



# Waterbird Population Estimates

Fifth Edition - *Summary Report*



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# The purpose and structure of this booklet

## Aims

This booklet aims to present the current knowledge of the population estimates, trends and conservation status of waterbird populations in different parts of the world in 2012. It is a summary version of the fifth edition of the *Waterbird Population Estimates* (WPE5) which has been published as a web-based, open access, interactive database ([wpe.wetlands.org](http://wpe.wetlands.org)). The online database was launched at the Ramsar COP11 in Bucharest, Romania, in July 2012.

## Structure

The first section provides a brief background of the methodology used for the analyses. This is followed by a section highlighting the key findings in different categories such as the occurrence in the six Ramsar regions, families of waterbirds, population sizes, population trends and IUCN Red List 2012 status. Finally, a section on future priorities for development of information on waterbird estimates and trends is presented. This should be used to guide and implement future conservation of the world's waterbirds.

## Key findings

- The Asia Ramsar administrative region has the largest proportion of the world's waterbird populations, followed by Africa and the Neotropics (Central and South America), while Europe, North America and Oceania have relatively fewer populations.
- The general conservation status of waterbird populations is most favourable in North America and Europe which have relatively strong legislative and administrative frameworks for species and habitat conservation.
- Waterbird population status is least favourable in Africa, the Neotropics and particularly Asia, where 50% of known populations are decreasing or extinct and only 20% are increasing.
- Overall, 3% of the known waterbird populations are considered to be extinct, while the trends of 38% of the populations remain unknown.

Of all extant populations, 38% are declining and only 20% are increasing, while 39% are stable and 4% are considered to be fluctuating.

- Families with relatively high proportion of decreasing populations include Ducks, Geese and Swans, Rails, Crakes and allies, Storks, Grebes, Ibises and Spoonbills, Cranes, Coursers, Pratincoles, and Jacanas.
- Families with the highest proportion of increasing populations are found among the Flamingoes, Pelicans, Herons, Egrets and Gulls, Terns and Skimmers. The Cranes and the Ducks, Geese and Swans families also have a higher than average proportion of increasing populations.
- Populations with no estimates primarily belong to the Rails, Crakes and allies (53% of all populations) followed by Herons and Egrets (16%) and Gulls, Terns and Skimmers (8%).
- Twenty four per cent (212) of all 871 waterbird species are categorised as Globally Threatened or Near Threatened in the IUCN Red List 2012, including 28 that are Critically Endangered.

## Future Priorities

- Further improvement in the coverage of up-to-date estimates and trends of world's waterbird populations is necessary to maintain a global overview.
- A need to strengthen the capacity for monitoring of waterbirds that provides the basis for waterbird estimates and trends.
- An improved linkage of the WPE to global Conventions and Flyway Initiatives.
- Presentation of maps of waterbird populations to be linked to the global expansion of the Critical Site Network Tool.

# Foreword

Biological diversity underpins ecosystem functioning and the provision of ecosystem services essential for human well-being. The Aichi Biodiversity Targets adopted as part of the Strategic Plan for Biodiversity 2011-2020 at the 10<sup>th</sup> meeting of the Conference of the Parties to the Convention on Biological Diversity in 2010 recognise the importance of preventing the extinction of the threatened species and of improving their status, including through the designation and effective management of protected areas and wider landscapes and seascapes. Monitoring the trends in status of species and their biogeographic populations is essential for assessing our achievement of such targets, and provide powerful indicators of the underlying health of the ecosystems upon which they depend.

Waterbirds are one of the most remarkable components of global biodiversity. Their long migrations and tendency to concentrate in large numbers on wetlands makes them visible and charismatic. Their management hinges on collection of reliable long-term information and the International Waterbird Census (IWC) implemented over the last five decades through the efforts of thousands of experts (many of them volunteers) around the world and coordinated by Wetlands International provides a basis for counting and assessing the status of many waterbird species and populations.

While there are only 28 Critically Endangered waterbird species globally, this latest edition of *Waterbird Population Estimates (WPE)* prepared by Wetlands International highlights, at the finer (and often biologically more relevant) scale of biogeographic populations, the precarious and generally deteriorating status of the 83% of world's waterbird populations for which estimates are available and of the 62% for which long term trend information are also available.

As well as providing these periodic assessments of waterbird status and trends, the *Waterbird Population Estimates* series provides a key support tool for countries in their implementation of the Ramsar Convention. Specifically *Waterbird Population Estimates* provides the authoritative Convention-recognised source of up-to-date '1% population thresholds' for the application of Ramsar's Criterion 6 for the identification and designation of Wetlands of International Importance (Ramsar Sites) - the '1% Criterion'. Indeed, providing this population size information for Criterion 6 application was the main purpose of preparing the first edition, then called *Waterfowl Population Estimates*, nearly two decades

ago. As at 1 July 2012, Ramsar Contracting Parties have designated 702 Ramsar Sites (covering over 82 million hectares of wetland) through the application of this *WPE* data and information.

Previous editions of *Waterbird Population Estimates* were available only in printed format, and all are now out of print. The major step forward in improving the accessibility of *WPE* data and information now is the development and release by Wetlands International of a searchable online version of the *Waterbird Population Estimates*. This now provides unprecedented access to all the data and information from five *WPE* editions, as part of Wetlands International's continuing commitment to supporting the Ramsar Convention and all those concerned with wetland and waterbird conservation and wise use.

Besides direct support to Parties of the Ramsar Convention, *Waterbird Population Estimates* provides a sound information base for the development of the world's major flyway and regional initiatives and their site networks to secure habitats for the conservation and management of migratory and non-migratory waterbird species. These include the African-Eurasian Migratory Waterbird Agreement (AEWA); the Convention on the Conservation of European Flora and Fauna; the Central/West Asian Site Network for cranes and other waterbirds established under the Convention on Migratory Species; the East Asian - Australasian Flyway Partnership (EAAFP); the European Union Birds Directive; the Important Bird Areas (IBA) programme of BirdLife International; and the Western Hemisphere Shorebird Reserve Network (WHSRN).

This new *WPE* resource complements the excellent online Critical Site Network Tool (CSN) developed by Wetlands International in partnership with BirdLife International, the AEWA and Ramsar Secretariats and UNEP-WCMC. This Tool brings together information on Ramsar Sites and other sites of critical importance for waterbirds in the African - Eurasian flyways and neatly presents core information on all waterbird populations for this vast region. It is very much hoped that this Tool can be expanded to cover the world's waterbird populations and sites with active support from Parties and other partners.

Wetlands International is to be praised for continuing to lead on this important work. On behalf of the Ramsar Convention, I commend this important publication and its supporting online tool as a vital source of information for all those concerned with the conservation and wise use of wetlands and their biological diversity.

**Prof Nick Davidson**  
*Deputy Secretary General*  
*Ramsar Convention on Wetlands*

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## Introduction

Waterbirds are an important component of wetland landscapes. Their beauty, rich diversity, abundance and migratory habits are closely linked to many of our cultural values and social practices. Their tendency to gather together, often in spectacular concentrations, has made them a target of research and monitoring and consequently provides us with an excellent indicator of the value and health of wetland ecosystems.

Networks of experts and waterbird enthusiasts on every continent contribute to coordinated waterbird monitoring programmes, making waterbirds one of the most comprehensively studied groups of animals on earth. Information gathered through such programmes has provided a basis for the development of models for sustainable management particularly where the birds are harvested for traditional purposes or sport hunting, or when their wetland habitats are threatened.

Conservation action for waterbirds and their wetland habitats has been promoted at the global level through the Ramsar Convention on Wetlands, the Convention on Migratory Species (CMS) and the Convention on Biological Diversity (CBD). At the regional or flyway level, a variety of formal and informal multilateral and bilateral mechanisms have also been used to promote their management.

The main objectives of the *Waterbird Population Estimates* are to provide a global overview of the status of world's waterbird populations, and to:

- i. assist in the identification of wetlands of international importance using waterbirds as bio-indicators, and especially to provide the basis of the so-called 1% criterion (Ramsar Criterion 6), whereby any site which regularly holds 1% or more of a waterbird population qualifies as being internationally important under the Ramsar Convention on Wetlands;
- ii. identify priorities for conservation and research to maintain global waterbird biodiversity;
- iii. identify gaps in knowledge of the world's waterbird populations;

- iv. support the development of three global conventions - the Ramsar Convention on Wetlands, the Convention on Migratory Species and the Convention on Biological Diversity; and
- v. support the development of regional/flyway initiatives, including the African-Eurasian Migratory Waterbird Agreement (AEWA) under the Convention on Migratory Species; the Convention on the Conservation of European Flora and Fauna (Berne Convention); the East Asian - Australasian Flyway (EAAF) Partnership; the European Union Birds Directive; and the Western Hemisphere Shorebird Reserve Network (WHSRN).

Besides its application in identification of wetlands of international importance under the Ramsar Convention, information in the *Waterbird Population Estimates* is applied for identification of a range of international site networks for waterbirds established under the EAAF Partnership; the Central/West Asian Site Network for cranes and other waterbirds established under CMS; the WHSRN for shorebirds in the Americas; the network of Special Protection Areas under the European Union's Birds Directive; and the Emerald Network under the Convention on the Conservation of European Flora and Fauna. It is also extensively used worldwide as a basis for identification of sites under the Important Bird Areas programme of BirdLife International.

Wetlands International and its associated waterbird Specialist Groups (co-convened with the IUCN Species Survival Commission) strive to inform the conservation and sustainable management of waterbirds by making accessible a concise synthesis of the latest information on the status of waterbirds worldwide. In the past, this was done through the periodic publication of updated editions of the *Waterbird Population Estimates* series. Having published four editions between 1994 and 2006, Wetlands International has embarked on publishing information of all five editions in a publically accessible, interactive online database [wpe.wetlands.org](http://wpe.wetlands.org) that was launched at the Ramsar COP11 in Bucharest, Romania, in July 2012. This website will allow users to access all historical information of the four previous editions of the *Waterbird Population Estimates* series<sup>1-4</sup> that are now out of print.

## Background

The fifth edition of *Waterbird Population Estimates* (WPE5) considers the same families of waterbirds covered in the earlier four editions.

The Ramsar Convention defines 'waterfowl' as species of birds that are 'ecologically dependent upon wetlands' and has defined 'waterbird' as being synonymous with 'waterfowl' for the purposes of the application of the Convention. However, since the second edition of *Waterfowl Population Estimates*, 'waterfowl' have been defined more precisely as all species of the families listed in Figure 5 (see page 10).

The taxonomy and nomenclature applied in this edition follows the one adopted by BirdLife International and the IUCN Red List authority on birds. This decision is driven by practical conservation and data management considerations. These include to make it possible to apply data from the *Waterbird Population Estimates* to the Red List assessments and to apply both sources consistently in conservation decision-making including the identification and designation of key sites for waterbirds.

A waterbird 'population' can be defined as a distinct assemblage of individuals which does not experience significant emigration or immigration. This definition can only be fulfilled if the interchange of individuals between populations remains at a low level. The degree to which exchange of individuals occurs will determine gene flow and hence the justification for recognising subspecies or merely populations<sup>4</sup>.

In this edition, information on the status and trends of the world's waterbird populations is presented based on: (i) the basis of their occurrence in the six Ramsar regions (Africa, Europe, Asia, Oceania, Neotropics and North America) (Figure 1), and (ii) their distribution in the main biogeographic realms (Figure 2) and flyways (Figure 3).

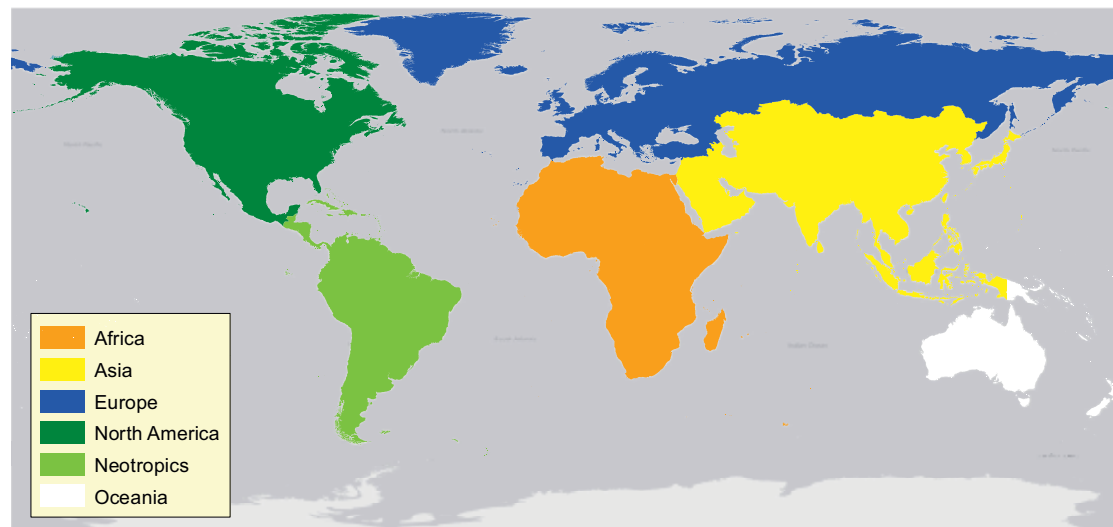


Figure 1. Ramsar regions of the world



### Biogeographic Realms

The demarcation of biogeographic realms<sup>5</sup> (which are divisions of the land masses of the world according to their distinctive floras and faunas)

has been adapted (Figure 2) with the addition of the Palearctic that has been divided into the east and west Palearctic realms.

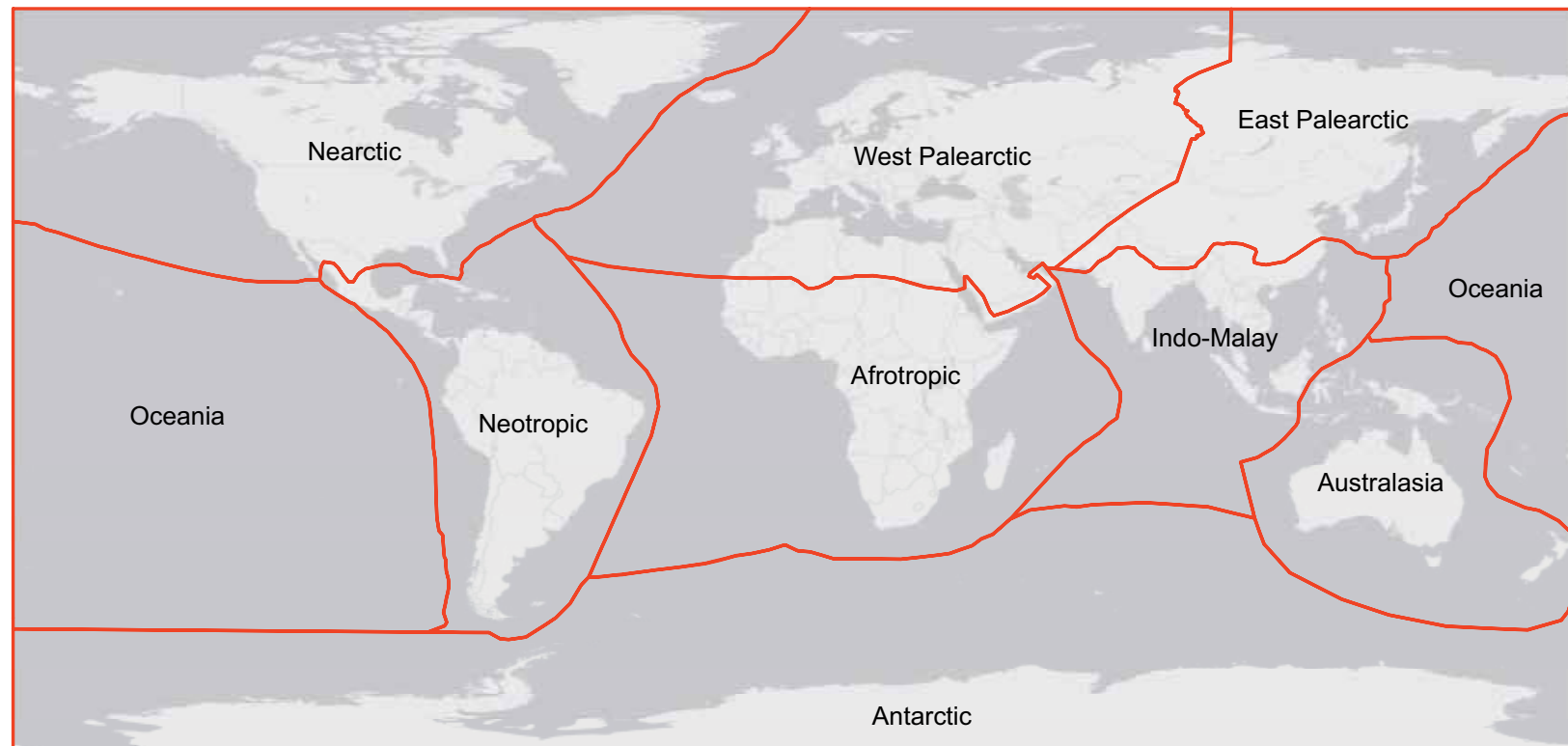


Figure 2. Biogeographic realms (adapted from Olson *et al.* 2001)

## Flyways

The term flyway is used in various contexts. Boere and Stroud<sup>6</sup> defined the broad concept of flyways as: “...the biological systems of migration paths that directly link sites and ecosystems in different countries and continents”. More specifically, they define a flyway as “the entire range of a migratory bird species (or groups of related species or distinct populations of a single species) through which it moves on an annual basis from the breeding grounds to non-breeding areas, including intermediate resting and feeding places as well as the area within which the birds migrate.” In this fifth edition, we follow the definition of the nine major waterbird flyways (Figure 3), based on the definition of flyways for shorebirds (some of the longest distance migrants) developed by the International Wader Study Group<sup>6</sup> with the addition of the Central Pacific

Flyway that is important for a limited number of migratory populations of waterbirds. For our analysis, a population was assigned to a flyway, if the majority of the population performs regular latitudinal migrations stretching through two or more biogeographic realms, a classification which works well for a majority of waterbirds that migrate in the Americas, Asia-Pacific and Africa-Eurasia regions.

However, against this simplified generalisation, some flyways are oriented more east-west. For example, in Eurasia, many species which breed in the eastern Palearctic move west to spend the northern hemisphere winter in the Western Palearctic. Similar examples occur where populations migrate between the Nearctic and the Eastern Palearctic or between the Nearctic and the Western Palearctic.

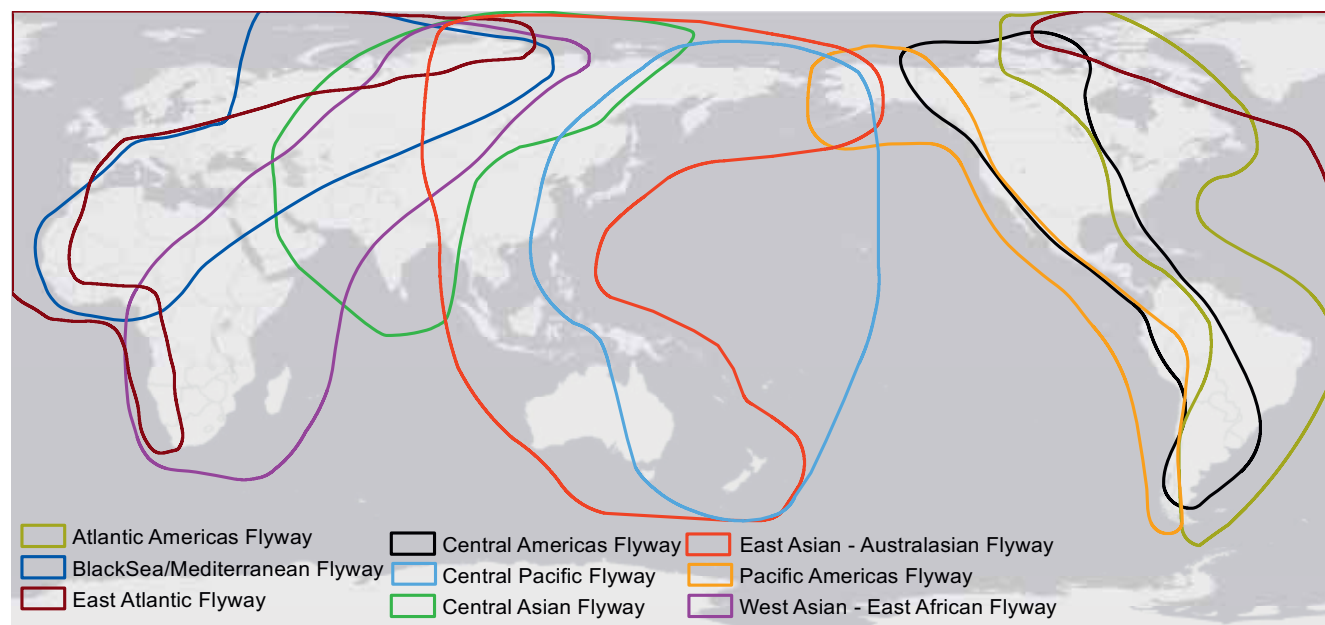


Figure 3. Schematic map of major flyways of waterbirds based primarily on migratory routes of shorebirds



### Major flyway management regions

For WPE5, populations were assigned to the zone (realm or flyway) where they spend the longer part of their annual cycle. In this respect, the widely used lists of populations in each flyway may differ slightly from our treatment in present analyses. The approach of WPE5 should therefore not be considered as the definitive portrayal of the boundaries of flyways for all purposes. Instead, it has proved to be useful in structuring elements of our analyses.

Finally, for some analyses, we have implemented a high-level aggregation of populations where either actual or potential multilateral agreements for the conservation of migratory waterbirds are underway and where the finer detail is not needed. Biogeographic realms and flyways were also grouped into major flyway management regions, namely: Africa-Eurasia, the Americas and Asia-Pacific (Figure 4).

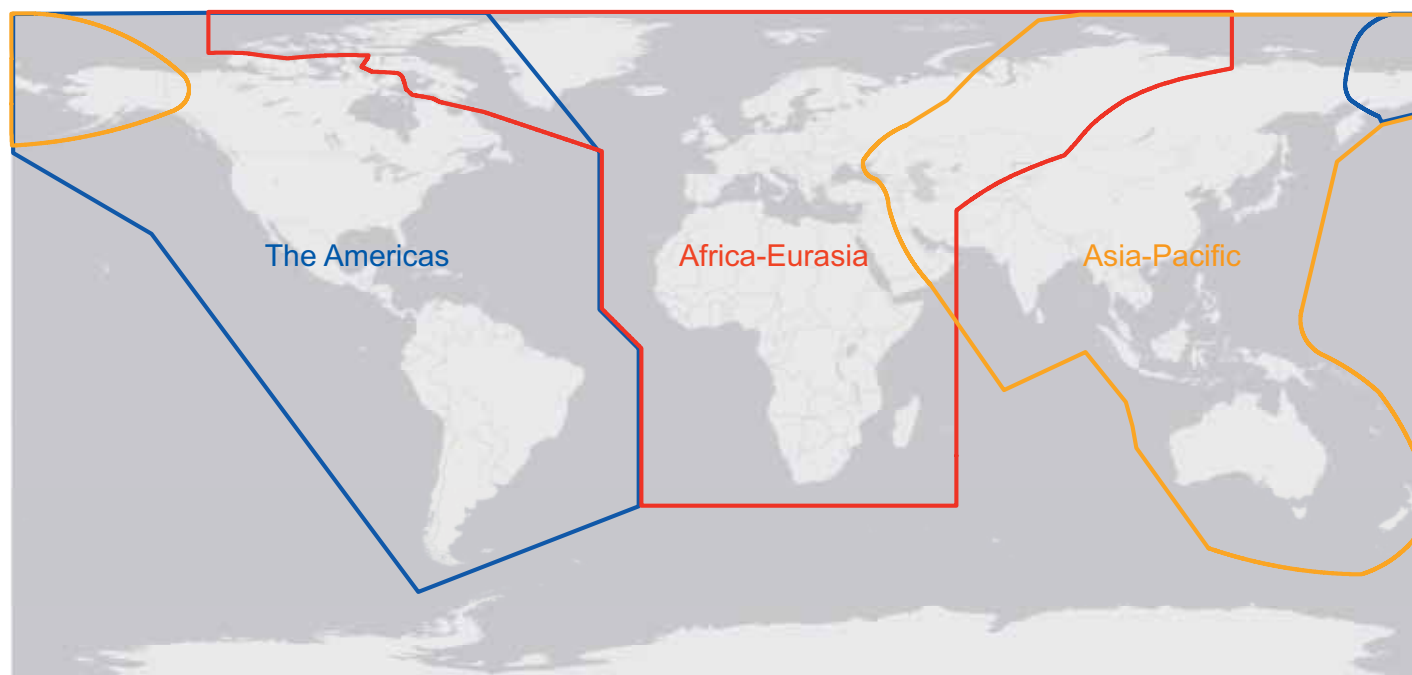


Figure 4. Map of major flyway management regions for waterbirds

## Highlights of Key Findings

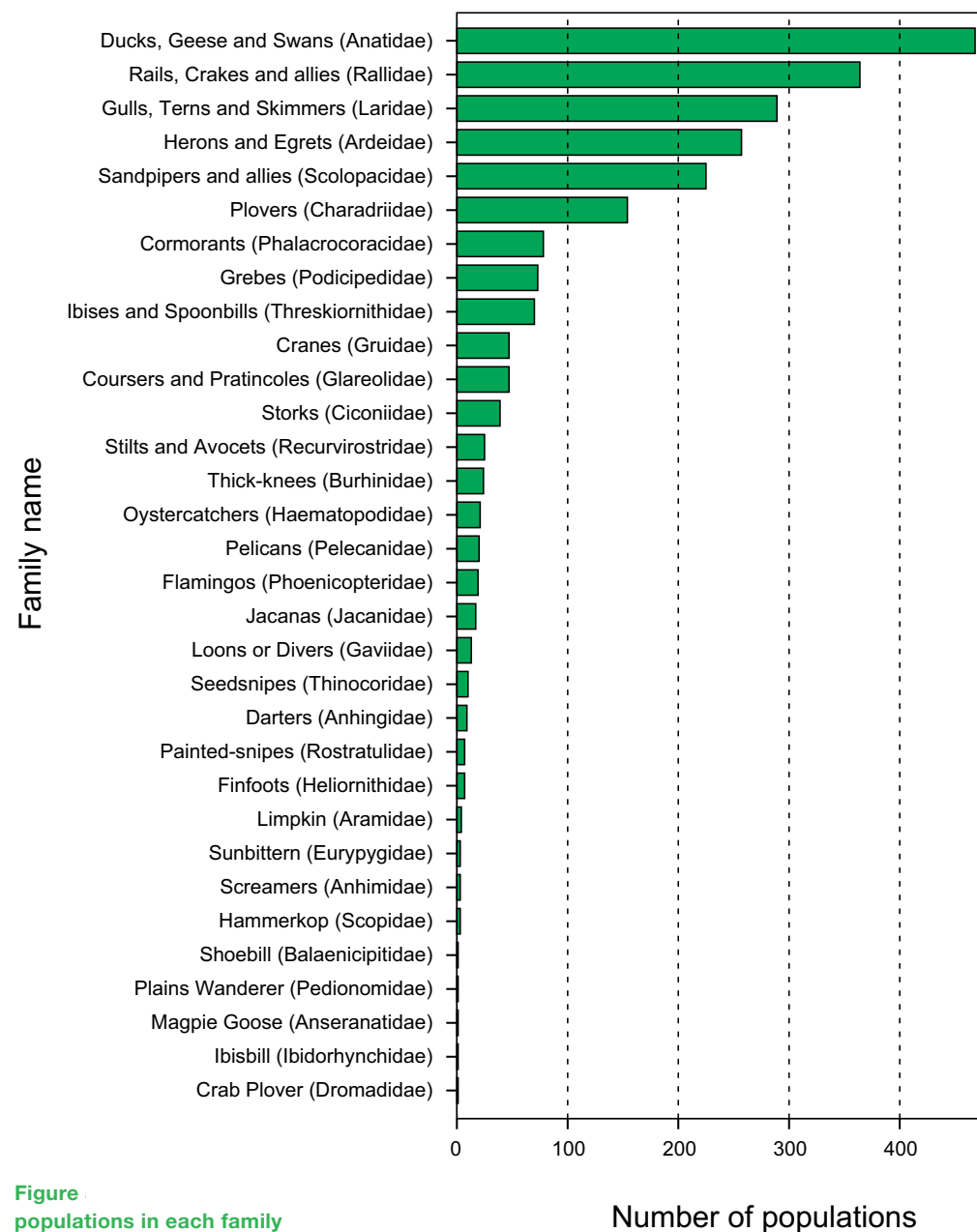
### Number of species and populations

The fifth edition of *Waterbird Population Estimates* (WPE5) collates information on the distribution, status and population trends of 2,304 populations of 871 species of waterbird from 32 families.

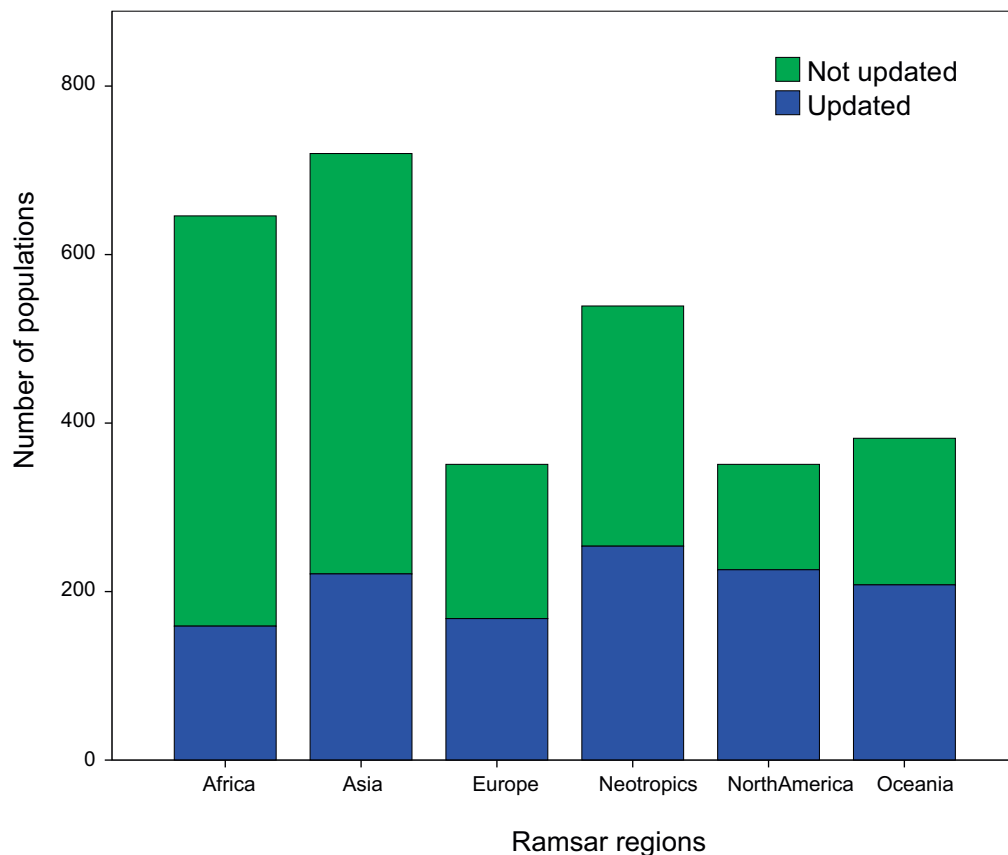
There has been an increase in the number of population estimates in the present edition due to the availability of ever-improving information about waterbirds (Table 1). As the quality of this information is variable, it needs to be improved further through enhanced field monitoring and assessments. The minor changes in number of species are largely a result of the adoption of the BirdLife International taxonomy; while the slight reduction in number of biogeographic populations is largely due to lumping of some populations being balanced by further sub-divisions of other populations on the basis of new and improved knowledge. It is expected that the number of populations will continue to change over future editions as new distributional and taxonomic information becomes available.

**Table 1. The growth in knowledge of the world's waterbird numbers and population trends over 18 years, as represented by the content of Wetlands International's *Waterbird Population Estimates* series**

	WPE1 1994	WPE2 1997	WPE3 2002	WPE4 2006	WPE5 2012
Number of waterbird species	833	840	868	878	871
Number of biogeographic populations	1,824	1,924	2,271	2,305	2,304
Number of population estimates	1,186	1,342	1,725	1,816	1,908
% of populations with estimates	65%	70%	76%	79%	83%
Number of population trends	727	792	1,138	1,200	1,422
% of populations with trends	40%	41%	50%	52%	62%







**Figure 6. The number of waterbird population estimates updated in each Ramsar region since WPE4**

Of the 32 waterbird families, Anatidae, Rallidae, Laridae, Ardeidae and Scolopacidae have the largest number of populations (Figure 5). On the other hand, several families (Balaenicipitidae, Pedionomidae, Anseranatidae, Ibidorhychidae and Dromididae) are represented by a single population.

#### Summary of population estimates by Ramsar region

The largest proportion of the world's waterbird populations inhabits the Asia Ramsar administrative region, followed by Africa and the Neotropics (Figure 6). Europe, North America and Oceania have relatively fewer populations.

The Neotropics, North America, Asia and Oceania had the highest absolute numbers of populations for which updated information has been provided since WPE4. In North America and Oceania, data for more than half of the populations were updated, while in Europe and the Neotropics, the updated population data approached 50%. However, the proportion of populations updated was relatively small in Africa and Asia, which urgently needs to be improved.

The ability to update population information is dependent on capable networks of volunteers and professionals gathering field information that can be analysed and combined with knowledge of the distribution, biology and migration ecology of species and populations. For example, the estimated maximum population of the Black-faced Spoonbill *Platalea minor* in East Asia has risen from 350 in 1994 (WPE1) to nearly 2700 in 2012 (WPE5); although this increase may also be complemented by ongoing conservation efforts.

### Summary of population estimates by biogeographic realm and flyway management region

The Neotropics, Afrotropics, Australasia and the Palearctic (including both east and west) biogeographic realms support the largest proportion of waterbird populations (Figure 7). The first two tropical

realms are biologically richer while the Palearctic covers the largest region as well as a variety of climate zones and habitat types. In contrast, some of the smallest and least known populations are limited to the islands of Oceania.

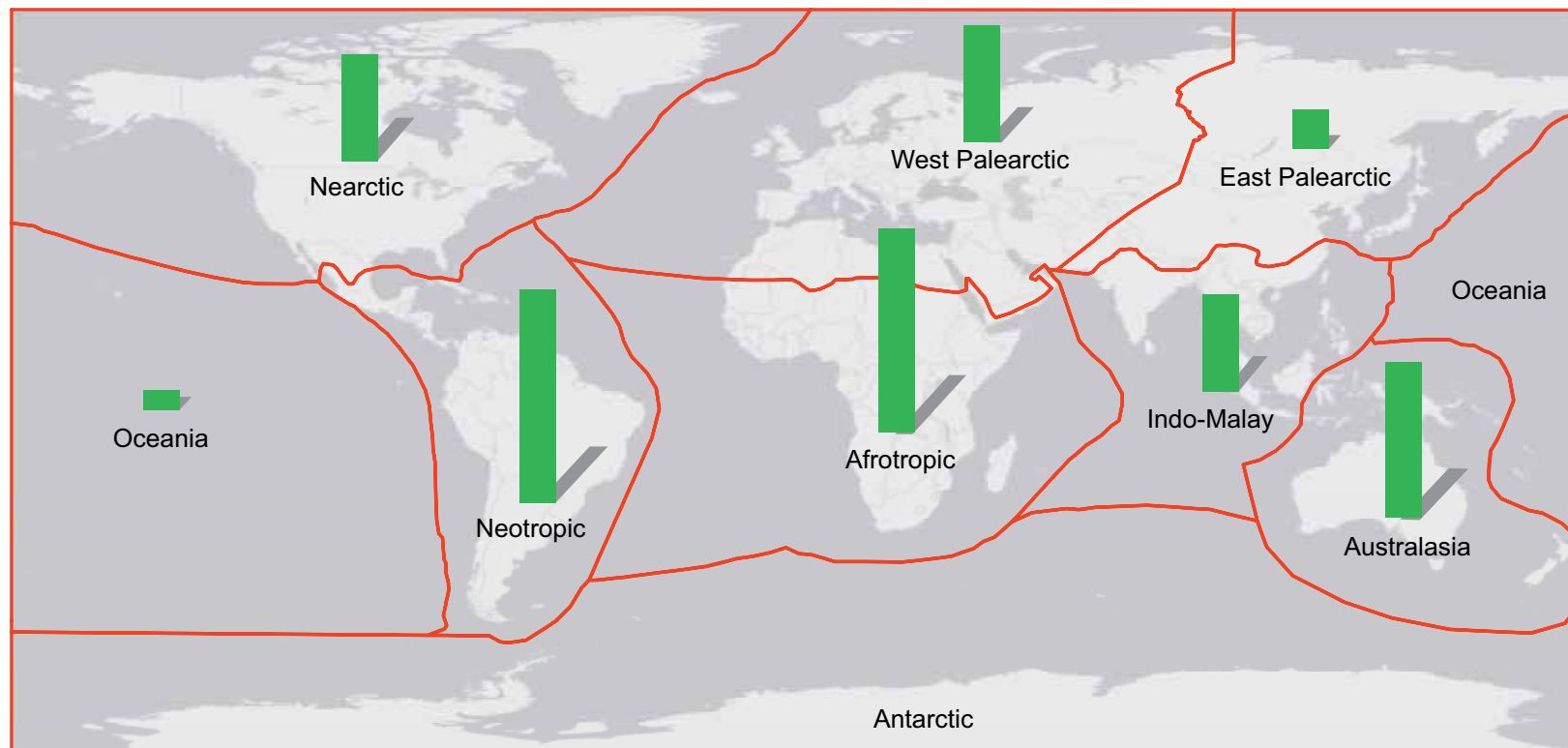


Figure 7. Proportional distribution of waterbird populations by biogeographic realm



When the flyway groups are considered collectively (Figure 8), the Asia-Pacific (Central Asian, East Asian-Australasian and Central Pacific flyways) and the African-Eurasian (East Atlantic, Black Sea/

Mediterranean and West Asian-East Africa flyways) support far more populations than the Americas flyways (Pacific Americas, Central Americas and Atlantic Americas flyways).

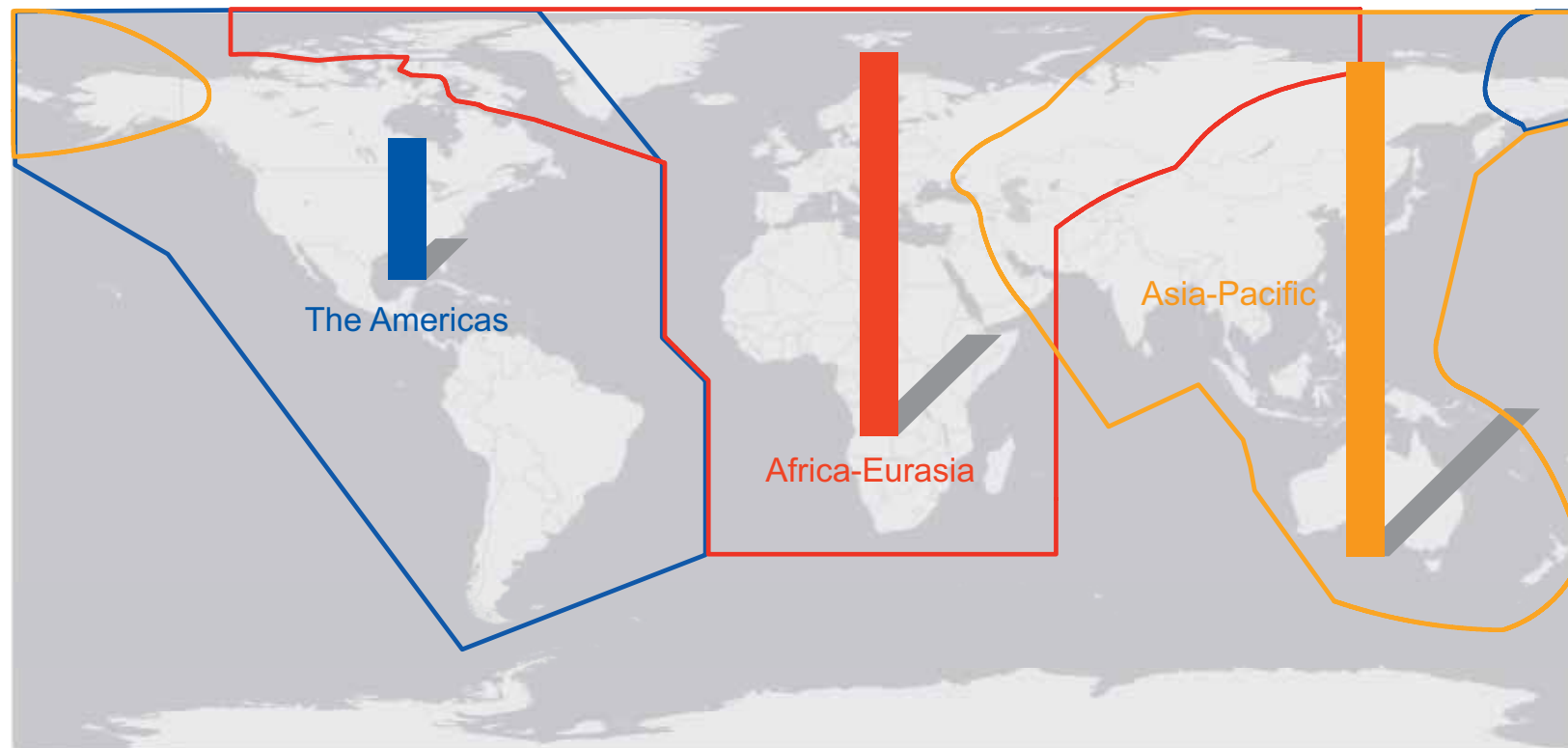


Figure 8. Proportional distribution of waterbird populations by major flyway management region

### Summary of population sizes

Overall, 29% of the waterbird populations are small, i.e. not larger than 10,000 individuals. Nine per cent of the populations are estimated to be between 10,001 and 25,000 individuals, 21% between 25,001 and one million, and only 100 of the waterbird populations (5%) are larger than 1 million individuals (Figure 9). The world's top five largest populations include:

- Eurasian Woodcock *Scolopax rusticola* population in Europe/South and West Europe and North Africa, estimated range 10,000,000-25,000,000 individuals.
- Northern Lapwing *Vanellus vanellus* population breeding in Western Asia/South-west Asia, Europe and W Asia, estimated range 5,500,000 - 9,500,000 individuals.
- Sooty Tern *Sterna fuscata oahuensis* population around the Hawaiian region in the Pacific, estimate of 9,600,000 individuals.
- Mallard *Anas platyrhynchos* North American population, estimate of 9,183,000 individuals.
- Blue-winged Teal *Anas discors* North, Central and N South America population, estimate of 8,948,000 individuals.

Smaller populations tend to be associated with the tropical regions, while large populations are more frequent in the temperate regions. The main exceptions are species that live in coastal and marine waters, such as the Sooty Tern. In Oceania, more than 40% of the populations are smaller than 10,000 individuals and it reflects the geography of this large region of small and widely separated islands, with many island endemics.

The world's smallest waterbird populations in the wild include:

- White Stork *Ciconia ciconia ciconia*, Southern Africa (breeding), with an estimate of 7 individuals.
- Siberian Crane, *Grus leucogeranus* Western/Central Asia, Central Asian Flock, estimated range of 10 - 15 individuals, with a declining trend.
- Siberian Crane, Western/Central Asia, Western Asian Flock, estimated range of 15 - 20 individuals, with a declining trend.
- Whooping Crane *Grus americana* Florida (re-established population), with an estimate of 20 individuals, with an increasing trend.
- Madagascar Pochard *Aythya innotata* endemic to Madagascar, with an estimate of 20 individuals. The species was believed to be extinct until it was rediscovered in 2006; and an emergency rescue plan is underway<sup>7</sup>.

The proportion of populations with no estimates is the highest in Oceania, the Neotropics and Asia. The latter two also have the highest absolute number of populations with no estimates. Therefore, there is a need to strengthen local capacity to monitor waterbirds and to increase access to uninhabited and inaccessible areas.

Populations with no estimates primarily belong to the Rallidae (53% of all waterbird populations with no estimates) followed by Ardeidae (16%) and Laridae (8%). This result partly reflects the difficulties of counting secretive, non-congregatory and pelagic waterbirds.



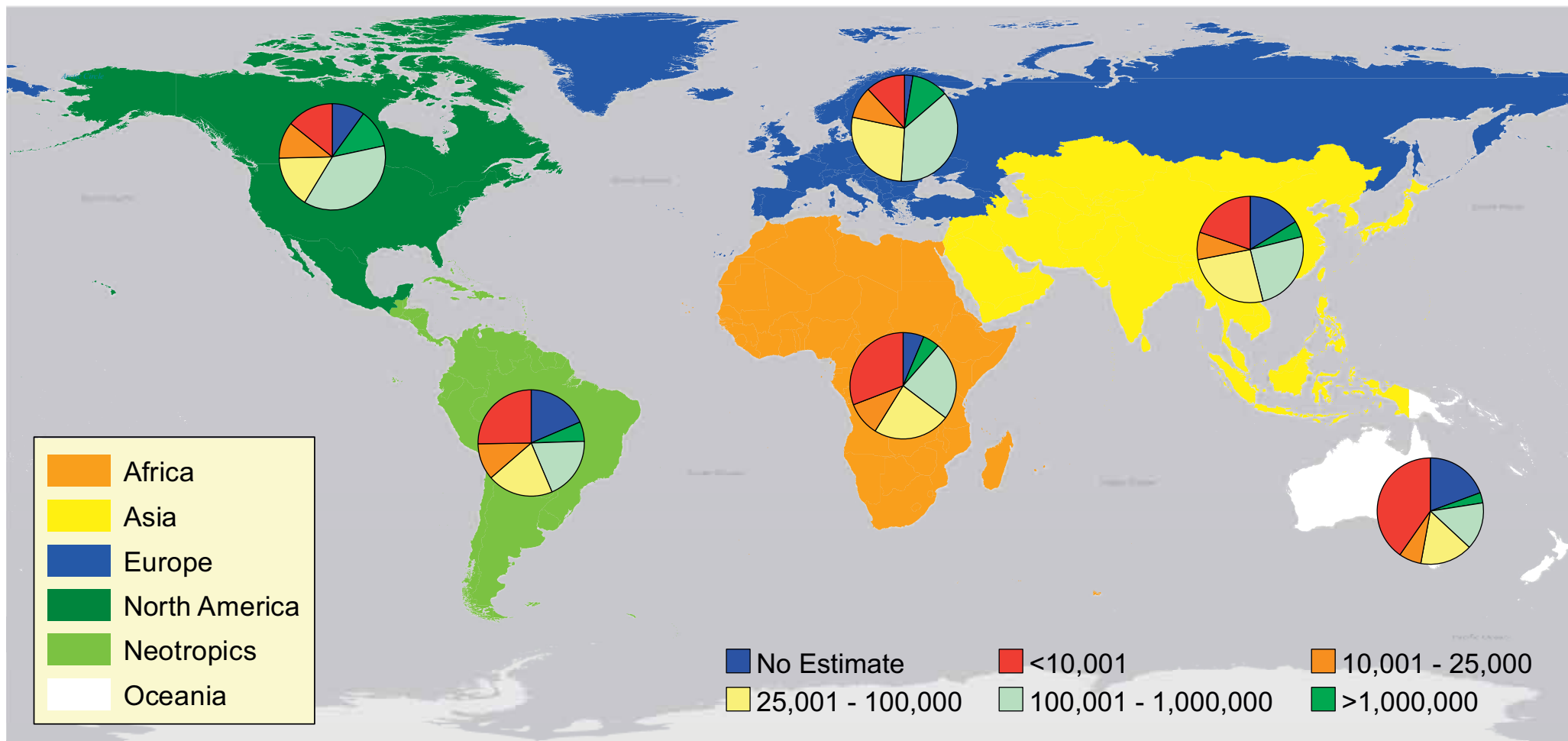


Figure 9. Waterbird population sizes by Ramsar region

## Population trends

Overall, 3% of the known waterbird populations are considered to have become extinct since the seventeenth century; a large majority of these were resident populations and restricted to one or a small number of islands.

The trends of 18% of the extant populations worldwide are not known; while the figure rises to nearly 50% for populations in Asia, Oceania and the Neotropics highlighting the large gaps in knowledge in these regions.

Of all populations for which trend information is available, 38% are declining and only 20% are increasing. Thirty nine per cent of the populations are stable and 3% are fluctuating. Both in absolute and relative terms, most declining populations can be found in Asia where about 50% of all populations with known trends are declining (Figure 10).

The situation in Asia is clearly a consequence of massive and dense human populations as well as rapid economic development, but results elsewhere suggest that adequate provision of resources for enforcement of the growing bodies of national legislation for wildlife protection will improve the situation.

On the other hand, the status of waterbird populations is markedly more favourable in Europe and North America, two regions with strong implementation of legal and financial instruments to govern the conservation and sustainable use of waterbird populations. This is a clear indication that conservation and sustainable management of birds and habitats can be effective.

Although there is no available trend information for a number of populations, the assessment of population trends through biogeographic realms and flyways gives more detailed insights (Figures 11 and 12) than the analysis based on Ramsar regions (Figure 10), particularly in the case of Asia. For example, while the population trends reveal that the status of populations that do not migrate farther south than the Eastern Palearctic is comparable to the status of populations in the Afrotropics, Africa-Eurasian or Americas flyways, there is a higher

proportion of declining migratory populations in the Asia-Pacific flyways and those within the Indo-Malay realm. This alarming situation was also reported in previous editions of the Waterbird Population Estimates<sup>1-4</sup> and summarised in the *State of the World's Waterbirds 2010*<sup>8</sup>.

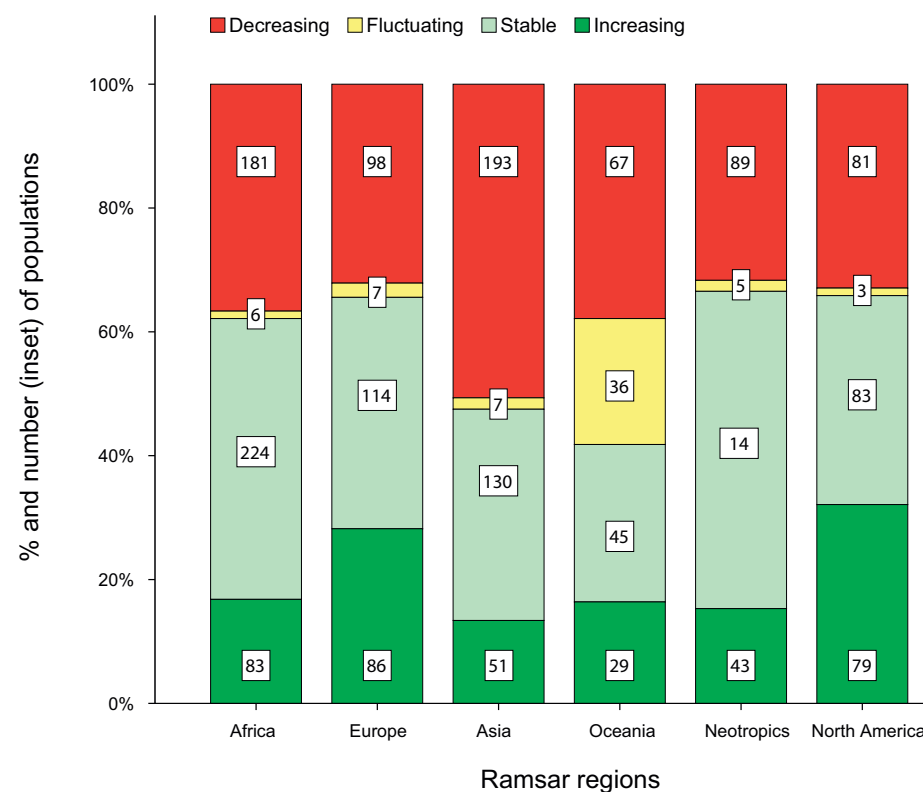


Figure 10. Waterbird population trends by Ramsar region

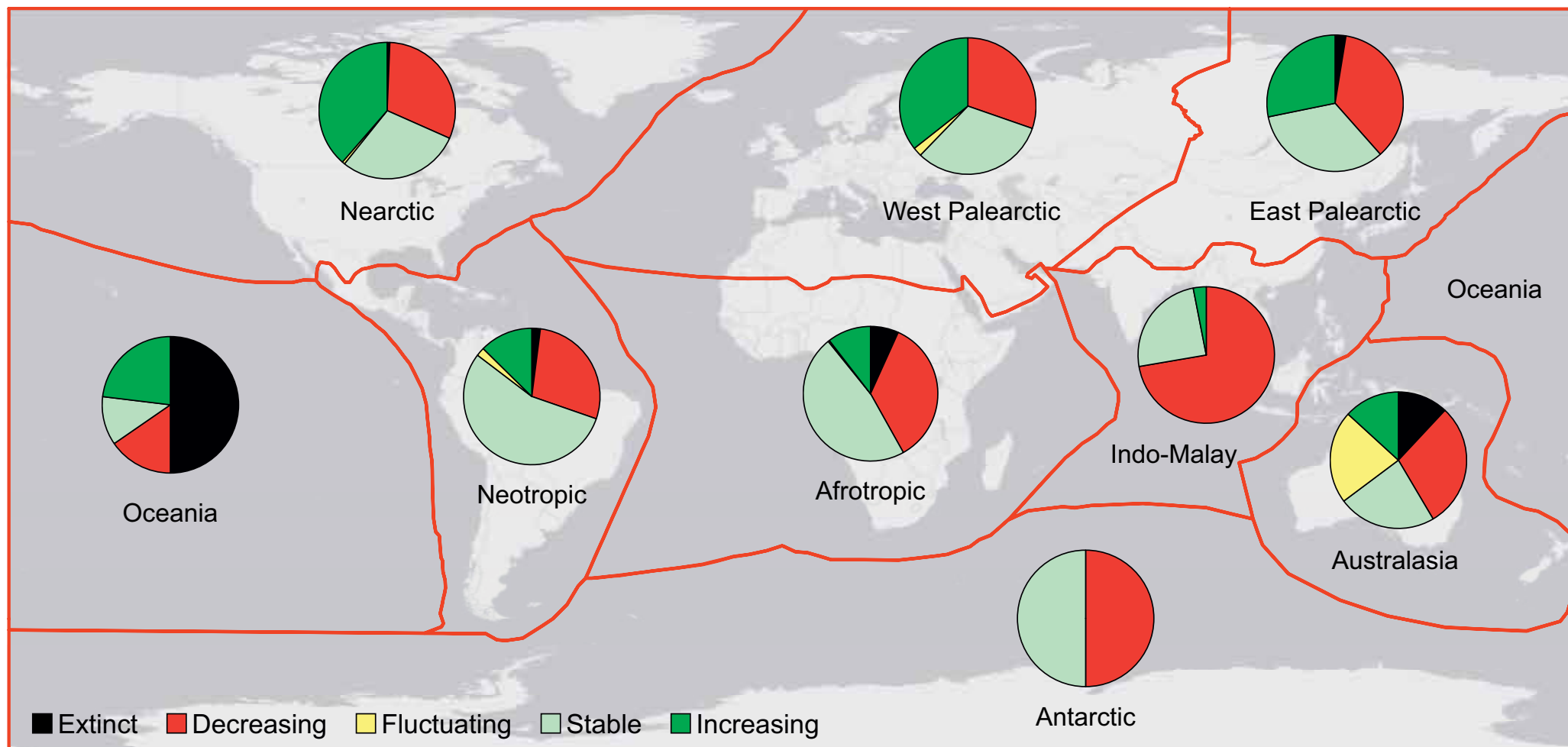


Figure 11. Waterbird population trends by biogeographic realm (%)



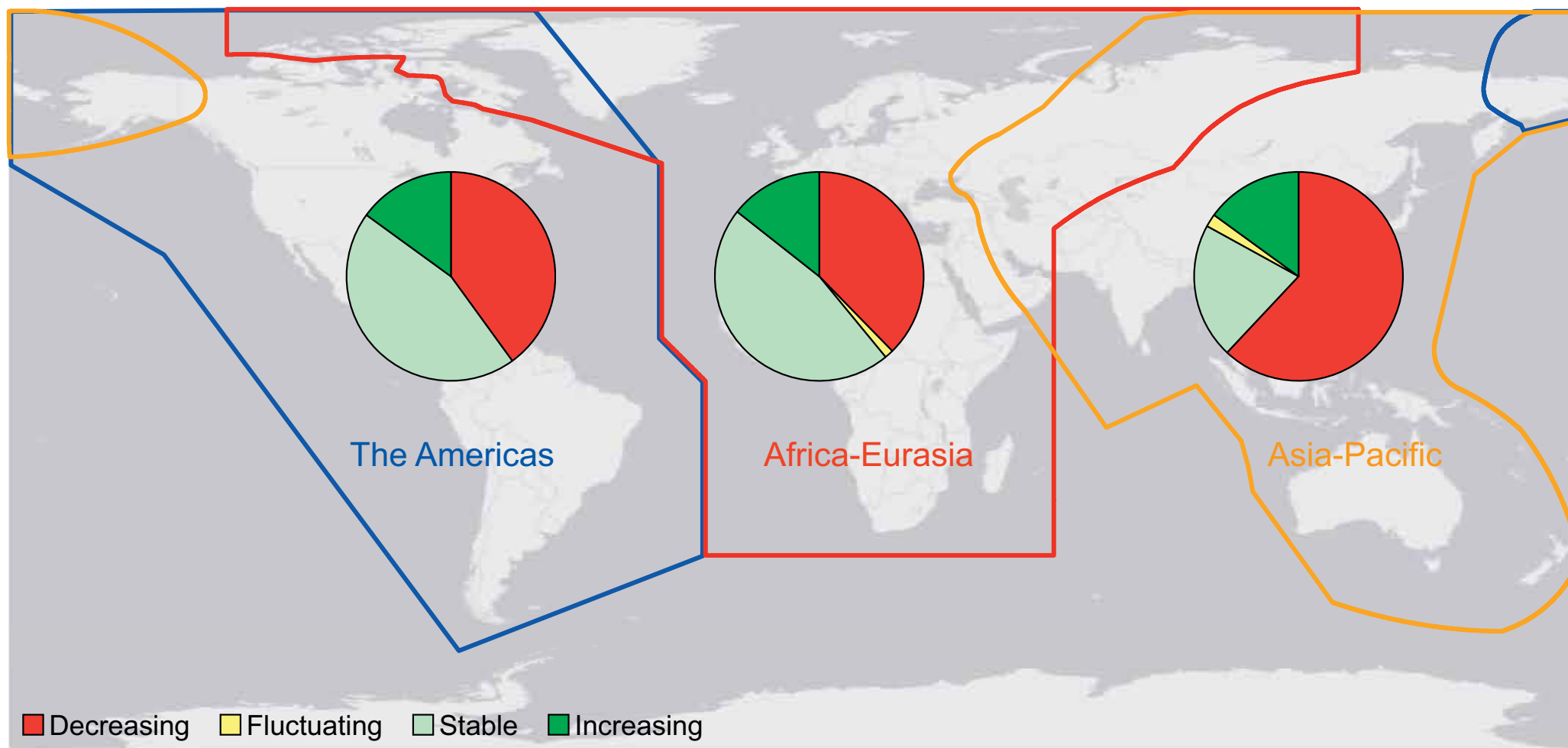
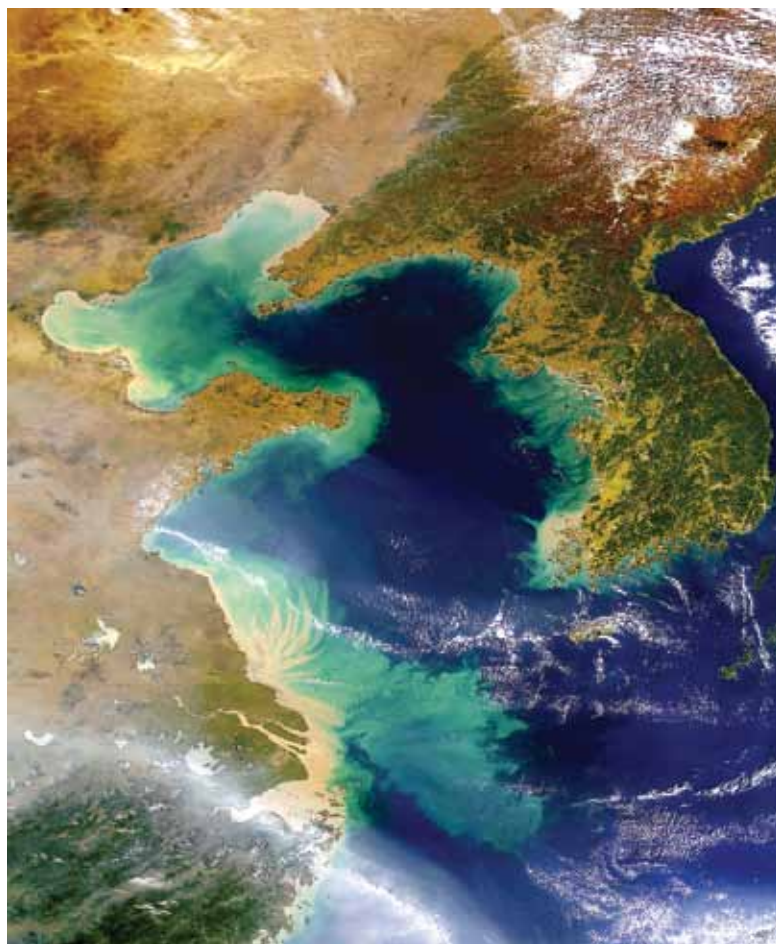


Figure 12. Waterbird population trends by major management flyway region (%)



Yellow Sea region, SeaWiFS Project, NASA/Goddard Space Flight Center and ORBIMAGE

### **The Yellow Sea - a key bottleneck**

The Yellow Sea region in the East Asian - Australasian Flyway supports a very high number of threatened and other short- and long-distance migratory waterbird populations that are under severe threat given the overwhelming pace of coastal land reclamation in the region. Recent remote sensing and geographical information system (GIS) analyses have clearly demonstrated losses of up to 60% of intertidal habitats in some key areas<sup>9</sup>. Oceania stands out as a very poorly known region with nearly 50% of populations with no estimates.

### **Summary of population trends and conservation status by family**

The highest proportion of increasing populations can be found among the Phoenicopteridae, Pelicanidae, Ardeidae, Recurvirostridae and Laridae. The Gruidae and Anatidae also have a higher than average proportion of increasing populations.



Siberian Crane, China, Sun Xiaoming

On the contrary, among the larger waterbird families, the highest number of decreasing populations can be found among the Anatidae. But, this is the biggest family and only a slightly higher proportion of the populations are declining in this family than the overall (Figure 13). The other families with a large number of populations with higher than average proportion of decreasing populations are Laridae and Rallidae. However, Podicipedidae, Ciconiidae, Threskiornithidae, Gruidae and Glareolidae also have a higher than average proportion of declining populations.

The highest number of Globally Threatened or Near Threatened species, as in the IUCN Red List 2012<sup>10</sup>, belongs to the Rallidae. Most of them are resident species and many are endemic to one or more islands (Figure 14). Some are especially vulnerable to introduced predators on these islands and this family includes no fewer than 20 extinct species. The families of Gruidae, Phalacrocoracidae, Ciconiidae, Threskiornithidae, Podicipedidae, and Scolopacidae also have a very high proportion of species of Global Conservation Concern. Although no Crane species has become extinct in historical times, two of the three populations of the Critically Endangered Siberian Crane in West and Central Asia have been reduced to less than 35 individuals. While the future status of the eastern population hangs in the balance as water management changes in the Yangtze floodplain in China modify the availability and suitability of their habitat.

The families of Burhinidae and Recurvirostridae each have only one species of Global Conservation Concern.

### Summary of conservation status by species

Under the IUCN Red List criteria, 79% of all waterbird species considered to be Extinct, Extinct in the Wild, Critically Endangered, Endangered or Vulnerable, belong to six families (Figure 15). Of these, 28% of them are Rallidae, followed by Anatidae (19%), Scolopacidae (8%), Ardeidae (7%), and Laridae, Phalacrocoracidae and Gruidae each contribute 6% to the total number of Globally Threatened waterbird species.

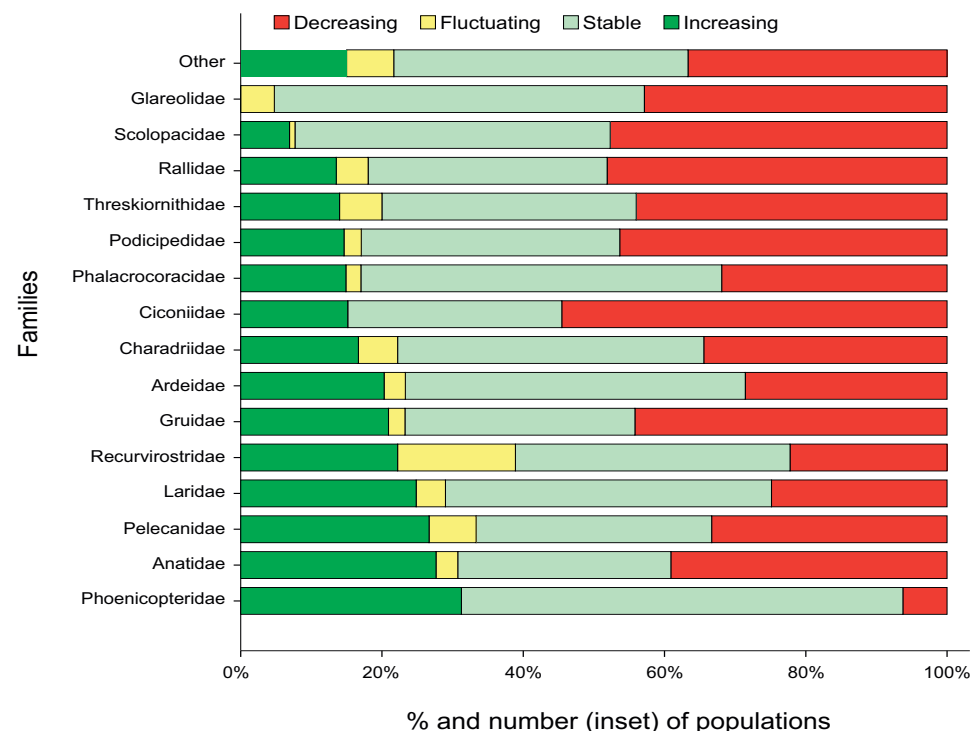


Figure 13. Population trends by selected waterbird families

The only species which has become incontrovertibly extinct since the last edition of the *Waterbird Population Estimates* is the Alaotra Grebe *Tachybaptus rufolavatus* which was restricted to Lake Alaotra in eastern Madagascar. The species declined rapidly after carnivorous fish were introduced to the lakes where they lived. This, along with the use of nylon gill-nets by fishermen that drowned birds, is believed to have driven the species to extinction<sup>11</sup>. This is the third grebe species to go

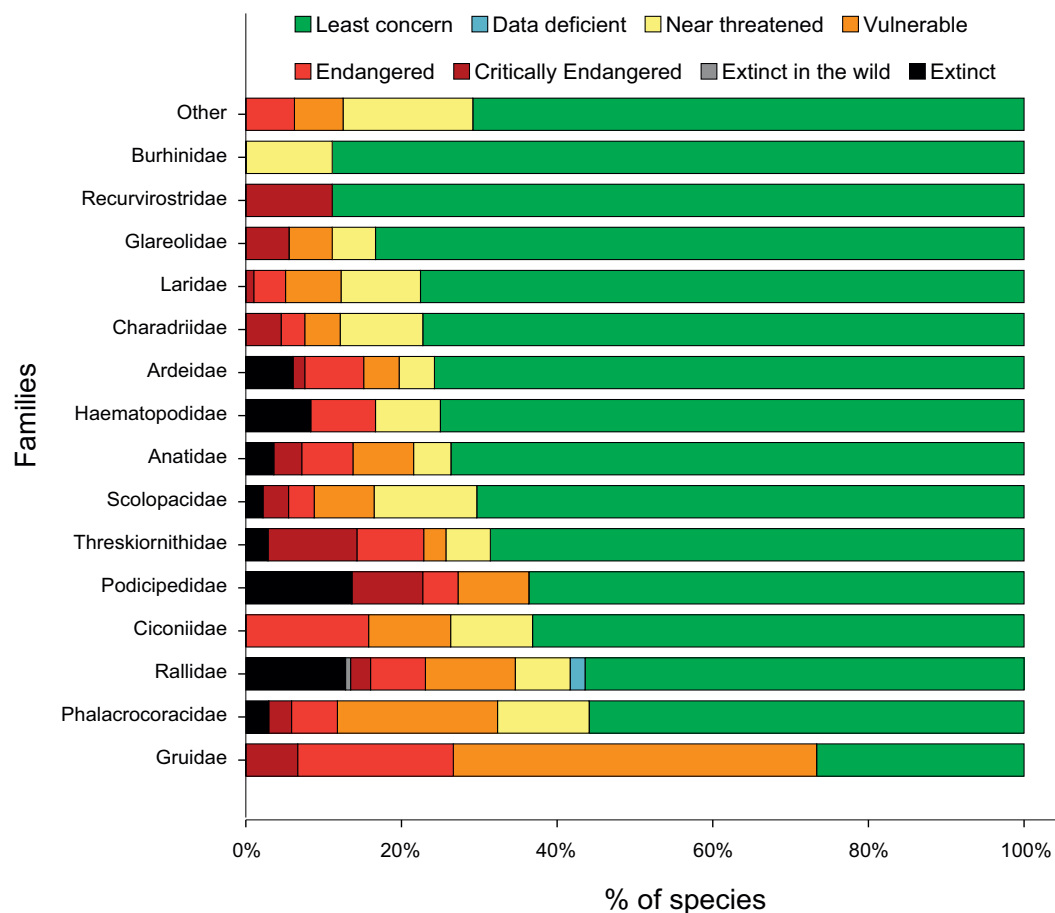


Figure 14. Red List status of selected waterbird families

extinct in recent decades. The previous two were the Atitlan Grebe *Podilymbus gigas* and Colombian Grebe *Podiceps andinus* which had very limited distribution in South America.

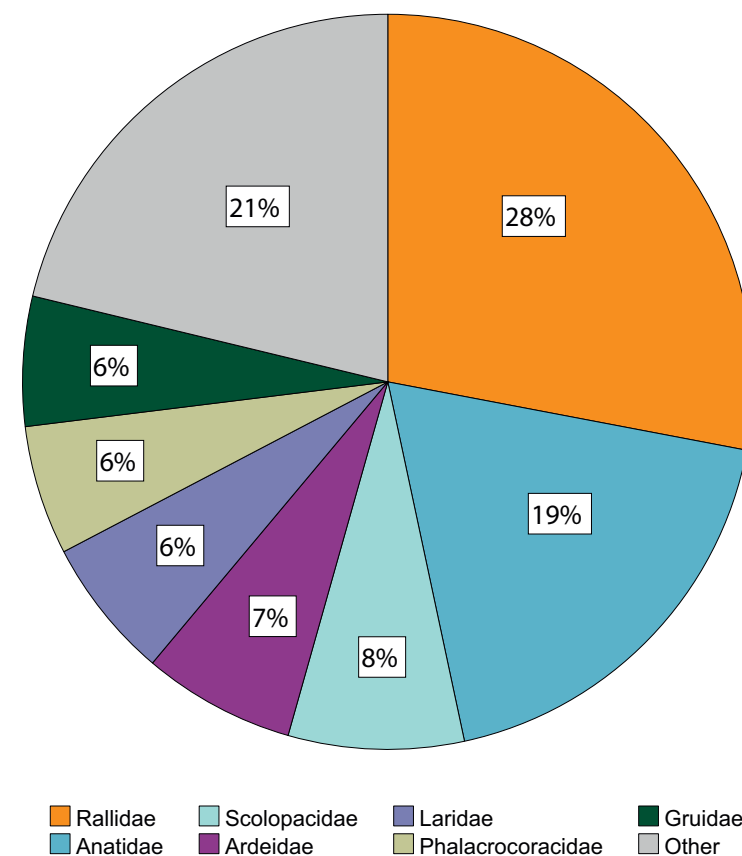


Figure 15. Globally threatened waterbird species by families (the percentage refers to the proportion of globally threatened waterbirds)

Three other South American grebe species which are also limited to single or limited number of lakes, such as: the Hooded Grebe *Podiceps gallardoi*, Junin Grebe *Podiceps taczanowskii* and Titicaca Grebe *Rollandia microptera* are under the category of Critically Endangered or Endangered and are declining.



Twenty four per cent (212) of all 871 waterbird species are categorised as Globally Threatened or Near Threatened in the IUCN Red List 2012, including 28 that are Critically Endangered:

- Junin Grebe *Podiceps taczanowskii*
- Hooded Grebe *Podiceps gallardoi*
- Chatham Islands Shag *Phalacrocorax onslowi*
- White-bellied Heron *Ardea insignis*
- White-shouldered Ibis *Pseudibis davisoni*
- Giant Ibis *Thaumatibis gigantean*
- Northern Bald Ibis *Geronticus eremita*
- Dwarf Olive Ibis *Bostrychia bocagei*
- Crested Shelduck *Tadorna cristata*
- Laysan Duck *Anas laysanensis*
- Pink-headed Duck *Rhodonessa caryophyllacea*
- Baer's Pochard *Aythya baeri*
- Madagascar Pochard *Aythya innotata*
- Brazilian Merganser *Mergus octosetaceus*
- Siberian Crane *Grus leucogeranus*
- New Caledonian Rail *Gallirallus lafresnayanus*
- Zapata Rail *Cyanolimnas cerverai*
- Samoan Moorhen *Gallinula pacifica*
- Makira Moorhen *Gallinula silvestris*
- Black Stilt *Himantopus novaezelandiae*
- Jerdon's Courser *Rhinoptilus bitorquatus*
- Javan Lapwing *Vanellus macropterus*
- Sociable Lapwing *Vanellus gregarius*
- St Helena Plover *Charadrius sanctaehelenae*
- Eskimo Curlew *Numenius borealis*
- Slender-billed Curlew *Numenius tenuirostris*
- Spoon-billed Sandpiper *Eurynorhynchus pygmeus*
- Chinese Crested Tern *Sterna bernsteini*



The Endangered Nordmann's Greenshank *Tringa guttifer* is rapidly declining (on left with yellow legs) with a Common Greenshank *Tringa nebularia*, Malaysia, David Bakewell



The resident Alaoatra Grebe listed as extinct in 2010, Chris Rose

## Future Priorities

Information on waterbird populations has improved significantly over the last decades and this has been matched by the listing of a growing number of species in the IUCN Red List of threatened species. Application of the *Waterbird Population Estimates* information for research and conservation action should concentrate on the following areas:

- Implementation of global conservation efforts in high-priority **regions or sub-regions** of Asia, islands of Oceania, Africa and the Neotropics.
- Identifying **populations** (species or families) for which additional work is required on a priority basis. In many areas, this entails supporting efforts to strengthen local capacity and voluntary networks in undertaking improved monitoring of waterbird populations. Wetlands International's long running, global programme of waterbird monitoring under the framework of the International Waterbird Census provides a basis for implementation of such activities. Recent progress in strengthening of this partnership programme into a sustainable regional network in the African-Eurasian region for collection of the core information for the WPE bodes well for the future and it provides a lead for similar activities in the other regions.  
This, however, does not detract from the need to continue to maintain effort and interest in regions where information quality has improved, especially given a growing understanding of the effects of climate change on distribution, abundance and trends of populations and on wetland habitats.
- Identifying **threatening processes**. Although there is a growing body of high quality information on the threatening processes for species, particularly those Globally Threatened, our knowledge remains incomplete for the vast majority of populations. The next editions of the WPE should work towards integrating this information on a more regular basis.
- Identifying **habitats** and **sites** under threat to encourage conservation on a priority basis. The Critical Site Network Tool<sup>12</sup> for the AEWA region and the Important Bird Areas programme, among others, provide the basis for initiating area-based conservation

action at important sites affected by a range of on-site and upstream threats.

### Enhancing Accessibility to Waterbird Population Estimates

In 2012, the launch of an online searchable website provides global access to information from all five editions of the series. This will allow the website to be used more widely to promote awareness and understanding of the changes in the status and trends of the world's waterbird populations over the past decades. It should also provide a stronger basis for its application for the conservation of waterbirds and their habitats through a wide range of global and regional frameworks and initiatives.

Although the WPE is focussed primarily on the Ramsar Convention and its Contracting Parties as a major stakeholder, the website also provides ready access to the information of populations covered by the Action Plan of the African-Eurasian Migratory Waterbird Agreement through a presentation of the results of the AEWA Conservation Status Review series. The website offers considerable potential to expand through similar links to the other global agreements including the Convention on Migratory Species (CMS) and Convention on International Trade in Endangered Species (CITES), as well as regional flyway initiatives such as the East Asian - Australasian Flyway Partnership (EAAFP) and the Western Hemisphere Shorebird Reserve Network (WHSRN).

Information from the *Waterbird Population Estimates* is also available in the online Critical Site Network Tool developed by Wetlands International in partnership with BirdLife International, the AEWA and Ramsar Secretariats, and UNEP-WCMC. The Tool displays maps showing the limits of the range of each waterbird population in the African-West Eurasian region and makes it possible to visualise and determine with certainty the full suite of range states that are included in each population. The Tool provides a strong basis for expansion to the Americas and Asia-Pacific regions to support delivery of distribution maps and quality information for the rest of the world's waterbird populations.

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- <sup>7</sup> Wildfowl and Wetlands Trust <http://www.wwt.org.uk/what-we-do/interactive-map/saving-the-madagascar-pochard-project/>
- <sup>8</sup> Wetlands International 2010. (Compiled by Simon Delany, Szabolcs Nagy and Nick Davidson). State of the World's Waterbirds, 2010. Wetlands International, Wageningen, The Netherlands.
- <sup>9</sup> MacKinnon, J., Verkuil, Y.I. and Murray, N. 2012. IUCN situation analysis on East and Southeast Asian intertidal habitats, with particular reference to the Yellow Sea (including the Bohai Sea). *Occasional Paper of the IUCN Species Survival Commission No. 47*. IUCN, Gland, Switzerland and Cambridge, UK: IUCN. ii + 70 pp.
- <sup>10</sup> IUCN Red List [www.redlist.org](http://www.redlist.org)
- <sup>11</sup> BirdLife International 2012. Species factsheet: *Tachybaptus rufolavatus*. Downloaded from <http://www.birdlife.org> on 18/06/2012.

## Websites of Conventions and International Initiatives mentioned in the text:

- African Eurasian Migratory Waterbird Agreement [www.unep-aewa.org/](http://www.unep-aewa.org/)
- Bern Convention [www.coe.int/t/dg4/cultureheritage/nature/bern/default\\_en.asp](http://www.coe.int/t/dg4/cultureheritage/nature/bern/default_en.asp)
- Convention on Biological Diversity [www.cbd.int/](http://www.cbd.int/)
- Convention on Migratory Species [www.cms.int/](http://www.cms.int/)
- Critical Sites Network Tool <http://www.wetlands.org/INFORMATIONFLYWAY/CRITICALSITENETWORKTOOL/tabid/1349/language/en-US/Default.aspx>
- Partnership for the East Asian-Australasian Flyway [www.eaaflyway.net](http://www.eaaflyway.net)
- Ramsar Convention on Wetlands [www.ramsar.org/](http://www.ramsar.org/)
- Western Hemisphere Shorebird Reserve Network [www.whsrn.org/](http://www.whsrn.org/)





## Mission:

To sustain and restore wetlands, their resources and biodiversity

This booklet is a summary of the fifth edition of the Waterbird Population Estimates series, which presents the latest estimates, trends and conservation status of the world's 2,304 biogeographic waterbird populations as of 2012. Globally, waterbird populations show a slightly improved condition compared to their status in 2006, as documented in the fourth edition. Nevertheless, of all existing populations, still 38% are declining and only 20% are increasing, while 39% are stable and 4% are fluctuating. Moreover, 24% (212) of all 871 waterbird species are categorised as Globally Threatened or Near Threatened in the IUCN Red List 2012, including 28 that are Critically Endangered.

Their conservation requires urgent action at national and international level by Contracting Parties to the Ramsar Convention and other Multilateral Environmental Agreements, UN institutions, non-governmental organisations, private sector and the public.

## About the Waterbird Population Estimates

This series is the authoritative and approved source of up-to-date '1% population thresholds' for the application of Ramsar's Criterion 6 for the identification and designation of Wetlands of International Importance (Ramsar Sites).

## Interactive online database

The summary accompanies the launch of the Waterbird Population Estimates as an interactive online database at the 11<sup>th</sup> Ramsar Conference of Parties in Bucharest, Romania (July 2012), available at **wpe.wetlands.org**. This provides universal access to all five editions, as part of Wetlands International's continuing commitment to supporting the Ramsar Convention and all those concerned with wetland and waterbird conservation and wise use.

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