Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention or CMS)

Agreement on the Conservation of African-Eurasian Migratory Waterbirds

Volume II

DRAFT MANAGEMENT PLAN

September 1993

Secretariat of the Convention

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International Waterfowl and Wetlands Research Bureau

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TABLE OF CONTENTS

VOLUME I

VOLUME II

CONTENTS

I GENERAL

1. SYSTEMATIC AND GEOGRAPHIC SCOPE OF THE AGREEMENT

1.1. Waterbird Families

The Agreement will include the families listed in Table 1. These are the families of birds which are traditionally treated as waterbirds, following the definitions of "waterfowl" and "wetland" in the Ramsar Convention, and which contain migratory species, following the definition of "migratory" in the Bonn Convention. The sequence and composition of families follow Morony, Bock and Farrand (1975) *Reference List of the Birds of the World.*

1.2. The Africa-Eurasia Region

The Africa-Eurasia region is outlined in Figure 1. For the purposes of this agreement, the Africa-Eurasia region is defined as follows:

> the continents of Europe and Africa, including their associated islands, from the Arctic Ocean and Greenland in the North to Latitude 40°S in the South; Western Siberia east to the region of the Lena River delta (Longitude 130°E); the Central Asian Republics of Kazakhstan, Uzbekistan and Turkmenistan; and Southwest Asia from Asia Minor through the Middle East east to central Islamic Republic of Iran and the Arabian Sea.

International marine waters are not included in the Agreement Area.

1.3. African-Eurasian Waterbird Species

The term "waterbird" as used in this Agreement is confined to those species which:

- belong to one of the families which are traditionally treated as waterbirds (listed in Table 1);

and:

- are ecologically dependent on wetlands for at least a part of their annual cycle (following the Ramsar definition of "wetland").

Waterbird species have been selected for inclusion in this Agreement on the basis of the following criteria:

(i) Species should belong to one of the waterbird families listed in Table 1.

(ii) Species should be dependent on wetlands, as defined in the Ramsar Convention, for at least a part of their annual cycles. (Marine, forest and desert species in the families listed in Table 1 will require very different management strategies from those required by typical waterbird).

(iii) Species should be migratory as defined in the Bonn Convention. The Bonn Convention defines "migratory species" as follows:

> "Migratory species" means the entire population or any geographically separate part of the population of any species or lower taxon of wild animals, a significant proportion of whose members cyclically and predictably cross one or more national jurisdictional boundaries.

Any species which is confined to a single Range State is, by this definition, not migratory.

(iv) Species and populations should be indigenous to the region. Species which occur in the Africa-Eurasia region only as a result of introductions by man (*e.g., Anser indicus* and *Aix galericulata*) should be excluded.

(v) Species should occur regularly in the Africa-Eurasia region during the normal course of their annual cycles (*i.e.* not as vagrants or rare stragglers from other regions).

(vi) The Africa-Eurasia region should have a special function for a discrete population or substantial proportion of a population of the species involved. Species which occur in the region only at the extreme limits of their normal distribution should be excluded.

All waterbird species or populations which meet these criteria have been included in the Agreement. They are listed in Table 2. The taxonomic sequence and treatment of species within families follow Sibley and Monroe (1990) *Distribution and Taxonomy of Birds of the World.* Species belonging to the families listed in Table 1 which occur in the Africa-Eurasia region but which fail to qualify for inclusion in this Agreement on the basis of criteria (ii) to (vi) are listed in Annex I.

1.4. The Agreement Area

The Agreement Area comprises all those range states utilized by significant numbers of the migratory waterbirds which occur in the Africa-Eurasia region at any time during their annual cycles. The Agreement Area is outlined in Figure 1. Range States which have their territory, or part of it, in this region are listed in Table 3.

The Agreement Area is the Africa-Eurasia region plus the Arctic islands of northeastern Canada.

2. CURRENT STATUS OF AFRICAN-EURASIAN WATERBIRDS

2.1. Population Size and Population Trends of African-Eurasian Waterbirds

If the populations of migratory waterbirds which utilize the Africa-Eurasia region 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.

Great advances have been made in knowledge of migratory species of waterbirds in West Eurasia and Africa in recent decades, especially in parts of Europe, where the status, distribution, abundance and migratory behaviour of some species is now known in great detail (*e.g.*, some species of geese, *Anser* and *Branta* spp.). This information is proving invaluable in determining those measures that need to be taken to conserve these species. The international waterbird censuses, coordinated by the International Waterfowl and Wetlands Research Bureau (IWRB), have been particularly valuable in providing estimates of population sizes and establishing a sound basis for long-term monitoring of population trends. A variety of specialist groups have focused on particular groups of waterbirds or even individual species, and most species which are listed as threatened in the IUCN Red Data Book are now the subject of major research and conservation efforts. Major ringing programmes in many European and some African and West Asian countries have established the principal migratory routes of most waterbird species migrating between West Eurasia and Africa, enabling the identification of the various population units involved.

However, there remain large gaps in knowledge of the status and distribution of many migratory waterbird species in parts of Africa south of the Sahara. Many areas remain poorly known; some regions have not been visited by waterbird biologists for many years, while others do not appear to have been surveyed at all. Until these areas are thoroughly investigated at the appropriate seasons (mid-winter, migration seasons and/or breeding season), knowledge of the status and distribution of many species and populations will remain incomplete. The situation is particularly confusing in equatorial regions. It is known that many species are "rains migrants", moving away from the equator during the rainy season to breed in seasonal wetlands to the north or south, and retreating back to the humid equatorial zone during the dry season. However, the extent of these movements, the degree of isolation between the northern populations and southern populations (which breed at different times of the year), and the extent to which these mix with or form part of the sedentary populations which remain year-round in the humid equatorial zone, are generally unknown.

In many of the more arid regions of Africa and the Middle East, most species of waterbirds are known to undertake lengthy movements in response to changing water levels. In areas where rainfall is infrequent and unpredictable, these movements are also likely to be infrequent and unpredictable, and might best be described as nomadism or irregular dispersive movements. In areas where the rainfall is more or less annual and seasonal, such movements could be classified as regular migrations, in the sense of the Bonn Convention. At the same time, in all but the most arid regions, there will be permanent wetlands at which some individuals can remain resident all year round. From the limited information available, it would seem that most populations of Afrotropical species of waterbirds are to some extent sedentary and to some extent nomadic or dispersive, moving in response to changing water levels. Many also undertake regular, seasonal migrations within Africa, sometimes of great length, but these movements often appear to be rather complex and, in most species, are still very poorly understood.

An attempt has been made in Table 4 to identify the major "biogeographical" populations of each species of waterbirds covered by the Agreement. In some monotypic species with restricted ranges, the population is the entire world population of the species in question. In some polytypic species, each subspecies comprises an identifiable population. In most cases, these populations are geographically separated at all times of the year, but in several cases, two or more subspecies overlap to some extent on the wintering grounds. In relatively few monotypic species or subspecies is it clear that there are two or more discrete populations which are separated at all stages in their annual cycles. Good examples include the two populations of *Anser brachyrhynchus* and the three populations of *Branta leucopsis*. For most species of waterbirds which have been the subject of intensive ringing studies, it is clear that no such biogeographically discrete populations exist. While there is a very strong tendency in many widespread species for western breeding populations to winter further west than eastern breeding populations, there is clearly a great deal of mixing across huge longitudinal ranges, especially amongst some of the ducks, and clear dividing lines are seldom present.

In general, for those species of waterbirds with a wide breeding range at northern latitudes in West Eurasia and a wide wintering distribution across Europe, Africa and Southwest Asia, populations have been divided somewhat arbitrarily according to the regions in which the main breeding and main wintering areas are situated. In many species of waterbirds, ringing recoveries have demonstrated that the majority of birds breeding in Northwest Europe (east to Scandinavia) winter from West Europe south in varying degrees to the West Mediterranean and Northwest Africa. The majority of birds breeding in Northeast and Central Europe (east to the Urals) generally follow a more easterly route to winter from the Black Sea and Southeast Europe through the Mediterranean basin to West Africa and the central Sahel Zone. Waterbird breeding in Western Siberia (notably in the basin of the Ob and Irtysh Rivers) generally migrate southwest through the Caspian Region to the Middle East and, in some cases, also Northeast, East and even South Africa. Unless there is evidence to the contrary, these three major "flyways"

are used in the identification of population units for all species of waterbirds with wide distributions in West Eurasia. (Those waterbird populations which breed in Western Siberia and migrate southeast to the Indian Subcontinent are outside the scope of this Agreement).

For many of the widespread Afrotropical species, it seems likely that there are several biogeographical populations with discrete or largely non-overlapping breeding areas and wintering ranges. This is particularly the case in species which have an extensive north-south range spanning the equator, since the northernmost and southernmost populations generally breed at opposite times of the year. However, until much more information becomes available on the movements of these populations, the timing of their breeding seasons, and their interactions with sedentary populations in equatorial regions, it is generally not possible to identify any particular migratory populations within the distribution of the species (or subspecies) as a whole. Thus for many of the Afrotropical species listed in Table 4, the only population "units" that can be given are the entire population of the species (or subspecies), although it is recognized that these will often include a large sedentary element, perhaps a large nomadic or dispersive element, and perhaps several relatively discrete migratory populations.

In some species, mainly shorebirds and terns, the evidence suggests that a single "population" extends from western India and Pakistan (South Asia) west to Iran and the Arabian Peninsula (Southwest Asia) and, in a few cases, also to Northeast and East Africa. These populations, which span the divide between the African-Eurasian Waterbird Agreement and the Asia-Pacific Waterbird Agreement, are covered by both Agreements. Clearly, close consultation and cooperation will be required between Range States in both Agreement Areas if these populations are to be effectively conserved. The 16 populations which fall into this category are indicated with an asterisk in Table 4 and listed in Table 5.

An attempt has also been made in Table 4 to give an estimate of the population size for as many species and populations as possible. These estimates have been derived from four main sources: the International Waterfowl Census in Europe, Southwest Asia and Africa; international shorebird counts in the Western Palearctic, coordinated jointly by IWRB and the Wader Study Group; national or regional censuses of breeding populations of colonially nesting species (*e.g.*, many Ardeidae and Laridae); and in-depth studies of particular species or groups of species (notably globally or regionally threatened species).

The International Waterfowl Census has been the principal source of population estimates for those species of waterbirds which concentrate during the mid-winter period (boreal winter). The Census was launched in the Western Palearctic in 1967, and rapidly expanded to cover most countries in the region. The Census has continued without break since then, and has provided information on the numbers of Anatidae and *Fulica atra* at almost 20,000 sites. Reliable population estimates are now available for most of these species within their ranges in Europe and North Africa, and good information is available on population trends. However, it was not until 1992 that the Census was expanded to cover all species of waterbirds.

Waterbird censusing began in Southwest Asia as early as the 1960s (in Turkmenistan and Iran), but it was not until 1987, with the launch of the Asian Waterfowl Census, that a major effort was made to promote the censusing of waterbirds (of all species) at a large number of sites throughout the region. Only two Southwest Asian countries participated in the 1987 census, but by 1992, 12 countries had become involved and over 300 sites had been counted.

North African countries have participated in the Western Palearctic Census almost since its inception in the 1960s. Aerial censuses of waterbirds in the Sahel Zone in West Africa were initiated in the 1970s, and have been undertaken at irregular intervals since then. Elsewhere in Africa, waterbird counts had been carried out at only a few sites, mainly in East Africa and Southern Africa, until 1991 when the African Waterfowl Census was launched. Twenty countries

participated in the first two years of the census, and already a considerable amount of valuable information has been generated, but much more extensive coverage and many more years of data will be required before it becomes possible to provide meaningful estimates of population size for more than a handful of very local species.

Despite the success of the waterbird censuses and the extensive coverage in some areas, it is clear that only a fraction of the total number of waterbirds occurring in West Eurasia and Africa are being censused each year. For secretive species of dense vegetation and swamp forest, such as some of the herons and most of the Rallidae, the counts are totally inadequate as a basis for population estimates, and give little more than an indication of distribution and relative abundance. Similarly, for those species of shorebirds which occur widely around small ponds, in ditches, in rice fields or on wet grassland, only a tiny fraction of the birds present are recorded during the censuses. It is only for the large and conspicuous species of waterbirds which congregate at the main wetland areas that the censuses can account for a significant proportion of the population.

In most of Europe, North Africa and Southwest Asia, where coverage has been very good for a number of years, it is felt that the mid-winter censuses may now account for between 50% and 75% of the birds present, depending on their habitat preferences, conspicuousness and dispersion. However, in West Africa and South Africa, it is doubtful if coverage exceeds 25% for all but a handful of very local and conspicuous species, while elsewhere in Africa, the comparable figure is probably no more than 10%. Thus for many of the species and populations listed in Table 4, only a rough indication of the magnitude of the population can be given. Even where population estimates are presented, these must be regarded as highly provisional.

Table 4 also provides some information on population trends. For many of the waterbird populations occurring in Europe and North Africa, the overall trend in numbers over the past twenty years is well documented, while for some species, notably the Anatidae, the data are sufficiently comprehensive to permit the monitoring of population trends from year to year. However, with only a few years of census data available for the great majority of wetlands in Southwest Asia and Africa south of the Sahara, it is not yet possible to determine long-term trends in the populations of most migratory waterbirds in these regions. In Subsaharan Africa, in particular, the existing statistical data on most migratory species and populations are quite inadequate to permit any precise statements concerning population trends during recent years. However, a considerable amount of ornithological exploration and research has been carried out in Africa since the mid 19th Century, and much of this has provided reliable, albeit anecdotal, information on the abundance of species. Much of the information on trends for African species and populations is derived from this type of information which has recently been summarized in *The Birds of Africa* (Brown *et al.*, 1982; Urban *et al.*, 1986).

2.2. Priority Lists of African-Eurasian Waterbirds

In the conservation and management of migratory waterbird species in the Africa-Eurasia region, highest priority should be given to those species and populations of waterbirds which are most at risk from the continuing loss and degradation of wetland habitats, over-exploitation or human disturbance. Those species which are seriously threatened throughout the whole of their ranges are listed in the IUCN Red Data Book and other regional and national "Red Lists", and can immediately be identified as priority species. However, there are many other species and populations which, although not globally threatened, are at risk throughout the whole or a large part of their ranges in the Africa-Eurasia region, and clearly merit special attention. Other species and populations, although still relatively common at the present time, have shown a marked decline in numbers in recent decades, and are beginning to give cause for concern.

Finally, there are those species and populations which, although numerically quite abundant and still with a relatively stable population level, are highly concentrated at a small number of sites (either at their breeding colonies or on their wintering grounds) and are thus extremely vulnerable to wetland loss, over-exploitation or disturbance.

The information reviewed in Attachment 2 and summarized in Table 4 has been used to identify these priority species, and to assign them to one of the following four categories:

> Category I: species and populations which are threatened in the Africa-Eurasia region, *i.e.* at risk of extinction;
>
> Category II: species and populations which have an unfavourable conservation status in the Africa-Eurasia region and are likely to become threatened in the near future unless some remedial action is taken;
>
> Category III: species and populations which, although still relatively abundant in parts of their range in the Africa-Eurasia region, have shown a marked decline in numbers in recent years.
>
> Category IV: species and populations which are restricted to only a few key sites during a particular period of their annual cycle, and which are therefore particularly vulnerable.

All other species and populations are provisionally regarded as having a favourable conservation status in the Africa-Eurasia region. It should be noted, however, that in the case of many Afrotropical species and populations, the available information on population size and trends is inadequate to permit assignment to the priority categories with any real degree of certainty. As further information becomes available, it is likely that several species and populations will need to be added to these lists or re-assigned.

The World Conservation Union (IUCN) is currently in the process of re-defining its Red List categories ("critical", "endangered", "vulnerable", "susceptible" *etc*). Very precise definitions are being developed for each term and category, and this will inevitably lead to extensive changes to the existing "Red List of Threatened Animals". However, the details are of little relevance to this Agreement as all species and populations listed as "threatened" by IUCN, whether as "extinct in the wild", "critical", "endangered", "vulnerable" or "susceptible", should be included in Category I in this Agreement.

2.2.1. Category I: Threatened Species and Populations

The 1990 IUCN Red List of Threatened Animals contains 29 species of waterbirds which occur in the Africa-Eurasia region. Of these, 15 are migratory species covered under this Agreement. All are considered to be of high priority for conservation action. Several other species of waterbirds, although perhaps not globally threatened, are at serious risk throughout all or a large part of their ranges in the Africa-Eurasia region. Any species of waterbirds or biogeographically discrete population which consists of less than 10,000 individuals is considered to be at risk, even if there is no definite evidence that the population is declining. In addition, any species or population which contains less than 25,000 individuals and is currently declining is considered to be at risk.

For the purposes of this Agreement, species or populations are considered to be "threatened" and therefore eligible for inclusion in Category I if they are one of the following:

* globally threatened species listed in the IUCN Red List of Threatened Animals;
* species or biogeographical populations which are thought to number less than 10,000 individuals;
* species or biogeographical populations which are thought to number less than 25,000 individuals and appear to be declining throughout all or a large part of their ranges in the Africa-Eurasia region.

Those species and populations of waterbirds which fall into this category are listed in Table 6.

2.2.2. Category II: Vulnerable Species and Populations

In addition to the threatened waterbirds in Category I, there are many species and populations of migratory waterbirds in the Africa-Eurasia region which are clearly at risk from the continuing loss and degradation of their wetland habitats, heavy hunting pressure and a general increase in levels of disturbance from human activities. Although not in immediate danger of becoming threatened with extinction, these species require special attention if their populations are to be restored to a favourable conservation status.

For the purposes of this Agreement, species or populations are considered to be "vulnerable" and therefore eligible for inclusion in Category II if they are one of the following:

* species or biogeographical populations which are thought to number less than 25,000 individuals and are dependent on a habitat type which is widely under threat in the Africa-Eurasia region.
* species or biogeographical populations which are thought to number less than 100,000 individuals and appear to be declining throughout all or a large part of their ranges in the Africa-Eurasia region.
* species or biogeographical populations for which no numerical data are available but which appear to be scarce throughout their ranges in the Africa-Eurasia region and which are dependent on a habitat type which is widely under threat.

Those species and populations of waterbirds which fall into this category are listed in Table 7.

2.2.3. Category III: Potentially Vulnerable Species and Populations

There are many species and populations which, although still relatively abundant in parts of their range in the Africa-Eurasia region, have shown a marked decline in numbers in recent years. Although not as yet considered to have an unfavourable conservation status, these species and populations are likely to become threatened if their decline in numbers continues unabated. Table 8 gives a list of these species and populations, identified on the basis of the following criterion:

* species or biogeographical populations with a population size of over 100,000 individuals, which have shown a marked decrease in numbers over the whole or a large part of their range in the Africa-Eurasia region in recent decades.

2.2.4. Category IV: Localized Species and Populations

Some species, because of their highly specialized requirements for nesting, moulting, roosting

or feeding, tend to congregate in very large numbers at a small number sites. Consequently, these species are often extremely vulnerable to change, with the loss of only one or two sites through habitat destruction or increased disturbance possibly having a major impact on the population. Although population levels may have remained relatively stable or shown some increase in recent decades, the vulnerability of these species to sudden change gives cause for concern. Table 9 gives a list of these species and populations, identified on the basis of the following criterion:

* species and populations with a population size of over 10,000 individuals, which are stable or increasing, but which are restricted to only a few key sites during a part or the whole of their annual cycle.

3. HABITAT AND IMPORTANT SITES

3.1. Introduction

The greatest threat to the populations of migratory waterbirds in the African/ Eurasian Region is loss of their natural wetland habitats as a result of man's activities. At northern latitudes in Europe and Western Siberia, where many of the region's migratory waterbirds breed, human population densities remain low, and large areas of wetland habitat remain almost intact. However, throughout the densely populated regions of Europe and Africa, as also in the arid regions of the Middle East and Africa where water resources are scarce, the great majority of natural wetland ecosystems have been extensively modified by man's activities and are now under some form of threat.

The conversion of natural wetlands into agricultural land began in the Mediterranean Basin and parts of the Middle East some 6,000 years ago, and has remained the principal reason for the loss of wetland habitat almost throughout the region. During the present century, large-scale flood control, drainage and irrigation projects have played a major role in this process. However, there are many other serious threats to wetlands. In many countries, especially in Africa, deforestation, overgrazing and slash-and-burn farming have led to severe soil erosion which in turn has resulted in increased sedimentation in wetlands downstream. Many of the major dams and barrages constructed for irrigation, generation of electricity and flood control have had serious downstream effects, and many important floodplain ecosystems have been destroyed. Throughout the arid regions of the Middle East and North Africa, the diversion of rivers and streams and excessive pumping of groundwater water for irrigation purposes have caused the loss of many natural wetlands. Coastal wetlands are under extreme pressure almost everywhere, from drainage for agriculture, urban and industrial development, and disease control. In parts of Africa, large areas of mangrove forest have been cleared for agriculture or degraded by non-sustainable timber exploitation. Pollution from domestic sewage, industrial waste and agricultural effluents poses a major threat to wetlands in many areas, while oil pollution is rapidly becoming one of the most serious threat to coastal wetlands in parts of the Middle East and Northwest Europe.

The Convention on the Conservation of Wetlands especially as Waterfowl Habitat (the Ramsar Convention) calls for the wise use of wetland resources in general, and for the protection of wetlands of international importance. At the time of ratification, Contracting Parties agree to designate at least one wetland for inclusion in the Convention List of Wetlands of International Importance, and to formulate and implement their planning so as to promote the conservation of the wetlands included in the List, and as far as possible the wise use of wetlands throughout their territory. Contracting Parties are also required to consider their international responsibilities for the conservation, management and wise use of migratory populations of waterbirds when designating wetlands for the List. However, the Ramsar Convention does not

specifically require countries to work together to conserve "chains" of wetlands of international importance which harbour the same migratory populations of waterbirds at different stages in their annual cycle.

The challenge for this Agreement is to provide a framework for the necessary international cooperation in the wise use of wetlands which will ensure the conservation of a network of sites used by particular migratory populations of waterbirds. The central aim of maintaining waterbird populations in a favourable conservation status can only be achieved when the continuing loss of wetlands is brought to halt, and a policy to restore lost wetlands is adopted. The African-Eurasian Waterbird Agreement and the Ramsar Convention will work together in this respect.

3.2. Disturbances and Threats to Waterbird Habitat

3.2.1. Drainage

Drainage is probably the most widespread human-induced threat to wetlands in many regions of Europe, Southwest Asia and Africa. Large Government and EC subsidies are still being paid in some countries to drain wetlands for agricultural purposes. For example, in Britain some 40% of coastal wetlands have been lost since 1960; in southwest France some 80% of the marshes of the Landes have been drained; in Portugal some 70% of the wetlands of the Western Algarve have been converted for agricultural and industrial development (Dugan, 1990); while in Turkey, many of the countries largest wetlands have been affected by drainage programmes (Grimmett and Jones, 1989). With this continuing drainage of wetlands, large areas of waterbirds habitat are lost.

3.2.2. Canalization and Dam Construction

Canalization and dam construction can have an important, and in some cases dramatic, impact on wetlands. Table 10 illustrates the expected impacts of existing and proposed dams on two important floodplain systems in West Africa. Many huge dam projects elsewhere in the world have come under severe criticism because they have failed to produce the predicted benefits for agriculture or industry, while at the same time causing a massive reduction in the productivity of natural floodplain wetlands downstream and disruption of the riverine and floodplain fisheries.

3.2.3. Irrigation Programmes

Many wetlands experience a reduction of inflowing water because of large-scale irrigation projects in the surrounding areas. Water levels decrease and salt levels increase when outflow plus evaporation exceeds inflow plus precipitation. The Aral Sea, once the world's fourth largest lake, now ranks only sixth, because of the diversion of large quantities of water from the Amu Darya and Syr Darya rivers for irrigation purposes since 1960. At the present rates of inflow, the Aral Sea will continue to shrink and by the year 2000 will be reduced to two-thirds of its present size (Dugan, 1990).

3.2.4. Acidification

Acid rain is a serious threat to wetlands in industrialized regions of Europe and to specific wetland types. In Sweden and Norway, many wetlands have been seriously damaged. More than a fifth of Sweden's 85,000 medium to large lakes are now acidified, 4,000 of them seriously. In

Norway, fish populations had disappeared from an area covering 13,000 sq.km by 1980. The wetland types most seriously threatened by acid rain are those which are poor in nutrients, such as fens and bogs (Dugan, 1990).

The effects of this acidification on waterbird populations are not entirely negative. While the disappearance of fish will lead to a reduction in the numbers of fish-eating birds, a reduction in fish densities is often followed by an increase in the abundance of aquatic insects which can have a positive effect on some duck species such as *Anas crecca* and *Bucephala clangula* (Ruger *et al.*, 1986).

3.2.5. Chemical and Oil Pollution

Chemical pollution of the environment may affect waterbirds in many ways. The occurrence of PCBs in the River Rhine affected the tern populations of Griend in the Dutch Waddensea during the 1960s (Koeman *et al.*, 1967). The breeding success of cormorants (*Phalacrocorax* spp.) seems to be much lower in areas with polluted feeding grounds (Boudewijn *et al.*, 1989). This phenomenon has also been recorded in *Podiceps cristatus* and *Aythya fuligula* (Scholten and Foekema, 1989). In Greece, large concentrations of pesticides have been found in the eggs of the endangered *Pelecanus crispus*. Although this has not as yet had any measurable effect on breeding success, a further deterioration in the situation could be serious (Crivelli *et al.*, 1989).

Every year, thousands of waterbirds are killed in oil spills, and in large spills the number of casualties can amount to tens of thousands. The divers, grebes, cormorants and sea-ducks are particularly vulnerable in this respect, as they spend a large part of their annual cycle in coastal waters. Despite improvements in safety standards for transporting oil and better international legislation, the frequency of major oil spills is increasing as the industry expands and the tankers become larger and larger. At the same time, the possibility of major oil pollution occurring as a result of warfare or terrorist activities is also increasing, as witnessed by the catastrophic spill in the Persian Gulf during the recent Gulf War.

3.2.6. Recreation and Disturbance

Disturbance can pose a serious threat to populations of migratory waterbirds, and has an important impact on the suitability of wetlands for waterbirds. Recreational activities, such as boating, wind-surfing, water-skiing and hunting, at major feeding and roosting sites can disturb large numbers of birds, with a negative influence on their energy budgets. Regular disturbance at a wetland can reduce the carrying capacity of that site for waterbirds.

3.3. Effects of Wetland Loss and Degradation on Migratory waterbirds

For most migratory waterbirds which breed at high latitudes in northern Europe, Western Siberia, Greenland and northeastern Canada, the loss or degradation of their breeding habitats has not as yet proceeded to the point at which it is a cause for concern. In general, it seems that the breeding grounds of these species remain in a relatively good condition. Some of these northern breeders undertake only short migrations, and remain throughout the year in regions where human population densities are low and wetlands remain largely intact. Examples include various divers, grebes, sea-ducks and gulls, which winter no further south than the Baltic and North Seas. Most of these species remain in a favourable conservation status.

However, most migratory waterbirds of the Africa-Eurasia region are dependent for a part or the whole of their annual cycles on wetlands in densely populated regions of temperate and

southern Europe, the Middle East, North Africa and Africa south of the Sahara. On the whole, wetlands in Subsaharan Africa have fared better than those further north, and many Afrotropical waterbird species remain widespread and abundant. However, with the recent rapid increase in the pace of development in many African countries and continuing exponential human population growth, the situation is changing rapidly. Major development projects currently in progress or planned will result in the destruction of large portions of some of Africa's most important wetland areas, and it seems inevitable that major losses will occur at wetlands throughout the continent within the next two or three decades.

By contrast, in much of Europe, North Africa and the Middle East, most major wetland systems have already been grossly modified by human activities and in many cases reduced to a tiny fraction of their former size. With the recent increase in conservation awareness and greatly enhanced appreciation of wetland values in these regions, major efforts are now being made to conserve the remaining wetlands, and to restore many of the wetlands that have been degraded. An extensive network of wetland reserves has been created, and many species of waterbirds now enjoy a high level of protection in their main breeding, staging and wintering areas. As a result, a number of species have increased considerably in recent years, after a long period of decline during the first half of the century.

However, for many other species, the situation remains precarious. This is especially the case with species which have their centre of distribution around the Mediterranean, Black and Caspian Seas, where wetland loss and degradation continue at an alarming rate. No less than ten of the fifteen Red Data Book species covered by this Agreement are birds which are dependent for at least a part of their annual cycle on wetlands around these inland seas. The continued survival of these threatened species and many other populations of waterbirds in the Mediterranean, Black Sea and Caspian regions is becoming increasingly dependent on the presence of wetland reserves and other protected areas where the birds can find sanctuary during the breeding season and in winter. In regions where few such sanctuaries exist, populations of both migratory and sedentary species of waterbirds have been decimated, with many species becoming locally extinct.

On the other hand, not all species of waterbirds have suffered as a result of man's conversion of wetlands to other uses. A number of species of migratory waterbirds have been able to adapt to, and in some cases benefit from, man's activities. This is especially the case with those species that have been able to move from natural grassy marshes into the wet meadows, rice fields or other crop-lands which have replaced them. These include *Bubulcus ibis*, several species of geese, various plovers and lapwings, *Gallinago gallinago*, *Limosa limosa* and *Tringa glareola*. Arable land now constitutes the most important wintering habitat for several species of geese in Northwest Europe, while rice fields have become important for several species of shorebirds, notably *Limosa limosa* and *Philomachus pugnax*, in West Africa. Many species of ducks habitually feed in flooded agricultural land and rice fields, particularly *Dendrocygna* spp. and some of the dabbling ducks, and several species of herons and egrets will also utilize this habitat. Wherever sufficient disturbance-free areas are available for roosting and loafing, these species continue to survive in appreciable numbers. An extreme example of this adaptation to man-made environments can be seen amongst some of the gulls in Northwest Europe which have taken to nesting on city roof-tops and feeding on rubbish tips.

3.4. Wetlands of International Importance for Waterbirds

As knowledge of the total size of many waterbird populations has improved, and as more and more information has become available on the numbers of waterbirds utilizing individual wetlands, it has become possible to develop objective criteria for determining the importance of particular sites for particular species. The most widely accepted criteria are those developed

in relation to the Ramsar Convention, to assist in the identification of wetlands suitable for designation as Ramsar Sites. One of the Ramsar criteria, the so-called "1% criterion", has now become established as the standard for assessing the international importance of individual sites for species of waterbirds.

Considerable progress has already been made in the identification of wetlands of international importance for migratory waterbirds in the Africa-Eurasia region. *A Directory of Western Palearctic Wetlands* (Carp, 1980) lists almost 900 wetlands, most of which are important for migratory waterbirds, in 44 countries in Europe, North Africa and the Middle East. *A Preliminary Inventory of Wetlands of International Importance for Waterfowl in West Europe and North Africa* (Scott, 1980) describes 544 wetlands in 22 countries, while *Important Bird Areas in Europe* (Grimmett and Jones, 1989) contains information on no less than 1,384 important sites for waterfowl in 32 countries including Greenland, Svalbard, Cyprus, the Azores, Madeira, the Canary Islands and the Asian part of Turkey. A full list of these important sites for waterfowl has subsequently been published separately as *Wetlands for the Shadow List of Ramsar Sites* (Langeveld and Grimmett, 1990). It is anticipated that an inventory of important wetlands in the Commonwealth of Independent States, Estonia, Latvia, Lithuania and Georgia will be initiated in 1993.

Several countries in North and West Africa were included in inventories compiled by Carp (1980) and Scott (1980), but little information was available at that time and coverage was very skimpy. However, the wetlands of Africa have recently been described in some detail in *A Directory of African Wetlands* (Hughes and Hughes, 1982). This Directory covers all 47 countries on the continent of Africa as well as Madagascar, and makes at least some reference to all except the most minor wetlands. A considerable amount of information on waterbirds is included, but in the absence of adequate census data, it was not possible to assess the importance of individual sites on the basis of any objective criteria. Thus, while the *Directory of African Wetlands* provides valuable information on most of Africa's major wetland systems, it does not provide a list of sites of special importance for waterfowl.

Parts of the Middle East were incorporated in the *Directory of Western Palearctic Wetlands* (Carp 1980), but very little information was given for most of the listed sites, and the Arabian Peninsula was excluded. A recent overview of the wetlands of the Middle East (Scott, in press) lists 248 wetlands of international and national importance, the great majority of which are important for migratory waterbirds. The International Council for Bird Preservation (ICBP) and IWRB are currently sponsoring a project on important bird areas in the Middle East which will contain detailed information on all wetlands of special importance for migratory waterbirds in the 14 countries in the region. There are also plans to carry out a wetland inventory in the Middle East along the lines of the Asian Wetlands Inventory, which extended no further west than Pakistan.

In addition to these various international inventories, there have been a number of national and regional inventories or lists of wetlands of special importance for waterbirds. Most countries in Western Europe and several countries in Southwest Asia and Africa have now produced their own lists of priority sites, while the European Commission has compiled a list of areas worthy of special protection in the European Community. A report on the protection status of wetlands of international importance for Anatidae is currently being prepared as a background document for this Agreement (Van Roomen and Boere, in prep).

The International Waterfowl Census has proved to be an extremely valuable tool in the identification of wetlands of importance for migratory species. Since its inception in Europe in 1967, the Census has rapidly grown to encompass over 20,000 sites in over 65 countries in Europe, Southwest Asia and Africa. IWRB is currently analysing the data derived from the Census to compile a list of wetlands of international importance for waterbirds on the basis of the 1% criterion (*i.e.* sites which regularly support at least 1% of a biogeographical population

of a species).

By the time that the Important Bird Areas Project in the Middle East and the proposed C.I.S. and Middle East wetland inventories have been completed, most if not all of the critical sites for migratory waterbirds in Europe, North Africa and Southwest Asia will have been identified. There are, however, several important regions of Africa which, because of their vast size and remoteness, have never been adequately surveyed by waterbird experts. With the recent rapid increase in awareness of wetland values almost throughout the continent, and with the *Directory of African Wetlands* as a stimulus, it is anticipated that many of these hitherto poorly known wetlands will be explored in some detail in the coming years. Until this is the case, however, these wetlands will continue to constitute an important unknown with respect to the present status of certain species.

3.4.1. Moulting Sites

The period of moult, especially wing moult, is a critical time in the annual cycle of waterbirds. Food requirements are high because of increased energy demand for thermo-regulation and feather synthesis (especially in herbivorous species). There is also an increased risk of predation because of decreased manoeuvrability (incomplete wings) or even complete flightlessness (in Anatidae). It is therefore likely that most waterbirds will have special habitat requirements during the moulting period, relating to feeding conditions and safety from predators. In a number of species, notably some Anatidae, huge numbers of birds concentrate at a few favoured localities for the wing moult, when they become flightless. At this time, the birds are extremely vulnerable to disturbance, over-exploitation and man-made catastrophes (*e.g.*, oil spills in coastal areas used by moulting *Tadorna tadorna*). Thus, sites with large concentrations of moulting waterbirds have an added importance.

3.4.2. Staging Sites

Various migration strategies can be observed among waterbirds. During the course of their migrations, most long-distance migrants need to break their journey, often at several points, to renew their fat and protein reserves. The presence of suitable staging areas with abundant food resources is thus of crucial importance. Some species use only a very small number of sites, probably because of their highly specialized feeding and habitat requirements. These sites may be extremely important, as it seems that in many cases no other suitable staging areas are available. Thus, the loss or degradation of even one of these sites could have serious consequences for the species concerned (Smit and Piersma, 1989).

The final staging area during the spring migration can be of crucial importance, especially for species of waterbird breeding in the high arctic. When these birds arrive on the tundra, feeding conditions may be poor, and the extra energy reserves obtained at the last staging area may prove vital in helping them to overcome this initial unfavourable period. In *Branta bernicla*, a correlation exists between body condition prior to departure from the Dutch Waddensea and breeding success in the same season (Ebbinge, 1985).

Some sites along the migration route may act as important refuges during years with unusually adverse weather conditions. Under normal conditions, these sites may hold only small numbers of birds, but in certain years, very large numbers of birds may be present. Although these sites may not qualify as wetlands of international importance on the basis of the Ramsar numerical criteria, they can be of vital importance for some species in some years. This has been illustrated for *Calidris canutus* breeding in Siberia, which only makes use of certain wetlands in west-central France when wind conditions between West Africa and West Europe are particularly unfavourable for migration (Smit and Piersma, 1989).

At some sites which are primarily used as staging areas by waterbirds, the turnover rate may be very high, and thus the total number of birds using the site during the course of a migration season may be much higher than the number of birds present at any one time. This phenomenon has been illustrated for *Calidris alpina* at a small wetland in Morocco (Kersten and Smit 1984). The number of birds that use the area during spring migration was found to be three times higher than the number present at any one time. In the case of *Branta leucopsis* wintering in the Netherlands, it has been shown that at one particular site, although no more than 10,000-20,000 birds are present at the same time, the total number of birds which make use of the area is about 40,000, *i.e.* about 60% of the Dutch wintering population (Ebbinge, 1989).

3.4.3. Species with Dispersed Distribution

Although most waterbirds will benefit from site protection because of their gregarious behaviour, several species are widely dispersed, particularly during the breeding season. The conservation of these species can seldom be achieved through the establishment of reserves alone, since this would require the creation of enormous reserves to protect a significant proportion of the population. Effective conservation will be dependent on the implementation of ecologically sound land-use practices over large areas of the species' range as part of an overall land-use strategy.

4. GENERAL OBJECTIVES OF THE AGREEMENT

1. To maintain or restore the abundance and diversity of African-Eurasian migratory waterbird populations in a favourable conservation status.

2. To conserve sites and habitats of international importance for African/ Eurasian waterbird, and maintain the ecological character of such areas, especially if these sites are part of a network used by the same migratory waterbird populations.

3. To promote overall land-use strategies based on ecological knowledge and wise-use principles.

4. To ensure that any taking and/or non-consumptive use of African/ Eurasian waterbird is based on wise-use principles and is sustainable on a long-term basis.

5. To stimulate greater cooperation between Range States in the research, monitoring and management of African-Eurasian waterbird.

6. To promote better exchange of information between Range States and wider dissemination of the results of research, monitoring and management activities relating to African-Eurasian waterbird.

7. To promote education and the dissemination of information relevant to the conservation of African-Eurasian waterbird.

8. To provide special support to developing countries for the activities under this Agreement.

II RECOMMENDATIONS FOR CONSERVATION AND MANAGEMENT

5. SPECIES CONSERVATION

5.1. Legislation and Law Enforcement

All Range States in the Africa-Eurasia region should be required to enact comprehensive legislation for the protection of migratory waterbirds and should mandate a lead agency to administer this legislation. The legislation should provide the requisite level of protection for all species of migratory waterbirds occurring in the Africa-Eurasia region. Such legislation could include the following elements:

* A list of species and populations which need to be given complete protection at all times of the year. These species and populations, listed in Tables 6 and 7, are threatened or vulnerable throughout the whole or a large part of their range in the Africa-Eurasia region. In some cases, it would be desirable to extend the protection to any other species which are very similar in appearance to the threatened species.
* Full protection for breeding birds, their nests, eggs, pulli and nestlings. Some traditional subsistence harvesting of eggs and nestlings might be permitted in exceptional circumstances, but only when it can be shown that this is taking place on a sustainable basis. There should be no exceptions for the harvesting of adult birds during the breeding season.
* A detailed series of hunting regulations, including lists of species that may or may not be hunted, descriptions of the hunting methods that are permitted, the length of the open seasons for quarry species, a system for obtaining information on hunter kill (bag statistics), the requirements to obtain a licence for waterbird hunting *etc.*
* Strict regulations concerning trade in waterbird species, whether alive or dead.
* Prohibition of the introduction of exotic species of waterbirds in the Africa-Eurasia region.

* A licensing system for the re-introduction of indigenous species into areas in which they have been extirpated in the wild.
* Strict controls on the management of captive populations of waterbirds to minimize the risk of hybridization and deliberate or accidental introduction of genetically contaminated stock into the wild.

Some such legislation exists in most Range States, but in many cases it is now very much of out date, imprecise and insufficiently restrictive to conserve waterbird populations effectively. In some Range States, exotic species of waterbirds have already become well established in the wild as a result of deliberate or accidental introductions. In these cases, Range States should take whatever measures are necessary to ensure that the exotic species do not spread in a manner potentially hazardous to indigenous species of waterbirds.

Enforcement of existing and new legislation relating to waterbird protection will also need to be improved almost throughout the region. An analysis of the reasons for ineffective enforcement is urgently needed. Responsible institutions should then be strengthened and organized so that the laws relating to waterbird protection can be enforced effectively.

5.2. Emergency Situations

In some situations, waterbird populations can suddenly be subjected to much higher levels of mortality than normal. These emergency situations can arise as a result of natural phenomena, such as periods of exceptionally cold weather or prolonged droughts, or as a result of man-made

disasters, such as major oil spills. International cooperation is required to address these situations without delay. For example, closing of hunting may be necessary during prolonged periods of cold weather or drought, when birds may be forced to move to unfamiliar areas, often in neighbouring countries, or to concentrate in huge numbers at a few sites. In both cases, the birds, already weakened by the adverse weather conditions, will be extremely vulnerable to excessive hunting pressure. Similarly, international cooperation will often be required to tackle major oil spills or other forms of water pollution, which can spread far beyond the country of origin.

Those emergency situations requiring immediate international cooperation should be defined, and the most vulnerable waterbird species identified. Appropriate emergency procedures should then be developed. Such measures could include the protection of sites which act as refuges during unfavourable weather conditions, a complete ban on waterbird hunting during extreme conditions, and a reduction in other forms of disturbance (*e.g.*, recreation) at sites with large concentrations of birds. A series of recommendations should be developed to assist Range States in tackling these emergency situations, and a practical procedure for international cooperation should be established. A Technical Committee, established under this Agreement, should be empowered to make interim decisions and recommendations. The species and populations listed in Tables 6, 7 and 9 should be given the highest priority in emergency situations.

5.3. Species Conservation Plans

International Species Conservation Plans should be developed for all threatened and vulnerable species or populations of waterbirds in the Africa-Eurasia region. These species and populations are listed in Tables 6 and 7. Each plan should describe the present status of the species or population in question, its ecological requirements, the important sites and the conservation problems. The plan should identify those actions which are required to protect the remaining populations and to promote their recovery to a favourable conservation status. Detailed status reports have already been prepared for the White-headed Duck (*Oxyura leucocephala*) (1990), Slender-billed Curlew (*Numenius tenuirostris*) (1991) and Marbled Teal (*Marmaronetta angustirostris*) (1993), and a full International Species Conservation Plan has been prepared for the Greenland White-fronted Goose (*Anser albifrons flavirostris*) (1993). The latter should be used as a model for conservation plans for the species and populations listed in Tables 6 and 7.

Species Conservation Plans may also be desirable for those common species of waterbirds which frequently come into conflict with human interests, *e.g.*, species of whistling-ducks (*Dendrocygna* spp.) which cause damage to crops in West Africa, species of geese (*Anser* spp. and *Branta* spp.) which cause damage to crops in Northwest Europe, and species of fish-eating birds (notably cormorants *Phalacrocorax* spp.) which cause damage at fish-farms.

6. HABITAT CONSERVATION

6.1. Establishment of a Network of Protected Areas

The continued survival of many species of migratory waterbirds in the African/ Eurasian Region will be dependent on the protection and conservation of a network of wetland sites which are of critical importance as breeding, moulting, staging or wintering areas. In many parts of the region, some types of natural wetland ecosystem have now all but disappeared outside of protected areas. This is particularly the case with reed-bed ecosystems and natural flood meadows in parts of Western Europe, and spring-fed marshes and shallow freshwater lakes in parts of North Africa and Southwest Asia. It seems likely that within the next two to three decades, many of the larger waterbirds of West Eurasia and Africa will have become almost

confined to protected areas where they can find adequate natural foods, secure nesting and roosting sites, and freedom from persecution.

Whether or not populations of migratory waterbirds will survive will depend on the effectiveness of the reserve networks in providing a "green route" from breeding grounds to wintering areas via a chain of protected wetlands which can serve as moulting and staging areas. For some species and populations, the loss of a single important staging area or moulting ground could be disastrous.

The concept that Parties and Range States should work together to conserve areas that are important for the same populations of migratory species but at different times of the year is fundamental to the Bonn Convention. Thus, the establishment of an adequate network of protected areas to ensure the survival of migratory populations of waterbirds is a basic requirement of this Agreement. Range States should work together with international conservation bodies and funding agencies to provide funds for the acquisition and protection of critical wetland areas, to prepare and implement management plans for these wetland reserves, and to restore degraded wetlands to their natural condition whenever possible.

Ideally, all wetlands of international importance for migratory waterbirds (on the basis of the numerical criteria developed in relation to the Ramsar Convention) should be safeguarded. In some cases, because of the fragility of the ecosystem or its high importance for threatened species, strict protection may be necessary in the form of a legally gazetted nature reserve or waterbird sanctuary. In other cases, however, designation under the Ramsar Convention might provide an effective level of protection, and would ensure that the site receives the international attention which it deserves. Designation under the Ramsar Convention has the advantage that it does not preclude the utilization of wetland resources at these sites. In most of the developing countries of Africa, the most cogent arguments for wetland conservation relate to the high economic values of wetlands and the potential for sustainable exploitation of their natural resources which include the migratory waterbirds.

A very extensive network of wetland reserves already exists in the African/ Eurasian Region. However, the effectiveness of these reserves in protecting an adequate network of breeding, staging and wintering areas for the region's migratory waterbirds remains unclear, and should be determined as an urgent priority.

Immediate priorities in the creation of new protected areas should be determined on the basis of the requirements of species listed in Tables 6 and 7 - the threatened and vulnerable species with an unfavourable conservation status. However, even for some of these relatively well known species, insufficient information is available to identify the minimum network or chain of wetlands which needs to be safeguarded to ensure that their populations survive. A report is currently being prepared on sites of major importance for particular populations of Anatidae in Europe throughout their annual cycle (Roomen and Boere, in prep), but much more work needs to be carried out on the migration routes of most other species in Europe and elsewhere in the region before the requirements for a comprehensive network of reserves can be determined.

Although a significant proportion of the wetlands of major importance for waterbirds in West Eurasia and Africa enjoy some form of legal protection, in reality, the enforcement of the protected areas is often very poor. Problems such as the encroachment of agricultural land, illegal drainage, illegal hunting, overgrazing, overfishing and pollution are widespread, and can only be resolved by a substantial improvement in the relevant legislation and management of the sites. In many areas, improvement in the integrity and management of wetland reserves

could provide far more immediate benefits for migratory waterbirds than the establishment of yet more reserves which exist only on paper.

6.2. Wetland Management and Restoration

Management plans should be developed for all wetlands which have been identified as being of critical importance for migratory waterbirds, whether or not they are already protected within the existing network of reserves. The guiding principle in the development of these management plans should be the maintenance of those ecological characteristics of the site which are of importance to migratory waterbirds through the implementation of sound management practices and, where appropriate, utilization of the wetland resources on a sustainable basis (*i.e.* the "wise use" concept as developed under the Ramsar Convention).

The exploitation of fisheries resources and other valuable wetland products on a sustainable basis is by no means incompatible with waterbird conservation. Indeed, some desirable management practices in wetland reserves, such as the planting of swamp forest trees and encouragement of marsh grasses, will not only improve the habitat for many waterbird species, but can also provide a valuable sustainable harvest of timber, fuelwood, fodder and materials for thatching and weaving. A variety of possibilities for people's participation present themselves in this context. Similarly, the development of nature tourism based on the often spectacular concentrations of migratory waterbirds will not only increase support amongst the general public for waterbird conservation, but can also, if properly managed, provide a valuable source of income for local people.

Greater efforts should be made by Range States to restore degraded wetlands which were formerly important for migratory waterbirds. A considerable body of expertise now exists in this field in parts of Europe, and numerous techniques have been developed to restore degraded wetlands to a near-natural condition and re-create optimum conditions for migratory waterbirds and other wildlife.

Many Range States in the Agreement Area may lack the financial resources to prepare and implement management plans for their wetland reserves or to carry out extensive restoration work at degraded sites. One possible solution might be found through the concept of "twinning", whereby the authority responsible for the management of a waterbird reserve in a wealthy nation provides assistance to the authority responsible for the management of a reserve in a poorer nation which shares the same migratory population of waterbirds. Such assistance might include provision of equipment and expertise, training programmes, staff exchanges and direct financial assistance.

As more and more natural wetland ecosystems are degraded and lost, man-made wetlands are becoming increasingly important for migratory waterbirds, particularly in Europe and Southwest Asia where man-made wetlands now constitute some of the most important refuges for wintering waterbirds. Large reservoirs, especially, can provide ideal roosting sites for many species. Range States are urged to devote more attention to the values of man-made wetlands as habitat for migratory waterbirds and other wildlife as these assume greater importance. In the creation of new wetlands for whatever purpose (*e.g.*, water storage reservoirs, gravel pits and settling ponds), consideration should be given to the requirements for nature conservation and the needs of migratory waterbirds in particular. Management plans should be developed and implemented for key man-made wetlands, and these should be designed to create a diversity of habitat types.

The establishment and management of wetland reserves cannot alone safeguard many of the

important sites and their migratory waterbirds, because many of the threats to which these wetlands are exposed have their origins in external sources, outside the control of the reserve managers. Problems such as siltation caused by soil erosion in the watershed, pollution from urban and industrial development, contamination with pesticides and fertilizers in run-off, diversion of water supplies for irrigation, and disruption of river flow by damming projects and flood control schemes upstream, are usually outside the control of the authorities responsible for the protected areas. The mitigation of these threats can only be achieved through a general improvement in the conservation of water resources at regional level. This would require an improvement in the protection and management of watersheds, stricter controls on all forms of water pollution, and better land-use planning. Clearly, there is a need for an integrated approach to wetland management which will involve many government agencies and people at various levels.

6.3. Management of Dispersed Waterbird Species

A strategy for the conservation of dispersed breeding waterbirds should be developed. Regions of particular importance for dispersed breeding species (*e.g.*, areas of arctic tundra or large lake systems) should be defined. Land-use strategies should then be developed for these regions based on sound ecological principles. Much of the burden of responsibility for the conservation of dispersed breeding species on their breeding grounds rests with Finland, Iceland, Norway, Russia and Sweden, which contain the principal breeding grounds for about 60 of the species covered by this Agreement.

6.4. Existing Strategies for Wetland Conservation

Many of the general actions required to conserve wetland ecosystems have been discussed in a number of international fora and are now well documented in the proceedings, recommendations and action plans emanating from these conferences and meetings. Two recent international conferences of particular relevance to this Agreement are an International Conference on Managing Mediterranean Wetlands and their Birds for the Year 2000 and Beyond, held in Grado, Italy, in 1991, and an International Conference on Wetland and Waterbird conservation in South and West Asia, held in Karachi, Pakistan, in December 1991. Both conferences produced a series of recommendations for conservation action, the former under the title *A Strategy to Stop and Reverse Wetland Loss and Degradation in the Mediterranean Basin* (Anon., 1992a) and the latter under the title *Action Programme for the Conservation of Wetlands in South and West Asia* (Anon., 1992b). Range States in the Mediterranean Basin and Southwest Asia are urged to implement the recommendations of these conferences and other relevant international meetings, especially as they relate to the conservation of migratory waterbirds in the Africa-Eurasia region.

7. EXPLOITATION Of WATERBIRDS

7.1. Hunting

If migratory waterbird populations in the Africa-Eurasia region are to be maintained in a favourable conservation status, it is essential that any exploitation of these populations be carried out on a sustainable basis. The management of hunting activities is thus of paramount importance if the stocks of migratory waterbirds are to be utilized wisely.

The hunting of migratory waterbirds is widespread throughout the African/ Eurasian Region. In Europe and parts of Southwest Asia, sport hunting is much the commonest form of hunting,

and market hunting is now widely banned. In general, the number of species which can be legally hunted is relatively small and mainly restricted to ducks, geese, coots and some shorebirds. In some parts of Southwest Asia, notably Iran and Iraq, and in many countries in Africa, commercial hunting for local consumption or trade remains the predominant form of hunting, although sport-hunting, particularly by tourists, is important in some areas (*e.g.*, parts of West Africa). Commercial hunting generally involves a far wider range of species than sport hunting, and in some areas involves the harvesting of large numbers of eggs and nestlings of waterbirds. Illegal hunting is common in many countries, and continues to pose a serious threat to some species, even in protected areas.

Heavy hunting pressure is clearly an important factor in limiting the distribution of migratory waterbirds in densely populated regions because of the direct disturbance which it causes. This is especially the case with shooting, which reinforces the wariness of waterbirds and prevents them from utilizing areas with high densities of humans, whether or not they are hunters. Constant disturbance is likely to have a serious effect on the species' energetics. Birds which are spending much of their time on the wing, avoiding hunters and other forms of disturbance, have less time to feed, and may, by the end of the winter, be in poor condition. This could lead to reduced survival during the northward migration in spring and reduced breeding success.

Further studies should be carried out on the significance of waterbirds hunting in the Africa-Eurasia region, especially in Africa and Southwest Asia, both with respect to its impact on waterbird populations and with respect to its importance in the economy of the local people. Various means of reducing the problem of hunting disturbance should be investigated, such as the creation of special disturbance-free zones in protected areas where no human access is permitted, or the elimination of all gun hunting and other hunting techniques which reinforce the birds' wariness of man. Where there is no shooting at all, birds rapidly become accustomed to man and are therefore much less affected by disturbance.

Greater efforts should be made to rationalize hunting regulations throughout the Africa-Eurasia region and to improve the level of enforcement of these regulations. Great progress has been made in the rationalization of hunting regulations and practices in Europe, but much still needs to be done, while in Southwest Asia and Africa, almost no attempt has been made to manage hunting activity at regional level. If migratory waterbird populations are to be utilized by sport hunters, market hunters and subsistence hunters on a sustainable basis, various steps will have to be taken in the very near future, before populations become so low that they are unable to withstand any significant harvest. These should include the following:

* A review of all legislation relating to the hunting of migratory waterbirds in the Africa-Eurasia region.
* Immediate restriction of the permissible quarry species to those species or populations which are believed to have a favourable conservation status and to be sufficiently abundant to support an annual harvest.
* Modification, where necessary, of the open seasons for waterbird hunting, to prohibit hunting during the breeding season.
* Assessment of the extent and potential impact of the harvesting of eggs, pulli and nestlings of migratory waterbirds.
* A review of hunting practices and hunting methods with a view to imposing restrictions on the use of particularly harmful practices and techniques.
* Introduction of more stringent restrictions on the use of lead shot in waterbirds hunting. (It is recommended that all Range States in Europe and North Africa be required to implement a complete ban on the use of lead shot in wetlands within three years of this Agreement coming into force).
* An assessment of the annual harvest of migratory waterbirds according to species, hunting method and type of hunter (sport hunter, market hunter, subsistence hunter). Wherever

possible, Range States should develop a reliable system for collecting bag statistics.

* An assessment of the economic importance of market hunting and subsistence hunting in those regions and communities where hunting is an important activity.
* Preparation of a series of guidelines on waterbird hunting in the Africa-Eurasia region, to assist governments of Range States in refining their hunting legislation and managing hunting activities within their territories.
* An assessment of the effectiveness of law enforcement throughout the region, and elaboration of a programme to address this problem. This could include training programmes for wardens and other law-enforcement personnel.
* Encouragement to hunters both at the community level and at national level to form their own cooperatives, clubs or national organizations to manage their activities on a rational basis.
* Development of education and awareness programmes for hunters. These should include the preparation and distribution of booklets, posters *etc.* in the relevant local languages, outlining the hunting legislation, illustrating the permissible quarry species and explaining the basis of sustainable exploitation.
* Encouragement to tourism groups involved in waterbird hunting to play an active role in waterbird conservation (*e.g.*, by establishing and managing their own wetland reserves), and to prohibit excessive hunting by foreign tourists.
* Establishment within each main waterbird hunting area of at least one disturbance-free area where all hunting is prohibited and birds can find security for roosting and loafing.

International hunting organizations such as FACE and CIC should be invited to take a lead in promoting these activities, and to play an active role in their implementation. A Technical Committee should be established under the Agreement to undertake regular reviews of hunting legislation, hunting practices and annual harvests based on information provided by the Range States and analyzed by competent research organizations.

Whenever possible, an attempt should be made to determine the harvestable surplus within a particular population of waterbirds, *i.e.* that proportion of birds which may be harvested each year without adversely affecting productivity in the following year. Harvesting levels should then be set accordingly, and imposed, where necessary, through the imposition of bag limits. Determination of the harvestable surplus in waterbird populations has, however, proved to be extremely complex, requiring detailed knowledge of the factors affecting productivity and mortality rates, population size, population trends *etc.* Even for *Anas platyrhynchos*, which has been the subject of detailed research over many decades, some of the fundamental questions remain unanswered and it is still not possible to set a threshold level for the annual harvest with any degree of confidence. Research is currently being carried out on this problem with populations of *Anser fabalis*, *Anser albifrons* and *Branta leucopsis* in Western Europe, and should be supported under this Agreement, as until some way is found of calculating harvestable surpluses on a population-by-population basis, any attempt to manage hunting activities on a sustainable basis will inevitably be very crude and to a large extent retroactive.

Many Range States in the Agreement Area have already made substantial progress in the rationalization of hunting activities throughout their territory. Excellent hunting legislation has been introduced, law enforcement is effective, and hunter groups are playing an active role in waterbird conservation. This is particularly the case in some Northwest European countries, where the populations of many popular quarry species have remained stable or even increased over the past decade. Other Range States should take full advantage of the experience gained and the expertise that exists in these countries when attempting to tackle the issue of hunting.

7.2. Eco-tourism

Tourism is now the world's largest industry, employing about 150 million people worldwide. Within this massive industry, tourism associated with wildlife and wild places ("eco-tourism") is one of the fastest growing sectors. Large concentrations of migratory waterbirds, mixed breeding colonies of pelicans, herons, storks *etc.* or flocks of popular species such as flamingos and cranes can provide an exciting spectacle for nature-loving tourists, and if properly managed, can cater for huge numbers of visitors with negligible harm to the environment. Many Range States in the Agreement Area have already made substantial progress in the development of "eco-tourism" and nature-oriented recreation at sites of importance for migratory waterbirds. Various techniques have been developed to enable the maximum number of visitors to enjoy waterbird spectacles at close quarters while at the same time causing minimum disturbance to the birds and their habitat.

The potential economic and social benefits from this type of tourism often far exceed those that might accrue from hunting. Efforts should be taken to encourage tourism wherever possible as an economically viable alternative to hunting. In all but the largest wetland areas, hunting activities will generally conflict with tourist interests, since hunted birds are wary birds, unlikely to provide the close views demanded by tourists. In many places where such conflicts have arisen, a solution has been found by recruiting the local hunters into the tourist industry.

Activities which should be carried out to promote nature tourism at wetlands include the following:

* An evaluation of the economic benefits that can be derived from tourism, through a study of selected wetlands where nature tourism has already been developed successfully.
* An assessment of the potential for tourism at sites of importance for migratory waterbirds in the Africa-Eurasia region, with recommendations for the development of tourism at all sites of particular interest to the tourist.
* Development and distribution of an information manual on the integration of "eco-tourism" with the conservation of wetlands and their migratory waterbirds.
* Development of cooperative programmes between conservation bodies and tourism groups to promote tourism and conservation at wetlands with outstanding waterbird spectacles.

7.3. Other Uses

Waterbirds can provide other economic benefits to man, either directly in the form of a harvestable resource (*e.g.*, guano and feather-down) or indirectly through their value in scientific research (*e.g.*, as "bio-indicators"). Range States should ensure that any such use of waterbirds or waterbird products is pursued on a sustainable basis. All such uses should be documented, quantified and monitored on a regular basis. If necessary, appropriate restrictions should be introduced to ensure that the waterbird populations in question are not adversely affected by the exploitation.

8. CONFLICT WITH HUMAN ACTIVITIES

8.1. Waterbirds as Pests on Agriculture and Aquaculture

Crop damage by migratory waterbirds has been reported in several parts of Europe and Africa. In West Africa, species of whistling-duck (*Dendrocygna* spp.) and some shorebirds (notably *Limosa limosa* and *Philomachus pugnax*) habitually feed in rice fields, while in Northwest Europe, various geese (*Anser* spp. and *Branta* spp.) feed extensively on winter wheat and other crops. In both cases, this can cause considerable damage to crops. Damage can be caused in two ways: damage to the top-soil and the young shoots by "puddling" of wet ground; and grazing or

digging up of the crops themselves. In Europe, most of the damage occurs on grassland and to a lesser extent on cereals and high value cash crops such as carrots (Ruger, 1985). Although grazing of crops takes place throughout the year, damage caused during the spring seems to be the most serious. In parts of West Africa, large numbers of migratory waterbirds have been poisoned because they have been perceived to be harmful to crops. While whistling-ducks can undoubtedly cause considerable damage to rice crops, recent work has suggested that the damage caused by *Limosa limosa* and probably also *Philomachus pugnax* is very limited (Altenburg and van der Kamp, 1985).

In areas where aquaculture is important, fish-eating birds such as cormorants, herons, pelicans and grebes can cause considerable damage to fish stocks. The White Pelican (*Pelecanus onocrotalus*), in particular, has been accused of causing serious damage to fish stocks in parts of Southeast Europe and Southwest Asia and has been persecuted for this reason, despite the fact that it has an unfavourable conservation status and is a protected species throughout most of its range in Western Eurasia.

Some of these problems have received a considerable amount of attention in Western Europe, and have been the subject of various seminars and publications. However, the problem has never been properly investigated in Africa or Southwest Asia. An obvious starting point would be to convene an international seminar to discuss the extent of the problem in Africa and Southwest Asia and to investigate potential solutions in the light of the extensive experience gained elsewhere in the world.

Management measures designed to reduce the conflict between waterbirds and human activities include the following:

* The establishment of special wildlife zones in areas with large concentrations of waterbirds, in combination with scaring techniques in the surrounding agricultural areas. These refuges should include enough feeding areas for the local population of waterbirds. A considerable amount of information is available on the effectiveness of various scaring techniques (Ruger, 1985).
* The establishment of a system of financial compensation for damage to crops caused by threatened, vulnerable and highly localized species (listed in Tables 6, 7 and 9). Some countries in Europe, *e.g.,* the Netherlands, Germany and Denmark, have already developed a system of financial compensation for farmers if intensive hunting to prevent crop damage is restricted or not allowed.
* Avoidance of conflict through changes in land-use, re-location of fish farms *etc.* For example, intensive farming and the cultivation of certain cash crops can be avoided in areas where large numbers of geese are always present and serious damage can be expected. Fish farms should not be built in the vicinity of large cormorant colonies, or mussel farms established in areas with large wintering populations of *Somateria mollissima*.

Efforts should be made to increase international exchange of information concerning crop damage and damage to fish farms by waterbirds. A series of advisory manuals should be produced, covering both the assessment of damage by waterbirds and the possibilities for the alleviation of the problems. Considerable progress has already been made in resolving problems of crop damage by geese in parts of Europe. The proceedings of a seminar on crop damage in Europe, convened by the Dutch Government in the Netherlands in 1991, have recently been published by IWRB under the title *Waterfowl and Agriculture: Review and Future Perspective on the Crop Damage Conflict in Europe* (Roomen and Madsen, 1992). The Dutch Government is currently preparing an advisory manual on the assessment and alleviation of crop damage by waterbirds in Europe, and this could be used as a model for other Range States. Eventually, it may be desirable to develop Species Conservation Plans for all those species of migratory waterbirds which frequently come into conflict with human interests.

8.2. Competition for Natural Food Resources

Direct competition between man and waterbirds for a limited natural food resource is probably a common phenomenon, although few instances have been documented. Well-known examples include the mussel fisheries and *Somateria mollissima*, and the cockle fishery and *Haematopus ostralegus*, in Northwest Europe. There is a widespread belief that fish-eating birds compete with fishermen in both freshwater wetlands and coastal waters, but there is little evidence to support this. Rather, it has been shown that many fish-eating birds catch a disproportionately high number of diseased and parasitized fish, and thereby help to maintain the health of the fishery. Furthermore, the guano created by fish-eating birds is an important source of nutrients in aquatic food chains, and can play an important role in maintaining the fishery. There is, however, good evidence that over-harvesting of fish stocks by man can have a detrimental effect on waterbird populations. The recent sharp decline in the breeding success of *Sterna paradisaea* in the North Sea has been attributed to over-exploitation of the small fish which constitute the tern's principal food resource. In cases such as this, where man himself will ultimately suffer from over-exploitation of the resource, the solution is straightforward, simply requiring a reduction in harvesting rates to a level which is sustainable.

A document should be prepared describing instances where exploitation of a natural food resource by man has had a negative impact on waterbird populations. Priorities for study and action can then be identified.

8.3. Mitigating the Impacts of Development on Wetland Habitats and Migratory Waterbirds

All development projects that affect wetlands and could therefore have an impact on populations of migratory waterbirds should be reviewed against strict criteria for their long-term economic and environmental costs and benefits, and should be subjected to an environmental impact assessment. These assessments should be made widely available, and should be subjected to independent expert review. Flood control, drainage and irrigation projects, in particular, are likely to have a negative impact on waterbird populations. These should be the subject of detailed investigations to determine their long-term economic viability and environmental sustainability. Full environmental impact assessments (EIAs) should be carried out for all such projects, and particular emphasis should be given to their potential impact on populations of migratory waterbirds.

Range States should endeavour to avoid pollution of wetlands. The use of pesticides and other environmentally harmful chemicals by agriculture and industry should be subject to strict national legislation, and greater efforts should be made to enforce this legislation. Similarly, the disposal of industrial and domestic waste should be subject to strict controls. Range States should take full advantage of modern techniques for the treatment and recycling of wastewater, and should support studies on the use of natural wetland ecosystems in the treatment of domestic sewage. Range States should increase their efforts to prevent oil spills, and in the event of an oil spill occurring, should take appropriate measures to combat the effects on waterbird populations. A study of the effects of water pollution, including acidification, on waterbirds should be undertaken and the results given wide dissemination. Major gaps in knowledge should be identified, and appropriate case studies initiated.

Where development of a wetland for recreation purposes poses a threat to waterbirds through increased disturbance, a strategy for coexistence should be developed. This would usually involve the zonation of activities in space and/or time, *e.g.*, restrictions on recreation activities during the winter months if the wetland is primarily important for its wintering waterbirds.

9. RESEARCH AND MONITORING

Both fundamental and applied research are necessary for the implementation of the African-Eurasian Waterbird Agreement. The assignment of priorities and design and implementation of conservation measures should, as far as possible, be based on the results of scientific research. However, a lack of scientific evidence should not be used as an excuse to postpone the implementation of conservation measures in cases where the conservation value of the measures is obvious.

Greater efforts should be made to ensure more effective use of research. In many cases, the results of research programmes have not been given the wide dissemination which they deserve, especially amongst the national agencies involved with wetlands. Furthermore, a lack of cooperation and collaboration between research institutions and research workers has often led to a duplication of effort and occasionally the promotion of conflicting results.

Existing centres of expertise in waterbird research and monitoring should be identified and where necessary strengthened, and greater utilization of existing research facilities, especially universities, should be encouraged. Efforts should be made to promote better coordination and cooperation between institutions and individuals involved in waterbird research and monitoring throughout the region, with a view to improving the free and speedy exchange of information.

9.1. Status and Distribution

There remain large gaps in knowledge of the status and distribution of many migratory waterbird species in the Africa-Eurasia region. Many parts of Africa and some parts of Southwest Asia still remain poorly known, and until these areas are thoroughly investigated, knowledge of the status and distribution of many species and populations will remain incomplete. Basic survey work is still, therefore, a high priority in Africa and Southwest Asia, and should be strongly promoted under this Agreement. Priority areas for such surveys include the wetlands of Mesopotamia in Iraq and large regions of Central and East Africa.

Even in some of the better known parts of the Agreement area, there remains a need for basic survey work. Much more information is required on the densities of breeding waterbirds in the tundra and taiga zones of northern Europe, to enable the identification of areas with unusually high densities of dispersed species. There are still large gaps in knowledge of the moulting areas of some species in northern Europe and the winter distributions of several populations of sea-ducks. Little is known about the huge wintering populations of phalaropes off the coasts of Africa and Arabia, or the distribution of some species of gulls and terns on the African coasts. Range States should continue to support basic survey work to fill in these and other gaps in knowledge.

9.2. Population Size and Trends

Populations of all migratory waterbirds in the Africa-Eurasia region should be monitored on a continuous basis to determine population trends and to provide an early-warning system for species in difficulty. This will enable appropriate measures to be implemented before the populations fall to dangerously low levels. Ideally, censusing and monitoring procedures should permit the comparison of population sizes at intervals of no more than five years.

The International Waterfowl Census provides a sound statistical basis for the monitoring of populations of all waterbird species which are relative easy to count during the mid-winter period. The Census also assists in the identification of sites of international importance for

particular species and populations, and provides a basis for the assessment of the impact of development projects, such as flood control, drainage and irrigation schemes, on waterbird populations at particular sites. It is essential that the Census be continued and expanded into new areas wherever possible. Ideally, the Census would eventually cover all sites of international importance for migratory waterbirds, as well as many sites of only national or local importance. It should, however, be possible to develop a reliable system for monitoring trends in waterbird populations based on regular counts at a much smaller number of sites, providing these include a majority of the most important sites as well as a representative sample of all wetlands types. Such a monitoring procedure has already been developed for most species of Anatidae in Northwest Europe and the Mediterranean region, and now produces trend information in the form of annual indices. Monitoring procedures of this type (using a sample of sites) can work equally well with many widespread and relatively inconspicuous species for which no reliable estimate of total population size can be obtained.

Parties to this Agreement should strongly support the continuation and expansion of this vital monitoring activity and seek ways of increasing its effectiveness wherever possible.

While some species of waterbirds, such as most Anatidae and many shorebirds, are most easily censused during the winter period or migration seasons, some species, notably the colonially-nesting cormorants, herons, egrets, storks, ibises, gulls and terns, are more easily counted during the breeding season. In addition, some of the species which remain widely dispersed throughout the year (*e.g.*, some of the plovers and snipes) are also easier to census during the breeding season, as they tend to be confined to a narrower range of habitat types and are much less mobile at that time. Thus transect methods of censusing can be applied with some success. In those species which can be censused both in summer and in winter, censuses during the breeding season can constitute an independent check to population estimates derived from the mid-winter censuses, and can provide a more reliable means of monitoring population trends on a year-to-year basis.

In many countries in Europe as well as in various parts of Africa and Southwest Asia, major efforts have been made to census colonially nesting waterbirds. However, these censuses have seldom been coordinated at international level; different species have been counted in different countries, or the same species may have been counted but in different years. In some cases, different censusing techniques have been used for the same species in different years, casting doubt on the validity of any comparison between the censuses. There is a need to launch a new international waterfowl census which focuses on breeding populations rather than on wintering or passage birds. Initially, emphasis should be given to the threatened, vulnerable and highly localized species listed in Tables 6, 7 and 9. A preparatory document should be produced which summarizes existing censusing efforts, and describes appropriate censusing techniques for each waterbird species. The document should include proposals for appropriate levels of international cooperation, and should identify the organizations responsible for coordination. Full use should be made of the existing network of organizations and individuals involved in the International Waterfowl Census.

9.3. Migration Routes of Waterbirds

Despite the considerable amount of bird ringing which has been carried out in parts of the Africa-Eurasia region, knowledge of the migration routes of many species and populations of waterbirds remains fragmentary. This is particularly the case with many Afrotropical species, the movements of which are still very poorly understood. This could be partly remedied by a comprehensive analysis of existing ringing data, since much of the information derived from the recoveries of ringed birds has never been properly analyzed and remains difficult of access. High priority should be given to such an analysis and publication and dissemination of the results.

There is also a need for more waterbird ringing programmes. In several key wintering areas for waterbirds in Africa and Southwest Asia, no ringing has ever been undertaken, and the local people (including hunters) have never been informed of the significance of ringed birds or what to do if they find a ring. Public awareness campaigns in these areas could greatly improve the effectiveness of ringing programmes by increasing the return rate of bird rings. Consideration should be given to the establishment of waterbirds ringing programmes in those countries which do not already have them, and major ringing programmes should be initiated for selected species in certain key areas. Colour-ringing schemes have proven to be particularly useful in identifying the migration routes of some of the larger and more conspicuous species (*e.g.*, geese, storks and flamingos), while in recent years satellite tracking has been used to follow the migrations of individual cranes from their breeding grounds to their winter quarters. Other techniques which can be employed to determine migration routes include analyses of biometric data and DNA "fingerprinting" to distinguish between different populations, and studies using radar. Reviews such as *The Conservation of International Flyway Populations of Waders* (Davidson and Pienkowski, 1987) should be produced at regular intervals to summarize recent discoveries and fill in gaps in knowledge.

9.4. Productivity and Mortality

Various techniques are available for measuring productivity rates in waterbird populations. These include direct measurement of breeding success on the breeding grounds, the ageing of samples of birds observed or trapped during the autumn migration season (*e.g.*, with swans, geese and some shorebirds), and the analysis of wings collected from hunters (*e.g.*, with many ducks). Attempts should be made to monitor the productivity of as many of the waterbird species covered by this Agreement as possible, on an annual basis. A variety of international projects should be initiated according to the different techniques available for different groups of species. Range States with large numbers of dispersed breeding waterbirds should establish a monitoring system employing a series of plots in the breeding areas to measure breeding success on an annual basis.

While productivity in waterbird populations is relatively easy to measure in the field, the measurement of mortality rates is often very difficult. Bag statistics can be used to measure the numbers of birds killed by hunters, but this is only relevant to legal quarry species and only covers a part of the total mortality. Patterns of mortality and the calculation of survival rates can be based on an analysis of ringing recoveries, but this usually requires an enormous ringing effort to produce the requisite number of recoveries. In general, annual mortality rates can only be assumed on the basis of reliable counts of the total population and known productivity rates.

9.5. Research on Priority Species

A considerable amount of research has already been conducted on many of the threatened waterbirds of the Africa-Eurasia region. The results of this research have often proved essential in the development of sound programmes for the conservation of these species. There is an urgent need to expand research activities to include all those species and populations of waterbirds which are considered to have an unfavourable conservation status (Tables 6 and 7). Studies should also be carried out on those relatively common but declining species and populations listed in Table 8, to provide insight into the reasons for their decline.

9.6. Research on the Carrying Capacity of Wetlands

It is proposed that studies be initiated on the effects of habitat degradation on the carrying capacity of wetlands. Research should be conducted on the population dynamics of selected species and the factors controlling the number of waterbirds which can be supported by a particular wetland. On the basis of this knowledge, the effects of wetland degradation can be predicted and studied. It should then be possible to predict the effects of wetland loss on waterbird populations, and to determine the minimum amount of habitat which is required to maintain these populations in a favourable conservation status. This knowledge would be extremely valuable in determining priorities in the conservation and management of wetland habitats.

10. EDUCATION AND INFORMATION

In many countries in Africa and Southwest Asia, there is a chronic shortage of trained personnel to carry out waterbird surveys and censuses, basic research and management of sites. The organization of training courses, workshops and seminars, and the development of training materials, are extremely important priorities in those countries which have already developed the infrastructure for waterbird conservation and research, but lack either the expertise or the financial resources to provide adequate training for their personnel. A considerable amount of waterbirds expertise is available within the Africa-Eurasia region as a whole, and many of the teaching and training requirements could easily be met by expansion of existing facilities, translation of existing training materials and bilateral student exchanges.

As a first step, a review of training requirements for waterbird surveys, monitoring, ringing, management *etc.* in the Africa-Eurasia region should be carried out. This would enable the identification of priority topics and areas for training. A register of institutes, organizations and agencies providing appropriate training courses should be compiled, with details of the short- and long-term courses organized by them. Such a register could be of considerable value in the implementation of this Agreement by facilitating access to the available training institutions.

Improvement in the level of awareness of the general public to waterbird conservation issues is obviously of great importance throughout the region. In Africa, special attention should be given to developing environmental awareness campaigns amongst the rural poor living in and around wetlands of special importance for migratory waterbirds, as their cooperation will be essential for real accomplishments on the ground. The media (press, television, radio) should be encouraged to educate and entertain the general public with articles and programmes on migratory waterbirds and their wetland habitats. Public awareness campaigns should be developed for all of the threatened species in the region, and are particularly important in areas where these species concentrate and so may seem common and therefore under no threat.

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Table 1

WATERBIRD FAMILIES INCLUDED IN THE AGREEMENT

Gaviidae:	Divers
Podicipedidae:	Grebes
Pelecanidae:	Pelicans
Phalacrocoracidae:	Cormorants*
Ardeidae:	Bitterns, herons, egrets
Ciconiidae:	Storks
Threskiornithidae:	Ibises and spoonbills
Phoenicopteridae:	Flamingos
Anatidae:	Whistling-Ducks, swans, geese and ducks
Gruidae:	Cranes
Rallidae:	Rails, crakes, gallinules and coots*
Dromadidae:	Crab plover
Haematopodidae:	Oystercatchers
Recurvirostridae:	Stilts and avocets
Burhinidae:	Thick-knees*
Glareolidae:	Coursers and pratincoles*
Charadriidae:	Lapwings and plovers*
Scolopacidae:	Curlews, sandpipers and snipes*
Laridae:	Gulls and terns*
Rynchopidae:	Skimmers

* Families marked with an asterisk include some species which are not ecologically dependent on wetlands, *e.g.*, strictly marine species of cormorants, gulls and terns, the desert coursers and the forest-dwelling woodcocks.

WATERBIRD SPECIES INCLUDED IN THE AGREEMENT

GAVIIDAE	
Red-throated Diver	*Gavia stellata*
Black-throated Diver	*Gavia arctica*
Great Northern Diver	*Gavia immer*
White-billed Diver	*Gavia adamsii*
PODICIPEDIDAE	
Little Grebe	*Tachybaptus ruficollis*
Red-necked Grebe	*Podiceps grisegena*
Great Crested Grebe	*Podiceps cristatus*
Slavonian Grebe	*Podiceps auritus*
Black-necked Grebe	*Podiceps nigricollis*
PELECANIDAE	
Great White Pelican	*Pelecanus onocrotalus*
Pink-backed Pelican	*Pelecanus rufescens*
Dalmatian Pelican	*Pelecanus crispus*
PHALACROCORACIDAE	
Pygmy Cormorant	*Phalacrocorax pygmaeus*
Great Cormorant	*Phalacrocorax carbo*
Socotra Cormorant	*Phalacrocorax nigrogularis*
ARDEIDAE	
Slaty Egret	*Egretta vinaceigula*
Little Egret	*Egretta garzetta*
Grey Heron	*Ardea cinerea*
Black-headed Heron	*Ardea melanocephala*
Purple Heron	*Ardea purpurea*
Great Egret	*Casmerodius albus*
Intermediate Egret	*Mesophoyx intermedia*
Cattle Egret	*Bubulcus ibis*
Squacco Heron	*Ardeola ralloides*
Madagascar Pond-Heron	*Ardeola idae*
Rufous-bellied Heron	*Ardeola rufiventris*
Black-crowned Night-Heron	*Nycticorax nycticorax*
Little Bittern	*Ixobrychus minutus*
Dwarf Bittern	*Ixobrychus sturmii*
Great Bittern	*Botaurus stellaris*
CICONIIDAE	
Yellow-billed Stork	*Mycteria ibis*
African Openbill	*Anastomus lamelligerus*
Black Stork	*Ciconia nigra*
Abdim's Stork	*Ciconia abdimii*
Woolly-necked Stork	*Ciconia episcopus*

White Stork	*Ciconia ciconia*
Marabou Stork	*Leptoptilos crumeniferus*

THRESKIORNITHIDAE

Glossy Ibis	*Plegadis falcinellus*
Waldrapp	*Geronticus eremita*
Sacred Ibis	*Threskiornis aethiopicus*
Eurasian Spoonbill	*Platalea leucorodia*
African Spoonbill	*Platalea alba*

PHOENICOPTERIDAE

Greater Flamingo	*Phoenicopterus ruber*
Lesser Flamingo	*Phoenicopterus minor*

ANATIDAE

Fulvous Whistling-Duck	*Dendrocygna bicolor*
White-faced Whistling-Duck	*Dendrocygna viduata*
White-backed Duck	*Thalassornis leuconotus*
White-headed Duck	*Oxyura leucocephala*
Mute Swan	*Cygnus olor*
Whooper Swan	*Cygnus cygnus*
Bewick's Swan	*Cygnus columbianus*
Pink-footed Goose	*Anser brachyrhynchus*
Bean Goose	*Anser fabalis*
Greater White-fronted Goose	*Anser albifrons*
Lesser White-fronted Goose	*Anser erythropus*
Greylag Goose	*Anser anser*
Barnacle Goose	*Branta leucopsis*
Brent Goose	*Branta bernicla*
Red-breasted Goose	*Branta ruficollis*
Egyptian Goose	*Alopochen aegyptiacus*
Ruddy Shelduck	*Tadorna ferruginea*
South African Shelduck	*Tadorna cana*
Common Shelduck	*Tadorna tadorna*
Spur-winged Goose	*Plectropterus gambensis*
Comb Duck	*Sarkidiornis melanotos*
African Pygmy-goose	*Nettapus auritus*
Eurasian Wigeon	*Anas penelope*
Gadwall	*Anas strepera*
Common Teal	*Anas crecca*
Cape Teal	*Anas capensis*
Mallard	*Anas platyrhynchos*
Yellow-billed Duck	*Anas undulata*
Northern Pintail	*Anas acuta*
Red-billed Duck	*Anas erythrorhyncha*
Hottentot Teal	*Anas hottentota*
Garganey	*Anas querquedula*
Northern Shoveler	*Anas clypeata*
Marbled Teal	*Marmaronetta angustirostris*
Red-crested Pochard	*Netta rufina*
Southern Pochard	*Netta erythrophthalma*
Common Pochard	*Aythya ferina*

Ferruginous Pochard	*Aythya nyroca*
Tufted Duck	*Aythya fuligula*
Greater Scaup	*Aythya marila*
Common Eider	*Somateria mollissima*
King Eider	*Somateria spectabilis*
Steller's Eider	*Polysticta stelleri*
Long-tailed Duck	*Clangula hyemalis*
Common Scoter	*Melanitta nigra*
Velvet Scoter	*Melanitta fusca*
Common Goldeneye	*Bucephala clangula*
Smew	*Mergellus albellus*
Red-breasted Merganser	*Mergus serrator*
Goosander	*Mergus merganser*

GRUIDAE

Siberian Crane	*Grus leucogeranus*
Demoiselle Crane	*Grus virgo*
Blue Crane	*Grus paradisea*
Wattled Crane	*Grus carunculatus*
Common Crane	*Grus grus*

RALLIDAE

Streaky-breasted Flufftail	*Sarothrura boehmi*
Water Rail	*Rallus aquaticus*
African Rail	*Rallus caerulescens*
African Crake	*Crecopsis egregia*
Black Crake	*Amaurornis flavirostra*
Little Crake	*Porzana parva*
Baillon's Crake	*Porzana pusilla*
Spotted Crake	*Porzana porzana*
Striped Crake	*Aenigmatolimnas marginalis*
Allen's Gallinule	*Porphyrio alleni*
Common Moorhen	*Gallinula chloropus*
Lesser Moorhen	*Gallinula angulata*
Red-knobbed Coot	*Fulica cristata*
Eurasian Coot	*Fulica atra*

DROMADIDAE

Crab Plover	*Dromas ardeola*

HAEMATOPODIDAE

Eurasian Oystercatcher	*Haematopus ostralegus*

RECURVIROSTRIDAE

Black-winged Stilt	*Himantopus himantopus*
Pied Avocet	*Recurvirostra avosetta*

BURHINIDAE

Senegal Thick-knee	*Burhinus senegalensis*

GLAREOLIDAE

Egyptian Plover	*Pluvianus aegyptius*
Collared Pratincole	*Glareola pratincola*
Black-winged Pratincole	*Glareola nordmanni*
Madagascar Pratincole	*Glareola ocularis*
Rock Pratincole	*Glareola nuchalis*
Grey Pratincole	*Glareola cinerea*

CHARADRIIDAE

European Golden Plover	*Pluvialis apricaria*
Grey Plover	*Pluvialis squatarola*
Common Ringed Plover	*Charadrius hiaticula*
Little Ringed Plover	*Charadrius dubius*
Kittlitz's Plover	*Charadrius pecuarius*
Three-banded Plover	*Charadrius tricollaris*
Forbes' Plover	*Charadrius forbesi*
Chestnut-banded Plover	*Charadrius pallidus*
Kentish Plover	*Charadrius alexandrinus*
White-fronted Plover	*Charadrius marginatus*
Mongolian Plover	*Charadrius mongolus*
Greater Sandplover	*Charadrius leschenaultii*
Caspian Plover	*Charadrius asiaticus*
Eurasian Dotterel	*Eudromias morinellus*
Northern Lapwing	*Vanellus vanellus*
Spur-winged Plover	*Vanellus spinosus*
White-headed Lapwing	*Vanellus albiceps*
Wattled Lapwing	*Vanellus senegallus*
Senegal Lapwing	*Vanellus lugubris*
Black-winged Lapwing	*Vanellus melanopterus*
Crowned Lapwing	*Vanellus coronatus*
Brown-chested Lapwing	*Vanellus superciliosus*
Sociable Plover	*Vanellus gregarius*
White-tailed Plover	*Vanellus leucurus*

SCOLOPACIDAE

Great Snipe	*Gallinago media*
Common Snipe	*Gallinago gallinago*
Jack Snipe	*Lymnocryptes minimus*
Black-tailed Godwit	*Limosa limosa*
Bar-tailed Godwit	*Limosa lapponica*
Whimbrel	*Numenius phaeopus*
Slender-billed Curlew	*Numenius tenuirostris*
Eurasian Curlew	*Numenius arquata*
Spotted Redshank	*Tringa erythropus*
Common Redshank	*Tringa totanus*
Marsh Sandpiper	*Tringa stagnatilis*
Common Greenshank	*Tringa nebularia*
Green Sandpiper	*Tringa ochropus*
Wood Sandpiper	*Tringa glareola*
Terek Sandpiper	*Tringa cinerea*
Common Sandpiper	*Tringa hypoleucos*
Ruddy Turnstone	*Arenaria interpres*

Great Knot	*Calidris tenuirostris*
Red Knot	*Calidris canutus*
Sanderling	*Calidris alba*
Little Stint	*Calidris minuta*
Temminck's Stint	*Calidris temminckii*
Purple Sandpiper	*Calidris maritima*
Dunlin	*Calidris alpina*
Curlew Sandpiper	*Calidris ferruginea*
Broad-billed Sandpiper	*Limicola falcinellus*
Ruff	*Philomachus pugnax*
Red-necked Phalarope	*Phalaropus lobatus*
Grey Phalarope	*Phalaropus fulicaria*

LARIDAE

White-eyed Gull	*Larus leucopthalmus*
Sooty Gull	*Larus hemprichii*
Common Gull	*Larus canus*
Audouin's Gull	*Larus audouinii*
Great Black-backed Gull	*Larus marinus*
Glaucous Gull	*Larus hyperboreus*
Iceland Gull	*Larus glaucoides*
Herring Gull	*Larus argentatus*
Yellow-legged Gull	*Larus cachinnans*
Armenian Gull	*Larus armenicus*
Lesser Black-backed Gull	*Larus fuscus*
Great Black-headed Gull	*Larus ichthyaetus*
Grey-headed Gull	*Larus cirrocephalus*
Common Black-headed Gull	*Larus ridibundus*
Slender-billed Gull	*Larus genei*
Mediterranean Gull	*Larus melanocephalus*
Little Gull	*Larus minutus*
Sabine's Gull	*Xema sabini*
Gull-billed Tern	*Sterna nilotica*
Caspian Tern	*Sterna caspia*
Royal Tern	*Sterna maxima*
Lesser Crested-Tern	*Sterna bengalensis*
Great Crested-Tern	*Sterna bergii*
Sandwich Tern	*Sterna sandvicensis*
Roseate Tern	*Sterna dougallii*
Common Tern	*Sterna hirundo*
Arctic Tern	*Sterna paradisaea*
Little Tern	*Sterna albifrons*
Saunders' Tern	*Sterna saundersi*
Damara Tern	*Sterna balaenarum*
White-cheeked Tern	*Sterna repressa*
Whiskered Tern	*Chlidonias hybridus*
White-winged Tern	*Chlidonias leucopterus*
Black Tern	*Chlidonias niger*

RYNCHOPIDAE

African Skimmer	*Rynchops flavirostris*

WATERBIRD SPECIES OCCURRING IN THE AFRICA-EURASIA REGION NOT INCLUDED IN THIS AGREEMENT

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 "**". Criterion (iii) on page 2 of the Management Plan.

2. The species occurs in the region only as a vagrant or rare straggler for another region. Criterion (v) on page 2.

3. Only a very small part of the total range of the species is within the Africa-Eurasia region. The region has very little significance for the species. Criterion (vi) on page 2.

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. Criterion (ii) on page 1 of the Management Plan.

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. Criterion (ii) on page 1.

6. The species has been introduced in the Africa-Eurasia region by man. Criterion (iv) on page 2.

	1	*2*	*3*	*4*	*5*	*6*
Tachybaptus rufolavatus	**					
Tachybaptus pelzelnii	**					
Podilymbus podiceps		*				
Phalacrocorax africanus	*					
Phalacrocorax coronatus	*			*		
Phalacrocorax neglectus	*			*		
Phalacrocorax auritus		*				
Phalacrocorax lucidus	*					
Phalacrocorax capensis	(*)			*		
Phalacrocorax aristotelis	*			*		
Anhinga rufa	*					
Egretta ardesiaca				*		
Egretta tricolor		*				
Egretta caerulea		*				
Egretta gularis	*					
Egretta dimorpha	*					
Egretta thula		*				
Ardea humbloti	**					
Ardea goliath	*					
Ardeola grayii	*		*			
Ardeola bacchus		*				
Butorides striatus	*					
Butorides virescens		*				

	1	2	3	4	5	6
Gorsachius leuconotus	*					
Tigriornis leucolophus	*					
Ixobrychus exilis		*				
Ixobrychus eurhythmus		*				
Botaurus lentiginosus		*				
Balaeniceps rex	*					
Scopus umbretta	*					
Ephippiorhynchus senegalensis	*					
Bostrychia hagedash	*					
Bostrychia carunculata	**					
Bostrychia olivacea	*					
Bostrychia bocagei	**					
Bostrychia rara	*					
Geronticus calvus	*					
Lophotibis cristata	**					
Oxyura jamaicensis						*
Oxyura maccoa	*					
Anser indicus		(*)				*
Anser caerulescens		*				
Anser rossii		*				
Branta canadensis		*				*
Cyanochen cyanopterus	**					
Pteronetta hartlaubii	*					
Nettapus coromandelianus		*				
Aix sponsa						*
Aix galericulata						*
Anas americana		*				
Anas falcata		*				
Anas formosa		*				
Anas bernieri	**					
Anas rubripes		*				
Anas melleri	**					
Anas sparsa	*					
Anas discors		*				
Anas smithii	*					
Aythya valisineria		*				
Aythya collaris		*				
Aythya innotata	**					
Aythya affinis		*				
Somateria fischeri		*				
Histrionicus histrionicus	*					
Melanitta perspicillata		*				
Bucephala islandica	*					
Bucephala albeola		*				
Lophodytes cucullatus		*				
Balearica pavonina	*					
Balearica regulorum	*					
Grus canadensis		*				
Grus monacha		*				
Sarothrura pulchra	*					

	1	2	3	4	5	6
Sarothrura elegans	*					
Sarothrura rufa	*					
Sarothrura lugens	*					
Sarothrura affinis	*					
Sarothrura insularis	**					
Sarothrura ayresi	*					
Sarothrura watersi	**					
Himantornis haematopus	*					
Canirallus oculeus	*					
Canirallus kioloides	**					
Rallus madagascariensis	**					
Crex crex					*	
Rougetius rougetii	**					
Dryolimnas cuvieri	**					
Amaurornis phoenicurus		*				
Amaurornis olivieri	**					
Porzana carolina		*				
Porphyrio porphyrio	*					
Porphyrio martinicus		*				
Fulica americana		*				
Podica senegalensis	*					
Actophilornis africanus	*					
Actophilornis albinucha	**					
Microparra capensis	*					
Hydrophasianus chirurgus			*			
Rostratula benghalensis	*					
Haematopus meadewaldoi	**					
Haematopus moquini	*					
Burhinus oedicnemus					*	
Burhinus vermiculatus	*					
Burhinus capensis	*				*	
Rhinoptilus africanus	*				*	
Rhinoptilus chalcopterus					*	
Rhinoptilus cinctus					*	
Cursorius cursor					*	
Cursorius rufus					*	
Cursorius temminckii					*	
Glareola maldivarum		*				
Glareola lactea		*				
Pluvialis fulva			*			
Pluvialis dominica		*				
Charadrius semipalmatus		*				
Charadrius vociferus		*				
Charadrius thoracicus	**					
Vanellus crassirostris	*					
Vanellus armatus	*					
Vanellus tectus	*					
Vanellus melanocephalus	**					
Vanellus indicus	*		*			
Scolopax rusticola					*	

	1	2	3	4	5	6
Gallinago solitaria		*				
Gallinago stenura			*			
Gallinago megala		*				
Gallinago nigripennis	*					
Gallinago macrodactyla	**					
Limosa haemastica		*				
Numenius borealis		*				
Numenius minutus		*				
Bartramia longicauda		*				
Tringa melanoleuca		*				
Tringa flavipes		*				
Tringa solitaria		*				
Tringa macularia		*				
Tringa brevipes		*				
Catoptrophorus semipalmatus		*				
Limnodromus griseus		*				
Limnodromus scolopaceus		*				
Limnodromus semipalmatus		*				
Calidris pusilla		*				
Calidris mauri		*				
Calidris ruficollis			*			
Calidris subminuta			*			
Calidris minutilla		*				
Calidris fuscicollis		*				
Calidris bairdii		*				
Calidris melanotos		*				
Calidris acuminata		*				
Micropalama himantopus		*				
Tryngites subruficollis		*				
Steganopus tricolor		*				
Larus delawarensis		*				
Larus dominicanus	*			*		
Larus brunnicephalus		*				
Larus hartlaubii	*			*		
Larus philadelphia		*				
Larus atricilla		*				
Larus pipixcan		*				
Pagophila eburnea	(*)			*		
Rhodostethia rosea			*	*		
Rissa tridactyla				*		
Sterna elegans		*				
Sterna sumatrana		*				
Sterna vittata			*			
Sterna forsteri		*				
Sterna aleutica		*				
Sterna anaethetus				*		
Sterna fuscata				*		
Anous stolidus				*		
Anous minutus	*			*		
Anous tenuirostris			*	*		

Table 3

RANGE STATES IN THE AFRICAN-EURASIAN WATERBIRD AGREEMENT

Albania
Algeria
Angola
Armenia
Austria
Azerbaijan
Bahrain
Belarus
Belgium
Benin
Bosnia and Herzegovina
Botswana
Bulgaria
Burkina Faso
Burundi
Cameroon
Canada
Cape Verde
Central African Republic
Chad
Comoros
Congo
Côte d'Ivoire
Croatia
Cyprus
Czech Republic
Denmark (incl. Faroe Islands and Greenland)
Djibouti
Egypt
Equatorial Guinea
Estonia
Ethiopia
Finland
France
Gabon
Gambia
Georgia
Germany
Ghana
Greece
Guinea
Guinea-Bissau
Hungary
Iceland
Iran (Islamic Republic of)
Iraq
Ireland
Israel
Italy
Jordan
Kazakhstan
Kenya
Kuwait
Latvia
Lebanon
Lesotho
Liberia
Libyan Arab Jamahiriya
Liechtenstein
Lithuania
Luxembourg
Madagascar
Malawi
Mali
Malta
Mauritania
Mauritius
Monaco
Morocco
Mozambique
Namibia
Netherlands
Niger
Nigeria
Norway (including Svalbard)
Oman
Poland
Portugal
Qatar
Republic of Moldova
Romania
Russian Federation
Rwanda
San Marino
Sao Tome and Principe
Saudi Arabia
Senegal
Seychelles
Sierra Leone
Slovakia
Slovenia
Somalia
South Africa
Spain
Sudan
Swaziland
Sweden
Switzerland
Syrian Arab Republic
The former Yugoslav Republic of Macedonia
Togo
Tunisia
Turkey
Turkmenistan
Uganda
Ukraine
United Republic of Tanzania
United Kingdom of Great Britain and Northern Ireland
United Arab Emirates
Uzbekistan
Yemen
Yugoslavia
Zaire
Zambia
Zimbabwe

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 Africa-Eurasia region (*e.g.* Northwest Europe, Southwest Asia, West Africa and Southern Africa) and shows only limited overlap with other "populations" of the same species or subspecies during its annual cycle.

Populations which are also included in the Asia-Pacific Waterbird Agreement are indicated with an asterisk (*).

Population category

For many species and populations, only a rough indication of population size is available. Five size categories have been used as follows:

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

Brackets are used to indicate that the category in question is uncertain. A plus sign (+) indicates that virtually no information is available on population size. The category given is considered to be the minimum category that might apply. Thus a population listed as C+ is considered to have a population in excess of 25,000 birds.

Population size

Population estimates derived from the published literature or the International Waterfowl Census. In all cases, these are given as number of individuals, although in many cases the estimates have been derived from numbers of breeding pairs.

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.

Population limits	Population category	Population size	Trends
GAVIIDAE			
Gavia stellata			
- Greenland/Iceland/NW Europe	C/D		(stable/increasing)
- W Siberia/Black Sea/Caspian	B+		unknown
Gavia arctica			
- W Siberia/NW Europe (*arctica*)	B/C		(stable/increasing)
- W Siberia/Caspian (*suschkini*)	B+		unknown
Gavia immer			
- Greenland/Iceland/NW Europe	A		(stable/decreasing)
Gavia adamsii			
- NE Europe	A/B		unknown
PODICIPEDIDAE			
Tachybaptus ruficollis			
- Europe/NW Africa	D		(stable)
Podiceps grisegena			
- N & NW Europe	B/C		(stable)
- Black Sea/E Mediterranean	A/B		unknown
- W Siberia/Caspian (to N India)*	B		(increasing)
Podiceps cristatus			
- N & W Europe	D		increasing
- E Europe/Black Sea/Medit.	C/D		unknown
- W Siberia/SW Asia	B		(increasing)
Podiceps auritus			
- Iceland/NW Europe (large-bill)	A	5,000	(stable)
- NE & NW Europe (small-bill)	B/C		(stable)
- W Siberia/Black Sea/Caspian	A/B		unknown
Podiceps nigricollis			
- SW Europe/Med./Black Sea	D	100,000	(stable/increasing)
- W Asia/Caspian/Arabia*	C	25,000	(increasing)
PELECANIDAE			
Pelecanus onocrotalus			
- Black Sea/E Med./NE Africa	C	80,000	stable/decreasing
- Caspian/Iran/Iraq	B	10,000	unknown
Pelecanus rufescens			
- Entire population	D		(stable)
Pelecanus crispus			
- Black Sea/Mediterranean	A	1,500	decreasing
- Caspian Sea/SW Asia	A	3,000	(stable)
PHALACROCORACIDAE			
Phalacrocorax pygmaeus			
- Mediterranean/Black Sea	C	45,000	stable/increasing
- Aral Sea/Caspian Sea/Iraq	A	5,000	stable/decreasing
Phalacrocorax carbo			
- British Isles/Norway (*carbo*)	D	120,000	increasing
- C Europe/W Medit. (*sinensis*)	D	150,000	increasing

Population limits	Population category	Population size	Trends
- Black Sea/E Mediterranean	D	150,000	unknown
- West Asia/SW Asia	C	100,000	unknown
Phalacrocorax nigrogularis			
- Entire population	D	400,000	unknown
ARDEIDAE			
Egretta vinaceigula			
- Entire population	A		(decreasing)
Egretta garzetta			
- S & W Europe/N & W Africa	C	60,000	increasing
- Black S./SW Asia/NE & E Africa	C		unknown
- Southern Africa	B+		unknown
Ardea cinerea			
- Europe/N Africa	D	150,000	increasing
- SW Asia	B		unknown
Ardea melanocephala			
- Entire population	D+		(increasing)
Ardea purpurea			
- S & W Europe/NW & W Africa	B	20,000	(decreasing)
- Black S./SW Asia/NE & E Africa	B/C		unknown
Casmerodius albus			
- SE Europe/Black Sea/E Medit.	A	5,000	(decreasing)
- SW Asia/Caspian Region/Iraq	B		stable/decreasing
Mesophoyx intermedia			
- Entire African population	C+		unknown
Bubulcus ibis			
- Southern Africa (N to 16°S)	D+		increasing
- Northern tropics (10-16°N)	D		unknown
- SW Europe/NW Africa	D	250,000	increasing
- Near East/Caspian Region	A/B		unknown
Ardeola ralloides			
- S & W Europe/NW & W Africa	C	70,000	increasing
- SW Asia/E Africa	B/C		unknown
Ardeola idae			
- Entire population	A+		decreasing
Ardeola rufiventris			
- Entire population	A+		unknown
Nycticorax nycticorax			
- S & W Europe/NW & W Africa	D	150,000	stable/increasing
- SW Asia/NE Africa	B/C		unknown
Ixobrychus minutus			
- S & W Europe/W & E Africa	B	20,000	decreasing
- SW Asia/E Africa	(C)		unknown
Ixobrychus sturmii			
- Entire population	A+		unknown
Botaurus stellaris			
- Europe	B	12,000	decreasing
- SW Asia	A/B		unknown
CICONIIDAE			
Mycteria ibis			
- Entire population	(C)		(stable)

Population limits	Population category	Population size	Trends
Anastomus lamelligerus			
· Entire pop. of *lamelligerus*	(D)		(stable/increasing)
Ciconia nigra			
- SW Europe/West Africa	A	1,000	stable/increasing
- C & E Europe/NE & E Africa	A	7,500	(increasing)
- Southern Africa	A	1,500	stable/increasing
Ciconia abdimii			
- Entire population	(C)		stable
Ciconia episcopus			
- Entire pop. of *microscelis*	(B)		stable/increasing
Ciconia ciconia			
- Iberia/NW & W Africa	C	85,000	decreasing
- C & E Europe/E & S Africa	D	400,000	decreasing
- Caucasus/SW Asia	C		unknown
Leptoptilos crumeniferus			
- Entire population	C/D	>100,000	(increasing)
THRESKIORNITHIDAE			
Plegadis falcinellus			
- Europe/W Africa	B	15,000	(stable/decreasing)
- SW Asia/NE Africa	B		(decreasing)
- African breeders	C+		unknown
Geronticus eremita			
- Morocco/Algeria	A	400	stable/decreasing
- Turkey/Arabia/NE Africa	A	>27	decreasing
Threskiornis aethiopicus			
- Subsaharan Africa	D		(stable)
- Iraq/Iran	A	200	decreasing
Platalea leucorodia			
- Netherlands/Spain/W Africa	A	3,000	increasing
- SE Europe/Black Sea/NE Africa	A	5,000	decreasing
- SW & S Asia (*major*)*	B	23,000	unknown
Platalea alba			
- Southern Africa	A/B		(stable)
PHOENICOPTERIDAE			
Phoenicopterus ruber			
- Mauritania	C	50,000	stable/increasing
- East Africa	C	50,000	(decreasing)
- Southern Africa	C		(increasing)
- West Mediterranean	C	80,000	increasing
- Southwest & South Asia*	D	550,000	(stable)
Phoenicopterus minor			
- West Africa	B	15,000	(stable)
- East Africa	E	3,500,000	(stable)
- Southern Africa	E	1,000,000	(stable)
ANATIDAE			
Dendrocygna bicolor			
- Africa (excl. Madagascar)	D		unknown

Population limits	Population category	Population size	Trends
Dendrocygna viduata			
- Africa (excl. Madagascar)	E		(increasing)
Thalassornis leuconotus			
- Eastern & Southern Africa	A/B		(decreasing)
- West Africa	A	<1,000	decreasing
Oxyura leucocephala			
- West Mediterranean	A	1,000	increasing
- SE Europe/Turkey/SW Asia	B	17,000	(stable)
Cygnus olor			
- Scandinavia/Baltic/Denmark	C	90,000	increasing
- Black Sea/E Mediterranean	B	20,000	increasing
- W-C Asia/Caspian Region	C	>25,000	unknown
Cygnus cygnus			
- Iceland/UK/Ireland	B	17,000	increasing
- NW Continental Europe	C	>25,000	increasing
- W Siberia/Black Sea/E Medit.	B	17,000	(stable)
- W Siberia/Caspian Region	A/B		(decreasing)
Cygnus columbianus			
- W Siberia/NW Europe	B	>17,000	(increasing)
- N Siberia/Caspian Region	A	<500	unknown
Anser brachyrhynchus			
- E Greenland/Iceland/UK	D	110,000	increasing
- Svalbard/NW Europe	C	25,000	stable
Anser fabalis			
- NE & NW Europe (*fabalis*)	C	80,000	stable
- W Sib./C & SW Europe (*rossicus*)	D	300,000	stable/increasing
Anser albifrons			
- NW Siberia/NE & NW Europe	D	300,000	increasing
- W Siberia/Central Europe	C	100,000	decreasing
- W Siberia/Black Sea/Turkey	D	250,000	(stable)
- N Siberia/Caspian/Iraq	B	15,000	(decreasing)
- Greenland/Ireland/UK (*flaviro.*)	B	22,000	increasing
Anser erythropus			
- NE Europe/SE Europe/Black Sea	A	<200	decreasing
- W Siberia/Caspian Region	C	>25,000	decreasing
Anser anser			
- Iceland/UK/Ireland	D	100,000	increasing
- NW Europe/SW Europe	D	120,000	increasing
- Central Europe/N Africa	B	20,000	stable
- Black Sea/Turkey	C	>25,000	(stable)
- W Siberia/Caspian Region/Iraq	C	80,000	(increasing)
Branta leucopsis			
- E Greenland/Ireland/Scotland	C	32,000	stable
- Svalbard/SW Scotland	B	>10,000	increasing
- Russia/Germany/Netherlands	C	70,000	increasing
Branta bernicla			
- Entire pop. of *bernicla*	D	170,000	stable
- Can./Greenland/Ireland (*hrota*)	B	20,000	stable
- Svalbard/Denmark/UK (*hrota*)	A	4,000	stable
Branta ruficollis			
- Entire population	C	65,000	(stable)
Alopochen aegyptiacus			
- Entire population	(D)		(increasing)

Population limits	Population category	Population size	Trends
Tadorna ferruginea			
- NW Africa	A	1,500	decreasing
- Black Sea/E Med./NE Africa	B	20,000	(stable)
- W-C Asia/Caspian/Iran/Iraq	C	>30,000	increasing
Tadorna cana			
- Entire population	C	42,000	stable
Tadorna tadorna			
- NW Europe	D	250,000	stable/increasing
- West Mediterranean	B	>15,000	increasing
- Black Sea/E Mediterranean	C	60,000	unknown
- W Asia/Caspian/Middle East	C	80,000	(increasing)
Plectropterus gambensis			
- Entire pop. of *gambensis*	(D)		unknown
- Entire population of *niger*	B+		(stable)
Sarkidiornis melanotos			
- Africa (excl. Madagascar)	(D)		(stable)
Nettapus auritus			
- Africa (excl. Madagascar)	(D)		unknown
Anas penelope			
- NW Europe	D	750,000	stable
- NE Europe/Black Sea/Medit.	D	600,000	stable/decreasing
- W Siberia/SW Asia/NE Africa	D	250,000	unknown
Anas strepera			
- NW Europe	B	>18,000	increasing
- NE Europe/Black Sea/Medit.	C	75,000	stable
- W Siberia/SW Asia/NE Africa	D	130,000	unknown
Anas crecca			
- NW Europe	D	400,000	stable
- NE Europe/Black Sea/W Africa	E	1,000,000	stable
- W Siberia/SW Asia/NE Africa	E	1,500,000	unknown
Anas capensis			
- Entire population	(D)		stable/increasing
Anas platyrhynchos			
- NW Europe	E	5,000,000	stable
- NE Europe/Black Sea/Medit.	E	4,000,000	stable/decreasing
- W Siberia/SW Asia	D	800,000	unknown
Anas undulata			
- Southern Africa (*undulata*)	C	60,000	(stable)
Anas acuta			
- NW Europe	C	70,000	stable
- NE Europe/Black Sea/W Africa	E	1,300,000	stable
- W Siberia/SW Asia/E Africa	D	750,000	unknown
Anas erythrorhyncha			
- Entire population	E		(stable)
Anas hottentota			
- Southern & Eastern Africa	(D)		unknown
Anas querquedula			
- Europe/West Africa	E	2,000,000	unknown
- W & SW Asia, NE & E Africa	D		unknown
Anas clypeata			
- NW Europe	C	40,000	stable
- NE Europe/Black Sea/W Africa	D	395,000	increasing
- W Siberia/SW Asia/E Africa	D	300,000	unknown

Population limits	Population category	Population size	Trends
Marmaronetta angustirostris			
- W Mediterranean/W Africa	A	2,000	decreasing
- East Mediterranean	A	600	decreasing
- SW Asia	C	30,000	(stable)
Netta rufina			
- C & SW Europe/W Mediterranean	B	20,000	stable
- Black Sea/E Mediterranean	C	50,000	decreasing
- West-central Asia/SW Asia	D	200,000	unknown
Netta erythrophthalma			
- Entire population (*brunnea*)	C+		stable/decreasing
Aythya ferina			
- NW & Central Europe	D	350,000	decreasing
- NE Europe/Black Sea/Medit.	E	1,250,000	decreasing
- W Siberia/SW Asia	D	350,000	decreasing
Aythya nyroca			
- Black Sea/Medit./W Africa	C	60,000	decreasing
- W & SW Asia/NE Africa	A	<5,000	decreasing
Aythya fuligula			
- NW & Central Europe	D	750,000	stable
- NE Europe/Black Sea/Medit.	D	600,000	increasing
- W Siberia/SW Asia/NE Africa	D	200,000	unknown
Aythya marila			
- NW Europe	D	310,000	unknown
- W Siberia/Black Sea/Caspian	C	50,000	unknown
Somateria mollissima			
- NW continental Europe	E	2,500,000	increasing
Somateria spectabilis			
- W Siberia/NE Europe	D	100,000	(stable)
Polysticta stelleri			
- W Siberia/NE Europe	B	15,000	increasing
Clangula hyemalis			
- Iceland (to Greenland)	D	>500,000	(stable)
- W Siberia/NW Europe	E	2,000,000	(stable)
Melanitta nigra			
- W Siberia/W Europe/NW Africa	E	1,250,000	(stable)
Melanitta fusca			
- W Siberia/NW Europe	D	250,000	(stable)
Bucephala clangula			
- NW & Central Europe	D	300,000	stable
- NE Europe/Black Sea/Medit.	B	20,000	unknown
- W Siberia/Caspian Region	A/B		unknown
Mergellus albellus			
- NW & Central Europe	C	25,000+	(stable)
- NE Europe/Black Sea/E Medit.	C	65,000	unknown
- W Siberia/SW Asia	D	10,000+	unknown
Mergus serrator			
- NW & Central Europe	D	100,000	(stable)
- NE Europe/Black Sea/Medit.	C	50,000	unknown
- W Siberia/SW Asia	(A)		unknown
Mergus merganser			
- NW & Central Europe	D	150,000	(stable)
- NE Europe/Black Sea/E Medit.	B	10,000	unknown
- W Siberia/Caspian Region	(A)		unknown

Population limits	Population category	Population size	Trends
GRUIDAE			
Grus leucogeranus			
- W Siberia/Caspian Region	A	10-14	stable
Grus virgo			
- SW Asia/E Medit./NE Africa	B	20,000	decreasing
Grus paradisea			
- Entire population	B	12,000	decreasing
Grus carunculatus			
- Central & Southern Africa	B	>10,000	stable/decreasing
Grus grus			
- W Scandinavia/Iberia/Morocco	C	65,000	increasing
- NE & Central Europe/N Africa	B	20,000	stable/decreasing
- E Europe/Black Sea/NE Africa	C		(decreasing)
- W Siberia/SW Asia (*lilfordi*)	B	20,000	(increasing)
RALLIDAE			
Sarothrura boehmi			
- Entire population	A+		unknown
Rallus aquaticus			
- Europe/N Africa (*aquaticus*)	(D)		(stable)
- W Siberia/SW Asia (*korejewi*)	B+		unknown
Rallus caerulescens			
- Eastern & Southern Africa	C+		unknown
Crecopsis egregia			
- Entire population	D+		unknown
Amaurornis flavirostra			
- Entire population	(E)		unknown
Porzana parva			
- Entire population of *parva*	C+		(decreasing)
Porzana pusilla			
- Entire pop. of *intermedia*	C+		(decreasing)
Porzana porzana			
- West Eurasia/Africa	C+		(decreasing)
Aenigmatolimnas marginalis			
- Entire population	A+		(decreasing)
Porphyrio alleni			
- Entire population	D+		unknown
Gallinula chloropus			
- Europe/North & West Africa	E		(stable)
- West Asia	(D)		unknown
Gallinula angulata			
- Entire population	D+		unknown
Fulica cristata			
- Southern Africa	D+		(stable)
Fulica atra			
- NW Europe	E	1,500,000	stable
- E Europe/Black Sea/W Africa	E	2,500,000	decreasing
- W Siberia/SW Asia	E	2,000,000	(decreasing)
DROMADIDAE			
Dromas ardeola			
- Entire population*	C	43,000	(decreasing)

Population limits	Population category	Population size	Trends
HAEMATOPODIDAE			
Haematopus ostralegus			
- W Europe/Medit./NW Africa	D	875,000	increasing
- Entire pop. of *longipes**	C	>25,000	unknown
RECURVIROSTRIDAE			
Himantopus himantopus			
- W Europe/NW & W Africa	C	40,000	(increasing)
- Black Sea/E Med./N-C Africa	B	>15,000	unknown
- SW Asia/NE Africa	(B)		unknown
- Subsaharan Africa/Madagascar	C+		unknown
Recurvirostra avosetta			
- E Atlantic/W Med./W Africa	C	67,000	stable
- Black Sea/E Med./N-C Africa	B/C	25,000	unknown
- SW Asia/NE Africa	(B)		unknown
- Eastern & Southern Africa	B+		unknown
BURHINIDAE			
Burhinus senegalensis			
- W Africa (*senegalensis*)	B+		unknown
- NE & E Africa (*inomatus*)	B+		unknown
GLAREOLIDAE			
Pluvianus aegyptius			
- Entire pop. of *aegyptius*	B+		(stable)
Glareola pratincola			
- SW Europe/NW & W Africa	A		(decreasing)
- SE Europe/Asia Minor/E Sahel	B		(decreasing)
- SW Asia/NE Africa	B/C		unknown
Glareola nordmanni			
- Entire population	A/B		decreasing
Glareola ocularis			
- Entire population	B/C		unknown
Glareola nuchalis			
- Entire pop. of *nuchalis*	B+		unknown
- Entire pop. of *liberiae*	B+		unknown
Glareola cinerea			
- Entire pop. of *cinerea*	B+		unknown
CHARADRIIDAE			
Pluvialis apricaria			
- Iceland/Faeroes/E Atlantic	D	900,000	(stable)
- NW continental Europe	E	1,000,000	stable/decreasing
- W Siberia/Asia Minor/Caspian	(A)		unknown
- British Isles/Denmark/Germany	C	90,000	decreasing
Pluvialis squatarola			
- E Atlantic/W Mediterranean	D	168,000	increasing
- SW Asia/E & S Africa/Madagascar	C	44,000	unknown
Charadrius hiaticula			
- NW Europe/W Med./W Africa	D	240,000	(increasing)
- SW Asia/E & S Africa	D	>200,000	unknown

Population limits	Population category	Population size	Trends
Charadrius dubius			
- Europe/West Africa	C/D		(stable)
- SW Asia/NE Africa	B+		unknown
Charadrius pecuarius			
- Pop. of *pecuarius* excl. Madag.	C+		unknown
Charadrius tricollaris			
- Entire pop. of *tricollaris*	C+		unknown
Charadrius forbesi			
- Entire population	B+		unknown
Charadrius pallidus			
- Entire pop. of *pallidus*	B+		unknown
- Entire pop. of *venustus*	B+		unknown
Charadrius alexandrinus			
- W Europe/W Med./W Africa	C	67,000	stable/decreasing
- E Med./Black Sea/E Sahel	(C)		unknown
- SW Asia/NE Africa	C/D		unknown
Charadrius marginatus			
- Southern & Eastern Africa	C		unknown
Charadrius mongolus			
- SW Asia/E & S Africa	C	>25,000	unknown
Charadrius leschenaultii			
- Entire pop. of *columbinus*	A		unknown
- SW Asia/E Africa (*crassirost.*)	C	65,000	unknown
Charadrius asiaticus			
- Entire population	B	>20,000	unknown
Eudromias morinellus			
- Europe/N Africa	D	160,000	stable/decreasing
- Asia/SW Asia*	B+		unknown
Vanellus vanellus			
- Europe/Asia Minor/N Africa	E	7,000,000	(stable)
- W Siberia/SW Asia	C+		unknown
Vanellus spinosus			
- SE Europe/SW Asia/Egypt	(B)		unknown
Vanellus albiceps			
- West & Central Africa	B+		unknown
Vanellus senegallus			
- West & NE Africa	B+		unknown
- Eeastern & Southern Africa	B+		unknown
Vanellus lugubris			
- Entire population	C+		unknown
Vanellus melanopterus			
- Southern Africa (*minor*)	C+		unknown
Vanellus coronatus			
- Central Africa (*coronatus*)	B+		unknown
- E & SE Africa (*coronatus*)	D+		unknown
- SW Africa (*xerophilus*)	C+		unknown
Vanellus superciliosus			
- Entire population	A+		unknown
Vanellus gregarius			
- Central Asia/NE Africa	A		decreasing
Vanellus leucurus			
- SW Asia/NE Africa	B+		unknown

Population limits	Population category	Population size	Trends
SCOLOPACIDAE			
Gallinago media			
- Norway & Sweden/W Africa	A	5,000	decreasing
- NE Europe & NW Asia/SE Africa	B/C		(decreasing)
Gallinago gallinago			
- Entire pop. of *faroeensis*	D	900,000	unknown
- Europe/NW Africa (*gallinago*)	E	>4,000,000	(decreasing)
- W Siberia/SW Asia/Africa	E		unknown
Lymnocryptes minimus			
- Europe	D		stable/decreasing
- W Siberia/SW Asia	B+		unknown
Limosa limosa			
- Entire pop. of *islandica*	C	65,000	stable
- W Europe/W Africa (*limosa*)	D	350,000	(decreasing)
- E Europe/Black Sea/E-C Africa	(C)		unknown
- W-C Asia/SW Asia/NE Africa	(C)		unknown
Limosa lapponica			
- Atlantic Europe & Africa	D	820,000	(increasing)
- E Africa/SW & S Asia*	C/D	>90,000	unknown
Numenius phaeopus			
- Europe/W Africa	D	>650,000	unknown
- SW Asia/E & S Africa	C+		unknown
- Volga/E Africa (*alboaxillaris*)	A+		unknown
Numenius tenuirostris			
- Entire population	A	<400	decreasing
Numenius arquata			
- Europe/N & W Africa	D	350,000	stable/decreasing
- SW Asia/E & S Africa	C	>28,000	unknown
Tringa erythropus			
- Europe/W Africa	D	>150,000	unknown
- SW Asia/NE & E Africa	B/C		unknown
Tringa totanus			
- Entire pop. of *robusta*	D	300,000	stable/decreasing
- British Isles/NW France	D	>100,000	(decreasing)
- Continental Europe/NW Africa	D	>400,000	decreasing
- SW Asia/E & S Africa	C/D		unknown
Tringa stagnatilis			
- Europe/E Med./W & C Africa	(C)		unknown
- SW Asia/E & S Africa	(C)		unknown
Tringa nebularia			
- Europe/N & W Africa	D	>300,000	(stable)
- SW Asia/E & S Africa	C/D		unknown
Tringa ochropus			
- Europe/N & W Africa	D	>400,000	(stable)
- SW Asia/NE & E Africa	C/D		unknown
Tringa glareola			
- Europe/NW & W Africa	E	>2,000,000	(decreasing)
- SW Asia/E & S Africa	D/E		unknown
Tringa cinerea			
- SE Europe/SW Asa/E & S Africa	C	44,000+	unknown
Tringa hypoleucos			
- W & C Europe/W Med./W Africa	E	2,500,000	stable/decreasing
- E Europe/SW Asia/E & S Africa	(D)		unknown

Population limits	Population category	Population size	Trends
Arenaria interpres			
- NE Canada/Greenland/W Europe	C	>67,000	(stable)
- NE Europe/W Med./W Africa	C	>70,000	(stable)
- E. Med/SW Asia/E & S Africa	C	>50,000	unknown
Calidris tenuirostris			
- SW Asia/South Asia*	A	>1,500	unknown
Calidris canutus			
- NW Europe (*islandica*)	D	345,000	stable/increasing
- W & S Africa (*canutus*)	D	512,000	(stable)
Calidris alba			
- Greenl. & Sib./W Europe/W Afr.	C	70,000	(stable)
- Sib./E Eur./SW Asia/E & S Afr.	D	120,000	unknown
Calidris minuta			
- Europe/Mediterranean/W Africa	D	211,000	(stable)
- SW Asia/E & S Africa	E	>1,000,000	unknown
Calidris temminckii			
- Europe/Black Sea/N & W Africa	C	>90,000	decreasing
- SW Asia/NE & E Africa	B+		unknown
Calidris maritima			
- Greenland/Iceland/British Is.	D	>150,000	(stable)
- W Siberia/NE & NW Europe	D		(stable)
Calidris alpina			
- NE Greenland/W Africa (*arctica*)	B	15,000	(stable)
- Entire pop. of *schinzii*	D	820,000	(stable)
- N Europe/S & W Europe (*alpina*	E	1,373,000	(decreasing)
- SW Asia/NE Africa (*alpina*)	D	>150,000	unknown
Calidris ferruginea			
- E. Europe/Med./W Africa	D	436,000	(stable)
- SW Asia/E & S Africa	D	>309,000	(stable)
Limicola falcinellus			
- Europe/W & SW Africa	C	>35,000	unknown
- W Sib/SW Asia/NE, E & S Africa	B/C		unknown
Philomachus pugnax			
- Europe/Black Sea/W Africa	E	1,000,000	decreasing
- SW Asia/Africa	D/E		unknown
Phalaropus lobatus			
- W Eurasia/Indian Ocean	D/E		unknown
Phalaropus fulicaria			
- Canada/Greenland/E Atlantic	(D)		unknown
LARIDAE			
Larus leucopthalmus			
- Entire population	B	20,000	(stable)
Larus hemprichii			
- Entire population	C	40,000	unknown
Larus canus			
- N & W Europe (*canus*)	E	1,500,000	stable/increasing
- W Sib/E Europe/SW Asia (*heinei*)	C	>50,000	unknown
Larus audouinii			
- Entire population	B	20,000	stable/increasing
Larus marinus			
- N & W Europe (incl. Iceland)	D	500,000	increasing
Larus hyperboreus			
- N Europe (incl. Iceland)	D		(stable)

Population limits	Population category	Population size	Trends
Larus glaucoides			
- Iceland/NW Europe	D		(stable)
Larus argentatus			
- Entire pop. of *argentatus*	E	1,500,000	increasing
- Entire pop. of *argenteus*	E	1,500,000	increasing
Larus cachinnans			
- Entire pop. of *michahellis*	D	350,000	increasing
- Entire pop. of *cachinnans*	C/D		unknown
- Entire pop. of *omissus*	B+		unknown
- Entire pop. of *heuglini*	B+		unknown
- Entire pop. of *taimyrensis*	B+		unknown
Larus armenicus			
- Entire population	B	30,000	unknown
Larus fuscus			
- Entire pop. of *fuscus*	D	200,000	unknown
- Entire pop. of *graellsii*	D	400,000	increasing
Larus ichthyaetus			
- Middle East/NE Africa	B		(stable)
Larus cirrocephalus			
- Southern Africa	B+		unknown
- Coastal W Africa	B		unknown
Larus ridibundus			
- W Europe/W Medit./W Africa	E	4,000,000	increasing
- E Europe/Black Sea/E Medit.	D	250,000	unknown
- SW Asia/NE Africa	D	250,000	unknown
Larus genei			
- W Africa	B	>10,000	increasing
- Black Sea/Mediterranean	D	350,000	(stable)
- SW Asia (to NW India)*	D	150,000	(increasing)
Larus melanocephalus			
- Entire population	D	500,000	increasing
Larus minutus			
- Central & SW Europe/W Medit.	(C)		(stable)
- Black Sea/Caspian Sea	C	50,000	unknown
Xema sabini			
- Canada & Greenland/SW Africa	C/D		unknown
Sterna nilotica			
- W Europe/W Medit./W Africa	B	12,000	decreasing
- Black Sea/E Medit./NE Africa	B	>10,000	decreasing
- Caspian Region/Middle East	A/B		unknown
Sterna caspia			
- Baltic & Black Sea/W Africa	B	>10,000	(stable)
- SW Asia/NE & E Africa	A/B		(stable/decreasing)
- West Africa	B	12,000	unknown
- Southern Africa	A	500	unknown
Sterna maxima			
- Entire pop. of *albidorsalis*	C	50,000	(stable)
Sterna bengalensis			
- Persian Gulf/E Arabia*	C/D		unknown
- Red Sea/E Africa/Madagascar	(C)		unknown
- Mediterranean/NW Africa	A	2,000	unknown
Sterna bergii			
- Southern Africa (*bergii*)	B	15,000	unknown
- East Africa (*thalassinus*)	A	<1,500	unknown
- Red Sea/E Africa (*velox*)	(B)		unknown

Population limits	Population category	Population size	Trends
Sterna sandvicensis			
NW Europe/W Med./W & SW Africa	D	150,000	increasing
- Black Sea/E & C Mediterranean	C	85,000	unknown
- Caspian/SW & S Asia/NE Africa*	C	>50,000	unknown
Sterna dougallii			
- W Europe/Azores/W Africa	A	5,000	decreasing
- South Africa	A	250	decreasing
Sterna hirundo			
- W & S Europe/NW & W Africa	D	150,000	decreasing
- N & E Europe/SW & S Africa	D	250,000	unknown
- SW Asia/NE & E Africa*	C/D		unknown
Sterna paradisaea			
- Iceland/W Europe	D	>600,000	decreasing
- Scandinavia	D	300,000	stable/decreasing
- Northern Russia	D	>120,000	unknown
Sterna albifrons			
- W Europe/NW, W & SW Africa	B	25,000	decreasing
- E Europe/Black S./Med./Red Sea	C	30,000	unknown
- SW Asia (to Pakistan)*	(B)		unknown
- West Africa (*guineae*)	A+		unknown
Sterna saundersi			
- Entire population*	C	>30,000	unknown
Sterna balaenarum			
- Entire population	B	>10,000	decreasing
Sterna repressa			
- Entire population*	D	600,000	decreasing
Chlidonias hybridus			
- SW Europe/NW & W Africa	D	>300,000	unknown
- SE Europe/Turkey/NE & E Africa	C	40,000	unknown
- Caspian/SW Asia (to NW India)	(C)		unknown
- S & E Africa/Madagascar	B+		unknown
Chlidonias leucopterus			
- E Europe/SW Asia/Africa	D	225,000	decreasing
Chlidonias niger			
- Entire population of *niger*	C	<100,000	decreasing
RYNCHOPIDAE			
Rynchops flavirostris			
- Entire population	B+		unknown

WATERBIRD POPULATIONS COVERED UNDER BOTH THE AFRICAN-EURASIAN WATERBIRD AGREEMENT AND THE ASIA-PACIFIC WATERBIRD AGREEMENT

PODICIPEDIDAE

Podiceps grisegena
West Siberia > > Caspian Region to Northern India

Podiceps nigricollis
West Asia > > Caspian Region and Arabian Peninsula (to Northern India)

THRESKIORNITHIDAE

Platalea leucorodia
Caspian Region and West-central Asia > > Southwest and South Asia (*major*)

PHOENICOPTERIDAE

Phoenicopterus ruber
West Asia > > Southwest Asia, South Asia and Northeast Africa

DROMADIDAE

Dromas ardeola
Entire population (East Africa to Sri Lanka)

HAEMATOPODIDAE

Haematopus ostralegus
Entire population of *longipes* (West and Central Asia > > East Africa to Sri Lanka)

CHARADRIIDAE

Eudromias morinellus
Asian breeding birds > > Southwest Asia and Mediterranean Basin

SCOLOPACIDAE

Limosa lapponica
West Siberia > > East Africa, Southwest Asia and South Asia (to NW India)

Calidris tenuirostris
Northern Siberia > > Arabian Peninsula and Pakistan

LARIDAE

Larus genei
West Asia > > Southwest and South Asia (Arabian Peninsula to NW India)

Sterna bengalensis
Persian Gulf > > Eastern Arabia and South Asia (to Sri Lanka)

Sterna sandvicensis
Caspian Region and Kazakhstan > > Persian Gulf and Indian Ocean (NE Africa to Sri Lanka)

Sterna hirundo
West Siberia and West-central Asia > > Indian Ocean (SE Africa to Pakistan)

Sterna albifrons
Caspian Region, Iran and Iraq > > Persian Gulf to Pakistan

Sterna saundersi
Entire population (East Africa to Sri Lanka)

Sterna repressa
Entire population (East Africa to West India)

Table 6

THREATENED WATERBIRD SPECIES AND POPULATIONS IN THE AFRICA-EURASIA REGION

KEY TO COLUMN HEADINGS:

A - globally threatened species listed in the IUCN Red List of Threatened Animals
B - species or biogeographical populations which are thought to number less than 10,000 individuals
C - species or biogeographical populations which are thought to number less than 25,000 individuals and appear to be declining throughout all or a large part of their ranges in the Africa-Eurasia region.

	A	B	C
Gavia immer			
- Greenland/Iceland/NW Europe		X	
Podiceps auritus			
- Iceland/NW Europe (large-bill)		X	
Pelecanus crispus			
- Black Sea/Mediterranean	X		
- Caspian Sea/SW Asia	X		
Phalacrocorax pygmaeus			
- Mediterranean/Black Sea	X		
- Aral Sea/Caspian Sea/Iraq	X		
Egretta vinaceigula			
- Entire population	X		
Ardea purpurea			
- S & W Europe/NW & W Africa			X
Casmerodius albus			
- SE Europe/Black Sea/E Medit.		X	
Ardeola idae			
- Entire population			X
Ixobrychus minutus			
- S & W Europe/W & E Africa			X
Botaurus stellaris			
- Europe			X
Ciconia nigra			
- SW Europe/West Africa		X	
- C & E Europe/NE & E Africa		X	
- Southern Africa		X	
Plegadis falcinellus			
- Europe/W Africa			X
- SW Asia/NE Africa			X
Geronticus eremita			
- Morocco/Algeria	X		
- Turkey/Arabia/NE Africa	X		
Threskiornis aethiopicus			
- Iraq/Iran		X	
Platalea leucorodia			
- Netherlands/Spain/W Africa		X	
- SE Europe/Black Sea/NE Africa		X	

	A	B	C
Thalassornis leuconotus			
- Eastern & Southern Africa			X
- West Africa		X	
Oxyura leucocephala			
- West Mediterranean	X		
- SE Europe/Turkey/SW Asia	X		
- W Siberia/Caspian Region	X		
Cygnus columbianus			
- N Siberia/Caspian Region		X	
Anser erythropus			
- NE Europe/SE Europe/Black Sea	X		
- W Siberia/Caspian Region	X		
Branta bernicla			
- Svalbard/Denmark/UK (*hrota*)		X	
Branta ruficollis			
- Entire population	X		
Tadorna ferruginea			
- NW Africa		X	
Marmaronetta angustirostris			
- W Mediterranean/W Africa	X		
- East Mediterranean	X		
- SW Asia	X		
Aythya nyroca			
- W & SW Asia/NE Africa		X	
Grus leucogeranus			
- W Siberia/Caspian Region	X		
Grus virgo			
- SW Asia/E Medit./NE Africa			X
Grus paradisea			
- Entire population			X
Grus carunculatus			
- Central & Southern Africa	X		
Grus grus			
- NE & Central Europe/N Africa			X
Glareola pratincola			
- SW Europe/NW & W Africa		X	
- SE Europe/Asia Minor/E Sahel			X
Glareola nordmanni			
- Entire population			X
Charadrius leschenaultii			
- Entire pop. of *columbinus*		X	
Vanellus gregarius			
- Central Asia/NE Africa	X		
Gallinago media			
- Norway & Sweden/W Africa		X	
- NE Europe & NW Asia/SE Africa			X
Numenius tenuirostris			
- Entire population	X		
Calidris tenuirostris			
- SW Asia/South Asia*		X	
Larus leucopthalmus			
- Entire population	X		
Larus audouinii			
- Entire population	X		

	A	B	C
Sterna nilotica			
- W Europe/W Medit./W Africa			X
- Black Sea/E Medit./NE Africa			X
- Caspian Region/Middle East			(X)
Sterna caspia			
- SW Asia/NE & E Africa			X
- Southern Africa		X	
Sterna bengalensis			
- Mediterranean/NW Africa		X	
Sterna bergii			
- East Africa (*thalassinus*)		X	
Sterna dougallii			
- W Europe/Azores/W Africa		X	
- South Africa		X	
Sterna albifrons			
- W Europe/NW, W & SW Africa			X
Sterna balaenarum			
- Entire population	X		

*: Population also included in the draft Asia-Pacific Waterbird Agreement.

Note: Detailed status reports (with priorities for conservation action) are already available for *Oxyura leucocephala*, *Marmaronetta angustirostris* and *Numenius tenuirostris*.

Table 7

VULNERABLE WATERBIRD SPECIES AND POPULATIONS IN THE AFRICA-EURASIA REGION

KEY TO COLUMN HEADINGS:

A - species or biogeographical populations which are thought to number less than 25,000 individuals and are dependent on a habitat type which is widely under threat in Africa and West Eurasia.

B - species or biogeographical populations which are thought to number less than 100,000 individuals and appear to be declining throughout all or a large part of their ranges in the Africa-Eurasia region.

C - species or biogeographical populations for which no numerical data are available but which appear to be scarce throughout their ranges in the Africa-Eurasia region and which are dependent on a habitat type which is widely under threat.

	A	B	C
Podiceps grisegena			
- Black Sea/E Mediterranean	X		
Podiceps auritus			
- W Siberia/Black Sea/Caspian	X		
Pelecanus onocrotalus			
- Black Sea/E Med./NE Africa		X	
- Caspian/Iran/Iraq	X		
Ardeola rufiventris			
- Entire population			X
Ixobrychus sturmii			
- Entire population			X
Ciconia ciconia			
- Iberia/NW & W Africa		X	
- Caucasus/SW Asia		X	
Platalea leucorodia			
- SW & South Asia (*major*)*	X		
Platalea alba			
- Southern Africa	X		
Anser albifrons			
- W Siberia/Central Europe		X	
- N Siberia/Caspian/Iraq	X		
Tadorna ferruginea			
- Black Sea/E Med./NE Africa	X		
Netta rufina			
- C & SW Europe/W Mediterranean	X		
- Black Sea/E Mediterranean		X	
Aythya nyroca			
- Black Sea/Medit./W Africa		X	
Mergus serrator			
- W Siberia/SW Asia	X		
Mergus merganser			
- NE Europe/Black Sea/E Medit.	X		
- W Siberia/Caspian Region	X		
Grus grus			
- E Europe/Black Sea/NE Africa		X	
Sarothrura boehmi			
- Entire population			X

Porzana parva			
- Entire population of *parva*		X	
Porzana pusilla			
- Entire pop. of *intermedia*		X	
Aenigmatolimnas marginalis			
- Entire population			X
Dromas ardeola			
- Entire population*		X	
Pluvialis apricaria			
- W Siberia/Asia Minor/Caspian	X		
- British Isles/Denmark/Germany		X	
Charadrius alexandrinus			
- W Europe/W Med./W Africa		X	
Charadrius asiaticus			
- Entire population	X		
Vanellus spinosus			
- SE Europe/SW Asia/Egypt	X		
Vanellus superciliosus			
- Entire population			X
Vanellus leucurus			
- SW Asia/NE Africa	X		
Numenius phaeopus			
- Volga/E Africa (*alboaxillaris*)	X		
Calidris temminckii			
- Europe/Black Sea/N & W Africa		X	
Sterna albifrons			
- West Africa (*guineae*)	X		
Chlidonias niger			
- Entire population of *niger*		X	

*: Population also included in the Asia-Pacific Waterbird Agreement.

Table 8

POTENTIALLY VULNERABLE WATERBIRD SPECIES AND POPULATIONS IN THE AFRICA-EURASIA REGION

- species or biogeographical populations with a population size of over 100,000 individuals, which have shown a marked decrease in numbers over the whole or a large part of their range in the Africa-Eurasia region in recent decades

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Ciconia ciconia
Central & East Europe/East & Southern Africa
Aythya ferina
NW & Central Europe
NE Europe/Black Sea/Mediterranean
West Siberia/SW Asia
Porzana porzana
West Eurasia/Africa
Fulica atra
East Europe/Black Sea/West Africa
West Siberia/SW Asia
Gallinago gallinago
Europe/NW Africa (*gallinago*)
Lymnocryptes minimus
Europe
Limosa limosa
West Europe/West Africa (*limosa*)
Tringa totanus
British Isles/NW France
Continental Europe/NW Africa
Calidris alpina
North Europe/Sout & West Europe (*alpina*)
Philomachus pugnax
Europe/Black Sea/West Africa
Sterna hirundo
West & South Europe/NW & West Africa
Sterna paradisaea
Iceland/West Europe
Scandinavia
Sterna repressa
Entire population
Chlidonias leucopterus
East Europe/SW Asia/Africa

LOCALIZED WATERBIRD SPECIES AND POPULATIONS IN THE AFRICA-EURASIA REGION

- species and populations with a population size of over 10,000 individuals, which are stable or increasing, but which are restricted to only a few key sites during a part or the whole of their annual cycle.

Phoenicopterus ruber
Mauritania
East Africa
Southern Africa
West Mediterranean
Southwest & South Asia*

Phoenicopterus minor
West Africa
East Africa
Southern Africa

Cygnus columbianus
West Siberia/NW Europe

Anser brachyrhynchus
Svalbard/NW Europe

Anser albifrons
Greenland/Ireland/UK (*flavirostris*)

Branta leucopsis
East Greenland/Ireland/Scotland
Svalbard/SW Scotland
Russia/Germany/Netherlands

Branta bernicla
Canada/Greenland/Ireland (*hrota*)

Aythya marila
West Siberia/Black Sea/Caspian

Somateria spectabilis
West Siberia/NE Europe

Polysticta stelleri
West Siberia/NE Europe

Mergellus albellus
Northwest & Central Europe

Recurvirostra avosetta
East Atlantic/West Mediterranean/West Africa
Black Sea/East Mediterranean/North-central Africa

Limosa limosa
Entire population of *islandica*

Limosa lapponica
Atlantic Europe & Africa

Calidris canutus
West & Southern Africa (*canutus*)

Larus hemprichii
Entire population

Larus armenicus
Entire population

Larus ichthyaetus
Middle East/NE Africa
Larus genei
West Africa
Black Sea/Mediterranean
Larus melanocephalus
Entire population
Sterna caspia
Baltic & Black Sea/West Africa
West African breeding population
Sterna maxima
Entire population of *albidorsalis*
Sterna bengalensis
Persian Gulf/Eastern Arabia*
Red Sea/East Africa/Madagascar
Sterna bergii
Southern Africa (*bergii*)
Red Sea/East Africa (*velox*)
Sterna sandvicensis
NW Europe/West Mediterranean/West & SW Africa
Black Sea/East & Central Mediterranean
Caspian/SW & South Asia/NE Africa*

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*: Population also included in the Asia-Pacific Waterbird Agreement.

Note: An International Species Conservation Plan has already been prepared for *Anser albifrons flavirostris*.

Table 10

THE IMPACT OF DAMS ON THE AREA OF WETLANDS ON SOME AFRICAN FLOODPLAINS

Floodplain	Area in 1960 (ha)	Area remaining in 2020 (ha)	Percentage loss
Senegal Delta	300,000	30,000	90
Senegal Valley	550,000	55,000	90
Niger Delta	3,000,00	2,700,000	10
Niger Valley	300,000	150,000	50

(After Dugan, 1990)

WATERBIRD SPECIES INCLUDED IN THE AGREEMENT

POPULATION LIMITS, POPULATION SIZES AND TRENDS

"Biogeographical Populations"

For each species included in the Agreement, an attempt has been made to identify all those discrete or relatively discrete migratory populations which occur in the Africa-Eurasia region and should be considered under this Agreement. Several types of "population" are recognized:

- the entire population of a monotypic species.
- the entire population of a recognized subspecies.
- a discrete migratory population of a species or subspecies, *i.e.* a population which rarely if ever mixes with other populations of the same species or subspecies.
- that "population" of birds which spends the winter in a relatively discrete portion of the Africa-Eurasia region (*e.g.*, Northwest Europe, the Black Sea/Mediterranean Region, the Caspian Region/Sub-Saharan West Africa, Southern Africa). In many cases, these "populations" may mix extensively with other populations on the breeding grounds, or may mix with sedentary populations of the same species during the migration seasons and/or on the wintering grounds. The birds wintering in two or more adjacent regions have often been grouped together into a single larger region, when it seems likely that they belong to the same "population".

The Special Case of "Rains Migrants"

Many populations of Afrotropical waterbirds, especially some Ardeidae, Ciconiidae, Rallidae and Charadriidae, are "rains migrants", moving considerable distances to take advantage of seasonal rainfall in otherwise arid regions. In a number of species with a wide north-south distribution spanning the equator, there appear to be three main elements in the population: (a) a sedentary element which breeds in humid equatorial regions and remains there all year round; (b) an element in the northern tropics which spends the non-breeding season in humid equatorial regions and migrates north in the northern wet season (June-October) to breed at seasonal wetlands in the Sahelian zone; and (c) an element in the southern tropics which spends the non-breeding season in humid equatorial regions and migrates south in the southern wet season (December-March) to breed in southern Africa. Both northern and southern migrant populations overlap extensively with the resident equatorial birds during their respective dry seasons (November-May in the case of northern birds; June-November in the case of southern birds), but may not overlap with one another to any great extent as they breed at different times of the year and are present in equatorial regions at different times of the year.

However, the situation may be even more complex, with one or both of the northern and southern elements being true trans-equatorial migrants, breeding in the wet season north (or south) of the equator, and spending the non-breeding season in the wet season south (or north) of the equator. This could involve extensive mixing of migratory populations throughout the year, with the two elements nesting at different times. Clearly, much more work needs to be carried out before these movements are fully understood.

Because of our lack of understanding of the movements of "rains migrants" and the extent to which they mix with sedentary populations of the same species, no attempt has been made in

this analysis to split the populations of these species into migratory and sedentary units. In most cases, therefore, the population included here is the entire population of the species or subspecies in question, even though the presence of relatively discrete migratory groups seems likely.

Population Size and Trends

Each population is assigned to one of the following five size categories:

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

A plus sign (+) indicates that virtually no information is available on the size of the population in question. The category given is considered to be the minimum category that might apply. Thus a population listed as C+ is considered to have a population in excess of 25,000 birds.

Whenever more precise estimates of population size are available, these are given in brackets after the size category. Unless otherwise stated, these estimates have been obtained from the International Waterfowl Census (Western Palearctic Waterfowl Census, Asian Waterfowl Census and African Waterfowl Census). However, in many cases the best information on population size has been obtained from censuses of breeding birds. When this is the case, the estimated size of the breeding population is given. An estimate of the total number of individuals in the population at the end of the breeding season has then been obtained by multiplying the number of breeding pairs by a factor of between three and four.

Unfortunately, many of the censuses of breeding populations of waterbirds in Western Eurasia have covered only a part of the range of the population in question. In many cases, for example, an estimate is available for the number of breeding pairs in virtually all of Europe except the Baltic States, Russia and other republics of the former U.S.S.R. In some cases, this will represent a large proportion of the total population; in other cases, possibly less than half.

Information on trends is generally confined to the situation in recent decades.

GAVIIDAE

Red-throated Diver *Gavia stellata*

Monotypic; circumpolar. West Eurasian populations breed in Greenland, Iceland, northern Europe and West Siberia and winter on the Atlantic coast of West Europe south to France (vagrant to Morocco), and less commonly in the Black and Caspian Sea (presumably West Siberian birds). No discrete populations are identifiable. Two main groups are recognized on the basis of winter distribution.

- Northwest Europe: C/D. 5,500 pairs in Finland, Scotland, Iceland and Norway; 10,000 wintering in British waters.

  Trends: Stable/increasing.

- Black Sea/Caspian Sea: B+. Poorly known.

  Trends: Unknown.

Black-throated Diver *Gavia arctica*

Two subspecies occur. 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 west and south Europe, south to northwest Africa (scarce) and east to the Black Sea; the central Asian form *suschkini* (often lumped with *arctica*) breeds in southwestern Siberia and winters in Turkmenistan and the Caspian Region. Two populations are recognized.

- West Eurasian *arctica*: B/C. 2,150 pairs in Finland and Scotland; 3,350 wintering in six countries.

  Trends: Stable/increasing.

- *suschkini* (entire population): B+. Poorly known.

  Trends: Unknown.

Great Northern Diver *Gavia immer*

Only the nominate race occurs as a winter visitor to the Atlantic coast of Northwest Europe (north Norway to NW France) from breeding grounds in Iceland, Greenland and possibly also NE Canada. One population is recognized.

- Northwest European wintering population: A. 100-300 pairs in Iceland. 5,000+ wintering in NW Europe.

  Trends: Stable/decreasing.

White-billed Diver *Gavia adamsii*

Monotypic; almost circumpolar. The population breeding in northern European Russia winters west along the north coast of Norway and rarely southwest to the North Sea. Only one population is recognized.

- Northwest Europe: A/B. Poorly known.

  Trends: Unknown.

PODICIPEDIDAE

Little Grebe *Tachybaptus ruficollis*

Three subspecies occur: *T. r. ruficollis* in Europe and Northwest Africa; *T. r. capensis* in Southwest Asia and Africa south of the Sahara; and *T. r. iraquensis* in Iraq and southwest Iran. *T.r. capensis* and *T.r. iraquensis* are largely sedentary. The nominate race is also mainly sedentary, although most populations in temperate and southern Europe show some dispersion southwest, especially during hard weather. Populations breeding in Sweden, the Baltic States and East Europe are migratory, wintering in west and south Europe and therefore overlapping extensively with sedentary populations. Only one population is relevant, and this includes a mixture of resident and migratory populations.

- Europe/NW Africa (*ruficollis*): D.

  Trends: Possibly stable; increasing in some areas, decreasing in others.

Red-necked Grebe *Podiceps grisegena*

Only the nominate subspecies occurs. This 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 NW Africa), with smaller numbers wintering in the Caspian Sea, Black Sea and

Eastern Mediterranean. Most European breeders are believed to winter in Northwest Europe; birds wintering in the Caspian are believed to originate from the Volga Basin and West Siberia. The small number of birds wintering in the Black Sea and Eastern Mediterranean presumably come from the breeding areas in Turkey, Bulgaria, Romania and the Ukraine. Three main wintering groups are recognized.

- Northwest Europe: B/C. 3,000-3,5000 pairs in five countries.
  Trends: Probably stable; increasing in some areas, decreasing in others.
- Black Sea/E Mediterranean: A/B. Poorly known.
  Trends: Unknown.
- SW Asia/South Asia (Caspian Region to NW India): B.
  Trends: Apparently increasing in east.

Note: The SW Asia/South Asia population is also included in the Asia-Pacific Waterbird Agreement.

Great Crested Grebe *Podiceps cristatus*

Two subspecies occur: the nominate race breeds across Eurasia and winters south to Morocco, Egypt and Saudi Arabia; *P. c. infuscatus* occurs in Africa south of the Sahara. African populations are largely sedentary. No discrete populations of *cristatus* are identifiable. Three main wintering groups are recognized.

- Northwest Europe: D. Over 22,000 pairs in nine countries.
  Trends: Increasing.
- Black Sea/Mediterranean: C/D. Count of 24,000 in Turkey.
  Trends: Unknown.
- Caspian Region/Iraq/Arabia: B.
  Trends: Increasing in some areas.

Slavonian Grebe *Podiceps auritus*

Monotypic, although two distinct forms, separable on bill-size, occur in West Eurasia. Large-billed birds breed in Iceland, the Faeroes, Scotland and north Norway, and winter in the British Isles and on the west coast of Norway. 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 recognized.

- British Isles/N Norway (large-billed): A. (5,000). Total breeding population estimated at 1,050-1,800 pairs.
  Trends: Apparently stable.
- Northwest Europe (small-billed): B/C. 4,000 pairs in Finland and Sweden.
  Trends: Apparently stable.
- Black Sea/Caspian Region: A/B. Poorly known.
  Trends: Unknown.

Black-necked Grebe *Podiceps nigricollis*

Two subspecies occur. The nominate subspecies breeds patchily across temperate and southern Europe to west-central Asia and winters south to North Africa and the Persian Gulf. *P. n. gurneyi* has a fragmented distribution in Africa from Ethiopia and S Angola to South Africa; most populations appear to be sedentary or nomadic, but the movements are poorly understood. Two main wintering groups of *nigricollis* are recognized.

- Southwest Europe/Mediterranean/Black Sea (European breeders): D. (100,000).
  Trends: Increasing in East and Central, decreasing in South.
- SW Asia/South Asia (Caspian Region & Arabian Peninsula to NW India; West-central Asian breeders): C. (25,000).
  Trends: Apparently increasing in some areas.

Note: The SW Asia/South Asia population is also included in the Asia-Pacific Waterbird Agreement.

PELECANIDAE

Great White Pelican *Pelecanus onocrotalus*

Monotypic. 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. Two largely discrete populations may be present in West Eurasia: a population breeding in Southeast Europe and western Turkey and wintering in Israel and East Africa (formerly also the Nile Delta); and a population breeding in the Caspian Region, eastern Turkey and northwestern Iran and wintering from Iraq and southern Iran to Afghanistan and probably also Pakistan.

- Black Sea/E Mediterranean/NE Africa: C. (80,000). 18,000 pairs. At least 75,000 occur on passage through Israel (late 1980s data).

  Trends: Stable/decreasing.

- Caspian Region/Iraq/Iran: B. (10,000) Possibly many more winter in Iraq.

  Trends: Unknown.

The African breeding population may be about 75,000 pairs.

Pink-backed Pelican *Pelecanus rufescens*

Monotypic. Breeds widely in Africa south of the Sahara and also in southwestern Arabia. Normally sedentary, undertaking only local movements perhaps related to water conditions. Populations in West Africa are rains migrants, moving north in the wet season and south in the dry season. There also appears to be an influx of birds into the Arabian peninsula from NE Africa in summer (the wet season). No discrete populations are identifiable, and only one population is therefore recognized.

- Entire population: D. Widespread, common and locally abundant. Estimates of 10,000 in West Africa, 15,000 in Southern Africa, 1,000 in Arabian Peninsula.

  Trends: Stable. Increasing in some areas, decreasing in others. Considered to be threatened in South Africa.

Dalmatian Pelican *Pelecanus crispus*

Monotypic. Two populations may be involved: a small East Mediterranean/Black Sea population, and a larger Southwest Asian population wintering in the South Caspian region and from Mesopotamia through southern Iran to Pakistan.

- Mediterranean/Black Sea: A. (1,500). 400-650 pairs; 1,000-2,000 birds.

  Trends: Decreasing.

- SW Asia: A. (3,000). 1,000-1,500 pairs, excluding Iraq, where possibly many more.

  Trends: Apparently stable.

PHALACROCORACIDAE

Pygmy Cormorant *Phalacrocorax pygmaeus*

Monotypic. Breeds from eastern Europe 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 southwest Caspian and lower Iraq. Two populations are recognized.

- Mediterranean/Black Sea: C. (45,000). Estimated 15,000 pairs.

  Trends: Stable or increasing after a long period of decline. Re-colonized Moldova in 1982, where 300-400 pairs by 1990; colonized Hungary in 1988.

- SW Asia (Aral Sea/Caspian Sea/Iraq): A. (5,000). Several thousand pairs in north Caspian.

  Trends: Stable/decreasing.

Great Cormorant *Phalacrocorax carbo*

Two subspecies occur. The nominate race breeds in Iceland, Norway and the British Islands. The Icelandic population (3,500 pairs) is sedentary; Norwegian birds disperse south to the western Baltic; British birds disperse widely within the British Isles, with a small proportion crossing the English Channel to winter in France and Portugal. *P. c. sinensis* breeds across continental Europe and Asia, wintering south to NW Africa, the Arabian Peninsula, India and Southeast Asia. Four main migratory populations are recognized in West Eurasia.

- British Isles/Norway population of *P. c. carbo*: D (120,000). Over 31,000 pairs in British Isles and Norway.

  Trends: Increasing rapidly.

- Central European *sinensis* (wintering Atlantic coast of Europe and West Mediterranean): D. (150,000). 35,000-40,000 pairs.

  Trends: Increasing rapidly, and colonizing many new areas.

- Black Sea/E Mediterranean *sinensis*: D. (150,000). 35,000 pairs.
Trends: Unknown.
- SW Asian *sinensis* (wintering Caspian Sea to Arabia): D. (100,000). 25,000-30,000 pairs in Caspian.
Trends: Unknown.

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 Socotra. There is evidence of large-scale movements along the Oman coast, but these are poorly understood. Only one population is recognized.

- Entire population: D. (400,000). The total population has been estimated at about 100,000 pairs or 400,000 birds.
Trends: Unknown.

ARDEIDAE

Slaty Egret *Egretta vinaceigula*

Monotypic. Only described as a distinct species in 1971. Known to breed only in Botswana, mainly in the Okavango Delta, but likely to breed in Zambia. Undertakes extensive movements eastwards during the wet season to wetlands around Lake Malawi and along the Shire and Zambesi Rivers in Malawi and NW Mozambique. Concentrations of up to 40 have been observed in the Okavango Delta in Botswana, and parties of up to 30 have been recorded on the Liuwa Plain and Kafue Flats in Zambia during the dry season. A colony of 26 nests has been found in northeast Namibia. Only one population is recognized.

- Entire population: A. (Probably in range 5,000-10,000).
Trends: Little information; some indications of a decrease in some areas.

Little Egret *Egretta garzetta*

Only the nominate subspecies occurs. 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. Most populations breeding in Subsaharan Africa are mainly sedentary, but the population breeding in Southern Africa is migratory. Three main groups of migrants are recognized; these mix extensively with sedentary populations on the winter grounds.

- S & W European/N African breeders (wintering mainly W Africa): C. (60,000). At least 20,000 pairs.
Trends: Increasing.
- Black Sea/Caspian/Middle East breeders (wintering mainly NE and E Africa): C. Minimum of 10,000-15,000 pairs.
Trends: Unknown.
- Southern Africa (northern limits of winter distribution unknown): B+. Poorly known; locally common.
Trends: Unknown.

Grey Heron *Ardea cinerea*

Three subspecies occur. *A. c. monicae* of Mauritania and *A. c. firasa* of Madagascar, Aldabra and Comoro are sedentary. The nominate race 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 Arabia. The populations breeding in Subsaharan Africa are mainly sedentary, as are those breeding in Britain and Ireland. Two main migratory groups are recognized.

- European breeders (wintering to Africa): D. (150,000). 37,000 pairs in W & C Europe; probably over 50,000 pairs in total.
Trends: Increasing.
- West Asian breeders (wintering to Arabia): B. At least 10,000 winter in SW Asia.
Trends: Unknown.

Black-headed Heron *Ardea melanocephala*

Monotypic, occurring widely throughout Africa south of the Sahara. Movements, if any, in southern part of range unknown. Apparently a rains migrant in Central Africa and the northern tropics, moving north during the wet season and retreating south of 12°N during the dry season. Only one population can be identified.

- Entire population: D+. Commonest large heron over most of Africa.
  Trends: Increasing in some areas.

Purple Heron *Ardea purpurea*

Three subspecies occur. *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. Two main migratory populations are recognized.

- S & W Europe/NW Africa (wintering mainly West Africa): B. (20,000). 6,500 pairs.
  Trends: Probably now decreasing after a period of increase.
- Black Sea/Caspian Region/SW Asia (wintering mainly NE and East Africa): B/C. Estimated 7,500 pairs in Black Sea and Caspian.
  Trends: Unknown.

Great Egret *Casmerodius albus*

Two subspecies occur. The nominate race breeds in eastern Europe and Southwest Asia, and winters west to France and south to Tunisia, Egypt and the Persian Gulf. *E. a. melanorhynchos* breeds throughout Africa south of the Sahara and appears to be largely sedentary except for some post-breeding dispersal. Two main migratory populations are recognized.

- SE Europe/Black Sea (wintering mainly in E Mediterranean): A. (5,000). At least 1,550 pairs.
  Trends: Possibly decreasing.
- Southwest Asia/Caspian Region (wintering mainly in Kazakhstan, Iraq and Iran): B. At least 10,000 winter in SW Asia.
  Trends: Stable/decreasing.

Some birds from both these populations also winter in Africa south of the Sahara, but the numbers may be small.

Intermediate Egret *Mesophoyx intermedia*

The subspecies *brachyrhyncha* breeds widely in Africa south of the Sahara and undertakes local movements and possibly regular migrations in many parts of its range. Only one population can be identified.

- Africa (entire population): C+. Widespread and locally common. Colonies of up to 1,000 pairs in Ethiopia, 2,000 pairs in Kenya, and 875 pairs in Mali.
  Trends: Unknown.

Cattle Egret *Bubulcus ibis*

Only the nominate subspecies occurs. This breeds widely in Africa south of the Sahara, in Madagascar and also in Northwest Africa, Southwest Europe, the Eastern Mediterranean, Iraq and the Caspian Region. Four main migratory populations are identifiable. (1) The population breeding in Southern Africa (from 16°S to the Cape) winters north to the Central African Republic, Zaire, Uganda and Tanzania. (2) The population breeding in the northern tropics (10-16°N) from Senegal to the Red Sea is a rains migrant within this zone. (3) The population breeding in Southwest Europe and Northwest Africa is partially migratory within this region, with Spanish breeders regularly crossing to NW Africa. (4) The population breeding in the Near East and Caspian Region is partially migratory, with a few birds wintering as far north as the Caspian. The populations breeding in Egypt, Central and East Africa, and Madagascar are mainly sedentary.

- Southern Africa: D+. Abundant.
  Trends: Increasing.
- Northern tropics of Africa: D. At least 250,000 in winter. 65,000 pairs in the Inner Niger Delta.
  Trends: Unknown.
- SW Europe/NW Africa: D. (250,000). 80,000 pairs in Iberia in 1990.
  Trends: Increasing rapidly.

- Near East/Caspian Region: A/B. Poorly known; 2,500 winter in SW Asia.
Trends: Unknown.

Squacco Heron *Ardeola ralloides*

Monotypic, breeding widely in Africa and in southern Europe and Southwest Asia as far east as 67°E in central Kazakhstan and northeastern Iran. Populations breeding south of the Sahara are largely sedentary, with possibly some local seasonal movements. The Northwest African and West Eurasian populations winter mainly in Africa south of the Sahara where they mix with the resident populations. Two main migratory populations are recognized.

- S & W European/NW African breeders (wintering mainly in West Africa): C. (70,000). 22,500 pairs, mainly around the Black Sea.
Trends: Increasing, at least locally.
- Southwest Asian breeders (wintering mainly East Africa): B/C. Poorly known; at least 4,500 pairs.
Trends: Unknown.

Madagascar Pond-Heron *Ardeola idae*

Monotypic. Confined as a breeding species to Madagascar and Aldabra (since 1967), but winters in East and Central Africa. Only one population is recognized.

- Entire population: A+. Unknown; reported to be fairly common.
Trends: Decreased dramatically over past 50 years, and now breeds only in the west.

Rufous-bellied Heron *Ardeola rufiventris*

Monotypic. Breeds in Central and Southern Africa from South Angola and Tanzania to South Africa; at least partially migratory over much of its range, but movements poorly understood. Only one population is recognized.

- Entire population: A+. Common in the floodplains of western and northern Zambia and Okavango Delta of Botswana, but local and generally scarce or rare elsewhere.
Trends: Unknown.

Black-crowned Night-Heron *Nycticorax nycticorax*

Only the nominate subspecies occurs. 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 Northwest 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. Two main migratory populations are recognized:

- S & W European/NW African breeders (wintering mainly in West Africa): D. (150,000). 44,000 pairs in Europe excluding Russia. Estimate of 70,000-100,000 wintering in tropical West Africa.
Trends: Perhaps mainly stable, although increasing in some areas.
- Southwest Asian breeders (wintering mainly in NE Africa): B/C. Poorly known.
Trends: Unknown.

Little Bittern *Ixobrychus minutus*

Three subspecies occur. *I. m. payesii* breeds widely in Africa south of the Sahara and appears to be mainly sedentary. *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, NW China and NW India, and winters mainly in Africa. Two main migratory populations are recognized, although these overlap extensively on their main wintering grounds in East Africa.

- S & W European breeders (wintering W and E Africa): B. (20,000). Population estimated at 4,400-7,100 pairs.
Trends: Decreasing, especially in western parts of range.
- Southwest Asian breeders (wintering mainly E Africa): Probably C. Poorly known.
Trends: Unknown.

The small population breeding in Pakistan and India and apparently wintering in South Asia is covered by the Asia-Pacific Waterbird Agreement.

Dwarf Bittern *Ixobrychus sturmii*

Monotypic. The species occurs widely in Africa south of the Sahara. 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 recognized, this containing sedentary as well as migratory birds.

- Entire population: A+. Uncommon to rare throughout its extensive range. The population in South Africa is estimated at 200 pairs.

Trends: Unknown.

Great Bittern *Botaurus stellaris*

Two subspecies occur. The nominate subspecies breeds widely in West Eurasia and winters south to the Mediterranean, Egypt, Iraq, and occasionally in Africa south of the Sahara. *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 are recognized.

- European breeders (wintering mainly in Europe): B. (12,000). 2,500-2,700 pairs in Europe excluding Russia and the Black Sea.

Trends: Decreasing generally throughout Europe and now considered threatened.

- West Asian breeders (wintering mainly in SW Asia): A/B. Poorly known.

Trends: Unknown.

Birds wintering in Turkmenistan and Seistan (Iran/Afghanistan border) may belong to the West Eurasian population or be a part of a South Asian population covered by the Asia-Pacific Waterbird Agreement.

CICONIIDAE

Yellow-billed Stork *Mycteria ibis*

Monotypic. The species occurs widely in Africa south of the Sahara. Central and East African populations appear to be sedentary or locally dispersive. Populations in southern Africa and West Africa are migratory, but the limits of these populations are unknown. A common non-breeding visitor to Madagascar from southern Africa. Only one population is recognized.

- Entire population: Probably C. Common to abundant throughout its range.

Trends: Apparently stable in many areas, but possibly decreasing in South Africa where less than 25 pairs.

African Openbill *Anastomus lamelligerus*

Two subspecies occur. The nominate subspecies breeds in Africa south of the Sahara, mainly south of the equator, and occurs north of the equator chiefly as a dry season visitor (November-May). *A. l. madagascariensis* is confined to Madagascar. One migratory populations is recognized.

- *A. l. lamelligerus* (entire population): Probably D. Probably the commonest stork in Africa; one colony of 5,000 pairs in Tanzania.

Trends: Apparently stable; possibly increasing in East Africa.

Black Stork *Ciconia nigra*

Monotypic. Three discrete populations are recognized. (1) A small population which breeds in Southwest Europe (Iberia) 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 from Central and East Europe east across Asia to Eastern Siberia and China. Central and East European breeders winter in Northeast and East Africa south to Ethiopia, Uganda and Tanzania; West Asian breeders probably winter mainly from southeastern Iran into South Asia and are thus largely extralimital. (3) A small population which breeds in southern Africa and moves within this region during the non-breeding season. Three migratory populations are relevant.

- Southwest Europe/West Africa: A. (1,000). Usually given as 150 pairs (100-150 pairs in Spain, 25-30 pairs in Portugal), but 300 pairs in Spain alone in 1992.

Trends: Decreasing for many years, but possibly a recent increase in Spain.

- Central & East Europe/NE & East Africa: A. (7,500). 1,500-2,000 pairs.

Trends: Possibly decreasing in east, but increasing in west (Ukraine, Poland, Austria, Belgium, France). Censuses in Ukraine showed an increase from 137 pairs in 1977 to 210 pairs in 1991.

- Southern Africa: A. (1,500). Probably over 200 pairs in South Africa.
Trends: Stable; may be increasing in South Africa.
(Birds wintering in southern and eastern Iran probably belong to the Central/South Asian population which is covered under the Asian-Pacific Waterbird Agreement).

Abdim's Stork *Ciconia abdimii*

Monotypic. The species occurs widely in Africa south of the Sahara. A trans-equatorial migrant, breeding during the wet season (May-October) north of the equator from Somalia, Ethiopia, Uganda and northwest Kenya to Senegal, and spending the dry season mainly in the southern tropics of eastern Africa south to the Zambesi and Transvaal. Small numbers of birds reach southwestern Arabia during the boreal summer, and the species has bred in Yemen. Only one population is recognized.
- Entire population: Probably C. Population in West Africa estimated at 50,000. Flocks of up to 10,000 have been recorded in Uganda. Up to 4,000 have occurred in Arabia.
Trends: Stable.

Woolly-necked Stork *Ciconia episcopus*

The subspecies *microscelis* occurs widely in Africa south of the Sahara. It is known to be migratory, especially in the central and southern parts of its range, but the movements are poorly understood. Only one population is recognized.
- Entire population of *microscelis*: Possibly B. Estimate of 400-600 in Guinea Bissau.
Trends: Stable; may be increasing in East Africa.

White Stork *Ciconia ciconia*

Only the nominate subspecies occurs. Three populations are recognized in West Eurasia. (1) A population breeding in Iberia and Northwest Africa and wintering in West Africa. (2) A population breeding from West-central Europe through Central and East Europe and Western Turkey. Birds breeding in West-central Europe (east to about 11°E) migrate southwest to winter in West and Central Africa, while those breeding further east migrate southeast or south to winter in East 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. (3) A population breeding in the Caucasus, eastern Turkey, Iraq and western Iran and wintering in southwestern Iran, Iraq and the Arabian Peninsula.
- Iberia/NW African breeders: C. (85,000). Population recently estimated at 50,000 breeding adults and 35,000-40,000 non-breeders.
Trends: Decreasing.
- W-C, Central & E Europe/W Turkey breeders: D. (400,000). Breeding population estimated at about 100,000 pairs.
Trends: Decreasing.
- Caucasus/E Turkey/Iraq/Iran breeders: C. Poorly known. 3,150-3,400 pairs in Iran in mid 1970s; 20,000-24,000 recorded on passage in Azerbaijan; minimum of 4,500 wintering in SW Asia.
Trends: Unknown.
The world population of the nominate race has recently been estimated at some 130,000 pairs, with a post-breeding population of over 500,000 (Goriup and Schulz, 1991). Even this may be too low, as a total of nearly 500,000 pass through Israel alone. A small breeding population (less than 10 pairs) has recently become established in South Africa.

Marabou Stork *Leptoptilos crumeniferus*

Monotypic. The species occurs widely in Africa south of the Sahara. Mainly sedentary in equatorial regions of Central and East Africa; a rains migrant in the northern and southern parts of its range. Only one population can be identified.
- Entire population: C/D. (100,000+).
Trends: Possibly increasing.

THRESKIORNITHIDAE

Glossy Ibis *Plegadis falcinellus*

The nominate race occurs widely but patchily in Subsaharan Africa, Madagascar, Southeast Europe and Southwest Asia. European breeders appear to winter mainly in 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 South Asia, and are therefore extralimital. The populations breeding in West Africa, East Africa and southern Africa are partly sedentary and partly migratory, with extensive post-breeding dispersal from some colonies. The population is Madagascar appears to be sedentary. Three migratory populations are recognized.

- European breeders (wintering mainly in West Africa): B. (15,000). Population estimates vary widely from 1,000 to 8,000 pairs. Probably 3,500-4,500 pairs.

  Trends: Decreasing in some areas, stable or increasing in others.

- Southwest Asian breeders (wintering mainly in the Middle East and NE Africa): B. Population estimates in the Caspian Region vary widely from as few as 1,500 pairs to as many as 7,500 pairs.

  Trends: Possibly decreasing.

- African breeders (excluding Madagascar): C+. Poorly known. Population in West Africa in winter estimated at 30,000, but this includes many migrants from Europe.

  Trends: Unknown.

Waldrapp *Geronticus eremita*

Monotypic. Two widely separated populations: one in Northwest Africa and one in Southwest Asia. The Northwest African population breeds in Morocco and Algeria and disperses in winter largely within these two countries 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 (one bird 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 recognized

- Morocco/Algeria: A. (400). Population currently estimated at 400-450. Census in 1981 located 64 pairs (319 birds) at ten colonies.

  Trends: Marked decrease in past, but now appears stable, although most colonies do not produce young.

- Turkey/Arabian Peninsula/NE Africa: Minimum of 27 in Arabia; Turkish colonies extinct.

Trends: Marked decrease; virtually extinct.

Sacred Ibis *Threskiornis aethiopicus*

Three subspecies occur. *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, mainly south of the Sahara, and also occurs in Southwest Asia. In Subsaharan Africa, the species is a rains migrant. The Southwest Asian population apparently breeds only in lower Iraq, but occurs in winter in neighbouring southwestern Iran. Two migratory populations are recognized.

- Population in Subsaharan Africa: D. Population estimated at a minimum of 200,000 birds.

  Trends: Apparently stable.

- Southwest Asia (Iran/Iraq): A. (200). Between 50 and 100 birds winter in SW Iran.

  Trends: Decreasing.

Eurasian Spoonbill *Platalea leucorodia*

Four subspecies occur. The nominate subspecies breeds in South and West Europe, Mauritania and Asia Minor and winters in Africa south to Senegal, Mali, Nigeria, Chad, Zaire and Sudan. The West Asian population of *P. l. major* breeds from the Caspian Region and lower Iraq east to Lake Balkash, and winters from Iraq and the Arabian Peninsula east to South Asia. (An East Asian population of *major* winters in China). *P. l. balsaci* (5,000-6,000 birds) is confined to Mauritania. *P. l. archeri* (200-500 pairs) occurs on the coasts of the Red Sea and Somalia, and is largely sedentary. Three migratory populations are recognized.

- Netherlands/Spain/W African coast: A. (3,000). 500-700 pairs in Spain by end of 1980s; 400 pairs in Netherlands.

  Trends: Increasing.

- Central & SE Europe/Black Sea/Turkey (wintering E Mediterranean, NE Africa and inland West Africa): A. (5,000). Estimate of 2,000 pairs in 1980s, possibly now much lower.

  Trends: Decreasing.

- Southwest/South Asia (*major*): B. (23,000). Estimate based on mid-winter counts.
Trends: Unknown.

Note: The SW Asia/South Asia population of *major* is also included in the Asia-Pacific Waterbird Agreement.

African Spoonbill *Platalea alba*

Monotypic. The species occurs widely in Africa south of the Sahara and in Madagascar. Most populations (including Madagascar) appear to be mainly sedentary, but the population breeding in southern Africa is migratory. Only one population is recognized.

- Entire population (excluding Madagascar): A/B. Poorly known; generally uncommon and patchily distributed, but locally common, especially in East Africa. Flocks of up to 1,000 and colonies of up to 300-400 pairs.
Trends: Apparently stable.

PHOENICOPTERIDAE

Greater Flamingo *Phoenicopterus ruber*

Only the subspecies *roseus* occurs. Five relatively discrete populations 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 and Senegambia, occasionally to Liberia. (2) An East African population (mainly Ethiopia to southern Tanzania). (3) A Southern African population (Angola and Zambia south to South Africa. (4) A West Mediterranean population, more or less confined to the western half of the Mediterranean Sea. (5) A Southwest Asian population breeding from central Turkey to Kazakhstan Asia and northwest India and wintering widely from the Eastern 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 Senegambia, while birds from the Southwest Asia breeding colonies have been recovered in Sudan and Ethiopia, indicating some mixing between these and the East African populations.

- Mauritania breeders: C. (50,000).
Trends: Stable/increasing.
- East Africa: C. (50,000).
Trends: Possibly decreasing.
- Southern Africa: C. Up to 15,000 pairs in Botswana.
Trends: Possibly increasing.
- West Mediterranean: C. (80,000). 25,000-35,000 pairs; count of 80,000 birds in 1983.
Trends: Increasing rapidly.
- Southwest Asia/South Asia: D. (550,000).
Trends: Increasing in some areas; perhaps declining in others.

Note: The SW Asia/South Asia population is also included in the Asian/ Australasian Waterbird Agreement.

Lesser Flamingo *Phoenicopterus minor*

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

- West Africa: B. (15,000). Estimates vary from 6,000 to 15,000-20,000. The largest colony ever found contained only 800-900 pairs.
Trends: Probably stable.
- East Africa: E. (3,500,000). Possibly as many as 4.5 million; one colony of 1.2 million pairs in 1962.
Trends: Probably stable.
- Southern Africa: E. Probably over 1,000,000. Colonies of up to 50,000 pairs.
Trends: Probably stable.

There is no firm evidence to suggest any regular movement between the East African population and the population in NW India and Pakistan.

ANATIDAE

Fulvous Whistling-Duck *Dendrocygna bicolor*

Only the nominate subspecies occurs. This 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). No discrete migratory populations are identifiable, and only one population is recognized.

- Africa (excluding Madagascar): D. Population in West Africa estimated at 100,000. Also counts of 50,000 at Kafue Flats in Zambia, 12,000 in Mozambique, 5,000 in Zaire, 3,000 in Malawi *etc.*

Trends: Unknown.

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. No discrete migratory populations are identifiable, and only one population is recognized.

- Africa (excluding Madagascar): E. Population in West Africa estimated at 250,000. Up to 16,000 at Kafue Flats in Zambia.

Trends: Possibly increasing.

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* appears to be mainly sedentary, but others are at least partially migratory, with regular seasonal movements known to take place in East, Central and Southern Africa. The small population in West Africa may be discrete. Two populations are recognized.

- Eastern and Southern Africa: A/B. Poorly known; still locally common. Up to 500 at Lake Naivasha, Kenya, and 500 at Kafue Flats, Zambia.

Trends: Decreasing in some parts of range.

- West Africa: A. (<1,000). Probably only a few hundred birds.

Trends: Decreasing.

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. The West Eurasian populations can be divided into three groups. (1) A small West Mediterranean population (Spain and Morocco to Tunisia). (2) A tiny sedentary population in Southwest Iran and perhaps also Iraq. (3) Much the largest population of the species, breeding from Romania and Turkey to Kazakhstan and wintering mainly in Turkey and the Caspian Sea. Two migratory populations are relevant.

- West Mediterranean: A (1,000).

Trends: Increasing after a long period of decline. The population in Spain increased from 22 in 1977 to 545 in 1991.

- SE Europe/Turkey/SW Asia: B. (17,000). Population recently estimated at 17,000-18,000 birds.

Trends: Apparently stable in recent years.

The small population wintering in Pakistan 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, which is covered under the Asia-Pacific Waterbird Agreement.

Mute Swan *Cygnus olor*

Monotypic. There are three discrete migratory populations in West Eurasia; a population breeding in southern Scandinavia and the Baltic States, which winters mainly in Denmark; a population breeding around the Black Sea, which winters southwest to Greece, and a population breeding in west-central Asia (east to 90°E), which migrates southwest to winter in the Caspian Region. The populations breeding in Ireland, Britain, the Low Countries, France and Central Europe are very largely sedentary.

- Scandinavia/Baltic States: C. (90,000). Estimated at 80,000-100,000 birds. The total wintering population in Northwest Europe (all breeding groups) is estimated at 180,000 birds.
  Trends: Increasing.
- Black Sea/East Mediterranean: B. (20,000).
  Trends: Increasing.
- West-central Asia/Caspian Region: C. (25,000+). Possibly as many as 30,000.
  Trends: Unknown.

Whooper Swan *Cygnus cygnus*

Monotypic. Four populations are recognized in West Eurasia. (1) A population which breeds in Iceland and winters in Britain and Ireland. (2) A population which breeds in northern Scandinavia and northwest Russia (east to Western Siberia) and winters in northwest continental Europe (3) A population which breeds in Western Siberia and winters in the Black Sea and East Mediterranean. (4) A population which presumably breeds further east and winters in southwest Asia from the Caspian Sea east to the region of Lake Balkash.
- Iceland/UK/Ireland: B. (17,000).
  Trends: Increasing.
- Northwest Continental Europe: C. (25,000+).
  Trends: Increasing.
- Black Sea/East Mediterranean: B. (17,000).
  Trends: Possibly stable.
- West Asia: A/B. Over 4,000 counted in Asian Waterfowl Census.
  Trends: Probably decreasing.

Bewick's Swan *Cygnus columbianus*

Only the subspecies *bewickii* occurs. A large population breeding in extreme northeast Europe and northwest Siberia winters in Northwest Europe (south in small numbers to the south of France). A much smaller population, presumably breeding further east, winters in the Caspian Region south to Iran.
- Northwest European wintering population: B. (17,000+). Recent counts suggest the population is now much higher.
  Trends: Probably increasing.
- Caspian wintering population: A. (<500). A tiny population; perhaps as few as 100 birds.
  Trends: Unknown.

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 in northwest continental Europe.
- E. Greenland/Iceland/UK: D. (110,000).
  Trends: Increasing.
- Svalbard/NW Europe: C. (25,000).
  Trends: Stable.

Bean Goose *Anser fabalis*

Two subspecies occur. *A. f. fabalis* of northern Europe and *A. f. rossicus* of northern Russia east to northwest 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 and occasionally Morocco and Algeria. The two subspecies overlap extensively on their wintering grounds in northern Germany and the Low Countries.
- Northwest Europe (*fabalis*): C. (80,000).
  Trends: Stable.
- Central & South Europe (*rossicus*): D. (300,000).
  Trends: Increasing in western Europe; decreasing sharply in Russia.

Greater White-fronted Goose *Anser albifrons*

Two subspecies occur. 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 largely discrete wintering areas: northwest Europe, central Europe, in the Black Sea region and Turkey (south to

Egypt), and in the Caspian Region south to Iraq and east possibly as far as the Aral Sea. *A. a. flavirostris* breeds in Greenland and winters in Ireland and the UK.

- Northwest Europe: D. (300,000).
  Trends: Increasing.
- Central Europe: C. (100,000).
  Trends: Decreasing.
- Black Sea/Turkey: D. (250,000).
  Trends: Apparently stable.
- Caspian Region/Iraq: B. (15,000). 10,000 in north Caspian and some thousands in Azerbaijan; formerly 2,500-5,000 in Iran but now scarce.
  Trends: Probably decreasing.
- *A. a. flavirostris*: B. (22,000).
  Trends: Increasing.

Lesser White-fronted Goose *Anser erythropus*

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

- Southeast Europe/Black Sea: A. (<200). Possibly fewer than 200. Only 60 pairs in Norway and Finland in 1989; none was found on the wintering areas in Romania and Bulgaria in 1993.
  Trends: Decreasing rapidly.
- Caspian Region: C. (25,000+). Estimated at 25,000-30,000, almost entirely in the west Caspian.
  Trends: Decreasing.

Until recently, these two populations combined were thought to number about 110,000 birds.

Greylag Goose *Anser anser*

Only the nominate subspecies occurs. Five relatively discrete populations are recognized. (1) A population breeding in Iceland and wintering in Britain and Ireland. (2) A population breeding in Norway, Sweden, Denmark and Germany and wintering from the Netherlands to southern Spain and Morocco. (3) A population breeding in Central and Eastern Europe and wintering southwest to Tunisia and Algeria. (4) A population breeding in the Black Sea region and Turkey and wintering within that region. (5) A population breeding in Western Siberia south to the Caspian Region and wintering in the South Caspian, Iran and Iraq. The small population breeding in the Outer Hebrides, Scotland (2,000 pairs) is largely sedentary. Feral populations have been established from introduced birds in several parts of Western Europe.

- Iceland/UK/Ireland: D. (100,000).
  Trends: Increasing. The breeding population in Iceland grew from 3,500 pairs in 1960 to 18,500 pairs in 1973.
- Northwest/Southwest Europe: D. (120,000).
  Trends: Increasing.
- Central Europe/North Africa: B. (20,000).
  Trends: Stable.
- Black Sea/Turkey: C. (25,000+). 25,000 were counted during the 1992 census, suggesting that the total population may be somewhat higher.
  Trends: Possibly stable.
- West Siberia/Caspian Region/Iran/Iraq: C. (80,000).
  Trends: Possibly increasing in some areas.

Barnacle Goose *Branta leucopsis*

Monotypic. Three discrete populations exist: one breeding in East Greenland and wintering mainly in Ireland and northwest Scotland; one breeding in Svalbard and wintering in southwest Scotland; and one breeding in northern Russia (Novaya Zemlaya and Vaigach Island) and wintering mainly in Germany and the Netherlands.

- East Greenland/Ireland/NW Scotland: C. (32,000).
  Trends: Stable.
- Svalbard/SW Scotland: B. (10,000+).
  Trends: Rapid increase in recent years from a low of 4,000.
- Russia/Germany/Netherlands: C. (70,000).
  Trends: Increasing.

Brent Goose *Branta bernicla*

Two subspecies occur. *B. b. bernicla* breeds in northern Russia 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 Greenland and wintering mainly in Ireland, and one breeding in Svalbard and wintering in Denmark and northeast England.

- *B. b. bernicla* (entire population): D. (170,000).
  Trends: Rapid increase from less than 20,000 in 1955-57 to 80,000 in 1973/74 and 235,000 in 1988. Marked fluctuations according to breeding success, with population in recent years averaging 170,000.
- *B. b. hrota* (Canada/Greenland/Ireland): B. (20,000).
  Trends: Stable.
- *B. b. hrota* (Svalbard/Denmark/Britain): A. (4,000).
  Trends: Stable.

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. Formerly wintered in the South Caspian Region, Iraq and Egypt, but now only a vagrant in these areas.

- Entire population: C. (65,000). Most recent estimates have given a population of 25,000-30,000, but 65,000 were counted in Bulgaria in January 1993 (59,000 at one site). This probably represents the entire population. (No young birds were observed, indicating a complete breeding failure in 1992).
  Trends: Unknown, because of inadequacies of previous censuses. Possibly now stable after earlier decrease.

Egyptian Goose *Alopochen aegyptiacus*

Monotypic, occurring widely in Africa south of the Sahara and also in lower Egypt. The species appears to be at least partially migratory over much of its range, but 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.

- Entire population: Probably D. Common to locally abundant, especially in south and east. 5,000 counted in West Africa in boreal winter.
  Trends: Marked increase in South Africa; some retraction of range in north.

The species has been introduced in Britain and the Netherlands.

Ruddy Shelduck *Tadorna ferruginea*

Monotypic. Four main groups can be identified. (1) A discrete population of 250-600 birds in Ethiopia. (2) 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. (3) A population which breeds Greece, west and central Turkey and the Black Sea area, and winters in the Eastern Mediterranean and presumably also south along the Nile Valley to Sudan. (4) A Southwest Asian population which breeds from eastern Turkey to Afghanistan and the Central Asian Republics and winters mainly in Iran and Iraq. Three migratory populations are recognized.

- NW Africa (and formerly Spain): A. (1,500).
  Trends: Decreasing.
- Black Sea/East Mediterranean/NE Africa: B. (20,000).
  Trends: Probably stable.
- West-central Asia/Caspian Region/Iran & Iraq: C. (30,000+).
  Trends: Increasing on winter quarters in Iran.

South African Shelduck *Tadorna cana*

Monotypic. The species is confined to Southern Africa (South Africa, Lesotho, Namibia, Botswana and SW Zimbabwe), particularly arid Orange Free State and southern Cape Province. The species undertakes moult migrations (to the NE) in November and December, returning after the moult.

- Entire population: C. (42,000). Estimate of 42,000 birds in 1981.
  Trends: Stable.

Common Shelduck *Tadorna tadorna*

Monotypic. Four main groups are recognized in West Eurasia. (1) A large population in Northwest Europe from Finland to the British Isles and Atlantic coast of France. (2) A population in the Western Mediterranean, from the Adriatic to southern Spain and Northwest Africa. (3) A Black Sea/East Mediterranean population wintering south to the Nile Delta. (4) A 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.

- Northwest Europe: D. (250,000).
  Trends: Stable/increasing.
- West Mediterranean: B. (15,000+). 12,500 counted in Spain in 1992.
  Trends: Increasing.
- Black Sea/East Mediterranean: C. (60,000).
  Trends: Unknown.
- Caspian Region/Middle East: C. (80,000).
  Trends: Increasing in Iran.

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. Moult migrations have been observed in the Niger Delta, Senegal Delta and South Africa. Two populations are recognized.

- *P. g. gambensis* (entire population): Probably D. The West African population has been estimated at 50,000, and there has been a count of 26,000 in East Africa.
  Trends: Unknown.
- *P. g. niger* (entire population): B+. Poorly known; common to very common almost throughout its range.
  Trends: Apparently stable.

Comb Duck *Sarkidiornis melanotos*

The nominate subspecies occurs widely in Africa south of the Sahara and in Madagascar (other subspecies are extralimital). The Madagascar population appears to be sedentary. The species is migratory over much of its range in Africa, the movements probably being linked with seasonal rains. Birds ringed in Zambia have been recovered north to Chad and Sudan, and large concentrations of non-breeders have been observed in the Senegal Delta, central Niger Delta (Mali), Cameroon, Sudan, Zaire, Kenya and Zambia. No discrete populations are identifiable, and only one population is recognized.

- Africa (excluding Madagascar): Probably D. The population in West Africa has been estimated at 50,000.
  Trends: Apparently stable.

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. The population in Madagascar appears to be mainly sedentary. No discrete populations are identifiable, and only one population is recognized.

- Africa (excluding Madagascar): Probably D. Locally common to abundant, except in West Africa where uncommon (only a few hundreds recorded in African Waterfowl Census). Population in the Okavango Delta estimated at 15,000. Flocks of up to 1,000 in South Africa.
  Trends: Unknown.

Eurasian Wigeon *Anas penelope*

Monotypic. The species has a wide breeding distribution across northern Eurasia from Iceland eastwards. No discrete populations are identifiable. Three main wintering populations are recognized.

- Northwest Europe: D. (750,000).
  Trends: Stable.
- Black Sea/Mediterranean (rarely to West Africa): D. (600,000).
  Trends: Stable/decreasing.
- Southwest Asia/NE Africa (to Ethiopia and Sudan): D. (250,000).
  Trends: Unknown.

Gadwall *Anas strepera*

Only the nominate subspecies occurs. The species has a wide breeding distribution across northern Eurasia from Iceland eastwards. No discrete populations are identifiable. Three main wintering populations are recognized.

- Northwest Europe: B. (18,000+). 18,000 were counted in January 1992.
  Trends: Increasing.
- Black Sea/Mediterranean (rarely to West Africa): C. (75,000).
  Trends: Stable after an increase in the late 1960s.
- Southwest Asia/NE Africa (east to Afghanistan, south to Sudan): D. (130,000).
  Trends: Unknown.

Common Teal *Anas crecca*

The nominate subspecies has a wide breeding distribution across Western Eurasia from Iceland eastwards. No discrete populations are identifiable. Three main wintering populations are recognized.

- Northwest Europe: D. (400,000).
  Trends: Stable.
- Black Sea/Mediterranean/West Africa (Senegal to Niger): E. (1,000,000).
  Trends: Stable.
- Southwest Asia/NE Africa (east to Afghanistan, south to Ethiopia): E. 1,500,000.
  Trends: Unknown.

The North American subspecies *carolinensis* has occurred in Europe as a vagrant.

Cape Teal *Anas capensis*

Monotypic. The species is patchily distributed in eastern and southern Africa and is locally abundant, although it is scarce over much of its range. The populations in East Africa are to some extent migratory, undertaking lengthy dry season movements north and northwest as far as Sudan, Chad, Nigeria and Ghana. No discrete populations are identifiable.

- Entire population: Probably D. Widespread and locally common to abundant.
  Trends: Perhaps mainly stable, but increasing in southern Africa in recent years.

Mallard *Anas platyrhynchos*

The nominate subspecies has a wide breeding distribution across West Eurasia from Iceland eastwards. No discrete populations are identifiable. Three main wintering populations are recognized.

- Northwest Europe: E. (5,000,000).
  Trends: Stable.
- Black Sea/Mediterranean: E. (4,000,000).
  Trends: Stable/decreasing.
- Southwest Asia (east to Afghanistan; in small numbers southwest to NE Africa): D. (800,000)
  Trends: Apparently stable.

The subspecies *A. p. conboschas* is confined to Greenland.

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; *ruppelli* is mainly sedentary. The nominate race undertakes both limited local movements and long-distance movements in Southern Africa. One migratory population is recognized.

- Southern Africa (*undulata*): C. (60,000). Population in Southern Africa estimated at 52,000-65,000.
  Trends: Apparently stable.

Northern Pintail *Anas acuta*

Only the nominate subspecies occurs. The species has a wide breeding distribution at northern latitudes in West Eurasia from Iceland eastwards. No discrete populations are identifiable. Three main wintering populations are recognized.

- Northwest Europe: C. (70,000).
  Trends: Stable.
- Black Sea/Mediterranean/West Africa (east to Chad): E. (1,300,000).
  Trends: Stable.
- Southwest Asia/NE & E Africa (east to Afghanistan, south to Kenya): D. (750,000). SW Asian population estimated at 650,000; NE African population estimated at 31,000-108,000.
  Trends: Unknown.

Red-billed Duck *Anas erythrorhyncha*

Monotypic. The species occurs widely in eastern and southern Africa, 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, and is a common non-breeding visitor to Madagascar. No discrete populations are identifiable, and only one population is recognized.

- Entire population: E. The most abundant duck in the south of the continent, with a concentration of 500,000 reported at Nagmi Lake in Botswana. Up to 29,000 recorded at Kafue Flats, Zambia.

Trends: Apparently stable.

Hottentot Teal *Anas hottentota*

Monotypic. The species occurs widely in eastern and southern Africa, and also occurs in West Africa and Madagascar. The West African and Madagascar populations appear to be sedentary. Elsewhere, the species is partly sedentary and partly migratory, undertaking regular short-distance migrations in southern and eastern Africa. Only one population is relevant.

- Southern and Eastern Africa: Probably D. Abundant in parts of East Africa; less common in southern Africa. Concentrations of thousands in Kenya and Tanzania; up to 500 at Kafue Flats in Zambia.

Trends: Unknown.

Garganey *Anas querquedula*

Monotypic. The species breeds widely across West 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 recognized.

- Europe/West Africa: E. (2,000,000).

Trends: Unknown.

- Southwest Asia/East Africa (commonly south to Kenya): D. 100,000-200,000 pass through Israel in autumn. East African wintering population estimated at 95,000-180,000.

Trends: Unknown.

Many birds from Western Siberia migrate southwest through Southwest Asia to winter in East Africa while some birds from the same breeding area migrate southeast through Iran to winter in South Asia.

Northern Shoveler *Anas clypeata*

Monotypic. The species has a wide breeding distribution across West Eurasia from Iceland (since 1931) eastwards. No discrete populations are identifiable. Five main wintering groups are recognized.

- Northwest Europe (mainly Icelandic and Northwest European breeders): C. (40,000).

Trends: Stable.

- Black Sea/Mediterranean/West Africa (Senegal to Chad): D. (395,000). 20,000 in West Africa.

Trends: Increasing.

- Southwest Asia/NE & E Africa (east to Afghanistan, south to Kenya): D. (300,000). 140,000 in Southwest Asia; 100,000-240,000 in East Africa.

Trends: Unknown.

Marbled Teal *Marmaronetta angustirostris*

Monotypic. Three discrete populations are identifiable. (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. (3) A large population which breeds from eastern Turkey, 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.

- West Mediterranean/West Africa: A. (2,000).

Trends: Decreasing.

- East Mediterranean (Turkey/Levant): A. (600).

Trends: Decreasing.

- Southwest Asia: C. (30,000).

Trends: Apparently stable.

A fourth population (of about 5,000 birds), wintering in Pakistan and NW India, is extralimital. The total world population has recently been estimated at 33,000-40,000 birds.

Red-crested Pochard *Netta rufina*

Monotypic. The species has a very patchy breeding distribution from Iberia across southern and Central Europe to West and Central Asia. Three more or less discrete populations are identifiable in West Eurasia.

- Central & SW Europe/West Mediterranean: B. (20,000).
  Trends: Stable, 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.
- Black Sea/East Mediterranean: C. (50,000).
  Trends: Decreasing.
- SW Asia (Central Asian Republics and Iran): D. (200,000).
  Trends: Unknown.

Southern Pochard *Netta erythrophthalma*

The subspecies *N. e. brunnea* occurs widely in eastern and southern Africa. Populations in Southern Africa are known to undertake local and long-distance migrations. South African breeders have been recorded during the dry season north to Zimbabwe, Zambia, Malawi, Botswana, Mozambique and Kenya. No discrete populations are identifiable.

- Entire population of *brunnea*: C+. Common to abundant in much of its range. Counts of up to 5,000 in South Africa, 7,500 at Kafue Flats in Zambia, and 2,300 at Lake Nakuru and 1,300 at Lake Naivasha in Kenya.
  Trends: Stable/decreasing.

Common Pochard *Aythya ferina*

Monotypic. The species has a wide breeding distribution across West Eurasia. No discrete populations are identifiable. Three main wintering populations are recognized.

- Northwest & Central Europe: D. (350,000).
  Trends: Decreasing since the late 1970s.
- Black Sea/Mediterranean (with small numbers to West Africa): E. (1,250,000).
  Trends: Decreasing since the late 1970s.
- SW Asia to Afghanistan (with small numbers to the Nile Valley, Sudan and Ethiopia): D. (350,000).
  Trends: Decreasing in some areas.

Ferruginous Pochard *Aythya nyroca*

Monotypic. The species has a fragmented breeding distribution across West Eurasia north to about 54°N. Two main wintering groups are recognized.

- Black Sea/Mediterranean/West Africa (Senegal to Chad): C. (60,000). 25,000 were counted at Lake Skadar (Montenegro/Albania) in 1991. The population wintering in West Africa has been estimated at 7,000-10,000.
  Trends: Decreasing.
- SW Asia (Central Asian Republics and Iran) & NE Africa (south to Ethiopia): A. (<5,000). Poorly known; perhaps fewer than 5,000.
  Trends: Decreasing, especially in NE Africa where now scarce.

Tufted Duck *Aythya fuligula*

Monotypic. The species has a wide breeding distribution across West Eurasia from Iceland eastwards. No discrete populations are identifiable. Three main wintering populations are recognized.

- Northwest & Central Europe: D. (750,000).
  Trends: Stable.
- Black Sea/Mediterranean/West Africa (Senegal to Chad): D. (600,000).
  Trends: Increasing.
- SW Asia (to Afghanistan) & NE Africa (to Kenya): D. (200,000).
  Trends: Unknown.

Greater Scaup *Aythya marila*

Only the nominate subspecies occurs. This breeds in Iceland, Scandinavia and northern Russia east to about the Lena River. Two main wintering populations are recognized.

- Northwest Europe: D. (310,000). Improved coverage of the counts in recent years has resulted in a doubling of the previous population estimate.
  Trends: Unknown, because of inadequacies of previous counts.

- Black Sea/Caspian Region: C. (50,000).
Trends: Unknown.

Common Eider *Somateria mollissima*

Only the nominate subspecies occurs, breeding from Iceland to Novaya Zemlaya and wintering in Northwest Europe south to northwest France (also in small numbers in Central Europe and the West Mediterranean). The populations breeding in Iceland (200,000-300,000 pairs), the Faeroes, Britain (20,000 pairs) and Ireland (500 pairs) are mainly sedentary and more or less discrete. Only one migratory population is recognized.

- Northwest Europe (excluding Iceland, Faeroes and British Isles): E. (2,500,000). Approximately 800,000 pairs.
Trends: Increasing.

King Eider *Somateria spectabilis*

Monotypic. In West Eurasia, breeds only in Svalbard and Arctic Russia and winters south to central Norway. A small number of birds from the mainly sedentary population breeding in Greenland reach Iceland in winter. Only one population is relevant.

- Northeast Europe: D. (100,000). 45,000 are thought to winter along the Norwegian coast.
Trends: Apparently stable.

Steller's Eider *Polysticta stelleri*

Monotypic. Breeds in northeastern Siberia east of the Khatanga Gulf (100°E) and winters mainly in the southern Bering Sea. However, a small number of birds migrate west to winter on the coasts of Murmansk and Finnmark and in the Gulf of Finland and southeast Baltic. Only one population is relevant.

- Northeast Europe: B. (15,000).
Trends: Increasing.

Numbers wintering in the Baltic (Estonia, Lithuania and Poland) have increased rapidly in recent years (to 3,500).

Long-tailed Duck *Clangula hyemalis*

Monotypic. Circumpolar, in West Eurasia breeding south to West Norway and southern Finland. Birds breeding in Scandinavia, Svalbard and northern Russia winter in Northwest Europe south to the Britain, Ireland and the Netherlands. The large breeding population in Iceland is partly resident and partly migratory, some birds moving southwest to winter in Greenland. Two populations are recognized.

- Icelandic population (to Greenland): D. (500,000+). The breeding population is estimated at 100,000-300,000 pairs. An estimated 450,000 winter in Icelandic waters.
Trends: Apparently stable.
- Northwest Europe: E. (2,000,000). Breeding population estimated at 500,000-750,000 pairs.
Trends: Apparently stable.

Common Scoter *Melanitta nigra*

Only the nominate subspecies occurs, breeding in Iceland, Ireland, Scotland, northern Scandinavia and northern Russia east to the Lena (125°E), and wintering south along the Atlantic seaboard to Morocco and occasionally Mauritania. Only one population is recognized.

- West Europe/NW Africa: E. (1,250,000). Improved coverage of the counts in recent years has resulted in a great increase in the population estimate.
Trends: Apparently stable. Increasing in some wintering areas and decreasing in others.

Velvet Scoter *Melanitta fusca*

Only the nominate subspecies occurs, breeding from Scandinavia east to the Yenisey River (85°E), and wintering south to Britain and France. The small breeding population in the Caucasus and eastern Turkey appears to be largely sedentary, moving only to the adjacent Black Sea in winter. Only one migratory population is recognized.

- Northwest Europe: D. (250,000).
Trends: Apparently stable.

Common Goldeneye *Bucephala clangula*

Only the nominate subspecies occurs. The species has a wide breeding distribution at northern latitudes in West Eurasia from Scotland (few) and western Norway eastwards. No discrete populations are identifiable. Three main wintering populations are recognized.

- Northwest/Central Europe: D. (300,000).
  Trends: Stable after an increase in the late 1970s.
- Black Sea/Mediterranean: B. (20,000).
  Trends: Unknown.
- SW Asia (mainly Caspian Sea): A or B; poorly known.
  Trends: Unknown.

Smew *Mergellus albellus*

Monotypic. The species has a wide breeding distribution at high latitudes in West Eurasia from northern Sweden eastwards. No discrete populations are identifiable. Three main wintering populations are recognized.

- Northwest & Central Europe: C. (25,000+). 25,000 were counted in January 1992, suggesting that the total population may be somewhat higher than this.
  Trends: Apparently stable.
- Black Sea/East Mediterranean: C. (65,000).
  Trends: Unknown.
- SW Asia (Caspian Region/Iraq): C. (30,000+). Poorly known.
  Trends: Unknown.

Red-breasted Merganser *Mergus serrator*

Only the nominate subspecies occurs. The species has a wide breeding distribution at northern latitudes in West Eurasia from Iceland eastwards. No discrete populations are identifiable. Three main wintering populations are recognized.

- Northwest and Central Europe: D. (100,000).
  Trends: Apparently stable.
- Black Sea/Mediterranean: C. (50,000).
  Trends: Unknown.
- SW Asia (Caspian Region to Persian Gulf): Probably A. Poorly known; perhaps fewer than 5,000.
  Trends: Unknown.

Goosander *Mergus merganser*

Only the nominate subspecies occurs. The species has a wide breeding distribution in West Eurasia from Iceland eastwards. The Icelandic breeding population is resident in Iceland, but no other discrete populations are identifiable. Three main wintering populations are recognized.

- Northwest and Central Europe (excluding Iceland): D. (150,000).
  Trends: Apparently stable.
- Black Sea/East Mediterranean: B. (10,000).
  Trends: Unknown.
- SW Asia (Caspian Region): Probably A. Poorly known; perhaps fewer than 5,000.
  Trends: Unknown.

GRUIDAE

Siberian Crane *Grus leucogeranus*

Monotypic. A tiny population from an unknown breeding area in northern Russia occurs on migration in the Volga Delta and winters in the southeast Caspian region of Iran. 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. Since its discovery in 1978, the tiny wintering population in northern Iran has remained relatively stable at between 9 and 14 individuals.

- Caspian Region: 9-14 individuals.
  Trends: Stable since 1978, with only minor annual fluctuations.

Demoiselle Crane *Grus virgo*

Monotypic. Two populations occur in the region: a tiny and apparently sedentary population in NW Africa (formerly Morocco to Tunisia, now confined to Morocco and possibly numbering fewer than 10 birds), and a population breeding from the Ukraine, SW Russia and Kazakhstan east into central Asia. Probably all birds breeding west of the Caspian migrate southwest through the eastern Mediterranean (Cyprus) to winter in Northeast Africa, mainly in Sudan and Ethiopia, but also formerly west to NE Nigeria. A few birds also winter in the Arabian Peninsula. Only one migratory population is relevant.

- Southwest Asia/E Mediterranean/NE Africa: B. (20,000).

Trends: Decreasing.

Blue Crane *Grus paradisea*

Monotypic. Confined to southern Africa (South Africa, Namibia, Botswana, Swaziland and Lesotho), with the main concentrations in South Africa. Locally migratory, but details of movements poorly understood. Only one population is recognized.

- Entire population: B. (12,000). Previously thought to number only a few thousands, the population has recently been estimated at 12,000 birds.

Trends: Decreasing.

Wattled Crane *Grus carunculatus*

Monotypic. Two discrete populations can be identified: a population of several hundred birds in Ethiopia, and a much larger population in Central and Southern Africa. Birds breeding in South Africa appear to be mainly sedentary, but birds breeding from Zimbabwe northwards undertake extensive seasonal movements. Only one migratory population is recognized.

- Central and Southern Africa: B. (10,000+). The population was estimated at not more than 6,000 birds in 1983; however, the total population (including Ethiopian birds) has recently been estimated at 12,000 birds.

Trends: Apparently stable in some areas; decreasing in others.

Common Crane *Grus grus*

Two subspecies occur. The nominate subspecies breeds widely across North and Central Europe to the Urals and winters south to the Mediterranean Basin and NE Africa. The eastern subspecies *lilfordi* breeds in West and Central Siberia and winters from Southwest Asia east to China. The wintering grounds of an isolated group of *lilfordi* breeding in Transcaucasia, Armenia and eastern Turkey are unknown but may be nearby in Turkey, the southwest Caspian and/or Iraq. Four main groups are recognized.

- W Scandinavia/Iberia/Morocco (*grus*): C. (65,000). Population recently estimated at 65,000-70,000.

Trends: Increasing steadily.

- W Russia/Finland/E Baltic/Central Europe/Tunisia & Algeria (*grus*): B. (20,000).

Trends: Stable/decreasing.

- European Russia/Black Sea/E Mediterranean/Sudan & Ethiopia (*grus*): C. Poorly known.

Trends: Decreasing in Africa.

- W Siberia/Caspian/Iran and Iraq (*lilfordi*): B. (20,000).

Trends: Possibly increasing.

RALLIDAE

Streaky-breasted Flufftail *Sarothrura boehmi*

Monotypic. Breeds from Cameroon, Zaire and Kenya to eastern Angola, southern Tanzania, Zambia and Zimbabwe. Southern breeders are migratory, retreating towards the equator during the dry season. No discrete populations are identifiable.

- Entire population: A+. Poorly known; generally uncommon, but may be locally numerous (*e.g.* over 100 calling in a grassy plain in Zambia).

Trends: Unknown.

Water Rail *Rallus aquaticus*

Three subspecies occur. *R. a. hibernans* is confined to Iceland where it is resident. The nominate subspecies breeds widely across West Eurasia; northern and eastern populations are migratory, wintering south to North Africa, while western and southern populations are mainly sedentary. *R. a. korejewi* breeds from Iran east through Transcaspia to Pakistan and northwest India and winters south to lower Iraq. There is some overlap between the two subspecies on their winter quarters in lower Iraq. Only two migratory populations are identifiable.

- Europe/N Africa (*aquaticus*): Probably D.
  Trends: Apparently stable.
- Southwest Asia (mainly *korejewi*): B+. Poorly known.
  Trends: Unknown.

African Rail *Rallus caerulescens*

Monotypic. Occurs mainly from eastern Zaire, southern Uganda and southern Kenya to South Africa, with an isolated population in the Ethiopian highlands. Mainly sedentary, but there is some evidence of regular movements in East and southern Africa. Only one population is relevant.

- Eastern and Southern Africa: C+. Widespread and locally common.
  Trends: Unknown.

African Crake *Crecopsis egregia*

Monotypic. Occurs widely in Africa south of the Sahara, from Senegambia and Ethiopia south to South Africa. A rains migrant, populations breeding in the northern and southern parts of the species' range moving towards the equator during the dry season and then overlapping with sedentary equatorial populations. Only one population can be identified.

- Entire population: D+. Widespread and locally common to abundant. Common from Nigeria to Zambia.
  Trends: Unknown.

Black Crake *Amaurornis flavirostra*

Monotypic. Occurs widely in Africa south of the Sahara to South Africa. Mainly sedentary but locally migratory. Probably a rains migrant in the northern parts of its range (Ghana, Nigeria and the Sahel zone of Sudan) and thought to be at least partly migratory in East Africa (Kenya). No discrete populations are identifiable.

- Entire population: Probably E. The commonest and most widespread rail in Africa.
  Trends: Unknown.

Little Crake *Porzana parva*

Only the nominate subspecies occurs. This breeds widely at temperate latitudes in West Eurasia and probably winters widely in Africa south of the Sahara from Senegambia and Ethiopia south at least to Zambia, despite the paucity of records. Only one population is recognized.

- Entire population (*parva*): C+. Poorly known.
  Trends: Decreasing in some areas.

The subspecies *illustris* of Central and Southern Asia is extralimital.

Baillon's Crake *Porzana pusilla*

Three subspecies occur, but one of these (*obscura* of Africa south of the Sahara and Madagascar) appears to be largely sedentary. *P. p. intermedia* breeds widely in western Europe, North Africa and the Middle East east to Iran and apparently winters widely in Subsaharan Africa, but its distribution there is poorly known because of overlap with resident *obscura*. The nominate race is largely extralimital, breeding from the Ukraine and Iran east across Asia to China and Japan and wintering widely in southern Asia. Only one migratory population is relevant.

- Entire population (*intermedia*): C+. Poorly known.
  Trends: Decreasing in some areas.

Spotted Crake *Porzana porzana*

Monotypic. Breeds widely across West Eurasia to Central Asia east to 100°E. Most populations (to Western Siberia) winter in Africa south of the Sahara, apparently sparingly in West and East Africa and more commonly in Zambia, Malawi, Zimbabwe and Mozambique. A few birds 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 South Asia and are thus extralimital. Only one population is relevant.
- West Eurasia/Africa: C+. Poorly known.
Trends: Decreasing in some areas.

Striped Crake *Aenigmatolimnas marginalis*
Monotypic. Widely but patchily distributed throughout Africa south of the Sahara. A rains migrant, apparently with two largely discrete populations: one mainly north of the equator in West-central Africa (Nigeria, Cameroon, Equatorial Guinea and Gabon), and the other mainly south of the equator from eastern Zaire, Uganda and Kenya south to Namibia, Botswana, Zambia and Mozambique. Both populations migrate towards equatorial regions during the dry season. Only one population is recognized, pending further study.
- Entire population: A+. Poorly known. Uncommon to rare throughout its range, with apparent gaps in distribution and few breeding records.
Trends: Probably decreasing. Breeds in seasonally inundated, often tussocky, grasslands, a habitat type which is widely under threat from overgrazing.

Allen's Gallinule *Porphyrio alleni*
Monotypic. Widely distributed in Africa south of the Sahara south to northern and eastern South Africa. A rains migrant north and south of the equator; populations breeding in equatorial regions are largely sedentary. Only one population is recognized, pending further study.
- Entire population: D+. Widespread and locally common in most countries in its range.
Trends: Unknown.

Common Moorhen *Gallinula chloropus*
Four subspecies occur, but three of these appear to be sedentary (*correiana* of the Azores, *meridionalis* of Africa south of the Sahara, and *pyrrhorrhoa* of Madagascar, Reunion and Mauritius). The nominate race breeds widely across West Eurasia and North Africa, and is migratory in the northern and eastern parts of its range. The species is a partial migrant over much of its range in West Europe, while populations breeding in the south and extreme west are sedentary or dispersive. North and East European breeders winter south to Iberia, the Balkans and North Africa, and less commonly in Subsaharan Africa from Senegambia to Chad and Sudan (south to 17°N); West Siberian breeders probably winter mainly in the Middle East. No discrete populations are identifiable. Two main groups are recognized.
- European/North African breeders (wintering to Subsaharan Africa): E. Very common throughout much of its range, but very difficult to census.
Trends: Apparently stable.
- West Asian breeders (wintering to Arabia): Probably D. Poorly known.
Trends: Unknown.

Lesser Moorhen *Gallinula angulata*
Monotypic. Widely distributed in Africa south of the Sahara from Senegambia, Sudan and Ethiopia south to northeastern Namibia and eastern South Africa. A rains migrant north and south of the equator. Only one population is recognized, pending further study.
- Entire population: D+. Widespread and locally common; locally abundant in Kenya, Zambia and Zimbabwe.
Trends: Unknown.

Red-knobbed Coot *Fulica cristata*
Monotypic. Widely distributed in Africa south of the Sahara and in Madagascar. The small population in southern Spain and northwest Africa (now perhaps confined to Morocco) appears to be mainly sedentary. Subsaharan populations are also generally sedentary, with a tendency to show some nomadism. Populations breeding in Southern Africa (Zambia, Namibia, Botswana, Mozambique and South Africa) appear to be at least partly migratory, with movements of over 1,000 km having been recorded. Only one migratory group is recognized.
- Southern Africa: D+. Locally abundant, especially in South Africa, where counts of 25,000 at Barberspan and 30,000 at De Hoop Veli. Up to 1,200 at Kafue Flats, Zambia.
Trends: Apparently stable.

Common Coot *Fulica atra*

Only the nominate form occur. This breeds widely across West Eurasia and winters south to Northwest Africa, East Africa, Iraq and the Gulf States, with a few birds reaching West Africa (Senegambia to Chad) and Northeast Africa (Sudan). No discrete populations are identifiable. Three main wintering populations are recognized.

- Northwest Europe: E. (1,500,000).
  Trends: Stable.
- Black Sea/Mediterranean/W Africa: E. (2,500,000).
  Trends: Decreasing.
- Southwest Asia (Caspian to Arabia)/NE Africa: E. (2,000,000). 5,000-10,000 reach East Africa.
  Trends: Decreasing in some areas.

DROMADIDAE

Crab Plover *Dromas ardeola*

Monotypic. A partial migrant, known to breed only in the Persian Gulf, Gulf of Oman, Gulf of Aden and southern Red Sea, but probably also breeds in western India; occurs outside breeding season east to Sri Lanka, Bangladesh, Thailand and Malaysia, and south in East Africa to Mozambique and Madagascar (less commonly to South Africa). Only one population is recognized.

- Southwest Asia/South Asia/East Africa (entire population): C. (43,000).
  Trends: Decreasing in some areas.

Note: This population is also included in the Asia-Pacific Waterbird Agreement.

HAEMATOPODIDAE

Eurasian Oystercatcher *Haematopus ostralegus*

Two subspecies occur: *ostralegus* in Europe, North Africa and Asia Minor, and *longipes* on inland waters of West and Central Asia. The Icelandic and Faeroese 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, Faeroes 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 northeast 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). (5) Birds breeding in the Mediterranean and wintering mainly on the North African coast. Because of the extensive overlap of these five populations in western Europe during the migration seasons, they are here treated as a single population. *H. o. longipes* breeds from the Black Sea and Asia Minor to Western Siberia and Central Asian Republics and winters along the coasts of NE Africa, the Arabian Peninsula and the Persian Gulf east to northwestern India. Only two populations are recognized.

- Atlantic Europe/W Mediterranean/NW Africa (*ostralegus*, "*malacophaga*" and "*occidentalis*"): D. (875,000). Winter counts give 856,000 in NW Europe, 13,000 in NW Africa and 3,000 in Mediterranean. Breeding population estimated at 218,000 pairs.
  Trends: Increasing.
- East Europe/Black Sea/Southwest & S Asia/NE Africa (*longipes*): C. (25,000+).
  Trends: Unknown.

Note: The population of *longipes* is also included in the Asian/ Australasian Waterbird Agreement.

RECURVIROSTRIDAE

Black-winged Stilt *Himantopus himantopus*

Only the nominate subspecies occurs. 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 (Senegambia, Chad and Sudan), but the populations breeding in southern Spain, Iraq and southern Iran may be at least partly sedentary. Some populations breeding in Subsaharan Africa appear to be migratory (*e.g.*, in Zambia and Madagascar), but the movements are poorly understood. Four main migratory groups are recognized.

- West Europe/NW Africa/West Africa: C. (40,000). Breeding population estimated at 13,200 pairs (10,500 pairs in Spain in 1989).

  Trends: Possibly increasing.

- Central Europe/East Mediterranean/Black Sea/Turkey/North-central Africa (to Chad): B. (15,000+). Perhaps as many as 20,000. 4,300 pairs excluding Ukraine and Russia.

  Trends: Unknown.

- SW Asia/Arabia/Northeast Africa (to Sudan): Probably B. Poorly known; about 10,000 winter in SW Asia.

  Trends: Unknown.

- Subsaharan Africa/Madagascar: C+. Locally common to very abundant, with counts of 20,000 in Kenya and 2,800 in South Africa.

  Trends: Unknown.

Pied Avocet *Recurvirostra avosetta*

Monotypic. Widely but patchily distributed in West Eurasia, Northwest Africa and East and South Africa. Four main populations are identifiable. (1) A population breeding on the Atlantic coast of Northwest Europe, in the western Mediterranean and locally in Northwest Africa, and wintering south along the Atlantic coast to Mauritania and Senegambia. (2) A population breeding in Southeast Europe, the Black Sea region and Turkey and wintering in the Eastern Mediterranean and eastern Sahel Zone (Chad). (3) A population breeding in Southwest Asia (Caspian Region, Kazakhstan and Iran) and wintering from Iran and Iraq through Arabia to Northeast Africa (to Sudan). (4) A population breeding in Eastern and Southern Africa from Ethiopia, Kenya and Tanzania south to South Africa. This latter population is partly sedentary and partly migratory, with southern breeders (Namibia, Botswana and South Africa) wintering north to East Africa.

- East Atlantic/W Mediterranean/NW & W Africa: C. (67,000). Breeding population estimated at 20,000 pairs.

  Trends: Stable.

- East Mediterranean/Black Sea/North-central Africa: B or C. (25,000). Probably 20,000-30,000 birds. 6,000 pairs in Black Sea area excluding Russia; up to 10,000 birds in Egypt.

Trends: Unknown.

- SW Asia/Arabia/NE Africa (to Sudan): Probably B. 2,000-2,500 pairs in western Iran; 6,000 birds wintering in SW Asia.

Trends: Unknown.

- Eastern and Southern Africa: B+. Common to locally abundant throughout its range, with counts of 3,000+ in Kenya and 7,500 in South Africa.

Trends: Unknown.

BURHINIDAE

Senegal Thick-knee *Burhinus senegalensis*

Two subspecies have been described, *B. s. senegalensis* from Senegambia to Chad and the Central African Republic, and *B. s. inornatus* from Egypt, Sudan and Ethiopia to northern Uganda and NW Kenya, but these are poorly defined. Some populations are sedentary, others are rains migrants, moving northwards in the Sahelian zone during the wet season. Two populations are recognized, both probably containing a mixture of sedentary and migratory birds.

- West Africa (*senegalensis*): B+. Poorly known; common.

  Trends: Unknown.

- NE and East Africa (*inornatus*): B+. Poorly known; common.

  Trends: Unknown.

GLAREOLIDAE

Egyptian Plover *Pluvianus aegyptius*

Two subspecies have been described: *P. a. aegyptius* from Senegal to lower Egypt and northern Zaire; and *P. a. angolae* in northern Angola and western Zaire. *P. a. angolae* appears to be mainly sedentary. *P. a. aegyptius* is to some extent a rains migrant, moving north during the rainy season. Only one migratory population is recognized.

- Entire population of *aegyptius*: B+. Poorly known; locally abundant.

Trends: Has decreased in Egypt, but no evidence of a decline further south.

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 *fuellebomi* from eastern Zaire and central Kenya to South Africa. (Some authors lump *boweni* and *limbata* with *fuellebomi*). 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 Senegambia 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 *pratincola* are recognized.

- SW Europe/NW Africa/West Africa: A. 1,500-2,000 pairs in SW Europe.

Trends: Probably decreasing.

- SE Europe/Asia Minor/Eastern Sahel: B. 3,000-3,500 pairs in SE Europe (excluding Ukraine and Russia) and Turkey.

Trends: Probably decreasing.

- Southwest Asia/NE Africa: B or C. At least 4,000 pairs in SW Asia. Flocks totalling 30,000 were seen moving north in southeast Sudan in April 1985.

Trends: Unknown.

Black-winged Pratincole *Glareola nordmanni*

Monotypic. The species breeds in west-central Asia (Ukraine and Kazakhstan) east to 85°E and appears to migrate almost non-stop over western Arabia and the Eastern Mediterranean to northeast Africa. It occurs on migration in Sudan, Ethiopia and Central Africa, and winters mainly in southern Africa, in northeastern Namibia, Botswana and South Africa. Only one population is recognized.

- Entire population: A or B. Flocks of 5,000-10,000 have been reported in Zambia, and up to 5,000 in Sudan, but there are no reports of large numbers of birds in recent years. Very few are seen on migration in SW Asia.

Trends: Decreasing.

Madagascar Pratincole *Glareola ocularis*

Monotypic. Confined as a breeding species 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 Zambesi River (mainly Kenya and Tanzania). Only one population is recognized.

- Entire population: B or C. Locally abundant. Up to 9,000 have been recorded at Sabaki on the Kenya coast, and up to 1,000 have been recorded inland at Lake Victoria.

Trends: Unknown.

Rock Pratincole *Glareola nuchalis*

Two subspecies have been described: *nuchalis* from Chad to Ethiopia and Mozambique, and *liberiae* from Sierra Leone to western Cameroon. Both subspecies are partly sedentary and partly migratory, and are known to make extensive movements, but these are poorly understood. *G. n. nuchalis* has been recorded as a migrant in the range of *liberiae*. Two populations are recognized.

- Entire population of *nuchalis*: B+. Locally abundant.
  Trends: Unknown.
- Entire population of *liberiae*: B+. Locally abundant.
  Trends: Unknown.

Grey Pratincole *Glareola cinerea*

Two subspecies have been described: *cinerea* occurs widely from Ghana to central Zaire; *colorata* is confined to the upper Niger River in Mali. The nominate race undertakes fairly extensive movements during the rainy season, moving down the major rivers to coastal estuaries and along the Logone River to Lake Chad. Only one migratory population is recognized.

- Entire population of *cinerea*: B+. Common to locally abundant.
  Trends: Unknown.

CHARADRIIDAE

European Golden Plover *Pluvialis apricaria*

Two subspecies have been described. *P. a. altifrons* breeds widely at high latitudes in West Eurasia from Iceland east to 100°E in Western Siberia, and winters south to North Africa (occasionally to Senegambia) and the South Caspian. *P. a. apricaria* breeds at more southerly latitudes in the British Isles, 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 populations are recognized. (1) Icelandic and Faeroese breeders, wintering mainly in Ireland, with smaller numbers to western Britain, France and Iberia, and a few to northwest Africa. (2) Breeders from northern Norway east to about 70°E, wintering mainly in west and south continental Europe and northwest Africa (Morocco to Tunisia). (3) Birds breeding in Western Siberia east to 100°E, wintering in Asia Minor and the Caspian Region (rarely to Egypt). (4) Southern breeders (British Isles, Denmark and Germany) wintering in Northwest Europe. Birds from populations (1), (2) and (4) mix on their wintering grounds in Northwest Europe.

- Iceland & Faeroes/East Atlantic: D. (900,000). The breeding population has been estimated at 300,000 pairs.
  Trends: Probably stable.
- Northern Europe/West Continental Europe/NW Africa: E. (1,000,000). The breeding population has been estimated at 300,000-400,000 pairs (250,000 pairs in Scandinavia; 50,000-150,000 in European Russia).
  Trends: Stable/decreasing.
- West Siberia/Asia Minor/Caspian Region: Probably A. Only about 1,000 winter in SW Asia south of the Caspian.
  Trends: Unknown.
- British Isles/Denmark/Germany: C. (90,000). The breeding population is estimated at 30,000 pairs.
  Trends: Decreasing.

Grey Plover *Pluvialis squatarola*

Monotypic. 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 Atlantic/West Mediterranean population, extending from the Wadden Sea and British Isles south to West Africa (to the Gulf of Guinea). This population includes bird from breeding areas as far east as the Taymyr Peninsula (80°E) and also apparently some birds (perhaps 10%) from NE Canada. (2) A west Indian Ocean population, extending from the Persian Gulf and Arabian Peninsula south to South Africa and Madagascar. Birds wintering in Namibia appear to belong to this population. Very few birds winter in the East Mediterranean.

- East Atlantic/West Mediterranean: D. (168,000). 85,000 winter in West Europe and 81,000 in North and West Africa.
  Trends: Increasing.
- Southwest Asia/East & Southern Africa: C. (44,000).
  Trends: Unknown.

Common Ringed Plover *Charadrius hiaticula*

Two subspecies occur. The nominate form breeds in northeastern Canada, Greenland and Iceland and on the coasts of Northwest Europe from southern Scandinavia and the Baltic to France, and winters south to Morocco, Mauritania and Senegambia. The high arctic form *tundrae* breeds across northern Europe and Russia east to the Bering Strait and appears to winter mainly in Eastern and Southern Africa and southwest Asia east to Pakistan, although some apparently reach West Africa. (Very few birds winter in Asia east of Pakistan). Populations of the nominate race show the phenomenon of "leap-frog" migration, with the northernmost breeding populations (in NE 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 and Morocco. Birds breeding in southern Scandinavia and the Baltic winter along the Atlantic coast from the British Isles to West Africa. Birds breeding in northern and eastern Europe winter partly in the Mediterranean and partly on the Atlantic coast. There is a considerable amount of mixing between all these sub-populations of *hiaticula* and they are here regarded as a single population. Thus only two wintering populations are recognized.

- NW Europe/W Mediterranean/NW & W Africa (entire population of *hiaticula*): D. (240,000). Winter counts give an estimate of 242,500 birds (47,500 in NW Europe and NW Africa, and 195,000 in West Africa). The breeding population in Europe is estimated at 58,500 pairs.

  Trends: Increasing in NW Europe in winter.

- Southwest Asia/Eastern & Southern Africa (*tundrae*): D. (200,000+). Probably well over 200,000. The winter counts give a total of only 45,000, but the breeding population in Scandinavia alone is estimated to be 36,500 pairs, and the subspecies breeds east across arctic Russia and Siberia to the Bering Sea!

  Trends: Unknown.

Little Ringed Plover *Charadrius dubius*

Only the subspecies *curonicus* occurs. This breeds widely across West 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 recognized. (1) European and Northwest African breeders, wintering mainly in West Africa (Mauritania to Chad and northern Zaire). (2) West Asian breeders, wintering through the Arabian Peninsula to Northeast Africa (south to northern Tanzania).

- Europe/West Africa: C or D. The breeding population of Northwest and Central Europe is estimated at 20,000-25,000 pairs.

  Trends: Apparently stable.

- Southwest Asia/Northeast Africa: B+. Common and widespread.

  Trends: Unknown.

Kittlitz's Plover *Charadrius pecuarius*

Three subspecies have been described. *C. p. allenbyi* is resident in the Nile Valley, and *C. p. tephricolor* is confined to northern Namibia. The nominate race 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.

- Entire population of *pecuarius* (excluding Madagascar): C+. Locally abundant.

  Trends: Unknown.

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 recognized.

- Entire population of *tricollaris*: C+. Generally common throughout southern Africa; less common in northern parts of its range.

  Trends: Unknown.

Forbes' Plover *Charadrius forbesi*

Monotypic. The species breeds from Senegambia to northern Angola, southwestern Sudan, western Uganda, western Tanzania and central Zambia. It is known to be seasonally migratory in West Africa, moving to rocky hillsides during the rainy season to breed. Only one population is recognized.

- Entire population: B+. Uncommon to locally common, especially in the western parts of its range.
  Trends: Unknown.

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 recognized.

- Entire population of *pallidus* (Southern Africa): B+. Common to abundant. 5,200 have been recorded in the African Waterfowl Census.
  Trends: Unknown.
- Entire population of *venustus* (Kenya and Tanzania): B+. Abundant to very abundant.
  Trends: Unknown.

Kentish Plover *Charadrius alexandrinus*

Only the nominate subspecies occurs. This breeds widely across West Eurasia and North Africa. Populations breeding in Africa (Atlantic coast south to Senegambia, Egypt, and Red Sea coast south to northern Somalia) appear to be mainly sedentary. Populations breeding north of 40°N in West Eurasia are migratory, wintering south to Senegambia and the Gulf of Aden (rarely to the equator in West Africa); southern populations are sedentary or dispersive. Three main populations are recognized, although in all cases there is extensive overlap of migratory and sedentary populations in winter.

- Atlantic Europe (to Denmark & Sweden)/West Mediterranean/NW & W Africa: C. (67,000). The breeding population in Northwest and Central Europe is estimated at 8,000 pairs.
  Trends: Stable/decreasing.
- East Mediterranean/Black Sea/Near East/Eastern Sahel: Probably C.
  Trends: Unknown.
- Southwest Asia/Arabia/Northeast Africa: C or D. Partial winter counts give a total of 66,000.
  Trends: Unknown.

White-fronted Plover *Charadrius marginatus*

Three subspecies have been described. The nominate race occurs in southwestern Africa from Angola to South Africa; *C. m. arenaceus* occurs in South Africa and southwestern Mozambique; *C. m. mechowi* occurs from Angola and Mozambique north to Somalia, Ethiopia, Chad, Mali and Senegambia, and also in Madagascar. *C. m. marginatus* and *C. m. arenaceus* are coastal and sedentary. *C. m. mechowi* occurs both in coastal and inland areas; the West African and Madagascar populations are largely sedentary, but inland populations in Southern and Eastern Africa are migratory, moving to the coast during the rainy season (December to May). Only one migratory population is recognized.

- Southern & Eastern Africa (*mechowi*): C. Partial winter counts give a total of 23,000 (18,000 Southern Africa, 5,000 Tanzania).
  Trends: Unknown.

Mongolian Plover *Charadrius mongolus*

Only the subspecies *pamirensis* occurs. This breeds in the mountains of West-central Asia (Pamirs, Karakoram, Ladakh, Kun Lun and Tien Shan) and winters from Southern and East Africa through Southwest Asia to western India, with small numbers reaching the Seychelles and Madagascar. Only one population is recognized.

- SW Asia/East & Southern Africa: C. (25,000+).
  Trends: Unknown.

Greater Sand Plover *Charadrius leschenaultii*

Two subspecies occur in the region. *C. l. columbinus* breeds in Turkey, Armenia and Jordan east to the Caspian Region and Afghanistan, and winters mainly in the Red Sea and Gulf of Aden, with

smaller numbers in the Eastern Mediterranean west to Tunisia. *C. l. crassirostris* breeds in Transcaspia east to SE Kazakhstan and winters from eastern Africa (Somalia to South Africa) through Arabia and southern Iran to South Asia. Two populations are recognized, although they overlap extensively in their winter quarters and are then inseparable in the field.

- SW Asia/Red Sea/Gulf of Aden (*columbinus*): A. Possibly very few; known to breed only in Turkey (100 pairs), Jordan (a few pairs), Azerbaijan (unknown numbers), Iran (a few pairs) and central Afghanistan (unknown numbers).

  Trends: Unknown.

- SW Asia/Eastern Africa (*crassirostris*): C. (65,000). Winter counts give a total of 65,000 *crassirostris* and *columbinus* combined. The great majority of these are thought to be *crassirostris*.

  Trends: Unknown.

Caspian Plover *Charadrius asiaticus*

Monotypic. 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, Namibia and South Africa, but it is not known if this reflects the presence of two discrete breeding populations. Only one population is recognized.

- Entire population: B. (20,000+). Up to 12,500 have been recorded in Kenya and Sudan, and up to 2,000 at one locality in Zambia. The species is also reported to winter commonly in Malawi.

  Trends: Unknown.

Eurasian Dotterel *Eudromias morinellus*

Monotypic. Breeds across northern Eurasia from the British Isles 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 recognized.

- European breeders (wintering mainly in North Africa): D. (160,000). Breeding population in Europe excluding Russia estimated at 36,500 pairs; population in European Russia estimated at 5,000-30,000 pairs. Total therefore likely to be in the range 120,000-200,000 birds.

  Trends: Stable/decreasing.

- Asian breeders (probably wintering mainly in the Middle East): B+. Very poorly known.

  Trends: Unknown.

Note: The population breeding in Asia is also included in the Asia-Pacific Waterbird Agreement.

Northern Lapwing *Vanellus vanellus*

Monotypic. Breeds widely across Eurasia south to Morocco (few), Turkey and northwestern Iran, and winters throughout South and West Europe, North Africa and the Middle East. No discrete populations are identifiable. Two wintering groups are recognized.

- Europe/Asia Minor/North Africa: E. (7,000,000). European breeding population estimated at 2,300,000 pairs (869,000 pairs in Northwest and Central Europe).

  Trends: Apparently stable over much of its range.

- West Siberia/Southwest Asia: C+. Poorly known; 35,000 winter in Southwest Asia south of the Caspian.

  Trends: Unknown.

Spur-winged Plover *Vanellus spinosus*

Monotypic. 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 Senegambia 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 recognized, and this contains a mixture of migratory and sedentary birds.

- SE Europe/SW Asia/Egypt: Probably B. Several thousand pairs in Egypt; probably less than 1,000 pairs elsewhere.

Trends: Unknown.

White-headed Lapwing *Vanellus albiceps*

Monotypic. Widespread in Africa south of the Sahara from Senegambia to southwestern Sudan and south to northern Angola. Three relatively discrete populations can be identified. (1) A sedentary population in southeastern Tanzania. (2) An apparently sedentary population in southeastern Africa (Zambia, Zimbabwe, Mozambique and South Africa). (3) A partially migratory population in West and Central Africa (from Senegambia and SW 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 population is relevant.

- West and Central Africa: B+. Generally fairly common.

Trends: Unknown.

Wattled Lapwing *Vanellus senegallus*

Four subspecies have been described: *senegallus* from Senegal to Sudan, northeastern Zaire and Uganda; *solitaneus* from western Kenya to northern Namibia; *lateralis* from eastern Zaire and Uganda to Angola and South Africa (Natal); and *major* in Ethiopia and Somalia. Some authors lump *solitaneus* with *lateralis*, and *major* with *senegallus*. Both groups 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. Two main groups are recognized.

- West Africa/NE Africa (*senegallus* and *major*): B+. Generally fairly common; seldom very numerous.

Trends: Unknown.

- Eastern and Southern Africa (*lateralis* and *solitaneus*): B+. Generally fairly common; seldom very numerous.

Trends: Unknown.

Senegal Lapwing *Vanellus lugubris*

Monotypic. 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. Migratory throughout much of its range, but the movements are complex and poorly understood. Only one population is recognized.

- Entire population: C+. Locally very common.

Trends: Unknown.

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*): C+. Common to locally abundant.

Trends: Unknown.

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, Botswana, western Zimbabwe, Namibia and South Africa. *V. c. demissus* is sedentary. Other populations are migratory, undertaking regular seasonal movements in response to changes in habitat. Three discrete populations are recognized.

- Central Africa - SW Uganda/E Zaire/Rwanda/Burundi (*coronatus*): B+. Locally common.

Trends: Unknown.

- Eastern Africa south to eastern Southern Africa (*coronatus*): D+. Common to abundant.

Trends: Unknown.

- Southwestern Africa (*xerophilus*): C+. Common.

Trends: Unknown.

Brown-chested Lapwing *Vanellus superciliosus*

Monotypic. Only proven to breed in southern Nigeria, but probably breeds in a narrow band from Togo to northeastern Zaire. A trans-equatorial migrant, present in the breeding range in the dry season (late November to early June). Spends the non-breeding season in southern Zaire, Rwanda, Burundi, Uganda, southwestern Kenya and northwestern Tanzania. Only one population is recognized.

- Entire population: A+. Generally uncommon to rare, but concentrates in some numbers locally in a few areas in its non-breeding range.

Trends: Unknown.

Sociable Lapwing *Vanellus gregarius*

Monotypic. Breeds in 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. Formerly a regular winter visitor and passage migrant in Egypt, but very few records in recent years. One population is relevant.

- Central Asia/NE Africa: Probably A. Recent estimates of "several tens of thousands" appear to be based on old information. No large concentrations have been reported in recent years.

Trends: Decreasing (perhaps dramatically).

White-tailed Lapwing *Vanellus leucurus*

Monotypic. Breeds from central Iraq east across Southwest Asia to Lake Balkash in Kazakhstan. Populations breeding in southern Iran and Iraq appear to be mainly sedentary, but populations breeding in Kazakhstan, Turkmenistan, Uzbekistan and Kirgiztan 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/NE Africa: B+. Poorly known, as main breeding and wintering areas are likely to be in Iraq. At least 2,500 winter in SW Asia outside Iraq, and up to 850 have been counted in Sudan.

Trends: Unknown.

SCOLOPACIDAE

Great Snipe *Gallinago media*

Monotypic. 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 passage in Northeast Africa. The small breeding population in Norway and Sweden is thought to winter in West Africa. Two main breeding groups are recognized.

- Norway & Sweden (probably wintering in West Africa): A. (5,000). Breeding population estimated at 1,600 pairs.

Trends: Decreasing.

- NE Europe/NW Asia (wintering mainly SE Africa): B or C.

Trends: Probably decreasing.

Common Snipe *Gallinago gallinago*

Two subspecies occur. The nominate subspecies has a wide breeding distribution across West Eurasia, wintering south to northern Zaire and western Tanzania (rarely to Zambia and Malawi). *G. g. faroeensis* breeds in Iceland, the Faeroes, Orkney and Shetland, and winters mainly in Ireland. Fenno-scandian 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 recognized.

- Iceland/Faeroes/N Scotland (*faroeensis*): D. (900,000). Breeding populations estimated at 300,000 pairs in Iceland and 1,100 pairs in the Faeroes.

Trends: Unknown

- Rest of Europe (wintering in S & W Europe and NW Africa): E. (4,000,000+). Breeding population in Europe excluding Russia estimated at about 500,000 pairs. The total wintering population of snipe (including *faroeensis*) in Europe and North Africa is likely to exceed 5 million. (One estimate puts the figure as high as 15 million).

Trends: Probably decreasing.

- Western Siberia (wintering SW Asia & Subsaharan Africa): E. Poorly known. The wintering population in East Africa is estimated at 1,500,000.

Trends: Unknown.

Jack Snipe *Lymnocryptes minimus*

Monotypic. The species has a wide breeding distribution at northern latitudes in West Eurasia from Sweden east to 160°E, wintering south to Senegambia, southern Sudan, southern India and Southeast Asia. No discrete populations are identifiable. Two main breeding populations are recognized in West Eurasia.

- Europe (wintering in S & W Europe and W Africa): D. The breeding population in Europe excluding Russia is estimated at about 30,000 pairs.

Trends: Stable/decreasing.

- Western Siberia (wintering in SW Asia and possibly NE Africa): B+. Poorly known.

Trends: Unknown.

Black-tailed Godwit *Limosa limosa*

Two subspecies occur. *L. l. islandica* breeds mainly in Iceland and winters mainly in Britain, Ireland and western France south to Northwest Africa. The nominate subspecies 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. Three main groups of *limosa* can be identified in West Eurasia. (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 Senegambia 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. (3) Birds which breed in west-central Asia and winter in Southwest Asia and Northeast Africa (south to Kenya). Four populations are recognized.

- Iceland/British Isles/W France (*islandica*): C. (65,000).

Trends: Stable.

- West Europe/West Africa (*limosa*): D. (350,000). The breeding population in Northwest and Central Europe is estimated at 133,000 pairs.

Trends: Possibly decreasing.

- East Europe/Black Sea/E Mediterranean/East-Central Africa: Probably C. Poorly known.

Trends: Unknown.

- West-central Asia/SW Asia/NE Africa: Probably C. Approximately 20,000 winter in SW Asia excluding Iraq. The wintering population is Sudan is estimated at 23,000.

Trends: Unknown.

Bar-tailed Godwit *Limosa lapponica*

Only the nominate subspecies occurs. This 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 NW India. North European and Western Siberian populations (east to the Taymyr) migrate southwest along the Atlantic coast to winter in West Europe and 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). Much the largest concentration occurs in Mauritania. Populations breeding further east migrate overland to winter on the coasts of the Arabian Peninsula and southern Iran east to Northwest India. Rather few winter on the Indian Ocean coast of East Africa. Two main wintering populations are recognized.

- Atlantic population (West Europe/W & SW Africa): D. (820,000). 120,000 in Europe, 700,000 in West Africa.

Trends: Increasing in Northwest Europe.

- Indian Ocean population (East Africa/SW & South Asia): C or D. (90,000+).

Trends: Unknown.

Note: The Indian Ocean population is also included in the Asian/ Australasian Waterbird Agreement.

Whimbrel *Numenius phaeopus*

Two subspecies occur. The nominate subspecies breeds from 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* breeds in the steppes of the lower Volga southeast of the Urals and winters in East Africa and Madagascar. Three populations are relevant. (1) Birds breeding in Iceland, the Faeroes, Scotland, Fenno-scandia and northwest Russia, and wintering mainly in West Africa to the Congo River. (2) Birds breeding in Western Siberia and migrating through the Caspian Region and Middle East to winter in Eastern and Southern Africa and Madagascar. (3) The population of *alboaxillaris* breeding in the Volga Steppes and wintering in Eastern Africa and Madagascar.

- European breeders/West Africa (*phaeopus*): D. (650,000+). Breeding population of Iceland and Northern Europe excluding NW Russia estimated at 250,000 pairs, giving a minimum total 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.

  Trends: Unknown.

- West Siberian breeders/E & S Africa (*phaeopus*): C+. Winter counts in SW Asia and East Africa give a total of 20,000.

  Trends: Unknown.

- Volga steppes/E Africa (*alboaxillaris*): A+. No indication of numbers is available.

  Trends: Unknown.

The Western Siberian population which winters from eastern Arabia and southeastern Iran east to western India and Sri Lanka is largely extralimital.

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, Iraq and perhaps also the Arabian Peninsula. In recent years, the species has only been found wintering regularly at one site in Morocco. However, much potentially suitable habitat in lower Iraq has never been adequately surveyed, and has not been visited by ornithologists since 1979. Only one population is recognized.

- Entire population: A. (<400). Gretton (1991) estimated the total population at 100-400, but this may be optimistic, as only 10-15 have been reported annually in recent years.

  Trends: Decreasing. Extinction possibly imminent.

Eurasian Curlew *Numenius arquata*

Two subspecies occur. The nominate race breeds widely in central and northern Europe east to the Urals, and winters south commonly to Mauritania and in much smaller numbers to Southwest Africa. No discrete populations are identifiable. *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 (occasionally also on the coast of Southwest Africa north to the Gulf of Guinea). Two populations are recognized.

- European breeders/N & W Africa (*arquata*): D. (350,000). Breeding population estimated at 125,000 pairs.

  Trends: Stable/decreasing.

- West Asian breeders/Middle East/E & S Africa (*orientalis*): C. (28,000+). Partial mid-winter counts give a total of 28,000 (25,000 in SW Asia, 2,800 in East and Southern Africa).

  Trends: Unknown.

Birds of both subspecies mix on the west coast of Africa between the Gulf of Guinea and South Africa, but the Banc d'Arguin in Mauritania seems to be the usual southern limit for birds of the nominate race.

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 South and West Europe, Northwest Africa and the Middle East and more commonly in Subsaharan 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 Western Siberian breeders winter mainly in the Middle East and

northeastern and eastern Africa. Two main groups are recognized.

- European breeders/West Africa: D. (150,000+). Breeding population excluding Russia estimated at 45,000 pairs, giving a total of 100,000-150,000 birds. Only 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.

  Trends: Unknown.

- West Siberian breeders/Middle East/NE & E Africa: B or C. Partial winter counts give 1,000 in SW Asia and 8,000 in East and Southern Africa.

  Trends: Unknown.

Common Redshank *Tringa totanus*

Three subspecies occur. *T. t. robusta* breeds in Iceland and the Faeroes, and winters mainly in the British Isles, North Sea area and northwest France, although stragglers reach Northwest Africa. *T. t. totanus* breeds from the British Isles east to the Urals. The British and Irish populations (sometimes considered as a separate subspecies *britannica*) are partly sedentary, with only limited movement to the Atlantic coast of France. Fenno-scandian, Baltic and west-central European populations winter in the West Mediterranean and on the Atlantic coast of Western Europe south to West Africa. *T. t. ussuriensis* breeds across Russia from the Urals to Manchuria and winters from Eastern and Southern Africa east across southern Asia to the Philippines. Four main breeding groups are recognized, although there is considerable overlap on the wintering grounds.

- Iceland & Faeroes breeders/British Isles & NW France (*robusta*): D. (300,000). Breeding population estimated at about 100,000 pairs. Mid-winter counts are apparently very ineffective, accounting for only 109,000 *robusta* and *"britannica"* combined in NW Europe.

  Trends: Stable/decreasing.

- British & Irish breeders/NW France (*"britannica"*): D. (100,000+). Breeding population estimated at about 35,000 pairs.

  Trends: Decreasing locally.

- Other European breeders/SW Europe/W Mediterranean/NW & W Africa (*totanus*): D. (400,000+). Breeding population excluding NW Russia estimated at 130,000 pairs (300,000-400,000 birds). Counts in winter account for only 177,000.

  Trends: Decreasing in many areas.

- West Asia/Middle East/E & S Africa (*ussuriensis*): C or D. Mid-winter censuses give a total of 55,000 in SW Asia and East and Southern Africa.

  Trends: Unknown.

Marsh Sandpiper *Tringa stagnatilis*

Monotypic. Breeds in a broad belt in the temperate zone from East Europe (30°E) to about 115°E, the westernmost populations wintering in Southwest Asia and Subsaharan Africa south to the Cape. A few birds winter in the East Mediterranean. No discrete populations are identifiable. Two main breeding groups are recognized.

- European breeders/Black Sea/E Mediterranean/West & Central Africa: Probably C.

  Trends: Unknown.

- West Asian breeders/Middle East/E & S Africa: Probably C. Mid-winter censuses give a total of 18,000 in SW Asia and East and Southern Africa.

  Trends: Unknown.

Common Greenshank *Tringa nebularia*

Monotypic. Breeds widely across northern Eurasia from Scotland eastwards, the westernmost populations wintering in southern Europe (relatively few), Southwest Asia and Subsaharan Africa south to the Cape. The small breeding population in Scotland (about 900 pairs) apparently winters mainly in Britain, Ireland and Northwest France. No discrete populations are identifiable. Two main breeding groups are recognized.

- European breeders/SW Europe/NW & W Africa east to Chad: D. (300,000+). Breeding population in Europe excluding Russia estimated at 109,000 pairs (250,000+ birds). Only 19,000 are counted in winter.

  Trends: Apparently stable.

- West Asian breeders/Middle East/E & S Africa: C or D. Mid-winter censuses give a total of 28,000 in SW Asia and East and Southern Africa.

  Trends: Unknown.

Green Sandpiper *Tringa ochropus*

Monotypic. Breeds widely across northern Eurasia from Norway and Germany eastwards, the westernmost populations wintering in western and southern Europe, North Africa, Subsaharan Africa south to Zaire and Zambia, and through Asia Minor and the Middle East to western Iran. No discrete populations are identifiable. Two main breeding groups are recognized.

- European breeders/S & W Europe/N & W Africa: D. (400,000+). Breeding population in Scandinavia alone estimated at 133,000 pairs (300,000-400,000 birds).

Trends: Apparently stable.

- West Asian breeders/Caspian Region/Middle East/NE & E Africa: C or D.

Trends: Unknown.

Wood Sandpiper *Tringa glareola*

Monotypic. 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/Eastern Mediterranean and East-central Africa. No discrete populations are identifiable. Two main breeding groups are recognized.

- European breeders/Black Sea/Mediterranean/NW & W Africa: E. (2,000,000+). Breeding population in Scandinavia alone estimated at 577,000 pairs (1,500,000-2,000,000 birds).

Trends: Possibly decreasing.

- West Siberian breeders/Caspian Region/Middle East/E & S Africa: D or E. Wintering population in Sudan estimated at 375,000.

Trends: Unknown.

Terek Sandpiper *Tringa cinerea*

Monotypic. Breeds widely from Finland and Estonia eastwards across northern Eurasia, the westernmost populations wintering in the Persian Gulf, southern Red Sea and Indian Ocean coast of Africa and Madagascar south to South Africa. Only one population is recognized.

- West Eurasian breeders/Middle East/E & S Africa: C. (44,000+). Mid-winter counts give a total of 44,000 in SW Asia and East Africa.

Trends: Unknown.

Common Sandpiper *Tringa hypoleucos*

Monotypic. Breeds widely across temperate Eurasia, the westernmost populations wintering mainly in Subsaharan Africa south to the Cape. Very small numbers winter in Southwest Europe, the Mediterranean Basin and Southwest Asia. No discrete populations are identifiable. West and Central European breeders (east to about 30°E) winter mainly in West Africa. Birds breeding in East Europe (and probably also eastern Turkey and northwestern Iran) pass through the Black Sea/East Mediterranean Region to winter mainly in East, Central and Southern Africa. The bulk of the population breeding east of the Urals probably migrates southeast to winter in South Asia, and is thus extralimital. Two main breeding groups are recognized.

- W & C European breeders/W Mediterranean/W Africa: E. (2,500,000). Breeding population estimated at 880,000 pairs. Only 38,500 are counted during the mid-winter censuses.

Trends: Stable/decreasing.

- E European & SW Asian breeders/Black Sea/E Mediterranean/E, C & S Africa: Probably D. The mid-winter censuses give a total of 9,200.

Trends: Unknown.

Ruddy Turnstone *Arenaria interpres*

Only the nominate subspecies occurs. This 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 and Greenland, and wintering in West Europe from the Irish Sea and North Sea to Iberia. (2) A population breeding in Fenno-Scandia and northwestern Russia and migrating through Western Europe to winter on the Atlantic coast of Africa from Morocco to the Gulf of Guinea (with

a few birds wintering in the West Mediterranean). (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 Gulf and Indian Ocean coast of Africa south to South Africa.

- NE Canada & Greenland breeders/West Europe: C. (67,000+).

Trends: Apparently stable.

- NE European breeders/W Mediterranean/West Africa: C. (70,000+). The breeding population in Scandinavia is estimated at 18,500 pairs (55,000-70,000 birds). Mid-winter counts give a total of 32,000 in West Africa.

Trends: Apparently stable.

- West Siberian breeders/E Mediterranean/Middle East/E & S Africa: C. (50,000+). Mid-winter counts give a total of 50,000, including 28,000 in South Africa.

Trends: Unknown.

Great Knot *Calidris tenuirostris*

Monotypic. 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) and eastern Saudi Arabia (100) to Pakistan and northwestern India. Only one population is relevant.

- SW Asia/South Asia: A. (1,500+).

Trends: Unknown.

Note: This population is also included in the Asia-Pacific Waterbird Agreement.

Red Knot *Calidris canutus*

Two subspecies occur. *C. c. islandica* breeds in the northeast Canadian arctic and northern Greenland, and winters in western Europe, mainly in the British Isles and southern North Sea. The nominate race breeds in the Taymyr Peninsula and Severnaya Zemlaya, and winters mainly on the coasts of West Africa (from Morocco to the Gulf of Guinea) and Southern Africa (Namibia and South Africa). Two populations are recognized.

- Canada/Greenland/NW Europe (*islandica*): D. (345,000).

Trends: Decreased from 609,000 in the early 1970s to 345,000 by the mid-1980s, probably because of severe summer weather in the Arctic. Apparently now stable or increasing.

- North-central Siberia/West & Southern Africa (*canutus*): D. (512,000).

Trends: Stable.

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 northeast Greenland migrate southeast through Northwest Europe to winter 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 West 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 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. No discrete populations are identifiable. Two main wintering groups are recognized, although their validity is somewhat questionable.

- Greenland & Siberian breeders/W Europe & W Africa: C. (70,000). 27,000 winter in Western Europe and 43,000 in West Africa.

Trends: Apparently stable.

- Siberian breeders/Black & Caspian Seas/Middle East/E & S Africa: D. (120,000). 20,000 winter in SW Asia and 100,000 in East, South and Southwest Africa.

Trends: Unknown.

The population wintering from southeastern Iran and eastern Arabia to Pakistan and India is largely extralimital, and is covered under the Asia-Pacific Waterbird Agreement.

Little Stint *Calidris minuta*

Monotypic. Breeds widely across northern Eurasia from extreme northeastern Norway east to about 150°E, the westernmost populations wintering from southern Europe (few) and 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 South Africa have been recovered on migration in Kazakhstan and the South Caspian. No discrete populations are identifiable. Two main passage/wintering groups are recognized.

- Europe/Black Sea/Mediterranean/N & W Africa (presumably mainly European breeders): D. (211,000). Wintering population on West African coast estimated at 211,000.

Trends: Stable.

- Caspian Sea/Middle East/E & S Africa (presumably mainly West Siberian breeders): E. (1,000,000+). Mid-winter censuses give a total of 630,000 (26,000 in SW Asia, 607,000 in Southern and Eastern Africa).

Trends: Unknown.

Temminck's Stint *Calidris temminckii*

Monotypic. Breeds widely across northern Eurasia from west Norway east to the Bering Straits, the westernmost populations wintering in southeastern Europe, Egypt, Tunisia, Subsaharan Africa mainly north of the equator, and the Middle East. No discrete populations are identifiable. Two main breeding groups are recognized.

- European breeders/Black Sea/E Mediterranean/N & W Africa (S & E to Gulf of Guinea): C. (90,000+). Breeding population in Scandinavia estimated at 25,400 pairs (70,000-90,000 birds).

Trends: Decreasing.

- West Siberian breeders/Middle East/NE & E Africa (S to Kenya & Burundi): B+. Poorly known. Mid-winter censuses give a total of only 1,850.

Trends: Unknown.

Purple Sandpiper *Calidris maritima*

Monotypic. 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. Birds breeding in East Greenland are believed to winter mainly in Iceland, although some reach the British Isles. Some Icelandic birds are sedentary, while others winter in the British Isles. All northeast European and Siberian breeders winter in North and West Europe from the Kola Peninsula and north Norway south to northwest France (less commonly to Spain and Portugal). Two main breeding groups are recognized.

- East Greenland & Iceland (to Iceland & British Isles): D. (150,000+). Breeding population in Iceland estimated at 50,000 pairs. Greenland population unknown.

Trends: Apparently stable.

- NE Europe & West Siberia (to British Isles and France): D. Breeding population in Norway, Sweden and Svalbard estimated at 17,500 pairs. Russian population unknown, but presumably much larger.

Trends: Apparently stable.

Mid-winter counts are very ineffective, accounting for only 54,000 birds from both populations. There is some evidence that the Northeast European and West Siberian birds 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.

Dunlin *Calidris alpina*

Three subspecies occur. 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. *C. a. arctica* breeds in northeast Greenland and appears to winter mainly in northwest Africa (Morocco to Mauritania). *C. a. schinzii* breeds in southeast Greenland, Iceland, the British Isles and Baltic region, and winters in Southwest Europe and Northwest Africa (SW France to Mauritania). Four main populations have been identified.

- NE Greenland/NW Africa (*arctica*): B. (15,000).

Trends: Apparently stable.

- SE Greenland/Iceland/British Isles/Baltic/NW Africa (*schinzii*): D. (820,000). Breeding population estimated at 310,000 pairs, including 11,100 pairs of "temperate" *schinzii* breeding in the British Isles and Baltic region.

Trends: Apparently stable.

- NE European/NW Siberian breeders/W Europe/Black Sea/Mediterranean (*alpina*): E. (1,373,000).

Trends: Apparently decreasing.

- West Siberian breeders/Caspian Region/Middle East/NE Africa (*alpina*): D. (150,000+).

Trends: Unknown.

Curlew Sandpiper *Calidris ferruginea*

Monotypic. The species has a rather restricted breeding distribution 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. No discrete populations are identifiable. Two main passage/wintering populations are relevant.

- East Europe/Mediterranean/West Africa: D. (436,000). 550,000 are thought to pass through European Russia.

Trends: Apparently stable.

- Caspian Region/Middle East/E & S Africa: D. (309,000+). Mid-winter censuses give a total of 309,000 (9,000 in SW Asia, 180,000 in East Africa and 120,000 in Southern Africa).

Trends: Apparently stable.

Some birds migrate southwest along the Atlantic seaboard of West Europe to West Africa in autumn, but these apparently return via the more direct route across the Sahara, Mediterranean and East Europe in spring.

Broad-billed Sandpiper *Limicola falcinellus*

Only the nominate subspecies occurs. This breeds in northern Eurasia from West Norway east to about the Yenisey River (85°E), and winters from Africa south of the Sahara and Arabian Peninsula east to western India and Sri Lanka. European breeders probably migrate on a broad front across East and Central Europe to winter in West and Southwest Africa, but the limits of the winter distribution in Africa are poorly understood. Birds breeding in Western Siberia migrate through the Caspian Region and Middle East to winter on the shores of the Arabian Peninsula and in Eastern and Southern Africa. Two main populations are recognized.

- European breeders/W & SW Africa: C. (35,000+). The breeding population in Scandinavia (most of the total) is estimated at 10,700 pairs (30,000-40,000 birds).

Trends: Unknown.

- West Siberian breeders/Caspian Region/Middle East/NE, E & S Africa: B or C. Mid-winter counts give a total of 6,720 (6,500 in Southwest Asia and 120 in East Africa), but the main wintering areas are still poorly understood.

Trends: Unknown.

Ruff *Philomachus pugnax*

Monotypic. The species breeds widely across northern Eurasia from the British Isles (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 grounds scattered between 70°E and 160°E). Two main populations are recognized, but these mix extensively on the wintering grounds in West Africa.

- European breeders/Black Sea/Mediterranean/West Africa: E. (1,000,000). The breeding population in Europe excluding Russia is estimated at 246,000 pairs.

Trends: Decreasing.

- Siberian breeders/Southwest Asia/Africa: D or E. The wintering population in Sudan is estimated at 650,000. Mid-winters counts elsewhere in East and Southern Africa give a total of 50,000.

Trends: Unknown.

Red-necked Phalarope *Phalaropus lobatus*

Monotypic. The entire population breeding on the mainland of West 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 (variously estimated at 50,000 to 200,000 pairs) and the small populations in the Faeroes and Scotland are unknown. These birds may migrate overland across Europe to join other European and Siberian breeders in the Arabia 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.

- West Eurasia/Indian Ocean: D or E. The breeding population in Scandinavia is estimated at 75,000 pairs. Concentrations of up to one million have been reported on migration in the Caspian Region.
  Trends: Unknown.

This population is also covered under the Asia-Pacific Waterbird Agreement.

Grey Phalarope *Phalaropus fulicaria*

Monotypic. The large populations breeding in northern Canada and Greenland and presumably also the small population breeding in Iceland (50-60 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 east Pacific off the coast of South America, and are thus extralimital. The winter quarters of birds breeding in 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 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 recognized here.

- Canada/Greenland/Iceland/East Atlantic: Probably D. Poorly known.
  Trends: Unknown.

LARIDAE

White-eyed Gull *Larus leucopthalmus*

Monotypic. The species is 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. Only one population is recognized.

- Entire population: B. (20,000). Breeding population estimated at 5,000-7,000 pairs.
  Trends: Apparently stable, but confined to a small number of breeding sites, and at constant risk from floating and beached oil.

Sooty Gull *Larus hemprichii*

Monotypic. The species breeds on islands off the coast of the Arabian Peninsula and northeast Africa, and in the Red Sea north to Egypt, dispersing in winter 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 Gulf and Pakistan in spring and summer. Only one population is recognized.

- Entire population: C. (40,000). Breeding population estimated at 10,000 pairs.
  Trends: Unknown.

Common Gull *Larus canus*

Two subspecies occur. 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 Gulf, East Mediterranean and Baltic. Two populations are recognized.

- W & C Europe/W Mediterranean (*canus*): E. (1,500,000). The breeding population is estimated at 460,000-490,000 pairs.

  Trends: Stable/increasing.

- West Siberia/E Europe/Black Sea/Caspian Sea (*heinei*): C. (50,000+).

  Trends: Unknown.

Audouin's Gull *Larus audouinii*

Monotypic. The species breeds only on islands in the Mediterranean, and 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. Only one population is recognized.

- Entire population: B. (20,000). Breeding population estimated at 5,000-6,500 pairs.

  Trends: Stable/increasing.

Great Black-backed Gull *Larus marinus*

Monotypic. The species breeds widely on the coasts of northern Europe from Greenland, Iceland, Svalbard and the Kola Peninsula south to the British Isles and Brittany. Populations breeding north of the Arctic Circle are completely migratory, wintering south commonly to the North Sea and in smaller numbers to the Bay of Biscay (and occasionally Portugal). Those breeding in the southern part of the range are mainly sedentary with some southward dispersal of immatures in winter. Icelandic birds are mainly sedentary, although some winter in Northwest Europe. The population breeding in southern Greenland appears to be entirely sedentary. No discrete populations are identifiable, and one population is recognized.

- Europe (including Iceland): D. (500,000). The breeding population is estimated at about 140,000-180,000 pairs.

  Trends: Increasing.

Glaucous Gull *Larus hyperboreus*

Only the nominate subspecies occurs. This breeds in the Canadian Arctic, Greenland, Iceland, Svalbard and northern Siberia east to the Taymyr Peninsula. The West Greenland and Icelandic populations appear to be sedentary, but the East Greenland population is believed to winter mainly in Iceland. Birds breeding in Svalbard and Siberia winter in North and West Europe south to the British Isles and northern France, and also in Iceland and Greenland. Thus there is considerable overlap between populations, and only one population is recognized here.

- East Greenland/Iceland/N Europe/West Siberia: D. Poorly known; probably over 100,000 pairs.

  Trends: Apparently stable.

Iceland Gull *Larus glaucoides*

Monotypic. The species breeds in Greenland. Those breeding on the west coast are sedentary or dispersive within Greenland; those breeding on the east coast are migratory, wintering mainly in Iceland but also in small numbers to the Faeroes, British Isles and occasionally Scandinavia. Only one population is recognized.

- East Greenland/Iceland/NW Europe: Probably D. Poorly known.

  Trends: Apparently stable.

The closely related *Larus kumlieni* of northeastern Canada was formerly considered to be a subspecies of *glaucoides*.

Herring Gull *Larus argentatus*

Larus argentatus is here considered to comprise only the pink-legged forms of the *argentatus/cachinnans/fuscus* group (*L. a. argentatus* and *L. a. argenteus* in Europe, and *L. a. vegae* in East Asia). The nominate race breeds from Denmark and Scandinavia east to the Kola Peninsula, and winters south to the North Sea and British Isles. *L. a. argenteus* breeds in Iceland, the Faeroes, the British Isles and on the coast of continental Europe from Germany to western France. Most populations are sedentary or dispersive, although some birds move southwest to Iberia in winter. Only two populations are recognized.

- Entire population of *argentatus*: E. (1,500,000). Breeding population 475,000 pairs.

  Trends: Increasing.

- Entire population of *argenteus*: E. (1,500,000). Breeding population 505,000 pairs.
Trends: Increasing.

Yellow-legged Gull *Larus cachinnans*

Larus cachinnans is here considered to comprise all the yellow-legged forms of the *argentatus/cachinnans/fuscus* group except for the two darkest-backed forms (treated as *Larus fuscus*) and the rather distinct *Larus armenicus*. The group occurs widely across southern Europe and Asia east to southern China, and winters south to West Africa, East Africa, southern India and Southeast Asia. Eight forms have been described: (1) *atlantis* of the Azores, Madeira and the Canary Islands; (2) *michahellis* of southwest France, western Iberia, Morocco and the Mediterranean; (3) *cachinnans* from the Black Sea through the Caspian Sea to eastern Kazakhstan and western China; (4) *barabensis* of the Central Asian steppes; (5) *mongolicus* of the southeast Altai and Lake Baikal region; (6) *omissus* in the eastern Baltic, Estonia, Finland and northwest Russia; (7) *heuglini* from the southern Kola Peninsula east to the Yenisey River; and (8) *taimyrensis* from the Yenisey River to the Taymyr Peninsula. *L. c. atlantis* is mainly sedentary. *L. c. michahellis* is dispersive, with immatures undertaking substantial movements within the Mediterranean and on the Atlantic coast of Africa south to the Gulf of Guinea. *L. c. cachinnans* is partly migratory, wintering south to the East Mediterranean, northern Red Sea and Persian Gulf. *L. c. barabensis* and *L. c. mongolicus* are largely extralimital, wintering mainly in South and East Asia, although both forms have been recorded in the Arabian Sea and Persian Gulf. *L. c. omissus* apparently winters in the western Baltic, southern Sweden and Danish archipelago. *L. c. heuglini* winters south through the Black, Aral and Caspian Seas to Northeast Africa, the Persian Gulf and the Arabian Sea east to India. The main winter quarters of *L. c. taimyrensis* are probably on the shores of the Arabian Sea east to Pakistan, although small numbers have been recorded inland in Kenya. Five migratory forms are relevant, each treated here as a separate population. Only the breeding ranges are given, as several forms overlap extensively in winter and are then indistinguishable in the field.

- *michahellis* (SW France/W Iberia/Morocco/Mediterranean): D. (350,000). Breeding population 112,000-124,000 pairs.
Trends: Increasing.
- *cachinnans* (Black Sea/Caspian Sea/E Kazakhstan): C or D. At least 17,000 pairs in Black Sea and Caspian Sea.
Trends: Unknown.
- *omissus* (Baltic/Estonia/Finland/NW Russia): B+. No information.
Trends: Unknown.
- *heuglini* (Kola Peninsula to Yenisey): B+. No information.
Trends: Unknown.
- *taimyrensis* (Yenisey to Taymyr): B+. No information.
Trends: Unknown.

Recent work (as yet unpublished) has suggested that it might be more appropriate to retain *atlantis*, *michahellis* and nominate *cachinnans* as forms of the Yellow-legged Gull *Larus cachinnans*, and to group the five other forms and *Larus armenicus* under a new species, *Larus sibiricus*. An alternative approach, also currently gaining acceptance, would be to lump all the *cachinnans* group, including *armenicus*, with the *Larus fuscus* group as a single "ring species".

Armenian Gull *Larus armenicus*

Monotypic (often considered to be a subspecies of *cachinnans*). Confined as a breeding species to lakes in Armenia, eastern Turkey and northwestern Iran. Largely migratory, wintering in the East Mediterranean (SE Turkey to Israel) and Persian Gulf, although a few birds remain at some of the breeding sites throughout the winter. Only one population is recognized.

- Entire population: B. (30,000). Estimate of 8,000-10,000 pairs.
Trends: Unknown.

Lesser Black-backed Gull *Larus fuscus*

Larus fuscus is here considered to comprise only the two very dark-backed forms of the *argentatus/cachinnans/fuscus* group breeding in northern Europe, *L. f. fuscus* and *L. f. graellsii*. The nominate race breeds in north continental Europe from northern Norway and Sweden east to the Kola Peninsula and White Sea (35°E), and migrates south across eastern Europe, the Black Sea and the East Mediterranean to winter in the Red Sea and Central and Eastern Africa (east to the Gulf of Guinea and south to Zimbabwe, Mozambique and Malawi). It is an uncommon migrant in the

Caspian Sea and rather scarce winter visitor to the Persian Gulf and Arabian Sea. (Most old reports of *L. fuscus* in the Arabian Peninsula and further east in Asia are now believed to refer to one or other subspecies of *Larus cachinnans*). *L. f. graellsii* breeds from Iceland, the British Isles and southern Norway south to northwest Spain and winters along the Atlantic seaboard from the British Isles south to West Africa (commonly to Guinea and Nigeria). A few birds winter in the West Mediterranean east to Tunisia. Only two populations are recognized.

- *L. f. fuscus* (entire population): D. (200,000). Breeding population at least 60,000 pairs.
  Trends: Unknown.
- *L. f. graellsii* (entire population): D. (400,000). Breeding population at least 140,000 pairs.
  Trends: Increasing.

Some authors give subspecific status to the populations breeding in the Netherlands, Denmark and southern Norway (*L. f. intermedius*).

Great Black-headed Gull *Larus ichthyaetus*

Monotypic. The species breeds across Central Asia from the Black Sea to the Tibetan Plateau, the westernmost populations wintering in the Caspian Sea, Persian Gulf, Arabian Sea and Red Sea, with small numbers reaching the Ethiopian lakes in Northeast Africa. One population is recognized.

- Middle East/NE Africa: Probably B. At least 5,700 pairs breeding in Caspian Sea. Up to 4,000 in winter in Iran. Up to 110 at Ethiopian lakes.
  Trends: Apparently stable.

Grey-headed Gull *Larus cirrocephalus*

Only the subspecies *poiocephalus* occurs. This is widespread in eastern and southern Africa from the Nile Valley in Sudan and Ethiopia to South Africa, and also occurs in southern Madagascar. Most populations appear to be mainly sedentary, but the population in Southern Africa is at least partly migratory (in South Africa, Zimbabwe, Zambia, Botswana, Namibia and southern Angola), while the population breeding on the coast of West Africa (Mauritania, Senegal, Gambia and Guinea Bissau) spreads along the coast in winter as far as the Gulf of Guinea. Two migratory populations are recognized.

- Southern Africa: B+. Common to abundant.
  Trends: Unknown.
- Coastal West Africa: B. Over 10,000 recorded during mid-winter census.
  Trends: Unknown.

Common Black-headed Gull *Larus ridibundus*

Monotypic. The species breeds widely across north and temperate Eurasia from Iceland to Eastern Siberia, western populations wintering south to Mauritania and East Africa. No discrete populations are identifiable. Three main groups are recognized. (1) Birds which breed in Western Europe (west of 30°E) and winter mainly in Western Europe, the West Mediterranean and West Africa. (2) Birds which breed in Eastern Europe and winter mainly in the Black Sea and East Mediterranean. (3) Birds which breed in Western Siberia and winter in the Caspian Region, Middle East and Northeast Africa south through Sudan to East Africa.

- West Europe/W Mediterranean/West Africa: E. (4,000,000). Estimated 1,250,000 pairs in West and Central Europe.
  Trends: Increasing.
- East Europe/Black Sea/E Mediterranean: D. (250,000). Breeding population probably in range 50,000-100,000 pairs.
  Trends: Unknown.
- West Siberia/Caspian Sea/Middle East/NE Africa: D. (250,000+). At least 176,000 winter in Southwest Asia south of the Caspian.
  Trends: Unknown.

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 NW India. Three largely discrete populations are identifiable. (1) A population which breeds in Mauritania and Senegambia 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. (3) A population which breeds in Kazakhstan, the Caspian Region, Iran and Iraq, and

winters in the Persian Gulf and Arabian Sea east to northwest India.
- West Africa: B. (10,000+). Breeding population 3,000 pairs.
Trends: Increasing.
- Black Sea/Mediterranean: D. (350,000). Breeding population in Black Sea well over 100,000 pairs in some years.
Trends: Apparently stable.
- SW Asia (to NW India): D. (150,000).
Trends: Increasing in NW India.
Note: The SW Asia population is also included in the Asia-Pacific Waterbird Agreement.

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 westwards 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 very small numbers. Only one population is recognized.
- Black Sea/Mediterranean (& NW Europe): D. (500,000). Breeding population estimated at 150,000-230,000 pairs.
Trends: Increasing markedly at the main colonies in the Black Sea, but decreasing locally in Romania.

Little Gull *Larus minutus*

Monotypic. There appear to be two largely discrete populations in West 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 recognized.
- Central Europe/SW Europe/W Mediterranean: Probably C. Poorly known. Breeding population probably 5,000-10,000 pairs.
Trends: Apparently stable.
- West Siberia/Black Sea/Caspian Sea: C. (50,000). Rough estimate of 50,000 birds.
Trends: Unknown.

Sabine's Gull *Xema sabini*

Monotypic; almost circumpolar. Populations breeding on the arctic tundra of Canada and Greenland migrate southeast across the Atlantic to winter in the cool Benguela Current off Namibia and South Africa (between 18°S and 34°S). The few pairs breeding in Svalbard presumably also winter off Southwest Africa. The species occurs commonly on migration off the West African coast, but is only an occasional visitor to the Atlantic seaboard of Europe (mainly the Bay of Biscay). Only one population is recognized.
- Canada & Greenland/SW Africa: C or D. Poorly known.
Trends: Unknown.
The population breeding in Alaska and northern Siberia (west to about 90°E) winters in the Southeast Pacific.

Gull-billed Tern *Sterna nilotica*

Only the nominate subspecies occurs. 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 Senegambia, and winters mainly inland in West Africa east to Nigeria and Chad. (2) A population which breeds in the Balkans, the Black Sea, the Eastern Mediterranean and central Turkey, and winters mainly inland in Northeast and East Africa from Sudan south to Tanzania (occasionally Botswana). (3) A population which breeds in the Caspian Region, Aral Sea and Kazakhstan, and winters in Iraq, southern Iran, the Persian Gulf and the Arabian Peninsula. Three populations are relevant.

- W Europe/W Mediterranean/W Africa: B. (12,000). 3,000-4,000 pairs, including 1,800 pairs in West Africa; 12,000-15,000 birds in West Africa in winter.
  Trends: Decreasing.
- Black Sea/Turkey/E Mediterranean/NE & E Africa: B. (10,000+). Probably 3,000-4,000 pairs.
  Trends: Decreasing.
- Kazakhstan/Caspian Region/Middle East: A or B. 3,400 recorded in winter in Southwest Asia.
  Trends: Unknown.

Caspian Tern *Sterna caspia*

Only the nominate subspecies occurs. This breeds at a number of widely scattered localities in temperate and southern Eurasia from the Baltic to NE China and in Africa. The populations breeding in the Red Sea and Madagascar appear to be mainly sedentary. Reports of breeding in East Africa are unsubstantiated. Four main migratory populations are identifiable. (1) 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. (2) A population which breeds in the Caspian Region and Iran, and winters in Northeast and East Africa, Arabia and southern Iran. (3) A population which breeds in Senegambia, Mauritania and Guinea Bissau and winters along the coast of West Africa, possibly to the Gulf of Guinea. (4) A population which breeds in Southern Africa (Namibia, South Africa and Mozambique) and winters north to Zambia, Botswana and Angola.

- Baltic Sea/Black Sea/Turkey (to West Africa): B. (10,000+). 3,000 pairs.
  Trends: Marked increase in the Baltic throughout the first half of this century until at least the late 1970s, then possibly some decrease. Decreasing in the Black Sea (122 pairs in 1979). Less than 50 pairs in Turkey.
- Caspian Region/Iran (to NE & E Africa/SW Asia): A or B. At least 3,000 in Southwest Asia in winter.
  Trends: Stable/decreasing.
- West Africa: B. (12,000). 3,500-4,300 pairs.
  Trends: Unknown.
- Southern Africa: A. (500). Possibly only 150 pairs.
  Trends: Unknown.

Royal Tern *Sterna maxima*

Only the subspecies *albidorsalis* occurs. This is known to breed at five sites on the coast of Mauritania and Senegambia. 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 recognized.

- Entire population of *albidorsalis*: C. (50,000). 15,000-18,000 pairs.
  Trends: Apparently stable.

Lesser Crested-Tern *Sterna bengalensis*

Two subspecies occur, but authors differ in their nomenclature and treatment of different populations. The nominate race (or *torresii*) breeds on islands in the Persian 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. and Madagascar. There is a small, isolated population in the Mediterranean, assigned by some authors to *S. b. par* and by others to *S. b. torresii*. This breeds on islands off the Libyan coast and winters mainly on the Atlantic coast of Northwest Africa south at least to Gambia. Three apparently discrete populations are recognized.

- Persian Gulf/South Asia (*bengalensis* or *torresii*): C or D. At least 20,000 pairs. 14,000 recorded during Asian Waterfowl Census.
  Trends: Unknown.
- Red Sea/East Africa/Madagascar (*par* or *bengalensis*): Probably C. At least 7,000 pairs, excluding Somalia, where population unknown.
  Trends: Unknown.
- Mediterranean/NW Africa (*par* or *torresii*): A. (2,000). Breeding colony with 2,000 birds in 1938. No recent counts.
  Trends: Unknown.

Note: The Persian Gulf/South Asia population is also included in the Asia-Pacific Waterbird Agreement.

Great Crested-Tern *Sterna bergii*

Three subspecies occur. The nominate race breeds on the coasts of southern Africa (Namibia, South Africa and Mozambique) and in Madagascar. The birds breeding in Madagascar (220 pairs) appear to be mainly sedentary, but those breeding in Southern Africa are at least partly migratory within Southern 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 Gulf east to Southeast Asia. Populations breeding from the Persian 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. Three migratory populations are recognized.

- Southern Africa (*bergii*): B. (15,000). 4,600 pairs in Namibia and South Africa.
  Trends: Unknown.
- East Africa (*thalassinus*): A. (<1,500). Apparently a tiny population; few breeding sites known, and possibly only 300 to 500 pairs.
  Trends: Unknown.
- Red Sea/East Africa (*velox*): Probably B. At least 5,300 pairs excluding Ethiopia, where population unknown.
  Trends: Unknown.

Sandwich Tern *Sterna sandvicensis*

Only the nominate subspecies occurs. Three largely discrete populations are present. (1) A population which breeds in Northwest Europe (NW France, British Isles, North Sea, Baltic Sea) and the northwest Mediterranean (Spain, France, 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, Russia), and winters in the southern Black Sea and southeast and central Mediterranean, occasionally west to Spain, Portugal and Northwest Africa. (3) A population which breeds in the Caspian Sea (Russia, Kazakhstan, Turkmenistan), and winters in the Persian Gulf and on the coasts of the Indian Ocean from the Gulf of Aden to Northwest India (with small numbers to East Africa and Sri Lanka).

- NW Europe/W Mediterranean/W & SW Africa: D. (150,000). Breeding population probably now over 50,000 pairs.
  Trends: Increasing. Recently established in the West Mediterranean, where now about 1,000 pairs.
- Black Sea/E & C Mediterranean: C. (85,000). About 26,000 pairs in Black Sea and 1,400 pairs in Sea of Azov.
  Trends: Unknown.
- Caspian Sea/SW & S Asia/NE Africa: C. (50,000+). Over 38,080 recorded during Asian Waterfowl Census.
  Trends: Unknown.

Note: The Caspian Sea/SW & S Asia/NE Africa population is also included in the Asia-Pacific Waterbird Agreement.

Roseate Tern *Sterna dougallii*

Two subspecies occur. *S. d. dougallii* breeds in the British Isles, northwest France and the Azores, and winters along the West African coast from Mauritania to Nigeria, apparently mainly in Ghana. A tiny breeding population in South Africa (Cape Province) probably belongs to this race. These birds are migratory, probably wintering along the adjacent coasts to Mozambique. *S. d. bangsi* breeds patchily from the Arabian Peninsula and west Indian Ocean (including Madagascar) east to Southeast Asia and the West Pacific, and appears to be sedentary or dispersive, rather than migratory. Two migratory populations are recognized.

- West Europe/West Africa: A. (5,000). 1,700 pairs (1,100 pairs in NW Europe; 600 pairs in Azores).
  Trends: Decreasing.
- South Africa: A. (250). Apparently a tiny population of only 70-80 pairs.
  Trends: Decreasing; has disappeared from some former breeding areas.

Common Tern *Sterna hirundo*

Two subspecies occur. The nominate race breeds widely in Europe, Northwest Africa and West 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 South and Southeast Asia, although the subspecies has been recorded in some numbers in South Africa and once in

Malawi. Three populations of *hirundo* are recognized. (1) Birds which breed in Western Europe (east to Germany), Southern Europe, 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. (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.

- W & S Europe/NW & W Africa: D. (150,000). About 45,000 breeding pairs.
  Trends: Decreasing.
- N & E Europe/SW & S Africa: D. (250,000). About 80,000 breeding pairs.
  Trends: Unknown.
- West Asia/Middle East/NE & E Africa: C or D. At least 25,000 pairs in the Caspian Sea; a few hundred pairs in Iran.
  Trends: Unknown.

Note: The West Asia/Middle East/NE & E Africa population is also included in the Asia-Pacific Waterbird Agreement.

Arctic Tern *Sterna paradisaea*

Monotypic; circumpolar. Populations breeding in Canada, the northeast USA, 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. No discrete populations are identifiable. Three main breeding groups have been identified in West Eurasia, but there is considerable mixing between these during migration and in winter, and extensive movement of birds between breeding colonies.

- Iceland/West Europe: D. (600,000+). Over 100,000 pairs in Iceland, and 92,000 pairs in Northwest Europe.
  Trends: Decreasing in British Isles (where 70,000 pairs).
- Scandinavia: D. (300,000). 95,000-115,000 breeding pairs.
  Trends: Stable/decreasing.
- Northern Russia (E of 40°E): D. (120,000+). At least 40,000 pairs.
  Trends Unknown.

Populations breeding in Eastern Siberia apparently migrate through the eastern Pacific to the southern oceans.

Little Tern *Sterna albifrons*

Two subspecies occur. The nominate subspecies breeds across temperate and southern Europe and North Africa east to Central Asia, and winters south to South Africa and Northwest India. *S. a. guineae* occurs in West and Central Africa from Mauritania to 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 recognized. (1) Birds which breed in Western Europe and Northwest Africa, and winter in West Africa from Senegambia to the Gulf of Guinea and probably also in Southwest Africa. (2) Birds which breed in Eastern Europe, the Black Sea region and Turkey, and winter in the Red Sea and southern Arabia (and possibly also in East Africa). (3) Birds which breed in the Caspian Region, Aral Sea, Iraq and Iran, and winter from the Persian Gulf east to Pakistan. (4) Birds which breed in West Africa (Mauritania to Cameroon) and move to the coast in winter.

- West Europe/NW, W & SW Africa (*albifrons*): B. (25,000). 7,000-9,400 breeding pairs.
  Trends: Decreasing.
- East Europe/Black Sea/E Mediterranean/Red Sea (*albifrons*): C. (30,000). About 10,000 breeding pairs.
  Trends: Unknown.
- Caspian Region/Iraq/Iran/Arabian Sea (to Pakistan): Probably B. At least 1,000 pairs in Iran.
  Trends: Unknown.
- West Africa (*guineae*): A+. Poorly known. Coastal population in Senegal and Mauritania only 150 pairs, but locally common inland, and up to 1,000 on Nigerian coast in non-breeding season.
  Trends: Unknown.

Note: The Caspian Region/Iraq/Iran/Arabian Sea population is also included in the Asia-Pacific Waterbird Agreement.

Saunders's Tern *Sterna saundersi*

Monotypic. Breeds on the coasts of NE Africa (SE Somalia, Sudan and Socotra), the Red Sea and Persian Gulf east to Pakistan and Sri Lanka, and winters south to Tanzania, Madagascar and Southeast Asia, straggling to Australia. Only one population is recognized.

- Entire population: C. (30,000+). Rough estimate of 10,000 breeding pairs.

Trends: Unknown.

Note: This population is also included in the Asia-Pacific Waterbird Agreement.

Damara Tern *Sterna balaenarum*

Monotypic. Breeds on the coast of South Africa, Namibia and probably also Angola, and winters along the west African coast north to Gabon, Cameroon, Nigeria and Ghana. Only one population is recognized.

- Entire population: B. (10,000+). Previously thought to be only about 4,000, but recent surveys have located at least 10,000 birds.

Trends: Decreasing.

White-cheeked Tern *Sterna repressa*

Monotypic. The species breeds in the Persian Gulf, in the Red Sea and along the African coast south to northern Kenya. 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 recognized.

- Entire population: D. (600,000). At least 150,000 pairs, and possibly many more.

Trends: Decreasing in some areas.

Note: This population is also included in the Asia-Pacific Waterbird Agreement.

Whiskered Tern *Chlidonias hybridus*

Two subspecies occur. The nominate race breeds widely across southern Europe and Southwest Asia to the southern Caspian Region and also in East Asia. West Eurasian populations winter mainly in Subsaharan Africa south to Zaire and Kenya. Three main breeding groups are identifiable. (1) Birds which breed in Southwest Europe and Tunisia, 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. (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 East 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 recognized.

- SW Europe/Tunisia/West Africa: D. (300,000+). Poorly known, but possibly as many as 100,000 pairs in Spain. Wintering population in West Africa estimated at 150,000-300,000.

Trends: Unknown.

- SE Europe/Turkey/NE & E Africa: C. (40,000). Breeding population estimated at 13,500 pairs. Up to 24,000 in Egypt in winter.

Trends: Unknown.

- Caspian Region/Aral Sea/Iraq to NW India: Probably C. At least 8,000 pairs. At least 3,000 birds in Southwest Asia in winter.

Trends: Unknown.

- S & E Africa/Madagascar (*sclateri*): B+. Poorly known; widespread but apparently not very common.

Trends: Unknown.

White-winged Tern *Chlidonias leucopterus*

Monotypic. The discrete West Eurasian population breeds from Eastern Europe (40°E) across west-central Asia to about 85°E, and winters at wetlands throughout Subsaharan Africa south to South Africa. Only one population is recognized.

- East Europe/West Asia/Subsaharan Africa: D. (225,000). Population probably in the range 200,000-250,000 birds.

Trends: Decreasing in the western parts of its range and possibly throughout.

Black Tern *Chlidonias niger*

Only the nominate subspecies occurs. This breeds in temperate regions of Europe and West Asia east to 85°E and winters mainly on the west coast of Africa from Senegambia south to Namibia, with major concentrations occurring in Mauritania. Only one population is recognized.

- Entire population of *niger*: C. (< 100,000). Poor information on breeding populations. Concentrations of up to 80,000 were recorded at the Ijsselmeer during autumn passage in the Netherlands in the mid-1970s, and 100,000 were found wintering at the Banc d'Arguin in the early 1970s. These concentrations were thought to represent the bulk of the population.

Trends: Decreasing, especially in the western parts of its range.

RYNCHOPIDAE

African Skimmer *Rynchops flavirostris*

Monotypic. The species occurs along major river systems in Subsaharan Africa from Senegambia, Sudan and Ethiopia south to Botswana, Zimbabwe, Mozambique and extreme northeastern South Africa. It is migratory over much of its range, but its movements are complex and poorly understood. Only one population is recognized.

- Entire population: B+. Locally common; concentrations of several hundreds to 1,000 at a number of localities.

Trends: Unknown.

THREATENED WATERBIRDS OF THE AFRICA-EURASIA REGION

As listed in the 1990 IUCN Red List of Threatened Animals

Species marked with an asterisk are included in the Agreement.

Alaotra Grebe	*Tachybaptus rufolavatus*
Madagascar Little Grebe	*Tachybaptus pelzelnii*
Dalmatian Pelican	*Pelecanus crispus**
Pygmy Cormorant	*Phalacrocorax pygmaeus**
Slaty Egret	*Egretta vinaceigula**
Madagascar Heron	*Ardea humbloti*
Shoebill	*Balaeniceps rex*
Dwarf Olive Ibis	*Bostrychia bocagei*
Waldrapp	*Geronticus eremita**
Bald Ibis	*Geronticus calvus*
White-headed Duck	*Oxyura leucocephala**
Lesser White-fronted Goose	*Anser erythropus**
Red-breasted Goose	*Branta ruficollis**
Madagascar Teal	*Anas bernieri*
Marbled Teal	*Marmaronetta angustirostris**
Madagascar Pochard	*Aythya innotata*
Siberian Crane	*Grus leucogeranus**
Wattled Crane	*Grus carunculatus**
White-winged Flufftail	*Sarothrura ayresi*
Slender-billed Flufftail	*Sarothrura watersi*
Corncrake	*Crex crex*
Sakalava Rail	*Amaurornis olivieri*
Canary Island Oystercatcher	*Haematopus meadewaldoi*
Madagascar Plover	*Charadrius thoracicus*
Sociable Plover	*Vanellus gregarius**
Slender-billed Curlew	*Numenius tenuirostris**
White-eyed Gull	*Larus leucopthalmus**
Audouin's Gull	*Larus audouinii**
Damara Tern	*Sterna balaenarum**

WATERBIRDS OF THE AFRICA-EURASIA REGION EXCLUDED FROM THE AGREEMENT

POPULATION UNITS, POPULATION SIZES AND TRENDS

PODICIPEDIDAE

Alaotra Grebe *Tachybaptus rufolavatus*
: Endemic to Madagascar; confined to Lake Aloatra and now probably extinct as a result of hunting, habitat destruction and competition and hybridization with *T. ruficollis*.

Madagascar Little Grebe *Tachybaptus pelzelnii*
: Endemic to Madagascar.

Pied-billed Grebe *Podilymbus podiceps*
: Vagrant to Europe from North America.

PHALACROCORACIDAE

Long-tailed Cormorant *Phalacrocorax africanus*
: Two subspecies occur: the nominate subspecies occurs throughout Africa south of the Sahara; *P. a. pictilis* is confined to Madagascar. All populations appear to be sedentary or dispersive. Some populations show local seasonal movements related to rainfall (*e.g.* in Congo), but no long-distance migrations are known.

Crowned Cormorant *Phalacrocorax coronatus*
: A marine species, confined to the coasts of Namibia and South Africa where the total population may not exceed 1,500. Apparently sedentary.

Bank Cormorant *Phalacrocorax neglectus*
: A marine species, confined to the coasts of Namibia and South Africa with a total population of about 4,000. Apparently sedentary.

Double-crested Cormorant *Phalacrocorax auritus*
: Vagrant to Europe from North America.

White-breasted Cormorant *Phalacrocorax lucidus*
: Largely sedentary, although some local movements have been recorded (*e.g.* along the Namibian coast). The two subspecies *lucidus* and *maroccanus* are often considered to be conspecific with *P. carbo*.

Cape Cormorant *Phalacrocorax capensis*
: A marine species, occurring along the coast of southern Africa from the Congo River to Durban. Disperses widely along the coast outside the breeding season. The total population exceeds 1,100,000.

European Shag *Phalacrocorax aristotelis*
: Invariably a marine speces of rocky coasts. Three subspecies occur: the nominate race breeds in Iceland and on the Atlantic coast of Europe; *P. a. desmarestii* breeds in the central Mediterranean; and *P.c. riggenbachi* breeds on the coast of Morocco. All populations are mainly sedentary, with the northernmost populations showing some post-breeding dispersal (*e.g.* from extreme NW Russia to north Norway). Populations of *desmarestii* appear to be entirely sedentary.

ANHINGIDAE

African Darter *Anhinga rufa*

Mainly sedentary; apparently subject to some local movements, but these have yet to be documented.

ARDEIDAE

Black Heron *Egretta ardesiaca*
Apparently sedentary throughout its wide range in Africa south of the Sahara.
Tricolored Heron *Egretta tricolor*
Vagrant to the Western Palearctic from North America.
Little Blue Heron *Egretta caerulea*
Vagrant to the Western Palearctic from North America.
Western Reef-Egret *Egretta gularis*
Largely sedentary, although there is some dispersal from breeding colonies along adjacent coasts.

Mascarene Reef-Egret *Egretta dimorpha*
Endemic to Madagascar and the Mascarene Islands.
Snowy Egret *Egretta thula*
Vagrant to Europe from North America.
Madagascar Heron *Ardea humbloti*
Endemic to Madagascar.
Goliath Heron *Ardea goliath*
Largely sedentary, with some post-breeding dispersal.
Indian Pond-Heron *Ardeola grayii*
Extralimital; a scarce visitor to the Arabian Peninsula and Persian Gulf from southeastern Iran and the Indian Subcontinent.
Chinese Pond-Heron *Ardeola bacchus*
Vagrant to Europe from East Asia.
Striated Heron *Butorides striatus*
Largely sedentary, with some post-breeding dispersal.
Green Heron *Butorides virescens*
Vagrant to Europe from North America.
White-backed Night-Heron *Gorsachius leuconotus*
A forest heron; apparently sedentary.
White-crested Bittern *Tigriornis leucolophus*
A secretive forest bittern; apparently sedentary.
Least Bittern *Ixobrychus exilis*
Vagrant to Europe from North America.
Schrenck's Bittern *Ixobrychus eurhythmus*
Vagrant to Europe from East Asia.
American Bittern *Botaurus lentiginosus*
Vagrant to Europe from North America.

BALAENICIPITIDAE

Shoebill *Balaeniceps rex*
Largely sedentary, each bird remaining in or near its home range for most of the year. Some local movements may occur during periods of deep flooding. The total population may not exceed 11,000 birds.

SCOPIDAE

Hamerkop *Scopus umbretta*
Largely sedentary, with some wet-season dispersal to seasonal ponds in semi-arid areas. No evidence of regular migration anywhere.

CICONIIDAE

Saddle-billed Stork *Ephippiorhynchus senegalensis*
Largely sedentary and probably territorial. Some nomadic movements within large expanses of swamp, but no migrations known.

THRESKIORNITHIDAE

Hadada Ibis *Bostrychia hagedash*
Apparently sedentary throughout its extensive range.
Wattled Ibis *Bostrychia carunculata*
Endemic to the highlands of Ethiopia.
Olive Ibis *Bostrychia olivacea*
A rather secretive forest ibis; sedentary.
Dwarf Olive Ibis *Bostrychia bocagei*
Endemic to Sao Tome; possibly extinct.
Spot-breasted Ibis *Bostrychia rara*
A forest ibis; sedentary.
Bald Ibis *Geronticus calvus*
Confined as a breeding species to the highlands of South Africa, Lesotho and Swaziland. Mainly sedentary, but subject to local movements (up to 18 km) outside the breeding season. The present population of 5,000-8,000 individuals has remained relatively stable since 1970, after a long period of decline.
White-winged Ibis *Lophotibis cristata*
Endemic to Madagascar.

ANATIDAE

Ruddy Duck *Oxyura jamaicensis*
Introduced into Western Europe from North America.
Maccoa Duck *Oxyura maccoa*
Largely sedentary; some local movements in South Africa, with birds concentrating on large waters during the non-breeding season.
Bar-headed Goose *Anser indicus*
Introduced into Western Europe from Central Asia; possibly also a vagrant.
Snow Goose *Anser caerulescens*
Vagrant to Europe and Africa from North America.
Ross' Goose *Anser rossii*
Vagrant to Europe from North America.
Canada Goose *Branta canadensis*
Widely introduced into Europe from North America; also a vagrant.
Blue-winged Goose *Cyanochen cyanopterus*
Endemic to the highlands of Ethiopia.
Hartlaub's Duck *Pteronetta hartlaubii*
Sedentary along rivers and streams in forested areas.
Cotton Pygmy-goose *Nettapus coromandelianus*
Very scarce winter visitor to the Arabian Peninsula from South Asia.
Wood Duck *Aix sponsa*
Introduced into Western Europe from North America.
Mandarin Duck *Aix galericulata*
Introduced into Western Europe from North America.
American Wigeon *Anas americana*
Vagrant to Europe and Africa from North America.
Falcated Duck *Anas falcata*
Vagrant to Europe and the Middle East from East Asia.
Baikal Teal *Anas formosa*
Vagrant to Europe from East Asia.
Madagascar Teal *Anas bernieri*
Endemic to Madagascar, where threatened with extinction.

American Black Duck *Anas rubripes*
Vagrant to Europe from North America.
Meller's Duck *Anas melleri*
Endemic to Madagascar.
African Black Duck *Anas sparsa*
Sedentary and territorial with a permanent home range. A species of rivers, streams and mountain bogs.
Blue-winged Teal *Anas discors*
Vagrant to Europe and Africa from North America.
Cape Shoveler *Anas smithii*
Largely sedentary, with some irregular movements in southern Africa but no clear pattern of migration.
Canvasback *Aythya valisineria*
Vagrant to Europe from North America.
Ring-necked Duck *Aythya collaris*
Vagrant to Europe and Africa from North America.
Madagascar Pochard *Aythya innotata*
Endemic to Madagascar where probably extinct. (The last known bird died in January 1993).
Lesser Scaup *Aythya affinis*
Vagrant to Europe from North America.
Spectacled Eider *Somateria fischeri*
Vagrant to Western Siberia and northern Norway from northeast Asia (east of the Lena Delta).
Harlequin Duck *Histrionicus histrionicus*
In the African-Eurasian Region, confined to Greenland and Iceland where the populations are resident. There is some movement of birds to adjacent coasts in winter.
Surf Scoter *Melanitta perspicillata*
Vagrant to Europe from North America.
Barrow's Goldeneye *Bucephala islandica*
A North American species, confined in African-Eurasian Region to Iceland, where the population of about 800 pairs is resident.
Bufflehead *Bucephala albeola*
Vagrant to Europe from North America.
Hooded Merganser *Lophodytes cucullatus*
Vagrant to Europe from North America.

GRUIDAE

Black Crowned Crane *Balearica pavonina*
Largely sedentary, with some local seasonal movements, birds gathering in flocks at large wetlands after breeding. Two subspecies have been described: *B. p. pavonina* in West Africa from Senegambia to Chad, and *B. p. ceciliae* in south Sudan, west Ethiopia, north Uganda and northwest Kenya.
Grey Crowned Crane *Balearica regulorum*
Apparently largely sedentary, with some local seasonal movements, but movements poorly documented.
Sandhill Crane *Grus canadensis*
Vagrant to Europe from North America.
Hooded Crane *Grus monacha*
Vagrant to Europe from East Asia.

RALLIDAE

White-spotted Flufftail *Sarothrura pulchra*
A sedentary forest rail. Four subspecies have been described.
Buff-spotted Flufftail *Sarothrura elegans*

Largely sedentary, with no evidence of regular migration. Two subspecies have been described.

Red-chested Flufftail *Sarothrura rufa*

Sedentary. Three subspecies have been described.

Chestnut-headed Flufftail *Sarothrura lugens*

Sedentary. Two subspecies have been described.

Striped Flufftail *Sarothrura affinis*

Sedentary. Two subspecies have been described.

Madagascar Flufftail *Sarothrura insularis*

Endemic to Madagascar where locally abundant.

White-winged Flufftail *Sarothrura ayresi*

A rare and poorly known species, occurring in two disjunct populations, one in Ethiopia and one in southern Africa (South Africa, Zambia and Zimbabwe). The view that birds migrated between these two regions (breeding in southern Africa and wintering in Ethiopia) has recently been discounted, and it is now thought that the species is sedentary or locally dispersive.

Slender-billed Flufftail *Sarothrura watersi*

Endemic to Madagascar, where apparently very rare and local.

Nkulengu Rail *Himantornis haematopus*

A sedentary rail of lowland rain forest, occasionally occurring in mangroves.

Grey-throated Rail *Canirallus oculeus*

Sedentary. An uncommon and secretive rail of lowland rain forest in West and Central Africa. Two subspecies have been described.

Madagascar Wood Rail *Canirallus kioloides*

Endemic to Madagascar. Two subspecies have been described.

Madagascar Rail *Rallus madagascariensis*

Endemic to eastern Madagascar.

Corncrake *Crex crex*

Breeds widely across West Eurasia at temperate latitudes east as far as western China (115°E) and winters throughout Africa south of the Sahara, with the main concentrations in Zaire, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe, Botswana and South Africa. A bird of grassland and agricultural land, avoiding standing water, lakes, swamps and river margins. On the breeding grounds, favours cool, moist, fairly thick stands of grass or herbage; also locally fields of clover, cereals or even crops of potatoes or fodder plants. On migration and in winter, found in grassland and savanna and in drier grassy areas bordering marshes and rivers; also in rank grass around sewage ponds.

Rouget's Rail *Rougetius rougetii*

Endemic to the highlands of Ethiopia.

Cuvier's Rail *Dryolimnas cuvieri*

Endemic to Madagascar (*D. c. cuvieri*) and Aldabra (*D. c. aldabranus*).

White-breasted Waterhen *Amauromis phoenicurus*

Vagrant to Oman from South Asia.

Sakalava Rail *Amauromis olivieri*

Endemic to Madagascar.

Sora *Porzana carolina*

Vagrant to Europe from North America.

Purple Swamphen *Porphyrio porphyrio*

Sedentary over most of its very extensive range; sometimes moves locally after breeding in northwest Africa and Egypt. Four subspecies are relevant: the nominate race in southwest Europe and northwest Africa; *madagascariensis* in Madagascar, Egypt and Africa south of the Sahara; *seistanicus* in eastern Turkey and northern and eastern Iran; and *poliocephalus* in Iraq.

Purple Gallinule *Porphyrio martinicus*

Vagrant to Europe from North America.

American Coot *Fulica americana*

Vagrant to Europe from North America.

HELIORNITHIDAE

African Finfoot *Podica senegalensis*
Highly localized and apparently sedentary. Four subspecies have been described.

JACANIDAE

African Jacana *Actophilornis africanus*
Mainly sedentary, but may undertake dispersive or nomadic movements in response to drought.
Madagascar Jacana *Actophilornis albinucha*
Endemic to Madagascar.
Lesser Jacana *Microparra capensis*
Apparently sedentary, unless forced to move by drought.
Pheasant-tailed Jacana *Hydrophasianus chirurgus*
Mainly extralimital; a scarce winter visitor to Oman from South Asia. Vagrant to Yemen.

ROSTRATULIDAE

Greater Painted-snipe *Rostratula benghalensis*
Mainly sedentary but performs irregular movements in response to rainfall or drought.

HAEMATOPODIDAE

Canary Island Oystercatcher *Haematopus meadewaldoi*
Endemic to the Canary Islands; possibly extinct.
African Oystercatcher *Haematopus moquini*
Confined to the shores of southern Africa from Namibia to South Africa. Adult population largely sedentary; some local movements by immature birds. Total population estimated at 4,780.

BURHINIDAE

Eurasian Thick-knee *Burhinus oedicnemus*
A bird of dry grasslands, heathlands and semi-desert.
Water Thick-knee *Burhinus vermiculatus*
Largely sedentary, making only local movements related to changes in water level.
Spotted Thick-knee *Burhinus capensis*
A bird of savanna, open woodland, cultivated land, semi-arid scrub and stony hillsides. Mainly sedentary.

GLAREOLIDAE

Double-banded Courser *Rhinoptilus africanus*
A bird of flat stony and gravelly desert and semi-desert plains; mainly sedentary.
Bronze-winged Courser *Rhinoptilus chalcopterus*
A bird of *Acacia* and other savanna, bushveld and thorn scrub. Migratory.
Three-banded Courser *Rhinoptilus cinctus*
A bird of dry mopane and miombo woodland, thorn savanna and scrub and other dry, open woodlands. Mainly sedentary, but migratory in southernmost part of range.
Cream-coloured Courser *Cursorius cursor*
A bird of desert and semi-desert. Migratory.
Burchell's Courser *Cursorius rufus*
A bird of desert, semi-desert and overgrazed grasslands. Highly nomadic.
Temminck's Courser *Cursorius temminckii*
A bird of semi-arid bush savanna, bushveld and short grasslands. Migratory in some areas.

Oriental Pratincole *Glareola maldivarum*
Vagrant to Europe from East Asia.
Small Pratincole *Glareola lactea*
Vagrant to Iran and the Arabian Peninsula from South Asia.

CHARADRIIDAE

Pacific Golden Plover *Pluvialis fulva*
Mainly extralimital, wintering from southeast Iran east through Asia to Australasia and the Pacific. Small numbers winter in the Arabian Peninsula and on the coast of Ethiopia and Somalia (maximum count at one site 138 in Somalia). Uncommon in winter south to Kenya and rare in South Africa. These birds probably belong to the large population which winters mainly in South Asia. This population is covered under the Asia-Pacific Waterbird Agreement.
American Golden Plover *Pluvialis dominica*
Vagrant to Europe and Africa from North America.
Semipalmated Plover *Charadrius semipalmatus*
Vagrant to Europe from North America.
Killdeer *Charadrius vociferus*
Vagrant to Europe from North America.
Madagascar Plover *Charadrius thoracicus*
Endemic to Madagascar where restricted to coastal grassy areas in the southwest.
Long-toed Lapwing *Vanellus crassirostris*
Three subspecies have been described: *crassirostris* around Lake Chad and in Sudan, Uganda and Kenya; *hybrida* from Tanzania and Eastern Zaire to Malawi; and *leucoptera* from southern Zaire, Zambia and Malawi to South Africa. *V. c. hybrida* is regarded by some authors as merely the intergrades between *crassirostris* and *leucoptera*. The species appears to be largely sedentary throughout its range.
Blacksmith Plover *Vanellus armatus*
Largely sedentary, but subject to local movements in some parts of its range in relation to the rains.
Black-headed Lapwing *Vanellus tectus*
Largely sedentary throughout its range, with some local movements in Mauretania, Mali and Nigeria during the rains.
Spot-breasted Lapwing *Vanellus melanocephalus*
Endemic to the highlands of Ethiopia.
Red-wattled Lapwing *Vanellus indicus*
Mainly extralimital, occurring throughout southern Asia west to north-central Iraq and extreme southeastern Turkey; also in Oman and the United Arab Emirates. Mainly sedentary.

SCOLOPACIDAE

Eurasian Woodcock *Scolopax rusticola*
A forest bird.
Solitary Snipe *Gallinago solitaria*
Vagrant to central Saudi Arabia from central Asia.
Pintail Snipe *Gallinago stenura*
Mainly extralimital, breeding in northeast Russia and wintering in southern and eastern Asia. Recorded as a vagrant or rare passage migrant/winter visitor in the United Arab Emirates, Oman, Yemen, Socotra, Somalia and Kenya.
Swinhoe's Snipe *Gallinago megala*
Vagrant to Europe from East Asia.
African Snipe *Gallinago nigripennis*
Largely sedentary, but subject to local movements often associated with drying of temporary floods.
Madagascar Snipe *Gallinago macrodactyla*
Endemic to Madagascar where uncommon.

Hudsonian Godwit *Limosa haemastica*
Vagrant to Europe from North America.
Eskimo Curlew *Numenius borealis*
Former vagrant to Europe from North America.
Little Curlew *Numenius minutus*
Vagrant to Europe from East Asia.
Upland Sandpiper *Bartramia longicauda*
Vagrant to Europe from North America.
Greater Yellowlegs *Tringa melanoleuca*
Vagrant to Europe and Africa from North America.
Lesser Yellowlegs *Tringa flavipes*
Vagrant to Europe and Africa from North America.
Solitary Sandpiper *Tringa solitaria*
Vagrant to Europe from North America.
Spotted Sandpiper *Tringa macularia*
Vagrant to Europe from North America.
Gray-tailed Tattler *Tringa brevipes*
Vagrant to Europe from East Asia.
Willet *Catoptrophorus semipalmatus*
Vagrant to Europe from North America.
Short-billed Dowitcher *Limnodromus griseus*
Vagrant to Europe from North America.
Long-billed Dowitcher *Limnodromus scolopaceus*
Vagrant to Europe and Africa from North America.
Asian Dowitcher *Limnodromus semipalmatus*
Vagrant to the United Arab Emirates, Yemen and Kenya from East Asia.
Semipalmated Sandpiper *Calidris pusilla*
Vagrant to Europe from North America.
Western Sandpiper *Calidris mauri*
Vagrant to Europe from North America.
Rufous-necked Stint *Calidris ruficollis*
Mainly extralimital breeding in northeast Asia and wintering in Southeast Asia and Australasia. Recorded as a vagrant or very scarce passage migrant on the East African coast, and as a regular winter visitor in very small numbers to South Africa.
Long-toed Stint *Calidris subminuta*
Mainly extralimital breeding in northeast Asia and wintering in Southeast Asia and Australasia. Rare winter visitor to the Arabian Peninsula; vagrant to Europe and eastern Africa.
Least Sandpiper *Calidris minutilla*
Vagrant to Europe from North America.
White-rumped Sandpiper *Calidris fuscicollis*
Vagrant to Europe and Africa from North America.
Baird's Sandpiper *Calidris bairdii*
Vagrant to Europe and Africa from North America.
Pectoral Sandpiper *Calidris melanotos*
Vagrant to Europe and Africa from North America.
Sharp-tailed Sandpiper *Calidris acuminata*
Vagrant to Europe and the Arabian Peninsula from East Asia.
Stilt Sandpiper *Micropalama himantopus*
Vagrant to Europe from North America.
Buff-breasted Sandpiper *Tryngites subruficollis*
Vagrant to Europe, Africa and the Arabian Peninsula from North America.
Wilson's Phalarope *Steganopus tricolor*
Vagrant to Europe, Africa and the Arabian Peninsula from North America.

LARIDAE

Ring-billed Gull *Larus delawarensis*
Vagrant to Europe and Africa from North America.

Kelp Gull *Larus dominicanus*
A marine species. Confined to the coast of southern Africa (Namibia and South Africa). Mainly sedentary, although some non-breeders range north to Angola and Mozambique.

Brown-headed Gull *Larus brunnicephalus*
Mainly extralimital, breeding in Central Asia and wintering in South and Southeast Asia. A very rare winter visitor to the southern Persian Gulf and Arabian Sea; vagrant to the Near East.

Hartlaub's Gull *Larus hartlaubii*
A marine species. Confined to the coasts of Namibia and South Africa where mainly sedentary.

Bonaparte's Gull *Larus philadelphia*
Vagrant to Europe from North America.

Laughing Gull *Larus atricilla*
Vagrant to Europe and Africa from North America.

Franklin's Gull *Larus pipixcan*
Vagrant to Europe and Africa from North America.

Ivory Gull *Pagophila eburnea*
A marine species. Breeds in the high Arctic (Greenland, Svalbard, Russia) and winters mainly in Arctic waters within drift ice and along the edge of the pack-ice. A vagrant further south in Europe.

Ross' Gull *Rhodostethia rosea*
Breeds on the tundra of northeastern Siberia between the Khroma and Kolyma Rivers (120° to 160°E). The winter distribution is poorly known, but is presumed to be along the edge of the pack-ice in the Arctic Ocean. Only a vagrant to Northwest Europe.

Black-legged Kittiwake *Rissa tridactyla*
A marine species; pelagic outside the breeding season. European breeding populations winter in the North Atlantic south to Mauritania.

Elegant Tern *Sterna elegans*
Vagrant to Europe from the Americas.

Black-naped Tern *Sterna sumatrana*
Vagrant to South Africa and Mozambique from Southeast Asia.

Antarctic Tern *Sterna vittata*
Mainly extralimital; a regular winter visitor to South Africa from subantarctic islands. A total count of 2,148 was thought to account for most of the birds spending the austral winter in South Africa.

Forster's Tern *Sterna forsteri*
Vagrant to Europe from North America.

Aleutian Tern *Sterna aleutica*
Vagrant to Europe from North America.

Bridled Tern *Sterna anaethetus*
A marine species, breeding on small islands off the African and Arabian coasts; pelagic outside the breeding season.

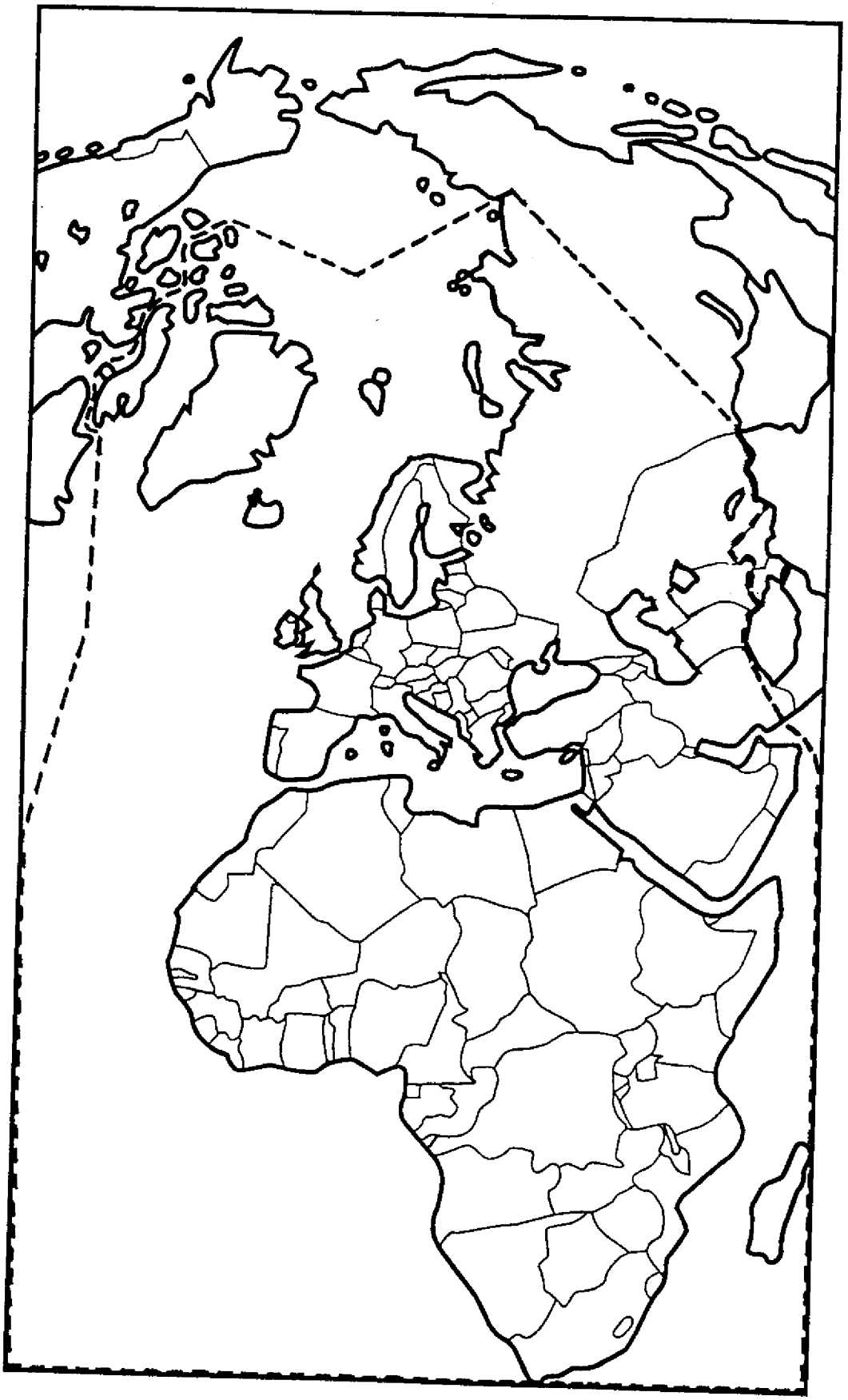
Sooty Tern *Sterna fuscata*
A marine species, breeding on small islands off the West and East African coasts; pelagic outside the breeding season.

Brown Noddy *Anous stolidus*
A marine species, breeding on small islands off the African and Arabian coasts; mainly pelagic outside the breeding season.

Black Noddy *Anous minutus*
A marine species, breeding on islands in the Gulf of Guinea; mainly sedentary.

Lesser Noddy *Anous tenuirostris*
A marine species. Mainly extralimital; a non-breeding visitor in small numbers to the coasts of Arabia, Madagascar and East Africa.

THE AGREEMENT AREA



– – – – – Limits of the Agreement area

(a more precise map will be produced later)

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