter in the West Mediterranean and on the Atlantic coast of Western Europe south to West Africa, while birds from Eastern Europe apparently winter in the East Mediterranean and Asia Minor, with many birds probably continuing on into Subsaharan Africa. *T. t. ussuriensis* breeds across Russia from the Urals to Manchuria, and winters in Eastern Africa (to about 10°S) and east through the Middle East and Southern Asia to the Philippines. *Waterfowl Population Estimates* recognises only three populations, corresponding to the three subspecies, but the estimate for nominate *totanus* relates only to the westernmost wintering populations of this form.

- Eastern Atlantic (wintering - *totanus*): 177,000 (WPE2).

Trends: Decreasing (WPE2).

- Eastern Europe/East Mediterranean & Africa (*totanus*): D.

Trends: Decreasing.

- Southwest Asia & Eastern Africa (wintering - *ussuriensis*): Unknown.

Trends: Unknown.

- Iceland & Faroes (breeding - *robusta*) 109,000 (WPE2). 150,000-300,000 (based on breeding populations)

Trends: Decreasing (WPE2). Stable or increasing (Hagemeijer & Blair, 1997; Davidson, in press)

Changes in status: Both the continental European population of *totanus* and the population of '*britannica*' in Britain and Ireland are decreasing. Tucker & Heath (1994) report recent decreases in the large breeding populations in Britain, the Netherlands, Germany and Russia, and range contractions in several countries with smaller populations. In the Netherlands, the population has declined by over 50% since the 1960s (Hagemeijer & Blair, 1997). Decreases have also been reported in the substantial populations in Estonia, Latvia, Poland, Spain and Ukraine, and probably also in Denmark, while an increase has been reported only in Finland (Tucker & Heath, 1994). These widespread declines have been attributed to drainage of wetlands and agricultural intensification on the breeding grounds. A recent provisional estimate of the numbers of *totanus* wintering in Southwest Europe and North Africa suggests that there has been a 55% decrease between the mid-1980s and early 1990s, although much of this apparent decrease may have been due to problems in coverage (Davidson, in press). Rather strangely, *T. totanus* was one of the few species of shorebirds to have shown an increase during a survey of the Banc d'Arguin in early 1997. Over 102,000 were counted during the 1997 survey, representing an increase of 46% over the 1980 total (Dodman *et al.*, 1997). van der Have *et al.* (1997) also found that there had been an increase of 28% in the numbers wintering in the Gulf of Gabes in Tunisia between 1984 and 1994 (to over 20,000).

The numbers of *robusta* breeding in Iceland are believed to be stable (Koskimies, 1993; Hagemeijer & Blair, 1997). However, Cayford & Waters (1996) found that the number of *T. totanus* wintering in Britain increased by 51% (from 75,400 to 114,000) during the period 1981-85 to 1988-92, and a recent provisional estimate of the numbers wintering in Northwest Europe (believed to be mainly *robusta*) suggests that there has been a 34% increase between the mid-1980s and early 1990s (Davidson, in press). There is no evidence to suggest that this population is decreasing, as stated in the first two editions of *Waterfowl Population Estimates*.

Comments: The first two editions of *Waterfowl Population Estimates* list only two populations of *T. totanus* in Europe, with the birds breeding in Britain and Ireland ('*britannica*') included within nominate *totanus*. The breeding population of *totanus* in continental Europe excluding Russia has been estimated at between about 200,000 and 290,000 pairs (data from Tucker & Heath, 1994), and that in European Russia at between 10,000 and 100,000 pairs (Hagemeijer & Blair, 1997). There are also believed to be between 10,000 and 100,000 pairs of *totanus* breeding in Turkey and 200-250 pairs in Tunisia (Snow & Perrins, 1998). The breeding population of '*britannica*' in Britain and Ireland was estimated at 35,000-38,600 pairs in the mid-late 1980s (Gibbons *et al.*, 1993). These figures suggest a combined European population of *totanus* and '*britannica*' of at least 250,000 pairs and possibly as many as 500,000 pairs, *i.e.* over 750,000 birds. The estimate of 177,000 for the East Atlantic wintering population of *totanus* given in the first two editions of *Waterfowl Population Estimates* (from Smit & Piersma, 1989) relates to only a small proportion of the total population of *totanus*, *i.e.* those birds wintering in the West Mediterranean and on the Atlantic

coast of Southwest Europe and West Africa, and does not take into account the large numbers of birds, presumably from breeding areas in Eastern Europe and Turkey, which winter in the East Mediterranean, Asia Minor and Africa south of the Sahara. These birds, which probably number several hundreds of thousands in winter, merit treatment as a separate population of nominate *totanus* (East Europe/East Mediterranean & Africa). There may also be good justification for treating the morphologically distinct and relatively sedentary breeding populations in Britain and Ireland ('*britannica*') as a separate population.

The Southwest Asian and Eastern African wintering population of *ussuriensis* remains poorly known. Partial mid-winter censuses give a total of 55,000.

The breeding population of *robusta* in Iceland has been estimated at between 50,000 and 100,000 pairs, suggesting a population of about 150,000-300,000 birds in winter, which is considerably higher than the estimate of 109,000 in the first two editions of *Waterfowl Population Estimates* (from Smit & Piersma, 1989). (Only 5-10 pairs breed in the Faroes).

Marsh Sandpiper *Tringa stagnatilis*

Monotypic. The species breeds in a broad belt in the temperate zone from Eastern Europe (30°E) to about 115°E, the westernmost populations wintering in Southwest Asia and Sub-Saharan Africa south to the Cape. A few birds winter in the East Mediterranean. Two populations are recognised: (1) birds breeding in Eastern Europe and migrating through the Black Sea and Mediterranean region to winter mainly in West and Central Africa; and (2) birds breeding in Western Asia and wintering mainly in the Middle East and Eastern and Southern Africa.

- Europe/West Africa: C or D (WPE2).

Trends: Unknown.

- Southwest Asia, Eastern & Southern Africa (wintering): C (WPE2).

Trends: Unknown.

Changes in status: There has been some expansion of the breeding range to the north and west in Europe in recent years, but the total population outside Russia remains very small (currently 13-40 pairs; Hagemeyer & Blair, 1997). Since the 1960s, there has been some northward expansion of the breeding range in Russia, but more recently, there have been reports of some decline in breeding populations in the Caspian and Aral Sea regions (del Hoyo *et al.*, 1996).

Comments: Mid-winter censuses give a total of 18,000 in Southwest Asia and Eastern and Southern Africa.

Common Greenshank *Tringa nebularia*

Monotypic. The species breeds widely across northern Eurasia from Scotland eastwards, the westernmost populations wintering in Southern Europe (relatively few), Southwest Asia and Sub-Saharan Africa south to the Cape. The small breeding population in Scotland (1,100-1,600 pairs) apparently winters mainly in Britain, Ireland and Northwest France. Two populations are recognised: (1) birds breeding in Northern Europe and wintering in Southwest Europe, Northwest Africa and West Africa east to Chad; and (2) birds breeding in Western Siberia and wintering mainly in the Middle East and Eastern and Southern Africa. However, there is clearly a considerable amount of overlap between these populations, as ringing recoveries have shown that birds from breeding areas in Finland and northwestern Russia may winter in areas as far apart as North Africa, Mali, Zaire, South Africa and India (Harrison *et al.*, 1997).

- Europe/West Africa: D (WPE2).

Trends: Stable (WPE2).

- Southwest Asia, Eastern & Southern Africa (wintering): C or D (WPE2).

Trends: Unknown.

Changes in status: Tucker & Heath (1994) and Hagemeyer & Blair (1997) suggest that overall the European breeding population has been stable in recent decades. There have been some local decreases in Scotland and parts of European Russia, but the large breeding populations in Fennoscandia appear to be relatively stable.

Comments: The breeding population in Europe excluding Russia is estimated at 58,000-83,000 pairs, and that in European Russia at between 10,000 and 100,000 pairs (Hagemeyer & Blair, 1997). The Southwest Asian and Eastern and Southern African wintering population remains poorly known. Partial mid-winter censuses give a total of 28,000.

Green Sandpiper *Tringa ochropus*

Monotypic. The species breeds widely across northern Eurasia from Norway and Germany eastwards, the westernmost populations wintering in western and Southern Europe, North Africa, Sub-Saharan Africa south commonly to Zaire and

Zambia, and through Asia Minor and the Middle East to western Iran. Small numbers of birds reach Zimbabwe, Botswana and northern South Africa. Two populations are recognised: (1) birds breeding in Northern Europe and wintering in Southern and Western Europe, and North and West Africa; and (2) birds breeding in Western Siberia and wintering mainly in the Caspian region, the Middle East and Northeast Africa.

- Europe/West Africa: D or E (WPE2).

Trends: Unknown (WPE2). Stable or increasing slightly (Hagemeijer & Blair, 1997).

- Southwest Asia & Eastern Africa (wintering): Unknown.

Trends: Unknown.

Changes in status: Most breeding populations in Europe appear to be stable or increasing. Since the mid-1970s, increases have been reported in Finland, Norway, Germany, Denmark, Czech Republic and Austria, and a decrease only in the small population in Ukraine (Hagemeijer & Blair, 1997). Expansions in the breeding range have been reported in Denmark, Norway, Finland and European Russia (Hagemeijer & Blair, 1997; Snow & Perrins, 1998).

Comments: The breeding population in Europe excluding Russia is estimated at 153,000-193,000 pairs, and that in European Russia at between 100,000 and 1,000,000 pairs (Hagemeijer & Blair, 1997). The Southwest Asian and Eastern African wintering population remains poorly known.

Wood Sandpiper *Tringa glareola*

Monotypic. The species breeds widely across northern Eurasia from West Norway and Denmark eastwards, the westernmost populations wintering mainly in Subsaharan Africa south to the Cape, but locally also in Northwest Africa, the Mediterranean Basin, Iraq and southwestern Iran. European breeders winter mainly in West Africa east to Cameroon, while West Siberian breeders winter mainly in Eastern and Southern Africa, but there is a considerable amount of mixing in the Black Sea/East Mediterranean and east-central Africa. Two populations are recognised: (1) birds breeding in Europe and wintering mainly in West Africa; and (2) birds breeding in Western Siberia and wintering mainly in Eastern and Southern Africa.

- Europe (breeding): E (WPE2).

Trends: Decreasing (WPE2).

- Southwest Asia, Eastern & Southern Africa (wintering): D or E (WPE2).

Trends: Unknown.

Changes in status: The very large breeding population in Finland (200,000-300,000 pairs) has been decreasing since the 1970s, following a period of increase in the 1960s, and decreases have also been reported in recent years in Denmark, Lithuania and Ukraine (Tucker & Heath, 1994; Hagemeijer & Blair, 1997). The reasons for the decline are unclear. Tucker & Heath (1994) attribute the decline to the drainage and exploitation of peatlands in Europe, while Vaisanen (in Hagemeijer & Blair, 1997) thinks that the decline is more likely to be related to factors affecting the wintering areas in West Africa.

The breeding population in Europe excluding Russia is estimated at 299,000-412,000 pairs, and that in European Russia at between 100,000 and 1,000,000 pairs (Hagemeijer & Blair, 1997). R.A. Vaisanen (in Hagemeijer & Blair, 1997) has given a crude estimate of 1.2 million pairs for the total European population. The Southwest Asian and Eastern and Southern African wintering population remains poorly known. The wintering population in Sudan has been estimated at 375,000 birds.

Terek Sandpiper *Tringa cinerea*

Monotypic. The species breeds widely from Finland and Latvia eastwards across Northern Eurasia, the westernmost populations wintering in the Persian/Arabian Gulf, southern Red Sea and Indian Ocean coast of Africa and Madagascar south to South Africa. Only one population is recognised.

- Southwest Asia & Africa (wintering): 44,000 (WPE2).

Trends: Unknown (WPE2). Probably stable (Snow & Perrins, 1998).

Changes in status: There has been some westward expansion of the breeding range in Europe during the 20th century, with birds breeding in Finland since the 1950s and in Latvia in the 1980s (Hagemeijer & Blair, 1997). The large breeding population in Russia is probably stable, as is the small population in Belarus (Snow & Perrins, 1998).

Comments: The breeding population in Europe excluding Russia is estimated at only 52-102 pairs, while that in European Russia is estimated at between 10,000 and 100,000 pairs (Hagemeijer & Blair, 1997). The population estimate of 44,000 is based on mid-winter counts in Southwest Asia and Eastern Africa. Probably only about 1,000

birds reach Southern Africa (Harrison *et al.*, 1997).

Common Sandpiper *Tringa hypoleucos*

Monotypic. The species breeds widely across temperate Eurasia, the westernmost populations wintering mainly in Sub-Saharan Africa south to the Cape. Very small numbers winter in Southwest Europe, the Mediterranean Basin and Southwest Asia. Western and Central European breeders (east to about 30°E) winter mainly in West Africa. Birds breeding in Eastern Europe (and probably also eastern Turkey and northwestern Iran) pass through the Black Sea/East Mediterranean region to winter mainly in Eastern, Central and Southern Africa. The bulk of the population breeding east of the Urals probably migrates southeast to winter in Southern Asia, and is thus extralimital. Two populations are recognised: (1) birds breeding in Western and Central Europe and wintering mainly in West Africa; and (2) birds breeding in Eastern Europe and Western Siberia and wintering mainly in Eastern, Central and Southern Africa.

- Western & Central Europe (breeding): E (WPE2).

Trends: Decreasing (WPE2). Mainly stable, with some local decreases in south (Hagemeijer & Blair, 1997).

- Southwest Asia & Eastern Africa (wintering): Unknown (WPE2). Probably E.

Trends: Unknown.

Changes in status: The huge breeding populations in Fennoscandia and the large breeding populations in Belarus, Estonia and Latvia are considered to be stable (Hagemeijer & Blair, 1997; Snow & Perrins, 1998), while in Britain, overall numbers have remained fairly stable in recent years, although there have been contractions on the fringes of the species' range (Gibbons *et al.*, 1993). Smaller populations south of about 55°N are either stable or decreasing slightly. A 30% contraction in breeding range has been reported in Ireland since 1968, and decreases have been reported in recent years in Germany, Poland, Austria, Switzerland and Slovenia. However, there are also reports of increases in Hungary and Slovakia, and a probable increase in Romania (Hagemeijer & Blair, 1997; Snow & Perrins, 1998).

The numbers breeding in European Russia are considered to be stable (Hagemeijer & Blair, 1997), but trends elsewhere in the breeding range of the Southwest Asian and Eastern African wintering population are unknown.

Comments: The breeding population in Europe excluding Russia is estimated at 504,000-665,000 pairs (Hagemeijer & Blair, 1997). Most of these birds belong to the western population, which therefore probably numbers between 1.5 and 2.0 million birds. However, only 38,500 are counted during the mid-winter censuses.

The breeding population in European Russia is estimated at between 50,000 and 500,000 pairs, and that in Turkey at between 2,000 and 10,000 pairs (Hagemeijer & Blair, 1997). No information is available on the numbers breeding in Western Siberia and Southwest Asia, but these are likely to be large, given the wide distribution of the species and its abundance on migration. Thus it is likely that this population also exceeds a million birds (E), although the mid-winter censuses in Southwest Asia and Eastern Africa can account for only about 9,200 birds.

Ruddy Turnstone *Arenaria interpres*

Two subspecies have been described: the nominate form breeding mainly in Eurasia, and *morinella* breeding in North America. The nominate form breeds in northeastern Canada and Greenland and from West Norway (and locally Denmark) eastwards across Northern Eurasia, the westernmost populations wintering on the coasts of Western Europe, the Middle East and Africa south to the Cape (including Madagascar). Three largely discrete populations are identifiable: (1) a population breeding in northeastern Canada (Axel Heiberg Island and Ellesmere Island) and Greenland, and wintering in Western Europe from the Irish Sea and North Sea to Iberia, with a few reaching West Africa (listed in *Waterfowl Population Estimates* as 'Western Palearctic wintering'); (2) a population breeding in Fennoscandia and northwestern Russia, and migrating through Western Europe and the West Mediterranean to winter on the Atlantic coast of Africa from Morocco to the Gulf of Guinea (with a few birds wintering in the West Mediterranean); and (3) a population breeding on the Arctic tundra east from about 50°E to Central Siberia, and migrating overland via Kazakhstan, the Caspian Sea and the Black Sea to winter in the East Mediterranean, Red Sea, Persian/Arabian Gulf and Indian Ocean coast of Africa south to South Africa.

- Western Palearctic (wintering): 67,000 (WPE2). At least 80,000, based on recent provisional estimates (N. Davidson, pers. comm.).

Trends: Stable (WPE2). Possibly increasing (Davidson, in press).

- West Africa (wintering): 32,000 (WPE2). 50,000-100,000 on the basis of recent estimates of breeding populations.

Trends: Stable (WPE2).

- Southwest Asia, Eastern & Southern Africa (wintering): C (WPE2).

Trends: Unknown.

Changes in status: A recent provisional estimate of the numbers of *A. interpres* wintering in Western Europe (mainly

birds from northeastern Canada and Greenland) suggests that there has been a 16% increase in this population between the mid-1980s and early 1990s (Davidson, in press). Cayford & Waters (1996) found that the number wintering in Britain increased by 45% (from 44,480 to 64,400) during the period 1981-85 to 1988-92. It seems likely, therefore, that the size of this population is now considerably higher than the 67,000 given by Smit & Piersma (1989).

The main breeding populations in Fennoscandia and European Russia are considered to be stable, although there has been some decline in the southern Baltic during the 20th century (Hagemeijer & Blair, 1997; Snow & Perrins, 1998). A decrease has also been reported in the number of birds wintering at the Banc d'Arguin in Mauritania. A comprehensive survey of the Banc d'Arguin in early 1997 found only 7,160 *A. interpres*, representing a decrease of 58% on the 1980 total (Dodman *et al.*, 1997).

Comments: The 'population' of birds wintering in the Western Palearctic consists very largely of birds breeding in northeastern Canada and Greenland, but also includes some birds from breeding grounds in Siberia. The population description 'Western Palearctic (wintering)' is therefore confusing, as it is not clear whether or not this refers exclusively to birds from the population breeding in Canada and Greenland. For the purposes of this Agreement, the description 'NE Canada & Greenland/W Europe & NW Africa' would be preferable.

In the first two editions of *Waterfowl Population Estimates*, the birds wintering in Southern Africa were included in the population which breeds in Northern Europe and winters mainly in West Africa ('Western & Southern Africa - wintering'). However, the estimate of 32,000 birds for this population (from Smit & Piersma, 1989) was based entirely on counts in West Africa. Summers *et al.*, (1987) have estimated the wintering population in Southern Africa (mainly Namibia and South Africa) at 28,000 birds, and imply that these birds belong to a West Siberian/East African population. Harrison *et al.* (1997) also suggest that birds wintering in Southern Africa originate from Western Siberia. There is some evidence to suggest that the birds undertake a loop migration, reaching Southern Africa via the east coast of Africa, and returning northward along the west coast of Africa to the Gulf of Guinea then across the Sahara to the East Mediterranean. The population of *Calidris alba* wintering in Southern Africa is believed to undertake a similar loop migration.

The breeding population in Europe excluding Russia is estimated at 14,800-25,200 pairs, and that in European Russia at between 3,000 and 10,000 pairs (Hagemeijer & Blair, 1997), suggesting a total population of between 50,000 and 100,000 birds. This is considerably higher than the present estimate of 32,000 birds for this population (from Smit & Piersma, 1989), which is based on counts of wintering birds in West Africa.

Great Knot *Calidris tenuirostris*

Monotypic. The species is mainly extralimital, the bulk of the population breeding in Eastern Siberia and wintering in Australasia. However, a small and apparently discrete population winters on the shores of the Arabian Sea, from Oman (up to 1,200), the United Arab Emirates and eastern Saudi Arabia (100) to Pakistan and northwestern India. Only one population is relevant.

- Southwest Asia & Western South Asia (wintering): A (WPE2).

Trends: Unknown.

Changes in status: None known. The population almost certainly exceeds 1,500 individuals.

Red Knot *Calidris canutus*

Polytypic. Two subspecies occur in the Agreement Area. The nominate form breeds in the Taymyr Peninsula and Severnaya Zemlya, and winters mainly on the coasts of West Africa (from Morocco to the Gulf of Guinea) and Southern Africa (Namibia and South Africa). A small number of birds, presumably of this form winter, in the Gulf of Gabes in Tunisia. *C. c. islandica* breeds in the northeast Canadian Arctic and northern Greenland, migrates through Iceland and northern Norway, and winters in Western Europe, mainly in Britain, Ireland and the southern North Sea, with apparently few birds moving further south than the Atlantic coast of France. Two populations are recognised, corresponding to the subspecies.

- Western & Southern Africa (wintering - *canutus*): 516,000 (WPE2). 260,000 (T. Piersma, in litt.).

Trends: Stable (WPE2). Decreasing (T. Piersma, in litt.).

- Northeast Canada & Greenland/Iceland/Northwest Europe (*islandica*): 345,000 (WPE2). 400,000, based on a recent provisional estimate (N. Davidson, pers. comm.).

Trends: Stable (WPE2). Perhaps now stable again after a period of increase in the 1980s.

Changes in status: The population of *canutus* wintering in Western and Southern Africa has apparently declined considerably since the 1980s. A comprehensive survey of the Banc d'Arguin in Mauritania in early 1997 found only 229,000 *canutus*, a decrease of 37% on the 1980 total (Dodman *et al.*, 1997), and it is now believed that this population may number only about 260,000 birds (T. Piersma, in litt.). The numbers of *canutus* wintering on the coasts of Namibia and South Africa (currently about 13,000) have undoubtedly increased during the 20th century (Harrison *et al.*, 1997), but these represent only a small fraction of the total.

The population of *islandica* decreased from 609,000 in the early 1970s to 345,000 by the mid-1980s, probably because of severe summer weather in the Arctic. However, there has since been some recovery, and the population may now exceed 400,000 birds (N. Davidson, pers. comm.). Cayford & Waters (1996) found that the number wintering in Britain increased by 31% (from 222,800 to 291,000) during the period 1981-85 to 1988-92, and a recent provisional estimate of the entire population suggests that there was a 15% increase between the mid-1980s and early 1990s (Davidson, in press). However, Cranswick *et al.* (1997) found that numbers had remained relatively stable during the period 1991/92 to 1995/96, at between 230,000 and 260,000, and S. Gillings (in Hagemeyer & Blair, 1997) suggests that the numbers wintering in Britain and Ireland (*i.e.* the bulk of the population) have now more or less stabilised.

Comments: The populations and migration routes of *Calidris canutus* have been discussed in some detail in Piersma & Davidson (1992).

Sanderling *Calidris alba*

Monotypic. The species has a relatively restricted breeding range in Arctic Canada, northern Greenland and north-central Siberia between 90°E and 145°E, but winters widely along the coasts of North and South America, Western Europe, Africa, Madagascar, Southern Asia and Australasia. Birds breeding in northern Greenland (and possibly also northeastern Canada) migrate southeast through Northwest Europe to winter mainly on the West African coast (south to South Africa) where they mix with Siberian breeders. The westernmost breeding populations in Siberia follow one of two routes; either along the Atlantic seaboard to winter in Western Europe and on the west coast of Africa south to South Africa, or overland via the Caspian Sea, Black Sea and East Mediterranean to winter from the Red Sea and Persian/Arabian Gulf south along the East African coast to Madagascar and South Africa. There appears to be considerable mixing between these two 'flyways', and there is evidence of a 'loop migration', with birds travelling south in autumn via the Middle East and East African coast to South Africa, and returning in spring via the West African coast to the Gulf of Guinea, then overland to the central Mediterranean and North Sea. Two main wintering populations are recognised in the Agreement Area, although their validity is somewhat questionable. The population wintering from southeastern Iran and eastern Arabia to Pakistan and India is largely extralimital.

- East Atlantic, Western & Southern Africa (wintering): 123,000 (WPE2).

Trends: Stable (WPE2). Probably increasing in European part of its wintering range (Davidson, in press), and possibly decreasing in West Africa (Dodman *et al.*, 1997).

- Southwest Asia, Eastern & Southern Africa (wintering): 120,000 (WPE2).

Trends: Unknown.

Changes in status: A recent provisional estimate of the numbers of *C. alba* wintering in Western Europe suggests that there has been a 34% increase between the mid-1980s and early 1990s, but a part of this apparent increase may be due to improved coverage (Davidson, in press). However, Cayford & Waters (1996) found that the number wintering in Britain had increased by 69% (from 13,700 to 23,200) during the period 1981-85 to 1988-92. Whether this reflects a genuine increase in the 'flyway' population or merely a redistribution of birds is unknown. The latter may be the case, as a comprehensive survey of the Banc d'Arguin in Mauritania in early 1997 found only 20,500 *C. alba*, a decrease of 40% on the 1980 total (Dodman *et al.*, 1997).

Comments: No change is known in the status of the Southwest Asian and Eastern African wintering population. An estimated 20,000 birds winter in Southwest Asia and 100,000 in Eastern, Southern and Southwest Africa.

Little Stint *Calidris minuta*

Monotypic. The species breeds widely across Northern Eurasia from extreme northeastern Norway east to about 150°E, the westernmost populations wintering from Southern Europe (few), North Africa and Southwest Asia south through Subsaharan Africa and Madagascar to South Africa. Birds breeding in Norway winter mainly on the Atlantic seaboard, while birds passing through the Black Sea and Mediterranean winter mainly in North and West Africa. Birds wintering in Southern Africa have been recovered on migration at the Rift Valley lakes in East Africa, in the South Caspian region and in Kazakhstan. Two main passage/wintering groups are recognised: birds occurring in Europe, the Black Sea, the Mediterranean and North and West Africa (presumably mainly European breeders); and (2) birds

occurring in the Caspian region, Middle East, and Eastern and Southern Africa (presumably mainly West Siberian breeders).

- Europe & West Africa (wintering): 211,000 (WPE2).

Trends: Stable (WPE2).

- Southwest Asia, Eastern & Southern Africa (wintering): 1,000,000 (WPE2).

Trends: Unknown.

Changes in status: None known. The small population (200-500 pairs) breeding in northern Scandinavia is believed to be stable (Hagemeijer & Blair, 1997).

Temminck's Stint *Calidris temminckii*

Monotypic. The species breeds widely across Northern Eurasia from western Norway east to the Bering Straits, the westernmost populations wintering in Southeast Europe, Egypt, Tunisia, Sub-Saharan Africa mainly north of the equator, and the Middle East. No discrete populations are identifiable. Two main populations are recognised: (1) birds breeding in Europe and migrating through the Black Sea and East Mediterranean to winter in North and West Africa (south and east to the Gulf of Guinea); and (2) birds breeding in Western Siberia and migrating through the Middle East to winter in Northeast and East Africa (south to Kenya and Burundi).

- Europe/West Africa: Unknown (WPE2).

Trends: Unknown.

- Southwest Asia & Eastern Africa (wintering): Unknown.

Trends: Unknown.

Changes in status: No information is available on overall population trends in Russia or Scandinavia, but the Scandinavian coastal breeding population has declined markedly since 1970, especially in Finland (Hagemeijer & Blair, 1997).

Comments: The breeding population in Fennoscandia is estimated at 11,500-17,700 pairs (about 35,000-50,000 birds). The total Russian breeding population is thought to exceed one million pairs, but the proportions of these breeding in European Russia and Western Siberia are unknown.

Purple Sandpiper *Calidris maritima*

Generally regarded as being monotypic, although considerable geographical variation in size may warrant recognition of two or more subspecies. The species breeds in northeastern Canada, Greenland, Iceland, Svalbard, northern Scandinavia and northern Russia east to about 110°E. Northeast Canadian birds apparently winter mainly in North America, although a few have been recovered in Northwest Europe. Birds breeding in West Greenland are not known to emigrate. Many of the birds breeding in East Greenland winter in Iceland, but some continue on to Britain and Ireland. The Icelandic breeding population appears to winter mainly in Iceland, although some birds reach Britain and Ireland. All Northeast European and Siberian breeders winter in Northern and Western Europe from the Kola Peninsula and northern Norway south to northwestern France (less commonly to Spain and Portugal). The first two editions of *Waterfowl Population Estimates* recognise only one population in Western Eurasia.

- Eastern Atlantic (wintering): 50,500 (WPE2).

Trends: Stable (WPE2).

Changes in status: No detailed information is available on trends on the breeding grounds, but the breeding range in Europe seems to be stable, and the breeding populations in Iceland (10,000-30,000 pairs), Norway (5,000-10,000 pairs) and Bear Island (150 pairs) are considered to be stable (Hagemeijer & Blair, 1997; Snow & Perrins, 1998). Cayford & Waters (1996) found that the number wintering in Britain apparently increased by 32% (from 16,140 to 21,300) during the period 1981-85 to 1988-92.

Comments: Mid-winter counts are very ineffective for this species, which is widely dispersed along rocky coasts and around offshore islands. The mid-winter counts account for only about 50,000 birds, whereas the European breeding population is estimated at between 30,000 and 60,000 pairs, including 1,000-10,000 pairs in Russia (Hagemeijer & Blair, 1997). To these can be added an unknown, but probably large number of birds breeding in East Greenland. It seems probable that the mid-winter counts in Northwest Europe relate very largely to birds from Scandinavia and Russia (15,000-30,000 pairs), and that most of the birds breeding in East Greenland and Iceland and wintering there are being overlooked.

Both editions of *Waterfowl Population Estimates* recognise only a single population of *C. maritima* wintering in Western Eurasia. However, there is considerable justification for recognising two 'populations' of *C. maritima* in Western Eurasia: a population breeding in East Greenland and Iceland, and wintering mainly in Iceland, with a few birds reaching Britain and Ireland; and a population breeding in Scandinavia and Russia and wintering in Northwest

Europe. There is some evidence that the *C. maritima* breeding in Northeast Europe and those breeding in Western Siberia comprise two distinct groups: short-billed birds from Scandinavia, wintering in eastern Britain; and long-billed Russian birds wintering in southeast Britain and the Netherlands. Some further sub-division of populations may, therefore, be necessary.

Dunlin *Calidris alpina*

Polytypic. Three subspecies occur in the Agreement Area. The nominate race breeds across Northern Eurasia from northern Scandinavia east to about 160°E, the westernmost populations wintering in Northwest Europe, the Mediterranean Basin, Northeast Africa (south to Ethiopia), the Caspian region and the Middle East. Some authors treat the birds breeding in Central Siberia (Taymyr Peninsula to Kolyma River) as a separate form *centralis*, but these birds closely resemble nominate *alpina*. *C. a. schinzii* breeds in southeastern Greenland, Iceland, Britain, Ireland and the Baltic region, and winters in Southwest Europe and Northwest Africa (southwestern France to Mauritania). *C. a. arctica* breeds in northeastern Greenland and appears to winter mainly in West Africa (Morocco to Mauritania). Five populations have been identified: (1) *alpina* breeding in Northwest Siberia and Northeast Europe, and wintering in Western Europe, the Black Sea and the Mediterranean south to Morocco; (2) *alpina* (including '*centralis*') breeding in Central Siberia, and wintering in the Caspian region, Middle East and Northeast Africa; (3) *schinzii* breeding in southeastern Greenland and Iceland, and wintering mainly in Northwest and West Africa south to Senegal and Gambia; (4) *schinzii* breeding in the Baltic, Britain and Ireland, and wintering in Southwest Europe and Northwest Africa; and (5) *arctica* breeding in northeastern Greenland, and wintering in West Africa.

- Northern Siberia/Europe & North Africa (*alpina*): 1,373,000 (WPE2).

Trends: Decreasing (WPE2).

- Southwest Asia & Northeast Africa (wintering - *alpina*): 150,000 (WPE2).

Trends: Unknown.

- Iceland & Greenland (breeding - *schinzii*): 800,000 (WPE2).

Trends: Stable (WPE2).

- Baltic, U.K. & Ireland (breeding - *schinzii*): 21,000 (WPE2). 33,000-36,000 based on recent estimates of breeding populations.

Trends: Unknown (WPE2). Decreasing (Gibbons *et al.*, 1993; Tucker & Heath, 1994; Hagemeyer & Blair, 1997).

- Greenland (breeding - *arctica*): 15,000 (WPE2).

Trends: Stable (WPE2).

Changes in status: The present status of the population of *alpina* breeding in Northwest Siberia and Northeast Europe is unclear. Substantial declines were reported in the numbers wintering in France and Britain between the mid-1970s and mid-1980s, but there are indications that there has been some recovery since then. A recent provisional estimate of the numbers of *C. alpina* (mostly *alpina*, but including some *schinzii*) wintering in Western Europe suggests that there was a 14% decrease in numbers between the mid-1980s and early 1990s (Davidson, in press), but Cayford & Waters (1996) found a 23% increase in the numbers wintering in Britain during the period 1981-85 to 1988-92 (from 433,000 to 532,000). van der Have *et al.* (1997) found only a 1% decrease in the number of *alpina* wintering in the Gulf of Gabes in Tunisia between 1984 and 1994. The breeding populations of *alpina* in Scandinavia are considered to be stable (Hagemeyer & Blair, 1997), but trends on the main breeding grounds further east are unknown.

The large population of *schinzii* breeding in Iceland (200,000-300,000 pairs) is considered to be stable (Hagemeyer & Blair, 1997), and this is supported by recent counts at the main wintering area in Mauritania. A comprehensive survey of the Banc d'Arguin in early 1997 found almost 920,000 *C. alpina* (mainly *schinzii*), representing an increase of 12% on the 1980 total (Dodman *et al.*, 1997).

The population of *schinzii* breeding in Britain, Ireland and the Baltic region (southern Sweden, the Baltic States, Denmark, Germany and Poland) is decreasing throughout its range as a result of upland afforestation, agricultural intensification and decrease in coastal grazing (Hotker, 1991; Gibbons *et al.*, 1993; Tucker & Heath, 1994; Hagemeyer & Blair, 1997). The decreases have been particularly marked in the small populations breeding in coastal marshes around the Baltic (Tucker & Heath, 1994), but there has also been a slight decrease during the past two decades in the large population breeding in Britain and Ireland (Gibbons *et al.*, 1993).

No changes are known in the status of the population of *alpina* wintering in Southwest Asia and Eastern Africa, and the population of *arctica* breeding in Greenland.

Comments: van der Have *et al.* (1997) assigned 42% of the birds wintering in the Gulf of Gabes in Tunisia to the Central Siberian form '*centralis*'. This suggests either that birds showing the characteristics of '*centralis*' breed much further west than the Taymyr Peninsula, or that there is a considerable amount of mixing between the two populations of *alpina* in the Mediterranean region.

The total breeding population of 'temperate' *schinzii* is now estimated at 11,000-12,000 pairs, the great majority of which are in Britain (9,150-9,900 pairs) (data from Snow & Perrins, 1998, and Gibbons *et al.*, 1993). The estimate of 21,000 individuals given in the first two editions of *Waterfowl Population Estimates* (from Smit & Piersma, 1989) is therefore almost certainly too low. Meltofte (1985) has estimated the breeding population of *arctica* in Greenland at 5,000 pairs.

In the second edition of *Waterfowl Population Estimates*, the wintering range of the North Siberian breeding population of nominate *alpina* is erroneously given as West Africa. Morocco appears to be the normal southern limit of this population (Smit & Piersma, 1989). The wintering range of the eastern population of nominate *alpina* is given as Southwest Asia and Eastern Africa, but as few birds occur further south than Ethiopia and Somalia, Southwest Asia and Northeast Africa would be more appropriate.

Curlew Sandpiper *Calidris ferruginea*

Monotypic. The species has a rather restricted breeding range in extreme northern Russia between 80°E and 155°E, but a wide wintering distribution in Subsaharan Africa (south to South Africa), Southern Asia and Australasia. Birds wintering in Africa have been recovered from as far east as 128°E. Some birds migrate southwest along the Atlantic seaboard of Western Europe to West Africa in autumn, but these apparently return via the more direct route across the Sahara, Mediterranean and Eastern Europe in spring. No discrete populations are identifiable. Two main passage/wintering populations are relevant: (1) a population passing through Eastern Europe and the Mediterranean to winter mainly in West Africa; and (2) a population passing through the Caspian region and Middle East to winter mainly in Eastern and Southern Africa. These two populations are poorly defined, and it may be that the Black Sea is a major staging area for both groups (Smit & Piersma, 1989).

- Southwest Europe & West Africa (wintering): 436,000 (WPE2).

Trends: Stable (WPE2).

- Southwest Asia, Eastern & Southern Africa (wintering): 310,000 (WPE2).

Trends: Stable (WPE2).

Changes in status: Over 226,000 birds were recorded during a comprehensive survey of the Banc d'Arguin in Mauritania in early 1997, representing an increase of 30% on the 1980 total (Dodman *et al.*, 1997).

Comments: An estimated 550,000 birds are thought to pass through European Russia. Mid-winter censuses in Southwest Asia and Eastern and Southern Africa give a total of 309,000 (9,000 in Southwest Asia, 180,000 in Eastern Africa and 120,000 in Southern Africa).

Broad-billed Sandpiper *Limicola falcinellus*

Two subspecies have been described: the nominate form breeding in Fennoscandia and northwestern Russia east to the Kanin Peninsula, and probably also in Western Siberia, and *sibirica* breeding in Eastern Siberia. The breeding distribution of the nominate form east of the Urals is very imperfectly known. An apparently isolated breeding population in the Taymyr region east to about the Yenisey River is assigned by some authors to *falcinellus* (Peters, 1934; Ali & Ripley, 1969; Cramp & Simmons, 1983), and by other authors to *sibirica* (Hayman *et al.*, 1986; del Hoyo *et al.*, 1996). The migration routes and main wintering areas are poorly understood. The nominate form winters widely but sparsely in Subsaharan Africa (most commonly in the east), commonly around the Arabian Peninsula (especially on the Gulf coast and in Oman), and also in Pakistan, western India and Sri Lanka. Small numbers of birds (75-100) have recently been found wintering in the Gulf of Gabes in Tunisia (van der Have *et al.*, 1997). European breeders probably migrate mainly south or southeast on a broad front across East and Central Europe and the Caspian region to winter in Eastern Africa and the Arabian Peninsula, although there is evidence of a small passage through Western Europe, presumably to wintering areas in West Africa. The Sea of Azov and Black Sea region is an important staging area for this population. It seems likely that the birds wintering in Pakistan, western India and Sri Lanka (generally assigned to nominate *falcinellus*) are from the Central Siberian (Taymyr) population. Only one population is therefore relevant to the Agreement: a population breeding in Northern Europe (and possibly also Western Siberia) and passing through Eastern Europe and the Caspian region to winter in the Arabian Peninsula and Subsaharan Africa.

- Northern Europe/Southwest Asia & Eastern Africa: 25,000 (WPE2). 40,000-60,000, based on recent estimates of breeding populations.

Trends: Unknown (WPE2). Probably decreasing (Tucker & Heath, 1994; Hagemeyer & Blair, 1997; Snow & Perrins, 1998)

Changes in status: The large breeding population in Finland (about 12,000 pairs) has probably declined since 1970 and 1990, and there may have been some range contraction associated with this, while the much smaller breeding

populations in Norway, Sweden and European Russia are thought to be stable (Tucker & Heath, 1994; Hagemeyer & Blair, 1997; Snow & Perrins, 1998).

Comments: The European breeding population has been estimated at about 14,000-20,000 pairs, including 100-1,000 pairs in European Russia (Hagemeyer & Blair, 1997). This suggests a total population of 40,000-60,000 birds, *i.e.* considerably more than the estimate of 25,000 given in the first two editions of *Waterfowl Population Estimates*. The estimate of 25,000 was taken from Perennou *et al.* (1994), who did not include birds wintering in Africa, as these were thought to belong to a separate western population.

Ruff *Philomachus pugnax*

Monotypic. The species breeds widely across northern Eurasia from the U.K. (few) and the Netherlands east to about 170°E. The great majority winter in Africa south of the Sahara, the main concentrations being in the northern tropics from Senegal to Sudan and Ethiopia, although large numbers also winter in parts of East Africa and in Southern Africa. European breeders winter mainly in West Africa, along with some West Siberian birds (recoveries from as far east as 130°E). Birds wintering in Eastern and Southern Africa appear to be entirely of Siberian origin (with recoveries during the breeding season scattered between 70°E and 164°E). Two main wintering populations are recognised, but these mix extensively on the breeding grounds in Siberia: (1) birds breeding mainly in Northern and Central Europe and Western Siberia, and migrating through Western Europe, the Black Sea and Mediterranean region to winter in West Africa; and (2) birds breeding in Siberia and migrating through Southwest Asia to winter mainly in Eastern and Southern Africa.

- West Africa (wintering): E (WPE2).

Trends: Decreasing (WPE2).

- Southwest Asia, Eastern & Southern Africa (wintering): D or E (WPE2).

Trends: Unknown.

Changes in status: In Europe, the large breeding populations in Sweden and Russia are considered to be stable, and there has been some increase in Norway, but elsewhere, most breeding populations have shown a marked decline since about 1980 (Hagemeyer & Blair, 1997). Massive declines have occurred in Finland, the Netherlands, Poland, Latvia and Ukraine, and smaller declines in Denmark, Germany and Lithuania, and probably also in Belarus and Estonia (Hagemeyer & Blair, 1997; Snow & Perrins, 1998). These declines in breeding populations have been attributed to drainage of breeding and feeding areas, increased use of fertilisers, encroachment on grasslands, and hunting (Hagemeyer & Blair, 1997). A recent decline has also been reported in the numbers at the main wintering sites in West Africa (del Hoyo *et al.*, 1986). The overall status of the population wintering in Southwest Asia and Eastern and Southern Africa is unknown. However, the numbers wintering in Southern Africa have increased during the 20th century, the birds apparently benefiting from the great increase in artificial wetlands, irrigation schemes and agricultural land (Harrison *et al.*, 1997).

Comments: The breeding population in Europe excluding Russia is estimated at about 105,000-140,000 pairs (Hagemeyer & Blair, 1997). The wintering population in West Africa has been roughly estimated at about 1,000,000 birds, and that in Sudan at about 650,000 birds. During the African Waterfowl Census in January 1995, over 77,000 were recorded in Eastern Africa (with no counts in Sudan) and over 21,400 in Southern Africa (Dodman & Taylor, 1995).

Red-necked Phalarope *Phalaropus lobatus*

Monotypic. The entire population breeding on the mainland of Western Eurasia (east to about the Taymyr Peninsula) apparently winters at sea off the Arabian Peninsula from the Gulf of Aden east almost to Pakistan. Huge concentrations sometimes occur on migration in the Caspian region, Kazakhstan and central Iran. The winter quarters of the large Icelandic breeding population and the small populations in the Faroes and Scotland are unknown. These birds may migrate overland across Europe to join other European and Siberian breeders in the Arabian Sea, or they may join the Nearctic population which winters off the Pacific coast of South America. (Birds breeding in Greenland are thought to be a part of the Nearctic population). Only one population is relevant.

- Western Eurasia (breeding): D or E (WPE2).

Trends: Unknown (WPE2). Probably more or less stable.

Changes in status: Overall trends are uncertain, but there is no evidence of any widespread decline. The breeding populations in Norway and Russia are considered to be stable; the Icelandic population is possibly increasing, and the Finnish population is possibly decreasing (Snow & Perrins, 1998).

Comments: The breeding population in Iceland is estimated at 30,000-50,000 pairs and elsewhere in Europe,

excluding Russia, at about 25,000-60,000 pairs (data from Snow & Perrins, 1998). Concentrations of up to 600,000 have been reported on migration at Lake Tengiz in Kazakhstan, and over one million are thought to winter in the Arabian Sea (del Hoyo *et al.*, 1996).

Grey Phalarope *Phalaropus fulicaria*

Monotypic. The large populations breeding in northern Canada and Greenland and presumably also the small population breeding in Iceland (40-50 pairs) winter in the Atlantic in two main areas: in upwellings of the Guinea and Canary Currents off the bulge of West Africa between the Tropic of Cancer and 7-8°N; and in the Benguela Current off Namibia and South Africa. Whether or not these two wintering areas represent two different breeding populations is unknown. Populations breeding in Alaska and Northern Siberia (west to about 80°E) migrate southeast to winter in the Eastern Pacific off the coast of South America, and are thus extralimital. The winter quarters of birds breeding on Bear Island (50 pairs), Svalbard (150-300 pairs) and Novaya Zemlaya are unknown. These birds may migrate southwest to join the Nearctic populations in the Atlantic, or they may migrate east to join the Siberian and Alaskan birds in the Pacific. However, it is now becoming apparent that there is a small wintering population in the Indian Ocean. There have been several records of small numbers amongst the large flocks of *lobatus* in the Persian/Arabian Gulf and Arabian Sea in recent years, and the species has been recorded as a rare passage migrant in Kazakhstan, the South Caspian and Iraq. These birds could account for some or all of the birds breeding in Svalbard and/or Novaya Zemlaya. In the absence of more convincing evidence, only one population is considered relevant here.

- African Atlantic coasts (wintering): Unknown.

Trends: Unknown.

Changes in status: Overall trends are unknown. The small population in Iceland (40-50 pairs) is decreasing (Hagemeijer & Blair, 1997).

LARIDAE

White-eyed Gull *Larus leucophthalmus*

Monotypic. The species is virtually confined to the Red Sea and Gulf of Aden, breeding in Somalia, Ethiopia, Sudan, Egypt, Saudi Arabia and Yemen. It occurs throughout its range year round, but there is a pronounced southward and eastward shift of birds in winter, with stragglers reaching Kenya, Oman and Iran. Only one population is recognised, the entire population of the species.

- Red Sea & nearby coasts: 20,000 (WPE2).

Trends: Stable (WPE2).

Changes in status: Numbers are believed to be stable, but the species is confined to a small number of breeding sites, and is at constant risk from floating and beached oil.

Comments: *L. leucophthalmus* is a globally threatened species in the category 'Vulnerable' (IUCN, 1996), and is listed in Appendix I of the Bonn Convention. The total breeding population has been estimated at 5,000-7,000 pairs.

Sooty Gull *Larus hemprichii*

Monotypic. The species breeds on islands off the coast of the Arabian Peninsula and Northeast Africa south to Kenya, in the Red Sea north to Wadi El Gamal Island in Egypt, and on the Makran coast of Pakistan (regularly only on Astola Island). Outside the breeding season, it disperses south along the East African coast to Mozambique and east along the coast of the Arabian Sea to Pakistan and occasionally India. There is a large influx of birds into the southern Persian/Arabian Gulf and Pakistan in spring and summer. Only one population is recognised, the entire population of the species.

- Red Sea, Gulf, Arabia & East Africa: 40,000 (WPE2). D; possibly as many as 150,000-300,000 (del Hoyo *et al.*, 1996).

Trends: Unknown.

Changes in status: None known. The species is reported to be decreasing as a breeding species in Pakistan, possibly because of egg-collecting by fishermen (Roberts, 1991), but increasing as a winter visitor to Eastern Africa (Urban *et al.*, 1986).

Comments: del Hoyo *et al.* (1996) suggest that the total population is probably in the range 50,000-100,000 pairs. These authors refer to two colonies off the Arabian coast with over 5,000 pairs each.

Audouin's Gull *Larus audouinii*

Monotypic. The species breeds only on islands in the Mediterranean, with colonies in Algeria, Cyprus, France (Corsica), Greece, Italy, Morocco, Spain, Tunisia and Turkey. It winters mainly along Mediterranean coasts (especially Libya, Tunisia and Algeria), although some birds regularly pass through the Straits of Gibraltar to winter along the Atlantic coast of Morocco south to Mauritania and Senegal (Hoogendoorn & Mackrill, 1987). Only one population is recognised, the entire population of the species.

- Mediterranean/North & West African coasts: 40,000 (WPE2).

Trends: Unknown (WPE2). Increasing, particularly in Spain (Tucker & Heath, 1994; Hagemeyer & Blair, 1997; Snow & Perrins, 1998).

Changes in status: The status of this species was given as stable in the first edition of *Waterfowl Population Estimates* and as unknown in the second edition. However, there has been a major increase in the population in recent decades, from possibly as few as 800-1,000 pairs in 1966 to 5,500-6,000 pairs in the early 1980s (Evans, 1986) and 9,000-9,500 pairs in 1989 (Snow & Perrins, 1998). Tucker & Heath (1994) give the European breeding population as 13,000-14,000 pairs in the early 1990s, and to this can be added some 500-600 pairs breeding in North Africa. M. Lambertini (in Heredia *et al.*, 1996) gives an estimate of 15,000 pairs based on breeding season counts in 1993 (15,620-15,830 pairs). Most of the dramatic increase has occurred in the Spanish breeding population. By 1993, the breeding population in Spain (including the Balearic Islands and Chafarinas) had increased to 14,000 pairs. A new colony in the Ebro Delta grew from 36 pairs in 1981 to 9,360 pairs in 1993. In the Balearic Islands, the population increased from about 350 pairs in the late 1970s to about 770 pairs in 1991. A breeding colony on the Columbretes Islands grew from 40-50 pairs in 1974 to 200 pairs in 1982, and 250-430 pairs during the period 1985-1991. The large colony on the Chafarinas Islands off the coast of Morocco grew from about 1,000 pairs in 1976 to 2,220 pairs in 1981, 3,188 pairs in 1991 and 4,440 pairs in 1992. Elsewhere, numbers have fluctuated or remained relatively stable (Evans, 1984 & 1986; de Juana, 1984; de Juana *et al.*, 1984; Hoogendoorn & Mackrill, 1987; Hagemeyer & Blair, 1997; Snow & Perrins, 1998). In historic times and until recently at least, the main threat to the species in Spain and probably throughout its range, was egg-collecting for human consumption. A virtual cessation of egg-collecting at the Spanish colonies is thought to have been the main cause behind the rapid recovery in the population (de Juana, 1984).

Comments: *Larus audouinii* is listed in Appendix I of the Bonn Convention. It was listed as a globally threatened species in *Birds to Watch* (Collar & Andrew, 1988) and the 1994 edition of the IUCN Red List of Threatened Animals (IUCN, 1993). Because of the population increase which has occurred in the West Mediterranean since 1980, the species has been removed from the list of globally threatened species, and is now listed as 'Conservation Dependent' by Collar *et al.* (1994). An Action Plan for *L. audouinii* in Europe has been compiled by M. Lambertini (in Heredia *et al.*, 1996).

Armenian Gull *Larus armenicus*

Monotypic. The species is confined as a breeding bird to inland lakes in Armenia, Georgia, eastern Turkey and northwestern Iran. It is largely migratory, wintering in the East Mediterranean (southeastern Turkey to Egypt) and Persian/Arabian Gulf, although a few birds remain at some of the breeding sites throughout the winter. Only one population is recognised, the entire population of the species.

- Armenia, Eastern Turkey & Western Iran: 30,000 (WPE2). 45,000-60,000 based on recent estimates of breeding populations.

Trends: Unknown (WPE2). Stable, following a period of increase (Snow & Perrins, 1998).

Changes in status: The breeding populations in Armenia and Georgia are now apparently stable after an increase during the last two decades (Snow & Perrins, 1998).

Comments: *L. armenicus* has only recently been recognised as a distinct species, and is still considered by many authors to be a subspecies of the *Larus cachinnans* group. The estimate of 30,000 given in the first two editions of *Waterfowl Population Estimates* was based on a very rough estimate of 10,000 pairs for the total breeding population. Better information is now available from the main breeding areas. There are reported to be 11,000-13,000 pairs at the two known sites in Armenia, about 50 pairs in Georgia, and perhaps 300-2,000 pairs in Turkey (Snow & Perrins, 1998), as well as 4,000-5,000 pairs at Lake Uromiyeh in Iran (Scott, 1995). These figures suggest a total population of 15,000-20,000 pairs or 45,000-60,000 individuals.

Great Black-headed Gull *Larus ichthyaetus*

Monotypic. The species breeds from the Black Sea eastwards across Western and Central Asia to the Tibetan Plateau, the westernmost populations wintering in the Caspian Sea, Persian/Arabian Gulf, Arabian Sea and Red Sea, with small numbers reaching the Ethiopian lakes in Northeast Africa. One population is recognised in the Agreement Area.

- Black Sea & Caspian/Southwest Asia: 70,000-120,000 (WPE2).

Trends: Unknown (WPE2). Increasing (Hagemeijer & Blair, 1997; Snow & Perrins, 1998).

Changes in status: The European breeding population increased by 150-200% during the 1980s, the main increase occurring in Ukraine, where there were 42,000 pairs in 1993. The increase has been attributed partly to successful conservation measures and partly to a redistribution of Asian and European populations, probably linked to changes in water level in the Caspian Sea (V. Serebryakov & V. Zubakin, in Hagemeijer & Blair, 1997).

Comments: Only the population occurring in Western Eurasia and Africa is included in Appendix II of the Bonn Convention. The total breeding population in Europe has recently been estimated at 45,000-50,000 pairs (V. Serebryakov & V. Zubakin, in Hagemeijer & Blair, 1997).

Slender-billed Gull *Larus genei*

Monotypic, with a highly fragmented breeding distribution in Southern Europe, North and West Africa and Southwest Asia east to Pakistan and northwestern India. Three largely discrete populations are identifiable: (1) a population which breeds in Mauritania and Senegal, and winters east along the West African coast to the Gulf of Guinea; (2) a population which breeds around the Black Sea and Mediterranean, and winters mainly in the Mediterranean (especially Egypt and Tunisia), with a few birds entering the Red Sea; and (3) a population which breeds in Kazakhstan, the Caspian region, Iran and Iraq, and winters in the Persian/Arabian Gulf and Arabian Sea east to northwestern India.

- West Africa (breeding): 10,000 (WPE2). 20,000, based on a recent estimate of the breeding population.

Trends: Increasing (WPE2).

- Black Sea & Mediterranean (breeding): 120,000-240,000 (WPE2).

Trends: Stable (WPE2). Probably increasing (Hagemeijer & Blair, 1997).

- Western, Southwest & Southern Asia (breeding): 150,000 (WPE2).

Trends: Increasing (WPE2).

Changes in status: The West African population appears to be increasing rapidly. Cooper *et al.* (1984) estimated the population at 2,850 pairs, based on 1970s data, but del Hoyo *et al.* (1996) have recently given an estimate of 6,000-7,000 pairs, suggesting that the total population may now be as high as 20,000 individuals. At the Banc d'Arguin in Mauritania, the population increased from 770-870 pairs in 1964 to 1,733 pairs in 1974 (Urban *et al.* 1986), although there were only 1,050 pairs in 1995 (Snow & Perrins, 1998).

Hagemeijer & Blair (1997) state that overall the numbers of *L. genei* breeding in Europe are increasing. Increases were reported in Russia and Ukraine until the mid-1980s, but there has been some decrease since then, especially in Ukraine, which supports about half of the population (Snow & Perrins, 1998). Increases have been reported in the relatively small populations in France and Tunisia, and the breeding population in Egypt is also thought to be increasing (Snow & Perrins, 1998). In recent years, small numbers of birds have appeared at Lake Victoria in Uganda (Dodman & Taylor, 1996), suggesting some expansion in the wintering range of this population.

An increase has been reported in the number of birds wintering in northwestern India (Perennou *et al.*, 1994).

Comments: The total breeding population in Europe and North Africa is estimated at 40,000-80,000 pairs (data from Snow & Perrins, 1998), the great majority of these in Ukraine and European Russia. Hagemeijer & Blair (1997) give a total of 41,000-82,000 for the European and Turkish population, but this includes some birds breeding in the Caspian region.

Mediterranean Gull *Larus melanocephalus*

Monotypic. The species breeds mainly around the Black Sea and in the East Mediterranean (Greece), and winters throughout the Mediterranean to southern Spain and Morocco. Some birds continue on west to winter along the Atlantic coast from southern Portugal to Morocco. The species has expanded its range both westwards and eastwards in recent decades. It has become increasingly frequent in Northwest Europe, with evidence of an overland crossing from the Black Sea to the Baltic, and now breeds regularly, albeit in small numbers, in many countries. The eastward expansion reached the Caspian Sea by the late 1980s. Only one population is recognised, the entire population of the species.

- Western Europe, Mediterranean & Northwest Africa: D (WPE2).

Trends: Increasing (WPE2).

Changes in status: The species has been expanding its range westward in Europe for some year. It now breeds regularly in Belarus, Belgium, Britain, France, Germany, Hungary, Netherlands and Poland, and continues to increase, but the total in these countries is probably still less than 1,000 pairs (830-975). An eastward expansion into the Sea of Azov and Transcaucasia was first noticed in 1972, and since then, the breeding population in this region has increased

dramatically to as many as 10,000 pairs in good years (Hagemeijer & Blair, 1997). The total population in the Former Soviet Union was estimated at 340,000-370,000 pairs in the mid-1980s, after a period of increase, but numbers at the main site in Ukraine decreased from 336,000 pairs in 1983 to 60,000-70,000 pairs in 1989-1990. Decreases have also been reported in Greece and Romania, while increases have been reported in Italy and Bulgaria (data from Snow & Perrins, 1998).

Comments: The total breeding population has been estimated at between about 185,000 and 360,000 pairs (Hagemeijer & Blair, 1997), suggesting a minimum non-breeding population of well over 500,000 birds.

Gull-billed Tern *Sterna nilotica*

Polytypic. Only the nominate subspecies occurs in the Agreement Area. This breeds in widely scattered colonies across Southern Europe, North Africa and the Middle East, and also locally in Northern Europe and West Africa. West Eurasian breeders winter south to the Gulf of Guinea, Tanzania and the Arabian Peninsula. Three populations are identifiable: (1) a population which breeds in Western Europe (north to Denmark and Germany), the West Mediterranean (east to Tunisia) and Northwest Africa south to Mauritania and Senegal, and winters mainly inland in West Africa east to Nigeria and Chad; (2) a population which breeds in the Balkans, the Black Sea, the East Mediterranean and central Turkey, and winters mainly inland in Northeast and Eastern Africa from Sudan south to Tanzania (occasionally Botswana); and (3) a population which breeds in the Caspian region, Aral Sea and Kazakhstan, and winters in Iraq, southern Iran, the Persian/Arabian Gulf and the Arabian Peninsula.

- Western Europe/West Africa: 12,000 (WPE2).

Trends: Decreasing (WPE2).

- Black Sea & East Mediterranean (breeding): 15,000-25,000 (WPE2).

Trends: Unknown (WPE2). Decreasing (Tucker & Heath, 1994; Hagemeijer & Blair, 1997).

- Southwest Asia (wintering): B (WPE2).

Trends: Decreasing (WPE2). Unknown.

Changes in status: The numbers breeding in Northwest Europe have declined markedly during the 20th century. In Germany, numbers peaked in 1917 and declined to only three pairs in 1972, but then increased to 50-60 pairs in recent years. In Denmark, the population declined from about 650 pairs in 1895-1900 to 106 pairs in 1961-1970, 30 pairs in 1979 (Evans, 1984) and only 10-15 pairs in 1995. A slight decrease has been reported in Spain, and there may have been a major decline in Mauritania (1,600 pairs at the Banc d'Arguin in 1974 but only 660 pairs in 1995), but numbers in France appear to be stable or increasing (Tucker & Heath, 1994; Hagemeijer & Blair, 1997; Snow & Perrins, 1998).

The first two editions of *Waterfowl Population Estimates* give the status of the Black Sea and East Mediterranean population as unknown. However, Tucker & Heath (1994) and Hagemeijer & Blair (1997) report a marked decrease in Romania and smaller decreases in Greece, Russia, Turkey and Ukraine. These authors consider the European breeding populations of *S. nilotica* as now possibly endangered, and attribute the widespread declines to loss of foraging habitats close to breeding areas, the destruction and disturbance of, and predation at, colonial nesting sites, and habitat destruction and degradation in the winter quarters.

Perennou *et al.* (1994) thought that the Southwest Asian wintering population was possibly declining, because of relatively low mid-winter counts in the 1980s. However, they noted that the lack of records in recent years was more likely to be due to the species being overlooked than to any decline in population. The status of this population should perhaps, therefore, remain as 'unknown'.

Comments: Only the West Eurasian and African populations of the nominate form *nilotica* are included in Appendix II of the Bonn Convention.

The breeding population in Western Europe and North and West Africa is estimated at 3,500-4,500 pairs, of which about 760-1,800 pairs are in West Africa (data from Urban *et al.*, 1986; Tucker & Heath, 1994; Snow & Perrins, 1998). Perennou (1991) has estimated the West African wintering population at 12,000-15,000 birds.

The breeding population in the Black Sea and East Mediterranean region is roughly estimated at between 4,500 and 10,000 pairs (data from Tucker & Heath, 1994, and Snow & Perrins, 1998), suggesting a winter population of 15,000-25,000 birds. As many as 14,580 were counted in Eastern Africa in January 1997, including 12,640 at Lutembe Bay on Lake Victoria in Uganda (Dodman *et al.*, 1997).

Caspian Tern *Sterna caspia*

Two subspecies have been described: the almost cosmopolitan nominate form, and *strenua* in Australia and New Zealand. The nominate form breeds at a number of widely scattered localities in temperate and Southern Eurasia from the Baltic to northeastern China and also in Africa. The populations breeding in the Red Sea and Madagascar appear to be mainly sedentary. Reports of breeding in Eastern Africa are unsubstantiated. Four main migratory populations

are identifiable: (1) a population which breeds in Southern Africa (Namibia, South Africa and Mozambique) and winters north to Zambia, Botswana and Angola; (2) a population which breeds in Senegal, Mauritania and Guinea Bissau and winters along the coast of West Africa, possibly to the Gulf of Guinea; (3) a population which breeds in the Baltic (Sweden, Finland and Estonia), Black Sea (Ukraine) and central Turkey (few), and winters mainly in tropical West Africa, notably in the Upper Niger Inundation Zone and Gulf of Guinea, but with a few in the Mediterranean and upper Nile to Sudan; and (4) a population which breeds in the Caspian region and Iran, and winters in Northeast and East Africa, Arabia and southern Iran.

- Southern Africa (breeding): 1,500 (WPE2).

Trends: Unknown (WPE2). Relatively stable in recent decades (Harrison *et al.*, 1997).

- West Africa (breeding): 12,000 (WPE2). 15,000, based on a recent estimate of the breeding population.

Trends: Unknown (WPE2). Possibly decreasing (Snow & Perrins, 1998).

- Europe (breeding): 5,000-7,000 (WPE2).

Trends: Decreasing (WPE2).

- Caspian (breeding): 10,000 (WPE2).

Trends: Decreasing (WPE2).

Changes in status: Long-term trends in this species are to some extent masked by strong local fluctuations. In Southern Africa, the numbers of birds present at each breeding site varies widely from year to year, but the overall range does not appear to have changed during the 20th century, and there has been no evidence of any significant decline in numbers in recent years (Harrison *et al.*, 1997). At the main breeding colony at Lake St Lucia in South Africa, there were 330 pairs in 1949, 150-180 pairs in the 1950s, 500-1,000 pairs in 1972, and 290 pairs in 1990 (Harrison *et al.*, 1997).

Overall trends in the West Africa breeding population are unknown, but a serious decline has been reported in the numbers breeding at the Banc d'Arguin in Mauritania, from 2,575 pairs in 1984-1985 to 360 pairs in 1995 (Snow & Perrins, 1998).

The European population now appears to be in decline. After some range contraction in Northwest Europe in the late 19th and early 20th centuries, there was a marked increase in the Baltic throughout the first half of the 20th century until at least the late 1970s. Since then, however, numbers have declined in Sweden, Finland and Estonia (Tucker & Heath, 1994; Hagemeyer & Blair, 1997). A decline in numbers has also been reported in the Black Sea, notably in Ukraine, and possibly also in Turkey (Tucker & Heath, 1994).

Tucker & Heath (1994) report a decline in the Caspian breeding population, although Snow & Perrins (1998) indicate that numbers in European Russia are increasing or fluctuating in different parts of the species' range.

Comments: Only the West Eurasian and African populations are included in Appendix II of the Bonn Convention.

The first edition of *Waterfowl Population Estimates* gave the Southern Africa population as only 500 individuals. This was revised to 1,500 individuals in the second edition, following Cooper *et al.* (1992), who estimated the population at about 500 pairs. Over 930 were counted in Southern Africa in January 1995 (Dodman & Taylor, 1995), and 980 in July 1996 (Dodman *et al.*, 1997).

The breeding population in West Africa has recently been estimated at about 5,000 pairs (del Hoyo *et al.*, 1996), as compared with an earlier estimate of 3,500-4,300 pairs based on data from Urban *et al.* (1986). A total population size of 15,000 individuals may therefore be more appropriate.

The population breeding in the Baltic, Southeast Europe and Turkey has recently been estimated at 1,800-2,800 pairs, including 1,450-1,600 in the Baltic, 300-1,000 pairs on the north coast of the Black Sea and 50-200 pairs in Turkey (Tucker & Heath, 1994).

The Caspian breeding population is concentrated mainly in the Volga Delta where there are up to 3,000-5,000 pairs.

Royal Tern *Sterna maxima*

Two subspecies have been described: the nominate form in the Americas and *albidorsalis* in Africa. The latter is known to breed at five sites on the coast of Mauritania and Senegal, and has attempted to breed in Gambia. The bulk of the population winters south along the coast to Angola and Namibia, with most in the Gulf of Guinea, but some birds move north along the Atlantic coast of Morocco. Only one population is recognised, the entire population of *albidorsalis*.

- West Africa (breeding): 50,000 (WPE2). 75,000, based on a recent estimate of the breeding population.

Trends: Stable (WPE2).

Changes in status: None known. Numbers fluctuate widely from year to year at the main breeding sites, but appear to

be relatively stable over the long term (Snow & Perrins, 1998).

Comments: Only the form *albidorsalis* is included in Appendix II of the Bonn Convention. The breeding population has been estimated at 15,000-18,000 pairs (data from Urban *et al.*, 1986 and Cooper *et al.*, 1984). More recently, del Hoyo *et al.* (1996) have given an estimate of about 25,000 pairs.

Lesser Crested-Tern *Sterna bengalensis*

Several subspecies have been described, but authors differ in their nomenclature and treatment of different populations. The nominate race (or *torresii*) breeds on islands in the Persian/Arabian Gulf, and winters east along the Indian Ocean coast to Pakistan, India, Sri Lanka and occasionally the Malay Peninsula. *S. b. par* (or *bengalensis*) breeds in the Red Sea and Gulf of Aden, and winters south along the East African coast from Kenya to Madagascar and South Africa. There is a small, isolated population in the Mediterranean, assigned by some authors to *S. b. par*, by others to *S. b. torresii*, and by others to *S. b. emigrata*. This breeds almost exclusively on two islands off the Libyan coast, and winters mainly on the Atlantic coast of Northwest Africa south at least to Sierra Leone. In recent years, a few pairs have bred in Italy, Lebanon and Spain. Three apparently discrete populations are recognised.

- Gulf/Southern Asia: 60,000 (WPE2). 150,000-180,000, based on a recent estimate of the breeding population (del Hoyo *et al.*, 1996).

Trends: Unknown.

- Red Sea/Eastern Africa: C (WPE2).

Trends: Unknown.

- Southern Mediterranean/Northwest & West African coasts: 4,000 (WPE2).

Trends: Unknown (WPE2). Apparently stable (Snow & Perrins, 1998).

Changes in status: Breeding colonies of 1,700 pairs and 40 pairs were found in the Gulf of Sirte off the Libyan coast in 1993, as compared with 2,000 birds (or 2,000 pairs) in 1937 (Meininger *et al.*, 1994), suggesting long-term stability in the Mediterranean population (Snow & Perrins, 1998).

Comments: Only the African and Southwest Asian populations are included in Appendix II of the Bonn Convention.

The breeding population in the Persian/Arabian Gulf has recently been estimated at 50,000-60,000 pairs, following the discovery of 24,500 pairs on islets off the United Arab Emirates in 1994, and 24,250 pairs off Saudi Arabia in the early 1990s (del Hoyo *et al.*, 1996). This suggests a total population of 150,000-180,000 birds, *i.e.* considerably more than the figure given in *Waterfowl Population Estimates*, which was based on an old estimate of 20,000 pairs for the entire breeding population.

The breeding population in the Red Sea and Eastern Africa (excluding Somalia, where the population is unknown) is estimated to be at least 7,000 pairs, suggesting a total population in excess of 25,000 birds.

A count of 376 on the coast of Sierra Leone in January 1994 (Taylor & Rose, 1994) suggests that the main wintering area of the Mediterranean breeding population is farther south than was formerly supposed.

Great Crested-Tern *Sterna bergii*

Polytypic. Three subspecies occur in the Agreement Area. The nominate race breeds on the coasts of Southern Africa (Namibia, South Africa and Mozambique) and in Madagascar. (Birds occurring in the Zambezi Delta and believed to nest on islands off Mozambique and Madagascar have been assigned to the subspecies *enigma*). The birds breeding in Southern Africa are at least partly migratory, extending north to Angola outside the breeding season, but it is not known if there is any interchange with the birds breeding in Mozambique and Madagascar. However, birds assignable to '*enigma*' have been recorded in small numbers south as far as Durban in South Africa. *S. b. thalassinus* breeds on islands off the coast of Tanzania and in the Seychelles, Aldabra and Rodriguez, and winters along the East African coast north to Kenya and Somalia. *S. b. velox* breeds in the Red Sea and from the Persian/Arabian Gulf east to Southeast Asia. Populations breeding from the Gulf eastwards appear to be sedentary or dispersive rather than migratory, but the population breeding in the Red Sea is partly migratory, wintering south along the East African coast to Kenya. The first two editions of *Waterfowl Population Estimates* recognise only three populations in the Agreement Area, corresponding to the entire populations of three subspecies (*enigma* is included within nominate *bergii*).

- Southern Africa & Madagascar (breeding - *bergii*): 15,000 (WPE2). 20,000, based on recent estimates of breeding populations.

Trends: Unknown.

- Eastern Africa & Seychelles (breeding - *thalassinus*): 1,200 (WPE2).

Trends: Unknown.

- Northeast Africa, Southwest & Southern Asia (*velox*): 40,000 (WPE2). Over 100,000, based on recent estimates of breeding populations.

Trends: Decreasing (WPE2). Unknown.

Changes in status: There have been no major changes in the distribution of *bergii* in Southern Africa during the 20th century, although new breeding sites have become available at artificial salt pans and sewage works (Harrison *et al.*, 1997).

Comments: Only the African and Southwest Asian populations are included in Appendix II of the Bonn Convention.

The breeding population of *bergii* in Southern Africa has recently been estimated at 6,000 pairs at 22 localities (Harrison *et al.*, 1997). There are also an estimated 220 pairs of *bergii* (or *enigma*) in Madagascar, and an unknown, but presumably small, number on islands off Mozambique. These figures suggest a total population of about 20,000 birds. Some 5,550 birds were counted in Southern Africa in July 1994 (Dodman & Taylor, 1995).

The Eastern African population appears to be tiny; only a few breeding sites are known (Latham Island off the Tanzanian coast, Aldabra, African Banks in the Amirantes, and Rodrigues), and there may be only some 300-500 pairs.

The first two editions of *Waterfowl Population Estimates* treat all individuals of the subspecies *velox* as belonging to a single population extending from Northeast Africa to Sri Lanka, the Maldives and Myanmar. However, the estimate of 40,000 individuals, taken from Perennou *et al.* (1994), applies only to the population breeding in Southwest Asia, and the total population size for this subspecies is unknown. Similarly, the decreasing trend ("possibly declining" in Perennou *et al.*, 1994) applies only to Southwest Asia, and may not be applicable for the subspecies as a whole. There is some justification for giving separate treatment to the birds which breed in the Red Sea and Northeast Africa and winter south along the African coast to Kenya. This population would be relevant to the Agreement, whereas the mainly sedentary populations breeding from the Persian/Arabian Gulf east to Myanmar would not. There are at least 5,300 pairs in the Red Sea and Northeast Africa, excluding Ethiopia (where the population is unknown), suggesting a total population size in the range 10,000-25,000 individuals (C). No information is available on trends in this population.

- Red Sea & Northeast Africa (*velox*): C.

Trends: Unknown.

The breeding population of *velox* in the Middle East has recently been estimated at about 33,000 pairs (del Hoyo *et al.*, 1996). The entire population of this subspecies (including the Northeast African birds) is therefore likely to exceed 100,000 individuals, *i.e.* considerably more than the estimate of 40,000 given in *Waterfowl Population Estimates*.

Sandwich Tern *Sterna sandvicensis*

Polytypic. Only the nominate subspecies occurs in the Agreement Area. Three largely discrete populations are present: (1) a population which breeds in Northwest Europe (northwestern France, Britain, Ireland, the North Sea and the Baltic Sea) and the northwestern Mediterranean (Spain, France and Italy), and winters on the Atlantic coast of Africa from Mauritania (where abundant) to South Africa; (2) a population which breeds in the Black Sea (Romania, Ukraine and Russia), and winters in the southern Black Sea and southeast and central Mediterranean, occasionally west to Spain, Portugal and Northwest Africa; and (3) a population which breeds in the Caspian Sea (Russia, Kazakhstan and Turkmenistan), and winters in the Persian/Arabian Gulf and on the coasts of the Indian Ocean from the Gulf of India to northwestern India (with small numbers to East Africa and Sri Lanka). Most of the birds wintering in Southern Africa are believed to originate from breeding areas in Western Europe, but birds ringed as nestlings in Ukraine and the Caspian Sea have been recovered in South Africa, suggesting that some mixing occurs between all three populations.

- Western Europe/West Africa: 150,000 (WPE2).

Trends: Increasing (WPE2).

- Black Sea & Mediterranean (breeding): 130,000 (WPE2).

Trends: Unknown (WPE2). Possibly decreasing (Tucker & Heath, 1994; Hagemeyer & Blair, 1997).

- Southwest & Southern Asia (wintering): 110,000 (WPE2).

Trends: Unknown.

Changes in status: The West European breeding population has been increasing for some time, and the current estimate of 150,000 individuals may now be too low. Large increases have been reported in Estonia, the Netherlands, Spain and the U.K., and smaller increases in five other countries, while a decrease has been reported only in Sweden (Tucker & Heath, 1994).

The status of the Black Sea/East Mediterranean population is uncertain. Hagemeyer & Blair (1997) show a decrease in the Ukraine population, and according to Tucker & Heath (1994), this population experienced a decline of 20-50%

over the period 1970-1990 following an earlier increase. However, according to Snow & Perrins (1998), the Ukraine population increased during the 1970s and 1980s. The small breeding populations in Bulgaria, Greece and Romania appear to be stable or increasing.

Comments: Only the nominate form *sandvicensis* is included in Appendix II of the Bonn Convention.

The West European breeding population has recently been estimated at 63,000-66,000 pairs (data from Tucker & Heath, 1994), although O. Merne (in Hagemeyer & Blair, 1997) gives a much more conservative estimate of 47,500-53,000 pairs.

The Black Sea/East Mediterranean population is variously estimated at 40,000 pairs (Lloyd *et al.*, 1991), 50,500-72,000 pairs (data from Tucker & Heath, 1994), 22,000-41,000 pairs (O. Merne, in Hagemeyer & Blair, 1997), or 38,000-40,000 pairs (data from Snow & Perrins, 1998). The great majority of these breed on the Black Sea coast of Ukraine (50,000-70,000 pairs according to Tucker & Heath, 1994, or 35,000-37,000 pairs according to Snow & Perrins, 1998).

The Caspian breeding population has been estimated at 33,000-40,000 pairs (Lloyd *et al.*, 1991). During the Asian Waterfowl Census in 1991, over 50,000 birds were counted in Southwest Asia (mainly in Oman), along with over 3,400 in Pakistan and northwestern India.

Roseate Tern *Sterna dougallii*

Polytypic. Two subspecies occur in the Agreement Area. The nominate form breeds in Western Europe (Britain, Ireland, northwestern France and the Azores), on islands off the Arabian Peninsula, on the East African coast from southern Somalia to northern Tanzania, in Madagascar, and in South Africa (Cape Province). *S. d. arideensis* is confined to the Seychelles and possibly also the Mascarenes. Birds breeding on islands off the Arabian Peninsula are sometimes assigned to the eastern race *bangsi*. West European breeders winter along the West African coast from Mauritania to Nigeria, apparently mainly in Ghana. The movements of birds breeding in the western Indian Ocean, from Arabia to Madagascar, are poorly understood, but it may be that these birds are more dispersive than truly migratory. The birds breeding in South Africa are to some extent migratory, most birds vacating the breeding area outside the breeding season and wandering widely (Harrison *et al.*, 1997). Only the northeast Atlantic population of the nominate form is covered by the Agreement.

- Europe (breeding): 5,000 (WPE2).

Trends: Decreasing (WPE2).

Changes in status: The breeding population in Western Europe and the Azores suffered a dramatic decline between 1969 and 1987, particularly in the northwest (Tucker & Heath, 1994). In Britain and Ireland, the population fell from 2,392 pairs in 1969/70 to 470 pairs in 1985-87 (Lloyd *et al.*, 1991). The decline has been attributed to disturbance and predation on the breeding grounds, and food shortage and hunting outside the breeding season. The total population was estimated at about 1,600 pairs in the early 1990s (Hagemeyer & Blair, 1997), most of which were concentrated in the Azores (1,000 pairs in 1992) and Ireland (454 pairs in 1992). There is some indication that the population may now have stabilised, as there were about 1,820 pairs in 1995 (data from Snow & Perrins, 1998). Because of its small population size and the marked decline in recent decades, this population is considered to be 'Endangered' by Tucker & Heath (1994) and Hagemeyer & Blair (1997).

Comments: Only the Atlantic population is included in Appendix II of the Bonn Convention.

The breeding population in Southern Africa has recently been estimated at 130-140 pairs at two main sites, Bird Island and St Croix Island in Algoa Bay, South Africa. This suggests a total population of about 400 individuals, rather than 200 as given in *Waterfowl Population Estimates*. This population has been decreasing for some time, and has disappeared from some of its former breeding areas (Urban *et al.*, 1986; Lloyd *et al.*, 1991). The species ceased to breed on Dyer Island in 1971, possibly due to disturbance from guano scraping (which ceased in 1985). Birds returned to the island in 1991, and 21 were present in 1996, including one on a nest (Harrison *et al.*, 1997). The species also formerly bred at Cape Recife in Algoa Bay, but disappeared apparently because of human disturbance and predation (Harrison *et al.*, 1997).

The population breeding in East Africa and Madagascar has been estimated at about 12,500 pairs (Cooper *et al.*, 1984), including over 8,500 pairs in East Africa, mainly on the Kiunga Islands off the Kenya coast, and 4,100 pairs in Madagascar, mainly at one large colony off the southwest coast (Lloyd *et al.*, 1991; Harrison *et al.*, 1997). These figures suggest a total population of about 38,000 individuals. Trends in this population are unknown.

Common Tern *Sterna hirundo*

Polytypic. Two subspecies occur in the Agreement Area. The nominate race breeds widely in Europe, Northwest

Africa and Western Asia east to Kazakhstan and Western Siberia, and winters south to South Africa and east to western India. *S. h. tibetana* is mainly extralimital, breeding in Central Asia and wintering in Southern and Southeast Asia, although the subspecies has been recorded in some numbers in South Africa and once in Malawi. Three populations of *hirundo* are recognised: (1) birds which breed in Southern and Western Europe (east to Germany), North Africa (Tunisia) and West Africa (Mauritania and Senegal), and winter mainly in West Africa, from Mauritania to Nigeria; (2) birds which breed in Northern and Eastern Europe, and winter mainly on the west coast of Southern Africa from Angola to South Africa, but also to a lesser extent in West Africa to Ghana and along the east coast of Southern Africa north to Mozambique; and (3) birds which breed in Asia Minor, the Caspian region, Western Siberia, Kazakhstan, Iraq and Iran, and winter around the Indian Ocean from southeastern Africa to Pakistan and northwestern India, perhaps mainly off Northeast and East Africa.

- Southern & Western Europe (breeding): 180,000 (WPE2).

Trends: Unknown (WPE2). Variable, with some increases and some decreases; perhaps approximately stable overall (Snow & Perrins, 1998).

- Northern & Eastern Europe (breeding): 600,000 (WPE2).

Trends: Unknown (WPE2). Variable, with some increases and some decreases; perhaps approximately stable overall (Snow & Perrins, 1998).

- Western Asia (breeding): C or D (WPE2).

Trends: Unknown.

Changes in status: Hagemeyer & Blair (1997) suggest that the European breeding population is more or less stable. The species declined in many parts of Western Europe in the 19th century, but then increased, at least locally, with protection during the first half of the 20th century. In recent decades, trends have varied from region to region, with increases in some areas and decreases in others, and overall, numbers may be relatively stable. Similarly, in Northern and Eastern Europe, trends vary from region to region, with increases in some areas and decreases in others. Overall, it would appear that numbers have remained relatively stable in recent decades. Nothing is known of trends in Western Asia.

Comments: Only the populations of the nominate form *hirundo* breeding in the Western Palearctic are included in Appendix II of the Bonn Convention.

Hagemeyer & Blair (1997) give the total European breeding population (including European Russia and Turkey) as 226,000-297,000 pairs. The breeding population in Southern and Western Europe and Northwest Africa is estimated at a minimum of 62,000-71,000 pairs, and that in Northern and Eastern Europe at roughly 165,000-265,000 pairs (data from Snow & Perrins, 1998). Little is known of numbers in Western Asia. There are at least 25,000 pairs breeding around the Caspian Sea (Golovkin, 1984), and a few hundred pairs in Iran (Scott, 1995).

Arctic Tern *Sterna paradisaea*

Monotypic; circumpolar. Populations breeding in Canada, northeastern U.S.A., Greenland, Iceland, Svalbard, Northern Europe and Western and Central Siberia converge in the East Atlantic off Western Europe and West Africa and migrate well offshore south to the edge of the pack-ice in Antarctica mainly between 50°E and 110°E. Immatures generally winter further north, with many occurring off South Africa. Most of the birds occurring in South African waters are believed to originate from breeding areas around the Baltic and North Seas, but there have been recoveries of birds from Labrador, Greenland and the White Sea (Harrison *et al.*, 1997). Breeding populations in Eastern Siberia and Alaska apparently migrate through the Eastern Pacific to the Southern Oceans. Because of the extensive mixing between birds from different breeding areas on their wintering grounds in the Southern Oceans, the first two editions of *Waterfowl Population Estimates* recognise only a single world population of the species.

- Arctic (breeding)/Southern Oceans (wintering): E (WPE2).

Trends: Unknown.

Changes in status: None known.

Comments: Only the Atlantic populations are included in Appendix II of the Bonn Convention. In the Draft Management Plan, three main breeding groups were identified in Western Eurasia: a population of about 300,000-550,000 pairs breeding in Iceland and Western Europe; a population of about 90,000-110,000 pairs breeding in Scandinavia; and a population of at least 40,000 pairs breeding in European Russia and Western Siberia. However, there is considerable mixing between these groups during migration and in winter, and extensive movement of birds between breeding colonies. It is therefore suggested that for the purposes of the Agreement, only one population should be recognised in Western Eurasia.

- Western Eurasia (breeding): E. Probably in the range 1,300,000-2,100,000.

Trends: Probably stable.

Hagemeyer & Blair (1997) give the total European breeding population (including European Russia) as 438,000-697,000 pairs. Some 250,000-500,000 of these are in Iceland, where the numbers are thought to be more or less stable

(Koskimies, 1993). Marked declines have occurred in some areas in recent decades (*e.g.* in the U.K.), while elsewhere there have been local increases (*e.g.* in Scandinavia). Hagemeyer & Blair (1997) conclude that the overall numbers in Europe have not changed dramatically since the early 1970s. Boertmann (1994) thought that the population breeding in Greenland did not exceed 80,000 pairs, and was in serious decline in West Greenland because of egg-collecting.

Lloyd *et al.* (1991) have estimated the world population at a minimum of 750,000-1,000,000 pairs.

Little Tern *Sterna albifrons*

Polytypic. Two subspecies occur in the Agreement Area. The nominate form breeds across temperate and Southern Europe and North Africa east to Central Asia, and winters south to South Africa and northwestern India. *S. a. guineae* occurs in West and Central Africa from Mauritania and Senegal to Ghana, Nigeria, Cameroon and Gabon. Birds breeding on the coast are largely sedentary, but those breeding inland in West Africa are migratory. An isolated population at Lake Turkana in Kenya is sedentary. Four main breeding groups are recognised: (1) birds which breed in Western Europe and Northwest Africa, and winter in West Africa from Senegal to the Gulf of Guinea and possibly also in Southwest Africa; (2) birds which breed in Eastern Europe, the Black Sea region and Turkey, and winter in the Red Sea, southern Arabia and probably along the East African coast to South Africa; (3) birds which breed in the Caspian region, Aral Sea, Iraq and Iran, and winter from the Persian/Arabian Gulf east to Pakistan; and (4) birds belonging to the race *guineae* which breed in West Africa (Mauritania to Cameroon) and move to the coast in winter. Most of the birds which winter in Southern Africa are believed to originate from Eastern Europe and the Black Sea region or further east, as there are very few records of birds along the west coast of Southern Africa.

- Eastern Atlantic (breeding): 34,000 (WPE2).

Trends: Decreasing (WPE2). Now stabilising or increasing in some areas (Tucker & Heath, 1994; Snow & Perrins, 1998).

- Black Sea & East Mediterranean (breeding): 40,000-80,000 (WPE2). 70,000-120,000 on the basis of recent estimates of breeding populations.

Trends: Unknown (WPE2). Moderate decrease (Tucker & Heath, 1994; Snow & Perrins, 1998)

- Caspian (breeding): B (WPE2).

Trends: Unknown.

- West Africa (breeding - *guineae*): Unknown.

Trends: Unknown.

Changes in status: Numbers declined markedly throughout much of Northwest Europe in the late 19th century and early 20th century, but there was then some recovery up to the 1950s. Further declines occurred in some areas in the 1960s, 1970s and 1980s, but in recent years, most populations appear to have stabilised or are still increasing (Snow & Perrins, 1998). According to Tucker & Heath (1994), the four largest breeding populations (in France, Spain, Poland and the U.K.) are all stable or increasing, and only the relatively small populations in Denmark, Germany, Lithuania, the Netherlands and Portugal are still declining. Recent local increases (*e.g.* in France and the United Kingdom) are probably due to careful protection of breeding sites (Evans, 1984). In Britain and Ireland, the population increased from about 2,000 pair in 1969-70 to 2,800 pairs in 1985-87 (Lloyd *et al.*, 1991).

The population breeding in Eastern Europe, the Black Sea and East Mediterranean appears to be in moderate decline, with decreases reported in recent years in Albania, Greece, Romania, Russia and Ukraine, and increases only in Italy and Israel (Tucker & Heath, 1994; Snow & Perrins, 1998).

No information is available on the trends in the other two populations.

Comments: Hagemeyer & Blair (1997) give the total European breeding population (including European Russia and Turkey) as 30,600-46,800 pairs. The breeding population in Western Europe (east to the Baltic States) is currently estimated at between 10,000 and 12,000 pairs (data from Tucker & Heath, 1994, and Snow & Perrins, 1998). The population breeding in Eastern Europe, the Black Sea and East Mediterranean is estimated at between 23,000 and 42,000 pairs, with 5,000-15,000 of these in Turkey and 3,700-4,800 in North Africa (data from Tucker & Heath, 1994, and Snow & Perrins, 1998). These figures suggest a total of 70,000-120,000 individuals, which is somewhat higher than the estimate given in *Waterfowl Population Estimates*.

The population in the Caspian region and Middle East has been roughly estimated at about 12,000 birds (Evans, 1994), including at least 1,000 pairs in Iran (Scott, 1995). In West Africa, the coastal population of *guineae* in Senegal and Mauritania has been estimated at only 150 pairs (Cooper *et al.*, 1984) or a few hundred pairs (del Hoyo *et al.*, 1996), but the species is locally common inland, and up to 1,000 birds have been recorded on the Nigerian coast during the non-breeding season (Urban *et al.*, 1986).

Saunders's Tern *Sterna saundersi*

Monotypic. The species breeds in the Red Sea, in the Persian/Arabian Gulf, and on the Indian Ocean coast from

Northeast Africa (southeastern Somalia, Sudan and Socotra) to Pakistan and Sri Lanka. It winters south to Tanzania, Madagascar and Southeast Asia, and has straggled to Australia. Only one population is recognised, the entire population of the species.

- Western South Asia, Red Sea, Gulf & Eastern Africa: 40,000 (WPE2).

Trends: Unknown.

Changes in status: None known.

Comments: There is some doubt as to the validity of this species, as many intermediates between *saundersi* and *S. albifrons* occur, especially in the Gulf (Olsen & Larssen, 1995).

Damara Tern *Sterna balaenarum*

Monotypic. The species breeds on the coast of South Africa, Namibia and probably also Angola, and winters along the Atlantic coast of Africa north to Gabon, Cameroon, Nigeria and Ghana. The main wintering area is probably in the Gulf of Guinea. Only one population is recognised, the entire population of the species.

- Southern & Central Africa Atlantic: 14,450 (WPE2). 13,500 (Simmons *et al.* 1998).

Trends: Unknown (WPE2). Decreasing in some areas in South Africa (Collar & Stuart, 1985).

Changes in status: The species has been decreasing in some of its breeding areas in South Africa. Habitat alteration has rendered some former sites unsuitable for breeding, and the bird has probably been displaced from other sites by human disturbance and encroachment of alien vegetation (Harrison *et al.*, 1997). However, the trends at its main breeding areas in Namibia are unknown.

Comments: *S. balaenarum* was listed as a globally threatened species by Collar & Stuart (1985) and IUCN (1993), in the category 'Rare'. With the discovery of large numbers of birds in Namibia, it has been removed from the Red List, and is now listed as 'Near-threatened' (Collar *et al.*, 1994).

The total population of the species was formerly thought to be only about 4,000 individuals (Collar & Stuart, 1985), but surveys in the main breeding strongholds along the coast of Namibia between 1992 and 1996 have indicated that the population is much larger than this. The figure of 14,450 given in the second edition of *Waterfowl Population Estimates* seems to have been a provisional figure from a manuscript by Simmons *et al.* Simmons *et al.* (1998) have subsequently published a figure of 13,500 adults for the global population of the species. The great majority of these birds (13,450) occur along the coast of Namibia during the breeding season, and only about 150 pairs breed in South Africa (Harrison *et al.*, 1997).

White-cheeked Tern *Sterna repressa*

Monotypic. The species breeds in the Persian/Arabian Gulf, in the Red Sea and along the African coast south to northern Kenya (Lamu Archipelago). It occurs on passage and in winter south to East Africa and east to Pakistan and India, but most birds apparently stay well offshore in winter. Only one population is recognised, the entire population of the species.

- Western South Asia, Red Sea, Gulf & East Africa: 600,000 (WPE2).

Trends: Decreasing (WPE2).

Changes in status: A major decline occurred at the main breeding colony in Iran (Sheedvar Island) during the 1970s, almost certainly as a result of massive egg-collecting by the inhabitants of nearby Lavan Island (Gallagher *et al.* 1984). A decrease has also been reported in Kuwait (Snow & Perrins, 1998).

Comments: The breeding population is thought to number at least 200,000 pairs (Evans, 1994), and could be many more.

White-winged Tern *Chlidonias leucopterus*

Monotypic. The discrete West Eurasian population breeds from eastern Poland, Hungary and Rumania across Eastern Europe and west-central Asia to about 85°E, and winters at wetlands throughout Subsaharan Africa south to South Africa. Only one population is recognised in the Agreement Area.

- Eastern Europe & Western Asia/Africa: 200,000-250,000 (WPE2).

Trends: Decreasing (WPE2).

Changes in status: The species is decreasing in the west of its range; it disappeared from breeding areas in Germany and Austria in the 1960s, and is decreasing in Hungary, Ukraine and European Russia. It is known to have nested in the Mesopotamian Marshes in Iraq in the 1920s, but there has been no evidence of breeding in that country since then. However, there has been some increase in recent years in Poland, and perhaps also in the Baltic States and parts of Belarus (Hagemeijer & Blair, 1997). The wintering range in Southern Africa has apparently been expanding during the 20th century, probably as a result of the creation of artificial wetlands such as sewage works and shallow dams (Harrison *et al.*, 1997).

Comments: Only the population occurring in Western Eurasia and Africa is included in Appendix II of the Bonn Convention.

Very little information is available on numbers of breeding birds in the main breeding grounds east of the Urals. However, Boere & Yurlov (1998) found about 12,000 pairs breeding at Lake Chany and other lakes in southern Western Siberia in 1997. Hagemeijer & Blair (1997) give the total European breeding population (including European Russia and Turkey) as 20,100-27,000 pairs. Perennou (1991) has estimated the wintering population in Africa at 200,000-250,000 birds. High counts in recent years have included over 20,300 at Lake Rukwa in Tanzania in January 1995 (Katondo, 1997), over 20,700 at Lutembe Bay, Lake Victoria, in Uganda in January 1996 (Dodman & Taylor, 1996), and concentrations of up to 20,000 in South Africa (Harrison *et al.*, 1997).

Black Tern *Chlidonias niger*

Two subspecies have been described: the nominate form breeding in Western Eurasia, and *surinamensis* breeding in North America. The nominate form breeds in temperate regions of Europe and Western Asia from France and Spain in the west to about 85°E in Western Siberia, and winters mainly on the west coast of Africa from Senegal south to Namibia, and also in much smaller numbers along the Nile Valley in Egypt and Sudan. Major wintering concentrations occur in Mauritania. Only one population is recognised, the entire population of *niger*.

- Europe & Asia (breeding): 200,000 (WPE2).

Trends: Unknown (WPE2). Decreasing (Tucker & Heath, 1994; Hagemeijer & Blair, 1997; Snow & Perrins, 1998).

Changes in status: The first two editions of *Waterfowl Population Estimates* give the status of this population as unknown. However, there is good evidence of a long-term decline which has accelerated in recent decades, despite some local increases in northern breeding areas (Tucker & Heath, 1994; Snow & Perrins, 1998). Since the 1970s, breeding populations have decreased by more than 50% in most countries in Western Europe and the Mediterranean (Hagemeijer & Blair, 1997). Tucker & Heath (1994) report large decreases in Bulgaria, the Czech Republic, Denmark, France, Germany, Italy, the Netherlands, Slovakia, Spain and Ukraine, and smaller decreases in Croatia and Hungary. The decline has been attributed to habitat loss and deterioration through wetland drainage, widespread introduction of intensive farming methods, and pollution on the breeding grounds (Tucker & Heath, 1994; Hagemeijer & Blair, 1997). Numbers seem to have stabilised in Western Europe in recent years, but this is a local and small-scale success restricted to nature reserves (Hagemeijer & Blair, 1997). In European Russia and other parts of Eastern Europe, the breeding populations appear to be relatively stable, despite pronounced fluctuations, and there have been some increases in Estonia and Finland (Hagemeijer & Blair, 1997).

Comments: Only the nominate form *niger* is included in Appendix II of the Bonn Convention.

Hagemeijer & Blair (1997) give the total European breeding population (including European Russia and Turkey) as 62,000-82,000 pairs. Concentrations of up to 150,000-200,000 birds at the IJsselmeer in the Netherlands during autumn passage probably represents almost the entire Northern and Eastern European population (Hagemeijer & Blair, 1997). Wintering concentrations of up to 100,000 were found at the Banc d'Arguin in Mauritania in the early 1970s. The numbers wintering in Namibia are thought to exceed 10,000 (Harrison *et al.* 1997).

2.2.

OTHER WATERBIRDS OF POSSIBLE CONSERVATION CONCERN

One hundred and seventy species of waterbirds are included in the Agreement. However, there are a further 214 species of birds in the traditional waterbird families (see Table 2 in the Draft Management Plan) which have been recorded in the Agreement Area. Many of these are either sedentary, dispersive or nomadic, and not migratory under the definition of 'migratory' in the Bonn Convention. Many others occur only as vagrants in the Agreement Area, or at the extreme edge of their normal distribution. Some species are not dependent on wetlands at any stage during their annual cycles, and cannot therefore be termed 'waterbirds' in the sense of the Agreement, while others occur in the Agreement Area only because of artificial introductions by man. None of these species is appropriate for inclusion in the Agreement. The 164 species concerned are listed in Table 2, with an indication of the reason why they are inappropriate for inclusion.

There remain 50 species of birds that occur widely in the Agreement Area, are to some extent dependent on wetlands, and are known or thought to be at least partly migratory in the sense of the Bonn Convention. These species are listed in Table 3, along with information on their population sizes and trends. Forty-two of these species were originally proposed for inclusion in the Agreement, but the proposals for the listing of these species on Appendix II of the Bonn Convention were rejected on the grounds that all populations of the species concerned had a favourable conservation status, or were inappropriate for inclusion in the Agreement for some other reason. These species are marked with an asterisk in Table 3. Table 3 also includes those populations of *Fulica atra* and *Sterna dougallii* that are not covered by the Agreement.

Four species, *Egretta ardesiaca*, *Egretta dimorpha*, *Oxyura maccoa* and *Sarothrura ayresi*, were not originally proposed for inclusion in the Agreement because at that time it was not thought that they were migratory. However, there is some evidence to suggest that all four species undertake regular seasonal movements across international boundaries, and might therefore be considered for inclusion in the Agreement. One species, *Sarothrura ayresi*, is a globally threatened species, listed in Appendix I and Appendix II of the Bonn Convention, and clearly merits inclusion in the Agreement, although the evidence for its migratory status is somewhat controversial. *Oxyura maccoa* is included in Appendix II along with all other species of Anatidae. The other two species are not included in either Appendix I or Appendix II.

Two species, *Crex crex* and *Scolopax rusticola*, were excluded from the Agreement because they were not considered to be 'waterbirds' in the strict sense of birds ecologically dependent on wetlands. However, both species frequently occur in wetlands. The former, although primarily a bird of dry grassland, often breeds in boggy meadows and iris beds, while the latter, primarily a forest and heathland bird, commonly winters in peat bogs and swampy woodland. *Crex crex* is a globally threatened species, listed on Appendix II of the Bonn Convention. *Scolopax rusticola*, as a member of the Scolopacidae, is also included in Appendix II.

Two species, *Pluvialis fulva* and *Gallinago stenura*, were excluded from the Agreement because it was believed that they occurred in the Agreement Area only in very small numbers at the extreme edges of their normal ranges. However, both species (primarily birds of Central and Eastern Asia) are now known to winter in the Arabian Peninsula and Eastern Africa in far larger numbers than was formerly supposed, and it may therefore be appropriate to consider the relevant populations of these species for inclusion in the Agreement.

The conservation status of these 50 species and the populations of *Fulica atra* and *Sterna dougallii* not included in the Agreement are summarised in Table 4 on the basis of the criteria used in Table 1 of the Action Plan.

A population is considered to have a favourable conservation status if it is known or thought to be in category C1, *i.e.* is known or thought to exceed 100,000 individuals, and is not considered to be at risk as a result of:

- (a) concentration onto a small number of sites at any stage of its annual cycle;
- (b) dependence on a habitat type which is under severe threat;
- (c) showing significant long-term decline; or
- (d) showing extreme fluctuations in population size or trend.

Thirty-two species can be omitted from further discussion because all of their populations occurring in the Agreement Area are currently considered to have a favourable conservation status. However, at least one of the populations of the remaining 20 species has a conservation status in column A or column B in Table 4. These 20 species and the 32 populations indicated in columns A or B are listed below, and discussed in further detail in Annex I.

Podiceps cristatus cristatus
 - Caspian Sea (wintering)*
Podiceps cristatus infuscatus
 - Eastern Africa
 - Southern Africa
Podiceps nigricollis nigricollis
 - Southwest & Southern Asia (wintering)*
Podiceps nigricollis gurneyi
 - Southern Africa*
Egretta ardesiaca
 - Sub-Saharan Africa
Egretta garzetta garzetta
 - Western Asia (breeding)*
Egretta dimorpha
 - Eastern Africa & Madagascar*
Ardea cinerea cinerea
 - Eastern Black Sea, Western & Southwest Asia (breeding)*
Bubulcus ibis ibis
 - East Mediterranean & Southwest Asia*
Ardeola ralloides ralloides
 - Northwest Africa & Mediterranean (breeding)
 - Southern Asia, Southwest Asia & Black Sea (breeding)
Nycticorax nycticorax nycticorax
 - Europe & Northwest Africa (breeding)
 - Western Asia/Northeast Africa*
Oxyura maccoa
 - Eastern Africa
Sarothrura ayresi
 - Ethiopia & Southern Africa
Crex crex
 - Europe & Western Asia/Africa
Haematopus ostralegus longipes
 - Southwest Asia, Southern Asia & Eastern Africa (wintering)*
Glareola ocularis
 - Madagascar/East Africa
Glareola nuchalis nuchalis
 - Eastern & Central Africa
Glareola nuchalis liberiae
 - West Africa
Larus canus canus
 - Northwest & Central Europe/Atlantic & Mediterranean
*Larus canus heinei**
 - Northeast Europe & Western Siberia/Black Sea & Caspian
Larus minutus
 - Central & Eastern Europe (breeding)
 - Black Sea & Western Asia (breeding)
Sterna dougallii dougallii
 - Southern Africa (breeding)
 - East Africa & Madagascar (breeding)
Chlidonias hybridus hybridus
 - Western Europe & Northwest Africa (breeding)
 - Black Sea & East Mediterranean (breeding)*
 - Caspian (breeding)*
Chlidonias hybridus sclateri
 - Southern & Eastern Africa (breeding)*
Rynchops flavirostris
 - Sub-Saharan Africa

Those populations marked with an asterisk are considered to have an unfavourable conservation status only by virtue of their relatively small population sizes (less than 100,000 individuals). There is no reason to believe that any of these populations is showing a long-term decline or is under serious threat. Several of these populations may be

considerably larger than the present estimates suggest (Caspian wintering population of *Podiceps cristatus*, Western Asian breeding population of *Egretta garzetta*, East Mediterranean and Southwest Asian population of *Bubulcus ibis*, Western Asian/Northeast African population of *Nycticorax nycticorax*, Southwest Asian, South Asian and East African wintering population of *Haematopus ostralegus*, and Caspian breeding population of *Chlidonias hybridus*), while one population (the Southwest and South Asian wintering population of *Podiceps nigricollis*) is thought to be increasing. These populations are not considered to be a priority for inclusion in the Agreement.

However, the remaining 19 populations of 14 species do indeed have an unfavourable conservation status, and are in need of conservation action if their status is not to deteriorate even further. These populations, listed below, are considered as high priorities for inclusion in the Agreement and its Action Plan. Only three of these populations are currently included in the Appendices to the Bonn Convention (the populations of *Oxyura maccoa*, *Sarothrura ayresi* and *Crex crex*), and therefore in all other cases, the populations concerned should initially be proposed for listing on Appendix II of the Bonn Convention. Proposals already exist for all except the population of *Egretta ardesiaca*, and could easily be updated on the basis of recent information to provide a more convincing case for acceptance on Appendix II.

Priority species and populations of waterbirds for inclusion in the Agreement and its Action Plan

Podiceps cristatus infuscatus

- Eastern Africa
- Southern Africa

Egretta ardesiaca

- Subsaharan Africa

Ardeola ralloides ralloides

- Northwest Africa & Mediterranean (breeding)
- Southern Asia, Southwest Asia & Black Sea (breeding)

Nycticorax nycticorax nycticorax

- Europe & Northwest Africa (breeding)

Oxyura maccoa

- Eastern Africa

Sarothrura ayresi

- Ethiopia & Southern Africa

Crex crex

- Europe & Western Asia/Africa

Glareola ocularis

- Madagascar/East Africa

Glareola nuchalis nuchalis

- Eastern & Central Africa

Glareola nuchalis liberiae

- West Africa

Larus canus canus

- Northwest & Central Europe/Atlantic & Mediterranean

Larus minutus

- Central & Eastern Europe (breeding)
- Black Sea & Western Asia (breeding)

Sterna dougallii dougallii

- Southern Africa (breeding)
- East Africa & Madagascar (breeding)

Chlidonias hybridus hybridus

- Western Europe & Northwest Africa (breeding)

Rynchops flavirostris

- Subsaharan Africa

3. PRINCIPAL REFERENCES

- Ali, S. & Ripley, S.D. (1969). Handbook of the Birds of India and Pakistan. Vol.2: Megapodes to Crab Plover. Oxford University Press, Bombay, London & New York. 345 pp.
- Anstey, S. (1989). The status and conservation of the White-headed Duck, *Oxyura leucocephala*. IWRB Special Publication No.10. IWRB, Slimbridge, U.K. 126 pp.
- Ardamackaja, T.B. (1990). Über einen isolierten Brutbestand der Eiderente, *Somateria mollissima*, im Schwarzmeer-Naturschutzgebiet (Sudwest-Ukraine). Mitt. Zool. Mus., Suppl. Ann. Orn. 14, Berlin 66: 35-48.
- Atkinson-Willes, G.L. (1976). The Numerical Distribution of Ducks, Swans and Coots as a Guide in Assessing the Importance of Wetlands in Midwinter. In: Smart, M. (ed.), Proc. Int. Conference on Conservation of Wetlands and Waterfowl, Heiligenhafen, Federal Republic of Germany, December 1974: 199-254.
- Baker, N. (in press). The northern population of the Cape Teal *Anas capensis*.
- Beekman, J.,H. (1997). International censuses of the north-west European Bewick's Swan population, January 1990 and 1995. Swan Specialist Group Newsletter No.6: 7-9.
- Beekman, J.H. van Eerden, M.R., Mineyev, Y.N., Luigujoe, L. & Den Hollander, H.J. (1996). Landsat satellite images for detection of submerged macrophytes: in search of potential stop-over feeding sites for Bewick's Swans (*Cygnus columbianus bewickii*) along their migratory route. In: Birkan, M., van Vessem, J., Havet, P., Madsen, J., Trolliet, B. & Moser, M. (eds), Proceedings of the Anatidae 2000 Conference, Strasbourg, France, 5-9 December 1994. Gibier Faune Sauvage, Game Wildl. 13: 421-450.
- Beintema, A.J. & Muskens, G.J.D.M. (1983). Changes in migration pattern of the Common Snipe. In: Kalchreuter, H. (ed.), Proc. 2nd European Woodcock and Snipe Workshop, 30 March 0 1 April 1982, Fordingbridge, U.K. pp. 146-160. IWRB, Slimbridge, U.K.
- Belik, V.P. (1994). Where on earth does the Slender-billed Curlew breed? Wader Study Group Bulletin 75: 37-38.
- Black, J. (1998a). Flyway conservation and management plan for the Svalbard Barnacle Goose population. DN Report 1998/1.
- Black, J. (1998b). Flyway Plan for the Svalbard Barnacle Goose population - a summary. Norsk Polarinstittut Skrifter 200.
- Boere, G.C. & Yurlov, A.K. (1998). In search of the Slender-billed Curlew (*Numenius tenuirostris*). Preliminary results of an expedition to wetlands and waterbirds of the Baraba and Karasuk steppe in the south of West Siberia, Russian Federation, 17 May-22 June 1997. Wader Study Group Bulletin 85.
- Boertmann, D. (1994). An annotated checklist to the birds of Greenland. Meddelelser om Gronland, Bioscience 38. 63 pp.
- Britton, P.L. (1980). Birds of East Africa. East African Natural History Society, Nairobi. 271 pp.
- Brown, L.H., Urban, E.K. & Newman, K. (1982). The Birds of Africa. Volume I. Academic Press, London & New York. 521 pp.
- CAFF Circumpolar Seabird Working Group. (1997). Circumpolar Eider Conservation Strategy and Action Plan. CAFF Strategy, CAFF, Iceland.
- Callaghan, D.A. & Green, A.J. (1993). Wildfowl at Risk, 1993. Wildfowl 44: 149-149.
- Callaghan, D.A. & Kear, J. (in press). Taxonomy and systematics. In: Kear, J. & The Wildfowl and Wetlands Trust, Bird Families of the World: Ducks, Geese and Swans. Oxford University Press, Oxford.
- Callaghan, D.A. et al. (in prep.). Ducks, Geese, Swans and Screamers: An Action Plan for the Conservation of Anseriformes. Wetlands International/SSC Threatened Waterfowl Specialist Group.
- Cayford, J.T. & Waters, R.J. (1996). Population estimates for waders Charadrii wintering in Great Britain, 1987/88-1991/92. Biological Conservation 77: 7-17.
- Collar, N.J. & Andrew, P. (1988). Birds to Watch. The ICBP World Checklist of Threatened Birds. ICBP Technical Publication No.8. ICBP, Cambridge, U.K. 303 pp.
- Collar, N.J., Crosby, M.J. & Stattersfield, A.J. (1994). Birds to Watch 2. The World Checklist of Threatened Birds. BirdLife Conservation Series No.4. BirdLife International, Cambridge, U.K. 407 pp.
- Collar, N.J. & Stuart, S.N. (1985). Threatened Birds of Africa and Related Islands. Third Edition. ICBP, Cambridge, U.K., and IUCN, Gland, Switzerland. 761 pp.
- Cooper, J., Brooke, R.K., Cyrus, D.P., Martin, A.P., Taylor, R.H. & Williams, A.J. (1992). Distribution, population size and conservation of the Caspian Tern *Sterna caspia* in southern Africa. Ostrich 63: 58-67.
- Cooper, J., Williams, A.J. & Britton, P.L. (1984). Distribution, population sizes and conservation of breeding seabirds in the Afrotropical Region. In: Croxall, J.P., Evans, P.G.H. & Schreiber, R.W. (eds), Status and Conservation of the World's Seabirds: 403-419. ICBP Tech. Publ. No.2. ICBP, Cambridge, U.K.
- Cramp, S. (ed.). (1985). Handbook of the Birds of Europe, the Middle East and North Africa. Vol.4: Terns to Woodpeckers. Oxford University Press. Oxford, London and New York. 960 pp.
- Cramp, S. & Simmons, K.E.L. (eds). (1977). Handbook of the Birds of Europe, the Middle East and North Africa. Vol.1: Ostrich to Ducks. Oxford University Press. Oxford, London and New York. 722 pp.
- Cramp, S. & Simmons, K.E.L. (eds). (1980). Handbook of the Birds of Europe, the Middle East and North Africa. Vol.2: Hawks to Bustards. Oxford University Press. Oxford, London and New York. 695 pp.

- Cramp, S. & Simmons, K.E.L. (eds). (1983). Handbook of the Birds of Europe, the Middle East and North Africa. Vol.3: Waders to Gulls. Oxford University Press. Oxford, London and New York. 913 pp.
- Cranswick, P.A., Waters, R.J., Musgrove, A.J. & Pollitt, M.S. (1997). The Wetland Bird Survey 1995-96: Wildfowl and Wader Counts. BTO/WWT/RSPB/ JNCC, Slimbridge, U.K. 165 pp.
- Danilenko, A.K., Boere, G.C. & Lebedeva, E.A. (1996). Looking for the recent breeding grounds of Slender-billed Curlew: a habitat-based approach. Wader Study Group Bulletin 81: 71-78.
- Davidson, N. (in press). Compiling estimates of East Atlantic flyway wader populations wintering in coastal Europe in the early 1990s: a summary of the 1996 WSG wader populations workshop. Wader Study Group Bulletin, August 1998.
- de Juana, A.E. (1984). The Status and Conservation of Seabirds in the Spanish Mediterranean. *In*: Croxall, J.P., Evans, P.G.H. & Schreiber, R.W. (eds), Status and Conservation of the World's Seabirds: 347-361. ICBP Tech. Publ. No.2. ICBP, Cambridge, U.K.
- de Juana, A.E., Varela, J. & Witt, H-H. (1984). The Conservation of Seabirds at the Chafarinas Islands. *In*: Croxall, J.P., Evans, P.G.H. & Schreiber, R.W. (eds), Status and Conservation of the World's Seabirds: 363-370. ICBP Tech. Publ. No.2. ICBP, Cambridge, U.K.
- del Hoyo, J., Elliott A. & Sargatal, J. (eds). (1992). Handbook of the Birds of the World. Volume 1: Ostrich to Ducks. Lynx Edicions, Barcelona. 696 pp.
- del Hoyo, J., Elliott A. & Sargatal, J. (eds). (1996). Handbook of the Birds of the World. Vol.3. Hoatzin to Auks. Lynx Edicions, Barcelona. 821 pp.
- Dement'ev, G.P. & Gladkov, N.A. (eds). (1969). Birds of the Soviet Union. Vol.III. Israel Program for Scientific Translations, Jerusalem. Translated from Russian. 756 pp.
- Dereliev, S. (1998). Monitoring of Red-breasted Geese in Bulgaria in the 1990s. TWSG News No.11: 38-40.
- Devort, M. (1997). The Snipe: elements for an action plan. Editions confluentes, CICB, OMPO, Paris. 99 pp.
- Dodman, T. & Rose, P.M. (1997). Application of the African Waterfowl Census in estimating the distribution and abundance of African waterfowl. *In*: Dodman, T. (ed.), A Preliminary Waterbird Monitoring Strategy for Africa: 23-39. Wetlands International Publication No.43. Wetlands International, Wageningen, The Netherlands.
- Dodman, T. & Taylor, V. (1995). African Waterfowl Census 1995. Les Denombrements Internationaux d'oiseaux d'eau en Afrique, 1995. IWRB, Slimbridge, U.K. 192 pp.
- Dodman, T. & Taylor, V. (1996). African Waterfowl Census 1996. Les Denombrements Internationaux d'oiseaux d'eau en Afrique, 1996. Wetlands International, Wageningen, The Netherlands. 206 pp.
- Dodman, T., de Vaan, C., Hubert, E. & Nivet, C. (1997). African Waterfowl Census 1997. Les Denombrements Internationaux d'oiseaux d'eau en Afrique, 1997. Wetlands International, Wageningen, The Netherlands. 260 pp.
- Elgood, J.H. (1982). Birds of Nigeria: An annotated check-list. B.O.U. Check-list No.4. British Ornithologists' Union, London. 246 pp.
- Elgood, J.H., Heigham, J.B., Moore, A.M., Nason, A.M., Sharland, R.E. & Skinner, N.J. (1994). The Birds of Nigeria: An annotated check-list. B.O.U. Check-list No.4 (second edition). British Ornithologists' Union, Tring, U.K.
- Evans, M.I. (ed.). (1994). Important Bird Areas in the Middle East. BirdLife Conservation Series No.2. BirdLife International, Cambridge, U.K. 410 pp.
- Evans, P.G.H. (1984). Status and Conservation of Seabirds in Northwest Europe (excluding Norway and the USSR). *In*: Croxall, J.P., Evans, P.G.H. & Schreiber, R.W. (eds), Status and Conservation of the World's Seabirds: 293-321. ICBP Tech. Publ. No.2. ICBP, Cambridge, U.K.
- Evans, P.G.H. (1986). Monitoring seabirds in the North Atlantic. *In*: Medmaravis & Monbailliu, X. (eds), Mediterranean Marine Avifauna: 179-206. Springer-verlag, Medmaravis, Berlin.
- Finlayson, C.M., Chuikov, Y.S., Prentice, R.C. & Fischer, W. (1993). Biogeography of the lower Volga, Russia: an overview. IWRB Special Publication No.28. IWRB, Slimbridge, U.K. 16 pp.
- Flint, V. Ye. & Krivenko, V.G. (1990). The present status and trends of waterfowl in the USSR. *In*: Matthews, G.V.T. (ed.), Managing Waterfowl Populations: 23-26. Proc. IWRB Symp. Astrakhan 1989. IWRB Spec. Publ. No.12. IWRB, Slimbridge, U.K.
- Gallagher, M.D., Scott, D.A., Ormond, R.F.G., Connor, R.J. & Jennings, M.C. (1984). The Distribution and Conservation of Seabirds Breeding on the Coasts and Islands of Iran and Arabia. *In*: Croxall, J.P., Evans, P.G.H. & Schreiber, R.W. (eds), Status and Conservation of the World's Seabirds: 421-456. ICBP Technical Publication No.2. ICBP, Cambridge, U.K.
- Gibbons, D.W., Reid, J.B. & Chapman, R.A. (1993). The New Atlas of Breeding Birds in Britain and Ireland: 1988-1991. T. & A.D. Poyser, London. 520 pp.
- Green, A.J. (1993). The Status and Conservation of the Marbled Teal *Marmaronetta angustirostris*. IWRB Special Publication No.23. 107 pp.
- Green, A.J. & Anstey, S. (1992). The status of the White-headed Duck *Oxyura leucocephala*. Bird Conservation International 2: 185-200.
- Green, A.J. & El Hamzaoui, M. (1998). The Status and Biology of Threatened Waterfowl in Morocco. TWSG News No.11: 25-27.
- Green, A.J. & Navarro, J.D. (1997). National censuses of the Marbled Teal *Marmaronetta angustirostris* in Spain. Bird Study 44: 80-87.

- Gretton, A. (1991). The Ecology and Conservation of the Slender-billed Curlew (*Numenius tenuirostris*). ICBP Monograph No.6. ICBP, Cambridge, U.K. 159 pp.
- Gretton, A. (1994). An estimate of the current population of the Slender-billed Curlew. *In: European Commission: Preparation d'un plan de sauvetage pour Numenius tenuirostris. Rapport final, Tome 2, Annexes (Annex 5).*
- Golovkin, A.N. (1984). Seabirds Nesting in the USSR: The Status and Protection of Populations. *In: Croxall, J.P., Evans, P.G.H. & Schreiber, R.W. (eds), Status and Conservation of the World's Seabirds: 473-486. ICBP Tech. Publ. No.2. ICBP, Cambridge, U.K.*
- Goriup, P.D. & Schulz, H. (1991). Conservation Management of the White Stork: an International Need and Opportunity. *In: Salathe, T. (ed.), Conserving Migratory Birds: 97-127. ICBP Technical Publication No.12. ICBP, Cambridge, U.K.*
- Hagemeyer, W.J.M. & Blair, M.J. (eds). (1997). The EBCC Atlas of European Breeding Birds: Their Distribution and Abundance. T. & A.D. Poyser, London. 903 pp.
- Hancock, J. & Elliott, H. (1978). The Herons of the World. London Editions, London. 304 pp.
- Hancock, J.A., Kushlan, J.A. & Kahl, M.P. (1992). Storks, Ibises and Spoonbills of the World. Academic Press, London. 385 pp.
- Handrinos, G.I. (1998). Record count of White-headed Ducks wintering in Greece. TWSG News No.11: 34-35.
- Harrison, J.A., Allan, D.G., Underhill, L.G., Herremans, M., Tree, A.J., Parker, V. & Brown, C.J. (1997). The Atlas of Southern African Birds. Vol.1. BirdLife South Africa, Johannesburg. 785 pp.
- Hayman, P., Marchant, J. & Prater, T. (1986). Shorebirds: An identification guide to the waders of the world. Croom Helm, London & Sydney. 412 pp.
- Heredia, B., Rose, L. & Painter, M. (eds). (1996) Globally threatened birds in Europe: Action plans. Council of Europe Publishing, Strasbourg, France. 408 pp.
- Hockey, P.A.R., Underhill, L.G., Neatherway, M. & Ryan, P.G. (1989). Atlas of the Birds of the Southwestern Cape. Cape Bird Club, Cape Town, South Africa. 236 pp.
- Hoogendoorn, W.T & Mackrill, E.J. (1987). Audouin's Gull in the Southwestern Palearctic. Dutch Birding 9. nr. 3.
- Hotker, H. (1991). Waders Breeding on Wet Grasslands in the Countries of the European Community - a Brief Summary of Current Knowledge on Population Sizes and Population trends. *In: Hotker, H. (ed.), Waders Breeding on Wet Grasslands. Wader Study Group Bulletin No. 61, Supplement April 1991: 50-55.*
- Hunter, J.M. & Black, J.M. (1995). Action Plan for the Red-breasted Goose *Branta ruficollis*. Unpublished report. 29 pp.
- Isakov, Y.A. (1970). Wintering of Waterfowl in the USSR. *In: Isakov, Y.A. (ed.), Proc. International Regional Meeting on Conservation of Wildfowl Resources, Leningrad, USSR, 25-30 September 1968: 239-254. Moscow.*
- IUCN (1993). 1994 IUCN Red List of Threatened Animals. IUCN, Gland, Switzerland, and Cambridge, U.K. 286 pp.
- IUCN (1996). 1996 IUCN Red List of Threatened Animals. IUCN, Gland, Switzerland, and Cambridge, U.K.
- Johnsgard, P.A. (1981). The Plovers, Sandpipers and Snipes of the World. University of Nebraska Press, Lincoln and London. 493 pp.
- Johnson, A.R. (ed.) (1998). Flamingo Specialist Group Newsletter No.8. Annual Reports 1995-1996. Wetlands International and IUCN-Species Survival Commission. 41 pp.
- Kalchreuter, H. (1994). On the wise use of woodcock and snipe populations. *In: Kalchreuter, H. (ed.), Proc. Fourth European Woodcock and Snipe Workshop, Saarbrücken, Germany, 6-8 April 1992: 108-114. IWRB Publication No.31. IWRB, Slimbridge, U.K.*
- Katondo, J. (1997). An overview of the January 1995 National Waterfowl Census in Tanzania. *In: Dodman, T. (ed.), A Preliminary Waterbird Monitoring Strategy for Africa: 117-121. Wetlands International Publication No.43. Wetlands International, Wageningen, The Netherlands.*
- Kirby, J.S., Evans, R.J. & Fox, A.D. (1993). Wintering seaducks in Britain and Ireland: populations, threats, conservation and research priorities. Aquatic Conservation: Marine and Freshwater Ecosystems Vol.3: 105-137.
- Koskimies, P. (1993). Population sizes and recent trends of breeding birds in the Nordic countries. Vesi- Ja Ymparistohallitus, Helsinki. 47 pp.
- Krivenko, V.G. (1993). The Current Status of Waterfowl Resources and their Habitats in the Middle Region of the Former USSR. *In: Moser, M. & van Vesseem, J. (eds), Wetland and Waterfowl Conservation in South and West Asia. Proc. Int. Symp., Karachi, Pakistan, 14-20 December 1991: 72-77. IWRB Special Publication No.25; AWB Publication No.85.*
- Kuresoo, A. & Leibak, E. (1994). Breeding status of snipes in Estonia and in the eastern Baltic region. *In: Kalchreuter, H. (ed.), Proc. Fourth European Woodcock and Snipe Workshop, Saarbrücken, Germany, 6-8 April 1992: 81-84. IWRB Publication No.31. IWRB, Slimbridge, U.K.*
- Langrand, O. (1990). Guide to the Birds of Madagascar. Yale University Press, New Haven & London. 364 pp.
- Laubeck, B., Nilsson, L., Wieloch, M., Koffijberg, K., Sudfelt, C. & Follestad, A. (1999). Distribution, number and habitat choice of the Northwest European Whooper Swan (*Cygnus cygnus*) population: results of an international Whooper Swan census, January 1995. Vogelwelt 120.
- Laursen, K., Pihl, S. & Komdeur, I. (1992). New figures of Seaduck Winter Populations in the Western Palearctic. IWRB Seaduck Bulletin No.1: 6-8.

- Lloyd, C., Tasker, M.L. & Partridge, K. (1991). The Status of Seabirds in Britain and Ireland. T. & A.D. Poyser, London. 355 pp.
- Madsen, J. (1991). Status and trends of goose populations in the Western Palearctic in the 1980s. *In*: Fox, A.D., Madsen, J. & van Rhijn, J. (eds), Western Palearctic Geese. Proc. IWRB Symp. Kleve, Germany, February 1989. *Ardea* 79 (2): 113-122.
- Madsen, J., Cracknell, G. & Fax, A.D. (eds). (1999). Goose populations of the Western Palearctic: A review of status and distribution. Wetlands International Publication No.48. Wetlands International, Wageningen, The Netherlands; National Environmental Research Institute, Ronde, Denmark. 344 pp.
- Madsen, J., Reed, A. & Andreev, A. (1996). Status and trends of geese (*Anser* sp., *Branta* sp.) in the world: a review, updating and evaluation. *In*: Birkan, M., van Vessem, J., Havet, P., Madsen, J., Trolliet, B. & Moser, M. (eds), Proceedings of the Anatidae 2000 Conference, Strasbourg, France, 5-9 December 1994. *Gibier Faune Sauvage, Game Wildl.* 13: 337-353.
- Massoli-Novelli, R. (1988). Status and Habitat of Great Snipe in Ethiopia and its Movements in Africa. *In*: Havet, P. & Hiron, G. (eds), Proc. Third European Woodcock and Snipe Workshop, Paris, France, 14-16 October 1986: 12-15. IWRB, Slimbridge, U.K.
- Meine, C.D. & Archibald, G.W. (eds). (1996). The Cranes: - Status Survey and Conservation Action Plan. IUCN, Gland, Switzerland, and Cambridge, U.K. 294 pp.
- Meininger, P.L., Wolf, P.A., Hadoud, D.A. & Essghaier, M.F.A. (1994). Rediscovery of Lesser Crested Tern breeding in Libya. *British Birds* 87: 160-170.
- Meltofte, H. (1985). Populations and breeding schedules of waders Charadrii, in high arctic Greenland. *Meddr Gronland, Bioscience* 16: 44 pp.
- Monval, J-Y. & Pirot, J-Y. (1989). Results of the IWRB International Waterfowl Census 1967-1986. IWRB Spec. Publ. No.8. IWRB, Slimbridge, U.K.
- Mooij, J.H. (1996). Winter distribution and population size of White-fronted Geese in the Western Palearctic. Wetlands International Goose Specialist Group Bulletin No.8: 13-21.
- Morony, J.J., Bock, W.J. & Farrand, J. (1975). Reference List of the Birds of the World. American Museum of Natural History, New York. 207 pp.
- Nygaard, T., Frantzen, B. & Svazas, S. (1995). The Steller's Eiders *Polysticta stelleri* wintering in Europe: Their numbers, distribution and origin. *Wildfowl* 46: 140-155.
- O'Donnell, C. & Fjelds , J. (1997). Grebes- A Global Action Plan For Their Conservation. IUCN/SSC, Gland, Switzerland. 79 pp.
- Olivier, G-N. (1996). Long-term trends of Common Snipe and Jack Snipe in northern France. Woodcock and Snipe Specialist Group Newsletter No.22: 28-29.
- Olsen, K.M. & Larssen, H. (1995). Field identification of Little and Saunders's Tern. *Bull. African Bird Club* Vol.2, No.2: 81-85.
- Paynter, D., Aarvak, T. & Sultanov, E. (1996). Conservation of wetland reserves in Azerbaijan: counts of wintering birds, January-February 1996. Flora & Fauna International, Wildfowl & Wetlands Trust, Norsk Ornitologisk Forening. Unpublished report.
- Perennou, C. (1991). Les Recensements Internationaux d'Oiseaux d'Eau en Afrique Tropicale. IWRB Spec. Publ. No.15. IWRB, Slimbridge, U.K. 140 pp.
- Perennou, C., Mundkur, T., Scott, D.A., Follestad, A. & Kvenild, L. (1994). The Asian Waterfowl Census 1987-91: Distribution and Status of Asian Waterfowl. AWB Publication No.86. IWRB Publication No.24. AWB, Kuala Lumpur, Malaysia and IWRB, Slimbridge, U.K. 372 pp.
- Peters, J.L. (1931). Check-list of Birds of the World. Volume I. Harvard University Press, Cambridge, Mass., U.S.A. 345 pp.
- Peters, J.L. (1934). Check-list of Birds of the World. Volume II. Harvard University Press, Cambridge, Mass., U.S.A. 401 pp.
- Petkov, N.V. (1998). Studies on the Ferruginous Duck in Bulgaria. TWSG News No.11: 14-19.
- Piersma, T. & Davidson, N. (eds) (1992). The Migration of Knots. Wader Study Group Bulletin 64, Supplement. 209 pp.
- Pihl, S. (1996). News from the regions in the Western Palearctic. Wetlands International Seaduck Specialist Group Bulletin No.6: 21-22.
- Pihl, S. (1997). European Species Action Plan: Steller's Eider *Polysticta stelleri*. *In*: Final Technical Report and Claim, 1 March 1996 - 30 November 1997. Species Action Plans for 8 European Threatened Bird Species. RSPB, Sandy, U.K.
- Pihl, S., Durinck, J. & Skov, H. (1995). Waterbird Numbers in the Baltic Sea, Winter 1993. National Environmental Research Institute. NERI Technical Report No.145. 60 pp.
- Pihl, S. & Laursen, K. (1996). A reestimation of Western Palearctic wintering seaduck numbers from the Baltic Sea 1993 survey. *In*: Birkan, M., van Vessem, J., Havet, P., Madsen, J., Trolliet, B. & Moser, M. (eds), Proceedings of the Anatidae 2000 Conference, Strasbourg, France, 5-9 December 1994. *Gibier Faune Sauvage, Game Wildl.* 13: 191-199.
- Pirot, J-Y. & Fox, A.D. (1990). Population levels of waterfowl in the Western Palearctic: an analysis of recent trends. *In*: Matthews, G.V.T. (ed.), Managing Waterfowl Populations: 52-62. Proc. IWRB Symp. Astrakhan 1989. IWRB Spec. Publ. No.12. IWRB, Slimbridge, U.K.

- Pirot, J.-Y., Laursen, K., Madsen, J. & Monval, J.-Y. (1989). Population estimates of swans, geese, ducks and Eurasian Coot *Fulica atra* in the Western Palearctic and Sahelian Africa. In: Boyd, H. & Pirot, J.-Y. (eds), Flyways and Reserve Networks for Waterbirds: 14-23. IWRB Spec. Publ. No.9. IWRB, Slimbridge, U.K.
- Ripley, S.D. (1977). Rails of the World. Godine, Boston, U.S.A. 406 pp.
- Roberts, T.J. (1991). The Birds of Pakistan: Vol.1 Non-Passeriformes. Oxford University Press, Karachi. 598 pp.
- Robinson, J.A. (in press). Migration and morphometrics of the Red-breasted Merganser *Mergus serrator* in northern Eurasia and the implications for conservation of this species in Britain and Ireland. Wildfowl 1999.
- Rogacheva, H. (1992). The Birds of Central Siberia. Husum, Germany. 737 pp.
- Rose, P.M. (ed.) (1995). Western Palearctic and South-West Asia Waterfowl Census 1994. IWRB Publication No.35. IWRB, Slimbridge, U.K. 119 pp.
- Rose, P.M. (1996). Status and trends of Western Palearctic duck (Anatinae), swan (*Cygnus* sp.) and coot (*Fulica atra*) populations. In: Birkan, M., van Vessem, J., Havet, P., Madsen, J., Trollet, B. & Moser, M. (eds), Proceedings of the Anatidae 2000 Conference, Strasbourg, France, 5-9 December 1994. Gibier Faune Sauvage, Game Wildl. 13: 531-545.
- Rose, P.M. & Scott, D.A. (1994). Waterfowl Population Estimates. IWRB Special Publication No.29. IWRB, Slimbridge, U.K. 102 pp.
- Rose, P.M. & Scott, D.A. (1997). Waterfowl Population Estimates - Second Edition. Wetlands International Publication No.44. Wetlands International, Wageningen, The Netherlands. 106 pp.
- Scott, D.A. (ed.) (1995). A Directory of Wetlands in the Middle East. IUCN, Gland, Switzerland and IWRB, Slimbridge, U.K. 560 pp.
- Scott, D.A. & Carp, E. (1982). A Midwinter Survey of Wetlands in Mesopotamia, Iraq: 1979. Sandgrouse 4: 60-76.
- Scott, D.A. & Rose, P.M. (1996). Atlas of Anatidae Populations in Africa and Western Eurasia. Wetlands International Publication No.41. Wetlands International, Wageningen, The Netherlands. 336 pp.
- Short, L.L., Home, J.F.M. & Muringo-Gichuki, C. (1990). Annotated Check-list of the Birds of East Africa. Proc. Western Foundation of Vertebrate Zoology, Vol.4, No.3, June 1990. 246 pp.
- Sibley, C.G. & Monroe, B.L. (1990). Distribution and Taxonomy of Birds of the World. Yale University Press, New Haven and London. 1111 pp.
- Sibley, C.G. & Monroe, B.L. (1993). A Supplement to Distribution and Taxonomy of Birds of the World. Yale University Press, New Haven and London. 108 pp.
- Simmons, R.E., Cordes, I. & Braby, R. (1998). Latitudinal trends, population size and habitat preferences of the Damara Tern *Sterna balaenarum* on Namibia's desert coast. Ibis 140: 439-445.
- Smit, C.J. & Piersma, T. (1989). Numbers, midwinter distribution and migration of wader populations using the East Atlantic flyway. In: Boyd, H. & Pirot, J.-Y. (eds), Flyways and Reserve Networks for Waterbirds: 24-63. IWRB Spec. Publ. No.9. IWRB, Slimbridge, U.K.
- Snow, D.W. & Perrins, C.M. (1998). The Birds of the Western Palearctic. Concise Edition. Volume 1: Non-Passerines. Oxford University Press, Oxford & New York. 1008 pp.
- Solovieva, D.V. (1997). Steller's Eider: National Report from Russia. Proc. from Steller's Eider Workshop. Wetlands International Seaduck Specialist Group Bulletin No.7: 7-12.
- Stroud, D.A. (1992). Greenland White-fronted Goose *Anser albifrons flavirostris*: International Conservation Plan. Draft Working Document: Full Plan. National Parks and Wildlife Service of the Office of Public Works, Ireland, and International Waterfowl and Wetlands Research Bureau. 184 pp.
- Summers, R.W., Underhill, L.G., Pearson, D.J. & Scott, D.A. (1987). Wader migration systems in southern and eastern Africa and western Asia. In: Davidson, N.C. & Pienkowski, M.W. (eds), The Conservation of International Flyway Populations of Waders: 15-34. Wader Study Group Bull. 49, Supplement. IWRB Special Publication No.7. IWRB, Slimbridge, U.K.
- Svazas, S., Meissner, W. & Nehls, H.W. (1994). Wintering populations of Goosander (*Mergus merganser*) and Smew (*Mergellus albellus*) at the south eastern Baltic Coast. Acta Ornithologica Lituanica 9-10: 68-69.
- Symens, P., Aspinall, S., Mohamed, S.A., Nation, R. & Werner, M. (1995). Joint Efforts towards the Conservation of Socotra Cormorant *Phalacrocorax nigrogularis* in the Arabian Gulf. IWRB Cormorant Research Group Bulletin No.1: 55-58.
- Symens, P., Kinzelbach, R., Suhaibani, A. & Werner, M. (1993). A review of the status, distribution and conservation of the Socotra Cormorant *Phalacrocorax nigrogularis*. Zoology in the Middle East 8: 17-30.
- Syroechkovski, E. (1996). Species, status and population distribution of Russian Arctic geese (*Branta* sp. and *Anser* sp.). In: Birkan, M., van Vessem, J., Havet, P., Madsen, J., Trollet, B. & Moser, M. (eds), Proceedings of the Anatidae 2000 Conference, Strasbourg, France, 5-9 December 1994. Gibier Faune Sauvage, Game Wildl. 13: 381-396.
- Sziji, J. (1972). Some suggested criteria for determining the International Importance of Wetlands in the Western Palearctic. In: Carp, E. (ed.), Proc. Int. Conference on Conservation of Wetlands and Waterfowl, Ramsar, Iran 1971: 111-124. IWRB, Slimbridge, U.K.
- Taylor, P.B. (1997). The status and conservation of rallids in South Africa: results of a wetland survey in 1995/96. ADU Research Report No.23. Avian Demography Unit, Department of Statistical Sciences, University of Cape Town. 41 pp.

- Taylor, P.B. (1999). The ecology and conservation of the White-winged Flufftail, and the sustainable utilisation of Ethiopian high-altitude palustrine wetland habitats: report on fieldwork in Ethiopia from 27 November to 12 December 1998. Pietermaritzburg, South Africa. Unpublished report.
- Taylor, P.B. & van Perlo, B. (1998). Rails: a Guide to the Rails, Crakes, Gallinules and Coots of the World. Pica Press, Mountfield, Sussex.
- Taylor, V. (1993). African Waterfowl Census 1993. Les Denombrements Internationaux d'oiseaux d'eau en Afrique, 1993. IWRB, Slimbridge, U.K. 156 pp.
- Taylor, V. & Rose, P.M. (1994). African Waterfowl Census 1994. Les Denombrements Internationaux d'oiseaux d'eau en Afrique, 1994. IWRB, Slimbridge, U.K. 184 pp.
- Tucker, G.M. & Heath, M.F. (1994). Birds in Europe: their conservation status. BirdLife Conservation Series No.3. BirdLife International, Cambridge, U.K. 600 pp.
- Urban, E.K., Fry, C.H. & Keith, S. (1986). The Birds of Africa. Volume II. Academic Press, London & Orlando. 552 pp.
- van der Have, T.M., Baccetti, N., Keijil, G.O. & Zenatello, M. (1997). Waterbirds in Kneiss, Tunisia, February 1994. WIWO Report No.54, Zeist. 140 pp.
- van Dijk, A.J., van Dijk, G., Piersma, T. & SOVON. (1989). Weidevogelpopulaties in Nederland. De jongste aantalschattingen in internationaal perspectief. Het Vogeljaar 37: 60-68.
- van Nugteren, J. (1997). Dark-bellied Brent Goose *Branta bernicla bernicla* Flyway Management Plan. National Reference Centre for Nature Management, Ministry of Agriculture, Nature Management and Fisheries and Dutch Society for the Preservation of the Wadden Sea. Wageningen, The Netherlands.
- van Vessem, J. (ed.). (1994). Actions to prevent avoidable mortality for threatened waterbirds in the European Community. Report prepared for the Commission of the European Communities. IWRB, Slimbridge, U.K.
- Vaurie, C. (1965). The Birds of the Palearctic Fauna. A Systematic Reference. Non-Passeriformes. H.F. & G. Witherby Limited, London. 763 pp.
- Vinogradov, V.G. & Auezov, E.M. (1990). Waterfowl of the Turgay depression, Kazakhstan. *In*: Matthews, G.V.T. (ed.), Managing Waterfowl Populations: 38. Proc. IWRB Symposium, Astrakhan, USSR, 1989. IWRB Special Publication No.12. IWRB, Slimbridge, U.K.
- von Essen, L. (1996). Reintroduction of Lesser White-fronted Geese (*Anser erythropus*) in Swedish Lapland (1981-1991). *In*: Birkan, M., van Vessem, J., Havet, P., Madsen, J., Trolliet, B. & Moser, M. (eds), Proceedings of the Anatidae 2000 Conference, Strasbourg, France, 5-9 December 1994. Gibier Faune Sauvage, Game Wildl. 13: 1169-1180.
- Wieloch, M. (1991). Population trends of the Mute Swan *Cygnus olor* in the Palearctic. *In*: Sears, J. (ed.), Proc. Third International Swan Symposium: 22-33. Wildfowl Supplement No.1.
- Wieloch, M. (1998). Studies on the Ferruginous Duck in Poland. TWSG News No.11: 19-22.

4.

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**TABLE 1 : POPULATION SIZES AND TRENDS OF WATERBIRD SPECIES
INCLUDED IN THE AGREEMENT**

KEY TO COLUMN HEADINGS:

Population

The migratory populations of the waterbird species covered under this Agreement. These populations may be the entire population of a species, the entire population of a distinct subspecies, a discrete biogeographical population of a monotypic species or of a subspecies, or that 'population' of birds which breeds and/or winters in one or more of the major sub-regions of the African-Eurasian region. For an explanation of the ways in which populations are listed, see section 2.1 in the main text.

Populations enclosed in square brackets are not included in the second edition of *Waterfowl Population Estimates*. Justification for these new populations is given in the species accounts in the main text.

Population size

Population estimates in the column headed WPE2 are taken from the second edition of *Waterfowl Population Estimates*. In some cases, a revised estimate is given in the column headed REV. Justification for the revised estimates is given in the species accounts. In most cases, the revised estimate is based on better knowledge of the population concerned, and does not imply any real change in population size.

In all cases, the numerical estimates are given as number of individuals, although in many cases the estimates have been derived from numbers of breeding pairs. For many species and populations, only a rough indication of population size is available. In these cases, population size is given in one of five categories.

- A: Less than 10,000 individuals
- B: 10,000-25,000 individuals
- C: 25,000-100,000 individuals
- D: 100,000-1,000,000 individuals
- E: Over 1,000,000 individuals

Trends

Information on trends is confined to the situation in recent decades. Brackets are used to indicate either that there is some doubt about the trend, or that a particular trend has been reported in only a part of the species' range, and may not be applicable throughout most of its range. The trends given in the column headed WPE2 are taken from the second edition of *Waterfowl Population Estimates*. Revised trends are given in the column headed REV, and discussed in the species accounts.

INC	-	Increasing	DEC	-	Decreasing
STA	-	Stable	?	-	unknown

Population	Population size WPE2	REV	Trends WPE2	REV
GAVIIDAE				
<i>Gavia stellata</i>				
- Northwest Europe (win)	75,000	D	DEC	
- Casp, Black S & E Med (win)	?		?	
<i>Gavia a. arctica</i>				
- W Siberia/Europe	120,000		STA	DEC
<i>Gavia a. suschkini</i>				
- C Siberia/Caspian	?		?	
<i>Gavia immer</i>				
- Europe (win)	5,000		?	
<i>Gavia adamsii</i>				
- Northern Europe (win)	A/B		?	
PODICIPEDIDAE				
<i>Podiceps g. grisegena</i>				
- Northwest Europe (win)	15,000	C	STA	
- Black Sea & Med (win)	10,000	C	?	
- Caspian (win)	15,000		?	
<i>Podiceps a. auritus</i>				
- NW Europe (large billed)	5,000	DEC	STA/INC	
- NE Europe (small billed)	B/C	C	?	(DEC)
- Caspian & South Asia (win)	B		?	
PELECANIDAE				
<i>Pelecanus onocrotalus</i>				
- Europe & W Asia (bre)	70,000		DEC	
<i>Pelecanus crispus</i>				
- Black Sea & Med (win)	2,000-3,000		INC	STA
- SW & South Asia (win)	10,000-13,000		STA	
PHALACROCORACIDAE				
<i>Phalacrocorax pygmeus</i>				
- Black Sea & Mediterranean	25,000		?	STA/INC
- Southwest Asia	5,000	C	DEC	?
<i>Phalacrocorax nigrogularis</i>				
- Gulf & Arabian Sea	500,000-1,000,000		?	(DEC)
ARDEIDAE				
<i>Egretta vinaceigula</i>				
- Southern Africa	5,000-10,000		DEC	
<i>Ardea p. purpurea</i>				
- West Mediterranean (bre)	B		DEC	
- E Europe & SW Asia (bre)	D		?	(DEC)
<i>Casmerodius albus albus</i>				
- Black Sea & Med (win)	7,000-17,000		DEC	STA/INC
- Southwest Asia (win)	B/C		?	
<i>Ardeola idae</i>				
- Madagascar & Aldabra (bre)	A	5,000	DEC	
<i>Ardeola rufiventris</i>				
- Tropical E & S Africa	B/C		?	
<i>Ixobrychus m. minutus</i>				
- Europe & N Africa (bre)	C	D	DEC	
- West & SW Asia (bre)	C		?	
<i>Ixobrychus sturmii</i>				
- Subsaharan Africa	B/C		?	

Population	Population size WPE2	REV	Trends WPE2	REV
<hr/>				
<i>Botaurus s. stellaris</i>				
- Europe (bre)	C		DEC	
- Southwest Asia (win)	A/B		?	
CICONIIDAE				
<i>Mycteria ibis</i>				
- Subsaharan Africa	C		STA	
<i>Ciconia nigra</i>				
- SW Europe/West Africa	1,000		?	STA/INC
- Cent & E Europe (bre)	20,000-30,000		?	INC
<i>Ciconia episcopus microscelis</i>				
- Tropical Africa	C		?	
<i>Ciconia c. ciconia</i>				
- Southern Africa	30		INC	
- Iberia & NW Africa (bre)	85,000	100,000	DEC	STA/INC
- Cent & E Europe (bre)	400,000		DEC	
- Southwest Asia (win)	C		?	
THRESKIORNITHIDAE				
<i>Plegadis f. falcinellus</i>				
- Subsaharan Africa (bre)	?		?	
- Black Sea & Med/W Africa	25,000-40,000	40,000-50,000	?	DEC
- SW Asia/Eastern Africa	B	C	?	
<i>Geronticus eremita</i>				
- Morocco	<250	200	STA	DEC
- Southwest Asia	>27		DEC	
<i>Threskiornis a. aethiopicus</i>				
- Subsaharan Africa	D		STA	
- Iraq & Iran	200		DEC	
<i>Platalea l. leucorodia</i>				
- Eastern Atlantic	<3,000	6,500	?	INC
- Cent & SE Europe (bre)	5,000-15,000		DEC	
<i>Platalea l. archeri</i>				
- Red Sea	500-1,500		?	
<i>Platalea l. major</i>				
- SW & South Asia	23,000		?	
<i>Platalea alba</i>				
- Subsaharan Africa	A/B		?	
PHOENICOPTERIDAE				
<i>Phoenicopterus ruber roseus</i>				
- West Africa	40,000		?	
- Eastern Africa	35,000		DEC	
- Southern Africa	50,000	55,000	DEC	
- West Mediterranean	80,000		INC	
- E Med, SW Asia & S Asia	500,000		STA	
<i>Phoenicopterus minor</i>				
- West Africa	15,000		STA	
- Eastern Africa	4,000,000		STA	DEC
- Southern Africa	<1,000,000	40,000	DEC	
ANATIDAE				
<i>Dendrocygna bicolor</i>				
- West Africa	100,000		?	
- Eastern & Southern Africa	200,000-500,000		?	
<i>Dendrocygna viduata</i>				
- West Africa	250,000		INC	
- Eastern & S Africa	1,000,000-2,000,000		INC	

Population	Population size WPE2	REV	Trends WPE2	REV
<i>Thalassornis l. leuconotus</i>				
- West Africa	1,000		DEC	
- Eastern & Southern Africa	10,000-25,000		STA	
<i>Oxyura leucocephala</i>				
- West Mediterranean	700	1,200	INC	
- Algeria & Tunisia	400		STA	
- E Med, Turkey & SW Asia	8,000-15,000		DEC	
<i>Cygnus olor</i>				
- NW Mainland & C Europe	210,000		INC	
- Black Sea	45,000		INC	
- W & Cent Asia/Caspian	250,000		INC	
<i>Cygnus cygnus</i>				
- Iceland/U.K. & Ireland	16,000		?	STA/DEC
- NW Mainland Europe	40,000	59,000	INC	
- N Eur & W Sib/B Sea & E Med	17,000		DEC	
- W & Cent Siberia/Caspian	20,000		DEC	
<i>Cygnus columbianus bewickii</i>				
- W Sib & NE Eur/NW Europe	17,000	29,000	INC	
- Northern Siberia/Caspian	500		?	
<i>Anser brachyrhynchus</i>				
- E Greenland & Iceland/UK	225,000	250,000	INC	
- Svalbard/Northwest Europe	34,000	37,000	INC	
<i>Anser f. fabalis</i>				
- W Sib & NE Eur/NW Europe	80,000	100,000	INC	STA
<i>Anser f. rossicus</i>				
- W & C Sib/NE & SW Europe	300,000	600,000	?	
<i>Anser a. albifrons</i>				
- NW Sib & NE Eur/NW Europe	600,000		INC	
- W Siberia/Cent Europe	100,000		DEC	
- W Sib/Black Sea & Turkey	650,000		?	(STA)
- N Siberia/Caspian & Iraq	15,000		DEC	
<i>Anser a. flavirostris</i>				
- Greenland/Ireland & U.K.	30,000	33,000	INC	
<i>Anser erythropus</i>				
- N Eur & W Sib/B Sea & Casp	15,000-35,000	15,000	DEC	
<i>Anser a. anser</i>				
- Iceland/UK & Ireland	100,000	80,000	INC	DEC
- NW Europe/SW Europe	200,000		INC	
- Cent Europe/N Africa	20,000	25,000	STA	INC
<i>Anser a. rubrirostris</i>				
- Black Sea & Turkey	25,000	85,000	STA	?
- W Siberia/Caspian & Iraq	100,000	>100,000	INC	
<i>Branta leucopsis</i>				
- E Greenland/Scot. & Ireland	32,000	40,000	STA	INC
- Svalbard/SW Scotland	12,000	23,000	STA	INC
- Russia/Germany & Netherlands	176,000	267,000	INC	
<i>Branta b. bernicla</i>				
- W Siberia/W Europe	300,000		INC	INC/STA
<i>Branta b. hrota</i>				
- Svalbard/Denmark & U.K.	5,000		STA	
- Canada /Ireland	20,000		STA	
<i>Branta ruficollis</i>				
- N Siberia/Black Sea & Caspian	70,000		?	STA/INC
<i>Alopochen aegyptiacus</i>				
- West Africa	10,000-25,000		?	
- Eastern & Southern Africa	200,000-500,000		?	
<i>Tadorna ferruginea</i>				
- Northwest Africa	2,500	3,000	DEC	
- E Med & Black Sea/NE Africa	20,000		DEC	
- W Asia & Caspian/Iran & Iraq	35,000		INC	
<i>Tadorna cana</i>				
- Southern Africa	42,000		STA	

Population	Population size WPE2	REV	Trends WPE2	REV
<i>Tadorna tadorna</i>				
- Northwest Europe	300,000		INC	
- Black Sea & Mediterranean	75,000		INC	STA/DEC
- W Asia/Casp & Middle East	80,000		INC	
<i>Plectropterus g. gambensis</i>				
- West Africa	50,000		DEC	
- Eastern Africa	200,000-300,000		STA	
<i>Plectropterus g. niger</i>				
- Southern Africa	50,000-100,000		STA	
<i>Sarkidiornis m. melanotos</i>				
- West Africa	50,000		STA	
- Southern & Eastern Africa	500,000-1,000,000	STA		
<i>Nettapus auritus</i>				
- West Africa	20,000-30,000		?	
- Southern & Eastern Africa	100,000-250,000		?	
<i>Anas penelope</i>				
- W Sib & NE Eur/NW Europe	1,250,000	INC		
- W Sib & NE Eur/B Sea & Med	560,000		DEC	
- W Sib/SW Asia & NE Africa	250,000		DEC	
<i>Anas s. strepera</i>				
- Northwest Europe	30,000		INC	
- NE Eur/Black Sea & Med	75,000-150,000		DEC	
- W Sib/SW Asia & NE Africa	130,000		?	
<i>Anas c. crecca</i>				
- Northwest Europe	400,000		INC	
- W Sib & NE Eur/B Sea & Med	750,000-1,375,000		STA	
- W Sib/SW Asia & NE Africa	1,500,000		DEC	
<i>Anas capensis</i>				
- E Africa to W Africa	100,000-250,000	A/B	STA	?
- Southern Africa	100,000-250,000		INC	
<i>Anas p. platyrhynchos</i>				
- Northwest Europe	5,000,000	STA		
- Northern Europe/West Med	1,000,000	INC		
- E Eur/Black Sea & E Med	2,250,000	DEC		
- W Siberia/SW Asia	800,000		?	
<i>Anas u. undulata</i>				
- Southern Africa	60,000	>100,000	STA	
<i>Anas acuta</i>				
- Northwest Europe	60,000		?	DEC
- W Sib & NE Eur/S Eur & W Afr	1,200,000	DEC		
- W Sib/SW Asia & E Africa	700,000		?	
<i>Anas erythrorhyncha</i>				
- Southern Africa	500,000-1,000,000	STA		
- Eastern Africa	100,000-300,000		STA	
- Madagascar	15,000-25,000		DEC	
<i>Anas hottentota</i>				
- West Africa	5,000-10,000		DEC	
- Eastern Africa	100,000-300,000		STA	
- Southern Africa	100,000-200,000	C	STA	
<i>Anas querquedula</i>				
- W Sib & Europe/W Africa	2,000,000	?	DEC	
- W Sib/SW Asia, NE & E Afr	100,000-200,000		?	
<i>Anas clypeata</i>				
- NW & Cent Europe (win)	40,000		STA	
- W Sib, NE Eur/S Eur & W Afr	450,000		?	(DEC)
- W Sib/SW Asia, NE & E Afr	400,000	DEC		
<i>Marmaronetta angustirostris</i>				
- West Med/West Africa	3,000		DEC	
- East Mediterranean	1,000		DEC	
- Southwest Asia	5,000-15,000		DEC	
<i>Netta rufina</i>				
- SW & Cent Europe/W Med	25,000		STA	INC

Population	Population size WPE2	REV	Trends WPE2	REV
- Black Sea & East Med	50,000		DEC	
- West & Cent Asia/SW Asia	200,000		STA	
<i>Netta erythrophthalma brunnea</i>				
- Southern & Eastern Africa	30,000-70,000		STA	
<i>Aythya ferina</i>				
- NE Europe/NW Europe	350,000		DEC	
- Cent & NE Eur/B Sea & Med	1,000,000	DEC		
- West Siberia/SW Asia	350,000		?	(DEC)
<i>Aythya nyroca</i>				
- West Med/West Africa	10,000	2,000-3,000	DEC	
- E Europe/E Med & Africa	10,000-50,000		DEC	
- W Asia/SW Asia & NE Africa	5,000		DEC	
<i>Aythya fuligula</i>				
- Northwest Europe (win)	1,000,000	INC		
- C Eur, Black S. & Med (win)	600,000		INC	?
- W Sib/SW Asia & NE Africa	200,000		?	
<i>Aythya m. marila</i>				
- Northern Europe/W Europe	310,000		?	
- W Sib/Black Sea & Caspian	100,000-200,000		?	
<i>Somateria m. mollissima</i>				
- Baltic, DK & NL	1,350,000-1,700,000		STA	
- Norway & Russia	300,000-550,000		STA	
<i>Somateria m. islandica</i>				
- Svalbard & Franz Joseph	40,000-80,000		STA	
<i>Somateria spectabilis</i>				
- E Greenl., NE Eur & W Sib	300,000		?	(STA)
<i>Polysticta stelleri</i>				
- W Siberia/NE Europe	30,000	40,000	INC	
<i>Clangula hyemalis</i>				
- Iceland & Greenland	150,000		STA	
- W Siberia/N Europe	4,600,000	STA		
<i>Melanitta n. nigra</i>				
- W Sib & N Eur/Eur & NW Afr	1,600,000	STA		
<i>Melanitta f. fusca</i>				
- W Sib & N Eur/NW Europe	1,000,000	STA		
- Black Sea & Caspian	1,500		?	
<i>Bucephala c. clangula</i>				
- NW & Cent Europe (win)	300,000		INC	
- NE Europe/Adriatic	75,000		?	
- W Sib & NE Eur/Black Sea	20,000		?	
- W Siberia/Caspian	25,000		?	
<i>Mergellus albellus</i>				
- NW & Cent Europe (win)	25,000-30,000		?	STA
- NE Eur/Black Sea & E Med	65,000	35,000	STA	?
- W Siberia/SW Asia	30,000		?	(DEC)
<i>Mergus s. serrator</i>				
- NW & Cent Europe (win)	145,000		STA	
- NE Eur/Black Sea & Med	50,000		?	
- W Siberia/SW & Cent Asia	<10,000		?	
<i>Mergus m. merganser</i>				
- NW & Cent Europe (win)	200,000		STA	
- NE Europe/Black Sea	10,000		?	
- W Siberia/Caspian	20,000		?	

Population	Population size WPE2	REV	Trends WPE2	REV
GRUIDAE				
<i>Grus leucogeranus</i>				
- Iran (win)	9		STA	
<i>Grus virgo</i>				
- Black Sea (bre)	500		DEC	
- Turkey (bre)	<100		?	
- Kalmykia (bre)	30,000-35,000		STA	
<i>Grus paradisea</i>				
- Extreme Southern Africa	21,000		DEC	
<i>Grus carunculatus</i>				
- North Southern Africa	13,000-15,000		DEC	
<i>Grus grus</i>				
- Northwest Europe (bre)	60,000-70,000		INC	
- NE & Cent Europe (bre)	>60,000		INC	STA/INC
- Black Sea & East Med (win)	35,000		DEC	
- Black Sea & Turkey (bre)	200-500		DEC	
- Southwest Asia (win)	55,000		DEC	
RALLIDAE				
<i>Sarothrura boehmi</i>				
- Central Africa	?		?	
<i>Porzana p. parva</i>				
- West Eurasia/Africa	C/D		DEC	
<i>Porzana pusilla intermedia</i>				
- Europe (bre)	B		DEC	
<i>Porzana porzana</i>				
- Europe/Africa	D		DEC	
<i>Aenigmatolimnas marginalis</i>				
- Sub-Saharan Africa	?		?	(DEC)
<i>Fulica a. atra</i>				
- Black Sea & Med (win)	2,500,000	DEC	(STA)	
DROMADIDAE				
<i>Dromas ardeola</i>				
- NW India Oc., Red Sea & Gulf	43,000		DEC	?
RECURVIROSTRIDAE				
<i>Himantopus h. himantopus</i>				
- Sub-Saharan Africa (bre)	?		?	
- West Mediterranean (bre)	40,000		INC	STA
- Black Sea & East Med (bre)	30,000-60,000		?	STA
- Southwest Asia (win)	B		?	
<i>Recurvirostra avosetta</i>				
- Southern Africa (bre)	?	10,000-20,000	?	INC
- Eastern Africa (bre)	?		?	
- W Europe & W Med (bre)	67,000		STA	INC
- Black Sea & E Med (bre)	C		?	(DEC)
- W & SW Asia/Eastern Africa	B		?	
GLAREOLIDAE				
<i>Glareola p. pratincola</i>				
- West Mediterranean (bre)	B	16,000-20,000	?	
- Black Sea & East Med (bre)	B		?	DEC
- Southwest Asia (bre)	B/C		?	
<i>Glareola nordmanni</i>				
- W & Cent Asia/E & S Africa?		D	DEC	

Population	Population size WPE2	REV	Trends WPE2	REV
CHARADRIIDAE				
<i>Pluvialis apricaria</i>				
- Iceland & Faroes/E Atlantic	-	750,000	-	(STA)
- N Eur/W Europe & NW Africa	-	1,000,000-	STA	
- U.K., Irel., DK & Germ.(bre)	-	70,000	-	DEC
- West Siberia (bre)	?		?	
<i>Pluvialis squatarola</i>				
- East Atlantic (win)	168,000		INC	
- SW Asia & E Africa (win)	50,000		?	
<i>Charadrius hiaticula hiaticula</i>				
- Europe & North Africa (win)	47,500		INC	
- West Africa (win)	195,000		?	
<i>Charadrius hiaticula tundrae</i>				
- SW Asia, E & S Africa (win)	200,000		?	
<i>Charadrius dubius curonicus</i>				
- Europe/West Africa	D		?	STA
- W & SW Asia/Eastern Africa	?		?	
<i>Charadrius p. pecuarius</i>				
- Sub-Saharan Africa	?	?		
<i>Charadrius t. tricoloris</i>				
- Southern & Eastern Africa	?		?	
<i>Charadrius forbesi</i>				
- West & Central Africa	?		?	
<i>Charadrius p. pallidus</i>				
- Southern Africa	?	6,000-7,000	?	STA
<i>Charadrius p. venustus</i>				
- Eastern Africa	?	B	?	
<i>Charadrius a. alexandrinus</i>				
- East Atlantic	67,000		DEC	
- Black Sea & East Med (bre)	C		?	DEC
- SW Asia & NE Africa (win)	C/D		?	
<i>Charadrius marginatus tenellus</i>				
- S & E Africa	?		?	
<i>Charadrius marginatus mechowii</i>				
- West-central Africa	?		?	
<i>Charadrius mongolus pamirensis</i>				
- SW Asia & E Africa (win)	25,000	>30,000	?	
<i>Ch. leschenaultii columbinus</i>				
- Black Sea & East Med (bre)	A		?	
<i>Ch. leschenaultii crassirostris</i>				
- Asia & E Africa (win)	65,000		?	
<i>Charadrius asiaticus</i>				
- W Asia/E & S Africa	B/C		?	DEC
<i>Eudromias morinellus</i>				
- Europe (bre)	D		DEC	
- Asia (bre)	B/C		?	
<i>Vanellus vanellus</i>				
- Europe (bre)	7,000,000	STA	DEC	
- Western Asia (bre)	C/D		?	
<i>Vanellus spinosus</i>				
- Black Sea & Med (bre)	B	C	?	INC
<i>Vanellus albiceps</i>				
- West & Central Africa	?		?	

Population	Population size WPE2	REV	Trends WPE2	REV
<i>Vanellus s. senegallus</i>				
- West Africa	?		?	
<i>Vanellus s. solitaneus</i>				
- Southwestern Africa	?		?	
<i>Vanellus s. lateralis</i>				
- Eastern & SE Africa	?		?	
<i>Vanellus lugubris</i>				
- SW West Africa, & C & E Afr.	?		?	
<i>Vanellus melanopterus minor</i>				
- Southern Africa	?		?	(DEC)
<i>Vanellus c. coronatus</i>				
- Eastern Africa	?		?	
- Central Africa	?		?	
<i>Vanellus c. xerophilus</i>				
- Southwest Africa	?		?	
<i>Vanellus superciliosus</i>				
- West & Central Africa	?		?	
<i>Vanellus gregarius</i>				
- Western Asia/NE Africa	A		DEC	
<i>Vanellus leucurus</i>				
- SW Asia & NE Africa (win)	B	B/C	?	(INC)
SCOLOPACIDAE				
<i>Gallinago media</i>				
- Scandinavia (bre)	5,000-10,000	18,000-51,000	DEC	STA
- W Siberia & NE Europe (bre)	B/C	D	DEC	
<i>Gallinago g. gallinago</i>				
- Europe (bre)	>20,000,000		DEC	
- Western Siberia (bre)	E		DEC	?
<i>Gallinago g. faroensis</i>				
- Iceland (bre)	750,000		?	STA
<i>Lymnocyptes minimus</i>				
- Europe (bre)	C/D		DEC	
- Western Siberia (bre)	?		?	
<i>Limosa l. limosa</i>				
- West Europe/West Africa	350,000		DEC	
- East Europe/Eastern Africa	D		?	DEC
- SW Asia & NE Africa (win)	C		?	
<i>Limosa l. islandica</i>				
- Iceland (bre)	65,000		INC	
<i>Limosa lapponica lapponica</i>				
- West Palearctic (win)	115,000		INC	STA/DEC
- West & SW Africa (win)	700,000		?	
- SW Asia & E Africa (win)	C/D		?	
<i>Numenius p. phaeopus</i>				
- Europe/West Africa	600,000-700,000		?	INC
- W Siberia/S & E Africa	?		?	
<i>Numenius p. alboaxillaris</i>				
- SW Asia/Eastern Africa	?	A	?	DEC
<i>Numenius tenuirostris</i>				
- Gulf, Med & Morocco (win)	100-400	50-270	DEC	
<i>Numenius a. arquata</i>				
- Europe (bre)	348,000		DEC	(STA/INC)
<i>Numenius a. orientalis</i>				
- SW Asia & E Africa (win)	C		?	(DEC)
<i>Tringa erythropus</i>				
- Europe/West Africa	75,000-150,000		?	(STA)
- SW Asia & E Africa (win)	B/C		?	

Population	Population size WPE2	REV	Trends WPE2	REV
<i>Tringa t. totanus</i>				
- East Atlantic (win)	177,000		DEC	
- E Europe/E Med & Africa	-	D	-	DEC
<i>Tringa t. ussuriensis</i>				
- SW Asia & Eastern Africa	?		?	
<i>Tringa t. robusta</i>				
- Iceland & Faroes (bre)	109,000	150,000-300,000	DEC	STA/INC
<i>Tringa stagnatilis</i>				
- Europe/West Africa	C/D		?	
- SW Asia & E & S Africa (win)	C		?	
<i>Tringa nebularia</i>				
- Europe/West Africa	D		STA	
- SW Asia & E & S Africa (win)	C/D		?	
<i>Tringa ochropus</i>				
- Europe/West Africa	D/E		?	STA/INC
- SW Asia & E Africa (win)	?		?	
<i>Tringa glareola</i>				
- Europe (bre)	E		DEC	
- SW Asia, E & S Africa (win)	D/E		?	
<i>Tringa cinerea</i>				
- SW Asia & Africa (win)	44,000		?	(STA)
<i>Tringa hypoleucos</i>				
- Europe (bre)	E		DEC	STA
- SW Asia & E Africa (win)	?	(E)	?	
<i>Arenaria i. interpres</i>				
- West Palearctic (win)	67,000	>80,000	STA	(INC)
- West Africa (win)	32,000	50,000-100,000	STA	
- SW Asia, E & S Africa (win)	C		?	
<i>Calidris tenuirostris</i>				
- SW Asia & W South Asia (win)	A		?	
<i>Calidris c. canutus</i>				
- West & Southern Africa (win)	516,000	260,000	STA	DEC
<i>Calidris c. islandica</i>				
- NE Can. & Greenland/NW Eur.	345,000	400,000	STA	(STA)
<i>Calidris alba</i>				
- E Atlantic, W & S Africa (win)	123,000		STA	
- SW Asia, E & S Africa (win)	120,000		?	
<i>Calidris minuta</i>				
- Europe & West Africa (win)	211,000		STA	
- SW Asia, E & S Africa (win)	1,000,000	?		
<i>Calidris temminckii</i>				
- Europe/West Africa	?		?	
- SW Asia & E Africa (win)	?		?	
<i>Calidris maritima</i>				
- East Atlantic (win)	50,500		STA	
<i>Calidris a. alpina</i>				
- N Sib/W Europe & N Africa	1,373,000	DEC		
- SW Asia & NE Africa (win)	150,000		?	
<i>Calidris a. schinzii</i>				
- Iceland & Greenland (bre)	800,000		STA	
- Baltic, U.K. & Ireland (bre)	21,000	33,000-36,000	?	DEC
<i>Calidris a. arctica</i>				
- Greenland (bre)	15,000		STA	
<i>Calidris ferruginea</i>				
- SW Europe & W Africa (win)	436,000		STA	
- SW Asia, E & S Africa (win)	310,000		STA	
<i>Limicola f. falcinellus</i>				
- N Eur/SW Asia and E Africa	25,000	40,000-60,000	?	(DEC)

Population	Population size WPE2	REV	Trends WPE2	REV
<i>Philomachus pugnax</i>				
- West Africa (win)	E		DEC	
- SW Asia, E & S Africa (win)	D/E		?	
<i>Phalaropus lobatus</i>				
- Western Eurasia (bre)	D/E		?	(STA)
<i>Phalaropus fulicaria</i>				
- African Atlantic coasts (win)	?		?	
LARIDAE				
<i>Larus leucophthalmus</i>				
- Red Sea & nearby coasts	20,000		STA	
<i>Larus hemprichii</i>				
- Red S., Gulf, Arabia & E Afr	40,000	D	?	
<i>Larus audouinii</i>				
- Med/N & W African coasts	40,000		?	INC
<i>Larus armenicus</i>				
- Armenia, E Turkey & W Iran	30,000	45,000-60,000	?	STA
<i>Larus ichthyaetus</i>				
- Black S & Caspian/SW Asia	70,000-120,000		?	INC
<i>Larus genei</i>				
- West Africa (bre)	10,000	20,000	INC	
- Black Sea & Med (bre)	120,000-240,000		STA	(INC)
- West, SW & S Asia (bre)	150,000		INC	
<i>Larus melanocephalus</i>				
- W Europe, Med & NW Africa	D		INC	
<i>Sterna n. nilotica</i>				
- West Europe/West Africa	12,000		DEC	
- Black Sea & E Med (bre)	15,000-25,000		?	DEC
- Southwest Asia (win)	B		DEC	?
<i>Sterna c. caspia</i>				
- Southern Africa (bre)	1,500		?	STA
- West Africa (bre)	12,000	15,000	?	(DEC)
- Europe (bre)	5,000-7,000		DEC	
- Caspian (bre)	10,000		DEC	
<i>Sterna maxima albidorsalis</i>				
- West Africa (bre)	50,000	75,000	STA	
<i>Sterna b. bengalensis</i>				
- Gulf/South Asia	60,000	150,000-180,000	?	
<i>Sterna b. par</i>				
- Red Sea/Eastern Africa	C		?	
<i>Sterna b. emigrata</i>				
- S Med/NW & W Africa coast	4,000		?	STA
<i>Sterna bergii bergii</i>				
- S Africa & Madagascar (bre)	15,000	20,000	?	
<i>Sterna b. thalassinus</i>				
- E Africa & Seychelles (bre)	1,200		?	
<i>Sterna b. velox</i>				
- Red Sea & NE Africa	-	C	-	?
<i>Sterna s. sandvicensis</i>				
- West Europe/West Africa	150,000		INC	
- Black Sea & Med (bre)	130,000		?	(DEC)
- SW & South Asia (win)	110,000		?	
<i>Sterna d. dougallii</i>				
- Europe (bre)	5,000		DEC	
<i>Sterna h. hirundo</i>				
- South & West Europe (bre)	180,000		?	(STA)
- North & East Europe (bre)	600,000		?	(STA)
- Western Asia (bre)	C/D		?	

Population	Population size WPE2	REV	Trends WPE2	REV
<i>Sterna paradisaea</i>				
- Western Eurasia (bre)	-	E	-	(STA)
<i>Sterna a. albifrons</i>				
- East Atlantic (bre)	34,000		DEC	STA/INC
- Black Sea & East Med (bre)	40,000-80,000	70,000-120,000	?	DEC
- Caspian (bre)	B		?	
<i>Sterna a. guineae</i>				
- West Africa (bre)	?		?	
<i>Sterna saundersi</i>				
- W S Asia, Red S, Gulf & E Afr	40,000		?	
<i>Sterna balaenarum</i>				
- S & Cent Africa Atlantic	14,450	13,500	?	(DEC)
<i>Sterna repressa</i>				
- W S Asia, Red S, Gulf & E Afr	600,000		DEC	
<i>Chlidonias leucopterus</i>				
- E Europe & W Asia/Africa	200,000-250,000		DEC	
<i>Chlidonias n. niger</i>				
- Europe & Asia (bre)	200,000		?	DEC

**TABLE 2 : SPECIES OF WATERBIRDS OCCURRING IN THE AGREEMENT AREA
BUT INAPPROPRIATE FOR INCLUSION IN THE AGREEMENT**

KEY TO COLUMN HEADINGS

1. The species is not migratory, as defined in the Bonn Convention. Species which are entirely or almost entirely confined to a single Range State are indicated with a double asterisk (**).
2. The species occurs in the Agreement Area only as a vagrant or rare straggler for another region.
3. Only a very small part of the total range of the species is within the Agreement Area. The region therefore has very little significance for the species.
4. The species is more properly regarded as a seabird, breeding on rocky or sandy sea coasts, cliffs, offshore islands *etc.*, and spending the non-breeding season exclusively in marine environments.
5. The species is otherwise unusual in its habitat requirements, occurring in desert, grassland, heathland or forest, and is at no time dependent on wetland habitats.
6. The species has been artificially introduced in the Agreement Area.

	1	2	3	4	5	6
<i>Tachybaptus rufolavatus</i>	**					
<i>Tachybaptus pelzelni</i>	**					
<i>Podilymbus podiceps</i>		*				
<i>Phalacrocorax africanus</i>	*					
<i>Phalacrocorax coronatus</i>	*			*		
<i>Phalacrocorax neglectus</i>	*			*		
<i>Phalacrocorax auritus</i>		*				
<i>Phalacrocorax capensis</i>				*		
<i>Phalacrocorax aristotelis</i>	*			*		
<i>Anhinga rufa</i>	*					
<i>Egretta tricolor</i>		*				
<i>Egretta caerulea</i>		*				
<i>Egretta gularis</i>	*					
<i>Egretta thula</i>		*				
<i>Ardea humbloti</i>	**					
<i>Ardea goliath</i>	*					
<i>Ardeola grayii</i>	*		*			
<i>Ardeola bacchus</i>		*				
<i>Butorides striatus</i>	*					
<i>Butorides virescens</i>		*				
<i>Gorsachius leuconotus</i>	*					
<i>Tigriornis leucolophus</i>	*					
<i>Ixobrychus exilis</i>		*				
<i>Ixobrychus eurhythmus</i>		*				
<i>Botaurus lentiginosus</i>		*				
<i>Balaeniceps rex</i>	*					
<i>Scopus umbretta</i>	*					
<i>Ephippiorhynchus senegalensis</i>	*					
<i>Bostrychia hagedash</i>	*					
<i>Bostrychia carunculata</i>	**					
<i>Bostrychia olivacea</i>	*					
<i>Bostrychia bocagei</i>	**					
<i>Bostrychia rara</i>	*					
<i>Geronticus calvus</i>	*					
<i>Lophotibis cristata</i>	**					

	1	2	3	4	5	6
<i>Oxyura jamaicensis</i>						*
<i>Anser indicus</i>						*
<i>Anser caerulescens</i>		*				
<i>Anser rossii</i>		*				
<i>Branta canadensis</i>		*				*
<i>Cyanochen cyanopterus</i>	**					
<i>Pteronetta hartlaubii</i>	*					
<i>Nettapus coromandelianus</i>		*				
<i>Aix sponsa</i>						*
<i>Aix galericulata</i>						*
<i>Anas americana</i>		*				
<i>Anas falcata</i>		*				
<i>Anas formosa</i>		*				
<i>Anas bernieri</i>	**					
<i>Anas rubripes</i>		*				
<i>Anas melleri</i>	**					
<i>Anas sparsa</i>	*					
<i>Anas discors</i>		*				
<i>Anas smithii</i>	*					
<i>Aythya valisineria</i>		*				
<i>Aythya collaris</i>		*				
<i>Aythya innotata</i>	**					
<i>Aythya affinis</i>		*				
<i>Somateria fischeri</i>		*				
<i>Histrionicus histrionicus</i>	*					
<i>Melanitta perspicillata</i>		*				
<i>Bucephala islandica</i>	*					
<i>Bucephala albeola</i>		*				
<i>Lophodytes cucullatus</i>		*				
<i>Balearica pavonina</i>	*					
<i>Balearica regulorum</i>	*					
<i>Grus canadensis</i>		*				
<i>Grus monacha</i>		*				
<i>Sarothrura pulchra</i>	*					
<i>Sarothrura elegans</i> ¹	*					
<i>Sarothrura rufa</i>	*					
<i>Sarothrura lugens</i>	*					
<i>Sarothrura affinis</i>	*					
<i>Sarothrura insularis</i>	**					
<i>Sarothrura watersi</i>	**					
<i>Himantornis haematopus</i>	*					
<i>Canirallus oculus</i>	*					
<i>Canirallus kioloides</i>	**					
<i>Rallus madagascariensis</i>	**					
<i>Rougetius rougetii</i>	**					
<i>Dryolimnas cuvieri</i>	**					
<i>Amaurornis phoenicurus</i>		*				
<i>Amaurornis olivieri</i>	**					
<i>Porzana carolina</i>		*				
<i>Porphyrio porphyrio</i>	*					
<i>Porphyrio martinicus</i>		*				
<i>Fulica americana</i>		*				
<i>Podica senegalensis</i>	*					
<i>Actophilornis africanus</i>	*					
<i>Actophilornis albinucha</i>	**					
<i>Microparra capensis</i>	*					
<i>Hydrophasianus chirurgus</i>			*			
<i>Rostratula benghalensis</i>	*					

	1	2	3	4	5	6
<i>Haematopus meadewaldoi</i>	**					
<i>Haematopus moquini</i>	*					
<i>Burhinus oedicephalus</i>					*	
<i>Burhinus vermiculatus</i>	*					
<i>Burhinus capensis</i>	*				*	
<i>Rhinoptilus africanus</i>	*				*	
<i>Rhinoptilus chalconotus</i>					*	
<i>Rhinoptilus cinctus</i>					*	
<i>Cursorius cursor</i>					*	
<i>Cursorius rufus</i>					*	
<i>Cursorius temminckii</i>					*	
<i>Glareola maldivarum</i>		*				
<i>Glareola lactea</i>		*				
<i>Pluvialis dominica</i>		*				
<i>Charadrius semipalmatus</i>		*				
<i>Charadrius vociferus</i>		*				
<i>Charadrius thoracicus</i>	**					
<i>Vanellus crassirostris</i>	*					
<i>Vanellus armatus</i>	*					
<i>Vanellus tectus</i>	*					
<i>Vanellus melanocephalus</i>	**					
<i>Vanellus indicus</i>	*		*			
<i>Gallinago solitaria</i>		*				
<i>Gallinago megala</i>		*				
<i>Gallinago nigripennis</i>	*					
<i>Gallinago macrodactyla</i>	**					
<i>Limosa haemastica</i>		*				
<i>Numenius borealis</i>		*				
<i>Numenius minutus</i>		*				
<i>Bartramia longicauda</i>		*				
<i>Tringa melanoleuca</i>		*				
<i>Tringa flavipes</i>		*				
<i>Tringa solitaria</i>		*				
<i>Tringa macularia</i>		*				
<i>Tringa brevipes</i>		*				
<i>Catoptrophorus semipalmatus</i>		*				
<i>Limnodromus griseus</i>		*				
<i>Limnodromus scolopaceus</i>		*				
<i>Limnodromus semipalmatus</i>			*			
<i>Calidris pusilla</i>		*				
<i>Calidris mauri</i>		*				
<i>Calidris ruficollis</i>			*			
<i>Calidris subminuta</i>			*			
<i>Calidris minutilla</i>		*				
<i>Calidris fuscicollis</i>		*				
<i>Calidris bairdii</i>		*				
<i>Calidris melanotos</i>		*				
<i>Calidris acuminata</i>		*				
<i>Micropalama himantopus</i>		*				
<i>Tryngites subruficollis</i>		*				
<i>Steganopus tricolor</i>		*				
<i>Larus delawarensis</i>		*				
<i>Larus dominicanus</i>	*			*		
<i>Larus brunnicapillus</i>		*				
<i>Larus hartlaubii</i>	*			*		
<i>Larus philadelphia</i>		*				
<i>Larus atricilla</i>		*				
<i>Larus pipixcan</i>		*				

	1	2	3	4	5	6
<i>Pagophila eburnea</i>			*			
<i>Rhodostethia rosea</i>			*	*		
<i>Rissa tridactyla</i>				*		
<i>Sterna elegans</i>		*				
<i>Sterna sumatrana</i>		*				
<i>Sterna vittata</i>			*			
<i>Sterna forsteri</i>		*				
<i>Sterna aleutica</i>		*				
<i>Sterna anaethetus</i>				*		
<i>Sterna fuscata</i>				*		
<i>Anous stolidus</i>				*		
<i>Anous minutus</i>	*			*		
<i>Anous tenuirostris</i>			*	*		

Footnotes to Table 2

- 1: Recent evidence suggests that *Sarothrura elegans* undertakes seasonal movements over much of its range, and is predominantly a migrant in some regions (Taylor & van Perlo, 1998). It is believed to have a favourable conservation status (del Hoyo *et al.*, 1996).

**TABLE 3 : POPULATION SIZES AND TRENDS OF MIGRATORY WATERBIRD SPECIES
NOT INCLUDED IN THE AGREEMENT**

KEY TO COLUMN HEADINGS:

Population

The migratory populations of waterbird species occurring in the Agreement Area but not covered by the Agreement. The method of describing populations follows that adopted in Table 1. The species (and subspecies) marked with an asterisk (*) were proposed for listing in Appendix II of the Bonn Convention at the Fourth Meeting of the Conference of the Contracting Parties in Nairobi in June 1994, but were rejected on the grounds that they had a favourable conservation status.

Population size

Population estimates given in the column headed WPE2 are taken from the second edition of *Waterfowl Population Estimates*. In some cases, a revised estimate based on more recent information is given in the column headed REV.

In all cases, the numerical estimates are given as number of individuals, although in many cases the estimates have been derived from numbers of breeding pairs. For many species and populations, only a rough indication of population size is available. In these cases, population size is given in one of five categories.

- A: Less than 10,000 individuals
- B: 10,000-25,000 individuals
- C: 25,000-100,000 individuals
- D: 100,000-1,000,000 individuals
- E: Over 1,000,000 individuals

Trends

Information on trends is confined to the situation in recent decades. Brackets are used to indicate either that there is some doubt about the trend, or that a particular trend has been reported in only a part of the species' range, and may not be applicable throughout most of its range. The trends given in the column headed WPE2 are taken from the second edition of *Waterfowl Population Estimates*. Revised trends based on more recent information are given in the column headed REV.

INC	-	Increasing	DEC	-	Decreasing
STA	-	Stable	?	-	Unknown

Population	Population size WPE2	REV	Trends WPE2	REV
PODICIPEDIDAE				
<i>Tachybaptus r. ruficollis</i> *				
- Western Palearctic	D		STA	
<i>Podiceps c. cristatus</i> *				
- Northwestern Europe (win)	150,000	D	INC	
- Black Sea & Med (win)	150,000	D	?	INC
- Caspian Sea (win)	0,000		?	
<i>Podiceps c. infuscatus</i> *				
- Eastern Africa	<1,000		DEC	
- Southern Africa	A		?	INC
<i>Podiceps n. nigricollis</i> *				
- Western Palearctic	100,000		INC	(STA)
- SW & S Asia (win)	25,000		INC	
<i>Podiceps n. gurneyi</i> *				
- Southern Africa	?	B/C	?	INC
PELECANIDAE				
<i>Pelecanus rufescens</i> *				
- Africa	D		STA	
PHALACROCORACIDAE				
<i>Phalacrocorax c. carbo</i> *				
- Northwestern Europe	120,000		INC	
<i>Phalacrocorax c. sinensis</i> *				
- Northern & Central Europe	200,000		INC	
- Black Sea & Mediterranean	100,000		?	INC
- Southwestern Asia (win)	100,000		?	
ARDEIDAE				
<i>Egretta ardesiaca</i>				
- Subsaharan Africa	B/C		DEC	
<i>Egretta g. garzetta</i> *				
- Subsaharan Africa	?		?	
- Black Sea & Med (bre)	100,000-150,000		INC	
- West Asia (bre)	C		?	
<i>Egretta dimorpha</i>				
- Eastern Africa & Madagascar	?		?	
<i>Ardea c. cinerea</i> *				
- Europe & N Africa (bre)	400,000-500,000		INC	
- E Black S, W & SW Asia (bre)	B/C		?	
<i>Ardea melanocephala</i> *				
- Subsaharan Africa	?	D/E	INC	
<i>Mesophoyx i. brachyrhyncha</i> *				
- Africa	?		?	
<i>Bubulcus i. ibis</i> *				
- Southern Africa	?	D	INC	
- Tropical Africa	D/E	E	?	
- SW Europe & NW Africa	00,000-270,000	>250,000	INC	
- E Med & SW Asia	A/B		?	
<i>Ardeola r. ralloides</i> *				
- NW Africa & Med (bre)	B		?	DEC
- S & SW Asia & Black Sea (bre)	C	D	?	DEC
<i>Nycticorax n. nycticorax</i> *				
- Europe & NW Africa (bre)	100,000-200,000		INC	DEC
- W Asia/NE Africa	B/C	C	?	

Population	Population size WPE2	REV	Trends WPE2	REV
CICONIIDAE				
<i>Anastomus l. lamelligerus</i> *				
- Tropical Africa	C/D		STA	
<i>Ciconia abdimii</i> *				
- Subsaharan Africa & SW Asia	D		STA	
<i>Leptoptilos crumeniferus</i> *				
- Subsaharan Africa	100,000		INC	
ANATIDAE				
<i>Oxyura maccoa</i>				
- Eastern Africa	15,000-25,000		DEC	
RALLIDAE				
<i>Sarothrura ayresi</i>				
- Ethiopia & Southern Africa	<1,000		?	
<i>Rallus a. aquaticus</i> *				
- Europe	D		STA	
<i>Rallus a. korejewi</i> *				
- W Siberia/SW Asia	?		?	
<i>Rallus caerulescens</i> *				
- Southern & Eastern Africa	?		?	
<i>Crecopsis egregia</i> * ¹				
- Subsaharan Africa	?		?	
<i>Crex crex</i>				
- Europe & W Asia/Africa	C/D	D	DEC	
<i>Amaurornis flavirostra</i> *				
- Subsaharan Africa	E		?	
<i>Porphyrio alleni</i> *				
- Subsaharan Africa	?		?	
<i>Gallinula c. chloropus</i> *				
- Europe/Northern Africa	E		STA	
- Southwestern Asia	D		?	
<i>Gallinula angulata</i> *				
- Subsaharan Africa	?		?	
<i>Fulica cristata</i> *				
- Subsaharan Africa	D	D/E	?	
<i>Fulica a. atra</i>				
- Northwest Europe (win)	1,500,000	STA		
- Southwest Asia (win)	2,000,000	?		
HAEMATOPODIDAE				
<i>Haematopus o. ostralegus</i> *				
- Europe & NW Africa (win)	874,000	1,000,000	INC	
<i>Haematopus o. longipes</i> *				
- SW & S Asia & E Afr (win)	25,000	?		
BURHINIDAE				
<i>Burhinus s. senegalensis</i> *				
- Western Africa	?		?	
<i>Burhinus s. inornatus</i> *				
- NE & Eastern Africa	?		?	
GLAREOLIDAE				
<i>Pluvianus a. aegyptius</i> *				
- Western & Eastern Africa	?		?	
<i>Glareola ocularis</i> *				
- Madagascar/East Africa	?		?	

Population	Population size WPE2	REV	Trends WPE2	REV
<i>Glareola n. nuchalis</i> *				
- Eastern & Central Africa	?		?	(DEC)
<i>Glareola n. liberiae</i> *				
- Western Africa	?		?	
<i>Glareola c. cinerea</i> *				
- SE West Africa & C Africa	?		?	
CHARADRIIDAE				
<i>Pluvialis fulva</i>				
- SW & S Asia & E Africa	C/D		?	
SCOLOPACIDAE				
<i>Scolopax rusticola</i>				
- Europe/Africa	>15,000,000		STA	
<i>Gallinago stenura</i>				
- Eastern Africa & S Asia (win)	C/D		?	
LARIDAE				
<i>Larus c. canus</i> *				
- NW & C Eur/Atlantic & Med	1,600,000		INC	DEC
<i>Larus c. heinei</i> *				
- NE Eur & W Sib/B.S. & Casp	C		?	
<i>Larus marinus</i> *				
- Northeastern Atlantic (bre)	480,000		INC	
<i>Larus h. hyperboreus</i> *				
- Northern Atlantic	200,000		STA	
<i>Larus g. glaucooides</i> *				
- Greenland/North Atlantic	C/D		STA	
<i>Larus a. argentatus</i> *				
- Northwest Europe (bre)	1,400,000		INC	
<i>Larus a. argentus</i> *				
- Iceland & W Europe (bre)	1,300,000		?	
<i>Larus (argentatus) heuglini</i> *				
- NE Eur-W Sib/W Asia-Afr	?		?	
<i>Larus (argentatus) taimyrensis</i> *				
- Central Siberia (bre)	35,000-40,000		?	
<i>Larus c. cachinnans</i> *				
- Black Sea & Casp/SW Asia	C/D		?	
<i>Larus c. michahellis</i> *				
- Mediterranean	350,000		INC	
<i>Larus f. fuscus</i> *				
- NE Eur/B Sea, SW Asia-E Afr	200,000-300,000		?	
<i>Larus f. graellsii</i> *				
- W Europe/Med & W Africa	400,000-500,000		INC	
<i>Larus c. poiocephalus</i> *				
- Sub-Saharan Africa	?	D	?	(INC)
<i>Larus ridibundus</i> *				
- Northwest Europe (bre)	>5,000,000		?	(STA)
- Mediterranean (bre)	D		?	(STA)
- SW Asia & E Africa (win)	250,000		?	
<i>Larus minutus</i> *				
- Central & E Europe (bre)	60,000-90,000		STA	STA/INC
- Black Sea & W Asia (bre)	?	(C)	?	
<i>Xema s. sabini</i> *				
- Canada & Greenland (bre)	?		?	
<i>Sterna d. dougallii</i>				
- Southern Africa (bre)	200	400	DEC	
- E Africa & Madagascar (bre)	38,000		?	

Population	Population size WPE2	REV	Trends WPE2	REV
<hr/>				
<i>Chlidonias h. hybridus</i> *				
- W Eur & NW Africa (bre)	20,000-30,000		?	DEC
- Black Sea & E Med (bre)	50,000-80,000		?	STA/INC
- Caspian (bre)	C		?	
<i>Chlidonias h. sclateri</i> *				
- S & E Africa (bre)	?		?	
RYNCHOPIDAE				
<i>Rynchops flavirostris</i> *				
- Sub-Saharan Africa	?	A/B	?	DEC
<hr/>				

Footnotes to Table 3

1: Often assigned to the genus *Crex*.

**TABLE 4 : STATUS OF THE POPULATIONS OF MIGRATORY WATERBIRDS
NOT INCLUDED IN THE AGREEMENT**

KEY TO CLASSIFICATION

Column A

- Category 1: (a) Species which are included in Appendix I to the Convention;
 (b) Species which are listed as threatened in the 1996 IUCN Red List of Threatened Animals; or
 (c) Populations which number less than around 10,000 individuals.
- Category 2: Populations numbering between around 10,000 and around 25,000 individuals.
- Category 3: Populations numbering between around 25,000 and around 100,000 individuals and considered to be at risk as a result of:
- (a) concentration onto a small number of sites at any stage of their annual cycle;
 (b) dependence on a habitat type which is under severe threat;
 (c) showing significant long-term decline; or
 (d) showing extreme fluctuations in population size or trend.

Column B

- Category 1: Populations numbering between around 25,000 and around 100,000 individuals and which do not fulfil the conditions in respect of Column A, as described above.
- Category 2: Populations numbering more than around 100,000 individuals and considered to be in need of special attention as a result of:
- (a) concentration onto a small number of sites at any stage of their annual cycle;
 (b) dependence on a habitat type which is under severe threat;
 (c) showing significant long-term decline; or
 (d) showing extreme fluctuations in population size or trend.

Column C

- Category 1: Populations numbering more than around 100,000 individuals which could significantly benefit from international cooperation and which do not fulfil the conditions in respect of either Column A or B, above.

NOTES

The brief descriptions used to identify the populations follow the second edition of *Waterfowl Population Estimates*, except that a slash sign (/) is used exclusively to distinguish between breeding areas and wintering areas.

The conservation status of each population is based on the population estimates and trends given in the second edition of *Waterfowl Population Estimates*. Where recent evidence suggests that the actual conservation status of a population differs significantly from that implied in the second edition of *Waterfowl Population Estimates*, the proposed new status is given in square brackets.

Conventional brackets are used to indicate that the conservation status is uncertain.

	A	B	C
<i>Tachybaptus ruficollis ruficollis</i>			
- Western Palearctic			1
<i>Podiceps cristatus cristatus</i>			
- Northwest Europe (win)			1
- Black Sea & Mediterranean (win)			1
- Caspian Sea (win)	2		
<i>Podiceps cristatus infuscatus</i>			
- Eastern Africa	1c		
- Southern Africa	1c		
<i>Podiceps nigricollis nigricollis</i>			
- Western Palearctic			1
- Southwest & Southern Asia (win)		1	
<i>Podiceps nigricollis gurneyi</i>			
- Southern Africa	2		
<i>Pelecanus rufescens</i>			
- Africa			1
<i>Phalacrocorax carbo carbo</i>			
- Northwest Europe			1
<i>Phalacrocorax carbo sinensis</i>			
- Northern & Central Europe			1
- Black Sea & Mediterranean			1
- Southwest Asia (win)			(1)
<i>Egretta ardesiaca</i>			
- Subsaharan Africa	(3c)		
<i>Egretta garzetta garzetta</i>			
- Subsaharan Africa			(1)
- Black Sea & Mediterranean (bre)			1
- Western Asia (bre)		(1)	
<i>Egretta dimorpha</i>			
- Eastern Africa & Madagascar		(1)	
<i>Ardea cinerea cinerea</i>			
- Europe & North Africa (bre)			1
- E Black Sea, W & SW Asia (bre)		(1)	
<i>Ardea melanocephala</i>			
- Subsaharan Africa			1
<i>Mesophoyx intermedia brachyrhyncha</i>			
- Africa			(1)
<i>Bubulcus ibis ibis</i>			
- Southern Africa			1
- Tropical Africa			1
- SW Europe & NW Africa			1
- East Mediterranean & SW Asia	2		
<i>Ardeola ralloides ralloides</i>			
- NW Africa & Mediterranean (bre)	2		
- S Asia, SW Asia & Black Sea (bre)		(1) [2c]	
<i>Nycticorax nycticorax nycticorax</i>			
- Europe & Northwest Africa (bre)		[2c]	1
- Western Asia/NE Africa		(1)	
<i>Anastomus lamelligerus lamelligerus</i>			
- Tropical Africa			1
<i>Ciconia abdimii</i>			
- Subsaharan Africa & SW Asia			1

	A	B	C
<i>Leptoptilos crumeniferus</i>			
- Subsaharan Africa			1
<i>Oxyura maccoa</i> ¹			
- Eastern Africa	2		
<i>Sarothrura ayresi</i> ¹			
- Ethiopia & Southern Africa	1a 1b 1c		
<i>Rallus aquaticus aquaticus</i>			
- Europe			(1)
<i>Rallus aquaticus korejewi</i>			
- Western Siberia/Southwest Asia			(1)
<i>Rallus caerulescens</i>			
- Southern & Eastern Africa			(1)
<i>Crecoptis egregia</i>			
- Subsaharan Africa			(1)
<i>Crex crex</i> ¹			
- Europe & Western Asia/Africa	1b	2c	
<i>Amaurornis flavirostra</i>			
- Subsaharan Africa			(1)
<i>Porphyrio alleni</i>			
- Subsaharan Africa			(1)
<i>Gallinula chloropus chloropus</i>			
- Europe/North Africa			1
- Southwest Asia			(1)
<i>Gallinula angulata</i>			
- Subsaharan Africa			(1)
<i>Fulica cristata</i>			
- Subsaharan Africa			(1)
<i>Fulica atra atra</i>			
- Northwest Europe (win)			1
- Southwest Asia (win)			(1)
<i>Haematopus ostralegus ostralegus</i>			
- Europe & Northwest Africa (win)			1
<i>Haematopus ostralegus longipes</i>			
- SW Asia, S Asia & E Africa (win)		(1)	
<i>Burhinus senegalensis senegalensis</i>			
- West Africa			(1)
<i>Burhinus senegalensis inornatus</i>			
- Northeast & Eastern Africa			(1)
<i>Pluvianus aegyptius aegyptius</i>			
- West & Eastern Africa			(1)
<i>Glareola ocularis</i>			
- Madagascar/East Africa	(3b)		
<i>Glareola nuchalis nuchalis</i>			
- Eastern & Central Africa	(3b)		
<i>Glareola nuchalis liberiae</i>			
- West Africa	(3b)		
<i>Glareola cinerea cinerea</i>			
- SE West Africa & Central Africa			(1)
<i>Pluvialis fulva</i> ¹			
- SW Asia, S Asia & E Africa (win) ²			(1)
<i>Scolopax rusticola</i> ¹			
- Europe/Africa			1
<i>Gallinago stenura</i> ¹			
- Eastern Africa & S Asia (win) ²			(1)

	A	B	C
<i>Larus canus canus</i>			
- NW & C Europe/Atlantic & Med		[3c]	1
<i>Larus canus heinei</i>			
- NE Eur & W Sib/B Sea & Caspian		(1)	
<i>Larus marinus</i>			
- Northeast Atlantic (bre)			1
<i>Larus hyperboreus hyperboreus</i>			
- North Atlantic			1
<i>Larus glaucooides glaucooides</i>			
- Greenland/North Atlantic			1
<i>Larus argentatus argentatus</i> ³			
- Northwest Europe (bre)			1
<i>Larus argentatus argenteus</i>			
- Iceland & Western Europe (bre)			(1)
<i>Larus (argentatus) heuglini</i> ⁴			
- NE Eur & W Sib/W Asia & E Afr			(1)
<i>Larus (argentatus) taimyrensis</i> ⁴			
- Central Siberia (bre)			(1)
<i>Larus cachinnans cachinnans</i>			
- Black Sea & Caspian/SW Asia			(1)
<i>Larus cachinnans michahellis</i>			
- Mediterranean			1
<i>Larus fuscus fuscus</i> ⁵			
- NE Eur/B Sea, SW Asia & E Africa			(1)
<i>Larus fuscus graellsii</i>			
- Western Europe/Med & West Africa			1
<i>Larus cirrocephalus poiocephalus</i>			
- Sub-Saharan Africa			(1)
<i>Larus ridibundus</i>			
- Northwest Europe (bre)			(1)
- Mediterranean (bre)			(1)
- SW Asia & Eastern Africa (win)			(1)
<i>Larus minutus</i>			
- Central & Eastern Europe (bre)	3b		
- Black Sea & Western Asia (bre)	3b		
<i>Xema sabini sabini</i>			
- Canada & Greenland (bre)			(1)
<i>Sterna dougallii dougallii</i>			
- Southern Africa (bre)	1c		
- East Africa & Madagascar (bre)	3a		
<i>Chlidonias hybridus hybridus</i>			
- Western Europe & NW Africa (bre)	[3c]	(1)	
- Black Sea & E Mediterranean (bre)		(1)	
- Caspian (bre)		(1)	
<i>Chlidonias hybridus sclateri</i>			
- Southern & Eastern Africa (bre)		(1)	
<i>Rynchops flavirostris</i>			
- Sub-Saharan Africa	(2)		

Footnotes to Table 4

- 1: Listed in Appendix II to the Bonn Convention.
- 2: This population is largely extralimital, with only small numbers of birds wintering in the Arabian Peninsula and Eastern Africa.

- 3: Includes '*omissus*' breeding in the eastern Baltic, Estonia, Finland and northwest Russia.
- 4: Sometimes treated as a subspecies of *Larus fuscus* or of *L. cachinnans*.
- 5: Includes '*intermedius*' breeding in the Netherlands, Denmark and southern Norway.

ANNEX I

OTHER WATERBIRD POPULATIONS POTENTIALLY OF CONSERVATION CONCERN

PODICIPEDIDAE

Great Crested Grebe *Podiceps cristatus*

Polytypic. Two subspecies occur in the Agreement Area: the nominate form breeds widely across Western Eurasia and winters south to Morocco, Egypt and Saudi Arabia; *P. c. infuscatus* is patchily distributed on highland lakes in Eastern Africa from southern Ethiopia to northern Zambia, and in Southern Africa from Botswana and Namibia to Cape Province, South Africa. Both of these populations are to some extent migratory, dispersing over considerable distances in response to seasonal rainfall. Three populations of *cristatus* and two populations of *infuscatus* are recognised.

- Northwest Europe (wintering) (*cristatus*): 150,000 (WPE2). Recent estimates of breeding populations suggest a much higher figure.

Trends: Increasing (WPE2).

- Black Sea & Mediterranean (wintering) (*cristatus*): 150,000 (WPE2). Recent estimates of breeding populations suggest a much higher figure.

Trends: Unknown (WPE2). Increasing (Hagemeijer & Blair, 1997).

- Caspian Sea (wintering) (*cristatus*): 10,000 (WPE2).

Trends: Unknown.

- Eastern Africa (*infuscatus*): <1,000 (WPE2).

Trends: Decreasing (WPE2).

- Southern Africa (*infuscatus*): A (WPE2).

Trends: Unknown (WPE2). Increasing (Harrison *et al.*, 1997).

Changes in status: The marked increase in the European breeding population, which began in the late 19th century, is continuing (Tucker & Heath, 1994; Hagemeijer & Blair, 1997). The increase has been most pronounced in Northwest Europe, especially in Finland, where the population has increased from about 5,000 pairs in the 1950s to possibly as many as 50,000 pairs in recent years (O'Donnell & Fjeldså, 1997). However, increases have also been reported in several countries in Eastern Europe, including Belarus and Romania, and there have been only local decreases, *e.g.* in Sicily (Hagemeijer & Blair, 1997).

The status of the Caspian wintering population is poorly known, but it seems likely that the population is much larger than the present estimate suggests, as there have been counts of almost 9,000 along the Caspian coast of Iran alone (Scott, 1995).

The small Southern African population appears to be increasing. There is some evidence of a recent expansion in range and increase in numbers, especially in Botswana, probably due to an increase in dams in semi-arid and arid areas (Dodman & Rose, 1997; Harrison *et al.*, 1997). However, eutrophication and pollution have led to the disappearance of the species from some former breeding sites in Witwatersrand in South Africa, and the birds are sensitive to human disturbance, especially water sports (Harrison *et al.*, 1997).

Drastic declines have been reported in the Eastern African population of *infuscatus* in recent years, possibly as a result of the rapid increase in the use of gill nets for fishing over the last 15 years, increased disturbance at wetlands, and the drying up of some sites due to persistent low rainfall (Dodman & Rose, 1997; O'Donnell & Fjeldså, 1997). The highest total count during the African Waterfowl Census (1991-1997) was only 41 (in 1997); the highest national totals have been 10 in Zambia (July 1994), four in Tanzania (January 1995), 24 in Kenya (January 1991) and 39 in Ethiopia (January 1997) (Dodman & Rose, 1997; Dodman *et al.*, 1997).

Comments: The Northwest European and Black Sea/Mediterranean populations have a favourable conservation status, while the population in the Caspian region, although relatively small, is not considered to be under threat. The Southern African population is considered to have an unfavourable conservation status because of its very low numbers, and the tiny, declining population in Eastern Africa now gives considerable cause for concern.

The breeding population in Europe excluding Russia has been estimated at about 271,000-315,000 pairs, and that in Russia at a minimum of 100,000 pairs (Hagemeijer & Blair, 1997), suggesting a European wintering population of at least a million birds. However, the second edition of *Waterfowl Population Estimates* gives only 150,000 for the Northwest European wintering population and 150,000 for the Black Sea/Mediterranean wintering population. Until this discrepancy is resolved, estimates of both these populations should be given in the range 100,000-1,000,000

(Category D).

Black-necked Grebe *Podiceps nigricollis*

Polytypic. Two subspecies occur in the Agreement Area. The nominate subspecies breeds patchily across temperate and Southern Europe to west-central Asia, and winters south to North Africa and the Persian/Arabian Gulf. *P. n. gurneyi* breeds in Botswana, Namibia and South Africa, and winters mainly along the coast of Namibia and Cape Province, South Africa, although some birds occasionally occur north to Angola and Mozambique. An isolated population in the Rift Valley zone from Ethiopia to northern Tanzania in Eastern Africa was assigned by Peters (1931) to *gurneyi*, but is now generally regarded as belonging to the nominate form (Britton, 1980; O'Donnell & Fjeldså, in press). This population appears to be mainly sedentary or dispersive, wandering somewhat, depending on the rains (Short *et al.*, 1990). Three migratory populations are relevant: two main wintering groups of *nigricollis* in Western Eurasia, and the population of *P. n. gurneyi* in Southern Africa.

- Western Palearctic (European breeders) (*nigricollis*): 100,000 (WPE2).

Trends: Increasing (WPE2). Possibly now stable after a long period of increase (O'Donnell & Fjeldså, 1997).

- Southwest Asia & Southern Asia (wintering) (*nigricollis*): 25,000 (WPE2).

Trends: Increasing (WPE2).

- Southern Africa (*gurneyi*): Unknown (WPE2). B or C. 10,000 (Harrison *et al.*, 1997); possibly as many as 100,000 (O'Donnell & Fjeldså, 1997).

Trends: Unknown (WPE2). Increasing (Harrison *et al.*, 1997).

Changes in status: *P. n. nigricollis* spread rapidly through Europe from about 1860, and numbers continued to increase until the 1980s, especially in parts of East and Central Europe. However, decreases were reported in some southern parts of its range (*e.g.* Italy, Spain and North Africa) in the 1980s, and more recently Tucker & Heath (1994) have reported declines in nine countries. The second edition of *Waterfowl Population Estimates* gives the trends in this population as increasing, but it now seems that the population may have stabilised, although the situation is confused by strong fluctuations in numbers from year to year (O'Donnell & Fjeldså, 1997).

The population in Southern Africa has undoubtedly increased during the 20th century, with the construction of dams, salt works and sewage works which now provide permanent drought refuges (Harrison *et al.*, 1997).

Comments: The Western Palearctic population has a favourable conservation status. Similarly, the wintering population of *nigricollis* in Southwest and Southern Asia and the population of *gurneyi* in Southern Africa, although numbering less than 100,000 individuals, give no cause for concern.

The breeding population in Europe excluding Russia has been estimated at about 31,000-37,000 pairs, and that in Russia at a minimum of 10,000 pairs (Hagemeijer & Blair, 1997), suggesting a European wintering population of at least 120,000 birds, *i.e.* somewhat higher than the present estimate of 100,000.

About 10,000 birds were recorded along the coast of Namibia and South Africa during surveys in 1976-81, and these were thought to represent the bulk of the population (Harrison *et al.*, 1997). However, O'Donnell & Fjeldså (1997) have suggested that there may be as many as 100,000 individuals in this population. Over 4,350 were counted in Southern Africa during the African Waterfowl Census in January 1994 (Taylor & Rose, 1994).

ARDEIDAE

Black Heron *Egretta ardesiaca*

Monotypic. The species has a wide range in Sub-Saharan Africa from Senegal and Gambia east to Ethiopia and south through Eastern Africa to South Africa, and also occurs in Madagascar. Over much of its range it is generally uncommon, although it is locally abundant in parts of West Africa and Eastern Africa north of the Zambezi River. Although sedentary throughout much of its range, the species is known to undertake seasonal movements in Southern Africa, and is largely a summer visitor south of 22°S (Harrison *et al.*, 1997). A bird ringed in Zambia has been recovered in Zimbabwe. Only one population is recognised, the entire population of the species.

- Sub-Saharan Africa: B or C (WPE2).

Trends: Decreasing (WPE2).

Changes in status: The species is said to be decreasing over much of its range. It seems to be particularly susceptible to

disturbance during the breeding season, and many of the colonies studied have low breeding success (del Hoyo *et al.*, 1992). According to Langrand (1990), this is the species of heron most affected by disruptions of human origin in Madagascar, where numbers have declined considerably since the 1960s. However, in Southern Africa, the species appears to have increased in abundance and range during the 20th century, although breeding is frequently unsuccessful owing to predation (Harrison *et al.*, 1997).

Comments: *E. ardesiaca* is considered to have an unfavourable conservation status because of its relatively small population size, and the widespread decline in its numbers.

The size of the population is poorly known. There is a report of 10,000-20,000 birds in Guinea-Bissau in October-December 1981 (del Hoyo *et al.*, 1992), and 1,558 were recorded at Waza-Logone in Cameroon in January 1996 (Dodman & Taylor, 1996).

Little Egret *Egretta garzetta*

Polytypic. Only the nominate subspecies occurs in the Agreement Area. This breeds widely across Southern Eurasia and in Africa south of the Sahara, and winters in Southern Europe, the Middle East and Africa south to the equator. European breeders winter mainly in West Africa; birds breeding in Western Asia winter mainly in Northeast and Eastern Africa. Most populations breeding in Subsaharan Africa are mainly sedentary, but the population breeding in Southern Africa is migratory. Three main groups of migrants are recognised; these mix extensively with sedentary populations on the winter grounds.

- Subsaharan Africa: Unknown.

Trends: Unknown.

- Black Sea & Mediterranean (breeding): 100,000-150,000 (WPE2).

Trends: Increasing (WPE2).

- Western Asia (breeding): C (WPE2).

Trends: Unknown.

Changes in status: The Mediterranean breeding population continues to increase in numbers and expand its range to the north, with recent notable range extensions in Britain and Ireland. However, there have been some decreases in the East Mediterranean and Black Sea, notably in Bulgaria, Greece and Romania (Hagemeijer & Blair, 1997). Trends in the other two populations are unknown.

Comments: The Black Sea & Mediterranean breeding population has a favourable conservation status, and the Subsaharan African population is very large and not known to be under threat. The West Asian breeding population, although relatively small by comparison, also gives no immediate cause for concern.

The European breeding population (including Russia and Turkey) is estimated at about 34,000-50,000 pairs (Hagemeijer & Blair, 1997). There are thought to be a minimum of 10,000-15,000 pairs in Western Asia.

Mascarene Reef Egret *Egretta dimorpha*

Monotypic. Often regarded as a subspecies of *Egretta garzetta* or *E. gularis*. The species breeds in Madagascar, in the Seychelles, on Aldabra and the Comoro Islands, and on islands off the East African coast (Pemba and Mafia), and occurs as a non-breeding visitor to the coasts of southern Kenya, Tanzania and northern Mozambique. Only one population is recognised, the entire population of the species.

- Eastern Africa & Madagascar: Unknown (WPE2).

Trends: Unknown.

Changes in status: None known.

Comments: Although the total population size is unlikely to exceed 100,000 individuals, and may be considerably fewer than this, the species is not known to be under any threat, and gives no immediate cause for concern. It has a wide distribution in Madagascar, where it is said to be common to locally very common (Langrand, 1990). Some 200 were recorded on the Tanzanian coast during the African Waterfowl Census in January 1995 (Dodman & Taylor, 1995).

Grey Heron *Ardea cinerea*

Polytypic. Three subspecies occur in the Agreement Area. *A. c. monicae* of Mauritania and *A. c. firasa* of Madagascar, Aldabra and the Comoro Islands are sedentary. The nominate form is widespread in Eurasia and Africa, populations breeding in Northern and Eastern Europe wintering throughout Southwest Europe, North Africa and Africa south of the Sahara to about 4°S. West Asian populations winter south to the Arabian Peninsula. The populations breeding in Sub-Saharan Africa are mainly sedentary, as are those breeding in Britain and Ireland. Two main migratory groups are recognised.

- Europe & North Africa (breeding): 400,000-500,000 (WPE2).

Trends: Increasing (WPE2).

- Eastern Black Sea, Western and Southwest Asia (breeding): B or C (WPE2).

Trends: Unknown.

Changes in status: The recent marked increase in the European breeding population, which began in the 1970s, is continuing (Hagemeijer & Blair, 1997).

Comments: The European and North African breeding population has a favourable conservation status. The West and Southwest Asian breeding population, although relatively small by comparison, also gives no immediate cause for concern.

The European breeding population (including Russia and Turkey) is estimated at about 140,000-160,000 pairs (Hagemeijer & Blair, 1997). At least 10,000 individuals winter in Southwest Asia (Perennou *et al.*, 1994).

Cattle Egret *Bubulcus ibis*

Polytypic. Two subspecies occur in the Agreement Area, but one of these, *B. i. seychellarum*, is confined to the Seychelles. The nominate race breeds widely in Africa south of the Sahara, in Madagascar and also in Northwest Africa, Southwest Europe, the East Mediterranean, Iraq and the Caspian region. Four main migratory populations are identifiable: (1) a population breeding in Southern Africa (from 16°S to the Cape), and wintering north to the Central African Republic, Zaire, Uganda and Tanzania; (2) a population breeding in the northern tropics (10-16°N) from Senegal to the Red Sea, and undertaking seasonal movements within this region in response to rainfall; (3) a population breeding in Southwest Europe and Northwest Africa, and undertaking short migrations within this region, with Spanish breeders regularly crossing to Northwest Africa; and (4) a population breeding in the Near East and Caspian region. The wintering area of these latter birds is unknown; a few birds remain throughout the winter as far north as the Caspian, but the majority leave the area, possibly for wintering areas in Iraq or Northeast Africa. The populations breeding in Egypt, Central and Eastern Africa, and Madagascar are mainly sedentary.

- Southern Africa: Unknown (WPE2). D, based on recent counts.

Trends: Increasing (WPE2).

- Tropical Africa: D or E (WPE2). E (P. Leonard, in litt.).

Trends: Unknown.

- Southwest Europe & Northwest Africa: 200,000-270,000 (WPE2). Over 250,000 based on recent estimates of breeding populations.

Trends: Increasing (WPE2).

- East Mediterranean & Southwest Asia: A or B (WPE2).

Trends: Unknown.

Changes in status: There has been a major expansion in range and increase in numbers in Southern Africa during the 20th century, and this increase is apparently continuing (Harrison *et al.*, 1997). The range expansion and increase in numbers that began in Southwest Europe in the early part of the 20th century is also continuing (Hagemeijer & Blair, 1997).

Comments: The populations in Southern Africa, Tropical Africa and Southwest Europe & Northwest Africa have a favourable conservation status. The East Mediterranean and Southwest Asian breeding population is very small by comparison, but is not known to be under any threat, and gives no immediate cause for concern.

The species is now abundant in Southern Africa, where over 46,000 were counted during the African Waterfowl Census in January 1996 (Dodman & Taylor, 1996). It is probable that this population now exceeds 100,000 individuals. The species is also abundant throughout much of the northern tropics of Africa. At least 250,000 occur in tropical West Africa in winter (Perennou, 1991), and about 65,000 pairs breed in the Inner Niger Delta.

The breeding population in Southwest Europe has recently been estimated at about 70,000-87,000 pairs, and that in Morocco (in the 1980s) at 15,000-20,000 pairs (Snow & Perrins, 1998). The species also breeds commonly in Algeria, *e.g.* over 3,000 were recorded at El Kala in July 1984 (Snow & Perrins, 1998). These figures suggest a total

population of 250,000-350,000 individuals, *i.e.* somewhat higher than estimate of 200,000-270,000 given in the second edition of *Waterfowl Population Estimates*. About 160,000 birds were reported in Iberia alone in January 1993 (Hagemeijer & Blair, 1997).

Squacco Heron *Ardeola ralloides*

Two weakly defined subspecies have been recognised, although most authors consider the species to be monotypic. The nominate form breeds locally in North Africa and widely in Southern Europe and Southwest Asia as far east as 67°E in central Kazakhstan and northeastern Iran. *A. r. paludivaga* breeds widely in Africa south of the Sahara. Populations breeding in Subsaharan Africa are largely sedentary, with possibly some local seasonal movements. The North African and West Eurasian populations winter mainly in the northern tropics of Africa where they mix with the resident populations. No discrete populations are identifiable, and the recognition of two migratory populations, one breeding in the Mediterranean and Northwest Africa, and one breeding in the Black Sea region and Southwest Asia, is somewhat arbitrary.

- Northwest Africa & Mediterranean (breeding): B (WPE2).

Trends: Unknown (WPE2). Decreasing in east (Tucker & Heath, 1994; Hagemeijer & Blair, 1997).

- South Asia, Southwest Asia & Black Sea (breeding): C (WPE2). D, based on recent estimates of breeding populations.

Trends: Unknown (WPE2). Decreasing in west (Tucker & Heath, 1994; Hagemeijer & Blair, 1997).

Changes in status: Some increase occurred in the European breeding population during the period 1940-1960, but a serious decline has taken place since the 1970s in some of the eastern breeding areas, notably Albania, Bulgaria, Croatia, Greece, Hungary, Romania, Turkey and Ukraine (Tucker & Heath, 1994; Hagemeijer & Blair, 1997). These decreases have affected both the Mediterranean and the Black Sea populations. However, the small breeding populations in the West Mediterranean have remained stable (Italy, France and Portugal) or increased slightly (Spain) in recent years (Tucker & Heath, 1994; Hagemeijer & Blair, 1997).

Comments: The populations breeding in Europe have an unfavourable conservation status, and are considered to be 'Vulnerable' by Tucker & Heath (1994) and Hagemeijer & Blair (1997). However, the status of the bulk of the eastern population (in Southwest Asia) is unknown.

In the first edition of *Waterfowl Population Estimates*, the birds breeding in Eastern Europe and the Black Sea region were grouped with the Mediterranean and Northwest African birds in a single Northwest African and European breeding population. In the second edition, birds breeding in the Black Sea region were grouped with Southwest Asian breeders, leaving a much smaller 'Northwest Africa/Mediterranean' population in the west. However, as there are no obvious breaks in breeding distribution between Iberia and central Turkey, and as the species is believed to migrate on a broad front across the Sahara (Snow & Perrins, 1998), the separation of Mediterranean breeders from Black Sea breeders seems unjustified.

The breeding population in Europe excluding the Black Sea region is estimated at only about 1,500-2,750 pairs (data from Tucker & Heath, 1994). There are probably no more than a few hundred pairs breeding in Northwest Africa (only 15-85 pairs in Morocco, according to Snow & Perrins, 1998), and even fewer than this in Egypt (over 100 pairs according to Snow & Perrins, 1998). However, some of the estimated 3,000-10,000 pairs breeding in Turkey can presumably be assigned to this population. These figures suggest that the Northwest African and Mediterranean population may number only about 10,000 individuals, *i.e.* in the lower end of the range given in *Waterfowl Population Estimates*.

The breeding population in the Black Sea region and Russia is estimated at 7,550-9,370 pairs, although this does not include any data from the Volga Delta where the species is common. There are an estimated 3,000-10,000 pairs in Turkey, 15,000-18,000 pairs in Azerbaijan and 150 pairs in Israel (Snow & Perrins, 1998). The species is the commonest heron in Iraq, and there were an estimated 1,200 pairs in Iran in the 1970s (Scott, 1995). Taking into account the unknown, but probably large breeding populations elsewhere in the Middle East, Kazakhstan, Turkmenistan and Uzbekistan, these figures suggest that the total population is well in excess of 100,000 individuals.

Black-crowned Night-Heron *Nycticorax nycticorax*

Polytypic. Only the nominate subspecies occurs in the Agreement Area. This breeds widely in Southern Eurasia, North Africa, Subsaharan Africa and Madagascar. The populations breeding in Subsaharan Africa and Madagascar are mainly sedentary, although some local movements have been reported in South Africa. The North African and West Eurasian populations are migratory, wintering mainly in Africa south of the Sahara, although some birds winter in Southern Europe, Egypt, Iraq and southwestern Iran. European and Northwest African breeders winter mainly in West Africa; Southwest Asian breeders winter mainly in Northeastern Africa. Two main migratory populations are recognised:

- Europe & Northwest Africa (breeding): 100,000-200,000 (WPE2).
Trends: Increasing (WPE2). Decreasing (Tucker & Heath, 1994; Hagemeyer & Blair, 1997).
- Western Asia/Northeast Africa: B or C (WPE2). C, based on recent estimates of breeding populations.
Trends: Unknown.

Changes in status: The second edition of *Waterfowl Population Estimates* states that the European population is increasing. The large breeding populations in Italy and France continue to increase; a large increase has been reported in the Czech Republic, and populations are more or less stable in 11 other European countries. However, the species is now declining in many parts of its European breeding range (e.g. in Russia, Moldova, Romania, Greece, Austria, the Netherlands and Spain), particularly where it is dependent on the remaining areas of natural and semi-natural wetlands (Tucker & Heath, 1994; Hagemeyer & Blair, 1997). Tucker & Heath (1994) and Hagemeyer & Blair (1997) conclude that the overall trend in Europe is now declining.

Comments: The European and Northwest African population is considered to have an unfavourable conservation status because of the recent declines in many parts of its range. The West Asian breeding population, although somewhat smaller, is not known to be under any threat, and gives no immediate cause for concern. Recent estimates of 7,000-8,000 pairs in Azerbaijan and 1,400-1,500 pairs in Kazakhstan (Snow & Perrins, 1998) suggest that this population may be considerably larger than was formerly supposed.

The European breeding population, including Russia and Turkey, is estimated at about 55,000-66,000 pairs (Hagemeyer & Blair, 1997). Between 500 and 1,500 pairs were reported to breed in Morocco in the 1980s (Snow & Perrins, 1998). An estimated 70,000-100,000 birds winter in tropical West Africa (Perennou, 1991).

ANATIDAE

Maccoa Duck *Oxyura maccoa*

Monotypic. The species has a patchy distribution in Eastern and Southern Africa, occurring from Ethiopia south to northern Tanzania, Rwanda, Burundi and eastern Zaire, and from Zimbabwe and Namibia south to Cape Province, South Africa. Three populations are identifiable: (1) a sedentary population in the Ethiopian highlands; (2) a partially migratory population in the East African highlands in Kenya, northern Tanzania, eastern Zaire, Uganda, Rwanda and Burundi; and a largely sedentary population in Southern Africa. Only the Eastern African population, which is known to undertake some regular trans-border movements, is relevant.

- Eastern Africa: 15,000-25,000 (WPE2).
Trends: Declining (WPE2).

Changes in status: Although still locally numerous in parts of Eastern Africa, *O. maccoa* has shown a marked decline in many areas in recent years. Numbers have fallen markedly in Kenya (L. Bennun, *in litt.*), and there have been no recent records from Uganda. The species was formerly common at Lake Nakuru and Lake Naivasha, but there have been no recent records from Nakuru and only small numbers now occur at Naivasha (Scott & Rose, 1996). This decline in numbers has been attributed to the widespread illegal use of gill nets (Callaghan & Green, 1993).

Comments: In Eastern Africa, *O. maccoa* is primarily a bird of the highlands. There may be very little mixing between the birds inhabiting the highlands of Kenya and northeastern Tanzania, and those in the highlands of western Uganda, Rwanda, Burundi and eastern Zaire, as there are very few records of birds in the intervening lowlands of the Lake Victoria basin. However, very little information is available on the western group, and for the time being at least, it would seem best to treat these birds as part of a wider Eastern African population.

RALLIDAE

White-winged Flufftail *Sarothrura ayresi*

Monotypic. *S. ayresi* is a rare and poorly known species, apparently occurring in two disjunct populations, one in Ethiopia and one in Southern Africa. In recent years, it has been recorded only from ten highland marshes in eastern South Africa and two sites near Addis Ababa in Ethiopia (Taylor & van Perlo, 1998). There are several older records of the species in northern Zimbabwe, including a possible breeding record in the 1950s and two records in the late 1970s, and there is one acceptable record from Zambia (Taylor & van Perlo, 1998). Lack of subspeciation suggests that migration may occur between Ethiopia and Southern Africa, but the paucity of records from intervening areas and an overlap in the dates of occurrence make this unlikely. It is more probable that the species is nomadic, undergoing periodic long-distance dispersal when populations are high (Harrison *et al.*, 1997). Only one population is recognised, the entire population of the species.

- Ethiopia & Southern Africa: <1,000 (WPE2).
Trends: Unknown.

Changes in status: The species has been reported regularly in South Africa in recent years, in very small numbers. The total population at the ten sites at which the species has been recorded since 1990 has been estimated at about 230-235 birds (Harrison *et al.*, 1997; Taylor & van Perlo, 1998). There have not as yet been any confirmed cases of breeding in South Africa, although breeding is suspected. The dense freshwater marshes that it favours in South Africa are under severe threat from damming, drainage, water abstraction, annual burning, over-grazing and commercial afforestation in their immediate catchments (Collar & Stuart, 1985; Harrison *et al.*, 1997; Taylor & van Perlo, 1998).

There appears to have been only one record of the species in Ethiopia between 1957 and 1995, a bird seen in flight at Sululta in August 1984 (Collar *et al.*, 1994). However, 10-15 pairs were found breeding in a wetland near Addis Ababa in August 1996 (Harrison *et al.*, 1997), and at least 200 pairs were found at a second site near Addis Ababa in August 1997 (Taylor & van Perlo, 1998). The seasonal marshes in which the species occurs are under severe threat from over-grazing, trampling and sedge-cutting (Taylor, 1999)

Comments: *S. ayresi* is a globally threatened species in the category 'Endangered' (IUCN, 1996). It is included in Appendix I and Appendix II of the Bonn Convention.

Corncrake *Crex crex*

Monotypic. The species breeds widely across Western Eurasia at temperate latitudes east as far as western China and western Yakutia and Lake Baikal in Central Siberia. It winters throughout Africa south of the Sahara, with the main concentrations extending from Zaire and central Tanzania south through Zambia, Malawi, Mozambique, Zimbabwe and Botswana to eastern South Africa. Only one population is recognised, the entire population of the species.

- Europe & Western Asia/Africa: C or D (WPE2). D, based on recent estimates of breeding populations.
Trends: Decreasing (WPE2).

Changes in status: There is clear evidence of a long-term and very steep decline throughout much of the species' breeding range in Europe and Russia (Tucker & Heath, 1994; Hagemeijer & Blair, 1997; Snow & Perrins, 1998) and also on its winter quarters in Africa (Collar *et al.*, 1994). In Europe, all countries with sizeable populations experienced declines of >20% (17 countries) or >50% (10 countries) during the period 1970-1990, except Sweden and Finland (Hagemeijer & Blair, 1997). Declining populations were already apparent in many European countries in the early 1900s, but the rate of decline and range contraction has accelerated since the 1970s (Hagemeijer & Blair, 1997). The decline has been attributed to drainage of sites, agricultural intensification and changes in grassland management on the breeding grounds, compounded by trapping of birds on migration, especially in Egypt (Collar *et al.*, 1994).

Comments: *C. crex* is now listed as a globally threatened species in the category 'Vulnerable' (IUCN, 1996). It is included in Appendix II of the Bonn Convention. An Action Plan for *C. crex* in Europe has been compiled by Crockford *et al.* (in Heredia *et al.*, 1996).

The breeding population in Europe excluding Russia is estimated at about 87,000-97,000 pairs, and that in Russia at between 10,000 and 100,000 pairs (Hagemeijer & Blair, 1997). These figures suggest a total population of at least 300,000 birds, and well within the range 100,000-1,000,000 (Category D).

HAEMATOPODIDAE

Eurasian Oystercatcher *Haematopus ostralegus*

Polytypic. Two subspecies occur in the Agreement Area, the nominate form in most of Europe and North Africa, and *longipes* on inland waters from Ukraine to Western and Central Asia. The Icelandic and Faroese birds are sometimes considered as a separate subspecies (*malacophaga*), as are the British and Irish birds (*occidentalis*). Most breeding populations are migratory, although a small proportion of birds in Western Europe are sedentary or dispersive. The nominate race comprises five relatively discrete populations: (1) birds breeding in Iceland, Faroes and Scotland, and wintering in Ireland and western Britain; (2) birds breeding in Norway and wintering in the North Sea area; (3) birds breeding in the Baltic and northeastern Russia, and wintering in the Wadden Sea; (4) birds breeding in southern Britain, Ireland, the Low Countries and France, and wintering on the Atlantic coast of Europe south to Iberia and Morocco (less commonly to Mauritania and Guinea Bissau); and (5) birds breeding in the Mediterranean and wintering mainly on the North African coast. However, because of the extensive overlap of these five populations in Western Europe during the migration seasons, they are treated as a single population in *Waterfowl Population Estimates*. *H. o. longipes* breeds from the Black Sea and Asia Minor to Western Siberia, northwestern Iran and the Central Asian Republics, and winters along the coasts of Northeast Africa, the Arabian Peninsula and the Persian/Arabian Gulf east to northwestern India. Only two populations are relevant.

- Europe & Northwest Africa (wintering) (*ostralegus*, '*malacophaga*' and '*occidentalis*'): 874,000 (WPE2). 1,000,000, based on a recent provisional estimate of wintering birds (N. Davidson, pers. comm.).

Trends: Increasing (WPE2).

- Southwest Asia, Southern Asia & Northeast Africa (wintering) (*longipes*): 25,000 (WPE2).

Trends: Unknown.

Changes in status: The long-term increase in the European population is apparently continuing, with increases reported in recent years in the large breeding populations in the Netherlands, Norway and the United Kingdom, and also in the smaller populations in Belgium, Denmark, the Faroes, Finland, Germany, Latvia, Poland and Spain (Hagemeijer & Blair, 1997; Snow & Perrins, 1998). A recent analysis suggests that the numbers wintering along the Atlantic coast of Europe have increased by 19% since the 1980s (Davidson, in press), while the numbers wintering in Britain increased by 28% (from 279,500 to 359,000) between 1981-85 and 1988-92 (Cayford & Waters, 1996). Provisional totals in the early 1990s suggest that there are now just over a million *H. ostralegus* wintering on the Atlantic coast of Europe (N. Davidson, pers. comm.).

Little is known of the status of the population of *longipes* breeding in the Black Sea region and Western Asia. Recent increases have been reported in the small breeding populations in Bulgaria and Romania, and slight decreases in the populations in Russia and Ukraine (Snow & Perrins, 1998). The trends further east are unknown.

Comments: The European and Northwest African wintering population has a favourable conservation status. The population of *longipes* is very small by comparison, but gives no immediate cause for concern. It is not known to be under any threat, and may be increasing in the western part of its range.

The European breeding population is estimated at about 230,000-290,000 pairs (Hagemeijer & Blair, 1997). This estimate agrees reasonably well with the estimate of 1,000,000 derived from winter counts.

GLAREOLIDAE

Madagascar Pratincole *Glareola ocularis*

Monotypic. The species is confined as a breeding bird to Madagascar, but occurs as a regular non-breeding visitor (March-September) to the East African coast between southern Somalia and Mozambique north of the Zambezi River (mainly Kenya and Tanzania). The species sometimes occurs far inland, usually only in small groups, although up to 1,000 have been recorded at Lake Victoria (Urban *et al.*, 1986). It occurs widely in Madagascar, but apparently breeds only in the east (Langrand 1990). Only one population is recognised, the entire population of the species.

- Madagascar/East Africa: Unknown.

Trends: Unknown.

Changes in status: No information is available on population trends. The widespread loss and degradation of wetland habitats in Madagascar in recent years are doubtless having a negative impact on the population, but details are lacking.

Comments: The species is considered to have an unfavourable conservation status because of its relatively small population size, and the widespread threats to its breeding habitat in Madagascar.

Little information is available on numbers. The species is reported to be fairly common in Madagascar (Langrand, 1990), although flocks seldom exceed 150 birds. It is frequent to locally abundant in East Africa, especially in coastal Kenya, where flocks of 9,000-10,000 birds were recorded in 1978. Flocks of 3,000 were reported in southern Somalia in 1979 and 1981 (del Hoyo *et al.*, 1996), and up to 1,000 have been recorded at Lake Victoria. However, it seems unlikely that the total population exceeds 50,000 birds, and it could be far fewer than this.

Rock Pratincole *Glareola nuchalis*

Two subspecies have been described: *nuchalis* from Chad, northeastern Sudan and Ethiopia south through Zaire, western Kenya and southeastern Tanzania to east-central Angola, extreme northeastern Botswana, Zimbabwe and western Mozambique; and *liberiae* from Sierra Leone to western Cameroon. Intermediates between *nuchalis* and *liberiae* occur in western Cameroon (Urban *et al.*, 1986). Both subspecies are partly sedentary and partly migratory, and are known to make extensive movements, but these are poorly understood. Populations in Gabon and on the shores of Lake Victoria are sedentary. However, other populations undergo seasonal movements related to changes in water level. The species is a regular migrant in Nigeria, occurring on the Niger River only between mid-March and September. In Zambia, it is plentiful only between July and early January, with a peak in September when water levels become low. Migrants from northeastern Namibia have been observed in eastern Zaire between January and July. Migrants of the southern race *nuchalis* have been observed in October in the range of *liberiae* (Urban *et al.*, 1986).

Two populations are recognised.

- Eastern & Central Africa (*nuchalis*): Unknown (WPE2). Decreasing in south (Harrison *et al.*, 1997).

Trends: Unknown.

- Western Africa (*iberiae*): Unknown.

Trends: Unknown.

Changes in status: No information is available on the overall trends in either population. Some suitable habitat has been lost as a result of the creation of dams on some of the major rivers within the range of both populations, and the species is possibly at risk from the contamination of rivers with pesticides and other chemicals. The breeding population in Zimbabwe is decreasing because of silting on the southeastern lowveld rivers and dam-building on the Zambezi River (Harrison *et al.*, 1997).

Comments: Both populations are considered to have an unfavourable conservation status because of their relatively small population sizes, and the widespread threats to their breeding habitat from river development.

Almost no information is available on numbers, but it seems unlikely that either population exceeds 100,000 individuals. The species is locally abundant along suitable rivers, with breeding groups of up to 100 pairs in some areas (Urban *et al.*, 1986). The Zimbabwe population has been estimated at 1,600-1,800 birds prior to breeding (Harrison *et al.*, 1997).

LARIDAE

Common Gull *Larus canus*

Polytypic. Two subspecies occur in the Agreement Area. The nominate race breeds widely in Northern Europe from Iceland east to the White Sea (40°E), and winters in Northwest Europe south commonly to western France and in smaller numbers to Iberia, Morocco and the West Mediterranean. *L. c. heinei* breeds from the Kanin Peninsula and Moscow region east to the Lena River (125°E), and winters mainly in the Black Sea and Caspian Sea, with a few birds reaching the Persian/Arabian Gulf, East Mediterranean and Baltic. Two populations are recognised.

- Northwest & Central Europe/Atlantic & Mediterranean (*canus*): 1,600,000 (WPE2).

Trends: Increasing (WPE2). Decreasing (Tucker & Heath, 1994; Hagemeyer & Blair, 1997).

- Northeast Europe & Western Siberia/Black Sea & Caspian Sea (*heinei*): C (WPE2).

Trends: Unknown.

Changes in status: The species has increased and spread in Northwest Europe in the last hundred years, especially in Britain, Ireland and Germany, and now breeds in the Faroes (since 1890), the Netherlands (since 1908), Belgium (since 1924), Iceland (since 1955), Poland (since 1956), Germany (since 1957), Austria (since 1958), Switzerland (since 1966) and France (since 1976). However, many populations appear to have stabilised in recent years or be declining slightly. The large populations in Sweden, Britain and Finland have been relatively stable since the 1970s, although there are recent indications of a decline in parts of Britain (M. Tasker, pers. comm.). Decreases have been reported in the Netherlands, Denmark, parts of Germany, Norway and Estonia (Hagemeyer & Blair, 1997; Snow & Perrins, 1998). In Denmark, the species decreased from a peak at 75,000-100,000 pairs in the 1930s and 1940s to about 40,000 pairs in 1974 (Evans, 1984) and 25,000 pairs in the early 1990s (Snow & Perrins, 1998). The declines have been attributed to a wide variety of causes including predation from foxes and feral mink, culling by humans, reduced availability of human refuse, habitat loss, disturbance and climate change (Hagemeyer & Blair, 1997).

The breeding population in Russia is reported to be increasing in most regions (Snow & Perrins, 1998), and this presumably relates to some populations of *heinei* breeding in the east, but trends elsewhere in the range of this subspecies are unknown.

Comments: The European population of *canus* is now considered to have an unfavourable conservation status because of the significant decline in the core areas of the breeding range in recent years (Tucker & Heath, 1994; Hagemeyer & Blair, 1998). The population of *heinei* is small by comparison, but gives no immediate cause for concern. It is not known to be under any threat, and may be increasing in the western part of its range.

The breeding population in Europe excluding Russia is estimated about 416,000-558,000 pairs, and that in European Russia (including some *heinei*) at 40,000-60,000 pairs (Hagemeyer & Blair, 1997).

Little Gull *Larus minutus*

Monotypic. There appear to be two largely discrete populations in Western Eurasia: one breeding in Central Europe

from the Baltic east to about 55°E, and wintering along the coasts of Southwest Europe and the West Mediterranean south to the Atlantic coast of Morocco; and the other breeding east of the Urals in the basin of the Ob and Irtysh, and wintering mainly in the Black Sea and Caspian Sea. Both populations may mix to a limited extent in the East Mediterranean. Two populations are recognised.

- Central & Eastern Europe (breeding): 60,000-90,000 (WPE2).

Trends: Stable (WPE2). Stable or increasing slightly (Hagemeijer & Blair, 1997).

- Black Sea & Western Asia (breeding): Unknown (WPE2). Probably C, based on winter counts.

Trends: Unknown.

Changes in status: The second edition of *Waterfowl Population Estimates* gives the trends in the European population as stable. Tucker & Heath (1994) concluded that the species was probably declining in Europe, and listed recent decreases in Estonia, Poland and Ukraine. According to Hagemeijer & Blair (1997), however, the species is evidently increasing and expanding in the northernmost parts of its European range in Finland and Russia, and appears to be more or less stable in the eastern Baltic. The breeding range in Finland expanded by over 50% during the period 1970-90 (Hagemeijer & Blair, 1997). Some decreases have been reported in the southern parts of its range in Europe, but these involve only a small number of birds. It would seem, therefore, that overall the European population is increasing slightly, although there are marked fluctuations from year to year in most areas which mask short-term trends. There has been a marked northward expansion in the wintering range in Western Europe in recent years, perhaps related to the northward expansion in the breeding range. No information is available on trends in West Asia.

Comments: Both populations are considered to have an unfavourable conservation status because of their relatively small population sizes and very specific habitat requirements for nesting. The species' habit of nesting in marshy, partially flooded areas leaves it susceptible to both natural and man-made flooding in the breeding season (Tucker & Heath, 1994).

The European breeding population is estimated at 23,000-32,000 pairs, of which about half (11,000-14,000 pairs) are in Russia (Hagemeijer & Blair, 1997). The size of the Black Sea and Western Asian population is unknown, but is unlikely to exceed 100,000 birds. Over 50,000 *L. minutus* have recently been found wintering in the lagoons in the Nile Delta in Egypt (Hagemeijer & Blair, 1997), which may be a major wintering area for this population.

Roseate Tern *Sterna dougallii*

See species account in main text. Three populations occur in the Agreement Area.

- Southern Africa (breeding): 200 (WPE2). 400, based on recent estimates of the breeding population.

Trends: Decreasing (WPE2).

- Eastern Africa & Madagascar (breeding): 38,000 (WPE2).

Trends: Unknown.

- Europe (breeding): 5,000 (WPE2).

Trends: Decreasing (WPE2).

Changes in status: The tiny breeding population in Southern Africa has been decreasing for some time, and has disappeared from some of its former breeding areas (Urban *et al.*, 1986; Lloyd *et al.*, 1991). The species ceased to breed on Dyer Island in 1971, possibly due to disturbance from guano scraping (which ceased in 1985). Birds returned to the island in 1991, and 21 were present in 1996, including one on a nest (Harrison *et al.*, 1997). The species also formerly bred at Cape Recife in Algoa Bay, but disappeared apparently because of human disturbance and predation (Harrison *et al.*, 1997). Trends in the East African and Madagascan population are unknown.

Comments: The Atlantic population is already included in the Agreement (see main text).

The breeding population in Southern Africa clearly has an unfavourable conservation status. The total population has recently been estimated at 130-140 pairs at two main sites, Bird Island and St Croix Island in Algoa Bay, South Africa. This suggests a total population of about 400 individuals, rather than 200 as given in *Waterfowl Population Estimates*.

The population breeding in East Africa and Madagascar is not known to be under threat, but is considered to have an unfavourable conservation status because of its relatively small population size and the concentration of a large proportion of the population onto a small number of sites during the breeding season. This population has been estimated at about 12,500 pairs (Cooper *et al.*, 1984), including over 8,500 pairs in East Africa, mainly on the Kiunga Islands off the Kenya coast, and 4,100 pairs in Madagascar, mainly at one large colony off the southwest coast (Lloyd *et al.*, 1991; Harrison *et al.*, 1997). These figures suggest a total population of about 38,000 individuals.

Whiskered Tern *Chlidonias hybridus*

Polytypic. Two subspecies occur in the Agreement Area. The nominate race breeds widely across Southern Europe

and Southwest Asia to the South Caspian region, and also in Eastern Asia. West Eurasian populations winter mainly in Sub-Saharan Africa south to Zaire and Kenya. Three main breeding groups are identifiable: (1) birds which breed in Southwest Europe and occasionally in Northwest Africa, and winter in tropical West Africa east to Chad and Zaire; (2) birds which breed in Southeast Europe and Turkey, and winter mainly from the Nile Delta and Sudan to Ethiopia and Kenya; and (3) birds which breed in the Caspian region, Aral Sea, Iraq and Iran, and winter from lower Iraq and southwestern Iran to Pakistan and India. Some of these may also reach Eastern Africa. *C. h. sclateri* (syn. *delalandii*) occurs widely in Eastern and Southern Africa from Kenya to South Africa, and also in Madagascar. Most populations appear to be highly nomadic or migratory, and there appears to be a regular movement of birds between Southern Africa and Madagascar. Four populations are recognised.

- Western Europe & Northwest Africa (breeding): 20,000-30,000 (WPE2).

Trends: Unknown (WPE2). Decreasing (Tucker & Heath, 1994; Hagemeyer & Blair, 1997).

- Black Sea & East Mediterranean (breeding): 50,000-80,000 (WPE2).

Trends: Unknown (WPE2). Stable or increasing (Hagemeyer & Blair, 1997).

- Caspian (breeding): C (WPE2).

Trends: Unknown.

- Southern & Eastern Africa (breeding) (*sclateri*): Unknown.

Trends: Unknown.

Changes in status: The breeding population in the Mediterranean declined from 1930 to 1970, and more recently, another slight decrease has occurred in some areas (Hagemeyer & Blair, 1997). The most serious declines have occurred in the West European population. Tucker & Heath (1994) and Hagemeyer & Blair (1997) report recent decreases in the large population in Spain, and in the smaller populations in Italy and Portugal. These declines have been attributed to wetland drainage.

In the Black Sea and East Mediterranean region, numbers appear to be stable or increasing. The large population in the Ukraine has shown a marked increase in recent decades, and slight increases have been reported in Hungary, Poland and Romania, while a decrease has been reported only in the small population in Croatia (Tucker & Heath, 1994; Hagemeyer & Blair, 1997). In parts of Eastern Europe, the species is thought to have benefited from the proliferation of fish-ponds (Cramp, 1985).

Overall trends in the population of *sclateri* are unknown. The relatively small population breeding in Southern Africa has possibly increased during the 20th century (Harrison *et al.*, 1997).

Comments: The relatively small population in Western Europe and Northwest Africa is now thought to be declining, and is considered to have an unfavourable conservation status. The Black Sea & East Mediterranean population, although numbering less than 100,000 individuals, is probably increasing, and is considered to have a favourable conservation status. No declines have been reported in the Caspian breeding population, and this population, although relatively small, does not give any immediate cause for concern. The population of *sclateri* in Southern and Eastern Africa, although poorly known, is also considered to have a favourable conservation status.

The breeding population in Southwest Europe is estimated at between 6,800 and 10,500 pairs (data from Tucker & Heath, 1994) which, allowing for the very small number of pairs breeding in Northwest Africa, suggests a total population of about 20,000-30,000 birds. However, these figures contrast markedly with some earlier estimates which indicated that there might be as many as 100,000 pairs in Spain alone (Cramp, 1985; del Hoyo *et al.*, 1996). Perennou (1991) estimated the numbers wintering in West Africa to be between 150,000 and 300,000 birds, a figure which lends support to the higher estimates of the breeding population.

The population breeding in Central and Eastern Europe (excluding Russia) is estimated 15,000-21,000 pairs, that in European Russia at 10,000-13,000 pairs, and that in Turkey at 1,000-5,000 pairs (data from Tucker & Heath, 1994, and Hagemeyer & Blair, 1997). These figures suggest a total population of about 26,000-39,000 pairs in Europe and Turkey, or 75,000-115,000 individuals. Some of the Russian birds belong to the Caspian population (*e.g.* about 1,000 pairs in the Volga Delta), but nevertheless, the numbers in the Black Sea and East Mediterranean population are likely to be near the upper end of the range given in *Waterfowl Population Estimates*, if not even higher. Up to 25,000 birds from this population have been found wintering in Egypt.

At least 8,000 pairs breed in the Caspian region and Iran. The breeding population in Iran alone was estimated at 3,600-7,000 pairs in the 1970s, very largely in the South Caspian region (Scott, 1995).

No information is available on the numbers of *C. h. sclateri*. It is reported to be widespread but generally not very common (Urban *et al.*, 1986).

RYNCHOPIDAE

African Skimmer *Rynchops flavirostris*

Monotypic. The species occurs along major river systems in Sub-Saharan Africa from Senegal, Sudan and Ethiopia south to Botswana, Zimbabwe, Mozambique and South Africa. It is migratory over much of its range, but its movements are complex and poorly understood. Outside the breeding season, it occurs in the deltas of the Senegal and Gambia Rivers, in coastal Ghana, along the Nile north to southern Egypt, and widely in suitable habitat in Zaire, Tanzania and Angola. Only one population is recognised, the entire population of the species.

- Sub-Saharan Africa: Unknown (WPE2). A or B.

Trends: Unknown (WPE2). Decreasing (del Hoyo *et al.*, 1996; Harrison *et al.*, 1997).

Changes in status: There has been a marked contraction in the breeding range and decline in numbers in Southern Africa during the 20th century (Harrison *et al.*, 1997). The species no longer breeds in South Africa, and the population along the middle Zambezi fell from 250 birds in 1987 to 36 in 1991. It is also believed to have declined dramatically in the Okavango basin in Botswana. Declines here and elsewhere in Africa have been attributed to the damming of rivers, contamination of rivers with pesticides, egg-collecting for human consumption, and disturbance of breeding colonies by fishermen and livestock (del Hoyo *et al.*, 1996; Harrison *et al.*, 1997). Contamination with pesticides has been identified as a serious problem in the Zambezi drainage and Okavango Delta (Harrison *et al.*, 1997). A breeding colony of 50 pairs on Central Island in Lake Turkana, Kenya, was much disturbed by humans (Urban *et al.*, 1986).

Comments: This species clearly has an unfavourable conservation status. The small breeding population in Southern Africa can now be considered as endangered (Harrison *et al.*, 1997).

Little information is available on numbers, but it has been suggested that the total population may be under 10,000 birds (del Hoyo *et al.*, 1996). The species is locally common, and concentrations of several hundred birds are not infrequent, but the largest known breeding colony supported only 50 pairs. High counts have included 1,000 at Ferguson's Gulf in Kenya, 1,500 at Lake Rukwa in Tanzania, and 600 at Lochinvar in Zambia (Urban *et al.*, 1986). During recent African Waterfowl Censuses, the highest counts have included 200 in Cameroon and 560 in Kenya in January 1993 (Taylor, 1993), 1,090 in Tanzania and 1,160 in Uganda in January 1995 (Dodman & Taylor, 1995), 1,375 along the Victoria Nile in Uganda in January 1996 (Dodman & Taylor, 1996), and 800 along the Nile near Murchison Falls in Uganda in January 1997 (Dodman *et al.*, 1997). Only four individuals were recorded during the census in Southern Africa in January 1997 (Dodman *et al.*, 1997).