

Numbers and distribution of waterbirds and wetlands in the Asia-Pacific region

Results of the Asian Waterbird Census: 1997-2001

David Li Zuo Wei and Taej Mundkur



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Foreword by the Secretary General of the Convention on Wetlands

This important publication is the result of the Asian Waterbird Census (part of the International Waterbird Census) from 1997 to 2001. The report provides valuable and important data on waterbird population, distribution and status, with reference to wetland habitats. Information presented in this report will contribute greatly to efforts towards the conservation of both waterbirds and wetlands, including Wetlands of International Importance.

The Convention on Wetlands (Ramsar, Iran, 1971) is the oldest of the global environmental conventions. It has always given particular attention to waterbirds, since its inception stemmed from widespread concern over the destruction of wetlands and the impact of this destruction on waterbirds, and other components of biological diversity. It remains of major concern to the Convention that such loss and deterioration of both coastal and inland wetlands continues to be widespread. Nowhere are these pressures greater than in Asia, owing to the needs and demands of the region's large and growing human population. Wetlands International acts as a formal International Organisation Partner (IOP) of the Convention, and the waterbird information compiled through the International Waterbird Census is important to Contracting Parties, in helping them implement their obligations under the Convention.

The International Waterbird Census is unique. With the increasing link-up with waterbird monitoring schemes in North America, it is becoming truly global in its scope, and it is probably the only global wildlife monitoring scheme of its kind. It not only identifies key wetlands for waterbirds but also permits assessment of the status and trends of waterbird populations at the biogeographical scale. Such assessments, and the monitoring schemes from which they are derived, are crucial to government's environmental management. In particular, they will help governments try to significantly reduce the rate of loss of biological diversity by 2010; a goal affirmed by the 2002 World Summit on Sustainable Development.

Asian Waterbird Census "counts" can help to identify those wetlands which qualify for designation as Wetlands of International Importance (Ramsar sites), particularly in the application of Ramsar Criteria 5 (sites which regularly support >20,000 waterbirds) and 6 (sites which regularly support 1% or more of a population of waterbirds).

In addition, the data gathered through the Asian Waterbird Census make a vital contribution to the understanding of waterbird status at the biogeographic scale, notably through the assessment of population sizes and trends for the Waterbird Population Estimates, regularly published by Wetlands International. These estimates provide the basis, endorsed by the Ramsar Convention, most recently through Resolution VIII.38, for 1% population thresholds in the application of Ramsar site designation Criterion 6

Finally, on behalf of the Ramsar Secretariat, I would like to thank Wetlands International for its painstakingly efforts in compiling and producing of this report. We encourage Contracting Parties to use this publication as a reference for their national conservation activities, as well as helping them contribute to international conservation efforts.

Peter Bridgewater
Secretary General
Convention on Wetlands (Ramsar, Iran, 1971)

Foreword by the Executive Secretary of the Convention on Migratory Species

After the support provided for publishing the results of the Asian Waterfowl Census from 1994 to 1996, the Secretariat of the Convention on the Conservation of Migratory Species of Wild Animals (CMS) is pleased to continue its support for this important initiative and welcomes the Wetlands International publication on the results of the AWC from 1997 to 2001. I am convinced that the valuable information presented in this report on the status and distribution of waterbird populations will greatly contribute to the conservation of waterbird species and their habitat in the Asiatic region.

Data generated through the AWC and the global IWC programme provides an important baseline for the work of the Convention in promoting the conservation and management of migratory waterbirds and the habitats on which they depend. Specifically, information collected by the Census contributes to the updating of the status of the species listed in CMS Appendices and to the identification of new species to be listed, which constitutes the basis for promoting action within the Convention.

Data on the status and trend of species have been instrumental in the identification and development of Concerted Actions for selected Appendix I waterfowl species, such as the White-headed duck, the Lesser white-fronted goose, the Black-faced spoonbill, the Spoon-billed sandpiper, and the Chinese crested tern. The development of the African Eurasian Migratory Waterbird Agreement (AEWA), the most ambitious Agreement established so far under the aegis of the Convention, was, and still is, largely based on data gathered through the IWC. The same applies to the development of the Asia-Pacific Migratory Waterbird Conservation Strategy and the initiative on the Central Asian Flyway, led by Wetlands International, which have the potential to evolve into new CMS Agreements.

CMS has also a major interest in linking its Global Register of Migratory Species (GROMS) to Wetland International's databases, to which the census provides crucial input.

On behalf of the CMS Secretariat, I would like to thank Wetlands International for its painstaking efforts in compiling and producing this report. I would like to strongly encourage the CMS Contracting Parties to use this publication as a reference for their national conservation activities.

Arnulf Müller-Helmbrecht
Executive Secretary
CMS Secretariat

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We firstly thank the AWC's thousands of volunteers, because without their active participation we would not have the data to compile this report and make an important volume of information available to a global audience. We acknowledge and appreciate our gratitude for all their efforts in undertaking the census and in reporting the results to the national and sub-national coordinators.

We thank all the AWC Coordinators who organised the census between 1997 and 2001 and sent the data gathered to Wetlands International. Without their great efforts, the AWC could not have been carried out so successfully. Koji Tagi served as International Coordinator from 1998 to 2000, supported on a voluntary basis by Lim Aun Tiah between 1998 and 2000. We are grateful to them both.

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Summary

Background

The Asian Waterbird Census (AWC) was initiated in 1987 and runs in parallel with other waterbird census in carried out in Africa, Europe, Central and West Asia and Latin America under the umbrella of the International Waterbird Census (IWC), which is organised by Wetlands International. The IWC is the largest and longest running faunal monitoring programme in the world.

The AWC started on the Indian subcontinent in January 1987 and has grown rapidly to cover Asia, Australasia and eastern Russia. Since 1987, a total of more than 5,700 sites from 25 countries have been counted at least once.

The AWC census takes place annually, during the second and third weeks of January, and is carried out by volunteers interested in collecting information on waterbirds and wetlands as a basis for contributing to their conservation.

The data collected by the AWC have been used in various reports and contributes to a range of conservation activities from local to global levels, including:

- species and site conservation and research programmes and campaigns to raise awareness of the importance of wetlands in many countries;
- the development of national wetland and waterbird conservation Action Plans and Strategies;
- the Ramsar Convention on Wetlands, in identifying wetlands of international importance through regular monitoring of waterbirds and Ramsar List sites;
- the Convention on Migratory Species, by monitoring the status of migratory waterbirds and their habitats;
- the Convention on Biological Diversity's goal of conservation and sustainable use of biodiversity;
- the implementation of the Asia-Pacific Migratory Waterbird Conservation Strategy: 2001-2005, through monitoring of waterbirds and their sites, including sites listed under the three East Asian–Australasian Migratory Waterbird Site Networks;
- BirdLife International's Important Bird Area (IBA) Programme;
- IUCN/BirdLife's Globally Threatened Bird Update (GTB) Programme; and
- Wetlands International's Waterbird Population Estimates (WPE).

The data given in this publication represent the results of the AWC from 1997 to 2001.

Highlights of the 1997–2001 censuses

A total of 22 countries participated in the censuses and 1,392 sites were covered at least once between 1997 and 2001. Of the sites covered, a total of 61 have been designated as internationally important sites under the Ramsar Convention (as at 31 December 2003), 32 as Migratory Waterbird Network Sites in the East Asian–Australasian Flyway (as at 31 December 2003) and 43 Important Bird Areas (as stated in BirdLife International's IBA publications for Cambodia, Lao PDR, the Philippines, Taiwan and Vietnam, as at 31 December 2003).

Eighty-two sites in 10 countries – about 6% of the total number of sites counted, were reported to support more than 20,000 birds. Of these 82 sites, 22 (ca. 27%) are Ramsar sites and 11 (ca. 13%) belong to the Migratory Waterbird Site Networks in the East Asian–Australasian Flyway.

Total numbers of waterbirds counted were 2,223,805 (314 sites), 1,794,280 (385 sites), 3,266,649 (625 sites), 3,233,096 (594 sites) and 4,571,522 (770 sites) in 1997, 1998, 1999, 2000 and 2001 respectively.

Totals of 291 species of waterbirds and 15 species of wetland-dependent raptors (birds of prey) were recorded. Over 43% of these are restricted to the region covered by the census (126 waterbird species and seven species of wetland-dependent raptors). The ten most numerous species were Mallard *Anas platyrhynchos* (489,652 in 2000), Northern Shoveler *Anas clypeata* (259,155 in 2001), Northern Pintail *Anas acuta* (237,105 in 2001), Baikal Teal *Anas formosa* (231,482 in 1999), Eurasian Wigeon *Anas penelope* (207,936 in 2001), Common Teal *Anas crecca* (194,723 in 2001), Gadwall *Anas strepera* (188,631 in 2001),

Common Coot *Fulica atra* (178, 458 in 2001), Spot-billed Duck *Anas poecilorhyncha* (161,494 in 2000) and Tufted Duck *Aythya fuligula* (160,280 in 2001).

Thirty seven of the species recorded are recognized as globally threatened, according to BirdLife International (2001). They include two Critically Endangered, 11 Endangered and 24 Vulnerable species; 31 of these are restricted to the region covered by the census. In addition, 17 Lower Risk species (one Conservation Dependent, 16 Near Threatened) were recorded. Good coverage of at least 14 congregatory threatened species (Spot-billed Pelican *Pelecanus philippensis*, Oriental Stork *Ciconia boyciana*, Black-faced Spoonbill *Platalea minor*, Lesser White-fronted Goose *Anser erythropus*, Swan Goose *Anser cygnoides*, Baikal Teal *Anas formosa*, White-headed Duck *Oxyura leucocephala*, Black-necked Crane *Grus nigricollis*, Hooded Crane *Grus monacha*, Red-crowned Crane *Grus japonensis*, White-naped Crane *Grus vipio*, Siberian Crane *Grus leucogeranus*, Saunders' Gull *Larus saundersi*, and Indian Skimmer *Rynchops albicollis*) reinforces the value of the census in monitoring the distribution and abundance of these threatened populations and the need for additional attention to be paid to enhancing this role. A total of 145 species covered by the census are listed in the Appendices of the Convention on Migratory Species; of which 35 are globally threatened and Lower Risk species and are listed in Appendix I while 10 species are listed in Appendix II. Additionally, 26 species are listed by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); 14 (including 12 globally threatened and Lower Risk species) and 12 (including three globally threatened and Lower Risk species) species are listed in Appendices I and II respectively.

Information on uses of and threats to sites reporting more than 20,000 waterbirds revealed strong anthropogenic influences through fishing, agriculture at and around the sites, and overgrowth of vegetation (on-site uses and threats), with eutrophication resulting from on-site activities and in the catchments, through, for example, pollution (domestic sewage, fertilisers, solid wastes, etc.) and excessive siltation. Of concern is the reported partial or complete reclamation of a small proportion of these internationally important sites. Improved reporting of information on uses and threats at all sites is being promoted to provide a more comprehensive mechanism to increase our knowledge base and to enable preventive actions to be undertaken in a timely manner through local and international action.

The collection of data was coordinated and carried out by a dedicated volunteer network of National/Sub-national Coordinators and over 1,000 volunteers in 22 countries.

The AWC covers the following three main regions: South Asia, Southeast Asia and East Asia. Australasia is also covered as part of the AWC.

South Asia (Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka)

A total of 649 sites in South Asia were counted at least once; count information was provided by all countries except Afghanistan and the Maldives. Total numbers of waterbirds counted were 508,030 (126 sites), 504,480 (194 sites), 1,005,325 (285 sites), 576,278 (164 sites) and 2,372,849 (327 sites) in 1997, 1998, 1999, 2000 and 2001 respectively. Totals of 173 species of waterbirds and 14 species of wetland-dependent raptors were counted, 32 of which are globally threatened and Lower Risk.

Southeast Asia (Brunei Darussalam, Indonesia, Lao P.D.R., Malaysia, Myanmar, the Philippines, Singapore, Thailand, Timor Leste and Vietnam)

A total of 299 sites in Southeast Asia were counted at least once; count information was provided by all countries except Timor Leste. Total numbers of waterbirds counted were 58,010 (51 sites), 51,605 (47 sites), 116,864 (133 sites), 252,225 (139 sites) and 192,514 (134 sites) in 1997, 1998, 1999, 2000 and 2001 respectively. Totals of 173 species of waterbirds and nine species of wetland-dependent raptors were counted, 30 of which are globally threatened and Near Threatened.

East Asia (mainland China, Taiwan, Hong Kong, Macao, Japan, Republic of Korea, Democratic People's Republic of Korea, Mongolia and eastern Russia)

A total of 390 sites in East Asia were counted at least once, with no information provided from the Democratic People's Republic of Korea and Macao. Total numbers of waterbirds counted were 1,482,374 (114 sites), 1,040,989 (118 sites), 1,857,856 (180 sites), 2,060,482 (263 sites) and 1,676,827 (275 sites) in 1997, 1998, 1999, 2000 and 2001 respectively. Totals of 174 species of waterbirds and 11 species of wetland-dependent raptors were counted, 27 of which are globally threatened and Lower Risk.

Australasia (Australia, New Zealand and Papua New Guinea)

Information, relating mainly to shorebirds, was received from Australia only. A total of 55 sites were counted at least once during 1997-2001. Total numbers of waterbirds counted were 175,391 (23 sites), 197,206 (26 sites), 286,604 (27 sites), 344,111 (28 sites) and 329,332 (29 sites) in 1997, 1998, 1999, 2000 and 2001 respectively. Eighty-two species of waterbirds were counted, and five Near Threatened species were recorded.

Species distribution

Distribution maps are presented for a selection of 110 species, including 24 globally threatened and nine Near Threatened species for which relatively significant data are available.

Future directions

The report outlines plans to be implemented during 2004-2006. These range from actions to enhance geographic and site coverage, strengthen coordination and communication activities, provide training to improve the quality of data collected, upgrade database systems used to collate information, support improved decision making for waterbird and wetland conservation at international and national levels through enhanced use of AWC data and develop a fund raising strategy to support activities of the census.

1. Introduction

This section gives an overview and explains the relevance of monitoring waterbirds and the International Waterbird Census (IWC) and Asian Waterbird Census (AWC) programmes. The information on the IWC presented in sections 1.1 and 1.2 is extracted from the latest publication on the waterbird census for the Western Palearctic and Southwest Asia (Gilissen *et al.* 2002).

1.1 Why monitor waterbirds?

Migratory waterbirds are one of the most remarkable components of global biodiversity. Their long migrations and tendency to concentrate in large numbers on particular wetlands make them both visible and charismatic. They are important indicators of the ecological condition and productivity of wetland ecosystems, and their presence is widely valued by numerous stakeholders including local human populations, tourists, associated enterprises, hunters (both sport and subsistence) and research biologists throughout the world. They also offer many opportunities for using wetlands sustainably, particularly through eco-tourism. This is particularly important for developing countries, since protecting migratory waterbirds may impose an additional resource burden on them.

Waterbirds are readily counted because many species congregate conspicuously. No other group of birds has been so comprehensively and frequently surveyed. There is a strong tradition in Europe and the USA, and a growing tradition in other parts of the world, of using long-term waterbird census data as a basis for estimating the sizes and trends of waterbird populations. The IWC is one of the longest running and most extensive harmonised biodiversity monitoring programmes in the world. The information obtained from the IWC has considerable conservation value at the local, national and international levels and a growing scientific impact.

1.2 Organisation of the IWC

1.2.1 Global organisation of the IWC

The IWC is a site-based counting scheme for monitoring waterbird numbers, organised by Wetlands International. The Census operates as four separate surveys, but a new strategy for global coordination of the IWC is currently being developed.

- The Asian Waterbird Census (AWC), which covers Asia, Australasia and eastern Russia and which is the subject of this report, is coordinated from the Wetlands International office in Kuala Lumpur, Malaysia (see e.g. Lopez and Mundkur 1997).
- The counts in the Western Palearctic and Southwest Asia (IWC-WP&SWA) are coordinated and compiled by the Wetlands International office in Wageningen, The Netherlands (see e.g. Gilissen *et al.* 2002).
- The African Waterbird Census (AfWC) is coordinated from the Wetlands International office in Dakar, Senegal (see e.g. Dodman and Diagana 2003).
- In South and Central America, the Neotropical Waterbird Census (NWC) is coordinated by the Wetlands International office in Buenos Aires, Argentina (see e.g. Blanco and Carbonell, 2001).
- Recent initiatives have been taken to develop the IWC in North America, in close cooperation with the United States Geological Survey/Patuxent Wildlife Research Centre and the North American Waterbirds Conservation Plan. This will add the final continent to the census, making it a truly global scheme.

1.2.2 New Global Programme Action Plan in preparation

In 2001, Wetlands International produced its draft Programme Action Plan, titled "Global Waterbird Monitoring and Conservation in the new Millennium" (www.wetlands.org/IWC/IWCstra.htm). In this document a strategic positioning of Wetlands International's waterbird-related work is presented. The main recommendations for the future are to:

- continue expansion of the census towards a global survey;

- finalise the new database programme, merging taxonomical databases, and have it adopted in all regions, which will facilitate exchange of data between the regional databases;
- disseminate the results of the IWC more regularly, especially through the internet;
- include waterbird data from additional seasons and sources;
- increase capacity to deliver products that meet the needs of conventions and their contracting parties, mainly through the increase in species coverage and geographical coverage;
- increase cooperation with parties working towards the conservation of (migratory) waterbirds (e.g. BirdLife International: Important Bird Area Programme, hunting organisations);
- link the database with a GIS, to standardise geographical definition of sites; and
- extend the scope of application of the data, for example with research on climate change.

The major change in the direction proposed for the IWC is the development of a more global character and closer interaction of the regional schemes in terms of standardisation and data management. Following a decision of the Board of Members of Wetlands International, the strategic formulation of the work on waterbirds and other species was changed to "Wetland Species Conservation". A summary of the Board's decisions can be found in the Wetlands International Strategy 2002-2005 (Wetlands International 2002a).

1.2.3 The role of Wetlands International's Specialist Groups

An important element of Wetlands International's networks of experts are the Specialist Groups (www.wetlands.org/networks/SGroups.htm). Mostly initiated in the 1980s, when they were known as Research Groups, the groups with strong links to the IWC are the Swan, Goose, Duck, Seaduck, Wader and Threatened Waterfowl Specialist Groups. The Wader Study Group is the largest and longest established of the Specialist Groups; its *Bulletin* appears three times a year. Since 1990 the annual publication of the *Goose Specialist Group Bulletin* and *Seaduck Specialist Group Bulletin* has provided a clear focus for the activities of these two groups. The Swan, Duck and Threatened Waterfowl Specialist Groups also produce high quality bulletins at regular intervals; most of these bulletins are also available on the internet.

During a workshop in early 2002, a Memorandum of Understanding (MoU) was agreed upon by representatives of each active Specialist Group and Wetlands International. These MoUs aim to strengthen the cooperation and enhance exchange of information between all parties. The Specialist Groups play an important role in providing information and advice on the IWC and the Waterbird Population Estimates (refer 1.4.4 for further information).

1.3 Organisation and development of the AWC

The AWC is an international programme initiated in 1987 to monitor the status of waterbird populations, their distribution and the status of wetlands in Asia. The AWC runs in parallel with other international census programmes for waterbirds in Africa, Europe and the Neotropics under the umbrella of the IWC, coordinated by Wetlands International. The census aims to contribute to the conservation of waterbirds and their wetland habitats by:

- providing the basis for estimates of waterbird populations;
- monitoring changes in waterbird numbers and distribution by regular, standardised counts of representative wetlands;
- improving knowledge of little-known waterbird species and wetland sites;
- identifying and monitoring (networks of) sites that are important for waterbirds in general and, more specifically, identifying and monitoring sites that qualify as Wetlands of International Importance under the Ramsar Convention on Wetlands;
- providing information on the conservation status of waterbird species, for use by international agreements;
- increasing awareness of the importance of waterbirds and their wetland habitats at local, national and international levels.

The AWC also aims to build and strengthen national networks of enthusiastic volunteers and facilitate their training.

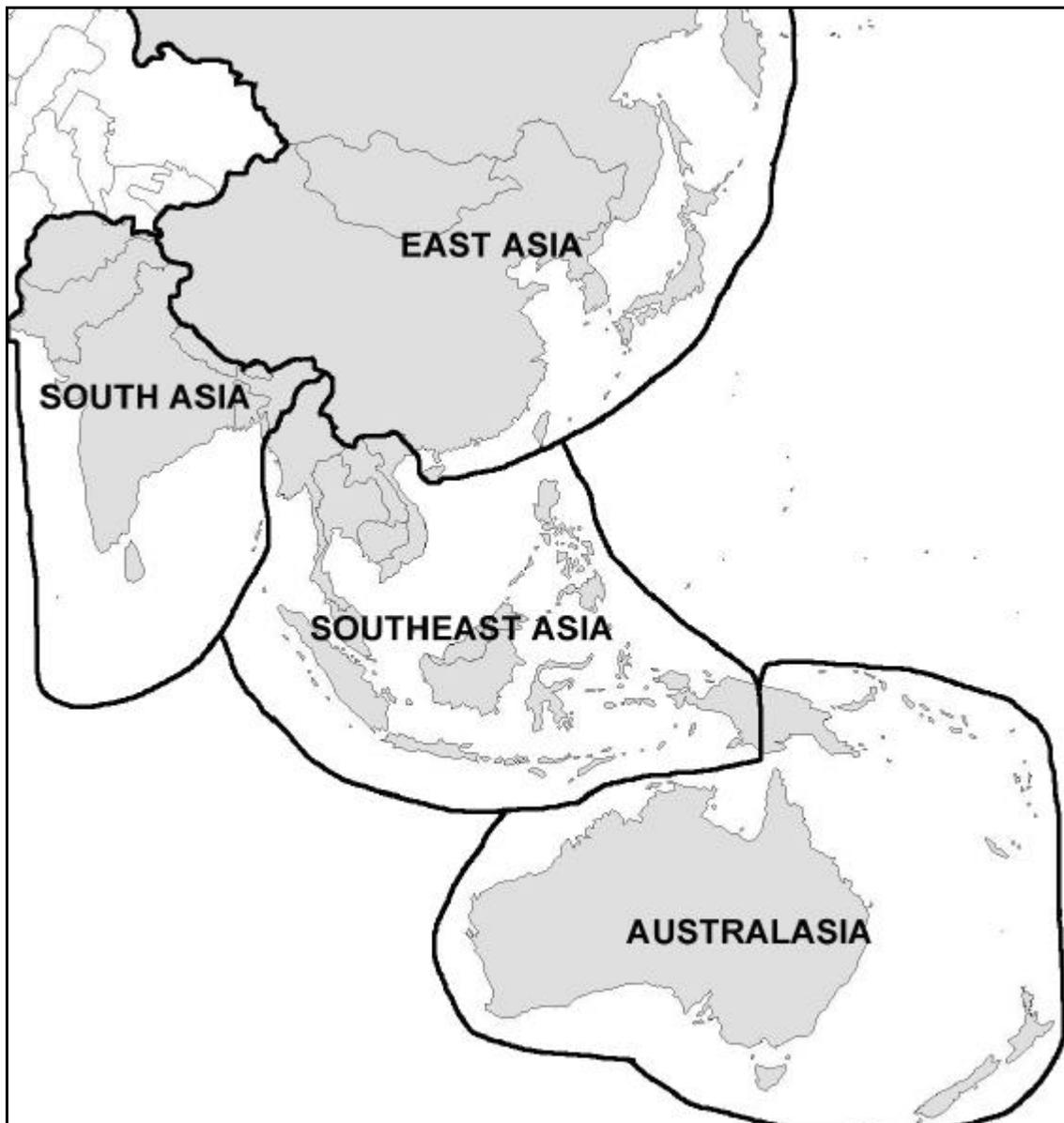
The AWC takes place once a year, during the second and third weeks of January. The census was initiated in 1987 on the Indian subcontinent, and has grown rapidly to cover most countries of South Asia, East Asia and Southeast Asia, as well as Australasia and eastern Russia (see Figure 1).

The census is carried out primarily by volunteers. Each country is normally coordinated by a volunteer National Coordinator (supported by Sub-national/State Coordinators in countries with a large number of participants) who is responsible for sending out count forms, liaising with participants and receiving forms after the census as well as compiling the national report, disseminating it locally, and forwarding count data to the international coordinators (refer to Appendix I for details).

Information collected by the census from 1987 to 1993 was published in a series of annual reports (van der Van 1987, 1988; Scott and Rose 1989; Perennou *et al.* 1990; Perennou and Mundkur 1991, 1992; Mundkur and Taylor 1993). In addition to these annual reports, results from the years 1987 to 1991 were analysed to define species distribution and to identify important wetlands in a comprehensive report by Perennou *et al.* (1994). The data for 1994, 1995 and 1996 were compiled in a three-year report by Lopez and Mundkur (1997).

Over the last 15 years, the AWC has established itself well in certain countries and regions, having achieved its objectives of monitoring waterbird populations in, for example, Hong Kong, the Republic of Korea, Japan and Taiwan, where the census has been conducted every year with consistent coverage of a large proportion of wetland sites. However, in some countries, e.g., Bhutan, Lao PDR (Laos), Democratic People's Republic of Korea, Mongolia and Papua New Guinea, the census has been conducted only occasionally, with data provided by individual counters. Therefore the census needs to be developed further in order to achieve its aims of undertaking counts consistently at wetlands.

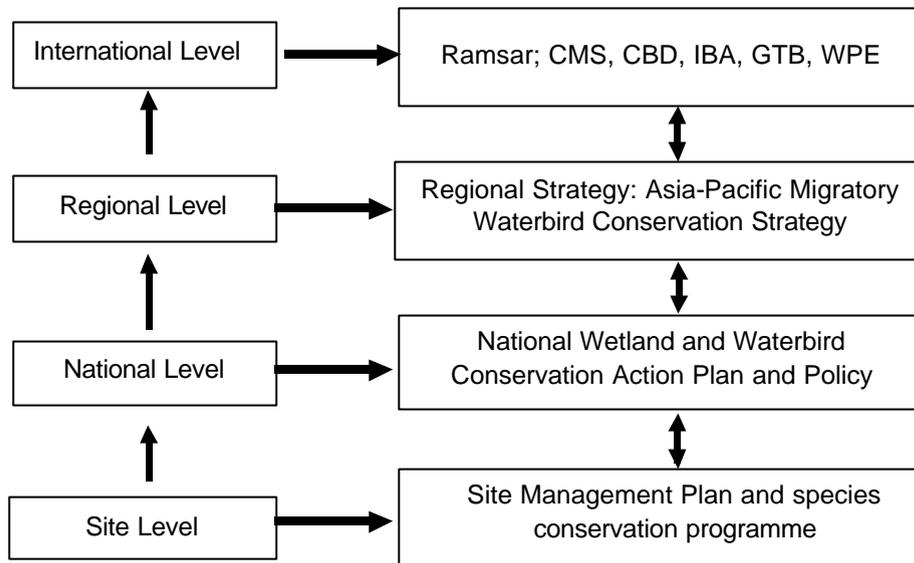
Figure 1: Regional coverage of the AWC



1.4 How the results of the AWC are used

The activities undertaken by the AWC and the data generated strongly support and contribute to a range of waterbird and wetland management and conservation activities on a scale from local to global (Figure 2).

Figure 2: The AWC's contribution to national and international conservation frameworks



Key: Ramsar – Convention on Wetlands, CMS – Convention on Migratory Species, CBD – Convention on Biological Diversity, IBA – BirdLife International’s *Important Bird Area* Programme, GTB – IUCN/BirdLife International’s *Globally Threatened Birds Update* programme, WPE – Wetlands International’s *Waterbird Population Estimates* programme.

1.4.1 Conservation of waterbirds and wetlands

Waterbirds are one of the key attributes of the biodiversity of many wetlands, and waterbird counts form one of several elements that are used to identify important wetlands. It is widely accepted that the number of waterbirds using a wetland site is a good indicator of that site’s biological importance (e.g. Scott 1980), and waterbird counts have been especially influential in the identification of important wetlands and their conservation. Bird counts can also provide vital evidence for the protection of wetlands, should they become threatened. Kushlan (1993) assessed the value of waterbirds as bio-indicators of wetland change, and one of his conclusions was that “population level data show special promise as sentinel bio-indicators”.

1.4.2 The Convention on Wetlands (The Ramsar Convention)

www.ramsar.org

The Convention on Wetlands (Ramsar, Iran, 1971) promotes the conservation of wetlands worldwide. The Ramsar Convention has grown rapidly since its establishment in 1971 and, as at 31 December 2003, 138 countries had become signatories to the Convention. Contracting Parties are required “to recognise and conserve any internationally important wetlands”, by designating them as Ramsar sites; the Ramsar List of wetlands of international importance comprised 1,313 sites worldwide covering more than 110 million hectares (as at 31 December 2003). The majority of sites are designated based on their importance for waterbirds according to data generated through the AWC and similar programmes.

The Convention has adopted eight criteria for identifying wetlands of international importance, three of which relate to waterbirds:

Criterion 2: A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.

Criterion 5: A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds.

Criterion 6: A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.

The Ramsar Convention encourages Contracting Parties to monitor waterbirds regularly as the basis for the identification of wetlands of international importance. More information about the Ramsar List and descriptions of the Ramsar sites are available at www.wetlands.org/RDB/Directory.html.

During the 6th meeting of the Conference of the Contracting Parties (COP), held in Brisbane, Australia in 1996, the Parties passed a resolution recognising the value of monitoring of waterbirds (*Res. VI.4: Adoption of population estimates for operation of the specific criteria based on waterfowl*, refer to Appendix II for full text). The resolution urged Wetlands International to continue to develop the International Waterfowl Census and to enhance its global coverage as an important basis for the application of Ramsar Criteria on waterbirds.

Subsequently, at the 8th COP, held in Valencia, Spain, in 2002, the Parties reiterated the value of using data collected through the International Waterbird Census and other programmes as a basis to generate and update the population estimates on waterbirds and identify sites of international importance (*Res. VIII.38: Waterbird population estimates and the identification and designation of Wetlands of International Importance*, refer to Appendix III for full text). The Contracting Parties further requested Wetlands International to regularly update the best available waterbird population estimates at each of their triennial conferences, and, every nine years, to revise the 1% thresholds for each waterbird population (see 1.4.4 below).

The *Ramsar Strategic Plan 2003-2008* identified as a priority the need to “Promote and disseminate research into the population dynamics and sustainable harvesting of wetland dependent species, especially migratory waterbirds” (operational objective 12.2.4, refer to http://ramsar.org/key_res_viii_25_e.htm for details). The AWC provides a mechanism to generate information on the population dynamics of migratory waterbirds on annual basis.

1.4.3 The Convention on Migratory Species (CMS)

www.unep-wcmc.org/cms

The Convention on the Conservation of Migratory Species of Wild Animals (CMS, Bonn, 1983) provides an international framework for the conservation of migratory species, which include many species of waterbirds. The Convention requires the Contracting Parties to promote, cooperate with and support research relating to migratory species to avoid any migratory species becoming endangered.

The waterbird monitoring data generated by the AWC provide a valuable information base for the Convention and its Contracting Parties to decide on a change in conservation status of a species of waterbird and whether it should be added to or removed from the lists of species of concern of the Convention (CMS Appendices I and II), which determines whether there is a need to take additional action to protect the species (or population). The full list of species covered by the Appendices is available on the CMS website.

1.4.4 Waterbird Population Estimates (WPE)

www.wetlands.org/IWC/WPEnote.htm

Wetlands International collates information on the status of the populations of waterbirds around the world and produces *Waterbird Population Estimates*; which forms the basis for the identification of international sites based on the 1% criterion of the Ramsar Convention and the species on the CMS Appendices (see 1.4.2 and 1.4.3 above).

The third edition of the WPE was published in 2002 (Wetlands International 2002b). It identifies 697 populations in Asia and notes the lack of population trends for 60% of these; for populations with trend information, 59% are decreasing, 23% are stable and only 16% are increasing. It calls for collection of new information, recognising the absence of updated and reliable estimates for a high proportion of Asian species.

The wealth of data collected through the AWC serves as a basis of collating and evaluating information on waterbird populations and trends for inclusion in the WPE.

1.4.5 Asia-Pacific Migratory Waterbird Conservation Strategy (APMWCS)

www.wetlands.org/IWC/awc/waterbirdstrategy

The APMWCS 1996–2000, which serves as an international cooperative conservation initiative for waterbirds and wetlands in the Asia-Pacific region, was launched in 1996 with the core support of the Ministry of the Environment Japan (formerly Environment Agency of Japan), the Australian Government's Department of the Environment and Heritage (formerly Environment Australia) and involvement of the other government agencies, wetland managers, Ramsar Convention, CMS, non-government organisations and technical experts in the region. The Strategy was updated for 2001–2005 following the successful implementation of the first phase of the Strategy.

Under the APMWCS, action plans have been developed for the three flagship species groups, namely, *Action Plan for the Conservation of Migratory Anatidae in the East Asian Flyway*, *Action Plan for the Conservation of Migratory Cranes in the North East Asian Flyway*, and *Action Plan for the Conservation of Migratory Shorebirds in the East Asian – Australasian Flyway*. The need for waterbird monitoring has been listed as a priority action in all of these Action Plans. Such actions are also required for identifying internationally important sites to enable their inclusion in the three Site Networks established under the three Action Plans.

In addition, an *Action Plan for Migratory Waterbirds in the Central Asian Flyway* currently under development by Wetlands International also identifies the monitoring of waterbirds and wetlands as a high priority for the region.

The APMWCS acknowledges the importance of monitoring waterbirds and their habitats as a basis for promoting and enabling waterbird conservation and encourages the implementation of further activities (Asia-Pacific Migratory Waterbird Conservation Committee 2001). The AWC has proven to serve as an ideal framework to respond to these monitoring needs and to promote conservation awareness for waterbirds and wetlands in the region. The monitoring activities also serve to strengthen the information base of the internationally important sites in the Site Networks and to identify new sites for incorporation into the Site Networks.

1.4.6 BirdLife International's Important Bird Area (IBA) Programme

www.birdlife.net/action/science/sites/index.html

BirdLife International's IBA Programme is a worldwide initiative aimed at identifying, documenting and protecting a network of sites critical for the conservation of the world's birds. These sites are selected as IBAs under one or more of the following four global IBA criteria: A1: a site regularly holds significant numbers of a globally threatened species, or other species of global conservation concern; A2: a site holds a significant component of the restricted-range species whose breeding distributions define an Endemic Bird Area (EBA) or Secondary Area (SA); A3: a site holds a significant component of the group of species whose distributions are largely or wholly confined to one biome; A4: a site holds on a regular basis >1% of the biogeographic population of a congregatory waterbird, seabird or terrestrial species, or more than 20,000 waterbirds or seabirds of one or more species. To date, some 7,000 IBAs have been identified in 130 nations worldwide. A significant proportion of the wetland sites covered in the AWC meet criterion A4, and the AWC counts are the primary source of data to support the identification of many of these sites as IBAs and their monitoring on an annual basis.

1.4.7 Globally threatened waterbirds

www.birdlife.net/action/science/species/globally_tbu/gtbu_main.html

BirdLife International leads on the update of the status of the world's threatened birds. It is the official Red Listing Authority on birds and supplies this information for the IUCN (World Conservation Union) Red List of Threatened Species. It collates information from a global network of experts and from published and unpublished sources to assess each species's extinction risk using standard quantitative. The four main types of criteria used to identify threatened species are: (a) rapid population reduction, (b) small range and fragmented, declining or fluctuation, (c) small population and declining, and (d) very small population or range. Species are assigned a Red List Category based on the standard IUCN Red List Categories (1994) as follows: Extinct (EX), Extinct in the Wild (EW), Critically Endangered (CR), Endangered (EN), Vulnerable (VU), three categories of Lower Risk (Conservation Dependent (cd), Near Threatened (nt) and Least Concern (lc)) and Data Deficient (DD); refer to Appendix III for further information.

The detailed, long-term monitoring of waterbirds at wetlands, one of the world's most damaged and vulnerable groups of habitats, has already provided the basis for much important work by conservation practitioners at local, national and international levels. Important (and perhaps the most urgent) targets of conservation action are species in danger of extinction, listed in the publications *Threatened Birds of the World* (BirdLife International 2000), *Threatened Birds of Asia* (BirdLife International 2001) and *Saving Asia's Threatened Birds* (BirdLife International 2003), which are based on the Red List criteria. The AWC data have been used extensively to update the status of the globally threatened waterbirds in Asia.

Whilst the AWC is able to provide information that is useful for the conservation of these threatened species, its main aim is to monitor the trends of more numerous and widespread species for which changes in status and distribution would otherwise go unnoticed.

2. Methods

2.1 Geographic and temporal coverage

The AWC takes place annually, during the second and third weeks of January. The geographic coverage of the AWC includes the following three main regions: South Asia (Afghanistan, Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan and Sri Lanka), Southeast Asia (Brunei Darussalam, Cambodia, Timor Leste, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam) and East Asia (mainland China, Taiwan, Hong Kong, Macao, Japan, Democratic People's Republic of Korea, Republic of Korea and Mongolia). In mainland China, Hong Kong and Taiwan the AWC has been coordinated separately, therefore the information has been presented separately in this report. The census also covers Australasia (Australia, New Zealand and Papua New Guinea) and eastern Russia.

The waterbird data presented in this report cover the years 1997, 1998, 1999, 2000 and 2001. Information was not received from Afghanistan, Democratic People's Republic of Korea, Macao, the Maldives, New Zealand, Papua New Guinea and Timor Leste.

Western Asia, covering the Arabian Peninsula, Central Asian Republics and Iran, lies on the crossroads of two flyways: the Central Asian Flyway and the East African–Eurasian Flyway. This region is largely covered under the African–Eurasian Waterbird Agreement (AEWA), and information from these countries is included in the reports of the Western Palearctic and Southwest Asian Waterbird Census (see e.g. Gilissen *et al.* 2002).

2.2 Wetland sites and species coverage

The AWC sites represent all types of natural and man-made wetlands, including rivers, lakes, reservoirs, ponds, freshwater swamps, tidal mudflats, coral reefs, rice fields, sewage farms, etc.

All waterbird groups encountered in the region as recognised by the Ramsar Convention are covered by the census (grebes, cormorants, pelicans, herons, egrets, storks, ibises, spoonbills, flamingos, ducks, geese, swans, cranes, rails, jacanas, shorebirds, gulls and terns). In addition, counts of wetland-dependent raptors (birds of prey) that are regularly encountered at wetlands have been included as several of these species live largely on the food resources provided by these habitats.

The sequence and nomenclature of species used in this report largely follow the *Waterbird Population Estimates – Third Edition* (Wetlands International 2002b) and the *Handbook of the Birds of the World* (del Hoyo *et al.* 1992 and 1996) for the sequence of families. A thorough upgrade and standardisation of the species list of the IWC towards a common standard, set by the *Handbook of the Birds of the World* (del Hoyo *et al.* 1992 and 1996) will be undertaken in the near future.

The taxonomy of “large grey-backed gulls” in the region, i.e. *Larus argentatus*, *L. cachinnans*, *L. heuglini* and *L. fuscus*, is an ornithological problem that remains to be solved. AWC counters and National Coordinators have different approaches to the identification of these gulls at (sub) species level, and data submitted to Wetlands International may contain different names for the same taxon. For the purposes of the AWC, a taxon is assigned to one of the four species if its range does not overlap with that of another of these species. Where ranges overlap and identification remains unclear, the taxon is assigned to a “complex” of the two (or more) species.

The IUCN Red List categories (1994) used in this report follow the categories outlined in the *Threatened Birds of Asia* by BirdLife International (2001), as introduced in Section 1.4.7 with additional details provided in Appendix III. The IUCN updated the Red List Categories in 2001, and the category Lower Risk (LR) and Conservation Dependent (cd) is no longer used (IUCN 2001). However, because the globally threatened bird species list had not been updated since the publication of the *Threatened Birds of Asia* (BirdLife International 2001), the IUCN (1994) categories are used in this AWC publication.

2.3 Data collection and management

2.3.1 Participation and coordination

The AWC is carried out primarily by volunteers from all walks of life: university and school staff and students, nature club members, amateur and professional ornithologists, government and non-governmental agencies related to forestry, wildlife or wetland conservation and others. The major contributors to waterbird monitoring participate because they find counting birds enjoyable and rewarding. In most countries the census is coordinated professionally, and in many countries professionals also carry out much of the fieldwork.

On a national level, the census is coordinated by one or more coordinators on a voluntary basis (refer to Appendix I for list of coordinators). In countries where the coverage is poor and there is no coordinator, information is sent directly to Wetlands International by the field counters.

2.3.2 Data collection and maintenance

One of the most important principles in the AWC methodology is standardisation, so that the same sites are covered in the same way each January, maximising the validity of comparisons of counts from site to site and from year to year. Standardisation is ensured by the use of rigorously designed recording forms and a network of national coordinators who liaise with counters and ensure that optimum coverage is maintained. At the national level, responsibility is often divided between a number of sub-national/state coordinators. At large sites, which are divided into sub-sites, good organisation and team work play an important part in the success of counts.

The annual waterbird count data and site information are recorded on standardised AWC Count and Site Forms by a network of participants. A single count is made at each site. The information is sent to the coordinators and is forwarded to Wetlands International after it has been checked, collated and an annual country report has been prepared. This information is entered into standard databases using customised Microsoft Access 97 programmes at the Wetlands International office in Malaysia.

2.3.3 Data checking and quality of information

The accuracy of the census depends on accurate reporting of species and numbers by the participants. As the information is being collected by a variety of volunteers with different levels of skills in identifying species and making counts, it is likely that there will be a few errors in the data supplied. As the coordinators are aware of local conditions, they need to check the returns and request additional verification where counts of birds appear unusually large, threatened species are reported in greater numbers than published information indicates are likely, or species are reported outside their normal range.

Wetlands International makes every attempt to verify the data received from coordinators and participants, in case it is ambiguous. In some cases, where unusual records have been received (threatened species, vagrants or large numbers) and where no supporting information was forthcoming from coordinators or participants, Wetlands International will decide whether the record could be attributable to a transcription error on the form or for some other reason, and these records are either included in the 'unidentified waterbird' category or deleted. For this reason, there may be a discrepancy between the information published in this report and other nationally generated outputs.

Participants are urged to authenticate all new and unusual observations made during the census with relevant national organisations and to publish them in appropriate national and/or regional ornithological publications.

2.4 Counting and reporting methods

Participants are provided with basic instructions on methods and tips to participate in the census and undertake the counts. They are requested to:

- cover the most important waterbird sites;

- visit all sites that were visited in the previous year, and use the same site names for them;
- count or estimate the number of all waterbirds present;
- give a figure for the number of individuals of each species present. Terms such as “hundreds” and “thousands” are not valid;
- avoid giving ranges, e.g. 100–200, and instead provide the figure considered to be the best minimum estimate;
- where waterbirds cannot be identified to species level, list them under their group (e.g. unidentified egrets);
- if no waterbirds are found at a wetland which is known to have held significant numbers of birds in the past, complete a census form nevertheless and note that no birds were present. If possible, give the reason for the absence of birds (e.g. wetland completely dry, wetland frozen over or site very disturbed by hunters);
- avoid duplication of effort – occasionally two or more censuses are conducted at the same site on different dates. Whenever possible, counters should liaise with one other and agree on ONE census form that gives the results of their combined efforts;
- double check all the entries on the count forms. In particular, check to see that the figures are not inadvertently inserted on the wrong line, and that species’ names are not confused;
- if any species of waterbird which is not listed on the count form for the region has been observed, they are required to add it in the space provided at the end of the list and give additional information on its identification in the *Comments* section of the form;
- write as clearly as possible and be sure to give the counter’s full name and address on the Waterbird Count Form;
- in the event that the counter feels that the wetland that has been counted is under severe threat of destruction or degradation, they need to inform the National Coordinator and develop a plan of action to raise awareness of the importance of the site and to conserve it. The National Coordinator may be able to advise whether international action involving Wetlands International and others is necessary.

2.5 Interpretation of waterbird counts

The following section is extracted verbatim from the latest publication on the waterbird census for the western Palearctic and southwest Asia (Gilissen *et al.* 2002).

Waterbird counts are long established and internationally recognised as an objective and scientifically valid method of assessing the sizes of waterbird populations and the importance of wetlands, but the interpretation of waterbird count data nevertheless requires considerable caution.

2.5.1 Counting errors

Counting birds, as is the case with all scientific recording methods, is subject to error. Experienced counters are able to enumerate high numbers of birds under pressure of time with considerable accuracy. Prater (1979) conducted experiments with observers viewing photographs of flocks of flying birds and concluded that there may be a tendency for observers counting flocks of between 100 and 1,000 birds to under-estimate slightly (on average, 8%), and for counts of bigger flocks of a few thousand upward to be slightly over-estimated. Rappoldt *et al.* (1985) compared estimated numbers with real flock sizes and concluded that, on average, counting errors cancel one another out and that estimates are usually correct. Counting errors can be considerable and Rappoldt *et al.* (1985) reported average counting errors of waders in flight of 17%, and of birds concentrated densely in roosts of up to 37%. Summaries of count data at national and international levels often comprise estimates made at hundreds, even thousands of sites, where it is reasonable to assume that random counting errors to some extent cancel one another out. Research on counting errors has been minimal, and it would be valuable to conduct more detailed experiments with counters of varying experience.

The method of counting has a big influence on the accuracy of species identification and the recorded numbers. Aerial and boat surveys on big wetlands are generally limited by the inability to identify big or mixed flocks of birds, due to disturbance and the distance from the flocks.

2.5.2 Factors which cause under-estimation

The behaviour of some species makes them difficult to count. Snipes and rails, for example, are inclined to skulk in dense vegetation and a high proportion may be missed by normal counting methods. Some species habitually feed at non-wetland sites; geese, swans, Northern Lapwing and Ruff are conspicuous examples in Asia. Other waterbird species, for example divers and seaducks e.g. *Melanitta* species, *Somateria* species, spend a lot of time far out at sea beyond the range of telescopes, or, if feeding, remain much of the time below the water surface. At large tidal sites, unless the areas used by roosting waterbirds, particularly shorebirds or waders, are known, birds are easily missed at high tide. If the roosts are known and accessible, however, high tide (or during the incoming tide) is often the best time to count such sites.

Migratory waterbirds pass through many wetlands *en route* to their breeding or non-breeding (wintering) grounds and although, as a result of this turnover, the number of birds present at any one time may never exceed 20,000 birds or 1% of a population, the wetland may still be supporting internationally important numbers of birds. Davidson *et al.* (1991) reviewed the question of turnover at individual estuaries in Britain and concluded that "in general, a larger, and sometimes a very much larger, proportion of each waterfowl population than is apparent at any one time depends on each estuary in the network used during the non-breeding season." And that "Overall the implication is that many estuaries which fall below the 1% criterion on the basis of peak monthly counts alone, in reality support more than 1% of the relevant populations during the course of a year and so will qualify as nationally or internationally important." One reason why IWC concentrates on counts made in the month of January is to minimise the effects on the counts of turnover, since this is the time of least between-site movement by most waterbird species in the northern latitudes. Close international synchronisation of counts also ensures that the effects of turnover are minimised.

On a national level, organisers and observers decide which sites to count on the basis of their perceived importance for waterbirds and on practical factors such as accessibility. Inaccessible sites and those which are perceived to be unimportant for waterbirds thus produce an unknown element in the national waterbird totals each season. Moser (1987) was able to calculate upward revisions of most species of shorebird spending the non-breeding period in the UK following a major survey which covered almost the entire coastline. Similar analysis of calculating waterbird numbers based on complete counts of wetlands in countries in Asia would be useful to provide more realistic population estimates. Achieving such comprehensive coverage would require much larger networks of participants in most countries; unless extra efforts to build local capacity is greatly strengthened and the resource base to support surveys to all wetlands is secured, meeting such a target is unlikely within the next decade.

These factors mean that counts may be under-estimates of the number of birds using a site, and this is why maximum counts are often used when assessing the importance of a site or the size of a waterbird population. Factors causing under-estimation can often be assumed to be constant over a range of sites and years, so that while under-estimates may occur, comparisons between sites and years usually remain valid.

2.5.3 Delimitation of site boundaries

Another factor which can cause problems when interpreting waterbird count data is the delimitation of site boundaries. Sites such as large lakes and estuaries are usually self-contained and have fairly obvious physical boundaries, but in some areas the best boundaries to use are not clear-cut. Vinogradov (1996) described an immense network of wetlands in Siberia where the delimitation of 'sites' is not very meaningful. This is an extreme example, but rivers, stretches of open coast, and groups of small lakes are more frequently encountered examples of the type of area where site boundaries may be difficult to define. Coverage of these sites may not have been the same in different years, but it can be difficult to discern at what point in time changes in coverage occurred. Political boundaries often follow rivers and lakes, and this can complicate organisation and reporting of counts at the sites affected, resulting in partial or disjointed coverage, or double counting. The encouragement of mapping and careful keeping of records of count site boundaries have in recent years led to improvements in site definition which will continue in future. A need still exists to establish and maintain inventories (including detailed maps) of the geographical units which form the basis of every national waterbird monitoring scheme. A project on this issue titled "The International Waterbird Census: Waterbird Count Site Delimitation and Guidelines for National Coordinators", was carried out (Van Ledden 2002), although more work is required to provide the guidance required by participants and coordinators.

Inconsistent use of site names by counters results in the loss of valuable data every season. Changes in counters and organisers and transliterations into English from other languages and scripts can result in the site appearing

several times in the database under slightly different names. It is incumbent on participants and coordinators to ensure consistency in use of site names. For the purpose of this report, the authors have attempted to identify such sites in consultation with coordinators.

The problems with obtaining consistent site coverage and consistent site definition are the most important threats to the scientific quality of the IWC data. Wetlands International is developing plans to further extend and standardise the geographical coverage and improve the data management, for instance through use of a GIS.

2.6 Methods used in the analyses

2.6.1 Species and site totals

Species totals have been used for analysing the total population of each species of each country and region. For summarising the count totals, data collected in January were used in the vast majority of cases, but occasionally only data from December and February were available. In these cases counts from December and February are included in the results.

Site totals have been used for identification of internationally important wetlands for waterbirds based on Criterion 5 ($\geq 20,000$ waterbirds) of the Ramsar Convention (Table 2). As the AWC is carried out during January, the middle of the boreal winter, some sites that are very important in the migration period and breeding season but less important in January might be undervalued if AWC data alone are used.

2.6.2 Coverage and distribution maps

Maps of AWC site coverage and species distribution are presented to illustrate information collected during the annual counts. For most sites, geographical (central) coordinates are included in the database and can be used for plotting count results on maps using a mapping programme (Maptitude). However, for those sites for which coordinates are not or are only partially available, it is not possible to plot information on a map. The site coverage maps are produced to show which sites were counted in 1997, 1998, 1999, 2000 and 2001. The dots on the species distribution maps represent the maximum count at each site over a period of five years, so the distribution shown is generally the result of records accumulated over five counts, except for those sites with fewer than five counts. Thus, the maps show a 'maximum' distribution, without specific information on distribution in separate years.

On all the maps, countries within the region with data available from 1997 to 2001 are shown in white, countries with no data available from 1997 to 2001 are in light grey, countries outside the region are in dark grey and coastal waters and marine areas are also in light grey.

2.6.3 Information on uses of and threats to wetlands

Data on uses and threats at sites were collected on the standardized AWC Count Forms; this information is presented in the country tables. A summary of the uses and threats reported at wetlands is also provided in the text relating to each country/region.

3. Results

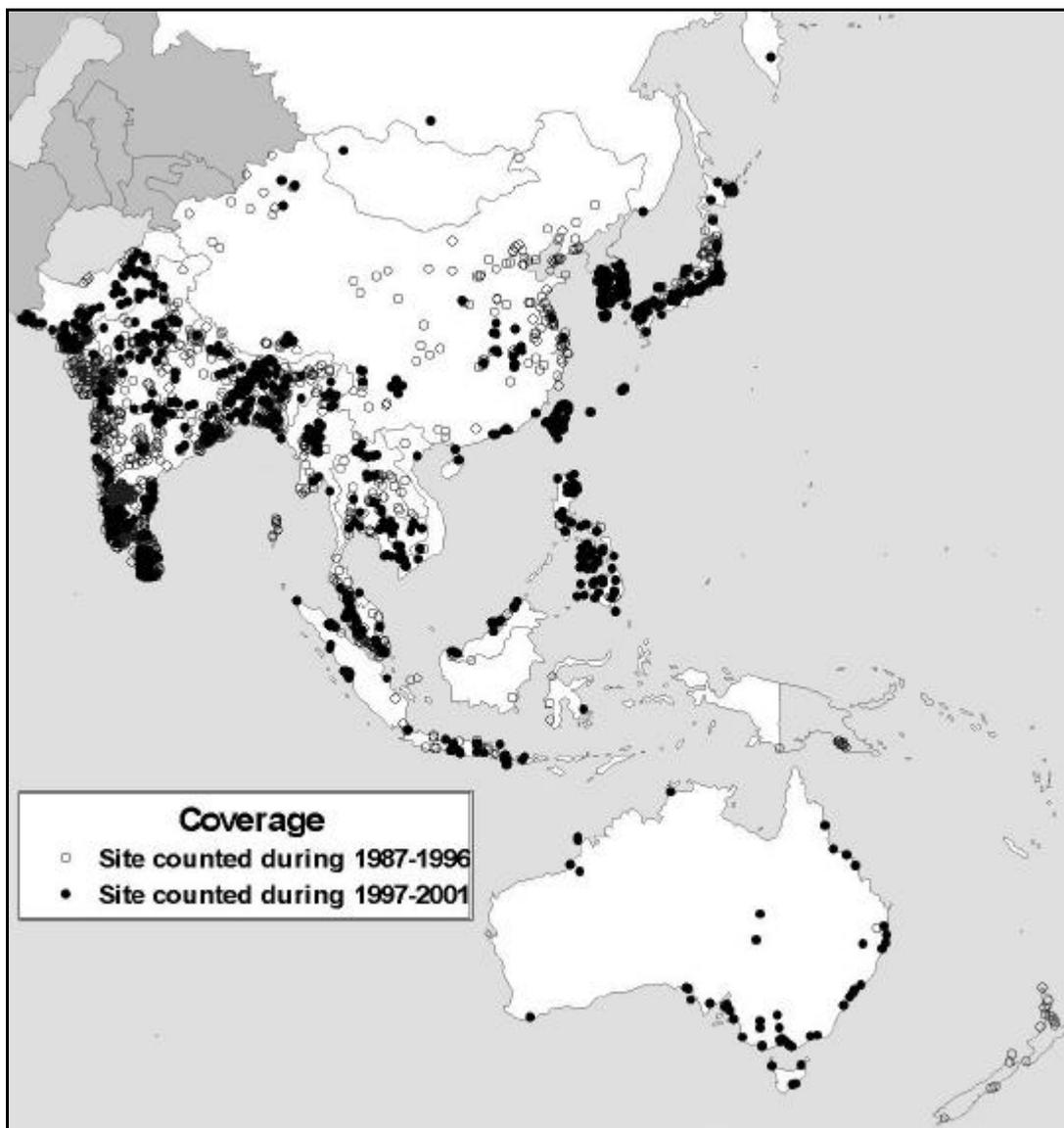
3.1 Overview

3.1.1 Geographic and site coverage

Since the AWC began in 1987, a total of more than 5,700 sites from 25 countries have been counted at least once. During 1997-2001, a total of 22 countries participated in the census and 1,392 sites were covered at least once (Figures 3, 4 and Table 1). Data were received from Mongolia and eastern Russia for the first time. Of the sites covered, a total of 61 have been designated as internationally important sites under the Ramsar Convention (as at 31 December 2003), 32 as Migratory Waterbird Network Sites in the East Asian–Australasian Flyway (as at 31 December 2003) and 43 Important Bird Areas (as stated in BirdLife International's IBA publications for Cambodia, Laos, the Philippines, Taiwan and Vietnam, as at 31 December 2003).

Figure 3: Sites covered by the AWC, 1987–2001

Geographical coordinates were unavailable for 1,200 sites during the period 1987-1996: for the period 1997-2001 coordinates were unavailable for only 20 sites.



Total numbers of waterbirds counted (including subspecies, birds not identified to the species level and non-native species) were 2,223,805 (314 sites), 1,794,280 (385 sites), 3,266,649 (625 sites), 3,233,096 (594 sites) and 4,571,522 (770 sites) in the years 1997, 1998, 1999, 2000 and 2001 respectively. The differences in the numbers of waterbirds reported each year are due mainly to inadequate consistency of site coverage or to the fact that some sites that hold large numbers of waterbirds were not covered every year. For example, in India, only 34, 65 and 17 sites were counted respectively in 1997, 1998 and 2000, but 178 and 194 sites were counted in 1999 and 2001. Chilika Lake in India was counted once only, in 2001, with a large number of birds present (781,739).

As the levels of development of the AWC in each country and region differ, the site coverage also varies. Coverage and count results in Bangladesh, the Philippines, Singapore, Hong Kong, Taiwan, Japan and Republic of Korea during this period were generally very good. Coverage in India, Pakistan, Sri Lanka, Malaysia and mainland China had dropped since peak numbers of sites were covered in the late 1980s and early 1990s.

Information provided in the report relates primarily to counts of waterbirds at wetland sites and is a combination of data provided by coordinators and participants, and supplemented by counts extracted from published sources where census information was not provided. For some countries and a majority of sites from other countries, information on the extent of coverage of a site during the count, physical conditions (such as, with water present, dry or frozen, and the types and extent of vegetation cover), uses and threats (see notes in Table 2) to the site is incomplete. This is despite the information being sought from participants in the standardized AWC Count and Site Forms promoted for use by the census. As a result, it has not been possible to undertake a comprehensive analysis of this important information; even for the most important sites this information is very patchy (see section 3.1.2). Improved reporting of information on the uses of and threats to count sites is needed in order to provide a more comprehensive mechanism to increase our knowledge base and enable preventive actions to be undertaken in a timely manner through local and international action. Securing this site information in future censuses should be a priority for participants and coordinators.

Figure 4: Number of countries and sites covered by the AWC and total numbers of waterbirds counted, 1987–2001

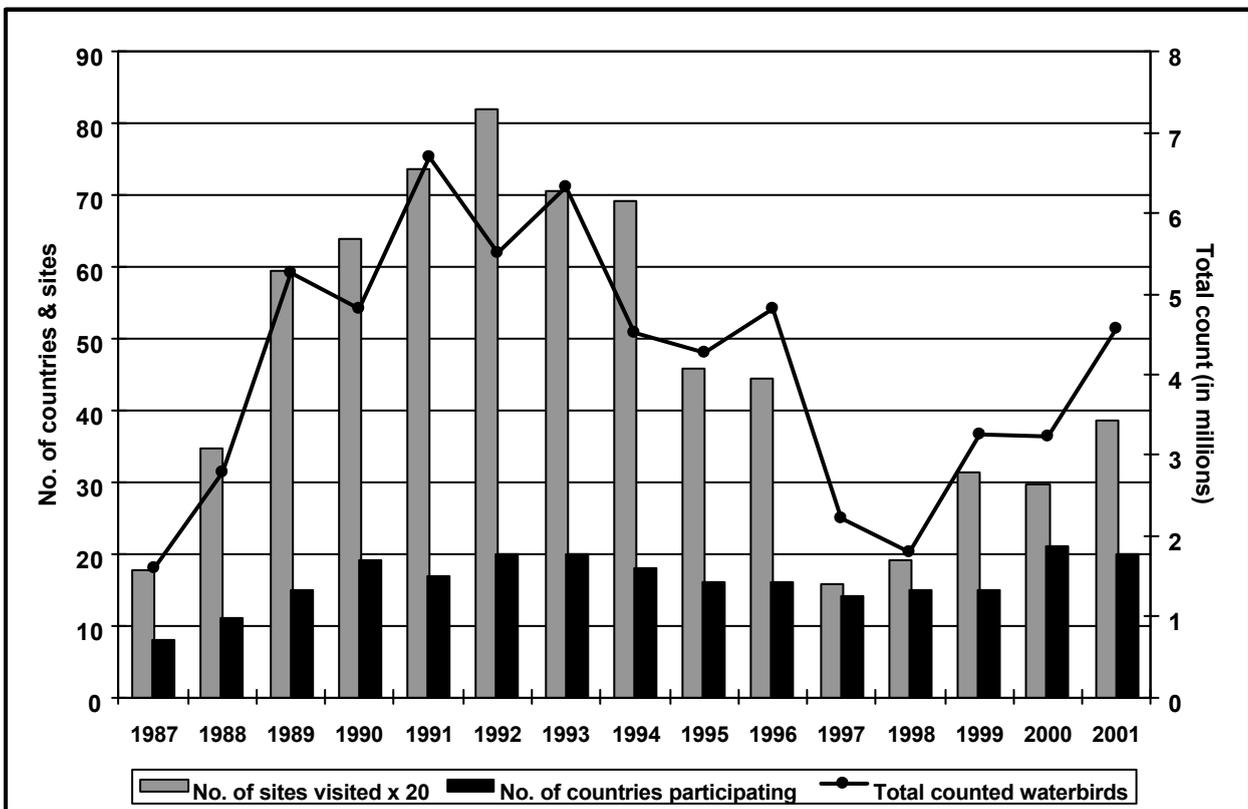


Table 1: Total numbers of sites counted for the AWC, 1987–2001

Country/Region	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Bangladesh	8	12	12	19	35	60	59	42	34	47	6	25	12	13	29
Bhutan		2	4											18	3
India	189	326	650	655	816	776	738	986	577	573	34	65	178	17	194
Nepal	12	10	2	11	8	14	12	7	12	4				12	9
Pakistan	67	147	190	140	176	258	269	31	32	15	42	37	42	42	55
Sri Lanka	67	101	109	115	106	102	64	58	53	42	44	67	53	62	37
South Asia	343	598	967	940	1,141	1,210	1,142	1,124	708	681	126	194	285	164	327
Brunei Darussalam				4	4		4	4	4	4	5	5			
Cambodia						1	10						12	13	11
Indonesia			1	19	8	18	18	16	18	16			47	12	10
Laos			2	4	5	3	2	1						14	1
Malaysia			70	66	108	86	17	10	7	15			20	25	24
Myanmar	5	3	12	17	16	21	21	14	13	3	4	2		10	33
Philippines				22	26	39	44	51			29	32	35	46	40
Singapore				3	12	18	19	15	15	13	10	6	11	10	10
Thailand	1	3	21	26	16	23	16	17	5	9	3	1		7	3
Vietnam		6	2	2		1	4		1	1		1	8	2	2
Southeast Asia	6	12	108	163	195	210	155	128	63	61	51	47	133	139	134
Mainland China		40	12	62	12	75	30	6	14	4	12	18	17	11	7
Hong Kong	7	7	6	6	7	7	10	4	5	4	3	3	3	3	3
Taiwan		26	33	28	32	34		33	30	38	38	40	52	38	40
Japan			53	44	53	47	33	50	44	46	37	41	37	109	112
Democratic People's Republic of Korea				3											
Republic of Korea		11	12	23	22	19	15	10	23	26	22	15	69	100	112
Mongolia														1	
Eastern Russia											2	1	2	1	1
East Asia	7	84	116	166	126	182	88	103	116	118	114	118	180	263	275
Australia						16		21	31	27	23	26	27	28	34
New Zealand						16	20								
Papua New Guinea			8	9	7	5	6								
Australasia			8	9	39	25	27	31	27	23	26	27	28	34	
Total no. of sites	356	694	1,191	1,277	1,471	1,641	1,410	1,382	918	887	314	385	625	594	770

3.1.2 Internationally important waterbird sites

Eighty-two sites have been reported to support more than 20,000 birds (Table 2 and Figure 5), which accounts for about 6% of the total number of sites covered. Of these, 22 sites have been designated as internationally important sites under the Ramsar Convention (listed as at 31 December 2003) and 11 sites are designated under the Migratory Waterbird Site Networks of the East Asian–Australasian region (listed as at 31 December 2003). They account for about 27% and 13% of the total sites counted with more than 20,000 birds. The Republic of Korea, Australia, India, Pakistan and Japan reported the highest number of sites with over 20,000 waterbirds.

Table 2: Sites reporting more than 20,000 waterbirds during the AWC, 1997–2001

Site Name	Province/state	Highest count	Year	Threats ¹	Protection ²	Ramsar Site ³	Network Site ⁴
Australia							
80 Mile Beach	Western Australia	38,236	1997			Yes	
Bellarine Peninsula	Victoria	22,701	1999			Yes	
Broome	Western Australia	29,868	1999				
Coongie Lakes System	South Australia	64,891	1999			Yes	
Gulf St Vincent	South Australia	41,754	2000				
Moreton Bay	Queensland	27,038	1999			Yes	S
Penrice Saltfields	South Australia	31,184	2001				
Port Philip Bay	Victoria	38,709	2001			Yes	S
Price Saltfields	South Australia	22,684	2001				
Shallow Inlet and Corner Inlet	Victoria	38,045	2000			Yes	S
Spencer Gulf	South Australia	38,199	2000				

Site Name	Province/state	Highest count	Year	Threats ¹	Protection ²	Ramsar Site ³	Network Site ⁴
The Coorong	South Australia	69,249	2000			Yes	S
Western District Lakes	Victoria	27,031	2001			Yes	
Western Eyre Peninsula	South Australia	31,853	2000				
Bangladesh							
Eastern Extension of Kalkinir Char	Barisal	22,254	2001		4		
Tangua Haor Complex	Sylhet	25,931	2001		4	Yes	
China							
East Dongting Lake	Hunan	76,486	1999		1	Yes	
Poyang Lake	Jiangxi	353,737	1997		1	Partly	C
Yancheng Nature Reserve	Jiangsu	202,255	2000		1	Yes	C & S
Deep Bay	Hong Kong	67,344	1997		1	Yes	A & S
Ao-Ku	Taiwan	22,758	2001		4		
Szu-Tsao	Taiwan	28,781	1999		4		
India							
Chilika Lake	Orissa	781,739	2001		1	Yes	
Farakka Barrage	West Bengal	89,206	2001		1		
Ganga River at Malda	West Bengal	48,781	1999		1		
Keoladeo National Park	Rajasthan	61,031	1997	3C	1	Yes	
Kole Wetlands	Kerala	120,322	2001	4CDFH	34		
Nandur Madhmeshwar	Maharashtra	21,418	1999	234567BHK	1		
Ousteri Tank	Tamil Nadu	20,245	2001	3567FHL	1		
Pobitora Sanctuary	Assam	55,601	1997	2	1		
Palta Water Works, Barrackpore	West Bengal	52,488	2001	6CDFHK	4		
Patna Bird Sanctuary	Uttar Pradesh	148,426	1999	6DL	1		
Pong Dam Bird Sanctuary	Himachal Pradesh	93,487	2001		1	Yes	
Rengali	Orissa	39,980	2001	2JH	24		
Yamuna River, I.S.B.T. – Nigambodh	Delhi	34,481	2001	23456CDG	1		
Japan							
East Region Of Hakata Bay	Fukuoka	24,867	2001	J	1		
Hamana Lake	Shizuoka	39,945	1997				
Kahokugata (Kawakitagata)	Ishikawa	32,805	1997	5	14		
Kasumiga Ura	Ibaragi	66,762	1998	589GHL	14		
Nakaumi	Shimane & Tottori	81,596	1997	35	1		
Ogawara Lake	Aomori	23,742	1998				
Sanbanse	Chiba	72,344	2000				
Shinji Lake	Shimane	48,694	2000	5GHL	1		
Shiokawa Tideland	Aichi	26,300	1999	58DG	4		
Republic of Korea							
Aewol-Gangjeong Coast	Jeju	32,106	1999				
Asan Bay	Gyeonggi	121,261	1997		4		
Bunam Reservoir	Chungnam	30,497	1999				
Cheolwon Basin	Gangwon	42,865	1999		1		C
Cheongho Reservoir	Jeonbuk	25,628	2000				
Cheonsu Bay	Chungnam	192,885	1997		1		A
Daeho Lake	Chungnam	46,958	1998		4		
Dongjin (Tongjin) River Estuary	Jeonbuk	85,424	2000				S
Dongrim Reservoir	Jeonbuk	156,243	2001				
Ganwol Reservoir	Chungnam	75,701	2000				
Geum (Kum) River Estuary	Chungnam	43,135	1999				
Geum (Kum) River Reservoir	Chungnam	75,753	1997		4		
Geumho Reservoir	Jeonnam	64,665	1999				
Gocheonam Reservoir	Jeonnam	204,658	1999				
Han River (Haengju Bridge – Paland Dam)	Gyeonggi	24,960	1999		4		
Han River Estuary	Gyeonggi	20,386	1997		1		C
Mangyung River Estuary	Jeonbuk	89,401	2001				
Mankyung and Tongjin Estuary	Jeonbuk	57,466	1997		4		
Nakdong Estuary	Busan	30,261	2001		1		
Sapkyo Lake	Chungnam	21,206	2000				
Siwha Reservoir	Gyeonggi	131,942	2000				
Yedang Reservoir	Chungnam	26,965	2000		4		
Youngsan Reservoir (Estuary)	Jeonnam	129,616	2000				
Myanmar							
Indaw-Gyi Lake	Kachin	23,112	1997	46FG	2		
Pakistan							
Chashma Barrage Reservoir	Punjab/N.W.F.P	89,705	1997	H	1	Yes	
Haleji Lake	Sindh Province	68,412	2000	2357GL	1	Yes	

Site Name	Province/state	Highest count	Year	Threats ¹	Protection ²	Ramsar Site ³	Network Site ⁴
Indus Waterfowl Refuge	N.W.F.P.	25,929	2001		1		
Jabho (Jhubo) Lake	Sindh Province	21,098	2001	FH	4	Yes	
Keenjhar (Kinjhar, Kalri) Lake	Sindh Province	38,902	2001	34567HL	1	Yes	
Lungh Lake	Sindh Province	30,602	2001	236CD	1		
Manchar Lake	Sindh Province	32,252	1999	3567BCD	4		
Nur-Ri, Badin	Sindh Province	43,079	2001	FH	4	Yes	
Phoosna (Phoosani)	Sindh Province	23,498	2000	3BH	3		
Sri Lanka							
Bundala Sanctuary	Southern Province	22,658	1997	678G	1	Yes	
Bundala to Yala (excl. Ruhuna NP)	Southern Province	22,889	2000				
Kalametiya – Lunama Sanctuary	Southern Province	45,501	1998	34678CD	14		
Thailand							
Beung Boraphet	Nakhon Sawan	25,835	2000				
Inner Gulf of Thailand		30,836	2000	8ACHI	4		

Notes:

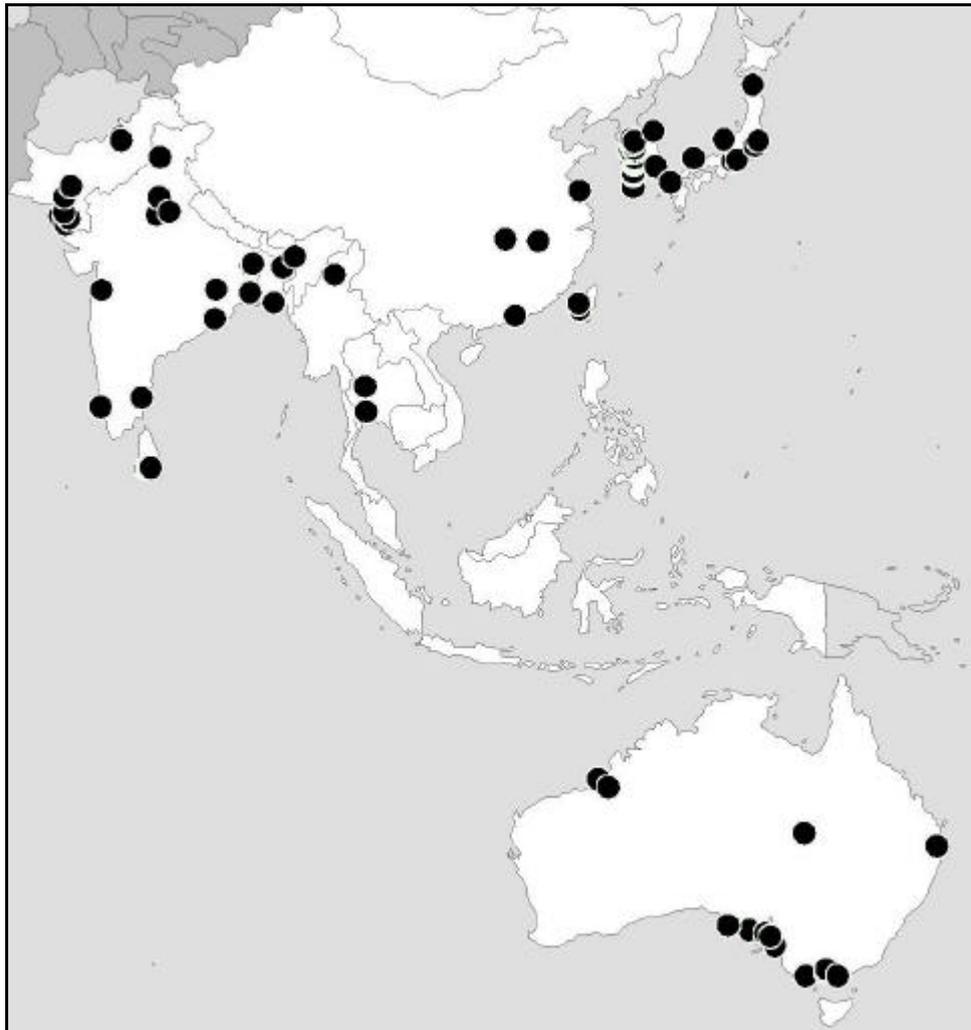
Threats¹: 1 – None, 2 – Sedimentation, 3 – Excessive overgrowth of vegetation, 4 – Cutting/clearance of vegetation, 5 – Eutrophication, 6 – Agriculture along drying margins, 7 – Excessive cattle grazing, 8 – Domestic sewage, 9 – Solid waste, A – Industrial waste, B – Oil pollution, C – Pesticides, D – Fertilizers, E – Mining, F – Hunting/trapping/poaching of birds, G – Small-scale fishing, H – Large-scale fishing, I – Partial reclamation, J – Complete reclamation, K – Dam/barrage construction, L – Tourism/recreation.

Protection²: 1 – By Government, 2 – By Tradition, 3 – Private Ownership, 4 – Unprotected.

Ramsar Site³: Wetland of international importance listed on the Ramsar List (refer to Section 1.4.2 for more information).

Network Site⁴: A – Anatidae Site Network for the East Asian Flyway; C – Crane Site Network for the North East Asian Flyway; S – Shorebird Site Network for the East Asian–Australasian Flyway (refer to Section 1.4.5 for more information).

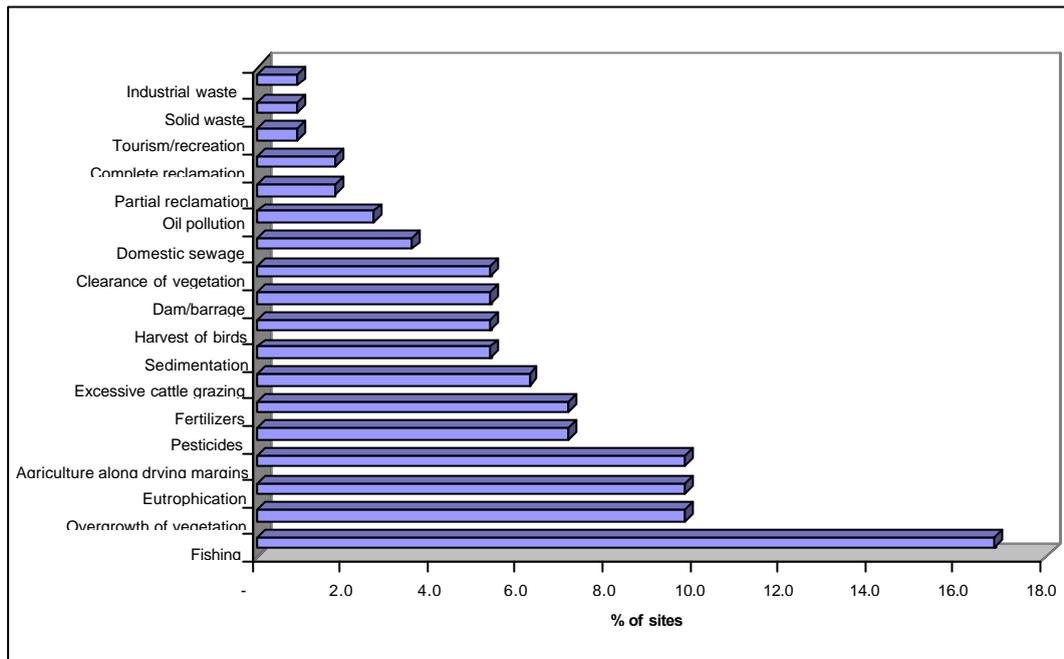
Figure 5: Location of sites reporting more than 20,000 waterbirds during the AWC, 1997–2001



A review of the data on uses of and threats to sites reporting more than 20,000 waterbirds is provided for 27 of the 82 sites (33%) in Table 2, revealing strong anthropogenic influences. Fishing, agriculture at and around the sites and overgrowth of vegetation are reported as the main on-site uses and threats, while eutrophication is a result of actions on site and within the catchments, through, e.g., pollution (domestic sewage, fertilisers, solid wastes, etc.) and excessive siltation (Figure 6). Of concern is the reported partial or complete reclamation of a small proportion of these important sites.

Figure 6: Uses of and threats to sites reporting more than 20,000 waterbirds during the AWC, 1997–2001

Data on uses and threats summarized for 27 of 82 sites (33%) for which data were provided.



3.1.3 Species coverage

Totals of 291 species of waterbirds and 15 species of wetland-dependent raptors were recorded during the AWC from 1997 to 2001 (Table 3). Over 43% of these are restricted to the region covered by the census (126 waterbird species and seven species of wetland-dependent raptors). The highest count totals of species from different waterbird families were as follows: divers - Red-throated Diver (85), grebes - Little Grebe (12,244), cormorants & darters - Little Cormorant (45,361), pelicans - Great White Pelican (7,174), herons, egrets & bitterns - Little Egret (33,836), storks - Asian Openbill (126,114), ibises & spoonbills - Eurasian Spoonbill (19,410), flamingos - Greater Flamingo (14,956), swans, geese & ducks – Mallard (489,652), cranes - Hooded Crane (8,905), rails, gallinules & coots - Common Coot (178,458), finfoots - Masked Finfoot (2), shorebirds - Red-necked Stint (129,242), gulls, terns & skimmers - Black-headed Gull (76,222) and wetland-dependent raptors - Steller's Sea Eagle (497). Maps of the distribution of counts of a selection of 110 species are presented in Section 3.6.

The ten most numerous species were all ducks and Coot: Mallard (489,652 in 2000), Northern Shoveler (259,155 in 2001), Northern Pintail (237,105 in 2001), Baikal Teal (231,482 in 1999), Eurasian Wigeon (207,936 in 2001), Common Teal (194,723 in 2001), Gadwall (188,631 in 2001), Common Coot (178,458 in 2001), Spot-billed Duck (161,494 in 2000) and Tufted Duck (160,280 in 2001).

Of the 291 species of waterbirds and 15 species of wetland-dependent raptors counted by AWC in 1997-2001, a total of 54 species are globally threatened or Lower Risk according to BirdLife International (2001): counts were made of two Critically Endangered species, 11 Endangered species, 24 Vulnerable species, one Conservation Dependent species and 16 Near Threatened species (Table 3).

Based on available population estimates of globally threatened or Lower Risk species (Wetlands International 2002b), the AWC is able to cover 25% to more than 100% of the estimated populations of some congregatory species (e.g. Spot-billed Pelican, Oriental Stork, Black-faced Spoonbill, Swan Goose, Lesser-White fronted Goose, Baikal Teal, White-headed Duck, Black-necked Crane, Red-Crowned Crane, Hooded Crane, White-naped Crane, Siberian Crane, Saunders' Gull and Indian Skimmer), which illustrates the importance of this programme for the monitoring of these threatened species.

Of the waterbird and wetland-dependent raptor species covered by the census, 145 species are listed by the Convention on Migratory Species; 28 (including 26 globally threatened and Lower Risk species) and 117 (including 9 globally threatened and Lower Risk species) species in Appendices I and II respectively. Additionally, 26 species are listed by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); 14 (including 12 globally threatened and Lower Risk species) and 12 (including three globally threatened and Lower Risk species) species are listed in Appendices I and II respectively. The AWC provides a useful mechanism for contributing to the monitoring of these species of international concern.

Table 3: Numbers of all waterbird and wetland-dependent raptor species reported to the AWC, 1997–2001

English Name ¹	Scientific Name	T ²	CMS ³	CITES ⁴	1997	1998	1999	2000	2001	Estimated Asian Population ⁵
Waterbirds										
Red-throated Diver	<i>Gavia stellata</i>				1	1	17	85	82	10,000-100,000
Black-throated Diver	<i>Gavia arctica</i>				1		5	32	73	(25,000-1,000,000)
Pacific Diver	<i>Gavia pacifica</i>				3	1	16	20	45	25,000-100,000
White-billed Diver	<i>Gavia adamsii</i>								1	Vagrant
Little Grebe	<i>Tachybaptus ruficollis</i>				4,178	3,507	9,797	6,793	12,244	200,000-2,000,000+?
Hoary-headed Grebe*	<i>Polocephalus polocephalus</i>						578			500,000
Red-necked Grebe	<i>Podiceps grisegena</i>		II		311	25	26	1	100	25,000-110,000
Great Crested Grebe	<i>Podiceps cristatus</i>				3,285	2,407	3,110	2,254	4,115	35,000-50,000
Horned Grebe	<i>Podiceps auritus</i>				27	5	32	29	79	35,000-125,000
Black-necked Grebe	<i>Podiceps nigricollis</i>				1,674	1,098	615	1,664	2,797	35,000-125,000
unidentified grebes	<i>Podicipedidae</i> spp.					27	76	6	69	
Great White Pelican	<i>Pelecanus onocrotalus</i>		I		3,188	398	4,649	1,521	7,174	15,000-30,000
Spot-billed Pelican*	<i>Pelecanus philippensis</i>		VU		789	527	1,137	1,438	2,110	5,500-10,000
Dalmatian Pelican	<i>Pelecanus crispus</i>		cd	I	269	38	253	553	272	9,900-12,500
Australian Pelican*	<i>Pelecanus conspicillatus</i>						1,567			10,000
unidentified pelicans	<i>Pelecanus</i> spp.						5			
Little Black Cormorant*	<i>Phalacrocorax sulcirostris</i>						87	27		Unknown
Great Cormorant	<i>Phalacrocorax carbo</i>				20,259	24,530	23,507	21,344	38,457	100,000-260,000
Indian Cormorant*	<i>Phalacrocorax fuscicollis</i>				1,630	1,934	3,637	4,239	8,163	30,000
Japanese Cormorant*	<i>Phalacrocorax capillatus</i>				23	94	637	598	783	25,000-100,000
Pelagic Cormorant	<i>Phalacrocorax pelagicus</i>				317		54	136	543	Unknown
Pied Cormorant*	<i>Phalacrocorax varius</i>						266			Unknown
Little Pied Cormorant*	<i>Phalacrocorax melanoleucus</i>						1		17	Unknown
Little Cormorant*	<i>Phalacrocorax niger</i>				10,549	12,949	18,660	20,322	45,361	175,000-250,000
unidentified cormorants	<i>Phalacrocorax</i> spp.				488	211	2,666	5,050	6,676	
Oriental Darter*	<i>Anhinga melanogaster</i>		nt		393	156	715	521	904	4,000+?
Australian Darter*	<i>Anhinga novahollandiae</i>						44			Unknown
Grey Heron	<i>Ardea cinerea</i>				10,401	5,451	18,027	9,179	13,320	121,000-1,022,000
White-necked Heron*	<i>Ardea pacifica</i>						27			100,000-1,000,000
Great White Egret	<i>Ardea alba (Ardea modesta)</i>				6,368	5,141	9,670	9,438	14,294	35,000+125,000+?
Intermediate Egret	<i>Egretta (Ardea) intermedia</i>				3,423	3,642	11,426	4,729	12,850	35,000-125,000
White-bellied Heron*	<i>Ardea insignis</i>		EN		4			2	13	250-1,000
Great-billed Heron*	<i>Ardea sumatrana</i>						19	1	26	10,000-100,000
Goliath Heron	<i>Ardea goliath</i>					2	2		2	20
Purple Heron	<i>Ardea purpurea</i>				984	373	1,442	1,485	1,496	35,000-125,000
Cattle Egret	<i>Bubulcus ibis (Ardea ibis)</i>				8,830	17,403	27,517	19,845	30,016	200,000->2,000,000
unidentified Egrets	<i>Egretta/Bubulcus</i> spp.				51	10,575	3,958	1,708	8,105	
Green-backed (Striated) Heron	<i>Butorides striatus</i>				123	165	537	413	573	35,000-125,000+?
Indian Pond-Heron*	<i>Ardeola grayii</i>				4,232	4,152	8,887	5,243	11,753	100,000-1,000,000?
Chinese Pond-Heron*	<i>Ardeola bacchus</i>				512	225	1,658	2,948	2,572	25,000-1,000,000
Javan Pond-Heron*	<i>Ardeola speciosa</i>						4,283	1,850	38	10,000-100,000+?
unidentified pond-herons	<i>Ardeola</i> spp.						908	1,993	1,574	
White-faced Heron*	<i>Egretta novaehollandiae</i>						31			>1,000,000

English Name ¹	Scientific Name	T ²	CMS ³	CITES ⁴	1997	1998	1999	2000	2001	Estimated Asian Population ⁵
Little Egret	<i>Egretta garzetta</i>				18,119	13,640	26,758	21,285	33,836	185,000-2,000,000
Western Reef Egret	<i>Egretta gularis (Egretta garzetta schistacea)</i>				59	177	436	432	724	17,000
Chinese Egret*	<i>Egretta eulophotes</i>	VU	I		813	241	285	611	533	2,600-3,400
Eastern Reef Heron*	<i>Egretta sacra</i>				37	42	169	98	86	100,000-1,000,000
Black-crowned Night-heron	<i>Nycticorax nycticorax</i>				2,740	2,630	5,370	4,730	4,205	125,000-1,100,000
Rufous Night-Heron*	<i>Nycticorax caledonicus</i>				5		8	7	12	Unknown
Malayan Night-Heron*	<i>Gorsachius melanolophus</i>								1	<20,000+?
Eurasian Bittern	<i>Botaurus stellaris</i>				3	136	10	11	48	25,000-100,000+?
Little Bittern	<i>Ixobrychus minutus</i>						14			10,000-25,000
Yellow Bittern	<i>Ixobrychus sinensis</i>				97	102	128	152	179	100,000-1,000,000+?
Schrenck's Bittern*	<i>Ixobrychus eurhythmus</i>				22		10		4	<25,000
Cinnamon Bittern*	<i>Ixobrychus cinnamomeus</i>				67	22	130	57	209	125,000-2,000,000
Black Bittern*	<i>Ixobrychus flavicollis</i>				51	36	61	56	48	35,000-200,000
Unidentified bitterns	<i>Ixobrychus spp.</i>								2	
Unidentified Ardeidae	<i>Ardeidae spp.</i>				530	195	5,810	660	11,519	
Milky Stork*	<i>Mycteria cinerea</i>	VU		I			2	73	3	5,550
Painted Stork*	<i>Mycteria leucocephala</i>	nt			2,644	969	1,524	1,316	944	15,000-25,000
Asian Openbill*	<i>Anastomus oscitans</i>				1,596	2,024	9,343	15,476	16,114	>125,000
Black Stork	<i>Ciconia nigra</i>		II	II	38	86	261	463	339	<10,100
Woolly-necked Stork	<i>Ciconia episcopus</i>				214	55	246	107	297	<20,000-35,000
Storm's Stork*	<i>Ciconia stormi</i>	EN							3	250-500
(European) White Stork	<i>Ciconia ciconia</i>			II	2	26	32	33	43	4,350
Oriental (White) Stork*	<i>Ciconia boyciana</i>	EN	I	I	888	863	3,169	999	2,888	3,000**
Black-necked Stork*	<i>Ephippiorhynchus asiaticus</i>	nt			34	45	31	36	25	1,000
Lesser Adjutant*	<i>Leptoptilos javanicus</i>	VU			42	23	161	138	136	5,000
Greater Adjutant*	<i>Leptoptilos dubius</i>	EN			1	4	24	18	7	800-1,000
Unidentified storks	<i>Ciconiidae spp.</i>					10	25	41	95	
Sacred Ibis	<i>Threskiornis aethiopicus</i>				93	102	53	67	74	Escapee
Black-headed Ibis*	<i>Threskiornis melanocephalus</i>	nt			1,357	902	741	957	1,382	<20,100
Australian White Ibis*	<i>Threskiornis molucca</i>						2			70,000
Straw-necked Ibis*	<i>Threskiornis spinicollis</i>						106			500,000
(Indian) Black Ibis*	<i>Pseudibis papillosa</i>				5	21	227	200	478	10,000
Giant Ibis*	<i>Pseudibis gigantea</i>	CR							2	100-200
Glossy Ibis	<i>Plegadis falcinellus</i>		II		1,875	103	1,136	222	1,319	35,000-1,025,000
unidentified ibises	<i>Threskiornithidae spp.</i>					2				
Eurasian Spoonbill	<i>Platalea leucorodia</i>		II	II	4,273	2,232	8,704	4,548	19,410	<29,500**
Black-faced Spoonbill*	<i>Platalea minor</i>	EN	I		450	584	525	721	707	970
Royal Spoonbill*	<i>Platalea regia</i>						204			100,000-250,000
Yellow-billed Spoonbill*	<i>Plativilis flavipes</i>						141			25,000-100,000
unidentified spoonbills	<i>Platalea spp.</i>						102		6	
Greater Flamingo	<i>Phoenicopterus ruber</i>		II	II	5,498	3,084	4,382	4,549	14,956	290,000
Lesser Flamingo	<i>Phoeniconaias minor</i>	nt	II	II	392	10	6		492	150,000
unidentified flamingoes	<i>Phoenicopteridae spp.</i>					1	320			
Plumed Whistling Duck*	<i>Dendrocygna eytoni</i>						25			100,000->1,000,000
Fulvous Whistling Duck	<i>Dendrocygna bicolor</i>				80	89	143	120	15,705	20,000**
Wandering Whistling Duck*	<i>Dendrocygna arcuata</i>			II	125	155	603	775	24	100,000-1,000,000
Lesser Whistling Duck*	<i>Dendrocygna javanica</i>				38,597	26,785	62,079	33,734	107,085	200,000-2,000,000
Mute Swan	<i>Cygnus olor</i>		II		38	116	33	32	54	1,000-3,000
Black Swan	<i>Cygnus atratus</i>						3,132			300,000-500,000
Whooper Swan	<i>Cygnus cygnus</i>		II		7,374	7,181	5,274	5,075	5,592	60,000
Tundra Swan	<i>Cygnus columbianus</i>		II		10,750	1,485	16,262	1,749	63,527	86,000**
unidentified swans	<i>Cygnus spp.</i>					360	36	3,839	158	
Swan Goose*	<i>Anser cygnoides</i>	EN	I		3,843	5,004	24,097	5,438	36,366	50,000-60,000**
Bean Goose	<i>Anser fabalis</i>		II		19,403	24,721	45,165	35,834	28,960	95,000-135,000
Greater White-fronted Goose	<i>Anser albifrons</i>		II		97,660	36,892	144,917	35,802	70,097	100,000-150,000
Lesser White-fronted Goose	<i>Anser erythropus</i>	VU	I		20,001	1	9,860	2	2	14,000**
Greylag Goose	<i>Anser anser</i>		II		5,770	1,057	10,569	688	6,211	65,000-115,000
Bar-headed Goose*	<i>Anser indicus</i>		II		4,655	3,603	9,060	8,429	18,165	52,000-60,000
Snow Goose	<i>Anser caerulescens</i>		II		2		1	2	1	<300
unidentified grey geese	<i>Anser spp.</i>				31,213	104	21,464	3,763	13,348	
Brent Goose	<i>Branta bernicla</i>		II		19	141	15		393	5,000
Freckled Duck*	<i>Stictonetta naevosa</i>						37			20,000
Ruddy Shelduck	<i>Tadorna ferruginea</i>		II		4,491	2,136	7,489	20,331	20,572	100,000-150,000
Australian Shelduck*	<i>Tadorna tadornoides</i>						151			Unknown
Common Shelduck	<i>Tadorna tadorna</i>		II		10,042	17,948	22,542	46,222	66,673	125,000-250,000

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White-winged Duck*	<i>Cairina scutulata</i>	EN		I			3	1	6	800
Comb Duck	<i>Sarkidiornis melanotos</i>		II	II	305	70	867	25	437	6,000
Cotton Pygmy-Goose	<i>Nettapus coromandelianus</i>				892	2,649	9,523	3,182	22,978	50,000-1,100,000
Mandarin Duck*	<i>Aix galericulata</i>				16	8	2,200	1,623	1,785	65,500
Maned Duck*	<i>Chenonetta jubata</i>						978			Unknown
Eurasian Wigeon	<i>Anas penelope</i>		II		48,071	47,336	84,728	64,254	207,936	750,000-1,250,000
American Wigeon	<i>Anas americana</i>				12	8	3	9	13	Vagrant
Falcated Teal*	<i>Anas falcata</i>		II		2,699	3,610	3,170	2,632	3,255	35,000
Gadwall	<i>Anas strepera</i>		II		16,188	17,324	44,911	20,088	188,631	650,000-1,150,000
Baikal Teal*	<i>Anas formosa</i>	VU	I	II	85,208	91,751	231,482	214,669	186,067	300,000**
Common Teal	<i>Anas crecca</i>		II		79,462	76,323	148,281	128,853	194,723	1,000,000-1,400,000
Grey Teal*	<i>Anas gracilis</i>						26,558		91	25,000-1,000,000
Mallard	<i>Anas platyrhynchos</i>		II		275,088	244,012	398,634	489,652	332,957	1,575,000
Spot-billed Duck	<i>Anas poecilorhyncha</i>		II		41,233	30,722	123,713	161,494	110,271	860,000-1,750,000
Philippine Duck*	<i>Anas luzonica</i>	VU				1,004	870	446	355	<10,000
Pacific Black Duck*	<i>Anas superciliosa</i>						138		40	100,000-1,000,000
Northern Pintail	<i>Anas acuta</i>		II		96,853	87,862	176,987	90,708	237,105	600,000->2,000,000
Garganey	<i>Anas querquedula</i>		II		19,301	49,496	24,501	22,545	92,163	350,000-1,250,000
Australasian Shoveler*	<i>Anas rhynchotis</i>						42			Unknown
Northern Shoveler	<i>Anas clypeata</i>		II		32,030	38,834	91,394	48,995	259,155	600,000-2,000,000
Pink-eared Duck*	<i>Malacorhynchos membranaceus</i>						18,820			Unknown
Marbled Teal	<i>Marmaronetta angustirostris</i>	VU	I			88	478	326	25	5,000
Red-crested Pochard	<i>Netta rufina</i>		II		4,978	1,103	7,765	199	68,182	25,000-100,000**
Canvasback	<i>Aythya valisineria</i>		II				22	1	1	Vagrant
Common Pochard	<i>Aythya ferina</i>		II		94,800	56,588	98,084	133,417	151,312	700,000-2,000,000
Hardhead*	<i>Aythya australis</i>						3,375			100,000-1,000,000
Baer's Pochard*	<i>Aythya baeri</i>	VU	II		2,538	18	79	20	4,058	10,000-20,000
Ferruginous Duck	<i>Aythya nyroca</i>	nt	I		8,375	972	2,501	4,822	3,331	25,000-1,000,000
Tufted Duck	<i>Aythya fuligula</i>		II		51,759	47,917	75,758	82,085	160,280	600,000-2,000,000
Greater Scaup	<i>Aythya marila</i>		II		45,325	68,027	47,572	112,743	38,632	200,000-400,000
Steller's Eider	<i>Polysticta stellerii</i>		II		20					180,000
Harlequin Duck	<i>Histrionicus histrionicus</i>		II		60	2	535	10	37	150,000-250,000
Long-tailed Duck	<i>Clangula hyemalis</i>		II		7,000	45	90	111	444	500,000-1,000,000
Black Scoter	<i>Melanitta nigra</i>		II			57	29	545	225	100,000-1,000,000
White-winged Scoter	<i>Melanitta fusca</i>		II		43	17	73	156	1,682	600,000-1,000,000
Bufflehead	<i>Bucephala albeola</i>		II		1	1	1			Vagrant
Common Goldeneye	<i>Bucephala clangula</i>		II		5,522	6,493	10,609	7,042	10,503	50,000-100,000
Smew	<i>Mergellus albellus</i>		II		889	694	1,169	851	1,058	25,000-100,000
Red-breasted Merganser	<i>Mergus serrator</i>		II		467	300	1,054	975	2,111	25,000-100,000
Scaly-sided Merganser*	<i>Mergus squamatus</i>	EN	II				1	100	31	3,600-4,500
Goosander	<i>Mergus merganser</i>		II		6,358	9,926	9,910	7,052	7,093	52,500-110,000
White-headed Duck	<i>Oxyura leucocephala</i>	EN	I	II	36		8	4	5	10
Blue-billed Duck*	<i>Oxyura australis</i>						65			18,000+?
Musk Duck*	<i>Biziura lobata</i>						7			Unknown
Unidentified ducks	<i>Anatinae</i> spp.				396,495	81,655	121,412	54,463	261,224	
Demoiselle Crane	<i>Grus virgo</i>		II	II			697	1	244	170,000-200,000
Siberian Crane	<i>Grus leucogeranus</i>	CR	I	I	2,428	974	2,795	1,916	3,010	3,002**
Sandhill Crane	<i>Grus canadensis</i>		II	II		1	1	1		Vagrant
Sarus Crane*	<i>Grus antigone</i>	VU	II	II	77	51	178	6	184	10,000-12,000
White-naped Crane*	<i>Grus vipio</i>	VU	I	I	3,152	964	5,768	5,272	4,790	7,200**
Eurasian Crane	<i>Grus grus</i>		II	II	2,028	744	2,405	5,565	4,968	85,000-92,000
Hooded Crane*	<i>Grus monacha</i>	VU	I	I	791	814	9,102	8,905	615	9,500**
Black-necked Crane*	<i>Grus nigricollis</i>	VU	I	I	473	1,889	486	5,347	1,705	6,000
Red-crowned Crane*	<i>Grus japonensis</i>	EN	I	I	1,408	254	802	1,466	814	2,400
unidentified cranes	<i>Gruidae</i> spp.						5			
Red-legged Crake*	<i>Rallina fasciata</i>				2		13			Unknown
Slaty-legged Crake*	<i>Rallina eurizinoides</i>					2	7			Unknown
Barred Rail*	<i>Gallirallus torquatus</i>					9	13	9	17	Unknown
Buff-banded Rail*	<i>Gallirallus philippensis</i>				6	11		1	17	Unknown
Slaty-breasted Rail*	<i>Gallirallus striatus</i>				14	9	21	36	17	Unknown
Water Rail	<i>Rallus aquaticus</i>				3	6	20	4	30	Unknown
Brown Crake*	<i>Amaurornis akool</i>				1,575		31	7	35	Unknown
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>				962	760	1,454	1,004	1,851	100,000->1,000,000
Baillon's Crake	<i>Porzana pusilla</i>					21	96	80	19	Unknown
Spotted Crake	<i>Porzana porzana</i>							3	2	Unknown

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Ruddy-breasted Crake*	<i>Porzana fusca</i>				48	28	67	35	29	Unknown
White-browed Rail*	<i>Porzana cinerea</i>				7	15	12	11	30	Unknown
Watercock*	<i>Gallicrex cinerea</i>				87	14	186	16	215	Unknown
Purple Swampphen	<i>Porphyrio porphyrio</i>				7,070	1,891	5,994	7,317	12,536	100,000->1,000,000+?
Common Moorhen	<i>Gallinula chloropus</i>				6,076	4,443	7,551	3,824	7,396	Unknown
Black-tailed Native Hen*	<i>Gallinula ventralis</i>						699			Unknown
Common Coot	<i>Fulica atra</i>				46,222	58,776	129,076	108,309	178,458	1,600,000->2,500,000
unidentified rails	<i>Rallidae</i> spp.				21	87	25	7	18	
Masked Finfoot*	<i>Heliopais personata</i>	VU						2		2,500-10,000
Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>				2,948	1,621	3,221	2,552	3,418	25,000-100,000
Bronze-winged Jacana*	<i>Metopidius indicus</i>				338	328	1,015	441	12,472	Unknown
Greater Painted-Snipe	<i>Rostratula benghalensis</i>				45	57	306	48	1,160	Unknown
Crab Plover	<i>Dromas ardeola</i>		II		2	11	49	1	64	20,000-30,000
Eurasian Oystercatcher	<i>Haematopus ostralegus</i>				3,669	2,750	7,854	627	2,671	110,000-210,000
Australian Pied Oystercatcher*	<i>Haematopus longirostris</i>				3,624	3,202	4,224	5,725	3,546	11,000
Sooty Oystercatcher*	<i>Haematopus fuliginosus</i>				753	507	759	1,598	777	11,500
Ibisbill*	<i>Ibidorhyncha struthersii</i>				14		1	84	29	Unknown
Black-winged Stilt	<i>Himantopus himantopus</i>		II		10,819	9,277	15,713	14,455	21,628	125,000-1,100,000+?
Banded Stilt*	<i>Cladorhynchus leucocephalus</i>				237	4,671	1,333	31,408	70,165	206,000
Pied Avocet	<i>Recurvirostra avocetta</i>		II		2,362	2,611	9,894	2,615	7,388	35,000-200,000
Red-necked Avocet*	<i>Recurvirostra novaehollandiae</i>				539	1,779	3,593	212	1,647	107,000
Stone Curlew	<i>Burhinus oediconemus</i>		II		45	38	13	24	8	Unknown
Bush Thick-knee*	<i>Burhinus grallarius</i>		nt					15		Unknown
Great Thick-knee*	<i>Burhinus recurvirostris</i>				94	264	154	64	305	Unknown
Beach Thick-knee*	<i>Burhinus gigantea</i>		nt		2	4	1	9	2	<25,000
unidentified Stone-curlews	<i>Burhinus</i> spp.							4		
Cream-coloured Courser	<i>Cursorius cursor</i>							32	4	Unknown
Indian Courser*	<i>Cursorius coromandelicus</i>					2	4	2	2	Unknown
Australian Pratincole*	<i>Stiltia isabella</i>						12		3	60,000
Collared Pratincole	<i>Glareola pratincola</i>					7				Vagrant
Oriental Pratincole*	<i>Glareola maldivarum</i>				6	21	6	610	34	100,000-1,075,000
Small Pratincole*	<i>Glareola lactea</i>				962	993	3,028	7,709	7,565	10,000-100,000
Northern Lapwing	<i>Vanellus vanellus</i>		II		1,223	1,088	3,521	2,047	2,078	35,000-125,000
River Lapwing*	<i>Vanellus duvaucelli</i>					303	39	472	343	<25,000
Yellow-wattled Lapwing*	<i>Vanellus malabaricus</i>				87	159	229	180	329	Unknown
Grey-headed Lapwing*	<i>Vanellus cinereus</i>		II		333	217	225	561	908	25,000-100,000
Red-wattled Lapwing	<i>Vanellus indicus</i>				1,933	1,776	3,428	2,702	3,624	5000-6000+?
Banded Lapwing*	<i>Vanellus tricolor</i>				67	10	24	864	79	27,000
Masked Lapwing*	<i>Vanellus miles</i>				2,019	1,693	3,112	2,497	6,601	297,000
Sociable Lapwing	<i>Vanellus gregarius</i>	VU	I					2	19	200-600
White-tailed Lapwing	<i>Vanellus leucurus</i>		II		129	89	363	412	219	10,000-100,000
Red-kneed Dotterel*	<i>Erythrogonyx cinctus</i>					5	497	127	114	26,000
Pacific Golden Plover	<i>Pluvialis fulva</i>		II		8,093	5,392	16,386	17,651	23,150	116,000+ (50,000-100,000)
Grey Plover	<i>Pluvialis squatarola</i>		II		4,043	6,731	7,026	16,528	12,473	155,000
Great Ringed Plover	<i>Charadrius hiaticula</i>		II		741	4	308	34	30	(145,000-280,000)
Long-billed Plover*	<i>Charadrius placidus</i>		II		2	5	89	94	224	<10,000
Little Ringed Plover	<i>Charadrius dubius</i>		II		4,363	7,026	4,301	6,163	7,524	25,000-100,000+?
Kentish Plover	<i>Charadrius alexandrinus</i>		II		19,005	33,527	44,115	51,762	41,013	130,000-210,000
Red-capped Plover*	<i>Charadrius ruficapillus</i>				1,325	2,186	1,515	7,050	6,064	95,000
Malaysian Plover*	<i>Charadrius peronii</i>		nt			20	31	5	8	10,000-25,000
Double-banded Plover*	<i>Charadrius bicinctus</i>				183	8	23	11	105	50,000
Lesser Sandplover	<i>Charadrius mongolus</i>		II		23,816	21,007	16,079	15,656	17,531	130,000-150,000+?
Greater Sandplover	<i>Charadrius leschenaultii</i>		II		4,349	6,312	7,962	11,051	17,444	100,000
Caspian Plover	<i>Charadrius asiaticus</i>		II		1					(40,000-55,000)
Oriental Plover*	<i>Charadrius veredus</i>		II				2	4,679		70,000
Hooded Plover*	<i>Charadrius rubricollis</i>		nt		56	81	86	120	250	6,500
Black-fronted Dotterel*	<i>Elseyonis melanops</i>				63	52	36	86	144	15,500
unidentified <i>Charadrius</i> plovers	<i>Charadrius</i> spp.				339	16,276	18,787	18,629	15,340	
Eurasian Woodcock	<i>Scolopax rusticola</i>		II		1		1	2	2	25,000-1,000,000
Jack Snipe	<i>Lymnocyptes minimus</i>		II		63	60	5	4	4	<10,000+?
Solitary Snipe*	<i>Gallinago solitaria</i>		II			8	2	3	1	10,000-110,000
Latham's Snipe*	<i>Gallinago hardwickii</i>		II		143	227	123	300	291	25,000-100,000

English Name ¹	Scientific Name	T ²	CMS ³	CITES ⁴	1997	1998	1999	2000	2001	Estimated Asian Population ⁵
Wood Snipe*	<i>Gallinago nemoricola</i>	VU	I					3	1	2,500-10,000
Pintail Snipe	<i>Gallinago stenura</i>		II		107	156	141	138	1,074	25,000-1,000,000
Swinhoe's Snipe*	<i>Gallinago megala</i>		II			9	1	4	1	25,000-100,000
Common Snipe	<i>Gallinago gallinago</i>		II		488	779	1,526	2,025	5,259	200,000->2,000,000
unidentified snipes	<i>Gallinago</i> spp.				14	19	2,024	49	46	
Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>		II		3	4	7	34	21	Vagrant
Asian Dowitcher*	<i>Limnodromus semipalmatus</i>	nt	II		51	53	38	466	458	23,000
Black-tailed Godwit	<i>Limosa limosa</i>		II		13,197	15,581	10,613	5,872	24,502	260,000
Bar-tailed Godwit	<i>Limosa lapponica</i>		II		28,439	34,338	51,643	34,964	25,163	320,000+ (100,000-150,000)
unidentified godwits	<i>Limosa</i> spp.				61	37	65	85	158	
Little Curlew*	<i>Numenius minutus</i>		II		449	232	441	433	45	180,000
Whimbrel	<i>Numenius phaeopus</i>		II		1,606	1,998	4,264	3,442	4,596	80,000-155,000
Eurasian Curlew	<i>Numenius arquata</i>		II		3,267	5,140	4,970	6,284	8,446	45,000-135,000
Far Eastern Curlew*	<i>Numenius madagascariensis</i>	nt	II		3,571	7,150	7,288	4,228	6,960	38,000
unidentified curlews	<i>Numenius</i> spp.				38		120	1	2	
Spotted Redshank	<i>Tringa erythropus</i>		II		772	1,154	1,325	2,370	1,313	35,000-125,000
Common Redshank	<i>Tringa totanus</i>		II		3,703	5,027	7,835	6,313	11,120	145,000-1,300,000
Marsh Sandpiper	<i>Tringa stagnatilis</i>		II		7,485	4,779	4,862	7,216	6,032	115,000-1,090,000
Common Greenshank	<i>Tringa nebularia</i>		II		4,794	5,223	7,825	9,947	12,117	65,000-155,000
Nordmann's Greenshank*	<i>Tringa guttifer</i>	EN	I	I				3	4	250-1,000
Lesser Yellowlegs	<i>Tringa flavipes</i>		II					2	6	Vagrant
Green Sandpiper	<i>Tringa ochropus</i>		II		201	569	1,175	1,481	2,411	50,000-1,100,000
Wood Sandpiper	<i>Tringa glareola</i>		II		1,361	1,562	2,223	2,726	6,105	200,000-1,100,000
unidentified <i>Tringa</i> sandpipers	<i>Tringa</i> spp.				8	6	124	42	49	
Terek Sandpiper	<i>Xenus cinereus</i>		II		1,553	1,100	2,745	2,209	1,008	60,000-150,000
Common Sandpiper	<i>Actitis hypoleucos</i>		II		2,401	2,424	5,763	5,083	8,400	55,000-1,030,000
Grey-tailed Tattler*	<i>Heteroscelus brevipes</i>		II		1,787	2,817	4,461	3,101	1,477	40,000
Wandering Tattler	<i>Heteroscelus incanus</i>		II					1		(10,000-25,000)
Ruddy Turnstone	<i>Arenaria interpres</i>		II		4,170	8,924	6,262	5,553	4,475	35,000-200,000
Great Knot	<i>Calidris tenuirostris</i>		II		24,509	23,265	19,764	14,794	6,044	380,000+(?)
Red Knot	<i>Calidris canutus</i>		II		5,434	6,722	2,766	15,109	4,103	220,000+(?)
Sanderling	<i>Calidris alba</i>		II		683	3,843	3,994	4,687	5,303	47,000-122,000
Red-necked Stint*	<i>Calidris ruficollis</i>		II		57,109	48,722	65,286	129,242	128,097	315,000
Little Stint	<i>Calidris minuta</i>		II		6,688	13,284	12,914	13,204	24,577	200,000
Temminck's Stint	<i>Calidris temminckii</i>		II		165	1,169	2,705	1,736	3,803	35,000-200,000
Long-toed Stint*	<i>Calidris subminuta</i>		II		703	1,018	597	1,142	651	25,000-100,000
Pectoral Sandpiper	<i>Calidris melanotos</i>				4	11	6	10	2	Vagrant
Sharp-tailed Sandpiper*	<i>Calidris acuminata</i>		II		7,284	9,783	8,116	34,805	17,911	160,000
Curlew Sandpiper	<i>Calidris ferruginea</i>		II		25,334	24,937	21,019	33,305	27,638	280,000
Rock Sandpiper	<i>Calidris ptilocnemis</i>		II					1		(60,000-70,000)
Dunlin	<i>Calidris alpina</i>		II		28,771	47,171	66,346	91,608	68,731	975,000-2,850,000
Unidentified <i>Calidris</i> sandpipers	<i>Calidris</i> spp.				123	1,465	877	310	6,515	
Spoon-billed Sandpiper*	<i>Eurynorhynchus pygmaeus</i>	VU	I			6	7	1	1	<3,000
Broad-billed Sandpiper	<i>Limicola falcinellus</i>		II		449	24	156	261	431	10,000-100,000+ (61,000-64,000)
Ruff	<i>Philomachus pugnax</i>		II		2,884	1,588	3,375	3,395	6,510	25,000-100,000
Red-necked Phalarope	<i>Phalaropus lobatus</i>		II		13		13	16	7	Unknown
Unidentified shorebirds	<i>Charadrii</i> spp.				27,834	25,637	22,080	21,459	41,131	
Black-tailed Gull*	<i>Larus crassirostris</i>				1,550	3,878	23,025	14,349	23,817	160,000
Sooty Gull	<i>Larus hemprichii</i>		II		551		155	4	12	(150,000-300,000)
Mew Gull	<i>Larus canus</i>				1,665	504	1,529	14,882	13,962	100,000-1,000,000
Glaucous-winged Gull	<i>Larus glaucescens</i>				13	1	54	163	19	(570,000)
Glaucous Gull	<i>Larus hyperboreus</i>				250	42	58	37	144	Unknown
Thayer's Gull	<i>Larus thayeri</i>							1		(<10,000)
Herring Gull	<i>Larus argentatus</i>				4,809	6,557	21,420	18,810	22,787	57,000-66,000+?
Heuglin's Gull	<i>Larus heuglini</i>				1,401	3	1,777	53	130	Unknown
Slaty-backed Gull*	<i>Larus schistisagus</i>				1,768	291	3,186	3,331	2,442	25,000-1,000,000
Yellow-legged Gull	<i>Larus cachinnans</i>				2,276	566	5,049	439	1,383	(100,000-1,000,000)
Great Black-headed Gull	<i>Larus ichthyaetus</i>				321	529	1,570	930	5,494	25,000-100,000
Brown-headed Gull	<i>Larus brunnecephalus</i>				1,982	1,678	6,471	3,934	10,687	(100,000)
Silver Gull*	<i>Larus novaehollandiae</i>						1,468			>1,000,000
(Common) Black-headed Gull	<i>Larus ridibundus</i>				36,475	31,625	54,931	40,920	76,222	125,000->2,000,000
Slender-billed Gull	<i>Larus genei</i>				636	54	781	124	52	(150,000)

English Name ¹	Scientific Name	T ²	CMS ³	CITES ⁴	1997	1998	1999	2000	2001	Estimated Asian Population ⁵
Saunders' Gull*	<i>Larus saundersi</i>	VU	I		1,354	3,078	1,697	3,097	1,435	7,100-9,600
Relict Gull*	<i>Larus relictus</i>	VU	I	I				447		12,000
Sabine's Gull	<i>Xema sabini</i>							3		Unknown
Black-legged Kittiwake	<i>Rissa tridactyla</i>				620			57	2	(4,800,000)
unidentified gulls	<i>Larus spp.</i>				7,799	745	7,150	8,517	12,670	
Gull-billed Tern	<i>Sterna nilotica</i>				1,883	1,181	2,788	1,190	3,283	35,000-200,000
Caspian Tern	<i>Sterna caspia</i>				805	709	2,149	867	749	20,000-125,000
Lesser Crested Tern	<i>Sterna bengalensis</i>				109	48	237	159	5,278	(150,000-180,000)+?
Sandwich Tern	<i>Sterna sandvicensis</i>				700	14	541	8	49	(110,000)
Greater Crested Tern	<i>Sterna bergii</i>				392	416	618	356	709	Unknown
Indian River Tern*	<i>Sterna aurantia</i>				816	341	1,483	1,353	10,019	10,000-100,000**
Black-naped Tern	<i>Sterna sumatrana</i>				459	390	38	82	493	Unknown
Common Tern	<i>Sterna hirundo</i>				1,922	2,764	4,052	5,132	4,124	35,000-1,100,000+?
Little Tern	<i>Sterna albifrons</i>		II		4,209	1,340	1,624	2,056	3,692	20,000-200,000
Black-bellied Tern*	<i>Sterna acuticauda</i>	nt	I		7	39	24	53	461	10,000-25,000
Bridled Tern	<i>Sterna anaethetus</i>							2		Unknown
unidentified <i>Sterna</i> terns	<i>Sterna spp.</i>				357	307	68	82	2,623	
Whiskered Tern	<i>Chlidonias hybridus</i>				4,127	6,651	11,350	16,117	31,064	100,000-1,000,000+ (25,000-100,000)+?
White-winged Black Tern	<i>Chlidonias leucopterus</i>				3,093	117	1,236	983	3,141	25,000-1,000,000
unidentified terns	<i>Sternae spp.</i>				2,312	1,747	17,159	8,862	11,577	
unidentified gulls/terns	<i>Laridae spp.</i>						118			
Indian Skimmer*	<i>Rynchops albicollis</i>	VU				559	34		5,542	2,500-10,000**
unidentified waterbirds							5,607	200,000		
Total Waterbirds					2,223,805	1,794,280	3,266,649	3,233,096	4,571,522	
Wetland-dependent raptors										
Osprey	<i>Pandion haliaetus</i>		II		57	39	138	48	70	50,000-60,000
Brahminy Kite*	<i>Haliaeetus indus</i>				269	225	257	340	157	100,000-1,000,000
White-bellied Sea Eagle*	<i>Haliaeetus leucogaster</i>				14	25	9	21	22	10,000-100,000
Pallas' Sea Eagle*	<i>Haliaeetus leucorhynchus</i>	VU	I	I	3	2	12	9	9	2,500-10,000
White-tailed Sea Eagle	<i>Haliaeetus albicilla</i>	nt	I	I	2		129	110	22	17,000-21,000
Steller's Sea Eagle*	<i>Haliaeetus pelagicus</i>	VU	I		2	57	497	207	2	5,000
Grey-headed Fishing Eagle*	<i>Ichthyophaga ichtyaetus</i>	nt	II		4	5	19	38	16	10,000-100,000
(Western) Marsh Harrier	<i>Circus aeruginosus</i>		II		13	60	148	92	210	240,000-300,000
Eastern Marsh Harrier*	<i>Circus spilintus</i>		II		1	5	22	16	12	240,000-300,000
Hen (Northern) Harrier	<i>Circus cyaneus</i>		II			2	11	33	30	140,000
Pallid Harrier	<i>Circus macrourus</i>	nt	II		1	9	10	6	3	30,000-70,000
Pied Harrier*	<i>Circus melanoleucos</i>		II			3	3	3	2	10,000-20,000
Montagu's Harrier	<i>Circus pygargus</i>		II			2			3	100,000-500,000
unidentified Harriers	<i>Circus spp.</i>						1	1		
Greater Spotted Eagle	<i>Aquila clanga</i>	VU	I		7	14	20	35	10	2,500-10,000
Imperial Eagle	<i>Aquila heliaca</i>	VU	I	I	14	8	7	2	7	2,500-10,000
Total raptors					387	456	1,283	961	575	

Notes:

English Name¹: English and scientific names used through out the report follow this Table. Alternative names used in *Waterbird Population Estimates* (Wetlands International 2002) is provided in brackets. The Western Reef Egret is listed a subspecies of Little Egret in *Waterbird Population Estimates*, but has been considered as a separate species *Egretta gularis* due to the distinct plumage differences (see for e.g. Grimmett *et al.* 1998), it is listed separately in the report. * - Species restricted to the Asia-Pacific region covered in this report.

T² – Globally threatened species as identified by BirdLife International (2001): CR – Critically Endangered; EN – Endangered; VU – Vulnerable; cd – Conservation Dependent; nt – Near Threatened.

CMS³ – Appendix I and II species of the Convention on Migratory Species (list downloaded from CMS website www.unep-wcmc.org/cms as at 31 December 2003, effective from 23 December 2002; see Section 1.4.3 for more information).

CITES⁴ – Appendix I and II species of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (list downloaded from CITES website www.cites.org as at 31 December 2003, valid from 16 October 2003).

Asian Population⁵:

- Waterbird species - It is important to note that these estimates are only provided as an indicative guide for the population estimate of the species for the AWC region in Asia (and migratory shorebirds and endemic waterbirds recorded in Australasia). The estimate is generated by combining estimates of all biogeographic populations of the species occurring in the region during the non-breeding period (winter) as extracted from *Waterbird Population Estimates Third Edition* (Wetlands International 2002b). *Waterbird Population Estimates* remains the definitive guide to population estimates for all species worldwide.
- Wetland-dependent raptor species - populations are extracted from *Threatened Birds of the World* (BirdLife International 2000) and *Raptors of the World* (Ferguson-Lees *et al.* 2001). A global population estimate has been provided where an estimate of the Asian population is not available.
- ** indicates that the estimate may be in need of revision in the light of data presented in this report.
- ? indicates that no estimate is available for one or more populations of the species.
- Estimates are placed in brackets when only a proportion of the population occurs in the Asia-Pacific region.
- Vagrant – a status for a species when it is accidental (rare and irregular) in occurrence.

3.1.4 Weather conditions during the AWC of 1997-2001

Migration from areas with frozen wetlands to milder areas is a common behaviour for many waterbird species (Ridgill and Fox 1990). However, the effects of weather conditions on count totals are not always easy to interpret. For the AWC, in particular, with variations in the sites counted each year and incomplete site coverage in some areas, it is even more difficult to assess the effects of the weather conditions on the counts. Figure 7 presents the position of the mean zero degree (0°) isotherm during January during 1997-2001. This gives an indication of the areas where the majority of wetlands were likely to have been frozen, i.e. unsuitable for waterbirds. During 1997-2001, the average January zero degree isotherm occurred across Central Asia, the Himalayan range in Pakistan, India, northern Nepal and Bhutan, across southwest and central China to about Shandong Peninsula, Republic of Korea and northern Honshu in Japan. Figures 8–12 present the position of the zero degree isotherm north of 20 degree latitude in Asia during January for the AWC in 1997, 1998, 1999, 2000 and 2001. The primary annual variation in the position of the zero degree isotherm was observed in central Asia (around Uzbekistan and Turkmenistan), central China, coastal China (northwards of Jiangsu coast), the Korean peninsula and northern Honshu. January climatic conditions were broadly similar in each of the five seasons and only January 1998 and 2001 appears to have been notably colder than average in China and Japan (images provided by the NOAA-CIRES Climate Diagnostics Center, Boulder, Colorado, USA, from their website at <http://www.cdc.noaa.gov/>).

Figure 7: Isotherms of the period between 1997-2001, with an interval of 5 degrees Celsius
(Source: NOAA-CIRES Climate Diagnostics Center, Boulder, Colorado, USA)

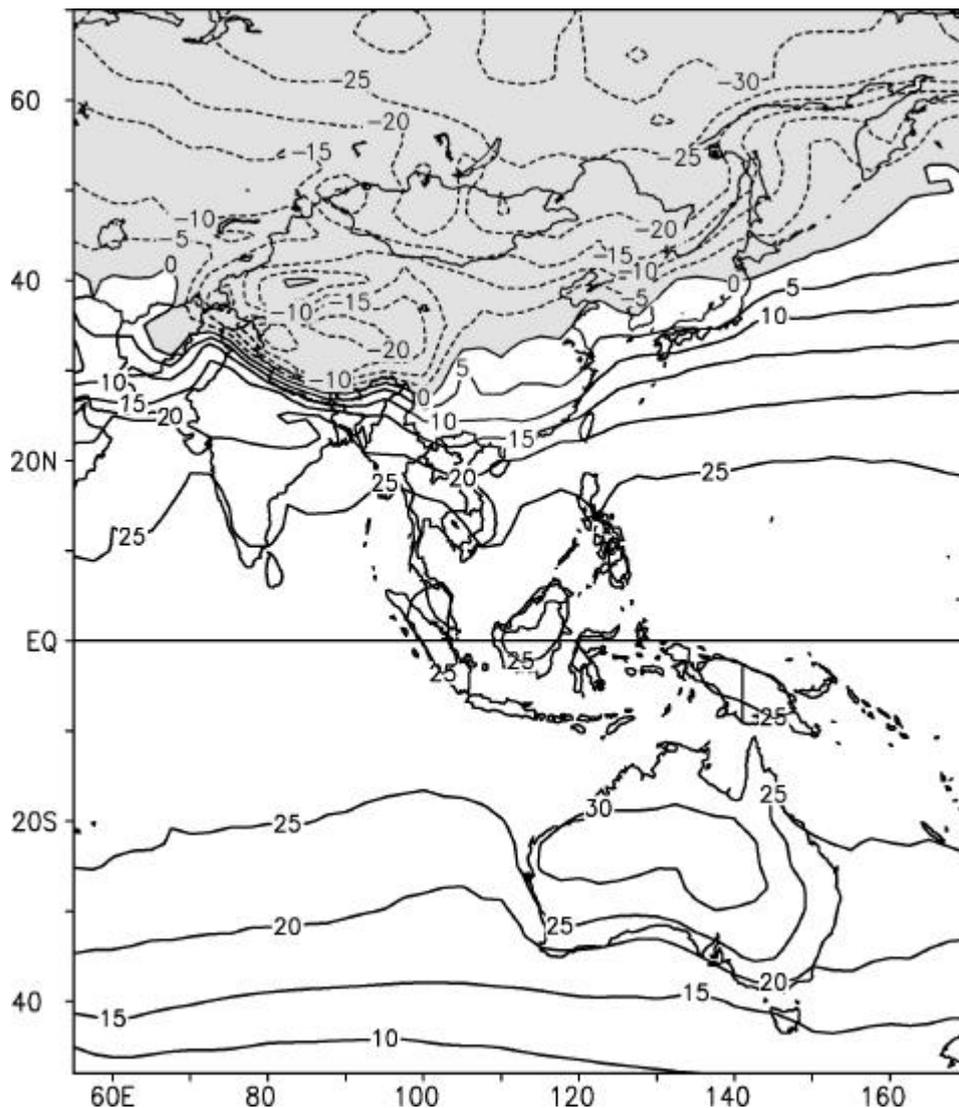


Figure 8: Isotherms for January 1997, with an interval of 5 degrees Celsius
(Source: NOAA-CIRES Climate Diagnostics Center, Boulder, Colorado, USA)

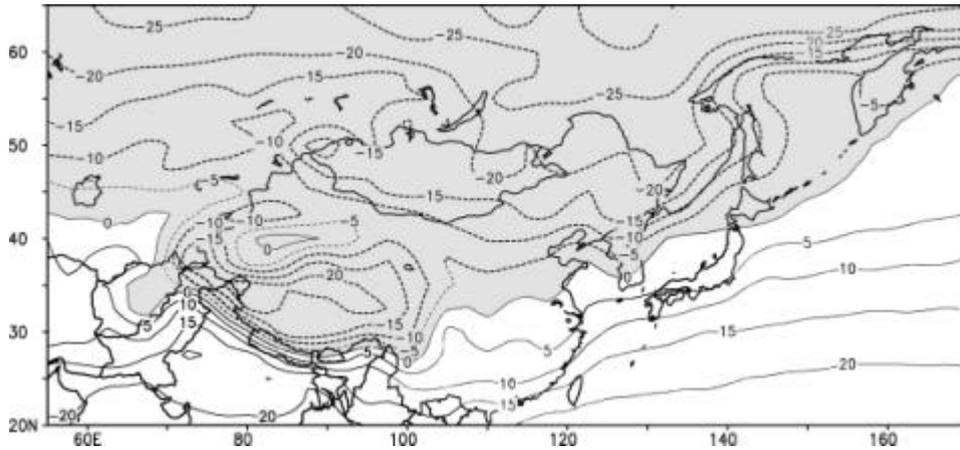


Figure 9: Isotherms for January 1998, with an interval of 5 degrees Celsius
(Source: NOAA-CIRES Climate Diagnostics Center, Boulder, Colorado, USA)

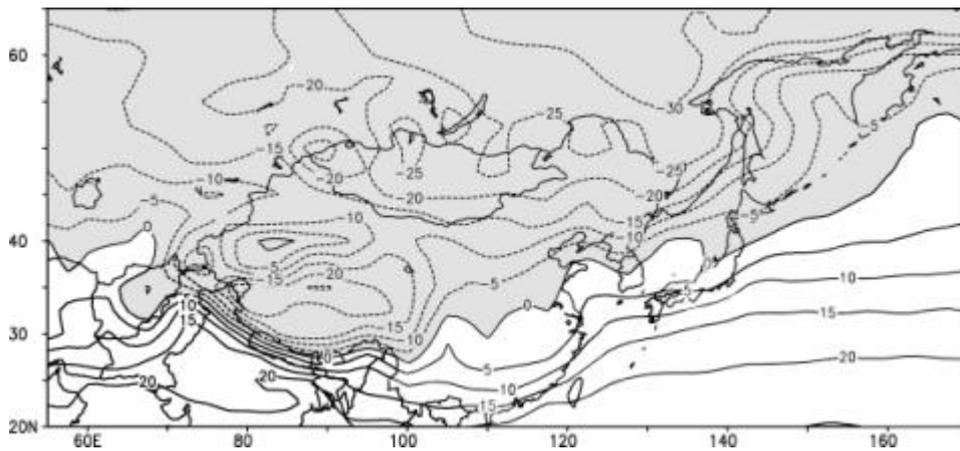


Figure 10: Isotherms for January 1999, with an interval of 5 degrees Celsius
(Source: NOAA-CIRES Climate Diagnostics Center, Boulder, Colorado, USA)

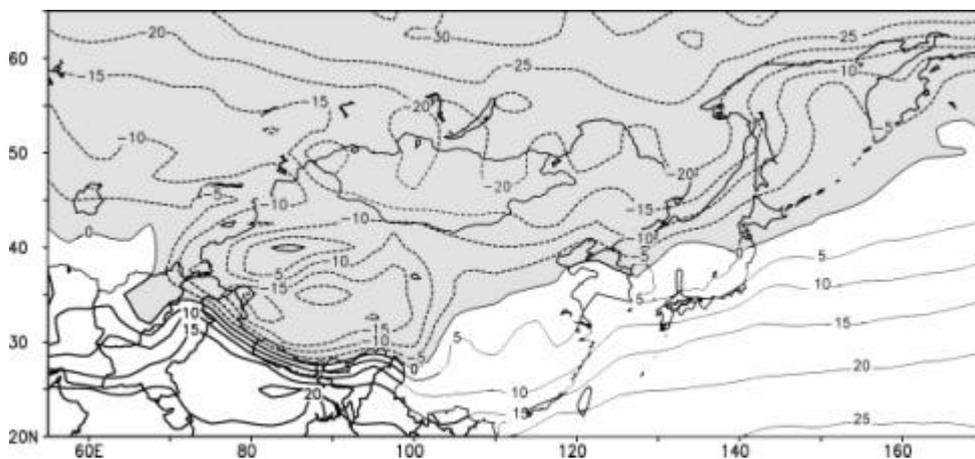


Figure 11: Isotherms for January 2000, with an interval of 5 degrees Celsius
(Source: NOAA-CIRES Climate Diagnostics Center, Boulder, Colorado, USA)

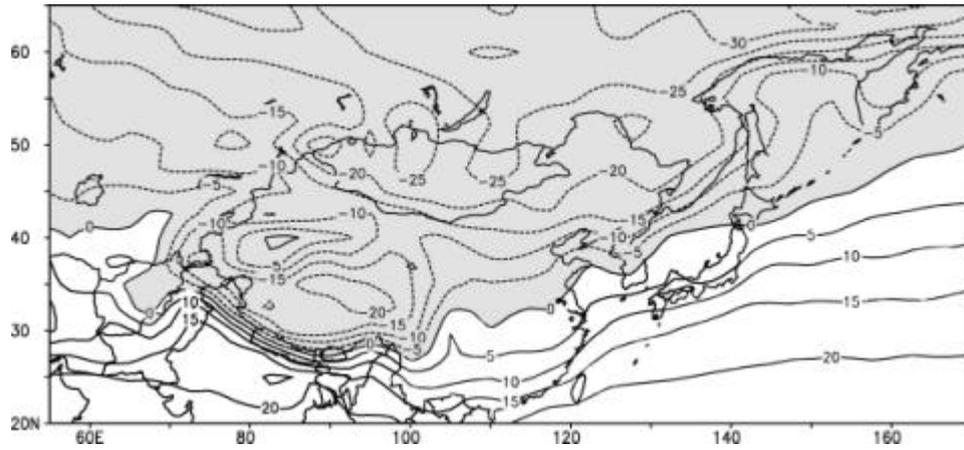
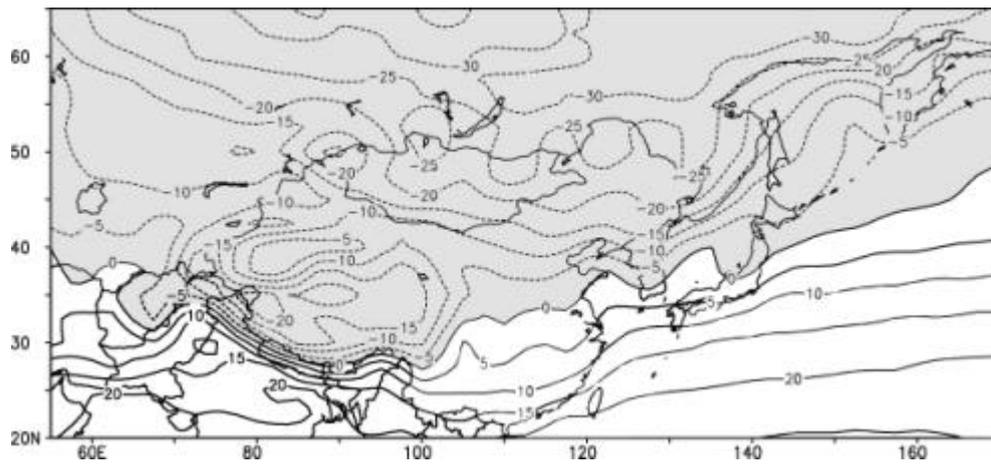


Figure 12: Isotherms for January 2001, with an interval of 5 degrees Celsius
(Source: NOAA-CIRES Climate Diagnostics Center, Boulder, Colorado, USA)

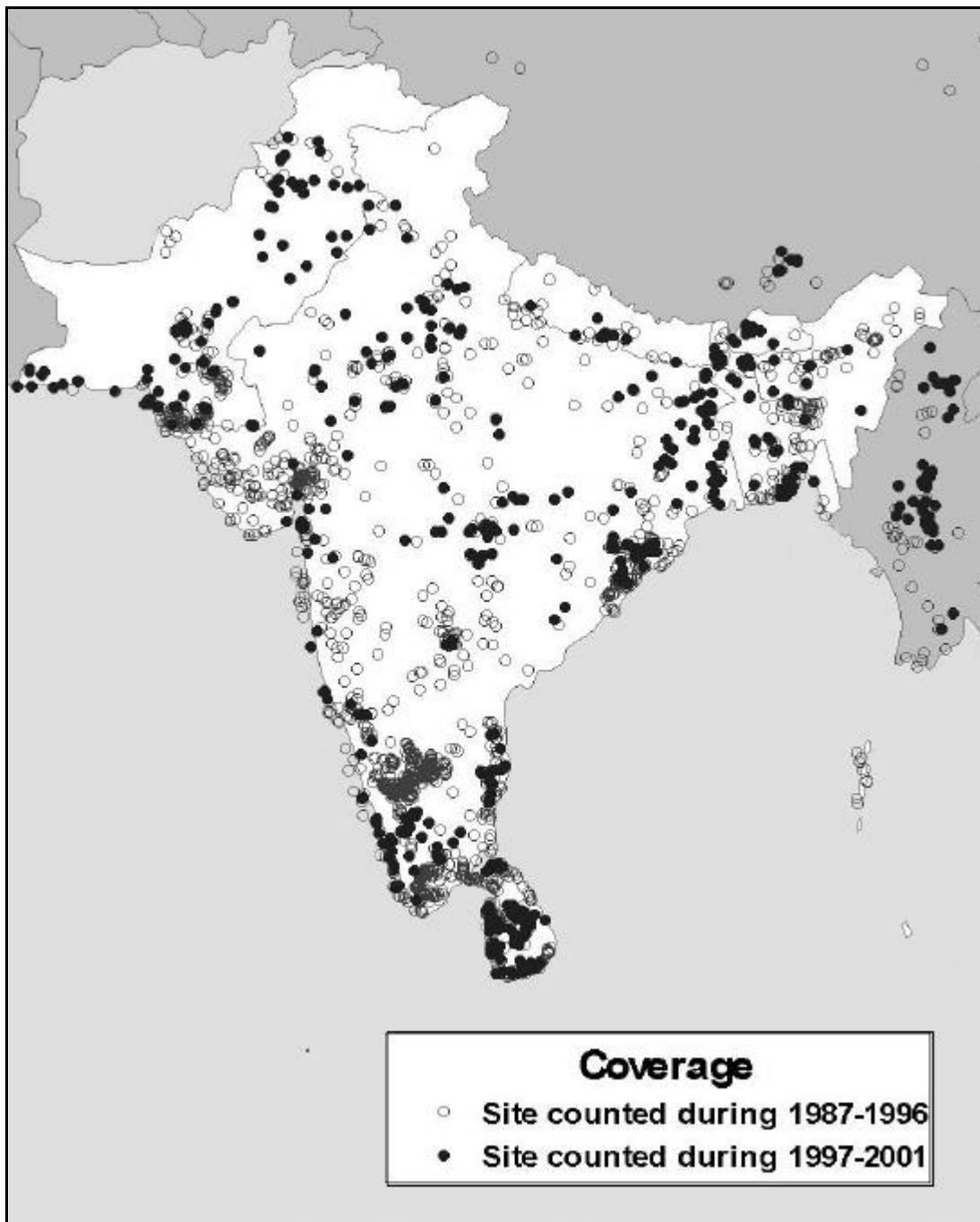


3.2 South Asia

3.2.1 Overview

A total of 649 sites in South Asia were counted at least once between 1997 and 2001 (Figure 13). Total numbers of waterbirds counted were 508,030 (126 sites), 504,480 (194 sites), 1,005,325 (285 sites), 576,278 (164 sites) and 2,372,849 (327 sites) in 1997, 1998, 1999, 2000 and 2001 respectively (Table 4). The large differences in the count totals are due mainly to the variations in annual site coverage; e.g. in India only 17 sites were counted in 2000, but in 2001, 194 sites were covered.

Figure 13: Sites covered by the AWC in the South Asian region, 1987-2001



Totals of 173 species of waterbirds and 14 species of wetland-dependent raptors were counted. The most numerous species (more than 50,000 birds) were 10 ducks and coot: Northern Shoveler (245,302 in 2001), Northern Pintail (196,412 in 2001), Gadwall (178,503 in 2001), Eurasian Wigeon (173,149 in 2001), Common Coot (171,667 in 2001), Common Teal (139,137 in 2001), Tufted Duck (124,132 in 2001), Lesser Whistling Duck (93,803 in 2001), Garganey (90,622 in 2001), Common Pochard (89,315 in 2001) and Red-crested Pochard (68,156 in 2001).

Twenty globally threatened species were recorded and the highest count totals were as follows: the Critically Endangered Siberian Crane (3 in 1997 and 2 in 1999); the Endangered White-bellied Heron (10 in 2001), Greater Adjutant (6 each in 2000 and 2001), White-headed Duck (36 in 1997) and Nordmann's Greenshank (3 in 2001); and the Vulnerable Spot-billed Pelican (789 in 1997), Lesser Adjutant (89 in 2001), Lesser White-fronted Goose (1 in 1997), Baikal Teal (1 in 2001), Marbled Teal (478 in 1999), Baer's Pochard (3,928 in 2001), Black-necked Crane (238 in 2000), Sarus Crane (178 in 1999), Sociable Lapwing (19 in 2001), Wood Snipe (3 in 2000), Spoon-billed Sandpiper (6 in 1998), Indian Skimmer (5,542 in 2001), Pallas's Sea Eagle (12 in 1999), Greater Spotted Eagle (28 in 2000) and Imperial Eagle (4 in 1999). Twelve Lower Risk species were recorded: the Conservation Dependent Dalmatian Pelican (532 in 2000), and Near Threatened Oriental Darter (746 in 2001), Painted Stork (2,644 in 1997), Black-necked Stork (45 in 1998), Black-headed Ibis (1,315 in 1997), Lesser Flamingo (492 in 2001), Ferruginous Duck (6,375 in 1997), Asian Dowitcher (368 in 2001), Black-bellied Tern (456 in 2001), White-tailed Sea Eagle, Grey-headed Fishing Eagle and Pallid Harrier.

Table 4: Waterbird species counts reported to the AWC from South Asia, 1997–2001

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Red-throated Diver	<i>Gavia stellata</i>					43	
Little Grebe	<i>Tachybaptus ruficollis</i>		1,552	1,887	4,973	2,715	9,381
Red-necked Grebe	<i>Podiceps grisegena</i>		1	25	24		46
Great Crested Grebe	<i>Podiceps cristatus</i>		319	104	400	101	1,231
Horned Grebe	<i>Podiceps auritus</i>						8
Black-necked Grebe	<i>Podiceps nigricollis</i>		99	195	174	144	492
unidentified grebes	Podicipedidae spp.			17	76		
Great White Pelican	<i>Pelecanus onocrotalus</i>		3,188	398	4,648	1,521	7,174
Spot-billed Pelican	<i>Pelecanus philippensis</i>	VU	789	527	360	508	522
Dalmatian Pelican	<i>Pelecanus crispus</i>	cd	259	12	231	532	256
unidentified pelicans	<i>Pelecanus</i> spp.				5		
Great Cormorant	<i>Phalacrocorax carbo</i>		1,455	5,089	5,331	4,760	22,910
Indian Cormorant	<i>Phalacrocorax fuscicollis</i>		1,580	1,934	2,836	3,377	5,384
Little Cormorant	<i>Phalacrocorax niger</i>		10,493	12,937	18,055	13,233	43,223
unidentified cormorants	<i>Phalacrocorax</i> spp.		110	56	294	397	5,635
Oriental Darter	<i>Anhinga melanogaster</i>	nt	369	147	518	321	746
Grey Heron	<i>Ardea cinerea</i>		2,278	1,020	2,446	1,611	6,078
White-billed Heron	<i>Ardea insignis</i>	EN	4			1	10
Goliath Heron	<i>Ardea goliath</i>			2	2		2
Purple Heron	<i>Ardea purpurea</i>		752	272	771	467	963
Great White Egret	<i>Ardea alba</i>		1,782	1,684	2,412	2,792	9,079
Intermediate Egret	<i>Egretta intermedia</i>		1,807	1,978	3,116	2,358	9,673
Western Reef Egret	<i>Egretta gularis</i>		59	177	436	432	724
Little Egret	<i>Egretta garzetta</i>		6,565	3,693	11,728	7,795	21,126
Cattle Egret	<i>Bubulcus ibis</i>		7,190	12,894	15,536	12,931	16,518
unidentified egrets	<i>Egretta/Bubulcus</i> spp.			1,752	382	10	
Indian Pond-Heron	<i>Ardeola grayii</i>		4,202	4,152	8,872	4,949	11,653
unidentified pond-herons	<i>Ardeola</i> spp.					31	22
Green-backed Heron	<i>Butorides striatus</i>		54	20	43	24	164
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>		602	836	1,292	939	1,473
Little Bittern	<i>Ixobrychus minutus</i>				14		
Yellow Bittern	<i>Ixobrychus sinensis</i>		60	26	50	66	82
Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>		26	10	46	11	95
Black Bittern	<i>Ixobrychus flavicollis</i>		44	36	50	38	38
unidentified bitterns	<i>Ixobrychus</i> spp.					2	
Eurasian Bittern	<i>Botaurus stellaris</i>			127	3	1	35
unidentified Ardeidae	Ardeidae spp.		180	195	445	126	6,647
Painted Stork	<i>Mycteria leucocephala</i>	nt	2,644	969	1,491	1,141	777
Asian Openbill	<i>Anastomus oscitans</i>		1,526	1,941	8,833	1,917	15,591

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Black Stork	<i>Ciconia nigra</i>		6	77	196	88	222
Woolly-necked Stork	<i>Ciconia episcopus</i>		212	55	220	69	241
White Stork	<i>Ciconia ciconia</i>		2	26	32	33	43
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>	nt	34	45	30	24	23
Greater Adjutant	<i>Leptoptilos dubius</i>	EN	1	4	3	6	6
Lesser Adjutant	<i>Leptoptilos javanicus</i>	VU	42	23	77	56	89
unidentified storks	Ciconiidae spp.			10	2	1	87
Black-headed Ibis	<i>Threskiornis melanocephalus</i>	nt	1,315	902	740	927	1,295
Black Ibis	<i>Pseudibis papillosa</i>		5	21	227	200	478
Glossy Ibis	<i>Plegadis falcinellus</i>		75	103	952	203	1,065
unidentified ibises	Threskiornithidae spp.			2			
Eurasian Spoonbill	<i>Platalea leucorodia</i>		837	612	2,318	1,096	3,322
Greater Flamingo	<i>Phoenicopterus ruber</i>		5,498	3,083	4,382	4,548	14,956
Lesser Flamingo	<i>Phoeniconaias minor</i>	nt	392	10	6		492
unidentified flamingos	Phoenicopteridae spp.			1	320		
Fulvous Whistling Duck	<i>Dendrocygna bicolor</i>		80	89	143	56	15,699
Lesser Whistling Duck	<i>Dendrocygna javanica</i>		34,097	24,488	59,698	7,126	93,803
Lesser White-fronted Goose	<i>Anser erythropus</i>	VU	1				
Greylag Goose	<i>Anser anser</i>		5,765	1,044	9,976	175	4,215
Bar-headed Goose	<i>Anser indicus</i>		4,655	3,603	9,060	3,105	15,042
unidentified grey geese	<i>Anser</i> spp.			104			5
Comb Duck	<i>Sarkidiornis melanotos</i>		305	70	855		380
Ruddy Shelduck	<i>Tadorna ferruginea</i>		2,281	1,885	4,775	5,707	11,731
Common Shelduck	<i>Tadorna tadorna</i>		28	267	383	47	21,090
Cotton Pygmy-Goose	<i>Nettapus coromandelianus</i>		741	2,594	8,757	905	21,190
Eurasian Wigeon	<i>Anas penelope</i>		19,512	22,854	34,295	34,162	173,149
Falcatad Teal	<i>Anas falcata</i>		9	43	87	16	443
Gadwall	<i>Anas strepera</i>		10,212	11,987	37,679	7,574	178,503
Baikal Teal	<i>Anas formosa</i>	VU					1
Common Teal	<i>Anas crecca</i>		22,854	21,268	57,043	53,801	139,137
Mallard	<i>Anas platyrhynchos</i>		27,637	6,996	10,347	14,189	19,978
Spot-billed Duck	<i>Anas poecilorhyncha</i>		2,919	664	5,215	1,408	6,700
Northern Pintail	<i>Anas acuta</i>		59,106	48,343	131,043	40,239	196,412
Garganey	<i>Anas querquedula</i>		18,234	48,361	24,043	7,138	90,622
Northern Shoveler	<i>Anas clypeata</i>		22,413	25,974	74,039	35,205	245,302
Marbled Teal	<i>Marmaronetta angustirostris</i>	VU		88	478	326	25
Red-crested Pochard	<i>Netta rufina</i>		4,957	1,102	7,765	123	68,156
Common Pochard	<i>Aythya ferina</i>		29,880	13,403	34,485	28,764	89,315
Baer's Pochard	<i>Aythya baeri</i>	VU	1,534		48	2	3,928
Ferruginous Duck	<i>Aythya nyroca</i>	nt	6,375	972	2,497	2,920	1,992
Tufted Duck	<i>Aythya fuligula</i>		1,755	7,208	35,573	8,465	124,132
Greater Scaup	<i>Aythya marila</i>			2			
Common Goldeneye	<i>Bucephala clangula</i>			2			
Goosander	<i>Mergus merganser</i>		16	59	65	867	579
White-headed Duck	<i>Oxyura leucocephala</i>	EN	36		8	4	5
unidentified ducks	Anatidae spp.		2,556	5,973	33,028	18,916	84,517
Eurasian Crane	<i>Grus grus</i>		450	21	328	128	393
Black-necked Crane	<i>Grus nigricollis</i>	VU				238	
Sarus Crane	<i>Grus antigone</i>	VU	77	51	178		130
Siberian Crane	<i>Grus leucogeranus</i>	CR	3		2		
Demoiselle Crane	<i>Grus virgo</i>				697		244
Slaty-breasted Rail	<i>Gallirallus striatus</i>		1		2	1	2
Water Rail	<i>Rallus aquaticus</i>				11	1	26
Baillon's Crake	<i>Porzana pusilla</i>			21	90	80	10
Spotted Crake	<i>Porzana porzana</i>					3	2
Ruddy-breasted Crake	<i>Porzana fusca</i>		8	2	26	5	4
Brown Crake	<i>Amaurornis akool</i>		1,575		31	7	35
Watercock	<i>Gallinula cinerea</i>		33	11	55	5	197
Purple Swamphen	<i>Porphyrio porphyrio</i>		6,013	1,591	4,683	3,364	8,115
Common Coot	<i>Fulica atra</i>		39,310	51,850	121,388	102,328	171,667
unidentified rails	Rallidae spp.			87			
Bronze-winged Jacana	<i>Metopidius indicus</i>		338	287	877	97	12,290
Greater Painted-Snipe	<i>Rostratula benghalensis</i>		10	19	216	9	1,063
Crab Plover	<i>Dromas ardeola</i>		2	11	49	1	64
Eurasian Oystercatcher	<i>Haematopus ostralegus</i>		2,490	30	3,824	16	23

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Ibisbill	<i>Ibidorhyncha struthersii</i>		14		1	84	29
Black-winged Stilt	<i>Himantopus himantopus</i>		7,910	5,645	10,287	8,138	12,245
Pied Avocet	<i>Recurvirostra avosetta</i>		739	267	525	303	1,696
Stone Curlew	<i>Burhinus oedicnemus</i>		45	38	13	24	8
Great Thick-knee	<i>Burhinus recurvirostris</i>		94	264	150	52	259
unidentified stone-curlews	<i>Burhinus</i> spp.					4	
Cream-coloured Courser	<i>Cursorius cursor</i>					32	4
Indian Courser	<i>Cursorius coromandelicus</i>			2	4	2	2
Collared Pratincole	<i>Glareola pratincola</i>			7			
Oriental Pratincole	<i>Glareola maldivarum</i>		1	20		6	23
Small Pratincole	<i>Glareola lactea</i>		962	993	2,922	2,519	3,901
Northern Lapwing	<i>Vanellus vanellus</i>		154	157	86	310	788
River Lapwing	<i>Vanellus duvaucelli</i>			303	30	151	156
Yellow-wattled Lapwing	<i>Vanellus malabaricus</i>		87	159	229	180	329
Sociable Lapwing	<i>Vanellus gregarius</i>	VU				2	19
White-tailed Lapwing	<i>Vanellus leucurus</i>		129	89	363	412	219
Grey-headed Lapwing	<i>Vanellus cinereus</i>		88	124	84	61	405
Red-wattled Lapwing	<i>Vanellus indicus</i>		1,889	1,776	3,409	2,629	3,577
Pacific Golden Plover	<i>Pluvialis fulva</i>		1,402	791	842	1,298	10,925
Grey Plover	<i>Pluvialis squatarola</i>		80	109	264	104	4,224
Great Ringed Plover	<i>Charadrius hiaticula</i>		738		302	3	3
Long-billed Plover	<i>Charadrius placidus</i>				61	19	12
Little Ringed Plover	<i>Charadrius dubius</i>		2,710	4,773	2,465	2,611	4,736
Kentish Plover	<i>Charadrius alexandrinus</i>		2,115	4,219	3,983	2,980	8,906
Lesser Sandplover	<i>Charadrius mongolus</i>		20,785	18,556	12,394	8,221	10,560
Greater Sandplover	<i>Charadrius leschenaultii</i>		53	1,719	954	4,040	15,429
Caspian Plover	<i>Charadrius asiaticus</i>		1				
unidentified <i>Charadrius</i> plovers	<i>Charadrius</i> spp.		16	16,263	18,534	17,035	13,655
Black-tailed Godwit	<i>Limosa limosa</i>		11,000	12,272	5,208	2,890	23,044
Bar-tailed Godwit	<i>Limosa lapponica</i>		26	267	2,157	238	930
unidentified godwits	<i>Limosa</i> spp.		61	37	65	79	158
Whimbrel	<i>Numenius phaeopus</i>		168	581	714	359	2,249
Eurasian Curlew	<i>Numenius arquata</i>		820	427	1,086	480	2,631
unidentified curlews	<i>Numenius</i> spp.					1	
Spotted Redshank	<i>Tringa erythropus</i>		82	396	480	499	463
Common Redshank	<i>Tringa totanus</i>		2,139	3,340	3,480	3,245	7,569
Marsh Sandpiper	<i>Tringa stagnatilis</i>		5,617	2,313	2,256	3,298	3,856
Common Greenshank	<i>Tringa nebularia</i>		909	1,536	1,861	2,248	3,444
Nordmann's Greenshank	<i>Tringa guttifer</i>	EN					3
Green Sandpiper	<i>Tringa ochropus</i>		143	328	714	1,138	1,895
Wood Sandpiper	<i>Tringa glareola</i>		572	708	929	709	4,594
unidentified <i>Tringa</i> sandpipers	<i>Tringa</i> spp.				33		
Terek Sandpiper	<i>Xenus cinereus</i>		127	160	129	25	133
Common Sandpiper	<i>Actitis hypoleucos</i>		1,335	1,466	3,816	2,648	5,239
Ruddy Turnstone	<i>Arenaria interpres</i>		254	447	117	223	181
Red-necked Phalarope	<i>Phalaropus lobatus</i>		1		13	16	6
Eurasian Woodcock	<i>Scolopax rusticola</i>		1		1	1	
Solitary Snipe	<i>Gallinago solitaria</i>			8	2	3	
Wood Snipe	<i>Gallinago nemoricola</i>	VU				3	
Pintail Snipe	<i>Gallinago stenura</i>		102	79	125	130	902
Swinhoe's Snipe	<i>Gallinago megala</i>					4	1
Common Snipe	<i>Gallinago gallinago</i>		199	366	653	889	4,045
unidentified snipes	<i>Gallinago</i> spp.		14	19	21	2	
Jack Snipe	<i>Lymnocyptes minimus</i>		63	60	5	4	4
Asian Dowitcher	<i>Limnodromus semipalmatus</i>	nt					368
Great Knot	<i>Calidris tenuirostris</i>			1	300	280	62
Sanderling	<i>Calidris alba</i>		134	3,228	2,461	1,220	1,122
Little Stint	<i>Calidris minuta</i>		6,688	13,273	12,914	13,196	24,572
Temminck's Stint	<i>Calidris temminckii</i>		11	1,059	2,295	1,486	3,414
Long-toed Stint	<i>Calidris subminuta</i>			550	3	3	4
Dunlin	<i>Calidris alpina</i>		1,807	1,785	3,765	1,059	6,802
Curlew Sandpiper	<i>Calidris ferruginea</i>		10,606	5,516	3,696	4,906	3,326
unidentified <i>Calidris</i> sandpipers	<i>Calidris</i> spp.		26	1,334	110	31	249
Spoon-billed Sandpiper	<i>Eurynorhynchus pygmaeus</i>	VU		6			
Broad-billed Sandpiper	<i>Limicola falcinellus</i>		14	21	115	75	267

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Ruff	<i>Philomachus pugnax</i>		2,881	1,580	3,357	3,348	6,501
unidentified shorebirds	Charadrii spp.		555	9,792	9,426	11,192	18,601
Sooty Gull	<i>Larus hemprichii</i>		551		155	4	12
Mew Gull	<i>Larus canus</i>			26			4
Heuglin's Gull	<i>Larus heuglini</i>		1,401	3	1,777	37	103
Yellow-legged Gull	<i>Larus cachinnans</i>		2,276	566	5,047	342	1,345
Great Black-headed Gull	<i>Larus ichthyaetus</i>		318	528	1,561	925	5,364
Brown-headed Gull	<i>Larus brunnicephalus</i>		1,404	1,658	6,115	619	10,356
Black-headed Gull	<i>Larus ridibundus</i>		5,464	2,162	17,202	3,998	29,600
Slender-billed Gull	<i>Larus geni</i>		636	54	781	124	52
unidentified gulls	<i>Larus spp.</i>		1,515	15	4,425	44	8,806
Whiskered Tern	<i>Chlidonias hybridus</i>		2,110	5,525	5,525	4,280	27,303
White-winged Black Tern	<i>Chlidonias leucopterus</i>		1,290	78	139	563	2,422
Gull-billed Tern	<i>Sterna nilotica</i>		1,627	1,177	2,050	918	2,667
Caspian Tern	<i>Sterna caspia</i>		699	548	1,371	266	211
River Tern	<i>Sterna aurantia</i>		816	341	1,446	1,110	9,890
Common Tern	<i>Sterna hirundo</i>		436	1,546	1,580	94	2,337
Black-bellied Tern	<i>Sterna acuticauda</i>	nt	7	39	24	47	456
Little Tern	<i>Sterna albifrons</i>		3,563	902	873	552	1,724
Greater Crested Tern	<i>Sterna bergii</i>		234	217	356	130	397
Lesser Crested Tern	<i>Sterna bengalensis</i>		109	48	221	148	5,278
Sandwich Tern	<i>Sterna sandwicensis</i>		700	14	541	8	49
unidentified <i>Sterna</i> terns	<i>Sterna spp.</i>		5	10	1	4	2,623
unidentified terns	Sterninae spp.		1,234	142	4,735	23	1,530
unidentified gulls/terns	Laridae spp.			118			
Indian Skimmer	<i>Rynchops albicollis</i>	VU		559	34		5,542
Total Waterbirds			508,030	504,480	1,005,325	576,278	2,372,849
Osprey	<i>Pandion haliaetus</i>		37	6	103	4	11
Brahminy Kite	<i>Haliastur indus</i>		262	224	200	198	110
White-bellied Sea Eagle	<i>Haliaeetus leucogaster</i>		13	23	5	14	11
Pallas's Sea Eagle	<i>Haliaeetus leucoryphus</i>	VU		2	12	9	9
White-tailed Sea Eagle	<i>Haliaeetus albicilla</i>	nt					2
Grey-headed Fishing Eagle	<i>Ichthyophaga ichthyaetus</i>	nt	4	5	6	20	4
Marsh Harrier	<i>Circus aeruginosus</i>		12	59	144	91	192
Eastern Marsh Harrier	<i>Circus spiliotus</i>			3		1	
Hen Harrier	<i>Circus cyaneus</i>					2	
Pallid Harrier	<i>Circus macrourus</i>	nt	1	9	10	6	3
Montagu's Harrier	<i>Circus pygargus</i>			2			3
Pied Harrier	<i>Circus melanoleucos</i>			3			
unidentified harriers	<i>Circus spp.</i>						1
Greater Spotted Eagle	<i>Aquila clanga</i>	VU	1	12	18	28	2
Imperial Eagle	<i>Aquila heliaca</i>	VU		2	4	2	1

Note:

T¹ – Globally threatened species as identified by BirdLife International (2001): CR – Critically Endangered; EN – Endangered; VU – Vulnerable; cd – Conservation Dependent; nt – Near Threatened.

3.2.2 Bangladesh

A total of 48 sites were counted at least once during 1997-2001 (Figure 14 and Table 5). Total numbers of waterbirds counted were 16,609 (6 sites), 71,776 (25 sites), 58,978 (12 sites), 57,810 (13 sites) and 185,411 (29 sites) in 1997, 1998, 1999, 2000 and 2001 respectively. Two sites, Kalkinir Char and Tangua Haor Complex, recorded more than 20,000 waterbirds; Tangua Haor was designated as a Ramsar site in 2000.

Totals of 102 species of waterbirds and seven species of wetland-dependent raptors were counted (Table 6). The most numerous species reported were Common Pochard (29,151 in 2001), Common Shelduck (20,075 in 2001), Red-crested Pochard (13,520 in 2001) and Gadwall (12,560 in 2001). The coastal areas of Bangladesh have been extremely important for non-breeding Common Shelduck in recent years; a team of bird-watchers reported sighting a flock of 120,000 individuals on the coast in December 2001 (Enam UI Haque, pers. comm., May 2002).

The highest count totals for five Vulnerable species recorded during this period (Table 6) were as follows: Baikal Teal (1 in 2001), Baer's Pochard (3,584 in 2001), Spoon-billed Sandpiper (6 in 1998), Indian Skimmer (5,400 in 2001) and Pallas's Sea Eagle (4 in 2001). Four Near Threatened species, Oriental Darter, Black-headed Ibis, Ferruginous Duck and Grey-headed Fishing Eagle were also recorded. The count of Indian Skimmer is worth highlighting as it is the largest number recorded at a site; the current estimated global population of this species is only 2,500–10,000 (Wetlands International 2002b).

Major uses of and threats to wetlands reported included sedimentation, fishing, cutting/clearance of vegetation, agriculture, and presence of domestic sewage and solid wastes.

The count data were provided by the Bangladesh Bird Club and individual counters.

Figure 14: AWC site coverage and numerical distribution of waterbirds in Bangladesh, 1997–2001

A dot represents the maximum number of waterbirds counted at a site during the AWC.

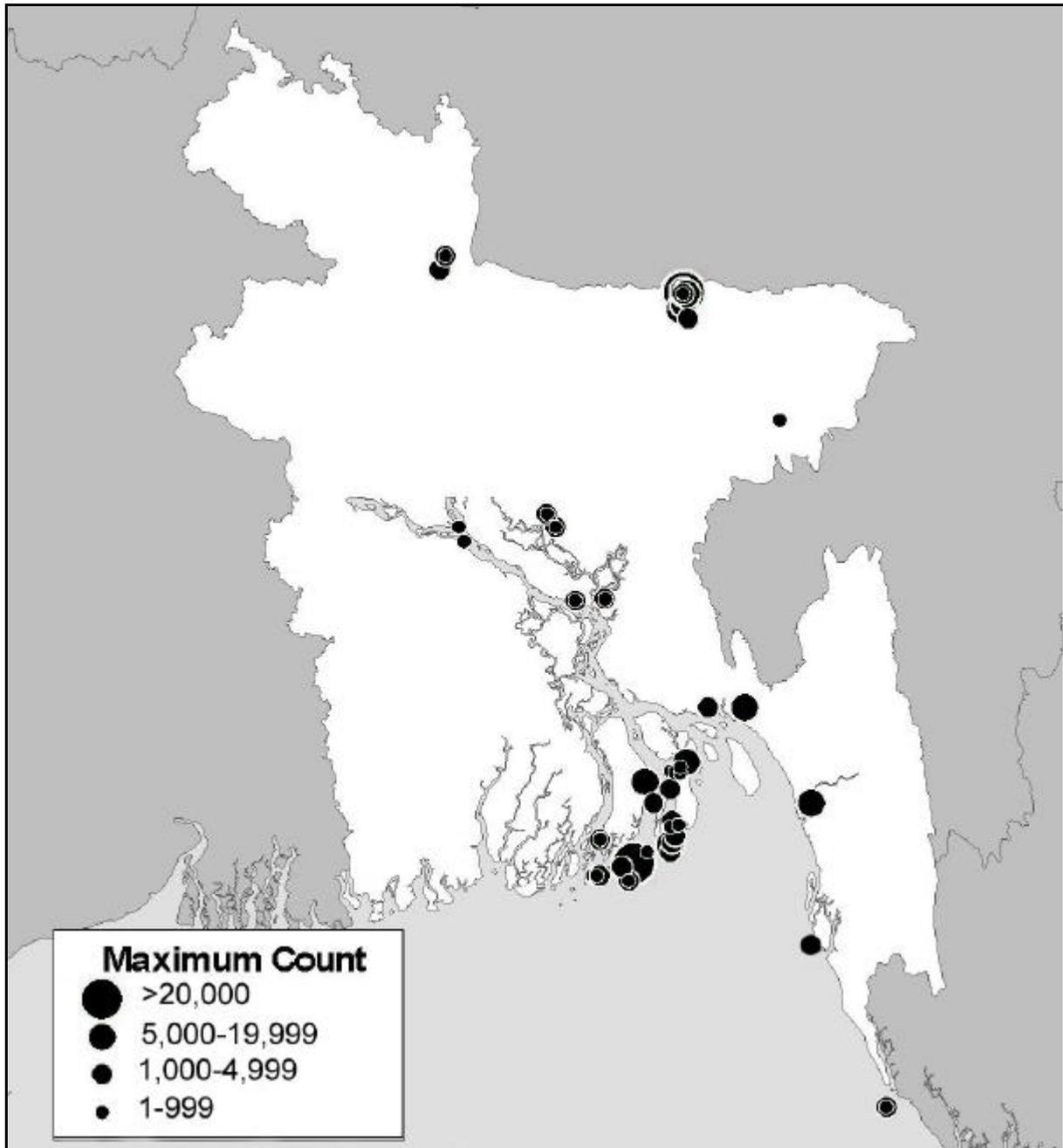


Table 5: AWC site coverage and waterbird and species totals in Bangladesh, 1997–2001

Site Name ¹	1997			1998			1999			2000			2001			Threats ⁴
	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	
Barisal																
Char Dighai													1,240	7	V	
Char Kachchakhali													2,448	4	Y	2
Char Kachchapia & Char Islam													1,224	8	W	
Char Kukrimukri													3,446	9	V	
Char Motaleb													4,175	7	Y	2
Char Peal (Char Pial)													653	12	V	2
Doba Char													6,008	34	W	
Eastern of Kalkinir Char													22,254	5	Y	
Puber Char & Char Shahjalal													2,842	35		
Shonar Char				1,083	25	V										
Chittagong																
Banda Khali												5,887	25			
Bayer Char				15,756	25		16,990	22		12,588	25		12,432	24		
Channel between Hatia & Borhanuddin				295	10	V										
Char Bhata				1,057	13		1,232	15		1,197	14		1,063	15		
Char Borhanuddin				918	30	V										
Char Mukteria				1,929	9	V										
Dhal Char (Hatiya)				659	16	W										
Hatia South Bank				21	8	V										
Hatia West Coast				81	10	W										
Jahmara													5,514	8	W	2
Moulovir (Maulavir) Char				1,423	24	V							1,245	8	V	1
Muhuri Dam				3,659	33	W	5,970	30	W	5,835	33	W	7,111	29	X	H
Namar Bazar													1,832	18		
Nangulia Char				15,289	27		16,222	23		13,841	19		12,300	21		
Nijhum Dweep				311	15	V							1,447	29	V	
Nogila Char				965	27	W										
Patenga Beach	8,779	10	Z	5,304	9	Z	3,538	9	Z	3,490	9	Z				IH
Shahparir Dwip				6,080	21		4,346	22		2,691	17		5,707	23		
Sonadia Island													4,873	20		
St. Martin Island				3,062	23		2,698	23		2,589	20		2,021	23		
Dhaka																
Arichar Char										164	21	W				
Dhaka Zoo	264	9	Z	43	5	Z										4L
Dighirpar	2,714	25	W	3,185	21	W	2,161	16	W	3,036	19	W				6
JU Campus	2,241	21	X	2,532	17	X	2,012	17	X	1,551	16	X	1,362	17	Z	48I
Kalir Char	594	23	W	690	16	W	574	15	W	3,423	20	W				48
Mirpur Ceramic Factory Premises	2,020	5	Z	3,517	7	Z	3,029	8	Z	1,527	7	Z				9
Padma River near Manikganj				27	9	V										
Rajshahi																
Gaibandha North				2,128	26											
Shariakandi				1,776	22	V										
Sylhet																
Boinna Beel													6,380	7	X	
Chatidhara Beel													1,967	9	W	2
Hail Haor							208	26	V							H
Khana Muia Beel													12,926	14	X	
Pana Beel													4,676	17	X	2
Pashua Haor													12,664	21	X	
Rowa Beel													18,313	20	X	
Tangua Haor Complex [R]													25,931	17	V	
Thhuar Char													1,364	19		

Notes:Site Name¹: [R] – Ramsar Site, refer to Section 1.4.2 for further information.Sp² – Species. C³ – Site Coverage: V – 25%; W – 25–50%; X – 50–75%; Y – 75–99%; Z – 100%.Threats⁴: 1 – None, 2 – Sedimentation, 3 – Excessive overgrowth of vegetation, 4 – Cutting/clearance of vegetation, 5 – Eutrophication, 6 – Agriculture along drying margins, 7 – Excessive cattle grazing, 8 – Domestic sewage, 9 – Solid waste, A – Industrial waste, B – Oil pollution, C – Pesticides, D – Fertilizers, E – Mining, F – Hunting/trapping/poaching of birds, G – Small scale fishing, H – Large scale fishing, I – Partial reclamation, J – Complete reclamation, K – Dam/barrage construction, L – Tourism/recreation.

Table 6: Waterbird species counts reported to the AWC from Bangladesh, 1997–2001

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Little Grebe	<i>Tachybaptus ruficollis</i>			17	301	100	500
Red-necked Grebe	<i>Podiceps grisegena</i>						10
Great Crested Grebe	<i>Podiceps cristatus</i>				2	3	1
Great White Pelican	<i>Pelecanus onocrotalus</i>						2
Great Cormorant	<i>Phalacrocorax carbo</i>			6		8	4
Little Cormorant	<i>Phalacrocorax niger</i>		54	41	48	20	1,775
Oriental Darter	<i>Anhinga melanogaster</i>	nt	1		1	1	1
Grey Heron	<i>Ardea cinerea</i>		60	108	9	7	408
Purple Heron	<i>Ardea purpurea</i>						1
Great White Egret	<i>Ardea alba</i>			193		1	10
Intermediate Egret	<i>Egretta intermedia</i>		80	38	37	54	2,233
Little Egret	<i>Egretta garzetta</i>		44	106	68	67	391
Cattle Egret	<i>Bubulcus ibis</i>			223	11	1	57
Indian Pond-Heron	<i>Ardeola grayii</i>		63	71	58	57	300
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>				1	13	13
Yellow Bittern	<i>Ixobrychus sinensis</i>				4		2
Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>				1		2
Asian Openbill	<i>Anastomus oscitans</i>		11	2		3	
Black Stork	<i>Ciconia nigra</i>		1	3			
Black-headed Ibis	<i>Threskiornis melanocephalus</i>	nt		43			51
Eurasian Spoonbill	<i>Platalea leucorodia</i>			34			9
Fulvous Whistling Duck	<i>Dendrocygna bicolor</i>		24	66	106	56	8
Lesser Whistling Duck	<i>Dendrocygna javanica</i>		4,530	6,430	5,270	3,140	1,200
Greylag Goose	<i>Anser anser</i>						25
Bar-headed Goose	<i>Anser indicus</i>			296			114
unidentified grey geese	<i>Anser spp.</i>						5
Comb Duck	<i>Sarkidiornis melanotos</i>		4	1			
Ruddy Shelduck	<i>Tadorna ferruginea</i>		806	512	373	700	2,628
Common Shelduck	<i>Tadorna tadorna</i>		21	142		4	20,075
Cotton Pygmy-Goose	<i>Nettapus coromandelianus</i>			7	16	50	22
Eurasian Wigeon	<i>Anas penelope</i>		25	2,328	1,500	2,005	9,133
Falcated Teal	<i>Anas falcata</i>		6	19	2	8	2
Gadwall	<i>Anas strepera</i>		7	1,275	158	326	12,560
Baikal Teal	<i>Anas formosa</i>	VU					1
Common Teal	<i>Anas crecca</i>		4	498	103	47	1,192
Mallard	<i>Anas platyrhynchos</i>			31			74
Spot-billed Duck	<i>Anas poecilorhyncha</i>		613	350	454	221	2,607
Northern Pintail	<i>Anas acuta</i>		283	951	2,160	137	3,575
Garganey	<i>Anas querquedula</i>		18	10	109	606	148
Northern Shoveler	<i>Anas clypeata</i>			82	50	4	60
Red-crested Pochard	<i>Netta rufina</i>			2			13,520
Common Pochard	<i>Aythya ferina</i>			24	33	18	29,151
Baer's Pochard	<i>Aythya baeri</i>	VU			4		3,584
Ferruginous Duck	<i>Aythya nyroca</i>	nt		2	50	4	251
Tufted Duck	<i>Aythya fuligula</i>		17	1,417	534	409	297
unidentified ducks	<i>Anatidae spp.</i>						6,400
Baillon's Crake	<i>Porzana pusilla</i>			3	3		3
Ruddy-breasted Crake	<i>Porzana fusca</i>			1	1	4	3
White-breasted Waterhen	<i>Amauornis phoenicurus</i>		20	24	10	11	9
Common Moorhen	<i>Gallinula chloropus</i>		31	162	198	422	300
Purple Swampphen	<i>Porphyrio porphyrio</i>			12	5	30	1,760
Common Coot	<i>Fulica atra</i>		5	802	1,262	1,500	9,700
Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>		5		7	8	692
Bronze-winged Jacana	<i>Metopidius indicus</i>		18	20	13	16	12
Greater Painted-Snipe	<i>Rostratula benghalensis</i>			4	1	2	12
Black-winged Stilt	<i>Himantopus himantopus</i>			17	8	8	35
Pied Avocet	<i>Recurvirostra avosetta</i>		30	8	1	17	324
Stone Curlew	<i>Burhinus oedipnemus</i>			1	1	2	3
Small Pratincole	<i>Glareola lactea</i>		684	618	712	2,087	2
River Lapwing	<i>Vanellus duvaucelli</i>			4	8	1	1
Yellow-wattled Lapwing	<i>Vanellus malabaricus</i>				3		
Grey-headed Lapwing	<i>Vanellus cinereus</i>			5	6	4	304
Red-wattled Lapwing	<i>Vanellus indicus</i>		18	52	42	51	39
Pacific Golden Plover	<i>Pluvialis fulva</i>			359	537	301	5,754

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Grey Plover	<i>Pluvialis squatarola</i>			29			26
Long-billed Plover	<i>Charadrius placidus</i>						2
Little Ringed Plover	<i>Charadrius dubius</i>			2,218	1,725	1,475	2,546
Kentish Plover	<i>Charadrius alexandrinus</i>		221	2,380	1,048	2,340	2,320
Lesser Sandplover	<i>Charadrius mongolus</i>		8,400	8,529	4,701	4,174	4,276
Greater Sandplover	<i>Charadrius leschenaultii</i>			1,584	804	3,996	1,173
unidentified <i>Charadrius</i> plovers	<i>Charadrius</i> spp.			16,075	18,439	17,035	13,652
Black-tailed Godwit	<i>Limosa limosa</i>			2,039	763	456	1,383
Bar-tailed Godwit	<i>Limosa lapponica</i>			267	249	234	412
unidentified godwits	<i>Limosa</i> spp.			37	65	79	158
Whimbrel	<i>Numenius phaeopus</i>		6	529	452	343	519
Eurasian Curlew	<i>Numenius arquata</i>		18	305	111	145	1,270
Spotted Redshank	<i>Tringa erythropus</i>			368	340	275	288
Common Redshank	<i>Tringa totanus</i>		58	964	930	844	1,536
Common Greenshank	<i>Tringa nebularia</i>			696	487	641	644
Green Sandpiper	<i>Tringa ochropus</i>		2	2	1		6
Wood Sandpiper	<i>Tringa glareola</i>		2	506	68	112	43
Terek Sandpiper	<i>Xenus cinereus</i>			47		2	2
Common Sandpiper	<i>Actitis hypoleucos</i>		9	50	16	15	65
Ruddy Turnstone	<i>Arenaria interpres</i>			6			4
Pintail Snipe	<i>Gallinago stenura</i>			23	29	26	12
Common Snipe	<i>Gallinago gallinago</i>		1	58	50	36	49
Little Stint	<i>Calidris minuta</i>		192	4,444	3,726	3,306	3,940
Temminck's Stint	<i>Calidris temminckii</i>			717	972	667	1,166
Dunlin	<i>Calidris alpina</i>			1			
Curlew Sandpiper	<i>Calidris ferruginea</i>		75	252	111	81	141
unidentified <i>Calidris</i> sandpipers	<i>Calidris</i> spp.			70	18	31	49
Spoon-billed Sandpiper	<i>Eurynorhynchus pygmaeus</i>	VU		6			
Broad-billed Sandpiper	<i>Limicola falcinellus</i>			20	67	25	178
Ruff	<i>Philomachus pugnax</i>			1,089	864	344	1,265
unidentified shorebirds	<i>Charadrii</i> spp.			9,029	8,457	8,413	8,980
Great Black-headed Gull	<i>Larus ichthyaetus</i>		43	78	120	40	960
Brown-headed Gull	<i>Larus brunnicephalus</i>		30	1,224	30	38	240
Black-headed Gull	<i>Larus ridibundus</i>					4	14
Slender-billed Gull	<i>Larus genei</i>			3			
Whiskered Tern	<i>Chlidonias hybridus</i>		6	79	15	20	978
Gull-billed Tern	<i>Sterna nilotica</i>			62			80
Caspian Tern	<i>Sterna caspia</i>			2			
River Tern	<i>Sterna aurantia</i>		58	39	38	75	65
Little Tern	<i>Sterna albifrons</i>			19			204
Greater Crested Tern	<i>Sterna bergii</i>						10
unidentified <i>Sterna</i> terns	<i>Sterna</i> spp.		5	10	1	4	
Indian Skimmer	<i>Rynchops albicollis</i>	VU		500			5,400
Total Waterbirds			16,609	71,776	58,978	57,810	185,411
Osprey	<i>Pandion haliaetus</i>		2	1	1	3	1
White-bellied Sea Eagle	<i>Haliaeetus leucogaster</i>			4			
Pallas's Sea Eagle	<i>Haliaeetus leucorhynchus</i>	VU					4
Grey-headed Fishing Eagle	<i>Ichthyophaga ichthyaetus</i>	nt	1			4	
Marsh Harrier	<i>Circus aeruginosus</i>			5	1	1	2
Eastern Marsh Harrier	<i>Circus spilnotus</i>			3		1	
Pied Harrier	<i>Circus melanoleucos</i>			1			

Note:

T¹ – Globally threatened species as identified by BirdLife International (2001): EN – Endangered; VU – Vulnerable; nt – Near Threatened.

3.2.3 Bhutan

After a gap of a decade, count data were received in 2000 and 2001 (Table 7). A total of 18 sites were counted at least once, mainly in the western half of the country (Figure 15). Total numbers of waterbirds counted were 1,281 (18 sites) and 667 (3 sites) in 2000 and 2001 respectively.

Totals of 27 species of waterbirds and three species of wetland-dependent raptors were counted (see Table 8). Ruddy Shelduck, Black-necked Crane (a Vulnerable species), Mallard, Common Teal and Goosander

were the most abundant species. A solitary Endangered White-bellied Heron and Near Threatened White-tailed Sea Eagle were recorded in 2000. Three Vulnerable species, Black-necked Crane (238 birds in 2000), Wood Snipe (3 in 2000) and Pallas's Sea Eagle (3 in 2000), were also recorded.

The major uses of and threats to the wetlands were cutting/clearance of vegetation, domestic sewage, solid waste, mining, hunting and reclamation.

The counts were provided by individual counters.

Figure 15: AWC site coverage and numerical distribution of waterbirds in Bhutan in 2000 and 2001
A dot represents the maximum number of waterbirds counted at a site during the AWC.

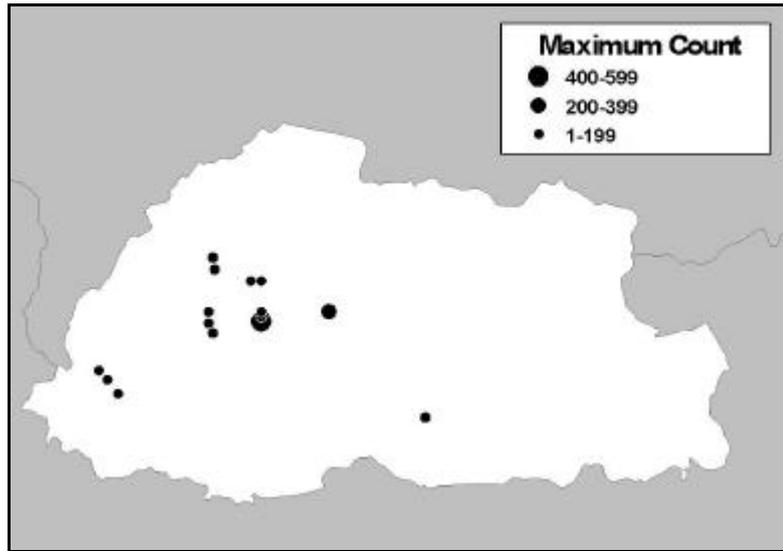


Table 7: AWC site coverage and waterbird and species totals in Bhutan, 2000 and 2001

Site Name	2000			2001			Threats ²
	Birds	Species	C ¹	Birds	Species	C ¹	
Paro							
Paro Chhu River Bondey Bridge – Paro Town	29	6					G
Paro Chhu River Isuna – Bondey Bridge	44	7	Y				I
Paro Chhu River Paro Town – Kichu Resort	62	9	Z				G
Punakha							
Mo Chhu River Goenshari	13	3	Y				4
Mo Chhu River Punakha – Sirigang	65	8	Y				1
Po Chhu River Punakha – Samdekha	42	7	Y				4
Puna Sang Chhu River Chime Chorten – Punakha	112	9	Y	78	10	Y	1
Thimphu							
Babesa Sewerage Station	86	10	Z	84	8	Z	89E
Forest Wetland Dechenphu	3	2	Z				
India House – Decheling Bridge	2	2	X				1
Marsh behind Swing Pool Sports Complex	8	2	Z				9IL
Marshy Area Taba	3	2	Z				J
Thim Chhu River Babesa Suspension Bridge – Ramtoto Bridge	23	7	Z				8
Thim Chhu River Tashichho Dzong – India House	4	3	Y				GL
Wangdue Phodrang							
Pa Chhu River Confluence	39	8	Y				1
Phobjikha Valley	240	2					
Puna Sang Chhu River Wangdue Phodrang Bridge – Chime Chorte	503	15	Y	505	16	Y	E
Zhemgang							
Mangde Chhu River Tingtibi – Berti	9	2	Y				G

Notes:

C¹ – Site Coverage; V – 25%; W – 25–50%; X – 50–75%; Y – 75–99%; Z – 100%.

Threats²: 1 – None, 2 – Sedimentation, 3 – Excessive overgrowth of vegetation, 4 – Cutting/clearance of vegetation, 5 – Eutrophication, 6 – Agriculture along drying margins, 7 – Excessive cattle grazing, 8 – Domestic sewage, 9 – Solid waste, A – Industrial waste, B – Oil pollution, C – Pesticides, D – Fertilizers, E – Mining, F – Hunting/trapping/poaching of birds, G – Small-scale fishing, H – Large-scale fishing, I – Partial reclamation, J – Complete reclamation, K – Dam/barrage construction, L – Tourism/recreation.

Table 8: Waterbird species counts reported to the AWC from Bhutan, 2000 and 2001

English Name	Scientific Name	T ¹	2000	2001
Great Cormorant	<i>Phalacrocorax carbo</i>		87	28
White-bellied Heron	<i>Ardea insignis</i>	EN	1	
Ruddy Shelduck	<i>Tadorna ferruginea</i>		313	292
Gadwall	<i>Anas strepera</i>		1	
Common Teal	<i>Anas crecca</i>		110	97
Mallard	<i>Anas platyrhynchos</i>		112	82
Spot-billed Duck	<i>Anas poecilorhyncha</i>		10	7
Northern Pintail	<i>Anas acuta</i>			5
Common Pochard	<i>Aythya ferina</i>			2
Tufted Duck	<i>Aythya fuligula</i>		1	
Goosander	<i>Mergus merganser</i>		108	61
Black-necked Crane	<i>Grus nigricollis</i>	VU	238	
Ibisbill	<i>Ibidorhyncha struthersii</i>		77	29
Northern Lapwing	<i>Vanellus vanellus</i>			6
River Lapwing	<i>Vanellus duvaucelli</i>		96	18
Red-wattled Lapwing	<i>Vanellus indicus</i>		7	1
Long-billed Plover	<i>Charadrius placidus</i>		3	1
Little Ringed Plover	<i>Charadrius dubius</i>		2	
Common Greenshank	<i>Tringa nebularia</i>		2	3
Green Sandpiper	<i>Tringa ochropus</i>		34	4
Common Sandpiper	<i>Actitis hypoleucos</i>		50	19
Eurasian Woodcock	<i>Scolopax rusticola</i>		1	
Solitary Snipe	<i>Gallinago solitaria</i>		3	
Wood Snipe	<i>Gallinago nemoricola</i>	VU	3	
Pintail Snipe	<i>Gallinago stenura</i>		5	10
Common Snipe	<i>Gallinago gallinago</i>		17	1
Great Black-headed Gull	<i>Larus ichthyaetus</i>			1
Total Waterbirds			1,281	667
Pallas's Sea Eagle	<i>Haliaeetus leucoryphus</i>	VU	3	
White-tailed Sea Eagle	<i>Haliaeetus albicilla</i>	nt	1	
Hen Harrier	<i>Circus cyaneus</i>		2	

Note:

T¹ – Globally threatened species as identified by BirdLife International (2001): EN – Endangered; VU – Vulnerable; nt – Near Threatened.

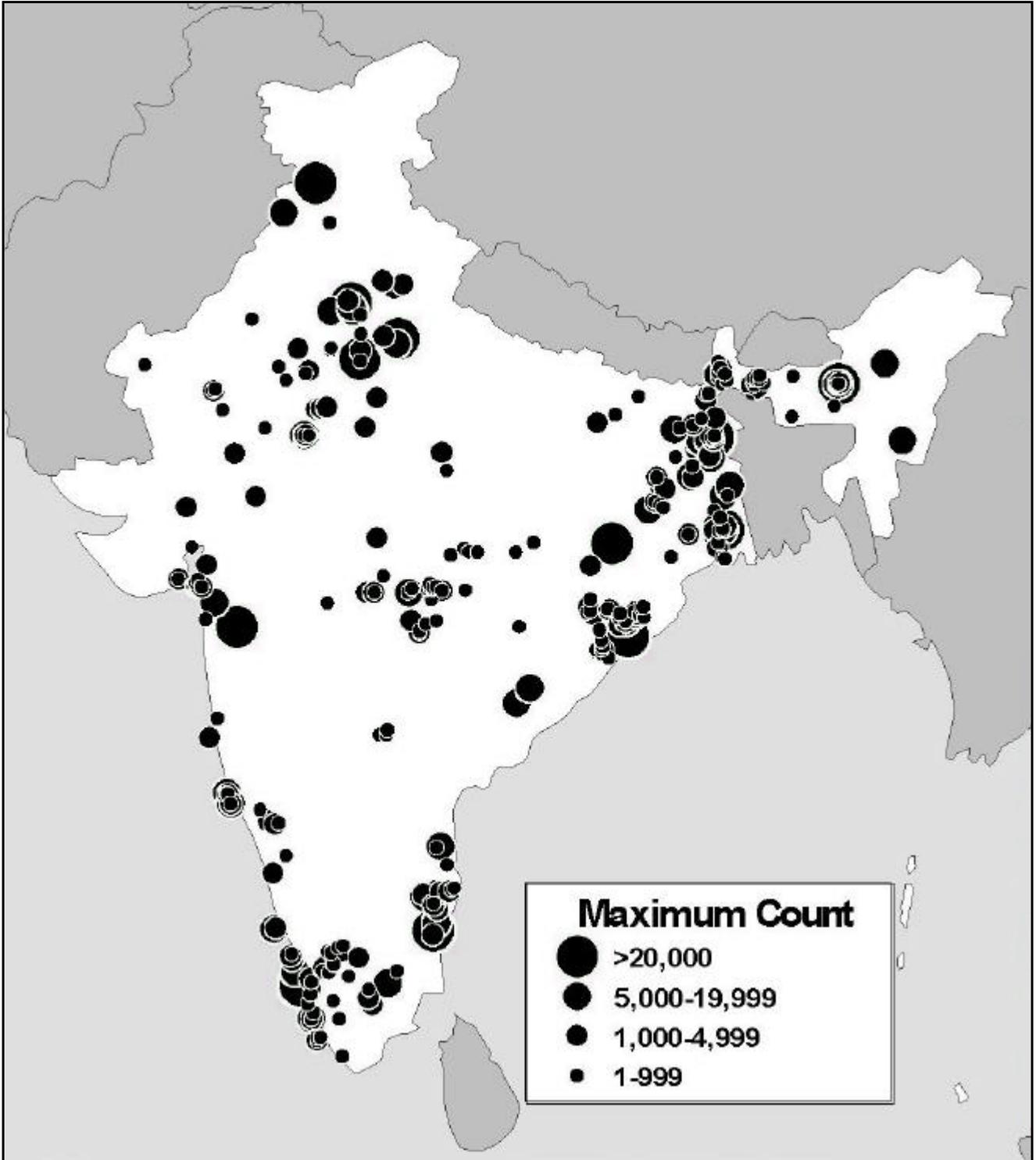
3.2.4 India

Count data were received for all five years, 1997–2001. A total of 355 sites were counted at least once (Figure 16 and Table 9). Totals of waterbirds counted were 157,292 (34 sites), 109,994 (65 sites), 568,658 (178 sites), 45,551 (17 sites), 1,615,664 (194 sites) in 1997, 1998, 1999, 2000 and 2001 respectively.

Eight of the total 19 Ramsar sites in India (13 of these sites were designated in 2002) were counted at least once, namely, Pong Dam Bird Sanctuary (93,487 in 2001), Vemband Lake (6,223 in 2001), Logtak Lake (highest count of 11,301 in 1999), Chilika Lake (781,739 in 2001), Harike Wetland (highest count of 13,735 in 2001), Popar Wetland (326 in 1999), Keoladeo National Park (highest count of 61,031 in 1997) and Sambhar Lake (920 in 1999).

A total of 13 sites, including three of the Ramsar sites mentioned above, recorded a maximum of more than 20,000 birds. The others were Patna Bird Sanctuary (148,426 in 1999), Kole Wetland (120,322 in 2001), Farakka Barrage (89,206 in 2001), Palta Water Works (52,488 in 2001), Ganga River at Malda (48,781 in 1999), Rengali (39,980 in 2001), Pobitora Sanctuary (55,851 in 1997), Yamuna River, I.S.B.T.-Nigambodh (34,481 in 2001), Nandur Madhemeshwar (21,418 in 1999) and Ousteri Tank (20,245 in 2001).

Figure 16: AWC site coverage and numerical distribution of waterbirds in India, 1997–2001
 A dot represents the maximum number of waterbirds counted at a site during the AWC.



Totals of 161 species of waterbirds and nine species of wetland-dependent raptors were counted (Table 10). Ten species with more than 50,000 individuals were recorded; the highest counts for each of these species were Northern Shoveler (193,205 in 2001), Northern Pintail (158,115 in 2001), Gadwall (141,520 in 2001), Eurasian Wigeon (136,232 in 2001), Tufted Duck (115,234 in 2001), Lesser Whistling Duck (91,619 in 2001), Garganey (87,259 in 2001), Common Coot (72,998 in 2001), Common Teal (55,056 in 2001) and Red-crested Pochard (54,542 in 2001).

The highest count totals of 14 globally threatened species during this period (Table 10) were as follows: the Critically Endangered Siberian Crane (3 in 1997 and 2 in 1999; the numbers of this small Central Asian flyway population that used to visit Keoladeo National Park has dwindled with no birds being recorded here in the last few years raising fears that this population may have been extirpated); the Endangered White-bellied Heron (10 in 2001), Greater Adjutant (6 each in 2000 and 2001), Nordmann's Greenshank (3 in 2001); the Vulnerable Spot-billed Pelican (199 in 2001), Lesser Adjutant (74 in 2001), Lesser White-fronted Goose (1 in 1997), Marbled Teal (24 in 1999), Baer's Pochard (1,534 in 1997), Sarus Crane (178 in 1999), Sociable Lapwing (17 in 2001), India Skimmer (138 in 2001), Pallas's Sea Eagle (4 in 1999) and Greater Spotted Eagle (4 in 1999).

Twelve Lower Risk species were also recorded: the highest count of Conservation Dependent Dalmatian Pelican was 81 in 1999. Eleven Near Threatened species, Oriental Darter, Painted Stork, Black-necked Stork, Black-headed Ibis, Lesser Flamingo, Ferruginous Duck, Beach Thick-knee, Asian Dowitcher, Black-bellied Tern, Grey-headed Fishing Eagle and Pallid Harrier were also recorded. Small numbers of Goliath Heron were recorded, a species for which the South Asian population is estimated at 20 individuals (Wetlands International 2002b).

Major uses of and threats to the wetlands were fishing, agriculture, hunting, sedimentation and grazing.

The counts were organised by the Bombay Natural History Society and a network of state coordinators.

Table 9: AWC site coverage and waterbird and species totals in India, 1997–2001

Site Name ¹	1997			1998			1999			2000			2001			Threats ⁴
	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	
Andhra Pradesh																
Durgama Tank, Madapur Village													58	7	Y	8
Gangavaram Tank													521	13	Y	8
Miyapur													11	2	Y	58
Nellapattu Bird Sanctuary													8,039	33	V	
Pulicat Lake Bird Sanctuary													715	26	Y	
Tammadi Tank, Khanamet Village													21	6	Y	35
Assam																
Aie River													63	13	X	F
Kamranga Beel													291	15		46FG
Kaziranga National Park									8,823	57	X					23
Pobitora Sanctuary – Dholi													3,602	41	X	
Pobitora Sanctuary – Haduk Beel	856	10	Y										340	23		DL
Pobitora Sanctuary – Jugdal	21	4	Y										490	32	Y	2
Pobitora Sanctuary – Pagladova	39,580	34	X										1,826	37	Y	2
Pobitora Sanctuary – Solmari													1,904	31	Y	
Pobitora Sanctuary – Tamulidova	15,021	28	X										5,775	54	Y	2G
Pobitora Sanctuary – Tuplung Jan	123	13	X										745	30		2
Tamranga Konora Beel Complex													485	13	X	26H
Bihar																
Baghar Bill							499	16	Z							25678CD
Baldia Chaur							357	5	Y							2345678
Baraila Jheel (Chaur)							178	6	V							67CDFH
Deoghar (Tapovan)				183	14	Z	235	14	Z							
Diara Land near Bridge, Bhagalpur							402	21	Y							25678CD
Dumka (Kumar Band)				437	12	Y	422	13	Y							L
Ghordaur							429	22	X							I
Gogabil Pakshi Vihar							4,294	25	Y							2568CDH
Kawar Lake Bird Sanctuary							2,263	20	W							
Nagi Dam Bird Sanctuary							2,866	23	Z							2568CDG
Nakti Dam Bird Sanctuary							762	9	Y							2568CDG
Topchani							1,225	26	X							FK
Udhuwa Lake Bird Sanctuary – Berhale Lake							817	13	W							234568C
Udhuwa Lake Bird Sanctuary – Pataura Lake							439	16	Z							2568CDH
Vikramshila Ganga Dolphin Sanctuary							16,176	47								

Site Name ¹	1997			1998			1999			2000			2001			Threats ⁴
	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	
Chhattishgarh																
Bhainsajhar – River Arpa													38	5		1
Dagori Village													49	11		6G
Haradeo River													258	14	Z	
Manoharsagar Bandh													256	7		6FG
Orarbandh													151	12		23FH
Udanti Wildlife Sanctuary													89	10		
Delhi																
Yamuna River, I.S.B.T. – Nigambodh													34,481	66	Y	23456CDG
Delhi/Uttar Pradesh																
Yamuna River: Okhla Barrage Bird Sanctuary				11,939	62					15,338	38		11,334	43	X	46789CDF
Goa																
Agassaim Mudflats													1,031	16	Y	G
Carambolim Tank							14,678	25	Z				6,353	34	Z	3I
Ciba-Geigy (Nocartis) Pvt. Ltd							245	17	Z				126	18	Z	1
Macazzen Tank							1,635	18	Z				5,635	19	Z	1F
Mandovi Estuary							669	19	Z				451	25	Y	G
Marjim - 'Tembwado' Coastline (mouth of River Chapora)							1,595	21	Z				2,059	17	Z	GHL
Neura Wetlands							1,466	30	W				599	28	Y	1G
Santa Cruz Pond							332	25								F
Shiroda													884	16	Y	1
Velim Tank							845	23	Z							
Gujarat																
Amli Dam										4,005	15		551	15	Y	
Barbodhan Lake													339	13	X	
Doswada										354	15	Z	330	14	Y	1
Eshar Dam													48	6	Z	
Gavier Lake										178	11		332	18	Y	
Kakrapur Dam										223	4		643	6	X	G
Kevdi Dam										1,418	16		184	13	Y	6
Kribhco Lake										1,282	14	Z	1,926	21	Y	1A
Lakhi Dam										102	10		25	6		
Lapkaman Tank	221	15														8
Panoli													4,230	15	Z	
Ratania Lake (Talav)										4,454	20	Y	1,235	9	Y	
Tapi Barrage													895	15	Y	
Tapi River at Causeway Surat										2,721	13					
Tapi River at Mandvi										281	7		669	9	X	
Thol Pond & Bird Sanctuary	1,803	36														6ACDG
Ukai Dam													3,000	12	X	
Haryana																
Bhindavas Lake Bird Sanctuary													9,942	57	X	35
Sultanpur Bird Sanctuary				22	10	P							1,124	21	X	67
Himachal Pradesh																
Pong Dam Bird Sanctuary [R]													93,487	53	Z	
Karnataka																
Akkialur Tank	970	23		1,072	32											6H
Chennamumbapura/Abbalagere													96	15	Z	68
Heggeri Tank	70	19		68	16											26G
Naregal Tank	1,360	36	Y	2,002	34											46
Ulave				2,081	3	Y										1
Kerala																
Ambalamedu Lake													9	6		
Barhmakulam Tank							66	6	Z				66	6	Z	
Cherai													4,315	34		
Chimmoni Reservoir													370	16		
Chulliyar Dam	505	22	W				303	14	V				268	13	V	
East Kallada Paddy Field and Marsh (Chittumala West)										243	23	X				DEF
Kadalundy Estuary										1,273	29	Y	1,755	46		
Kadapuzha – Marsh and Paddy Field, west Kallada										852	32	Y				GI

Site Name ¹	1997			1998			1999			2000			2001			Threats ⁴
	Birds	Sp ²	C ³	Birds	Sp ²	C ³										
Kaippuzha Muttu													10,782	19	X	1
Kallada													2,332	38		
Kalmandapam Paddy Fields	225	9	Y	189	11	Y	356	11	Y				181	8	Y	
Karali Marsh, west Kallada										3,543	31	X				EFGI
Karimkulam Tank							35	4	Z							
Kattampally													9,731	28		
Kodimatha Marshes													359	12		
Kole Wetlands													120,322	59	V	4CDFH
Kumarakom Paddyfields													183	14	Y	I
Kumarakom Tourist Complex													197	7	X	L
Madakkara													1,728	38		
Malampuzha Dam	942	28	W	942	25	V	1,003	27	W				912	24	V	
Mangalam Dam							144	14	W							
Mangalavanam													139	12	W	
Meenara Dam	368	19	X	247	19	V	356	22	W				242	18	V	
Narakathara													601	14		
Nedumudi													274	13	X	I
Sandflat on Periyar River at Kalady													580	16	Y	EF
Pallathuruthi													1,148	22	X	CD
Pathiramanal													1,201	16	Y	FL
Peechi Reservoir													3,228	15		
Periyar Tiger Reserve, Lake													553	22		
Poothani – Perumkulam Tank							144	12	Y				143	11	Y	
Pothundy Dam	86	13	W													
Purathur (Bharatapuzza) Estuary													13,433	41	V	6EFH
Thannermukkam Bund													200	10		
Thollairam Kayal													1,401	5	X	CD
Vembanad Lake [R]													6,223	27		
Walayar Dam	575	21	X	600	23	W	533	22	X	524	22	X	619	24	X	
Madhya Pradesh																
Balgaon Tank (Project Tiger Kanha)	38	11	Z													67H
Beni Sagar Dam				4,123	20	W										
Dularh Tank													188	14	X	
Kanha National Park – Bisanpura Tank	101	15	Z													
Kanha National Park – Sondhar Tanks	323	15	Z													
Mendrapani Pond													24	6	Z	
Panna National Park – Kvdan Dam				303	14	Y										6
Panna National Park – Rampuar Dam				805	32	Y	871	26	Y							67
Panna National Park – Talgaon Dam				174	23	Y	321	31	Y							578
Sakhya Sagar (Chandpata Lake), Madhav National Park							2,433	30	Y							578G
Samnapur & Basinkhar Tank (Project Tiger Kanha)	216	14	Z													67G
Tawa Reservoir							1,100	17	X							
Tekanpur Lake							2,150	16								2G
Maharashtra																
Ambazari Reservoir							5,057	22	W							AGL
Amgaon							178	18	X							47FG
Ankhoda Reservoir							595	20	Y							5G
Ashband													3,502	23	X	ACDFH
Band Irrigation Tank													128	13	X	1
Chargaon Lake													2,185	54	Z	47CDFG
Dahegaon Reservoir							225	8	X							3CH
Gangapur Dam							1,893	27	X				9,781	26	W	26G
Gorewada Reservoir							329	11	W							H
Guhagar Beach							2,439	10	Y							G
Januna Tank							859	23	Z				532	22		7G
Khursipar Lake							460	15	Y							57CDFG
Kokanabodi and Katadi Tanks							52	8	X							
Kolsa Tank (inside Andhary Sanctuary)							166	9	Y							
Malipar Tank							179	15	W							37FG
Mana Irai													142	19	X	4789CDEF
Mangalitanak													293	24	Z	47FG
Moharli							54	10	X							
Nag Thana Lake							654	23	X							67

Site Name ¹	1997			1998			1999			2000			2001			Threats ⁴
	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	
Nandur Madhemeshwar							21,418	50	Z				14,574	49	V	234567H
Pachgaon (New) Tank							108	15	X							67CDFG
Pandhari Lake							1,437	35	Y							7G
Propex Lake (O.F. Estate)							60	7	X							37LG
Raidoha & Daww Tanks (Raidoh)							54	7	X							47FG
Ranai Tank (near Tah Point)				803	25	Y										1
Rantalai Tank							601	23								2
Rawanwadi							389	10	X							7FHL
Satnur Lake							1,134	32	Y							67G
Shekdari Lake							593	26	X							67G
Shiregaon – Bandh							565	14	X							6CDG
Shivnibandh							1,367	21								57CDFH
Silli – Ambadi Tank							46	4	W							3678CD
Siwani Bandh Lake							2,646	42	X							5G
Sonegaon Reservoir							282	9	W							2
Tadoba Lake							343	7	X							L
Tavepar Tank							86	7								
Vashishti River at Pimpali Village							486	4	W							
Wareswar							133	5	X							
Manipur																
Logtak Lake [R]	446	9	W				11,301	26	X							
Meghalaya																
Umiam Reservoir							25	11	W							
Orissa																
Baghpali Reservoir													1,080	15	Z	25FG
Balimela													7,900	20		25FH
Belapathra Ghai													926	12		45G
Bhetanai Haja													804	15		26G
Chilika Lake [R]													781,739	100		
Deras Reservoir													3,616	7	Z	25FG
Dhulianali Dam – Manpur													1,196	10	Z	25H
Dimari Sora (Shishupalgarh)													297	8	W	236H
Gayala Banka on Mahanadi													493	16		25FH
Ghasiputa Pata													646	12	Z	6FH
Hirapur Bada Pokhari													9,442	38		
Jalamara Tank													92	4		26G
Jari-Pato													1,240	18		27CH
Jhumuka Reservoir													3,472	16	W	29G
Kalinji Bandha													433	5		257H
Karba Dam													88	9	W	25FH
Kathapal Reservoir													738	8		257F H
Kelakata Reservoir													635	5	Z	25FH
Khalakhala Reservoir													890	14	Y	2589FH
Khulusai Tank													947	12	Z	5FH
Kumuti Bandha													492	14		23GJ
Mahanadi (Kontilo)													611	12	Y	2G
Mahhkund													8,470	15		2H
Mankadagada Dam (M.I.P)													80	6	Z	25G
Mohadei Sagar Complex													440	11		236
Nagapur Bada Pokhari													26	26		
Naraj-Mundali													1,034	12		
Pangidi Haja													852	18		235
Pompalo Tank													1,053	6	Z	F
Raghua Gorada Pokhari													1,385	22		
Raghunath Sagar													1,723	20		25GI
Ralaba Bandha													346	9		235G
Remala													1,282	7		2
Rengali													39,980	21		2JH
Rusikulya Dam													973	24		
Sanglijhara Swamp													867	13	X	256FG
Sundarpur Tank													318	8		25G
Thana Canal Barang													198	4	Z	35H
Punjab																
Harike Wetland [R]							10,835	22	P				13,735	58		3G

Site Name ¹	1997			1998			1999			2000			2001			Threats ⁴
	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	
Ropar Wetland [R]							326	25								ACD
Rajasthan																
Abhedra							2,137	58	Y				1,004	42	Y	35F
Ajan Dam							550	30	X							6CD
Alniya Dam							2,974	51	Z				2,060	39	X	
Badli Pond							111	21	Y							
Bardha Dam							720	22	Y				2,821	45	Y	46EFH
Baretha Reservoir							432	25	X							2EH
Chambal River, Atsimalyaamalsara Village													3,598	50	X	149BDF
Fateh Sagar Lake							2,277	78	Z							789IL
Golyahedi Village Pond													450	9	X	2489CD
Guda-Bish (Vishnion) Dam							1,256	14					411	27	Z	17
Guron Ka Tatav							188	21	Y							
Haro Dam							1,618	15	X							6CDKL
Jalmahal Lake													3,362	23	Y	356G
Kankwari Dam													105	14	Z	1
Kaylana							821	37								
Keoladeo National Park [R]	61,031	67					37,817	65	W							3C
Kothari Dam							746	9	W							67FGK
Krishnapura Village Pond													185	21	Z	235689A
KTPS Ash Pond							791	29	Z							
Lakhawa Tank							495	31	Z				140	14	Z	2
Lordia Tatav. Pali							267	29	Z							46789
Mansarovar													1,470	14	X	6G
Mawatha Larowar													40	11	Z	G
Ranpur							663	37	Z							
Sambhar Lake [R]							920	21	Z							6E
Sardarsamand							514	10								6
Sariska Tiger Reserve													2,484	63	Z	
Sultana Lake							305	20	V							1
Surwal Lake				4,831	57											
Talwas							4,130	18	X							
Tehla Dam							721	37	Y							6H
Tolesar													165	20	Z	
Ummedganj							7,267	54	Z				3,582	42	Y	F
Tamil Nadu																
Andiodai Eri							689	26	Y							27
Bahoor Tank							345	5	W				4,873	11	X	
Bellathi Kuttai							24	5	X							
Bhavani Sagar							65	7	W							
IIIT Chennai Campus													817	12		45
Kaliveli	1,549	27		938	18	V	15,609	21	V				170	8	V	67FG
Kanoor							64	11	Y							
Kaveripakkam Tank							2,083	6	Z							46H
Kavilipalayam							1,284	16	W							
Keeranoor							49	11	Y							
Kodaikanal Lake							13	2								2589GL
Kongur Kulam							545	15	X							
Koothiargundu (Nilaiyur) Tank													4,719	15	Y	67CDGI
Kunnathur Tank							2,065	22	X				4,841	20		46CDFG
Madhavaram Water Tank							718	34	Y							78FG
Maduranthakkam Tank							297	9	X				3,860	5	X	68IL
Mamandur Tank							831	6	Y				521	4		
Manodai Eri							222	7	W							3
Nilaiyur Tank							1,311	16	Y							67FG
Ousteri Tank				827	20	X	7,502	34	P				20,245	23	Y	367AHL
Padiur Periakulam							496	16	W							4FGI
Simpson Estate – Semblum							1,190	11	Y							1
Singenallum													93	2		
Sriperumbudur Tank							1,216	6	Y							34
Tenneri Tanks							10,350	8	X				10,346	8	Y	6G
Thalaimalai							173	15	Y							
Thenkarai Tank							606	8	W				1,224	12	W	36CDFG
Ukkadam Tank							254	4	W							

Site Name ¹	1997			1998			1999			2000			2001			Threats ⁴
	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	
Uthiramerur Tank													1,130	8		
Vadakarai Tank							181	9	Y				537	11	W	34CDFG
Valayaru							157	6	X							
Vedapatty													16	6		9
Vellode							1,264	17	W							
Vettakudi – Karavetti							2,324	27	Y				8,549	32		1
Uttar Pradesh																
Ashpan							2,189	40	X				2,827	19	Y	89AH
Amakhera Tank							7,631	57	X							6
Bijnor Barrage				3,185	39	X										
River Hindon													549	15	V	468FG
Patna Bird Sanctuary							148,426	79	X				3,401	19	Z	6DL
Seohara Estate Wetlands				2,612	52	Z										
Sheilcha T Jheel													1,559	19		H
Shaikha							4,917	57								6
Tumeria Dam							4,694	67					3,525	28	Y	6FGH
West Bengal																
Adina Deer Park							2,529	17	Y				990	11	Z	35GHL
Ahiran, Murshidabad				2,010	43								999	22	Y	2
Alipore Zoological Gardens				843	4	Z	835	6	Z				595	5		45
Ashdykes of Farakka Thermal Power Project													5,104	32	Y	23AF
Bada Bill				148	8	Z	480	17	Z							3
Bagdebitala	987	15		519	15	Z										6FG
Baghar Beel							5,011	21	X				2,401	23	W	6CDFH
Bakhali				397	6	Y	367	5	Y							HL
Ballavpur Wildlife Sanctuary	2,327	25		12,077	23	Z	4,138	18	Z							5
Bara Beel							1,695	22	Y				448	15	Z	36CDEG
Bara Sagar Dighi							8,789	27	X							HL
Baratali Beel													664	15	Z	67DFHI
Beltali, Haldibari				378	16		395	15								FGH
Bhutan Ghat				75	1	V										
Birpara Jhil				133	5											
Brace Bridge Wetlands				367	7	Z	932	14								
Chander More													2,410	35	Z	467CDF
Chandni							1,161	22	Z							36H
Chouka							34	3								
Dabur Chaar	2,217	21		958	26		1,410	13	Z							HL
Domahani				320	11	X	752	17								CDGF
Durgapur Barrage	2,155	24		1,895	15	Z										AG
Farakka Barrage				2,232	18		6,726	32					89,206	21	W	1
Fulbari				417	11		255	13	Y							FHI
Gajaldoba Teesta Barrage							2,507	25	Y							
Ganga River at Malda							48,781	33	X							
Gazoledaba				6698	30	Y							1,989	29	Y	67CFGL
Gopal Pukar													471	4	Z	38
Gorumara National Park				357	17											1
It Bhata Ihil				180	1	Z	150	1	Z							G
Jaldapara Wildlife Sanctuary							257	13	W							2
Jalhari Bandh							473	9								8FG
Jhenaiguri Block				348	14	Y	166	16	Y							67GL
Joka, Indian Institute of Management				863	7	X										
Joredhighi							929	5	Z							G
Kaljani Bill				447	9	Z	438	10	Z							G
Kalyani Lake	3,144	19		1,576	12	Z	4,636	13	Z							X
Kansabati Reservoir							55	7								Y
Karnail Singh Park	7,462	25		4,929	28	Z	1,722	29	Z				3,084	21		FG
Kol Beel	994	20		268	15											6
Kumari Dam													576	13	Z	7G
Layabandh Beel													609	24	Z	3CDFH
Mahan Beel							1,467	19	Z				406	15	Z	6CDFG
Mahananda (Phulbari) Barrage													1,086	22		2
Maity Bandh							1,332	12								8FG
Malangi Beat of Jaldapara							396	11								

Site Name ¹	1997			1998			1999			2000			2001			Threats ⁴
	Birds	Sp ²	C ³	Birds	Sp ²	C ³										
Mara Toresha River													516	13	Z	368CDG
Mechi River				319	9	W	223	10	W							7CG
Nalban Fishery	1,684	14		1,112	13	Z	643	14	Z							H
Naya Bandh Bill							1,592	16	Y							
Palta Water Works, Barrackpore				1,141	21	Z	5,940	24					52,488	51	X	6CDFHK
Panchet Dam							4,151	15					2,802	9		
Rabindra Sarobar	239	7		434	5	Z	201	5	Z				132	5	Z	248L
Raigunj Bird Sanctuary													4,658	17	X	L
Rasar Char Purbasthali				8,895	23	Z	8,958	24					8,540	22	Y	
Rasik Bill				3,339	38	Y	2,699	36	Y							47DFHL
Riyang				151	6	Y										2L
Rydak River													252	9	W	CDFGK
Sagar Dighi				741	3	Z	2,700	1	Z				5,623	32	Z	HL
Saheb Bandh				1,181	25	Z	1,525	23	Y				2,953	20	Z	AB
Sankarpur Gangetic Isle Complex				1,495	14	Z	6,105	58	Y							
Sankosh River													199	8	W	FHKL
Santragachi Jheels	4,351	10		4,958	10	Z	8,540	15	Z							3589A
Sarengabad Wetland				507	5	Z	485	5	Z							67
Satbeki Bill				3,784	22	Z	3,340	18	Z							678FG
Senpukur				35	6	Z										
Serc Sanctuary, Satrangadi													16,831	23	Z	2
Sevoke				266	12	Y	246	10	Y							7FGL
Shalkhana Pond				1,255	3	Z										
Sunderban Biosphere Reserve				335	11		293	10	X							A
Tara Dam, Purulia													422	8	Z	
Tilpara Barrage	5,471	27		2,988	19	Y	4,487	18	Z							
Vikon Beel													425	22	Z	467CFG
West Pakhriguri				308	10	Z	416	12	Z							H

Notes:

Site Name¹ : [R] – Ramsar Site, refer to Section 1.4.2 for further information.

Sp² – Species; C³ – Site Coverage: V – 25%; W – 25–50%; X – 50–75%; Y – 75–99%; Z – 100%.

Threats⁴: 1 – None, 2 – Sedimentation, 3 – Excessive overgrowth of vegetation, 4 – Cutting/clearance of vegetation, 5 – Eutrophication, 6 – Agriculture along drying margins, 7 – Excessive cattle grazing, 8 – Domestic sewage, 9 – Solid waste, A – Industrial waste, B – Oil pollution, C – Pesticides, D – Fertilizers, E – Mining, F – Hunting/trapping/poaching of birds, G – Small-scale fishing, H – Large-scale fishing, I – Partial reclamation, J – Complete reclamation, K – Dam/barrage construction, L – Tourism/recreation.

Table 10: Waterbird species counts reported during the AWC in India, 1997–2001

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Little Grebe	<i>Tachybaptus ruficollis</i>		379	741	2,604	67	7,409
Red-necked Grebe	<i>Podiceps grisegena</i>		1	25	24		
Great Crested Grebe	<i>Podiceps cristatus</i>		5	59	195		859
Horned Grebe	<i>Podiceps auritus</i>						8
Black-necked Grebe	<i>Podiceps nigricollis</i>			4	59		37
unidentified grebes	Podicipedidae spp.			17	76		
Great White Pelican	<i>Pelecanus onocrotalus</i>		355	202	621	146	464
Spot-billed Pelican	<i>Pelecanus philippensis</i>	VU	173	33	40	145	199
Dalmatian Pelican	<i>Pelecanus crispus</i>	cd	75	12	81		28
unidentified pelicans	<i>Pelecanus</i> spp.				5		
Great Cormorant	<i>Phalacrocorax carbo</i>		244	826	2,871	153	12,516
Indian Cormorant	<i>Phalacrocorax fuscicollis</i>		604	660	1,388	39	3,307
Little Cormorant	<i>Phalacrocorax niger</i>		1,463	3,390	7,520	2,122	27,538
unidentified Cormorants	<i>Phalacrocorax</i> spp.		110	56	294	62	5,635
Oriental Darter	<i>Anhinga melanogaster</i>	nt	204	44	449	203	617
Grey Heron	<i>Ardea cinerea</i>		548	161	848	65	1,841
White-billed Heron	<i>Ardea insignis</i>	EN	4				10
Goliath Heron	<i>Ardea goliath</i>			2	2		2
Purple Heron	<i>Ardea purpurea</i>		344	66	444	93	766
Great White Egret	<i>Ardea alba</i>		589	241	1,188	247	2,364
Intermediate Egret	<i>Egretta intermedia</i>		619	215	1,623	177	4,533
Western Reef Egret	<i>Egretta gularis</i>				72	10	233
Little Egret	<i>Egretta garzetta</i>		1,566	1,033	5,071	284	10,644
Cattle Egret	<i>Bubulcus ibis</i>		698	2,560	9,008	277	12,366

South Asia

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
unidentified egrets	<i>Egretta/Bubulcus</i> spp.			1,752	367	10	
Indian Pond-Heron	<i>Ardeola grayii</i>		1,511	1,581	5,892	327	8,702
Green-backed Heron	<i>Butorides striatus</i>		4	2	27	3	122
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>		408	458	838		896
Little Bittern	<i>Ixobrychus minutus</i>				14		
Yellow Bittern	<i>Ixobrychus sinensis</i>			2	18	2	25
Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>				41	1	93
Black Bittern	<i>Ixobrychus flavicollis</i>		4		5	4	24
Eurasian Bittern	<i>Botaurus stellaris</i>			2	3		35
unidentified Ardeidae	Ardeidae spp.		180	195	445		6,646
Painted Stork	<i>Mycteria leucocephala</i>	nt	1,766	111	1,020	27	547
Asian Openbill	<i>Anastomus oscitans</i>		835	1,243	7,942	82	15,221
Black Stork	<i>Ciconia nigra</i>		5	74	146	1	145
Woolly-necked Stork	<i>Ciconia episcopus</i>		180	31	191	22	207
White Stork	<i>Ciconia ciconia</i>			25	32		41
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>	nt	19	44	30	23	20
Greater Adjutant	<i>Leptoptilos dubius</i>	EN	1	4	3	6	6
Lesser Adjutant	<i>Leptoptilos javanicus</i>	VU	11	21	73	35	74
unidentified storks	Ciconiidae spp.			10	2		87
Black-headed Ibis	<i>Threskiornis melanocephalus</i>	nt	323	76	451	1	870
Black Ibis	<i>Pseudibis papillosa</i>		5	21	227		262
Glossy Ibis	<i>Plegadis falcinellus</i>		21	2	919	8	873
unidentified ibises	Threskiornithidae spp.			2			
Eurasian Spoonbill	<i>Platalea leucorodia</i>		426	212	1,597	15	1,074
Greater Flamingo	<i>Phoenicopterus ruber</i>		40	1,001	127	69	5,723
Lesser Flamingo	<i>Phoeniconaias minor</i>	nt	2	10	6		174
unidentified flamingoes	Phoenicopteridae spp.			1	320		
Fulvous Whistling Duck	<i>Dendrocygna bicolor</i>		56	23	37		15,691
Lesser Whistling Duck	<i>Dendrocygna javanica</i>		27,029	15,591	53,243		91,619
Lesser White-fronted Goose	<i>Anser erythropus</i>	VU	1				
Greylag Goose	<i>Anser anser</i>		5,756	1,044	9,976	140	4,040
Bar-headed Goose	<i>Anser indicus</i>		3,956	3,307	5,260	2,252	14,469
unidentified grey geese	<i>Anser</i> spp.			104			
Comb Duck	<i>Sarkidiornis melanotos</i>		301	69	855		379
Ruddy Shelduck	<i>Tadorna ferruginea</i>		342	1,223	3,897	558	5,569
Common Shelduck	<i>Tadorna tadorna</i>		7	125	308	3	39
Cotton Pygmy -Goose	<i>Nettapus coromandelianus</i>		593	2,183	8,229	359	19,918
Eurasian Wigeon	<i>Anas penelope</i>		4,995	774	14,467	968	136,232
Falcated Teal	<i>Anas falcata</i>		3	24	40		441
Gadwall	<i>Anas strepera</i>		7,128	6,913	32,013	943	141,520
Common Teal	<i>Anas crecca</i>		3,833	4,185	13,676	2,248	55,056
Mallard	<i>Anas platyrhynchos</i>		1,476	517	1,067	50	791
Spot-billed Duck	<i>Anas poecilorhyncha</i>		2,306	244	4,761	860	2,748
Northern Pintail	<i>Anas acuta</i>		31,982	18,346	105,302	2,105	158,115
Garganey	<i>Anas querquedula</i>		10,419	823	18,098	640	87,259
Northern Shoveler	<i>Anas clypeata</i>		6,448	7,196	44,201	3,459	193,205
Marbled Teal	<i>Marmaronetta angustirostris</i>	VU			24		
Red-crested Pochard	<i>Netta rufina</i>		1,058	1,086	7,672		54,542
Common Pochard	<i>Aythya ferina</i>		2,506	486	16,244	837	27,342
Baer's Pochard	<i>Aythya baeri</i>	VU	1,534		44	2	314
Ferruginous Duck	<i>Aythya nyroca</i>	nt	5,243	964	2,421	238	959
Tufted Duck	<i>Aythya fuligula</i>		1,462	1,291	28,150	38	115,234
Greater Scaup	<i>Aythya marila</i>			2			
Common Goldeneye	<i>Bucephala clangula</i>			2			
Goosander	<i>Mergus merganser</i>			59	65		20
unidentified ducks	Anatidae spp.		1,556	5,973	30,728	18,116	75,167
Eurasian Crane	<i>Grus grus</i>		450	21	326		79
Sarus Crane	<i>Grus antigone</i>	VU	77	47	178		130
Siberian Crane	<i>Grus leucogeranus</i>	CR	3		2		
Demoiselle Crane	<i>Grus virgo</i>				667		216
Slaty-breasted Rail	<i>Gallirallus striatus</i>				2	1	2
Water Rail	<i>Rallus aquaticus</i>				11		26
Baillon's Crake	<i>Porzana pusilla</i>				11		1
Ruddy-breasted Crake	<i>Porzana fusca</i>		7	1	24		1
Brown Crake	<i>Amaurornis akool</i>		1,575		31	1	30

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>		27	131	650	29	880
Watercock	<i>Gallinula cinerea</i>				14	2	194
Common Moorhen	<i>Gallinula chloropus</i>		3,794	1,912	3,850	42	3,017
Purple Swampphen	<i>Porphyrio porphyrio</i>		4,051	181	3,395	1,585	5,367
Common Coot	<i>Fulica atra</i>		4,364	4,122	61,433	2,504	72,998
unidentified rails	Rallidae spp.			87			
Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>		1,672	251	1,575	77	1,189
Bronze-winged Jacana	<i>Metopidius indicus</i>		320	267	864	73	12,266
Greater Painted-Snipe	<i>Rostratula benghalensis</i>		10	8	214		143
Crab Plover	<i>Dromas ardeola</i>			11	16		57
Ibisbill	<i>Ibidorhyncha struthersii</i>				1		
Black-winged Stilt	<i>Himantopus himantopus</i>		145	952	2,117	66	4,851
Pied Avocet	<i>Recurvirostra avosetta</i>		41	107	91	75	781
Great Thick-knee	<i>Burhinus recurvirostris</i>			175	72		182
Oriental Pratincole	<i>Glareola maldivarum</i>		1	5			23
Small Pratincole	<i>Glareola lactea</i>		258	332	2,193	100	2,880
Northern Lapwing	<i>Vanellus vanellus</i>			127	50	189	352
River Lapwing	<i>Vanellus duvaucelli</i>			299	22	10	84
Yellow-wattled Lapwing	<i>Vanellus malabaricus</i>			6	164		89
Sociable Lapwing	<i>Vanellus gregarius</i>	VU					17
White-tailed Lapwing	<i>Vanellus leucurus</i>		2	4	89	3	81
Grey-headed Lapwing	<i>Vanellus cinereus</i>		88	119	78	57	101
Red-wattled Lapwing	<i>Vanellus indicus</i>		466	348	1,185	87	1,525
Pacific Golden Plover	<i>Pluvialis fulva</i>		38	1	24	56	4,763
Grey Plover	<i>Pluvialis squatarola</i>				28	20	2,008
Great Ringed Plover	<i>Charadrius hiaticula</i>		2				
Long-billed Plover	<i>Charadrius placidus</i>				8		8
Little Ringed Plover	<i>Charadrius dubius</i>		351	1,139	342	30	714
Kentish Plover	<i>Charadrius alexandrinus</i>		108	832	573	44	5,711
Lesser Sandplover	<i>Charadrius mongolus</i>			3,235	1,240	200	3,602
Greater Sandplover	<i>Charadrius leschenaultii</i>				8	10	14,230
unidentified <i>Charadrius</i> plovers	<i>Charadrius</i> spp.		16	188	90		
Black-tailed Godwit	<i>Limosa limosa</i>		477	282	1,532	12	17,605
Bar-tailed Godwit	<i>Limosa lapponica</i>				4		324
unidentified godwits	<i>Limosa</i> spp.		61				
Whimbrel	<i>Numenius phaeopus</i>		32	17	120		1,687
Eurasian Curlew	<i>Numenius arquata</i>		9	39	245		1,078
unidentified curlews	<i>Numenius</i> spp.					1	
Spotted Redshank	<i>Tringa erythropus</i>			28	127	212	125
Common Redshank	<i>Tringa totanus</i>		188	109	723	41	3,452
Marsh Sandpiper	<i>Tringa stagnatilis</i>		188	15	129		3,107
Common Greenshank	<i>Tringa nebularia</i>		263	55	884	132	1,017
Nordmann's Greenshank	<i>Tringa guttifer</i>	EN					3
Green Sandpiper	<i>Tringa ochropus</i>		96	21	300	35	362
Wood Sandpiper	<i>Tringa glareola</i>		393	89	678	42	4,444
unidentified <i>Tringa</i> sandpipers	<i>Tringa</i> spp.				33		
Terek Sandpiper	<i>Xenus cinereus</i>			5	45	6	96
Common Sandpiper	<i>Actitis hypoleucos</i>		478	746	2,223	77	1,821
Ruddy Turnstone	<i>Arenaria interpres</i>						26
Eurasian Woodcock	<i>Scolopax rusticola</i>		1		1		
Solitary Snipe	<i>Gallinago solitaria</i>			8	2		
Pintail Snipe	<i>Gallinago stenura</i>		3		46	9	70
Swinhoe's Snipe	<i>Gallinago megala</i>					4	1
Common Snipe	<i>Gallinago gallinago</i>		67	188	240	14	693
unidentified snipes	<i>Gallinago</i> spp.		14	19	21	1	
Jack Snipe	<i>Lymnocyptes minimus</i>		63	59	5		3
Asian Dowitcher	<i>Limnodromus semipalmatus</i>	nt					368
Sanderling	<i>Calidris alba</i>				25		
Little Stint	<i>Calidris minuta</i>		43	623	1,825	6	14,705
Temminck's Stint	<i>Calidris temminckii</i>		11	69	663	24	1,769
Long-toed Stint	<i>Calidris subminuta</i>				3		4
Dunlin	<i>Calidris alpina</i>			2	71	5	1,124
Curlew Sandpiper	<i>Calidris ferruginea</i>				26	10	1,488
unidentified <i>Calidris</i> sandpipers	<i>Calidris</i> spp.		26	1,264	107		5,635
Broad-billed Sandpiper	<i>Limicola falcinellus</i>			1			

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Ruff	<i>Philomachus pugnax</i>		2,804	82	1,009		2,368
unidentified shorebirds	Charadrii spp.		55	302	739	1	9,316
Mew Gull	<i>Larus canus</i>			26			4
Yellow-legged Gull	<i>Larus cachinnans</i>						10
Great Black-headed Gull	<i>Larus ichthyaetus</i>			2	301	5	706
Brown-headed Gull	<i>Larus brunnicephalus</i>			75	3,838	312	5,453
Black-headed Gull	<i>Larus ridibundus</i>		2	296	7,509	444	21,582
Slender-billed Gull	<i>Larus genei</i>						3
unidentified gulls	<i>Larus spp.</i>			15	1,258	34	8,806
Whiskered Tern	<i>Chlidonias hybridus</i>		3	374	585	142	24,082
White-winged Black Tern	<i>Chlidonias leucopterus</i>				2		20
Gull-billed Tern	<i>Sterna nilotica</i>		135	1	884	13	841
Caspian Tern	<i>Sterna caspia</i>				3		14
River Tern	<i>Sterna aurantia</i>		287	168	1,232	70	4,111
Common Tern	<i>Sterna hirundo</i>		7	2	86	23	306
Black-bellied Tern	<i>Sterna acuticauda</i>	nt		3	20		109
Little Tern	<i>Sterna albifrons</i>				98	70	1,141
Greater Crested Tern	<i>Sterna bergii</i>				3		77
Lesser Crested Tern	<i>Sterna bengalensis</i>				3		384
Sandwich Tern	<i>Sterna sandvicensis</i>						38
unidentified <i>Sterna</i> terns	<i>Sterna spp.</i>						2,623
unidentified terns	Sternae spp.		8	142	3,341	3	15
unidentified gulls/terns	Laridae spp.			118			
Indian Skimmer	<i>Rynchops albicollis</i>	VU		59	34		138
Total Waterbirds			157,292	109,994	568,658	45,551	1,615,664
Osprey	<i>Pandion haliaetus</i>		1	1	32	1	4
Brahminy Kite	<i>Haliaeetus indus</i>		158	52	138	60	5
White-bellied Sea Eagle	<i>Haliaeetus leucogaster</i>		1		4		
Pallas's Sea Eagle	<i>Haliaeetus leucoryphus</i>	VU			4		
Grey-headed Fishing Eagle	<i>Ichthyophaga ichthyaetus</i>	nt	1				
Marsh Harrier	<i>Circus aeruginosus</i>		6	12	43	2	4
Pallid Harrier	<i>Circus macrourus</i>	nt	1	1	2		
Pied Harrier	<i>Circus melanoleucos</i>			2			
Greater Spotted Eagle	<i>Aquila clanga</i>	VU	1		4		

Note:

T¹ – Globally threatened species as identified by BirdLife International (2001): CR – Critically Endangered; EN – Endangered; VU – Vulnerable; cd – Conservation Dependent; nt – Near Threatened.

3.2.5 Nepal

Count data were only received for 2000 and 2001, when 12 and nine sites were counted respectively in the river valleys and lakes of this mountainous country. A total of 17 sites were counted at least once (Figure 17 and Table 11). Total numbers of waterbirds counted were 15,817 and 9,898 for 2000 and 2001 respectively. Koshi Tappu, the only Ramsar site in Nepal, held the most significant waterbird population (4,417 in 2000).

Totals of 78 species of waterbirds and two species of wetland-dependent raptors were counted (Table 12). The most abundant species were Ruddy Shelduck (3,858 in 2000) and Lesser Whistling Duck (2,000 in 2000).

Three Vulnerable species, Spot-billed Pelican (1 in 2000), Lesser Adjutant (19 in 2000 and 7 in 2001) and Baer's Pochard (30 in 2001), and few individuals of six Near Threatened species, Oriental Darter, Black-necked Stork, Black-headed Ibis, Ferruginous Duck, Black-bellied Tern and White-tailed Sea Eagle, were reported.

The major uses of and threats to the wetlands were fishing, cutting/clearance of vegetation, agriculture, domestic sewage and hunting.

The counts were organized by Bird Conservation Nepal.

Figure 17: AWC site coverage and numerical distribution of waterbirds in Nepal in 2000 and 2001
A dot represents the maximum number of waterbirds counted at a site during the AWC.

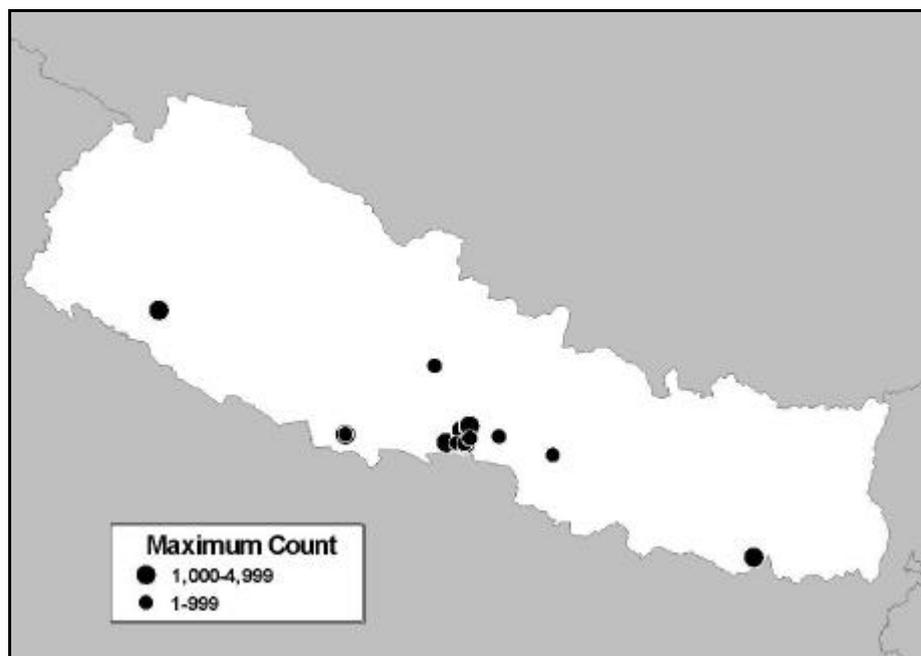


Table 11: AWC site coverage and waterbird and species totals in Nepal, 2000 and 2001

Site Name ¹	2000			2001			Threats ³
	Birds	Species	C ²	Birds	Species	C ²	
Rapti & Karra River, Hetauda	511	18	V				67AEF
Baradia							
Karnali River, Royal Bardia National Park	877	25		1,507	31	X	24GK
Chitwan							
Rapti River in Royal Chitawan National Park				1,401	29		
Sigrauli to Amaltari Ghat, Narayani River				1,709	38	X	468ACDF
Sigrauli-Amaltari Ghat, Narayani River E Channel	1,266	24	W				468AGL
Sigrauli-Amaltari Ghat, Narayani River W Channel	1,840	33	W				46GL
Chitwan/Nawalparasi							
Amaltari Ghat to Triveni Ghat, Narayani River	865	24	W	2,747	40	X	8AG
Gandaki							
Pokhara Valley Lakes (Khaste, Depang, Madi, Gunde, Rupa)				520	11		
Kathmandu							
Taudaha	390	14	W	459	10	Y	
Koshi							
Koshi (Koshi Tappu Wildlife Reserve) R. Barrage [R]	4,417	55					347FHK
Makwanpur							
Rapti River & Kara Khola	177	16	W				6AEG
Narayani							
Royal Chitwan National Park (RCNP) – Devi Tal				62	8	W	3CFG
RCNP – Rapti & Narayani River & Lakes, Devi, Manna Tals	3,893	39					
RCNP – Rapti and Dungre River	273	29					
RCNP – Rapti R. Kasara to Rapti/Narayani Confl.	986	31	W	726	30	X	24678FG
Nawal Parasi							
Narayani Dhuban to Triveni				768	26	X	468CDFH
Triveni Area Barrage	323	22					K

Notes:

Site Name¹ : [R] – Ramsar Site, refer to Section 1.4.2 for further information.

C² – Site Coverage: V – 25%; W – 25–50%; X – 50–75%; Y – 75–99%; Z – 100%.

Threats³: 1 – None, 2 – Sedimentation, 3 – Excessive overgrowth of vegetation, 4 – Cutting/clearance of vegetation, 5 – Eutrophication, 6 – Agriculture along drying margins, 7 – Excessive cattle grazing, 8 – Domestic sewage, 9 – Solid waste, A – Industrial waste, B – Oil pollution, C – Pesticides, D – Fertilizers, E – Mining, F – Hunting/trapping/poaching of birds, G – Small-scale fishing, H – Large-scale fishing, I – Partial reclamation, J – Complete reclamation, K – Dam/barrage construction, L – Tourism/recreation.

Table 12: Waterbird species counts reported to the AWC from Nepal, 2000 and 2001

English Name	Scientific Name	T ¹	2000	2001
Little Grebe	<i>Tachybaptus ruficollis</i>		21	52
Great Crested Grebe	<i>Podiceps cristatus</i>		10	12
Spot-billed Pelican	<i>Pelecanus philippensis</i>	VU	1	
Great Cormorant	<i>Phalacrocorax carbo</i>		452	644
Little Cormorant	<i>Phalacrocorax niger</i>		135	110
Oriental Darter	<i>Anhinga melanogaster</i>	nt	28	12
Grey Heron	<i>Ardea cinerea</i>		37	25
Purple Heron	<i>Ardea purpurea</i>		2	1
Great White Egret	<i>Ardea alba</i>		174	1043
Intermediate Egret	<i>Egretta intermedia</i>		392	64
Little Egret	<i>Egretta garzetta</i>		462	150
Cattle Egret	<i>Bubulcus ibis</i>		182	173
Indian Pond-Heron	<i>Ardeola grayii</i>		333	85
Green-backed Heron	<i>Butorides striatus</i>		16	6
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>		457	212
Yellow Bittern	<i>Ixobrychus sinensis</i>		3	
Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>		2	
Black Bittern	<i>Ixobrychus flavicollis</i>		1	
Asian Openbill	<i>Anastomus oscitans</i>		111	22
Black Stork	<i>Ciconia nigra</i>		75	75
Woolly-necked Stork	<i>Ciconia episcopus</i>		12	10
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>	nt	1	
Lesser Adjutant	<i>Leptoptilos javanicus</i>	VU	19	7
Black-headed Ibis	<i>Threskiornis melanocephalus</i>	nt	125	
Black Ibis	<i>Pseudibis papillosa</i>		200	216
Eurasian Spoonbill	<i>Platalea leucorodia</i>		40	
Lesser Whistling Duck	<i>Dendrocygna javanica</i>		2,000	50
Bar-headed Goose	<i>Anser indicus</i>		402	444
Comb Duck	<i>Sarkidiornis melanotos</i>			1
Ruddy Shelduck	<i>Tadorna ferruginea</i>		3,858	2,288
Cotton Pygmy -Goose	<i>Nettapus coromandelianus</i>			10
Eurasian Wigeon	<i>Anas penelope</i>		28	41
Falcated Teal	<i>Anas falcata</i>		8	
Gadwall	<i>Anas strepera</i>		869	796
Common Teal	<i>Anas crecca</i>		936	379
Mallard	<i>Anas platyrhynchos</i>		524	233
Spot-billed Duck	<i>Anas poecilorhyncha</i>		31	20
Northern Pintail	<i>Anas acuta</i>		592	132
Garganey	<i>Anas querquedula</i>		180	524
Northern Shoveler	<i>Anas clypeata</i>		26	
Red-crested Pochard	<i>Netta rufina</i>		107	77
Common Pochard	<i>Aythya ferina</i>		154	47
Baer's Pochard	<i>Aythya baeri</i>	VU		30
Ferruginous Duck	<i>Aythya nyroca</i>	nt	25	20
Tufted Duck	<i>Aythya fuligula</i>		20	
Goosander	<i>Mergus merganser</i>		759	498
Water Rail	<i>Rallus aquaticus</i>		1	
Ruddy-breasted Crake	<i>Porzana fusca</i>		1	
Brown Crake	<i>Amaurornis akool</i>		6	5
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>		39	9
Common Moorhen	<i>Gallinula chloropus</i>		258	197
Purple Swampphen	<i>Porphyrio porphyrio</i>		19	
Common Coot	<i>Fulica atra</i>		8	186
Bronze-winged Jacana	<i>Metopidius indicus</i>		8	12
Greater Painted-Snipe	<i>Rostratula benghalensis</i>		4	
Ibisbill	<i>Ibidorhyncha struthersii</i>		7	
Oriental Pratincole	<i>Glareola maldivarum</i>		6	
Small Pratincole	<i>Glareola lactea</i>		312	181
River Lapwing	<i>Vanellus duvaucelli</i>		44	53
Red-wattled Lapwing	<i>Vanellus indicus</i>		91	26
Long-billed Plover	<i>Charadrius placidus</i>		16	1
Little Ringed Plover	<i>Charadrius dubius</i>		17	3
Kentish Plover	<i>Charadrius alexandrinus</i>		4	2
Lesser Sandplover	<i>Charadrius mongolus</i>		110	64

English Name	Scientific Name	T ¹	2000	2001
Spotted Redshank	<i>Tringa erythropus</i>		8	2
Common Redshank	<i>Tringa totanus</i>		69	59
Common Greenshank	<i>Tringa nebularia</i>		513	346
Green Sandpiper	<i>Tringa ochropus</i>		94	41
Wood Sandpiper	<i>Tringa glareola</i>		11	
Common Sandpiper	<i>Actitis hypoleucos</i>		165	105
Pintail Snipe	<i>Gallinago stenura</i>		27	20
Common Snipe	<i>Gallinago gallinago</i>		3	
Little Stint	<i>Calidris minuta</i>			2
Temminck's Stint	<i>Calidris temminckii</i>		143	60
unidentified shorebirds	Charadrii spp.			2
Great Black-headed Gull	<i>Larus ichthyaeus</i>		15	9
Black-headed Gull	<i>Larus ridibundus</i>			3
River Tern	<i>Sterna aurantia</i>		4	1
Black-bellied Tern	<i>Sterna acuticauda</i>	nt	4	
Total Waterbirds			15,817	9,898
Osprey	<i>Pandion haliaetus</i>			1
White-tailed Sea Eagle	<i>Haliaeetus albicilla</i>	nt	1	

Note:

T¹ – Globally threatened species as identified by BirdLife International (2001): VU – Vulnerable; nt – Near Threatened.

3.2.6 Pakistan

Count data were received for all five years, 1997–2001. A total of 94 sites were counted at least once (Figure 18 and Table 13). Total numbers of waterbirds reported were 213,431 (42 sites), 171,670 (37 sites), 302,918 (42 sites), 365,895 (42 sites), 508,988 (55 sites) in 1997, 1998, 1999, 2000 and 2001 respectively.

The highest total counts at fourteen of 19 Ramsar sites in Pakistan counted at least once were as follows; Jiwani Mangroves (5,896 in 1999), Tanda Reservoir (545 in 2001), Thanedra Wala (896 in 2001), Ucchali Complex (including Ucchali Lake, Jahlar Lake and Khabbaki Lake, 16,684 in 1997), Taunsa Barrage (11,142 in 1999), Chashma Barrage (89,705 in 1997), Drigh Lake (12,352 in 2000), Haleji Lake (68,412 in 2000), Akro-II (includes a total of four sites with 1,159 birds in 1997), Hub Lake (14,417 in 2001), Indus River Mouth (Delta) (1,428 in 2001), Jhubo (Jubho) Lake (21,098 in 2001), Keenjhar (Kinjhar) Lake (38,902 in 2001), and Nurri Lagoon (43,079 in 2001).

In all, nine sites recorded more than 20,000 birds each; five of these were the Ramsar sites mentioned above, while the others were Manchar Lake (32,252 in 1999), Lugh Lake (30,602 in 2001), Indus Waterfowl Refuge (25,929 in 2001) and Phoosna (23,498 in 2000).

Totals of 132 species of waterbirds and eight species of wetland-dependent raptors were reported (Table 14). More than 20,000 individuals were recorded for eight waterbird species, the highest counts being Common Coot (101,316 in 2000), Common Teal (82,399 in 2001), Northern Shoveler (51,873 in 2001), Common Pochard (32,773 in 2001), Northern Pintail (31,500 in 2001), Eurasian Wigeon (26,381 in 2000), Mallard (26,161 in 1997) and Gadwall (23,627 in 2001).

Among the eight globally threatened species recorded, the Endangered White-headed Duck was recorded almost every year (36, 8, 4, and 5 birds recorded in 1997, 1999, 2000 and 2001 respectively; they constitute the entire South Asian non-breeding population, Li and Mundkur 2003); the Vulnerable species were Marbled Teal (454 in 1999), Sarus Crane (4 in 1998), Sociable Lapwing (2 each in 2000 and 2001), Indian Skimmer (4 in 2001), Pallas's Sea Eagle (8 in 1999), Greater Spotted Eagle (28 in 2000) and Imperial Eagle (4 in 1999). One Conservation Dependent species, Dalmatian Pelican, was recorded almost every year, with a maximum of 532 in 2000; seven Near Threatened species, Oriental Darter, Painted Stork, Black-necked Stork, Lesser Flamingo, Ferruginous Duck, Black-bellied Tern and Pallid Harrier, were recorded. In addition, counts of Red-throated Diver (43 in 2000) and Eurasian Bittern (125 in 1998) are also worthy of mention.

The major uses of and threats to the wetlands were overgrowth of vegetation, fishing, hunting, domestic sewage and cattle grazing.

The counts were organized by the Punjab Wildlife Department, Sindh Wildlife Department and Zoological Survey Department.

Figure 18: AWC site coverage and numerical distribution of waterbirds in Pakistan, 1997–2001
 A dot represents the maximum number of waterbirds counted at a site during the AWC.

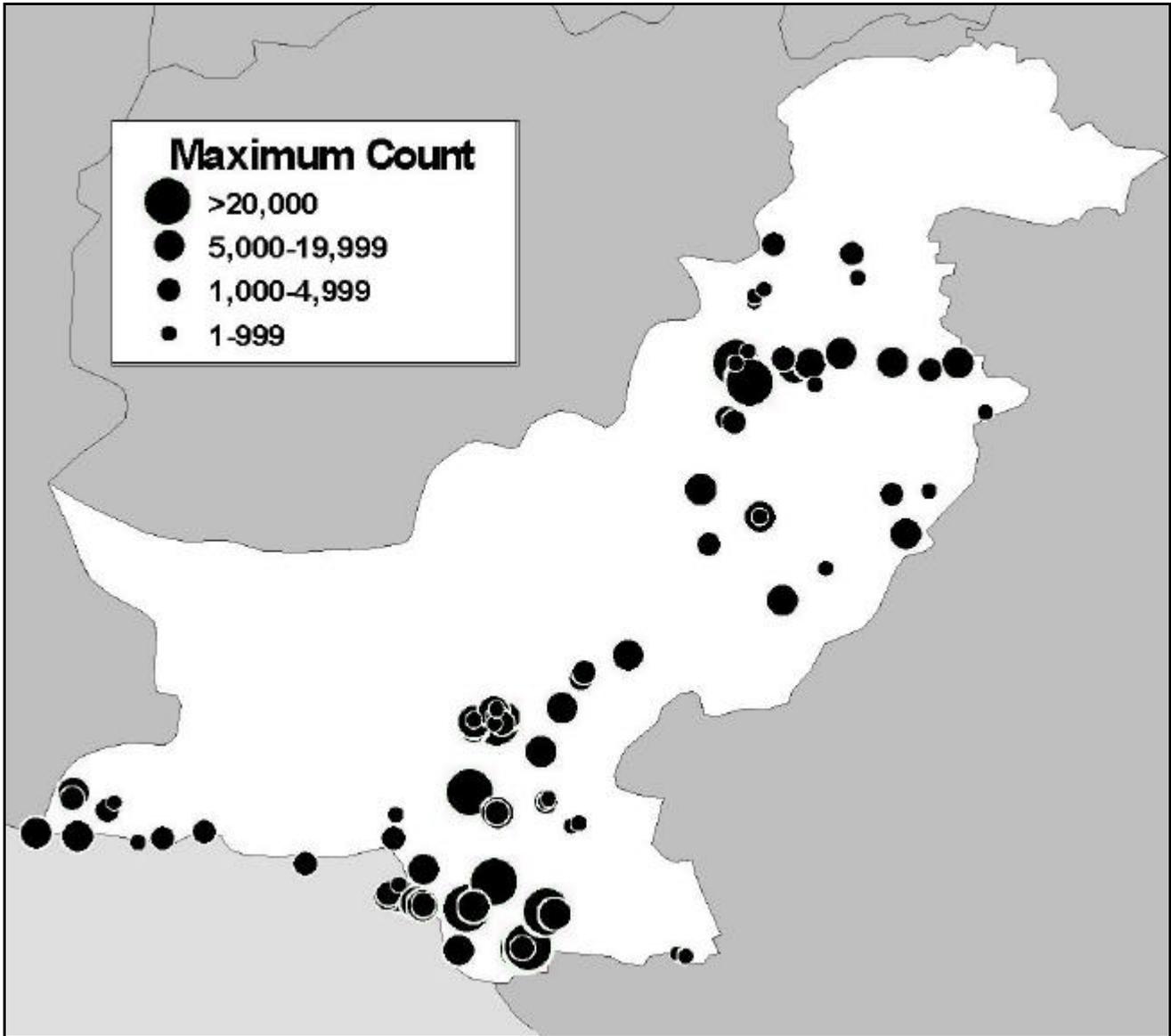


Table 13: AWC site coverage and waterbird and species totals in Pakistan, 1997–2001

Site Name ¹	1997			1998			1999			2000			2001			Threats ⁴
	Birds	Sp ²	C ³													
Baluchistan																
Akara (Kaur) Dam	367	7	Y				1,209	11								F
Ghazi Ghat	1,038	9														
Gwadar Beach	1,364	11	X				5,165	24								FH
Hingol Hor	950	17	X				1,852	15								F
Jiwani Mangroves [R]	4,174	24	Y				5,896	24								FH
Kalimat	3,600	22	X													
Kanki River							79	8								F
Kund Lake							72	4								H
Pansi Hor	2,363	16	W				4,905	24								4I

Site Name ¹	1997			1998			1999			2000			2001			Threats ⁴
	Birds	Sp ²	C ³													
Purali River							291	11								F
Ras Juddi	2,020	17	Y				3,989	23								4
Shadi Kour Estuary	97	6	W				255	8								4
Shamal Bandar							261	4								4F
Sonmiani Damb	2,865	19	Y				4,710	38								FG
Sur-Bundar Coastal Wetland	1,157	15	X				6,977	23								G
N.W.F.P.																
Darwazai Reservoir	7	2	Z													
Dera Ishmail Bridge	1,941	29	Z	1,715	38	Z										
Indus Waterfowl Refuge													25,929	38		
Kabul River (40km Strech)	221	9	Z	393	26	Z				410	17		1,462	20		AH
Kandar Reservoir	17	5	Z													
Khanpur Reservoir	361	3	Z	329	9	Z				317	9					
Tanda Reservoir [R]	522	7	Z	165	8	Z				537	8		545	9		
Tarbela Reservoir	2,094	6	X	1,450	27	Z				2,430	21		2,206	19		
Thanedar Wala [R]	88	6	Z	108	11	Z				268	14		896	17		
Punjab																
Bhahhar Bridge – D.I. Khaw	1,046	11														
Chaindian Wali										373	18	Z				
Ghamaghar Lake	806	13					630	4	Z	632	13	Z	373	12		
Head Islam	282	15											289	10		
Head Marala Barrage	3,714	36					13,108	22	Z	2,392	24		2,045	25		
Head Qadirabad	3,738	33					1,177	8	Z	3,323	22	Z	1,762	18		
Head Sulemanbe													14,490	30		
Jassal	880	19								381	16	Z				
Kallar Kahar Lake	11,044	14					109	6	Z	165	7	Z				
Kharal Lake	883	16					2,239	9	Z	460	14	Z	494	17		
Kurium River (D. I. Khaw)	208	9														
Lal Sohanara (Patisar) Lake	2,321	17					893	13	Z	12,604	27	Z	18,910	21		
Nammal Lake	1,100	20					815	9	Z	443	11	Z	1,240	17	Z	
Rang Pur (Klwghab)	12,262	28											848	12	Z	
Rasool Barrage	15,340	37					4,152	19	Z	15,181	30	Z	9,695	32		
Renala Estate	237	14														
Taunsa Barrage	8,826	21					11,142	28	Z	10,880	35	Z	4,640	24	Z	
Ucchali Complex [R] – Jahlar Lake	158	8					26	2	Z	41	5	Z	20	2	Z	
Ucchali Complex [R] – Khabbaki Lake	10,910	27					3,699	12	Z	9,427	17	Z	1,160	11	Z	
Ucchali Complex [R] – Ucchali Lake	5,616	28					5,803	11	Z	99	4	Z	70	4	Z	
Punjab/N.W.F.P.																
Chashma Barrage [R]	89,705	42		1,970	23	Z	10,107	20	Z	16,685	36	Z	74,894	34	Z	H
Darya Khan Bridge										3,309	32					
Sindh																
Akro-II [R] – Bawran Waro				171	6	Z										
Akro-II [R] – Bolahi Dhand				907	6	Z										
Akro-II [R] – Choor Dubo				27	2	Z										
Akro-II [R] –Yarey Wari Dhund				54	5	Z										
Badam (Badram)				1,065	14	Y							4,430	10	X	3FGH
Barr Talao													66	5	Z	
Bhan Sar Talao				35	11					104	13	Z	8	2	Z	3478
Bhode Sar I Talao													56	8	Z	37
Bhode Sar II Talao				173	18	Z				410	17	Z	183	12	Z	3478
Bolahi													1,561	12	X	F
Cape Monze	244	9					1,073	13								GL
Charvo Lake										18,908	16		10,880	20	X	BFH
Chach Jehan Khan													5,681	14	X	78FH
Clifton Beach	8,474	20	Y	5,686	24	X	9,211	45	Y	5,010	34	Y	4,172	42	Y	48BFHL
Drigh Lake [R]				4,549	10	Z	10,403	19	Z	12,352	21		7,757	24	Y	35FGH
Guddu Barrage				7,749	8	Z							7,589	40	X	26ABCDFG
Haleji Lake [R]				28,018	47		53,513	54	Y	68,412	54	X	44,841	39	X	2357GL
Hamal Katchri Lake				13,348	12	Z										
Hamal Lake							14,380	29	W	16,083	34		5,630	23	X	357FH
Hawks Bay/Sandspit	3,621	27	X	3,205	25	W	7,889	45	X	5,252	40	X	5,328	48	X	478BHL
Hub (Hab) Dam [R]	6,808	25	Y	12,507	45	X	10,471	50	X	13,079	46		14,417	49	X	267BCDHL
Hub (Hab) River Mouth				764	21	W	1,129	27	X	979	37	Y	1,240	45	Y	3678ABHG
Hudero Lake				11,907	29		16,144	34	X	12,131	30	X	12,738	21	Y	347BH

Site Name ¹	1997			1998			1999			2000			2001			Threats ⁴
	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	
Ibrahim's Haidri (Coastal)				1,652	28					1,798	39	X	2,708	47	X	48ABFH
Indus River Mouth (Delta) [R]													1,418	23	W	FH
Jabho (Jhubo) Lake [R]													21,098	23	X	FH
Jukhrao Dhand													8,614	15	X	F
Kalkan Wari Chand													7,458	25	X	HF
Keenjhar Lake [R]				35,836	44		21,928	40	X	29,749	42		38,902	24	X	34567BHL
Korangi Creek				4,753	43		5,079	43	X	4,058	43	X	4,502	51	X	489ABHL
Lungh Lake				20,113	23	Z	14,772	27	Z	18,072	33		30,602	37	Z	236CD
Manchar Lake							32,252	42	X	31,816	50		10,431	33	X	3567BCDFH
Miani Lake, Larkana				573	6	Y										3FH
Narya Sar Talao				138	21	Z				249	18	Z	88	12	Z	3478
Nur-ri, Badin [R]													43,079	41	X	FH
Pagri, Larkana				2,677	16	Y										3
Phoosna (Phoosani)										23,498	34		20,510	33	X	3BH
Pugri							8,069	19	W				9,865	19	X	23FH
Rajo Dero										1,366	34	Y				FH
Rup (Ghauspur) Lake				86	5	Z	4,143	23	Y				3,707	15	X	2367DFGH
Sanghiaro Lake				877	13	Y										FH
Sangrario Dhand													2,225	15		F
Saro				709	9	Y										3FH
Sindh Dhoro (Chimney Lake)				494	3	Z							2,059	25	X	368DFG
Soonahri				51	4	Z										3FH
Sukkur Barrage				6,639	8	Y	3,111	12	Y	3,828	23		3,535	39	X	2678ABDHL
Tharri										11,857	25		9,859	29	X	3FH
Zeroo, Larkana				876	12	Z										46FG

Notes:

Site Name¹: [R] – Ramsar Site, refer to Section 1.4.2 for further information.

Sp² – Species. C³ – Site Coverage: V – 25%; W – 25–50%; X – 50–75%; Y – 75–99%; Z – 100%.

Threats⁴: 1 – None, 2 – Sedimentation, 3 – Excessive overgrowth of vegetation, 4 – Cutting/clearance of vegetation, 5 – Eutrophication, 6 – Agriculture along drying margins, 7 – Excessive cattle grazing, 8 – Domestic sewage, 9 – Solid waste, A – Industrial waste, B – Oil pollution, C – Pesticides, D – Fertilizers, E – Mining, F – Hunting/trapping/poaching of birds, G – Small-scale fishing, H – Large-scale fishing, I – Partial reclamation, J – Complete reclamation, K – Dam/barrage construction, L – Tourism/recreation.

Table 14: Waterbird species counts reported to the AWC from Pakistan, 1997–2001

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Red-throated Diver	<i>Gavia stellata</i>					43	
Little Grebe	<i>Tachybaptus ruficollis</i>		945	897	1,840	1,964	950
Red-necked Grebe	<i>Podiceps grisegena</i>						36
Great Crested Grebe	<i>Podiceps cristatus</i>		314	45	203	105	359
Black-necked Grebe	<i>Podiceps nigricollis</i>		99	191	115	144	455
Great White Pelican	<i>Pelecanus onocrotalus</i>		2,833	196	4,028	1,375	6,708
Dalmatian Pelican	<i>Pelecanus crispus</i>	cd	184		150	532	228
Great Cormorant	<i>Phalacrocorax carbo</i>		1,211	4,256	2,457	4,852	9,688
Indian Cormorant	<i>Phalacrocorax fuscicollis</i>		292	2	152	38	583
Little Cormorant	<i>Phalacrocorax niger</i>		1,453	3,087	6,864	6,627	10,826
Oriental Darter	<i>Anhinga melanogaster</i>	nt					71
Grey Heron	<i>Ardea cinerea</i>		1,201	456	1,408	1,152	3,630
Purple Heron	<i>Ardea purpurea</i>		235	38	177	190	116
Great White Egret	<i>Ardea alba</i>		471	426	698	1,190	5,204
Intermediate Egret	<i>Egretta intermedia</i>		569	692	1,143	1,107	2,592
Western Reef Egret	<i>Egretta gularis</i>		59	176	364	420	488
Little Egret	<i>Egretta garzetta</i>		2,210	532	5,140	5,438	9,049
Cattle Egret	<i>Bubulcus ibis</i>		934	339	1,426	2,488	1,366
Indian Pond-Heron	<i>Ardeola grayii</i>		909	768	1,328	1,916	1,812
Green-backed Heron	<i>Butorides striatus</i>						28
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>		30	275	275	262	300
Yellow Bittern	<i>Ixobrychus sinensis</i>					8	36
Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>			6			
Eurasian Bittern	<i>Botaurus stellaris</i>			125		1	
Painted Stork	<i>Mycteria leucocephala</i>	nt				8	
Black Stork	<i>Ciconia nigra</i>					50	12

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
White Stork	<i>Ciconia ciconia</i>		2	1		33	2
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>	nt	13				2
Glossy Ibis	<i>Plegadis falcinellus</i>			72	26	163	192
Eurasian Spoonbill	<i>Platalea leucorodia</i>		116		487	852	2,149
Greater Flamingo	<i>Phoenicopterus ruber</i>		2,858	1,276	1,741	1,859	7,824
Lesser Flamingo	<i>Phoeniconaias minor</i>	nt	390				318
Greylag Goose	<i>Anser anser</i>		9			35	150
Bar-headed Goose	<i>Anser indicus</i>		699		3,800	451	15
Ruddy Shelduck	<i>Tadorna ferruginea</i>		1,133	150	505	278	954
Common Shelduck	<i>Tadorna tadorna</i>				75	40	976
Cotton Pygmy -Goose	<i>Nettapus coromandelianus</i>			266	330	465	1,144
Eurasian Wigeon	<i>Anas penelope</i>		11,242	14,982	13,375	26,381	26,077
Falcated Teal	<i>Anas falcata</i>				45		
Gadwall	<i>Anas strepera</i>		3,077	3,799	5,508	5,435	23,627
Common Teal	<i>Anas crecca</i>		19,017	16,563	43,244	50,662	82,399
Mallard	<i>Anas platyrhynchos</i>		26,161	6,448	9,280	14,331	18,798
Spot-billed Duck	<i>Anas poecilorhyncha</i>			70		286	1,318
Northern Pintail	<i>Anas acuta</i>		16,033	11,117	18,112	27,846	31,500
Garganey	<i>Anas querquedula</i>			1,385	168	503	133
Northern Shoveler	<i>Anas clypeata</i>		15,809	18,023	29,013	31,611	51,873
Marbled Teal	<i>Marmaronetta angustirostris</i>	VU		88	454	326	25
Red-crested Pochard	<i>Netta rufina</i>		3,899	14	93	16	17
Common Pochard	<i>Aythya ferina</i>		27,374	12,893	18,208	27,915	32,773
Ferruginous Duck	<i>Aythya nyroca</i>	nt	1,132	6	26	2,668	762
Tufted Duck	<i>Aythya fuligula</i>		276	4,500	6,889	7,997	8,601
Goosander	<i>Mergus merganser</i>		16				
White-headed Duck	<i>Oxyura leucocephala</i>	EN	36		8	4	5
unidentified ducks	Anatidae spp.		1,000		2,000		1,950
Eurasian Crane	<i>Grus grus</i>				2	128	314
Sarus Crane	<i>Grus antigone</i>	VU		4			
Demoiselle Crane	<i>Grus virgo</i>				30		28
Baillon's Crake	<i>Porzana pusilla</i>			18	76	80	6
Spotted Crake	<i>Porzana porzana</i>					3	2
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>		472	6	185	331	375
Watercock	<i>Gallicrex cinerea</i>				35		
Common Moorhen	<i>Gallinula chloropus</i>		904	933	1,656	1,533	2,339
Purple Swamphen	<i>Porphyrio porphyrio</i>		751	408	456	887	631
Common Coot	<i>Fulica atra</i>		34,941	46,925	58,693	101,316	88,763
Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>		32		452	477	410
Greater Painted-Snipe	<i>Rostratula benghalensis</i>			7			908
Crab Plover	<i>Dromas ardeola</i>		2		6		
Eurasian Oystercatcher	<i>Haematopus ostralegus</i>		2,490	30	3,824	16	22
Ibisbill	<i>Ibidorhyncha struthersii</i>		14				
Black-winged Stilt	<i>Himantopus himantopus</i>		1,085	1,096	3,345	2,829	5,411
Pied Avocet	<i>Recurvirostra avosetta</i>		668	152	433	211	591
Stone Curlew	<i>Burhinus oedicephalus</i>					1	
Great Thick-knee	<i>Burhinus recurvirostris</i>					2	6
unidentified stone-curlews	<i>Burhinus</i> spp.					4	
Cream-coloured Courser	<i>Cursorius cursor</i>					32	4
Indian Courser	<i>Cursorius coromandelicus</i>					2	
Small Pratincole	<i>Glareola lactea</i>						832
Northern Lapwing	<i>Vanellus vanellus</i>		154	30	36	121	430
Yellow-wattled Lapwing	<i>Vanellus malabaricus</i>			64	8	120	180
Sociable Lapwing	<i>Vanellus gregarius</i>	VU				2	2
White-tailed Lapwing	<i>Vanellus leucurus</i>		127	85	274	409	138
Red-wattled Lapwing	<i>Vanellus indicus</i>		631	741	1,826	1,730	1,681
Pacific Golden Plover	<i>Pluvialis fulva</i>					18	14
Grey Plover	<i>Pluvialis squatarola</i>			27	199	12	2,144
Great Ringed Plover	<i>Charadrius hiaticula</i>		735		298		
Long-billed Plover	<i>Charadrius placidus</i>				53		
Little Ringed Plover	<i>Charadrius dubius</i>		2,077	326	350	909	1,316
Kentish Plover	<i>Charadrius alexandrinus</i>		1,274	359	2,038	168	714
Lesser Sandplover	<i>Charadrius mongolus</i>		370	64	965	344	240
Greater Sandplover	<i>Charadrius leschenaultii</i>		45		40		4
Black-tailed Godwit	<i>Limosa limosa</i>		598	710	330	306	1,274

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Bar-tailed Godwit	<i>Limosa lapponica</i>		26		1,903	4	180
Whimbrel	<i>Numenius phaeopus</i>		120		79	10	8
Eurasian Curlew	<i>Numenius arquata</i>		781	10	505	16	200
Spotted Redshank	<i>Tringa erythropus</i>		82		13	4	48
Common Redshank	<i>Tringa totanus</i>		1,228	91	1,418	792	2,188
Marsh Sandpiper	<i>Tringa stagnatilis</i>			249	310	264	83
Common Greenshank	<i>Tringa nebularia</i>		344	76	377	647	1,322
Green Sandpiper	<i>Tringa ochropus</i>		43	302	396	970	1,474
Wood Sandpiper	<i>Tringa glareola</i>		3	71	76	104	52
Terek Sandpiper	<i>Xenus cinereus</i>		95	98	76	10	20
Common Sandpiper	<i>Actitis hypoleucos</i>		614	336	1,472	2,114	3,135
Ruddy Turnstone	<i>Arenaria interpres</i>			16	34	70	72
Red-necked Phalarope	<i>Phalaropus lobatus</i>					8	4
Pintail Snipe	<i>Gallinago stenura</i>						768
Common Snipe	<i>Gallinago gallinago</i>		122	119	363	819	3,302
Jack Snipe	<i>Lymnocyptes minimus</i>					4	1
Great Knot	<i>Calidris tenuirostris</i>				300	270	62
Sanderling	<i>Calidris alba</i>		79	3,207	2,428	1,200	1,028
Little Stint	<i>Calidris minuta</i>		623	4,266	4,890	3,986	4,547
Temminck's Stint	<i>Calidris temminckii</i>			257	660	646	410
Dunlin	<i>Calidris alpina</i>		1,807	1,782	3,694	1,054	5,678
Curlew Sandpiper	<i>Calidris ferruginea</i>			16	76	127	226
Broad-billed Sandpiper	<i>Limicola falcinellus</i>				38		
Ruff	<i>Philomachus pugnax</i>			406	1,460	2,980	2,860
unidentified shorebirds	Charadrii spp.		500				
Sooty Gull	<i>Larus hemprichii</i>		551		155	4	12
Yellow-legged Gull	<i>Larus cachinnans</i>		2,276	566	5,047	442	1,335
Heuglin's Gull	<i>Larus heuglini</i>		1,401	2	477	22	
Great Black-headed Gull	<i>Larus ichthyaetus</i>		275	448	600	624	3,083
Brown-headed Gull	<i>Larus brunnicephalus</i>		23	10	143	38	440
Black-headed Gull	<i>Larus ridibundus</i>		5,462	1,862	9,693	3,950	7,976
Slender-billed Gull	<i>Larus genei</i>		636	51	781	124	49
unidentified gulls	<i>Larus</i> spp.		1,515		3,167		
Whiskered Tern	<i>Chlidonias hybridus</i>			118	349	878	1,193
White-winged Black Tern	<i>Chlidonias leucopterus</i>						2,400
Gull-billed Tern	<i>Sterna nilotica</i>		95	306	753	248	1,200
Caspian Tern	<i>Sterna caspia</i>		401	199	1,110	56	82
River Tern	<i>Sterna aurantia</i>		471	134	176	1,091	5,713
Common Tern	<i>Sterna hirundo</i>		80	198	834		290
Black-bellied Tern	<i>Sterna acuticauda</i>	nt	7	36	4	43	347
Little Tern	<i>Sterna albifrons</i>		219	250	509	214	280
Greater Crested Tern	<i>Sterna bergii</i>			29	26	34	20
Lesser Crested Tern	<i>Sterna bengalensis</i>		15				
Sandwich Tern	<i>Sterna sandvicensis</i>		700	14	541	8	6
unidentified terns	Sterninae spp.		1,226		1,170		
Indian Skimmer	<i>Rynchops albicollis</i>	VU					4
Total Waterbirds			213,431	171,670	302,918	365,895	508,988
Osprey	<i>Pandion haliaetus</i>		34	4	68		3
Brahminy Kite	<i>Haliastur indus</i>			30	9	56	20
Pallas's Sea Eagle	<i>Haliaeetus leucoryphus</i>	VU		2	8	6	5
Marsh Harrier	<i>Circus aeruginosus</i>		4	39	99	88	186
Pallid Harrier	<i>Circus macrourus</i>	nt		8	8	5	
Montagu's Harrier	<i>Circus pygargus</i>			2			
Greater Spotted Eagle	<i>Aquila clanga</i>	VU		12	14	28	2
Imperial Eagle	<i>Aquila heliaca</i>	VU		2	4	2	1

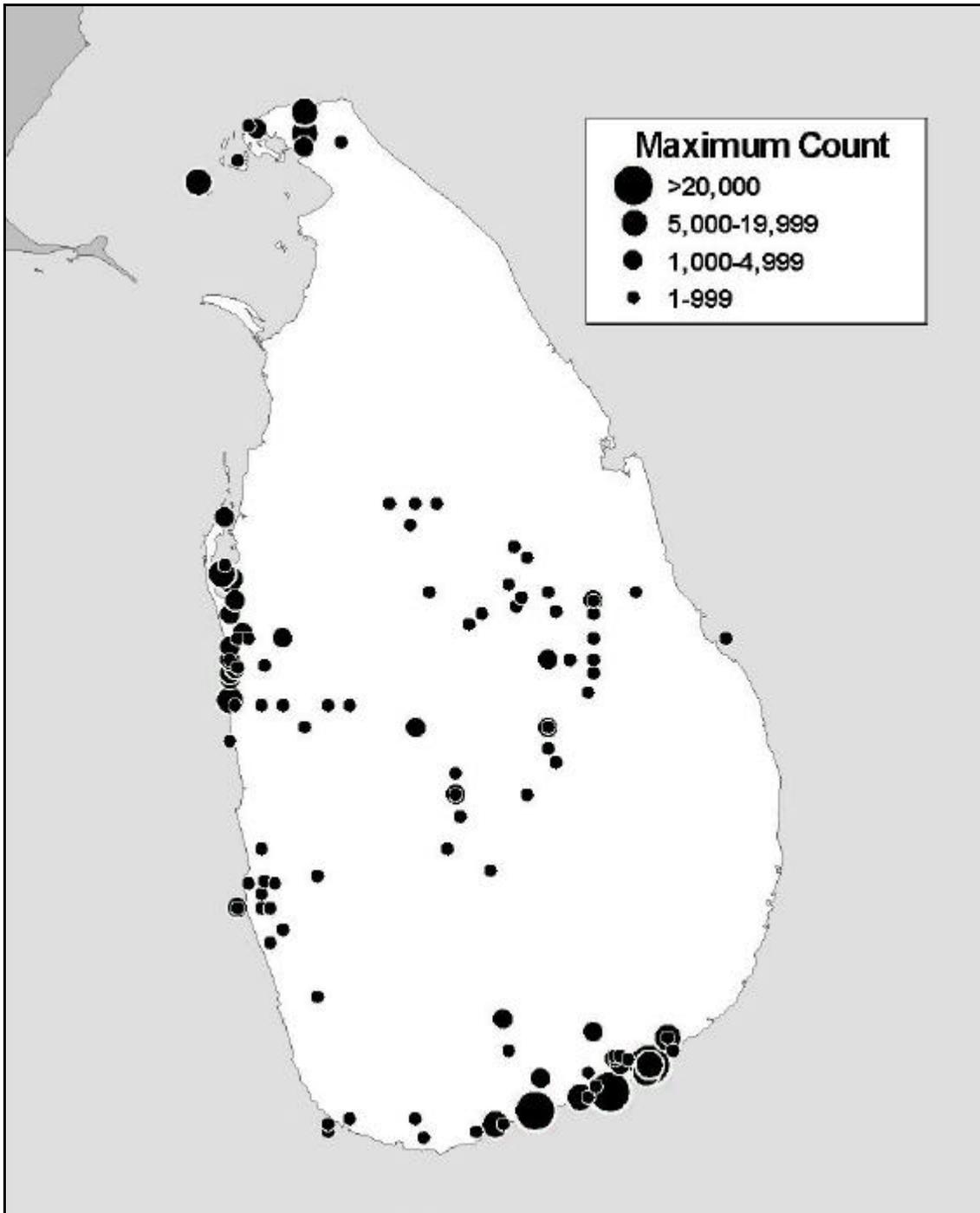
Note:

T¹ – Globally threatened species as identified by BirdLife International (2001): EN – Endangered; VU – Vulnerable; cd – Conservation Dependent; nt – Near Threatened.

3.2.7 Sri Lanka

Count data were received for all five years, 1997–2001, with a total of 117 sites counted at least once (Figure 19 and Table 15). The total numbers of waterbirds counted were 120,698 (44 sites), 151,040 (67 sites), 74,771 (53 sites), 96,636 (62 sites), 52,221 (37 sites) in 1997, 1998, 1999, 2000 and 2001 respectively. The two Ramsar sites, Anaiwilundawa Tanks (highest count of 3,794 in 1997) and Bundala Sanctuary (highest count of 22,658 in 1997), were counted regularly. In addition the Bundala Sanctuary, two other sites recorded more than 20,000 birds, namely Kalametiya-Lunama Sanctuary (45,501 in 1998) and Bundala to Yala (22,889 in 2000).

Figure 19: AWC site coverage and numerical distribution of waterbirds in Sri Lanka, 1997–2001
A dot represents the maximum number of waterbirds counted at a site during the AWC.



Totals of 100 species of waterbirds and seven species of wetland-dependent raptors were reported (Table 16). The most abundant species were Garganey (46,143 in 1998), Northern Pintail (17,929 in 1998), Lesser Sandplover (12,015 in 1997) and Curlew Sandpiper (10,531 in 1997).

The highest total counts of two Vulnerable species were as follows: Spot-billed Pelican (more than 300 every year and 616 in 1997) and Lesser Adjutant (31 birds in 1997). Six Near Threatened species, Oriental Darter, Painted Stork (a significant count of 1,106 in 2000), Black-necked Stork, Black-headed Ibis, Grey-headed Fishing Eagle and Pallid Harrier were also recorded.

The major uses of and threats to the wetlands were agriculture, fishing, overgrowth of vegetation and pesticides.

The counts were organized by the Ceylon Bird Club.

Table 15: AWC site coverage and waterbird and species totals in Sri Lanka, 1997–2001

Site Name ¹	1997			1998			1999			2000			2001			Threats ⁴
	Birds	Sp ²	C ³													
Central Province																
Kandalama Tank							327	16	X	123	11	Y				48FGL
Kandy Lake Area	652	16	Z	577	16	Z	1,174	8	X							28
Kotmale Reservoir	180	9	X	62	8	W	1	1	W							
Minipe Canal North (Yoda Ela)													452	24		
Nuwara Eliya (Lake Gregory)	42	11	Y	70	12		66	11	Y	52	10	Y	50	11	X	239GIL
Srgiriya Area				923	15	V	503	20	W	394	15	Y				2678FGIL
Victoria Reservoir				676	15	W										
Waterways around Gampola & Geliya							48	4	W							CD
Eastern Province																
Batticaloa Lagoon										72	8					47H
Maduru Oya N.P (Incl. Reservoir)				3,478	19	V				653	15	V				
North Central Province																
Anuradhapura							1,175	17		137	14	V				
Aralaganwila Area				424	22	V				332	11	V				
Balalu Tank							593	13	X							6H
Dehiattakandiya				184	11	V										
Dimbulagala Area				309	12	V										
Gal-Oya Tank							70	9	W							
Giritale Tank				5	3	V	173	18	V	42	11	W				
Handapanvila				1,637	11	V										
Kalawewa Tank							995	12	X							6H
Kammalkulama Tank							284	12								
Katukeliyawa Area				979	22		388	16	V	247	17	V				
Katuvanvila – Mutugala Tanks				376	15	V				1,799	25	V				
Kaudulla Tank							499	9		585	18	V				
Mahakandarawa Tank							653	17								
Mahaweli System C				433	15	V				1,489	19	W				
Manampitiya Area				209	11	V				875	18	V				
Minneriya Area				46	4	V	24	5		730	16	V				
Nacchaduwa							43	3								
Parakrama Samudraya				310	3	V				544	18	V				
Pimburettewa and Alutwewa Reservoirs										147	9	V				
Polonnaruwa area				388	6	W				53	5	W				
Sinapura to Welikanda, Roadside										195	5	V				
Sorobora Tank													132	14		
Wasgomuwa National Park	1,636	25	W										615	31		
Welikanda Area										326	15	V				
Yakkure Tank				126	13	V										
Northern Province																
Delft Island				9,115	36	Y	5,227	40	Y	7,616	22	X	6,952	50	Y	1
Jaffna Lagoon Mouth							254	27	X	384	6	W	366	34	X	1
Jaffna-Araly-Punani				1,804	39	W	1,418	23	X	1,457	38	X	2,119	39	Y	1
Kaithadi Kulam	4,000	2	W	4,537	10	Y	2,525	11	Y	37	14	X	1,008	3	W	
Kayts Island and Mandaitivu				866	33	W	3,044	36	X	6,090	49	X	2,246	41	X	4
Punkudutivu Island				260	10	V				150	1	V				1

Site Name ¹	1997			1998			1999			2000			2001			Threats ⁴
	Birds	Sp ²	C ³	Birds	Sp ²	C ³										
Uppu Aru Lagoon	540	6	V	7,604	45	Z	10,163	40	Y	3,260	40	Y	3,309	45	X	14
Vadamarachchi Lagoon	6,400	8	W	5,112	43	Y	4,091	38	Y	4,631	37	X	1,997	34	X	G
North Western Province																
Anaiwilundawa Tanks [R]	3,794	27	Y	1,293	15		1,563	22		3,234	16	Y	495	18	Y	
Chilaw Sandspit and Bay				241	13					461	28	Y	9,646	35		
Dutch Bay	1,124	27	V													5
Kaduru Tank				49	6											3
Kaliyawa Tank				26	8											
Kanatta Tank				32	12											36G
Karikattai (Pottuvillu) Tank	60	10														
Katupota Tank							101	7		16	2	X				
Kiniyama Tank				62	11											6
Maha Maeliya Tank							39	6								
Maha Tank				46	12											3
Mayawa Tank				1,014	18											
Metipitiya Tank										88	16					
Mundal Lake	923	25	Y	2,117	20		2,752	33					2,308	44	X	2489CDF
Munhirigama Tank				10	4											3
Munnessaram Tank				269	15											3
Nabadan Kulam	961	29	Y	827	19		1,279	23	W	977	6		705	15	Y	23CDG
Palavi Salt Pans										3,343	33					
Pomparippu – Karaitivu	974	29														
Puliyankara Tank				44	9											36
Puttalam Lagoon	6,841	40		13,711	39		938	27					4,308	41	X	4689CDH
Puttalam Salt Pans	4,434	31		7,716	28		11,254	27	X	7,815	25					468F
Puttalam to Mundel Lake	1,409	24														
Suruwila Tank				1,854	17											
Tabbowa Tank	2,759	29					326	13		282	14					267CDFH
Uddapu-Chilaw Coast	1,025	14	W													
Weerapandiana Tank				42	7											3
Wetlands along Tabbowa-Nikaweratiya Road	1,331	30	X													6
Sabaragamuwa Province																
Uda Walawe Tank	2,151	22	W	658	15	W				436	12	P	1,631	50	X	G
Southern Province																
Attargoda Mangroves	324	21	X				375	20	X							48G
Bandagiriya Tank	415	10	X	252	12	W	316	14	W	440	15	X				67G
Bundala Sanctuary [R]	22,658	64	Y	7,637	54		2,466	45	X				3,553	44	W	4678CDG
Bundala to Yala (excl. Ruhuna NP)							6,540	63		22,889	68					
Chandrika Tank	84	5	W	154	7	W				159	7	P				67
Debara Tank				967	19	X	862	15	X	529	12	X	393	17	X	36G
Galle Coast Wetland	88	15		833	20	X										689CDG
Hambantota Wetlands	11,667	55	X	1,599	48	X	1,798	46	X	2,618	37	X	1,192	27	W	678CGL
Kalameitiya – Lunama Sanctuary	16,898	62	Y	45,501	62	Y	3,813	58	X	6,658	55	Y	209	23	W	4678CDE
Kirinda-Palatupana	17,145	41	Y										1,541	42	Y	678C
Koholankala Lewaya				30	9											
Lunugamwehera Tank	428	12	X	354	12	W				1,970	25	Y				
Malala Lewaya/Kalapuwa				597	32											GL
Matara Sea Coast and associated wetlands										489	17	W				68CH
Mawella – Kalapuwa				466	19	X										6G
Nakulugamuwa Marsh							99	10	X	342	15	W	239	20	W	468CDG
Nandugala Marshes	400	23	X	585	18	Y	603	20	X	643	16	X				6GK
Pannegamuwa Tank				418	14	Y	402	12	Y				222	12	X	36G
Rekawa Kalapuwa	86	17		923	26	Y	64	9	X	283	12	W				678CDG
Ridiyagama Tank	337	12	X	1,052	18	X										67G
Ruhuna National Park				9,984	45					540	31	P				
Ruhuna National Park Block I	716	42	Y	281	25								624	45	Y	7
Tangalla Marshes	281	17	X	5,414	26	Y	147	12	X	892	25	X	1,228	16	W	678CD
Tissa Tank				649	24	X	570	15	X	334	14	X	273	21	X	6G
Tissamaharama Tanks													1,191	28	W	68GL
Wakwella Marshes	206	22	X				395	15	X	748	20	X				46CDKG
Walahanduwa Paddy Fields	257	14	Z				472	10	X	363	12	X				6CD
Wirawila Tank				1,099	25	X	1,348	12	X	1,574	16	P	882	20	Y	67G
Wirawila – Tissa Tanks	3,964	26	Y							2,847	27	X				3678CDG

Site Name ¹	1997			1998			1999			2000			2001			Threats ⁴
	Birds	Sp ²	C ³													
Yoda Tank				421	24	W	688	12	W	394	13	W	499	14	W	6G
Western Province																
Bandaragama Area							43	7	W	1,008	26	V	128	16		29
Beira Lake										135	11	Y	318	9	X	238AGI
Bellanwila-Attidiya Marshes	1,013	35	Z	676	32		914	28	Z	835	26	Z				39ABI
Bolgoda Lake South	247	14	Y				471	17	W	216	15	V	511	17		28GK
Boralesgamuwa Tank	229	22	Z													2A
Borupona Kumbura (Navinna)										203	18	V				2
Colombo Coast & Beira Lake	1,173	24		796	16											
Egodawatta, Pugoda													69	5		
Gotatuwa Marsh										241	19					38GK
Kotte Marshes	336	29	W				458	30		328	24	W				238AGI
Malabe, Pittugala – Kahantota Road													253	20		
Muturajawela	328	28	X										574	21		38AHIL
Pamunugama Sea and Beach													91	6		
Thalangama Tank	302	32	P													

Notes:

Site Name¹: [R] – Ramsar Site, refer to Section 1.4 for further information.

Sp² – Species. C³ – Site Coverage: V – 25%; W – 25–50%; X – 50–75%; Y – 75–99%; Z – 100%.

Threats⁴: 1 – None, 2 – Sedimentation, 3 – Excessive overgrowth of vegetation, 4 – Cutting/clearance of vegetation, 5 – Eutrophication, 6 – Agriculture along drying margins, 7 – Excessive cattle grazing, 8 – Domestic sewage, 9 – Solid waste, A – Industrial waste, B – Oil pollution, C – Pesticides, D – Fertilizers, E – Mining, F – Hunting/trapping/poaching of birds, G – Small-scale fishing, H – Large-scale fishing, I – Partial reclamation, J – Complete reclamation, K – Dam/barrage construction, L – Tourism/recreation.

Table 16: Waterbird species counts reported to the AWC from Sri Lanka, 1997–2001

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Little Grebe	<i>Tachybaptus ruficollis</i>		228	232	228	618	470
Spot-billed Pelican	<i>Pelecanus philippensis</i>	VU	616	494	320	362	323
Great Cormorant	<i>Phalacrocorax carbo</i>			1	3	8	30
Indian Cormorant	<i>Phalacrocorax fuscicollis</i>		684	1,272	1,296	3,300	1,494
Little Cormorant	<i>Phalacrocorax niger</i>		7,523	6,419	3,623	4,829	2,974
unidentified cormorants	<i>Phalacrocorax</i> spp.					335	
Oriental Darter	<i>Anhinga melanogaster</i>	nt	164	103	68	89	45
Grey Heron	<i>Ardea cinerea</i>		469	295	181	350	174
Purple Heron	<i>Ardea purpurea</i>		173	168	150	182	79
Great White Egret	<i>Ardea alba</i>		722	824	526	1,243	458
Intermediate Egret	<i>Egretta intermedia</i>		539	1,033	313	700	251
Western Reef Egret	<i>Egretta gularis</i>			1		2	3
Little Egret	<i>Egretta garzetta</i>		2,745	2,022	1,449	1,564	892
Cattle Egret	<i>Bubulcus ibis</i>		5,558	9,772	5,091	9,983	2,556
unidentified egrets	<i>Egretta/Bubulcus</i> spp.				15		
Indian Pond-Heron	<i>Ardeola grayii</i>		1,719	1,732	1,594	2,316	754
unidentified pond-herons	<i>Ardeola</i> spp.					31	22
Green-backed Heron	<i>Butorides striatus</i>		50	18	16	5	8
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>		164	102	178	207	52
Yellow Bittern	<i>Ixobrychus sinensis</i>		60	24	28	53	19
Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>		26	4	4	8	
Black Bittern	<i>Ixobrychus flavicollis</i>		40	36	45	33	14
unidentified bitterns	<i>Ixobrychus</i> spp.					2	
unidentified <i>Ardeidae</i>	<i>Ardeidae</i> spp.					126	1
Painted Stork	<i>Mycteria leucocephala</i>	nt	878	858	471	1,106	230
Asian Openbill	<i>Anastomus oscitans</i>		680	696	891	1,721	348
Woolly-necked Stork	<i>Ciconia episcopus</i>		32	24	29	35	24
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>	nt	2	1			1
Lesser Adjutant	<i>Leptoptilos javanicus</i>	VU	31	2	4	2	8
unidentified storks	<i>Ciconiidae</i> spp.					1	
Black-headed Ibis	<i>Threskiornis melanocephalus</i>	nt	992	783	289	801	374
Glossy Ibis	<i>Plegadis falcinellus</i>		54	29	7	32	
Eurasian Spoonbill	<i>Platalea leucorodia</i>		295	366	234	189	90
Greater Flamingo	<i>Phoenicopterus ruber</i>		2,600	806	2,514	2,620	1,409
Lesser Whistling Duck	<i>Dendrocygna javanica</i>		2,538	2,467	1,185	1,986	934

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Cotton Pygmy-Goose	<i>Nettapus coromandelianus</i>		148	138	182	31	96
Eurasian Wigeon	<i>Anas penelope</i>		3,250	4,770	4,953	4,780	1,666
Common Teal	<i>Anas crecca</i>			22	20		14
Northern Pintail	<i>Anas acuta</i>		10,808	17,929	5,469	9,879	3,085
Garganey	<i>Anas querquedula</i>		7,797	46,143	5,668	5,209	2,558
Northern Shoveler	<i>Anas clypeata</i>		156	673	775	105	164
unidentified ducks	Anatidae spp.				300	800	1,000
Slaty-breasted Rail	<i>Gallirallus striatus</i>		1				
Ruddy-breasted Crake	<i>Porzana fusca</i>		1		1		
White-breasted Waterhen	<i>Amauornis phoenicurus</i>		337	464	266	385	152
Watercock	<i>Gallicrex cinerea</i>		33	11	6	3	3
Common Moorhen	<i>Gallinula chloropus</i>		67	249	25	70	34
Purple Swampphen	<i>Porphyrio porphyrio</i>		1,211	990	827	843	357
Common Coot	<i>Fulica atra</i>			1			20
Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>		1,231	1,333	1,032	1,144	605
Greater Painted-Snipe	<i>Rostratula benghalensis</i>				1	3	
Crab Plover	<i>Dromas ardeola</i>				27	1	7
Eurasian Oystercatcher	<i>Haematopus ostralegus</i>						1
Black-winged Stilt	<i>Himantopus himantopus</i>		6,680	3,580	4,817	5,235	1,948
Stone Curlew	<i>Burhinus oedicephalus</i>		45	37	12	21	5
Great Thick-knee	<i>Burhinus recurvirostris</i>		94	89	78	50	71
Indian Courser	<i>Cursorius coromandelicus</i>			2	4		2
Collared Pratincole	<i>Glareola pratincola</i>			7			
Oriental Pratincole	<i>Glareola maldivarum</i>			15			
Small Pratincole	<i>Glareola lactea</i>		20	43	17	20	6
Yellow-wattled Lapwing	<i>Vanellus malabaricus</i>		87	89	54	60	60
Red-wattled Lapwing	<i>Vanellus indicus</i>		774	635	356	693	305
Pacific Golden Plover	<i>Pluvialis fulva</i>		1,364	431	281	923	394
Grey Plover	<i>Pluvialis squatarola</i>		80	53	37	72	46
Great Ringed Plover	<i>Charadrius hiaticula</i>		1		4	3	3
Little Ringed Plover	<i>Charadrius dubius</i>		282	1,090	48	178	157
Kentish Plover	<i>Charadrius alexandrinus</i>		512	648	324	424	159
Lesser Sandplover	<i>Charadrius mongolus</i>		12,015	6,728	5,488	3,393	2,378
Greater Sandplover	<i>Charadrius leschenaultii</i>		8	135	102	34	22
Caspian Plover	<i>Charadrius asiaticus</i>		1				
Black-tailed Godwit	<i>Limosa limosa</i>		9,925	9,241	2,583	2,116	2,782
Bar-tailed Godwit	<i>Limosa lapponica</i>				1		14
Whimbrel	<i>Numenius phaeopus</i>		10	35	63	6	35
Eurasian Curlew	<i>Numenius arquata</i>		12	73	225	319	83
Common Redshank	<i>Tringa totanus</i>		665	2,176	409	1,499	334
Marsh Sandpiper	<i>Tringa stagnatilis</i>		5,429	2,049	1,817	3,034	666
Common Greenshank	<i>Tringa nebularia</i>		302	709	113	313	112
Green Sandpiper	<i>Tringa ochropus</i>		2	3	17	5	8
Wood Sandpiper	<i>Tringa glareola</i>		174	42	107	440	55
Terek Sandpiper	<i>Xenus cinereus</i>		32	10	8	7	15
Common Sandpiper	<i>Actitis hypoleucos</i>		234	334	105	227	94
Ruddy Turnstone	<i>Arenaria interpres</i>		254	425	83	153	79
Red-necked Phalarope	<i>Phalaropus lobatus</i>		1		13	8	2
Pintail Snipe	<i>Gallinago stenura</i>		99	56	50	63	22
Common Snipe	<i>Gallinago gallinago</i>		9	1			
unidentified snipes	<i>Gallinago</i> spp.					1	
Jack Snipe	<i>Lymnocyptes minimus</i>			1			
Great Knot	<i>Calidris tenuirostris</i>			1		10	
Sanderling	<i>Calidris alba</i>		55	21	8	20	94
Little Stint	<i>Calidris minuta</i>		5,830	3,940	2,473	5,898	1,378
Temminck's Stint	<i>Calidris temminckii</i>			16		6	9
Long-toed Stint	<i>Calidris subminuta</i>			550		3	
Curlew Sandpiper	<i>Calidris ferruginea</i>		10,531	5,248	3,483	4,688	1,471
Broad-billed Sandpiper	<i>Limicola falcinellus</i>		14		10	50	89
Ruff	<i>Philomachus pugnax</i>		77	3	24	24	8
unidentified shorebirds	Charadrii spp.			461	230	2,778	303
Heuglin's Gull	<i>Larus heuglini</i>			1	1,300	15	103
Great Black-headed Gull	<i>Larus ichthyæus</i>				540	241	605
Brown-headed Gull	<i>Larus brunnecephalus</i>		1,351	349	2,104	231	4,223
Black-headed Gull	<i>Larus ridibundus</i>			4			25

South Asia

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
unidentified gulls	<i>Larus</i> spp.					10	
Whiskered Tern	<i>Chlidonias hybridus</i>		2,101	4,954	4,576	3,240	1,050
White-winged Black Tern	<i>Chlidonias leucopterus</i>		1,290	78	137	563	2
Gull-billed Tern	<i>Sterna nilotica</i>		1,397	808	413	657	546
Caspian Tern	<i>Sterna caspia</i>		298	347	258	210	115
Common Tern	<i>Sterna hirundo</i>		349	1,346	660	71	1,741
Little Tern	<i>Sterna albifrons</i>		3,344	633	266	268	99
Greater Crested Tern	<i>Sterna bergii</i>		234	188	327	96	290
Lesser Crested Tern	<i>Sterna bengalensis</i>		94	48	218	148	4,894
Sandwich Tern	<i>Sterna sandvicensis</i>						5
unidentified terns	Sterninae spp.				224	20	1,515
Total Waterbirds			120,698	151,040	74,771	96,636	52,221
Osprey	<i>Pandion haliaetus</i>				2		2
Brahminy Kite	<i>Haliastur indus</i>		104	142	53	82	85
White-bellied Sea Eagle	<i>Haliaeetus leucogaster</i>		12	19	1	14	11
Grey-headed Fishing Eagle	<i>Ichthyophaga ichthyaetus</i>	nt	2	5	6	16	4
Marsh Harrier	<i>Circus aeruginosus</i>		2	3	1		
Pallid Harrier	<i>Circus macrourus</i>	nt				1	3
Montagu's Harrier	<i>Circus pygargus</i>						3
unidentified harriers	<i>Circus</i> spp.					1	

Note:

T¹ – Globally threatened species as identified by BirdLife International (2001): VU – Vulnerable; nt – Near Threatened.

3.3 Southeast Asia

3.3.1 Overview

A total of 298 sites in Southeast Asia were counted at least once between 1997 and 2001 (Figure 20). The total numbers of waterbirds were 58,010 (51 sites), 51,605 (47 sites), 116,864 (133 sites), 252,225 (139 sites) and 192,514 (134 sites) during 1997, 1998, 1999, 2000 and 2001 respectively (Table 17).

Totals of 173 species of waterbirds and nine species of wetland-dependent raptors were counted. The most numerous species (more than 10,000 individuals) were Lesser Whistling Duck (26,608 in 2000), Tufted Duck (17,588 in 2000), Garganey (15,257 in 2000) and Asian Openbill (13,559 in 2000).

The Southeast Asian region recorded the highest number of globally threatened species (19) in the AWC. The highest count totals were as follows: the Critically Endangered Giant Ibis (2 in 2001); Endangered Greater Adjutant (21 in 1999), Storm's Stork (3 in 2001), Black-faced Spoonbill (59 in 1999), White-winged Duck (6 in 2001), White-bellied Heron (3 in 2001) and Nordmann's Greenshank (2 in 2000); the Vulnerable Spot-billed Pelican (1,588 in 2001), Chinese Egret (813 in 1997), Milky Stork (73 in 2000), Lesser Adjutant (84 in 1999), Philippine Duck (1,004 in 1998), Baer's Pochard (1,000 in 1997), Sarus Crane (54 in 2001), Masked Finfoot (2 in 2000), Spoon-billed Sandpiper (7 in 1999), Wood Snipe (1 in 2001), Saunders' Gull (44 in 1998) and Greater Spotted Eagle (7 in 2000). The low number of the threatened subspecies of Sarus Crane recorded reflects the lack of coverage of Tram Chim National Park in southern Vietnam, a site which holds the largest concentrations of the sub-species during December-April (Meine and Archibald 1996).

Near threatened species recorded including Oriental Darter, Black-headed Ibis, Painted Stork, Black-necked Stork, Ferruginous Duck, Far Eastern Curlew, Beach Thick-knee, Malaysian Plover, Asian Dowitcher, Black-bellied Tern and Grey-headed Fishing Eagle.

Figure 20: AWC site coverage in the Southeast Asian region, 1987-2001

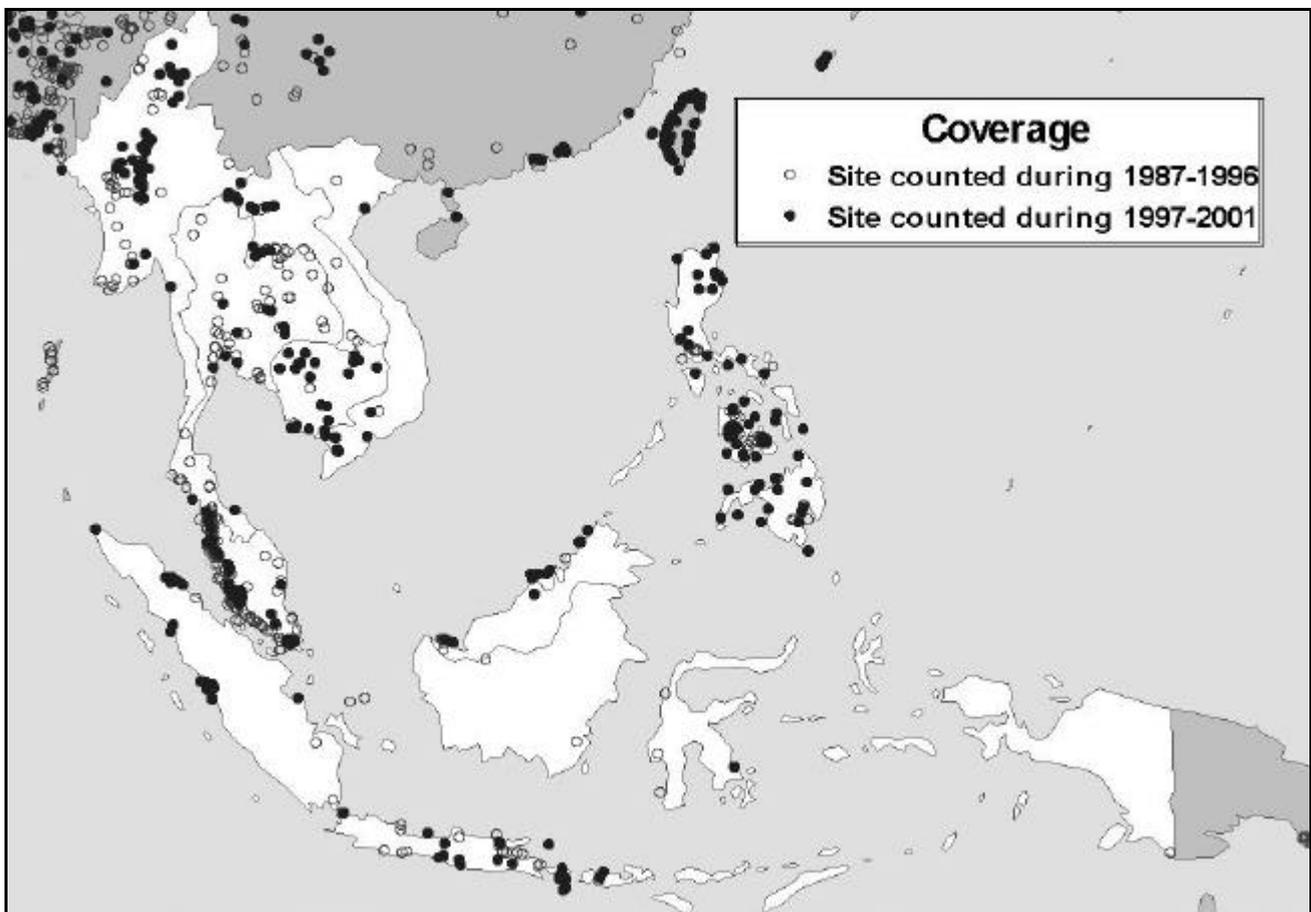


Table 17: Waterbird species counts reported to the AWC from Southeast Asia, 1997–2001

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
White-billed Diver	<i>Gavia adamsii</i>						1
Little Grebe	<i>Tachybaptus ruficollis</i>		59	16	114	1,549	817
Great Crested Grebe	<i>Podiceps cristatus</i>		70			9	31
Black-necked Grebe	<i>Podiceps nigricollis</i>					2	2
Spot-billed Pelican	<i>Pelecanus philippensis</i>	VU			777	930	1,588
Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>				30	27	
Great Cormorant	<i>Phalacrocorax carbo</i>		50		37	680	1,708
Indian Cormorant	<i>Phalacrocorax fuscicollis</i>		50		801	862	2,779
Little Pied Cormorant	<i>Phalacrocorax melanoleucos</i>				1		17
Little Cormorant	<i>Phalacrocorax niger</i>		56	12	605	7,089	2,138
unidentified cormorants	<i>Phalacrocorax</i> spp.				2,367	4,090	1,034
Oriental Darter	<i>Anhinga melanogaster</i>	nt	24	9	197	200	158
Grey Heron	<i>Ardea cinerea</i>		83	180	501	976	1,187
White-bellied Heron	<i>Ardea insignis</i>	EN				1	3
Great-billed Heron	<i>Ardea sumatrana</i>				19	1	26
Purple Heron	<i>Ardea purpurea</i>		229	91	655	986	515
Great White Egret	<i>Ardea alba</i>		1,099	218	1,924	2,648	1,719
Intermediate Egret	<i>Egretta intermedia</i>		1,302	1,202	7,593	1,981	2,868
White-faced Heron	<i>Egretta novaehollandiae</i>				1		
Little Egret	<i>Egretta garzetta</i>		2,601	2,186	7,101	7,170	6,416
Chinese Egret	<i>Egretta eulophotes</i>	VU	813	234	280	611	533
Eastern Reef Heron	<i>Egretta sacra</i>		29	31	153	72	61
Cattle Egret	<i>Bubulcus ibis</i>		483	3,107	10,478	5,694	12,614
unidentified egrets	<i>Egretta/Bubulcus</i> spp.		50	8,818	3,576	1,023	8,105
Indian Pond-Heron	<i>Ardeola grayii</i>		30		15	294	100
Chinese Pond-Heron	<i>Ardeola bacchus</i>		224	8	1,487	2,730	2,287
Javan Pond-Heron	<i>Ardeola speciosa</i>				4,283	1,850	38
unidentified pond-herons	<i>Ardeola</i> spp.				908	1,962	1,552
Green-backed Heron	<i>Butorides striatus</i>		53	143	491	385	407
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>		500	6	571	2,095	1,275
Rufous Night-Heron	<i>Nycticorax caledonicus</i>		5		8	7	12
Yellow Bittern	<i>Ixobrychus sinensis</i>		24	23	60	71	78
Schrenck's Bittern	<i>Ixobrychus eurhythmus</i>		22		10		4
Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>		35	4	63	37	108
Black Bittern	<i>Ixobrychus flavicollis</i>		7		11	18	10
Eurasian Bittern	<i>Botaurus stellaris</i>			5	1	1	6
unidentified Ardeidae	Ardeidae spp.		350		5,365	532	4,838
Milky Stork	<i>Mycteria cinerea</i>	VU			2	73	3
Painted Stork	<i>Mycteria leucocephala</i>	nt			33	175	167
Asian Openbill	<i>Anastomus oscitans</i>		70	83	510	13,559	523
Black Stork	<i>Ciconia nigra</i>					361	105
Woolly-necked Stork	<i>Ciconia episcopus</i>		2		26	38	56
Storm's Stork	<i>Ciconia stormi</i>	EN					3
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>	nt			1	12	2
Greater Adjutant	<i>Leptoptilos dubius</i>	EN			21	12	1
Lesser Adjutant	<i>Leptoptilos javanicus</i>	VU			84	82	47
unidentified storks	Ciconiidae spp.				23	40	8
Black-headed Ibis	<i>Threskiornis melanocephalus</i>	nt	42		1	30	87
Giant Ibis	<i>Pseudibis gigantea</i>	CR					2
Glossy Ibis	<i>Plegadis falcinellus</i>		1,800		48	19	254
Black-faced Spoonbill	<i>Platalea minor</i>	EN		59	31	42	47
Fulvous Whistling Duck	<i>Dendrocygna bicolor</i>					64	6
Wandering Whistling Duck	<i>Dendrocygna arcuata</i>		125	155	603	775	24
Lesser Whistling Duck	<i>Dendrocygna javanica</i>		4,500	2,297	2,381	26,608	13,282
Greylag Goose	<i>Anser anser</i>			10	46	505	989
Bar-headed Goose	<i>Anser indicus</i>					4,874	3,123
Comb Duck	<i>Sarkidiornis melanotos</i>				12	25	57
Ruddy Shelduck	<i>Tadorna ferruginea</i>		570	200		6,329	4,342
Common Shelduck	<i>Tadorna tadorna</i>					9	1
White-winged Duck	<i>Cairina scutulata</i>	EN			3	1	6
Cotton Pygmy -Goose	<i>Nettapus coromandelianus</i>		150	54	766	2,277	1,788
Eurasian Wigeon	<i>Anas penelope</i>		1,000	940	128	137	331
Falcated Teal	<i>Anas falcata</i>					6	2
Gadwall	<i>Anas strepera</i>				6	5,529	2,811
Common Teal	<i>Anas crecca</i>		1,000	50	248	609	1,779
Grey Teal	<i>Anas gracilis</i>				68		91

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Mallard	<i>Anas platyrhynchos</i>		1,000	8		619	426
Pacific Black Duck	<i>Anas superciliosa</i>				18		40
Spot-billed Duck	<i>Anas poecilorhyncha</i>		512	18	1,622	1,407	632
Philippine Duck	<i>Anas luzonica</i>	VU		1,004	870	446	353
Northern Pintail	<i>Anas acuta</i>		1,500	921	309	3,410	2,595
Garganey	<i>Anas querquedula</i>		1,000	1,070	48	15,257	1,476
Northern Shoveler	<i>Anas clypeata</i>		1,000	294	12	1,043	1,459
Red-crested Pochard	<i>Netta rufina</i>					76	26
Common Pochard	<i>Aythya ferina</i>			26		1,482	370
Baer's Pochard	<i>Aythya baeri</i>	VU	1,000			16	129
Ferruginous Duck	<i>Aythya nyroca</i>	nt	2,000			1,902	1,339
Tufted Duck	<i>Aythya fuligula</i>					17,588	4,923
Common Goldeneye	<i>Bucephala clangula</i>						29
Goosander	<i>Mergus merganser</i>					246	178
unidentified ducks	Anatidae spp.		5,002	1,124	2,072	273	9,267
Eurasian Crane	<i>Grus grus</i>			229		3,766	2,147
Sarus Crane	<i>Grus antigone</i>	VU				6	54
Buff-banded Rail	<i>Gallirallus philippensis</i>		6	11		1	17
Slaty-breasted Rail	<i>Gallirallus striatus</i>		1	2	9	29	10
Barred Rail	<i>Gallirallus torquatus</i>			9	13	9	17
Water Rail	<i>Rallus aquaticus</i>				1	1	
Red-legged Crake	<i>Rallina fasciata</i>		2		13		
Slaty-legged Crake	<i>Rallina eurizinoides</i>			2	7		
White-browed Rail	<i>Porzana cinerea</i>		7	15	12	11	30
Baillon's Crake	<i>Porzana pusilla</i>				6		9
Ruddy-breasted Crake	<i>Porzana fusca</i>		21		12	7	8
White-breasted Waterhen	<i>Amauornis phoenicurus</i>		38	22	182	118	337
Watercock	<i>Gallicrex cinerea</i>		53	3	130	11	18
Common Moorhen	<i>Gallinula chloropus</i>		354	151	144	616	484
Purple Swamphen	<i>Porphyrio porphyrio</i>		1,057	297	1,301	3,953	4,421
Common Coot	<i>Fulica atra</i>		1,500	68		1,923	3,088
unidentified rails	Rallidae spp.		21		25	7	18
Masked Finfoot	<i>Heliopais personata</i>	VU				2	
Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>			26	116	846	522
Bronze-winged Jacana	<i>Metopidius indicus</i>			41	138	344	182
Greater Painted-Snipe	<i>Rostratula benghalensis</i>		13	4		8	55
Black-winged Stilt	<i>Himantopus himantopus</i>		1,280	63	315	2,427	1,247
Pied Avocet	<i>Recurvirostra avosetta</i>					1	4
Great Thick-knee	<i>Burhinus recurvirostris</i>				4	12	46
Beach Thick-knee	<i>Burhinus gigantea</i>	nt			1		
Oriental Pratincole	<i>Glareola maldivarum</i>		5		4	4	10
Small Pratincole	<i>Glareola lactea</i>				106	5,190	3,664
Northern Lapwing	<i>Vanellus vanellus</i>					10	1
River Lapwing	<i>Vanellus duvaucelli</i>				9	321	187
Grey-headed Lapwing	<i>Vanellus cinereus</i>				10	94	82
Red-wattled Lapwing	<i>Vanellus indicus</i>		44		19	73	47
Pacific Golden Plover	<i>Pluvialis fulva</i>		1,375	1,811	2,974	3,148	2,639
Grey Plover	<i>Pluvialis squatarola</i>		481	784	873	1,433	681
Great Ringed Plover	<i>Charadrius hiaticula</i>						10
Long-billed Plover	<i>Charadrius placidus</i>					5	38
Little Ringed Plover	<i>Charadrius dubius</i>		270	178	255	1,866	1,500
Kentish Plover	<i>Charadrius alexandrinus</i>		2,515	2,162	2,162	4,272	7,770
Malaysian Plover	<i>Charadrius peronii</i>	nt		20	31	5	8
Lesser Sandplover	<i>Charadrius mongolus</i>		2,567	1,362	2,370	4,281	5,306
Greater Sandplover	<i>Charadrius leschenaultii</i>		126	251	450	527	1,419
Oriental Plover	<i>Charadrius veredus</i>					2	
unidentified <i>Charadrius</i> plovers	<i>Charadrius</i> spp.		323	13	258	1,594	
Black-tailed Godwit	<i>Limosa limosa</i>		91	1,191	125	774	667
Bar-tailed Godwit	<i>Limosa lapponica</i>		110	140	606	944	600
unidentified godwits	<i>Limosa</i> spp.					6	
Little Curlew	<i>Numenius minutus</i>		448	57	441	395	45
Whimbrel	<i>Numenius phaeopus</i>		1,038	302	2,079	1,789	1,543
Eurasian Curlew	<i>Numenius arquata</i>		216	270	1,413	1,427	1,283
Far Eastern Curlew	<i>Numenius madagascariensis</i>	nt		20	99	3	69
unidentified curlews	<i>Numenius</i> spp.		35		120		2
Spotted Redshank	<i>Tringa erythropus</i>				2	915	300
Common Redshank	<i>Tringa totanus</i>		1,337	1,277	3,516	2,550	2,307
Marsh Sandpiper	<i>Tringa stagnatilis</i>		972	931	1,046	1,955	1,121

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Common Greenshank	<i>Tringa nebularia</i>		1,261	575	1,332	1,376	3,318
Nordmann's Greenshank	<i>Tringa guttifer</i>	EN				2	1
Green Sandpiper	<i>Tringa ochropus</i>		15	195	374	116	417
Wood Sandpiper	<i>Tringa glareola</i>		387	193	196	1,064	790
unidentified <i>Tringa</i> sandpipers	<i>Tringa</i> spp.		8	1	91	42	49
Terek Sandpiper	<i>Xenus cinereus</i>		212	169	829	894	774
Common Sandpiper	<i>Actitis hypoleucos</i>		663	539	1,457	1,595	2,564
Grey-tailed Tattler	<i>Heteroscelus brevipes</i>		170	139	65	233	322
Ruddy Turnstone	<i>Arenaria interpres</i>		285	268	150	293	339
Red-necked Phalarope	<i>Phalaropus lobatus</i>						1
Eurasian Woodcock	<i>Scolopax rusticola</i>						1
Wood Snipe	<i>Gallinago nemoricola</i>	VU					1
Pintail Snipe	<i>Gallinago stenura</i>				12	8	170
Swinhoe's Snipe	<i>Gallinago megala</i>			6			
Common Snipe	<i>Gallinago gallinago</i>		25	13	43	210	387
unidentified snipes	<i>Gallinago</i> spp.				3	47	46
Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>			1			
Asian Dowitcher	<i>Limnodromus semipalmatus</i>	nt	39	47	34	455	89
Red Knot	<i>Calidris canutus</i>		13	220	8	19	136
Great Knot	<i>Calidris tenuirostris</i>		158	140	752	674	542
Sanderling	<i>Calidris alba</i>		54	46	104	127	55
Red-necked Stint	<i>Calidris ruficollis</i>		1,073	636	600	2,464	1,314
Little Stint	<i>Calidris minuta</i>			11			
Temminck's Stint	<i>Calidris temminckii</i>		7	38	350	209	343
Long-toed Stint	<i>Calidris subminuta</i>		414	131	18	693	40
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>				3		
Dunlin	<i>Calidris alpina</i>			2,100	1,200		305
Curlew Sandpiper	<i>Calidris ferruginea</i>		55	259	740	1,473	575
unidentified <i>Calidris</i> sandpipers	<i>Calidris</i> spp.		97	131	752	79	831
Spoon-billed Sandpiper	<i>Eurynorhynchus pygmaeus</i>	VU			7	1	
Broad-billed Sandpiper	<i>Limicola falcinellus</i>		427		26	96	154
Ruff	<i>Philomachus pugnax</i>				1	2	5
unidentified shorebirds	Charadrii spp.		287	4,130	4,165	7,533	6,213
Mew Gull	<i>Larus canus</i>						4
Herring Gull	<i>Larus argentatus</i>		61	45	2	91	83
Heuglin's Gull	<i>Larus heuglini</i>					14	17
Slaty-backed Gull	<i>Larus schistisagus</i>					1	
Great Black-headed Gull	<i>Larus ichthyaetus</i>					2	130
Brown-headed Gull	<i>Larus brunnicephalus</i>		577	20	356	3,314	330
Black-headed Gull	<i>Larus ridibundus</i>		190	96	809	2,265	1,285
Saunders' Gull	<i>Larus saundersi</i>	VU		44		3	
unidentified gulls	<i>Larus</i> spp.		256	579	51	121	100
Whiskered Tern	<i>Chlidonias hybridus</i>		20	342	2,163	9,551	2,965
White-winged Black Tern	<i>Chlidonias leucopterus</i>		8	23	1,070	350	248
Gull-billed Tern	<i>Sterna nilotica</i>		254	4	661	271	611
Caspian Tern	<i>Sterna caspia</i>			1	607	324	48
River Tern	<i>Sterna aurantia</i>				37	243	129
Common Tern	<i>Sterna hirundo</i>		1,486	1,218	2,461	5,034	1,787
Black-naped Tern	<i>Sterna sumatrana</i>		459	390	38	82	493
Black-bellied Tern	<i>Sterna acuticauda</i>	nt				6	5
Bridled Tern	<i>Sterna anaethetus</i>					2	
Little Tern	<i>Sterna albifrons</i>		636	436	656	1,472	1,911
Greater Crested Tern	<i>Sterna bergii</i>		156	199	262	226	312
Lesser Crested Tern	<i>Sterna bengalensis</i>				16	11	
unidentified <i>Sterna</i> terns	<i>Sterna</i> spp.		352	297	67	78	
unidentified terns	Sterninae spp.		1,078	1,605	12,424	8,839	10,047
Total Waterbirds			58,010	51,605	116,864	252,225	192,514
Osprey	<i>Pandion haliaetus</i>			22	12	27	31
Brahminy Kite	<i>Haliastur indus</i>		7	1	57	142	47
White-bellied Sea Eagle	<i>Haliaeetus leucogaster</i>			1	4	7	10
Grey-headed Fishing Eagle	<i>Ichthyophaga ichthyaetus</i>	nt			13	18	12
Marsh Harrier	<i>Circus aeruginosus</i>					1	11
Eastern Marsh Harrier	<i>Circus spillnotus</i>			2	17	15	7
Hen Harrier	<i>Circus cyaneus</i>			2			1
Pied Harrier	<i>Circus melanoleucos</i>				3	1	
Greater Spotted Eagle	<i>Aquila clanga</i>	VU			2	7	6

Note: T¹ – Globally threatened species as identified by BirdLife International (2001); CR – Critically Endangered; EN – Endangered; VU – Vulnerable; nt – Near Threatened.

3.3.2 Brunei Darussalam

The census was conducted in 1997 and 1998 only. A total of six sites were counted, with four sites counted in both years (Figure 21 and Table 18), consistent with coverage of previous years. Total numbers of waterbirds counted were 1,024 and 851 for 1997 and 1998 respectively.

A total of 31 species of waterbirds were counted (Table 19). The most numerous species included Cattle Egret and four shorebirds (Pacific Golden Plover, Kentish Plover, Lesser Sandplover and Wood Sandpiper). Of the globally threatened species, a single individual of the Vulnerable Chinese Egret was recorded in 1997. There were a few records of the Near Threatened Oriental Darter.

The major uses of and threats to the wetlands were overgrowth of vegetation, industrial waste, oil dredging, fertilizers and fishing. The counts were provided by individual counters.

Figure 21: AWC site coverage and numerical distribution of waterbirds in Brunei Darussalam in 1997 and 1998

A dot represents the maximum number of waterbirds counted at a site during the AWC.

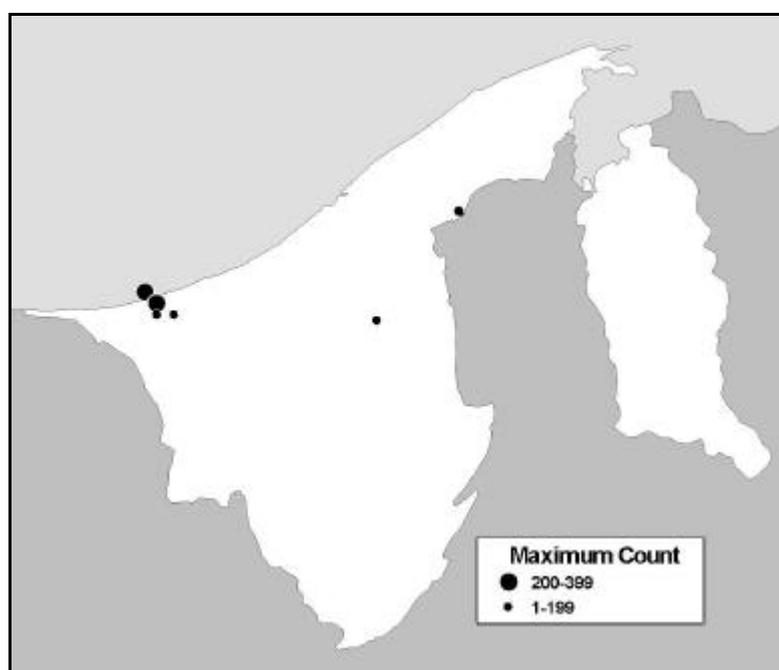


Table 18: AWC site coverage and waterbird and species totals in Brunei Darussalam, 1997 and 1998

Site Name	1997			1998			Threats ²
	Birds	Species	Coverage ¹	Birds	Species	Coverage ¹	
H14 Dump Site, Seria	13	7	Y	20	11	Y	3A
Helicopter Pad & Flooded Area, Front Brunei Shell HQ	367	6	Y				
Sungai Bera Estuary	134	12	Y	156	12	Y	3AB
Sungai Seria Estuary	322	20	Y	487	21	Y	3BG
Tasek Merimbun				112	3	W	
Wasan	188	14	X	78	13	X	3CDG

Notes:

Coverage¹: Site Coverage; V – 25%; W – 25–50%; X – 50–75%; Y – 75–99%; Z – 100%.

Threats²: 1 – None, 2 – Sedimentation, 3 – Excessive overgrowth of vegetation, 4 – Cutting/clearance of vegetation, 5 – Eutrophication, 6 – Agriculture along drying margins, 7 – Excessive cattle grazing, 8 – Domestic sewage, 9 – Solid waste, A – Industrial waste, B – Oil pollution, C – Pesticides, D – Fertilizers, E – Mining, F – Hunting/trapping/poaching of birds, G – Small-scale fishing, H – Large-scale fishing, I – Partial reclamation, J – Complete reclamation, K – Dam/barrage construction, L – Tourism/recreation.

Table 19: Waterbird species counts reported to the AWC from Brunei Darussalam, 1997 and 1998

English Name	Scientific Name	T ¹	1997	1998
Oriental Darter	<i>Anhinga melanogaster</i>	nt	3	9
Grey Heron	<i>Ardea cinerea</i>			2
Purple Heron	<i>Ardea purpurea</i>		10	5
Great White Egret	<i>Ardea alba</i>		8	7
Intermediate Egret	<i>Egretta intermedia</i>		28	21
Little Egret	<i>Egretta garzetta</i>		11	116
Chinese Egret	<i>Egretta eulophotes</i>	VU	1	
Eastern Reef Heron	<i>Egretta sacra</i>		1	1
Cattle Egret	<i>Bubulcus ibis</i>		123	95
unidentified egrets	<i>Egretta/Bubulcus spp.</i>		20	4
Chinese Pond-Heron	<i>Ardeola bacchus</i>		5	3
Green-backed Heron	<i>Butorides striatus</i>			4
Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>		3	1
White-browed Rail	<i>Porzana cinerea</i>		7	12
White-breasted Waterhen	<i>Amauornis phoenicurus</i>		6	8
Common Moorhen	<i>Gallinula chloropus</i>		13	92
Pacific Golden Plover	<i>Pluvialis fulva</i>		107	77
Grey Plover	<i>Pluvialis squatarola</i>		7	
Little Ringed Plover	<i>Charadrius dubius</i>		27	35
Kentish Plover	<i>Charadrius alexandrinus</i>		220	85
Lesser Sandplover	<i>Charadrius mongolus</i>		186	93
Greater Sandplover	<i>Charadrius leschenaultii</i>		28	34
Common Redshank	<i>Tringa totanus</i>		11	5
Marsh Sandpiper	<i>Tringa stagnatilis</i>		3	2
Common Greenshank	<i>Tringa nebularia</i>			2
Wood Sandpiper	<i>Tringa glareola</i>		133	19
Common Sandpiper	<i>Actitis hypoleucos</i>		25	7
Swinhoe's Snipe	<i>Gallinago megala</i>			6
Common Snipe	<i>Gallinago gallinago</i>			2
Sanderling	<i>Calidris alba</i>		10	16
Red-necked Stint	<i>Calidris ruficollis</i>		5	25
Long-toed Stint	<i>Calidris subminuta</i>		23	63
Total Waterbirds			1,024	851
Hen Harrier	<i>Circus cyaneus</i>			2

Note: T¹ – Globally threatened species as identified by BirdLife International (2001): VU – Vulnerable; nt – Near Threatened.

3.3.3 Cambodia

Count data were received in three years, 1999, 2000 and 2001. A total of 20 sites were counted at least once (Figure 22 and Table 20), with coverage across the country improving. The total numbers of waterbirds counted were 14,313 (12 sites), 24,528 (13 sites) and 14,194 (11 sites) in 1999, 2000 and 2001 respectively. Two of the three Ramsar sites in Cambodia were covered by the AWC, while the Middle Stretches of the Mekong River (AWC site name Upper Mekong River) was partly covered in 1999, 2000 and 2001, with 1,296, 2,488 and 79 birds counted respectively; one count was conducted at Boeng Chhmar with 4,400 waterbirds recorded. The site with the most abundant waterbirds was Prek Toal (a part of the Tonle Sap biosphere reserve), with more than 7,000 birds in each of the three years for which data was received and a highest count of 11,083 birds in 2000. A total of 10 Important Bird Areas as identified by Seng Kim Hout *et al.* (2003) were covered, including the two Ramsar sites and Prek Toal mentioned above.

Totals of 67 species of waterbirds and six species of wetland-dependent raptors were counted (Table 21). The most numerous species were Little Cormorant (3,721 in 2000), Indian Cormorant (2,777 in 2001) and Lesser Whistling Duck (2,351 in 2000).

Six globally threatened species were recorded. Two Critically Endangered Giant Ibis were recorded on 24-25 February 2001 on the Sekong River, between Stung Treng and the Lao border. The Endangered Greater Adjutant was recorded each year from 1999-2001 with 21, 12 and 1 individuals observed respectively. The Vulnerable species recorded were Spot-billed Pelican (highest count of 1,500 birds in 2001), Milky Stork (2

and 3 birds counted in 2000 and 2001), Lesser Adjutant (46, 31 and 9 birds were counted respectively in 1999, 2000 and 2001), Sarus Crane (6 and 47 birds counted in 2000 and 2001) and Greater Spotted Eagle (2 in 2000 and 1 in 2001). The Near Threatened species recorded were Oriental Darter, Painted Stork, Black-necked Stork, Black-headed Ibis, Black-bellied Tern and Grey-headed Fishing Eagle.

The major uses of and threats to the wetlands reported were fishing, cutting/clearance of vegetation and agriculture.

The counts were coordinated and organized by the Wildlife Conservation Society.

Figure 22: AWC site coverage and numerical distribution of waterbirds in Cambodia, 1999–2001
A dot represents the maximum number of waterbirds counted at a site during the AWC.

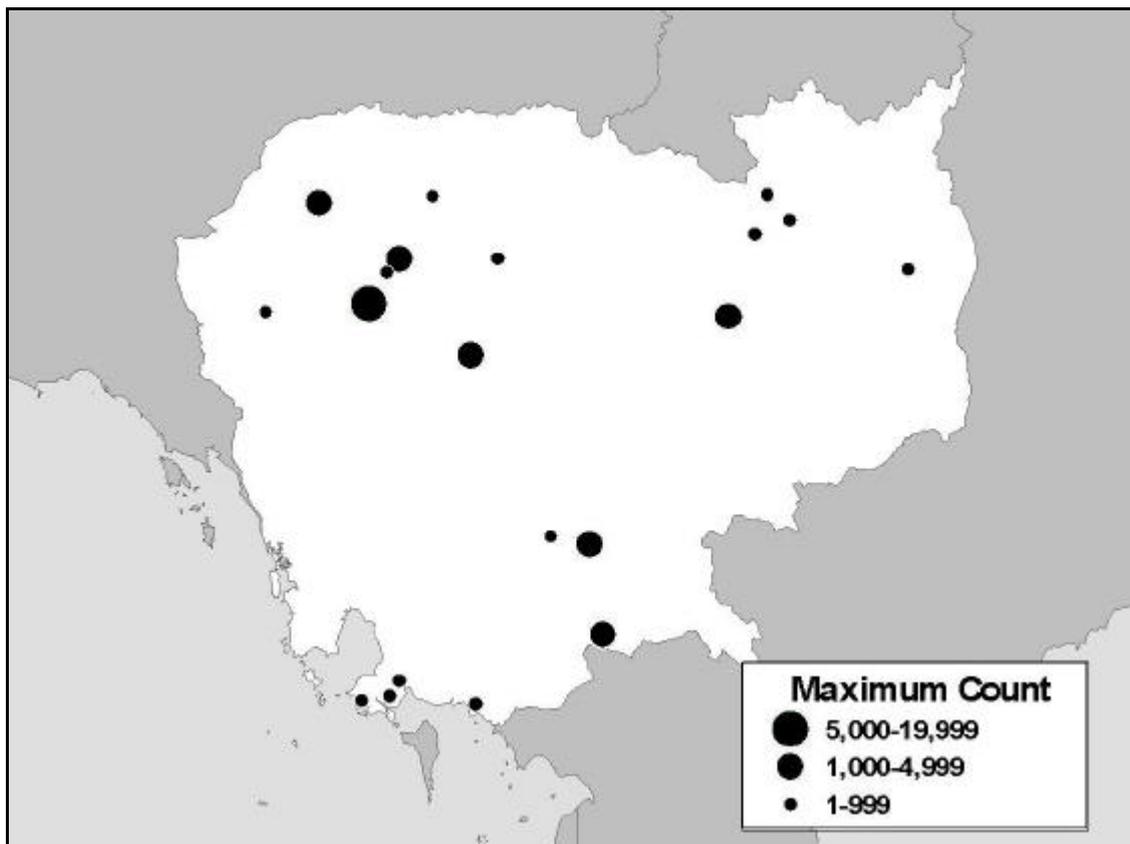


Table 20: AWC coverage of sites and waterbird and species totals in Cambodia, 1999–2001

Site Name ¹	1999			2000			2001			Threats ³
	Birds	Species	C ²	Birds	Species	C ²	Birds	Species	C ²	
Bantey Meanchey										
Ang Tropeing Thmor Reservoir [I]	2,530	28	W	1,180	25	W	2,376	30	X	4689CDFG
Battambang										
Kamping							614	14	X	FG
Prek Toal [I]	7,610	40	V	11,083	47	W	7,168	25	X	4FHI
Kampot										
Kampot River Estuary	127	9	W							I
Kandal										
Bassac Marshes [I]				2,822	28	V	1,877	24	X	FH
Basset Marsh (Samrong Lake) [I]	151	21	X	130	14	X	187	19	X	468CDGL
Boeng Veal Samnap [I]	1,220	29	W	337	19	X	455	19	Y	246789DGHL
Ratana Kiri										
Srepok River [I]				73	17		74	18	V	46G
Siem Reap										
Angkor Wetlands				947	13		1,017	17	Y	2689GL

Site Name ¹	1999			2000			2001			Threats ³
	Birds	Species	C ²	Birds	Species	C ²	Birds	Species	C ²	
Kvaev (Boeng Chhun)	905	13	Y							
Obai Tap	69	10	W							46FG
Tropeang Rohal Pra				97	21	Y				4HF
Sihanoukville										
O'chamna Reservoir	188	6	Z							
Prek Teuk Sap, Ream National Park	118	13	Y	45	5	Y				4GH
Veal Renh	76	9	Y							6FGI
Stung Treng										
Boeng Chhmar [R] [I]				4,400	18	Z				4H
Sekong River [I]				295	18	Y	246	18	V	46GK
Sesan River [I]				787	26	Y	149	11	V	4GK
Sesan River & Srepok River	102	18	Y							GK
Upper Mekong River [R] [I]	1,296	23	W	2,488	29	X	79	18	V	46GK

Notes:

Site Name¹ : [R] – Ramsar Site; [I] – Important Bird Area as identified by Seng Kim Hout *et al.* (2003). Refer to Section 1.4 for further information.

C² – Site Coverage: V – 25%; W – 25–50%; X – 50–75%; Y – 75–99%; Z – 100%.

Threats³: 1 – None, 2 – Sedimentation, 3 – Excessive overgrowth of vegetation, 4 – Cutting/clearance of vegetation, 5 – Eutrophication, 6 – Agriculture along drying margins, 7 – Excessive cattle grazing, 8 – Domestic sewage, 9 – Solid waste, A – Industrial waste, B – Oil pollution, C – Pesticides, D – Fertilizers, E – Mining, F – Hunting/trapping/poaching of birds, G – Small-scale fishing, H – Large-scale fishing, I – Partial reclamation, J – Complete reclamation, K – Dam/barrage construction, L – Tourism/recreation.

Table 21: Waterbird species counts reported to the AWC from Cambodia, 1999–2001

English Name	Scientific Name	T ¹	1999	2000	2001
Little Grebe	<i>Tachybaptus ruficollis</i>		15	196	93
Spot-billed Pelican	<i>Pelecanus philippensis</i>	VU	777	914	1,500
Great Cormorant	<i>Phalacrocorax carbo</i>		37	46	53
Indian Cormorant	<i>Phalacrocorax fuscicollis</i>		801	852	2,777
Little Cormorant	<i>Phalacrocorax niger</i>		571	3,721	322
unidentified cormorants	<i>Phalacrocorax</i> spp.		1,200	4,090	1,023
Oriental Darter	<i>Anhinga melanogaster</i>	nt	68	53	14
Grey Heron	<i>Ardea cinerea</i>		157	226	74
Purple Heron	<i>Ardea purpurea</i>		127	113	59
Great White Egret	<i>Ardea alba</i>		748	806	370
Intermediate Egret	<i>Egretta intermedia</i>		118	75	111
Little Egret	<i>Egretta garzetta</i>		624	530	291
Cattle Egret	<i>Bubulcus ibis</i>		119	279	284
unidentified egrets	<i>Egretta/Bubulcus</i> spp.		576	970	2
Chinese Pond-Heron	<i>Ardeola bacchus</i>		18		115
unidentified pond-herons	<i>Ardeola</i> spp.		892	1,564	1,456
Green-backed Heron	<i>Butorides striatus</i>		35	76	24
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>		3	56	32
Yellow Bittern	<i>Ixobrychus sinensis</i>		6	10	5
Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>		1	4	2
Black Bittern	<i>Ixobrychus flavicollis</i>			1	4
unidentified <i>Ardeidae</i>	<i>Ardeidae</i> spp.		20	17	331
Milky Stork	<i>Mycteria cinerea</i>	VU		2	3
Painted Stork	<i>Mycteria leucocephala</i>	nt	26	121	167
Asian Openbill	<i>Anastomus oscitans</i>		510	1,452	22
Woolly-necked Stork	<i>Ciconia episcopus</i>		4	13	6
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>	nt	1		
Greater Adjutant	<i>Leptoptilos dubius</i>	EN	21	12	1
Lesser Adjutant	<i>Leptoptilos javanicus</i>	VU	46	31	9
unidentified storks	<i>Ciconiidae</i> spp.		23	40	8
Black-headed Ibis	<i>Threskiornis melanocephalus</i>	nt		18	
Giant Ibis	<i>Pseudibis gigantea</i>	CR			2
Glossy Ibis	<i>Plegadis falcinellus</i>			18	
Lesser Whistling Duck	<i>Dendrocygna javanica</i>		2,040	2,351	1,304
Comb Duck	<i>Sarkidiornis melanotos</i>		12	25	11
Cotton Pygmy-Goose	<i>Nettapus coromandelianus</i>		101	492	1,082
Spot-billed Duck	<i>Anas poecilorhyncha</i>		15	33	23
Northern Pintail	<i>Anas acuta</i>		9		
Garganey	<i>Anas querquedula</i>		45	848	155

English Name	Scientific Name	T ¹	1999	2000	2001
unidentified ducks	Anatidae spp.		1,064	214	
Sarus Crane	<i>Grus antigone</i>	VU		6	47
Ruddy-breasted Crake	<i>Porzana fusca</i>		2	1	
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>		2	13	7
Watercock	<i>Gallinula cinerea</i>		2		1
Common Moorhen	<i>Gallinula chloropus</i>		19	19	5
Purple Swampphen	<i>Porphyrio porphyrio</i>		1,015	249	434
Common Coot	<i>Fulica atra</i>			4	
unidentified rails	Rallidae spp.		8	5	
Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>		90	175	50
Bronze-winged Jacana	<i>Metopidius indicus</i>		71	61	44
Black-winged Stilt	<i>Himantopus himantopus</i>		23	42	44
Great Thick-knee	<i>Burhinus recurvirostris</i>		4	7	11
Oriental Pratincole	<i>Glareola maldivarum</i>		4	1	
Small Pratincole	<i>Glareola lactea</i>		106	1,999	101
River Lapwing	<i>Vanellus duvaucelli</i>		9	138	84
Grey-headed Lapwing	<i>Vanellus cinereus</i>		3	5	17
Red-wattled Lapwing	<i>Vanellus indicus</i>		13	9	2
Pacific Golden Plover	<i>Pluvialis fulva</i>			1	
Little Ringed Plover	<i>Charadrius dubius</i>		7	87	30
Kentish Plover	<i>Charadrius alexandrinus</i>			5	
unidentified <i>Charadrius</i> plovers	<i>Charadrius</i> spp.		39	7	
Black-tailed Godwit	<i>Limosa limosa</i>		9		
Eurasian Curlew	<i>Numenius arquata</i>		1		
unidentified curlews	<i>Numenius</i> spp.		20		
Common Greenshank	<i>Tringa nebularia</i>		33	97	36
Green Sandpiper	<i>Tringa ochropus</i>		1	3	
Wood Sandpiper	<i>Tringa glareola</i>		10	5	25
unidentified <i>Tringa</i> sandpipers	<i>Tringa</i> spp.		1		
Common Sandpiper	<i>Actitis hypoleucos</i>		8	53	33
Pintail Snipe	<i>Gallinago stenura</i>		5	1	6
Common Snipe	<i>Gallinago gallinago</i>		7	2	14
unidentified snipes	<i>Gallinago</i> spp.		3		6
unidentified shorebirds	Charadrii spp.		29	10	
Brown-headed Gull	<i>Larus brunnicephalus</i>		356	248	2
Whiskered Tern	<i>Chlidonias hybridus</i>		1,159	784	1,399
Caspian Tern	<i>Sterna caspia</i>		354	34	1
River Tern	<i>Sterna aurantia</i>		37	170	60
Common Tern	<i>Sterna hirundo</i>		31		
Black-bellied Tern	<i>Sterna acuticauda</i>	nt		4	
unidentified terns	Sterninae spp.		2	14	
Total Waterbirds			14,313	24,528	14,194
Osprey	<i>Pandion haliaetus</i>		9	22	11
Brahminy Kite	<i>Haliaastur indus</i>		50	104	19
White-bellied Sea Eagle	<i>Haliaeetus leucogaster</i>		1		
Grey-headed Fishing Eagle	<i>Ichthyophaga ichthyaetus</i>	Nt	11	18	11
Eastern Marsh Harrier	<i>Circus spiliotus</i>		8	10	6
Greater Spotted Eagle	<i>Aquila clanga</i>	VU		2	1

Note: T¹ – Globally threatened species as identified by BirdLife International (2001): CR – Critically Endangered; EN – Endangered; VU – Vulnerable; nt – Near Threatened.

3.3.4 Indonesia

Count data were received for three years, 1999, 2000 and 2001. A total of 67 sites were counted at least once (Figure 23 and Table 22). Total numbers of waterbirds counted were 24,420 (47 sites), 7,518 (12 sites) and 9,832 (11 sites) in 1999, 2000 and 2001 respectively. Petulu Ubud (6,000 in 1999), Dua Island (6,091 in 1999) and Parupuk Tabing-Padang (5,381) each recorded more than 5,000 waterbirds. However, none of the Ramsar sites or the shorebird network site of the East Asian-Australian Flyway was counted.

Totals of 81 species of waterbirds and one wetland-dependent raptor were counted (Table 23). The most numerous species were the egrets, Cattle Egret (8,409 in 2001), Intermediate Egret (6,254 in 1999), Javan Pond-Heron (4,260 in 1999) and Little Egret (3,011 in 1999).

Four globally threatened species were recorded. A solitary Endangered Storm's Stork was recorded in 2001. The Vulnerable Milky Stork (2 and 71 birds counted in 1999 and 2000), Lesser Adjutant (5, 6 and 4 birds counted respectively in 1999, 2000 and 2001) and Masked Finfoot (2 birds in 2000) were recorded. The Near Threatened species recorded including Oriental Darter, Black-headed Ibis, Malaysian Plover, Far Eastern Curlew and Asian Dowitcher.

The major uses of and threats to the wetlands reported included hunting, agriculture, pesticides, fishing and cutting/clearance of vegetation.

The counts were coordinated by Wetlands International – Indonesia Office.

Figure 23: AWC site coverage and numerical distribution of waterbirds in Indonesia, 1999–2001

A dot represents the maximum number of waterbirds counted at a site during the AWC.

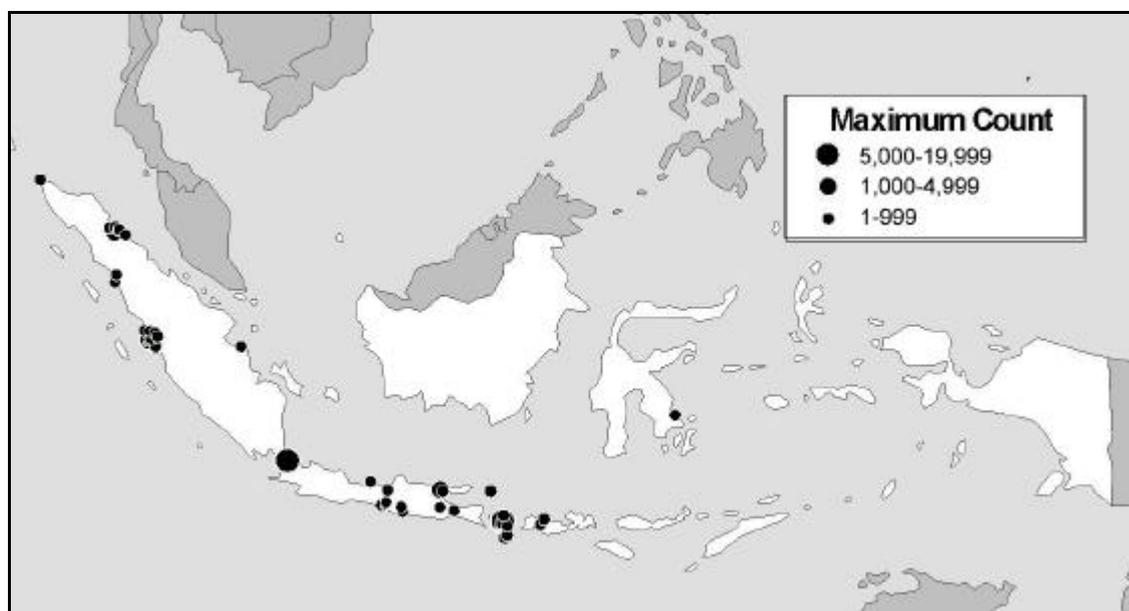


Table 22: AWC site coverage and waterbird and species totals in Indonesia, 1999–2001

Site Name	1999			2000			2001			Threats ²
	Birds	Species	C ¹	Birds	Species	C ¹	Birds	Species	C ¹	
Bali										
Benoa Port	611	25	Y							9ABI
Buyan Lake							21	2		
Danau Buyan	34	2	X							8L
Hangtuah Street				35	2	V				6F
Kedonganan	106	15	Y							89GIJL
Nusa Dua Lagoon							154	10		
Ngurah Rai Airport				5	2	W				J
Nusa Dua Sewage Ponds	305	18	Y							89L
Petulu Ubud	6,000	3	W				3,423	1		F
Pulau Serangan (Turtle Island)	25	7	X							BI
Suwung – Denpasar							71	1		
Suwung Kauh	287	18	X							39
Yeh Sumbul							50	1		
Java										
East Java										
Bromo Tengger Semeru National Park	18	1								
Desa Tambak Cemandi	31	4	V							2F
Medokan Sawah	15	6	V							AFU

Site Name	1999			2000			2001			Threats ²
	Birds	Species	C ¹	Birds	Species	C ¹	Birds	Species	C ¹	
Padi Dangkal	17		4 X							6CDFG
Pantai Ria Kenjeran	484		10							
Pantai Timur Surabaya	711		23 Y							2489ABC
Sumber Suko				76		4 X				6CDF
Tambak Desa Banter	1,361		6 Z							
Tambak Osowilangun	110		1 W							
Tambak Wonorejo	307		12 Y							F
Urang Gantung				70		2 W				6CDF
Waduk Gajah Mungkur	40		2 V							6CDF
Watu Gesing	75		3 W							46
Wonokromo Estuary	35		4							
Wonorejo	46		8 V							FI
Wonorejo Estuary	97		6							
Yogyakarta										
Muara Sungai Bogowonto	7		1 X							
Pantai Trisik	414		18 X							2CF
Ambarukmo Palace Hotel	351		1 Y							
Central Java										
Linggo Asri	28		7 X							467F
Rawa Pening	595		18 V							3G
West Java										
Dua Island and surrounding rice fields	6,091		16 Z	3,600		9 Y				24CFL
Southeast Sulawesi										
Kendari Bay							123	11		C
Lantari Fishponds							163	8		C
Sumatra										
Aceh										
Krueng Aceh (Sungai Aceh)	62		4 V							CF
North Sumatra										
Desa Bakaran Batu	15		2 Y							6D
Kampung Pon	15		1 X							6D
Lobu River				5		2 W				6FG
Mangambur River				12		4 X				6CDG
Percut				3,497		18 W				489CFH
Ramunia				48		1 W				68CD
Sihiong, Sipahu and Garoga River				32		10 Y				46FG
Sm. Karang Gading	88		5 W							46CG
Sungai Sunggal, Asam Kumbang	42		2 Y							EFG
West Sumatra										
Desa Sumani	105		1 W							6
Jondul Tabling	40		4 W							348FHJ
Koto Tengah	122		4 X							6AI
Lubuk Alung	154		3 V							6C
Lubuk Minturun	7		3 W							67CF
Lung – Painan							97	7 W		D6
Mandeh – Painan							349	10 Y		IL
Muara Siberut Mentawai				126		15				8
Panti Gasan	488		7 X							G
Parupuk Tabing – Padang							5,381	6 V		I
Pasir Jambak	540		1							CDJ
Pasir Parupuk	4,007		3 X							48GJ
Pulau Belibis	23		5 Y							3578FGL
Sagulubek Mentawai				14		7 V				J
Tunggul Hitam	16		2 V							37F
Jambi										
Air Hitam Dalam	15		4 V							4FG
West Nusa Tenggara										
Alas	40		1 W							6CF
Danau Lebuk	260		4 V							23F
Labuan Lalar	30		1 W							GF
Sateluk	150		1 W							6CF

Notes:

C¹ – Site Coverage: V – 25%; W – 25–50%; X – 50–75%; Y – 75–99%; Z – 100%.

Threats²: 1 – None, 2 – Sedimentation, 3 – Excessive overgrowth of vegetation, 4 – Cutting/clearance of vegetation, 5 – Eutrophication, 6 – Agriculture along drying margins, 7 – Excessive cattle grazing, 8 – Domestic sewage, 9 – Solid waste, A – Industrial waste, B – Oil pollution, C – Pesticides, D – Fertilizers, E – Mining, F – Hunting/trapping/poaching of birds, G – Small-scale fishing, H – Large-scale fishing, I – Partial reclamation, J – Complete reclamation, K – Dam/barrage construction, L – Tourism/recreation.

Table 23: Waterbird species counts reported to the AWC from Indonesia, 1999–2001

English Name	Scientific Name	T'	1999	2000	2001
Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>		30	27	
Little Pied Cormorant	<i>Phalacrocorax melanoleucos</i>		1		17
Little Cormorant	<i>Phalacrocorax niger</i>		33		
Oriental Darter	<i>Anhinga melanogaster</i>	nt	21	1	7
Grey Heron	<i>Ardea cinerea</i>		74		2
Great-billed Heron	<i>Ardea sumatrana</i>		7	1	
Purple Heron	<i>Ardea purpurea</i>		48	27	12
Great White Egret	<i>Ardea alba</i>		41	129	
Intermediate Egret	<i>Egretta intermedia</i>		6,254	18	415
White-faced Heron	<i>Egretta novaehollandiae</i>		1		
Little Egret	<i>Egretta garzetta</i>		3,011	256	170
Eastern Reef Heron	<i>Egretta sacra</i>		76	2	5
Cattle Egret	<i>Bubulcus ibis</i>		6,862	1,576	8,409
unidentified egrets	<i>Egretta/Bubulcus spp.</i>			12	
Javan Pond-Heron	<i>Ardeola speciosa</i>		4,260	1,850	38
Green-backed Heron	<i>Butorides striatus</i>		13	6	5
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>		335		8
Rufous Night-Heron	<i>Nycticorax caledonicus</i>		6	1	
Yellow Bittern	<i>Ixobrychus sinensis</i>		23		
Schrenck's Bittern	<i>Ixobrychus eurhythmus</i>		3		
Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>		18	4	50
Milky Stork	<i>Mycteria cinerea</i>	VU	2	71	
Woolly-necked Stork	<i>Ciconia episcopus</i>		12		
Storm's Stork	<i>Ciconia stormi</i>	EN			1
Lesser Adjutant	<i>Leptoptilos javanicus</i>	VU	5	6	4
Black-headed Ibis	<i>Threskiornis melanocephalus</i>	nt	1		
Glossy Ibis	<i>Plegadis falcinellus</i>		47	1	
Wandering Whistling Duck	<i>Dendrocygna arcuata</i>		62		
Lesser Whistling Duck	<i>Dendrocygna javanica</i>		90	2	16
White-winged Duck	<i>Cairina scutulata</i>	EN	3	1	4
Grey Teal	<i>Anas gracilis</i>		68		91
Pacific Black Duck	<i>Anas superciliosa</i>		18		40
unidentified ducks	Anatidae spp.		8		
Red-legged Crake	<i>Rallina fasciata</i>		2		
White-browed Rail	<i>Porzana cinerea</i>		6	1	
Baillon's Crake	<i>Porzana pusilla</i>		6		
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>		41	13	96
Common Moorhen	<i>Gallinula chloropus</i>		46		6
Purple Swampphen	<i>Porphyrio porphyrio</i>		39		
Masked Finfoot	<i>Heliopais personata</i>	VU		2	
Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>		16		
Black-winged Stilt	<i>Himantopus himantopus</i>				45
Pacific Golden Plover	<i>Pluvialis fulva</i>		76	25	1
Grey Plover	<i>Pluvialis squatarola</i>		55		18
Little Ringed Plover	<i>Charadrius dubius</i>		54		
Kentish Plover	<i>Charadrius alexandrinus</i>		62		
Malaysian Plover	<i>Charadrius peronii</i>	nt	20	2	
Lesser Sandplover	<i>Charadrius mongolus</i>			3	
Greater Sandplover	<i>Charadrius leschenaultii</i>		69	10	
unidentified <i>Charadrius</i> plovers	<i>Charadrius spp.</i>		208		
Black-tailed Godwit	<i>Limosa limosa</i>		15	4	
Bar-tailed Godwit	<i>Limosa lapponica</i>		74	5	20
Little Curlew	<i>Numenius minutus</i>		22		
Whimbrel	<i>Numenius phaeopus</i>		149	50	
Eurasian Curlew	<i>Numenius arquata</i>		286	300	7
Far Eastern Curlew	<i>Numenius madagascariensis</i>	nt	85		
Common Redshank	<i>Tringa totanus</i>		114	1,000	17
Marsh Sandpiper	<i>Tringa stagnatilis</i>		10		
Common Greenshank	<i>Tringa nebularia</i>		81		35
Green Sandpiper	<i>Tringa ochropus</i>		14		
Wood Sandpiper	<i>Tringa glareola</i>		92	90	20
unidentified <i>Tringa</i> Sandpipers	<i>Tringa spp.</i>		9		
Terek Sandpiper	<i>Xenus cinereus</i>		13		
Common Sandpiper	<i>Actitis hypoleucos</i>		278	18	48
Grey-tailed Tattler	<i>Heteroscelus brevipes</i>		9		
Ruddy Turnstone	<i>Arenaria interpres</i>		15	19	

English Name	Scientific Name	T ¹	1999	2000	2001
Pintail Snipe	<i>Gallinago stenura</i>			1	
Common Snipe	<i>Gallinago gallinago</i>		1		
Asian Dowitcher	<i>Limnodromus semipalmatus</i>	nt		400	
Sanderling	<i>Calidris alba</i>		12		
Red-necked Stint	<i>Calidris ruficollis</i>		1		
Long-toed Stint	<i>Calidris subminuta</i>		6		
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>		3		
Dunlin	<i>Calidris alpina</i>		10		
Curlew Sandpiper	<i>Calidris ferruginea</i>		1		
Broad-billed Sandpiper	<i>Limicola falcinellus</i>		2		
Ruff	<i>Philomachus pugnax</i>		1		
unidentified shorebirds	Charadrii spp.		4	1,500	
unidentified gulls	<i>Larus</i> spp.			2	
Whiskered Tern	<i>Chlidonias hybridus</i>		15		
White-winged Black Tern	<i>Chlidonias leucopterus</i>		11		
Gull-billed Tern	<i>Sterna nilotica</i>		132	1	
Common Tern	<i>Sterna hirundo</i>		612	75	200
Black-naped Tern	<i>Sterna sumatrana</i>		30		25
Little Tern	<i>Sterna albifrons</i>		21	3	
Greater Crested Tern	<i>Sterna bergii</i>		147		
Lesser Crested Tern	<i>Sterna bengalensis</i>		12	3	
Total Waterbirds			24,420	7,518	9,832
White-bellied Sea Eagle	<i>Haliaeetus leucogaster</i>			2	

Note:

T¹ – Globally threatened species as identified by BirdLife International (2001): EN – Endangered; VU – Vulnerable; nt – Near Threatened.

3.3.5 Lao PDR (Laos)

Information was received in 2000 and 2001 from a total of 15 sites that were counted along the Mekong River in northern Laos (Figure 24 and Table 24). Total numbers of waterbirds counted were 2,247 (14 sites) and 311 (1 site) in 2000 and 2001 respectively. Two Important Bird Areas, as identified by Ounekham and Inthapatha (2003), were covered by the census.

Figure 24: AWC site coverage and numerical distribution of waterbirds in Laos in 2000 and 2001

A dot represents the maximum number of waterbirds counted at a site during the AWC.



A total of 22 species of waterbirds were counted (Table 25). Of these, the most numerous species was Small Pratincole, with a total of 1,646 birds counted in 2000. No globally threatened species were recorded; however, many of these species are concentrated in the southern part of the country.

The data were contributed by individual counters.

Table 24: AWC site coverage and waterbird and species totals in Laos, 2000 and 2001

Site Name ¹	2000		2001	
	Birds	Species	Birds	Species
Upper Mekong River [I ¹], Ban Xianguouang – Ban Muangmom	119	10		
Upper Mekong River [I ¹], Ban Muangmom – Ban Tonpheang	931	14		
Upper Mekong River [I ¹], Ban Tonpheung – Ban Khonkeo	306	14		
Upper Mekong River [I ¹], Ban Houayxai – Ban Paktha	256	7		
Upper Mekong River [I ¹], Ban Paktha – Muang Pakbeng	33	8		
Upper Mekong River [I ¹], Muang Pakbeng – Ban Thaxoang	7	2		
Upper Mekong River [I ¹], Ban Thaxoang – Ban Bo	12	4		
Upper Mekong River, Ban Lay – Pak Ou	15	5		
Upper Mekong River, Pak Ou – Louang Phabang	57	6		
Upper Mekong River [I ²], Pak Lay – Xaignabouli/Thai Border	95	7		
Upper Mekong River [I ²], Xaignabouli/Thai Border – Bang Vang	79	7		
Upper Mekong River [I ²], Bang Vang – Don Chan	32	6		
Upper Mekong River [I ²], Paksan Lake	123	1		
Upper Mekong River [I ²], Paksang – Vientiane	182	10		
Upper Mekong River [I ²], – 4km downstream from Pak Bung			311	12

Note:

Site Name¹: [I] – Important Bird Area as identified by Ounekham and Inthapatha (2003); I¹ – IBA name: Upper Lao Mekong; I² – IBA name: Mekong Channel upstream of Vientiane. Refer to Section 1.4.6 for further information.

Table 25: Waterbird species counts reported to the AWC from Laos, 2000 and 2001

English Name	Scientific Name	2000	2001
Great Cormorant	<i>Phalacrocorax carbo</i>	3	
Grey Heron	<i>Ardea cinerea</i>	24	
Great White Egret	<i>Ardea alba</i>	1	
Little Egret	<i>Egretta garzetta</i>	10	1
unidentified egrets	<i>Egretta/Bubulcus</i> spp.	11	70
unidentified pond-herons	<i>Ardeola</i> spp.	14	
Green-backed Heron	<i>Butorides striatus</i>	6	
Lesser Whistling Duck	<i>Dendrocygna javanica</i>		150
Spot-billed Duck	<i>Anas poecilorhyncha</i>	69	
Northern Pintail	<i>Anas acuta</i>	4	
Black-winged Stilt	<i>Himantopus himantopus</i>		3
Great Thick-knee	<i>Burhinus recurvirostris</i>	4	
Small Pratincole	<i>Glareola lactea</i>	1,646	14
River Lapwing	<i>Vanellus duvaucelli</i>	129	6
Grey-headed Lapwing	<i>Vanellus cinereus</i>	56	
Long-billed Plover	<i>Charadrius placidus</i>		2
Little Ringed Plover	<i>Charadrius dubius</i>	19	43
Kentish Plover	<i>Charadrius alexandrinus</i>	9	5
unidentified <i>Charadrius</i> plovers	<i>Charadrius</i> spp.	10	
Spotted Redshank	<i>Tringa erythropus</i>	92	
Common Greenshank	<i>Tringa nebularia</i>	27	4
Wood Sandpiper	<i>Tringa glareola</i>		1
Common Sandpiper	<i>Actitis hypoleucos</i>	18	12
unidentified shorebirds	<i>Charadrii</i> spp.	92	
Herring Gull	<i>Larus argentatus</i>	2	
River Tern	<i>Sterna aurantia</i>	1	
Total Waterbirds		2,247	311

3.3.6 Malaysia

Count data were received from 1999 to 2001 and a total of 45 sites were counted at least once (Figure 25 and Table 26). Total numbers of waterbirds counted were 11,491 (20 sites), 15,595 (25 sites) and 16,088 (24 sites) respectively in 1999, 2000 and 2001. Sites counted with more than 5,000 waterbirds were the Kapar Power Station (5,863 in 1999) (designated on the East Asian–Australasian Shorebird Site Network in 2003) and Buntal Bay (5,329 in 2001). None of the four Ramsar sites was counted.

Totals of 71 species of waterbirds and eight species of wetland-dependent raptors were counted (Table 27). The most abundant species were Lesser Sandplover (2,417 in 2000), Common Redshank (1,620 in 1999), Eurasian Curlew (1,108 in 2001) and Greater Sandplover (1,047 in 2001).

Records of four globally threatened species were submitted. The Endangered Storm's Stork (2 in 2001) and Nordmann's Greenshank (2 birds in 2000 and 1 in 2001), the Vulnerable Lesser Adjutant (27 in 1999) and Greater Spotted Eagle (5 in 2000) were recorded. The near threatened Oriental Darter, Malaysian Plover, Far Eastern Curlew and Grey-headed Fishing Eagle were also reported.

The major uses of and threats to wetlands reported were cutting/clearance of vegetation, fishing, domestic sewage and solid waste.

The counts were coordinated by the Malaysian Nature Society and the Department of Wildlife & National Parks.

Figure 25: AWC site coverage and numerical distribution of waterbirds in Malaysia, 1999–2001

A dot represents the maximum number of waterbirds counted at a site during the AWC.

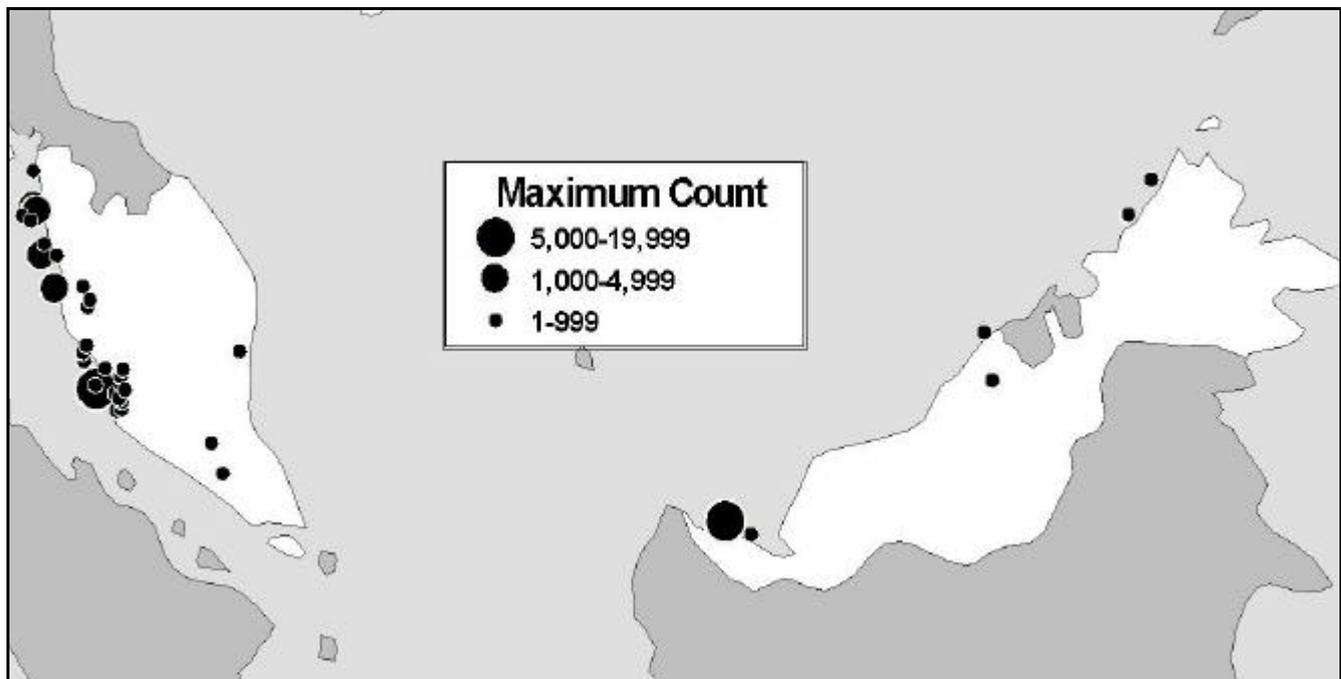


Table 26: AWC site coverage and waterbird and species totals in Malaysia, 1999–2001

Site Name ¹	1999			2000			2001			Threats ³
	Birds	Species	C ²	Birds	Species	C ²	Birds	Species	C ²	
Johor										
Yong Peng Heronry				379	2	Y				489AFI
Kedah										
Kedah Coast South of Kuala Kedah				196	13	X				4CDGI
Kuala Kedah – Kuala Sungai Kangkong Coast							336	8	X	46CDF
Kuala Lumpur										
Pantai Hall (Sewerage Ponds)							238	7	X	1
Selayang (off Jalan Kepong)	16	5								89J
Melaka										
Batang Tiga Ricefields	59	7		237	11					6DF
Pahang										
Sungai Galing River Bank							248	1		1
Penang										
Batu Maung (Batu Uban)	414	14	X	169	17	Y				2J
Kuala Bekah (Telok Air Tawar) to Kuala Muda	2,114	21	W	937	20	W	1,998	29	W	249CDFGI
Pantai Mas (Pantai Aceh Village)	97	9	Y	166	11	Y	309	15	V	49G
Perak										
Kamunting Ex-Mining Pools				198	17	W	147	19	V	34589ADF
Kinta Nature Park							1,022	17	V	459FI
Krian Ricefields	37	7	V							
Kuala Gula	1,274	20	V				804	9	Y	HL
Malim Nawar Ex-Mining Pools				850	26					249EI
Pinji Estate/Pinji Ponds				189	7		371	8		46CD
Simpang Empat				121	9	X				I
Perlis										
Kuala Perlis – Kuala Sanglang Coast							103	5	X	46FGI
Timah –Tasoh Dam	610	10		91	7	Y	16	4	X	689CDFG
Putrajaya										
Putrajaya Wetlands							40	1	V	1
Sabah										
Jelatik Mangroves	101	8	W							5GI
Kota Belud Bird Sanctuary	261	25	W							
Kota Kinabalu Bird Sanctuary	45	7	W	109	7	W				458L
Likas Bird Sanctuary							97	15	X	458CGL
Likas Lagoon	53	11	V	33	8	V				35G
Likas Mudflat	6	3	V	1	1	X				89G
Sembulan	134	9	V	15	4	V				8G
Sarawak										
Buntal Bay (Kampung Buntal)				4,423	25		5,329	30	Y	68FGIL
Kpg. Jaie/Kpg. Semera							171	19	V	8CDG
Kuala Baram							27	12		GI
Loagan Bunut Lakes							20	9		CDL
Miri Peat swamp (Padang Kerbau)							58	8		4F
Selangor										
Berjantai Mining Pools							41	8	W	9A
Jeram (Coastal/Mudflat)	260	13		205	18		230	9		489CDHI
Kapar Power Station [S]	5,863	35		5,639	40	Y	4,049	26	Y	29AJ
Kampung Bukit Changgang							29	9	Y	
Kuala Selangor Nature Park	39	11	V	144	14	W				KL
Paya Indah Wetlands	90	11		87	10		207	12	Y	4B
Kelana Jaya Lakes	31	10	X	20	7	Z				48GL
Rantau Panjang Ex-Mining Ponds							231	19	X	9G
Rasa Sayang Mangrove/Mudflat				786	13					4BCDHI
Sekinchan Ricefields				31	8					
Sungai Nibong Beach				588	13					8G
Taman Mawar, Puchong	14	4	Z							89GJ
Ulu Yam Mining Pools				20	6	W				36CI

Notes:

Site Name¹: [S] – Site on the East Asian-Australasian Shorebird Site Network, refer to Section 1.4.5 for further information.

C² – Site Coverage: V – 25%; W – 25–50%; X – 50–75%; Y – 75–99%; Z – 100%.

Threats³: 1 – None, 2 – Sedimentation, 3 – Excessive overgrowth of vegetation, 4 – Cutting/clearance of vegetation, 5 – Eutrophication, 6 – Agriculture along drying margins, 7 – Excessive cattle grazing, 8 – Domestic sewage, 9 – Solid waste, A – Industrial waste, B – Oil pollution, C – Pesticides, D – Fertilizers, E – Mining, F – Hunting/trapping/poaching of birds, G – Small-scale fishing, H – Large-scale fishing, I – Partial reclamation, J – Complete reclamation, K – Dam/barrage construction, L – Tourism/recreation.

Table 27: Waterbird species counts reported to the AWC from Malaysia, 1999–2001

English Name	Scientific Name	T ¹	1999	2000	2001
Little Grebe	<i>Tachybaptus ruficollis</i>		39	72	43
Oriental Darter	<i>Anhinga melanogaster</i>	nt			4
Grey Heron	<i>Ardea cinerea</i>		83	76	17
Purple Heron	<i>Ardea purpurea</i>		47	187	76
Great White Egret	<i>Ardea alba</i>		245	153	97
Intermediate Egret	<i>Egretta intermedia</i>		50	41	224
Little Egret	<i>Egretta garzetta</i>		269	288	858
Eastern Reef Heron	<i>Egretta sacra</i>		6		
Cattle Egret	<i>Bubulcus ibis</i>		859	631	445
Chinese Pond-Heron	<i>Ardeola bacchus</i>		693	364	1,044
unidentified pond-herons	<i>Ardeola</i> spp.			10	
Green-backed Heron	<i>Butorides striatus</i>		90	106	83
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>		213	330	710
Rufous Night-Heron	<i>Nycticorax caledonicus</i>		2		
Yellow Bittern	<i>Ixobrychus sinensis</i>		8	12	18
Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>		10	3	6
unidentified Ardeidae	Ardeidae spp.		548	44	305
Storm's Stork	<i>Ciconia stormi</i>	EN			2
Lesser Adjutant	<i>Leptoptilos javanicus</i>	VU	27	2	3
Glossy Ibis	<i>Plegadis falcinellus</i>		1		
Lesser Whistling Duck	<i>Dendrocygna javanica</i>		6	40	28
Cotton Pygmy-Goose	<i>Nettapus coromandelianus</i>		500	125	35
Common Teal	<i>Anas crecca</i>				300
Garganey	<i>Anas querquedula</i>			3	
Slaty-breasted Rail	<i>Gallirallus striatus</i>		5		4
White-browed Rail	<i>Porzana cinerea</i>		5	10	13
Ruddy-breasted Crake	<i>Porzana fusca</i>			3	1
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>		42	70	91
Watercock	<i>Gallicrex cinerea</i>		7	3	5
Common Moorhen	<i>Gallinula chloropus</i>		51	54	98
Purple Swampphen	<i>Porphyrio porphyrio</i>		53	42	136
unidentified rails	Rallidae spp.				1
Greater Painted-Snipe	<i>Rostratula benghalensis</i>				6
Black-winged Stilt	<i>Himantopus himantopus</i>		16	12	
Oriental Pratincole	<i>Glareola maldivarum</i>				1
Grey-headed Lapwing	<i>Vanellus cinereus</i>				2
Pacific Golden Plover	<i>Pluvialis fulva</i>		135	99	270
Grey Plover	<i>Pluvialis squatarola</i>		300	483	149
Little Ringed Plover	<i>Charadrius dubius</i>		36	122	18
Kentish Plover	<i>Charadrius alexandrinus</i>		5	95	36
Malaysian Plover	<i>Charadrius peronii</i>	nt	3	3	8
Lesser Sandplover	<i>Charadrius mongolus</i>		608	2,417	1,389
Greater Sandplover	<i>Charadrius leschenaultii</i>		200	376	1,047
Black-tailed Godwit	<i>Limosa limosa</i>		20	49	65
Bar-tailed Godwit	<i>Limosa lapponica</i>		315	793	481
unidentified godwits	<i>Limosa</i> spp.				6
Whimbrel	<i>Numenius phaeopus</i>		944	693	928
Eurasian Curlew	<i>Numenius arquata</i>		1,075	831	1,108
Far Eastern Curlew	<i>Numenius madagascariensis</i>	nt			2
unidentified curlews	<i>Numenius</i> spp.		100		
Common Redshank	<i>Tringa totanus</i>		1,620	478	1,222
Marsh Sandpiper	<i>Tringa stagnatilis</i>		346	44	106
Common Greenshank	<i>Tringa nebularia</i>		98	140	59
Nordmann's Greenshank	<i>Tringa guttifer</i>	EN		2	1
Wood Sandpiper	<i>Tringa glareola</i>		42	110	39
Terek Sandpiper	<i>Xenus cinereus</i>		313	277	226
Common Sandpiper	<i>Actitis hypoleucos</i>		56	151	197
Grey-tailed Tattler	<i>Heteroscelus brevipes</i>				2
Ruddy Turnstone	<i>Arenaria interpres</i>		1	86	39
Pintail Snipe	<i>Gallinago stenura</i>		7		5
unidentified snipes	<i>Gallinago</i> spp.			37	3
Red Knot	<i>Calidris canutus</i>		4		19
Great Knot	<i>Calidris tenuirostris</i>		100	43	82
Red-necked Stint	<i>Calidris ruficollis</i>		50	117	405

English Name	Scientific Name	T ¹	1999	2000	2001
Long-toed Stint	<i>Calidris subminuta</i>		5	35	
Curlew Sandpiper	<i>Calidris ferruginea</i>		200	223	135
unidentified <i>Calidris</i> sandpipers	<i>Calidris</i> spp.			17	
Broad-billed Sandpiper	<i>Limicola falcinellus</i>		20	4	
Ruff	<i>Philomachus pugnax</i>				5
unidentified shorebirds	Charadrii spp.		95	3617	2160
Brown-headed Gull	<i>Larus brunnicephalus</i>				24
Whiskered Tern	<i>Chlidonias hybridus</i>		23		
White-winged Black Tern	<i>Chlidonias leucopterus</i>		108	330	235
Gull-billed Tern	<i>Sterna nilotica</i>		450	145	121
Caspian Tern	<i>Sterna caspia</i>		20	13	22
Common Tern	<i>Sterna hirundo</i>		65	474	51
Little Tern	<i>Sterna albifrons</i>		47	394	522
Greater Crested Tern	<i>Sterna bergii</i>		1		38
Lesser Crested Tern	<i>Sterna bengalensis</i>		1		
unidentified terns	Sterninae spp.		203	200	223
Total Waterbirds			11,491	15,595	16,088
Osprey	<i>Pandion haliaetus</i>		1	2	6
Brahminy Kite	<i>Haliaeetus indus</i>		7	23	19
White-bellied Sea Eagle	<i>Haliaeetus leucogaster</i>		3	2	5
Grey-headed Fishing Eagle	<i>Ichthyophaga ichthyaetus</i>	nt	2		1
Marsh Harrier	<i>Circus aeruginosus</i>			1	1
Eastern Marsh Harrier	<i>Circus spiliotus</i>		9	5	1
Pied Harrier	<i>Circus melanoleucos</i>		3	1	
Greater Spotted Eagle	<i>Aquila clanga</i>	VU	2	5	

Note:

T¹ – Globally threatened species as identified by BirdLife International (2001): EN – Endangered; VU – Vulnerable; nt – Near Threatened.

3.3.7 Myanmar

Count data were received for four years; 1997, 1998, 2000 and 2001, and was supplemented by two survey reports (van der Ven 2000 and 2001). A total of 44 sites were counted at least once, with good coverage (Figure 26 and Table 28). Total numbers of waterbirds counted were 27,676 (4 sites), 6,237 (2 sites), 51,171 (10 sites) and 59,377 (33 sites) respectively in 1997, 1998, 2000 and 2001. One site, Indaw-gyi Lake, held more than 20,000 birds (23,112 in 1997), and the Irrawaddy River between Myitkhyina and Sinbo held nearly 20,000 birds (19,876 in 2000).

Totals of 101 species of waterbirds and four species of wetland-dependent raptors were counted (Table 29). The most abundant species were Lesser Whistling Duck (8,036 in 2001), Ruddy Shelduck (6,329 in 2000), Gadwall (5,528 in 2000), Bar-headed Goose (4,874 in 2000) and Eurasian Crane (3,766 in 2000).

Six globally threatened species were reported during this period (Table 29). The Endangered White-winged Duck (2 birds in 2001); the Vulnerable Spot-billed Pelican (10 and 88 in 2000 and 2001 respectively), Lesser Adjutant (36 and 17 in 2000 and 2001 respectively), Baer's Pochard (1000 in 1997 and 129 in 2001), Sarus Crane (7 in 2001; constitutes new information on the distribution of this threatened subspecies) and Greater Spotted Eagle (5 in 2001) were recorded. The Near Threatened Oriental Darter, Black-necked Stork, Black-headed Ibis, Ferruginous Duck and Black-billed Tern were also recorded.

The first records for Myanmar of White-billed Diver and the Black-necked Grebe, on the Irrawaddy River at Talawgyi in December 2000, were confirmed by Joost van der Ven (pers. comm. 2003).

The major uses and threats recorded at the wetlands were fishing, agriculture and hunting.

The census was coordinated by the Myanmar Forestry Department.

Figure 26: AWC site coverage and numerical distribution of waterbirds in Myanmar, 1997–2001
 A dot represents the maximum number of waterbirds counted at a site during the AWC.

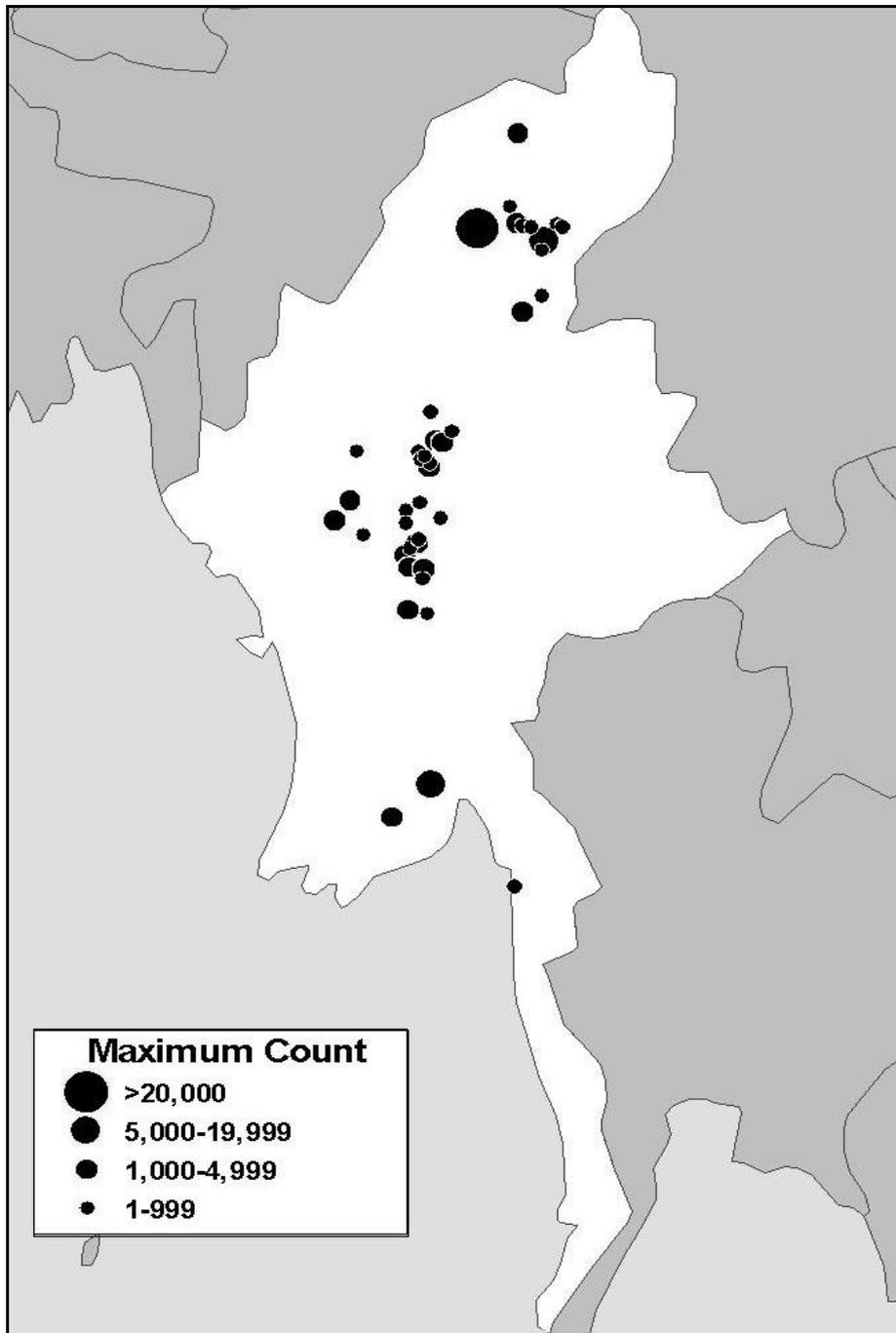


Table 28: AWC site coverage and waterbird and species totals in Myanmar, 1997–2001

Site Name	1997			1998			2000			2001			Threats ³
	Birds	Sp ¹	C ²										
Amarapura													
Taung Ta Man										446	14	X	5689FHL
Bago													
Moyingyi				5,239	18	Z	6,472	28	P	3,739	25	W	G
Kachin													
Agricultural Area of SE of Myitkhyina							954	14					

Site Name	1997			1998			2000			2001			Threats ³
	Birds	Sp ¹	C ²	Birds	Sp ¹	C ²	Birds	Sp ¹	C ²	Birds	Sp ¹	C ²	
Myitkhyina to the south, along the airport/river							12	2					
Indaw -Gyi Lake	23,112	36					18,901	53	X	14,517	45		46FG
Irrawaddy R. – Myitkhyina to Sinbo							19,876	49	X	13,189	51		
Irrawaddy R. – SW of Bhamo							1,869	36	W				
Mogaung – Samo (Mogaung River)							840	15					
Mogaung River (towards Samo)										1,317	30		
Nam Sam Chaung (Near Irrawaddy)										117	17		
North of Mogaung							827	31					
River Taping, Mole & Irrawaddy, NNE Bhamo							750	24	W				
Rivers at Tanai (Tanai Hka, Chindwin, Tabyi)										1,468	43		
S Mogung; River Namkawng and Lakes							671	37	W				
Kyauk Padaung													
Kyet Mauk Taung Dam										163	10	X	6G
Madaya													
Sedawgyi Reservoir										41	6	X	G
Taung Kan										2,140	27	Y	6FH
Mandalay													
Kya Inn	521	4	Z										
Min Hla Lake										739	8	X	2FG
Taung Pyone	2,477	13											3F
Yewai Lake										283	12	Z	67FL
Myittha													
Kin Da Reservoir										142	10	X	4
Nwa Atu Gyi													
Pyauung Pya Reservoir										393	15	Z	6H
Nyanna Oo													
Irrawaddy R. – Nyaung-U-Pakokku										1,764	23	Y	HL
Nyaung Oo													
Irrawaddy R. – downstream of Bagan										2,070	27	Y	H
Paleik													
Paleik Inn										2,764	27	Y	6FGI
Pyaw Bwe													
Chaungmagyi Lake										2,441	28	V	267FH
Nyaung Pin Te Village										132	4	V	
Yin Daw Lake										232	15	Z	6FH
Pyinmana													
Yesin Reservoir										481	5	V	G
Sagaing													
Irrawaddy R. – Singu (Kyaukmyaung-Singu)										982	24	Y	FH
Kaung Hmu Daw Inn										411	11	Y	568H
Pa Du Inn				998	6	Y							
Ye Khar Lake										830	7	Z	A
Yemyetkyi Inn										211	3	V	7HI
Singu													
Ku Le Kan										835	19	Y	6FHI
Thazi													
Nyaung Yan Kan										2,504	21	X	2567GHI
Wun Dwin													
Alaung Si Thu										120	9	X	26G
Taung Pu Lu										444	16	X	26G
Yangon													
Hlawga Wildlife Park	1,566	10	Z										
Yemethin													
Kye Ni Kan										1,493	15	Y	68FH
Me Aung Kan										111	6	Z	6H
Ngalaik Reservoir										1,046	13	Y	G
Thitson Reservoir										1,834	10	X	567G

Notes:

Sp¹ – Species. C² – Site Coverage: V – 25%; W – 25–50%; X – 50–75%; Y – 75–99%; Z – 100%.

Threats³: 1 – None, 2 – Sedimentation, 3 – Excessive overgrowth of vegetation, 4 – Cutting/clearance of vegetation, 5 – Eutrophication, 6 – Agriculture along drying margins, 7 – Excessive cattle grazing, 8 – Domestic sewage, 9 – Solid waste, A – Industrial waste, B – Oil pollution, C – Pesticides, D – Fertilizers, E – Mining, F – Hunting/trapping/poaching of birds, G – Small-scale fishing, H – Large-scale fishing, I – Partial reclamation, J – Complete reclamation, K – Dam/barrage construction, L – Tourism/recreation.

Table 29: Waterbird species counts reported to the AWC from Myanmar, 1997–2001

English Name	Scientific Name	T ¹	1997	1998	2000	2001
White-billed Diver	<i>Gavia adamsii</i>					1
Little Grebe	<i>Tachybaptus ruficollis</i>		50		56	459
Great Crested Grebe	<i>Podiceps cristatus</i>		70		7	31
Black-necked Grebe	<i>Podiceps nigricollis</i>				2	2
Spot-billed Pelican	<i>Pelecanus philippensis</i>	VU			10	88
Great Cormorant	<i>Phalacrocorax carbo</i>		50		631	1,655
Indian Cormorant	<i>Phalacrocorax fuscicollis</i>		50		10	2
Little Cormorant	<i>Phalacrocorax niger</i>		56	11	917	1,800
unidentified cormorants	<i>Phalacrocorax</i> spp.					10
Oriental Darter	<i>Anhinga melanogaster</i>	nt	21		145	131
Grey Heron	<i>Ardea cinerea</i>		10	62	175	397
White-bellied Heron	<i>Ardea insignis</i>	EN			1	3
Purple Heron	<i>Ardea purpurea</i>		20	67	158	83
Great White Egret	<i>Ardea alba</i>		101		228	133
Intermediate Egret	<i>Egretta intermedia</i>		211	321	296	120
Little Egret	<i>Egretta garzetta</i>		179	4	492	546
Cattle Egret	<i>Bubulcus ibis</i>		150	68	244	955
unidentified egrets	<i>Egretta/Bubulcus</i> spp.		30	31		8
Indian Pond-Heron	<i>Ardeola grayii</i>		30		294	100
Chinese Pond-Heron	<i>Ardeola bacchus</i>				121	
unidentified pond-herons	<i>Ardeola</i> spp.				70	96
Green-backed Heron	<i>Butorides striatus</i>					10
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>		500		65	
Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>				1	
unidentified <i>Ardeidae</i>	<i>Ardeidae</i> spp.					1,403
Asian Openbill	<i>Anastomus oscitans</i>		70	83	107	501
Black Stork	<i>Ciconia nigra</i>				360	104
Woolly-necked Stork	<i>Ciconia episcopus</i>		2		15	18
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>	nt			12	2
Lesser Adjutant	<i>Leptoptilos javanicus</i>	VU			36	17
Black-headed Ibis	<i>Threskiornis melanocephalus</i>	nt	42		8	87
Glossy Ibis	<i>Plegadis falcinellus</i>		1,800			254
Fulvous Whistling Duck	<i>Dendrocygna bicolor</i>				64	6
Lesser Whistling Duck	<i>Dendrocygna javanica</i>		4,500	2,295	4,869	8,036
Greylag Goose	<i>Anser anser</i>				505	969
Bar-headed Goose	<i>Anser indicus</i>				4,874	3,123
Comb Duck	<i>Sarkidiornis melanotos</i>					46
Ruddy Shelduck	<i>Tadorna ferruginea</i>		570	200	6,329	4,342
Common Shelduck	<i>Tadorna tadorna</i>				8	1
White-winged Duck	<i>Cairina scutulata</i>	EN				2
Cotton Pygmy -Goose	<i>Nettapus coromandelianus</i>		150	54	144	218
Eurasian Wigeon	<i>Anas penelope</i>		1,000		121	331
Falcated Teal	<i>Anas falcata</i>				6	2
Gadwall	<i>Anas strepera</i>				5,528	2,811
Common Teal	<i>Anas crecca</i>		1,000		415	1,478
Mallard	<i>Anas platyrhynchos</i>		1,000		548	48
Spot-billed Duck	<i>Anas poecilorhyncha</i>		512		1,238	603
Northern Pintail	<i>Anas acuta</i>		1,500	850	2,756	2,526
Garganey	<i>Anas querquedula</i>		1,000	1,070	1,100	1,060
Northern Shoveler	<i>Anas clypeata</i>		1,000		291	1,430
Red-crested Pochard	<i>Netta rufina</i>				76	26
Common Pochard	<i>Aythya ferina</i>				1,480	370
Baer's Pochard	<i>Aythya baeri</i>	VU	1,000			129
Ferruginous Duck	<i>Aythya nyroca</i>	nt	2,000		1,886	1,339
Tufted Duck	<i>Aythya fuligula</i>				666	1,016
Common Goldeneye	<i>Bucephala clangula</i>					29
Goosander	<i>Mergus merganser</i>				246	178
unidentified ducks	Anatidae spp.		5,000	500	1	3,834
Eurasian Crane	<i>Grus grus</i>			229	3,766	2,147
Sarus Crane	<i>Grus antigone</i>	VU				7
Ruddy-breasted Crake	<i>Porzana fusca</i>				1	
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>				1	5
Watercock	<i>Gallicrex cinerea</i>		50			1

English Name	Scientific Name	T ¹	1997	1998	2000	2001
Common Moorhen	<i>Gallinula chloropus</i>		308		487	175
Purple Swampphen	<i>Porphyrio porphyrio</i>		1,000	240	3,119	2,479
Common Coot	<i>Fulica atra</i>		1,500	60	1,630	3,064
unidentified rails	Rallidae spp.					6
Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>			26	161	331
Bronze-winged Jacana	<i>Metopidius indicus</i>			41	112	21
Black-winged Stilt	<i>Himantopus himantopus</i>		410	15	160	988
Pied Avocet	<i>Recurvirostra avosetta</i>					4
Great Thick-knee	<i>Burhinus recurvirostris</i>				1	35
Oriental Pratincole	<i>Glareola maldivarum</i>				2	10
Small Pratincole	<i>Glareola lactea</i>				1,545	3,549
Northern Lapwing	<i>Vanellus vanellus</i>				10	1
River Lapwing	<i>Vanellus duvaucelli</i>				54	97
Grey-headed Lapwing	<i>Vanellus cinereus</i>				31	61
Red-wattled Lapwing	<i>Vanellus indicus</i>		42		7	16
Pacific Golden Plover	<i>Pluvialis fulva</i>				252	379
Grey Plover	<i>Pluvialis squatarola</i>					42
Long-billed Plover	<i>Charadrius placidus</i>				5	36
Little Ringed Plover	<i>Charadrius dubius</i>		25		63	229
Kentish Plover	<i>Charadrius alexandrinus</i>				13	12
Lesser Sandplover	<i>Charadrius mongolus</i>					176
Black-tailed Godwit	<i>Limosa limosa</i>				3	281
Eurasian Curlew	<i>Numenius arquata</i>				4	7
Spotted Redshank	<i>Tringa erythropus</i>				61	271
Marsh Sandpiper	<i>Tringa stagnatilis</i>					70
Common Greenshank	<i>Tringa nebularia</i>				59	161
Green Sandpiper	<i>Tringa ochropus</i>				21	38
Wood Sandpiper	<i>Tringa glareola</i>				54	116
Common Sandpiper	<i>Actitis hypoleucos</i>		48		28	53
Eurasian Woodcock	<i>Scolopax rusticola</i>					1
Wood Snipe	<i>Gallinago nemoricola</i>	VU				1
Common Snipe	<i>Gallinago gallinago</i>		15		25	7
unidentified snipes	<i>Gallinago</i> spp.				10	37
Red-necked Stint	<i>Calidris ruficollis</i>					137
Temminck's Stint	<i>Calidris temminckii</i>				56	87
unidentified <i>Calidris</i> sandpipers	<i>Calidris</i> spp.					7
unidentified shorebirds	Charadrii spp.		4	5	480	352
Mew Gull	<i>Larus canus</i>					4
Heuglin's Gull	<i>Larus heuglini</i>				14	17
Great Black-headed Gull	<i>Larus ichthyaetus</i>				2	130
Brown-headed Gull	<i>Larus brunnicephalus</i>		500		635	304
Black-headed Gull	<i>Larus ridibundus</i>		100		614	263
unidentified gulls	<i>Larus</i> spp.					32
Whiskered Tern	<i>Chlidonias hybridus</i>					80
River Tern	<i>Sterna aurantia</i>				72	69
Black-bellied Tern	<i>Sterna acuticauda</i>	nt			2	5
Little Tern	<i>Sterna albifrons</i>			5		6
unidentified terns	Sternae spp.					1
Total Waterbirds			27,676	6,237	51,172	59,377
Osprey	<i>Pandion haliaetus</i>					6
Marsh Harrier	<i>Circus aeruginosus</i>					10
Hen Harrier	<i>Circus cyaneus</i>					1
Greater Spotted Eagle	<i>Aquila clanga</i>	VU				5

Note:

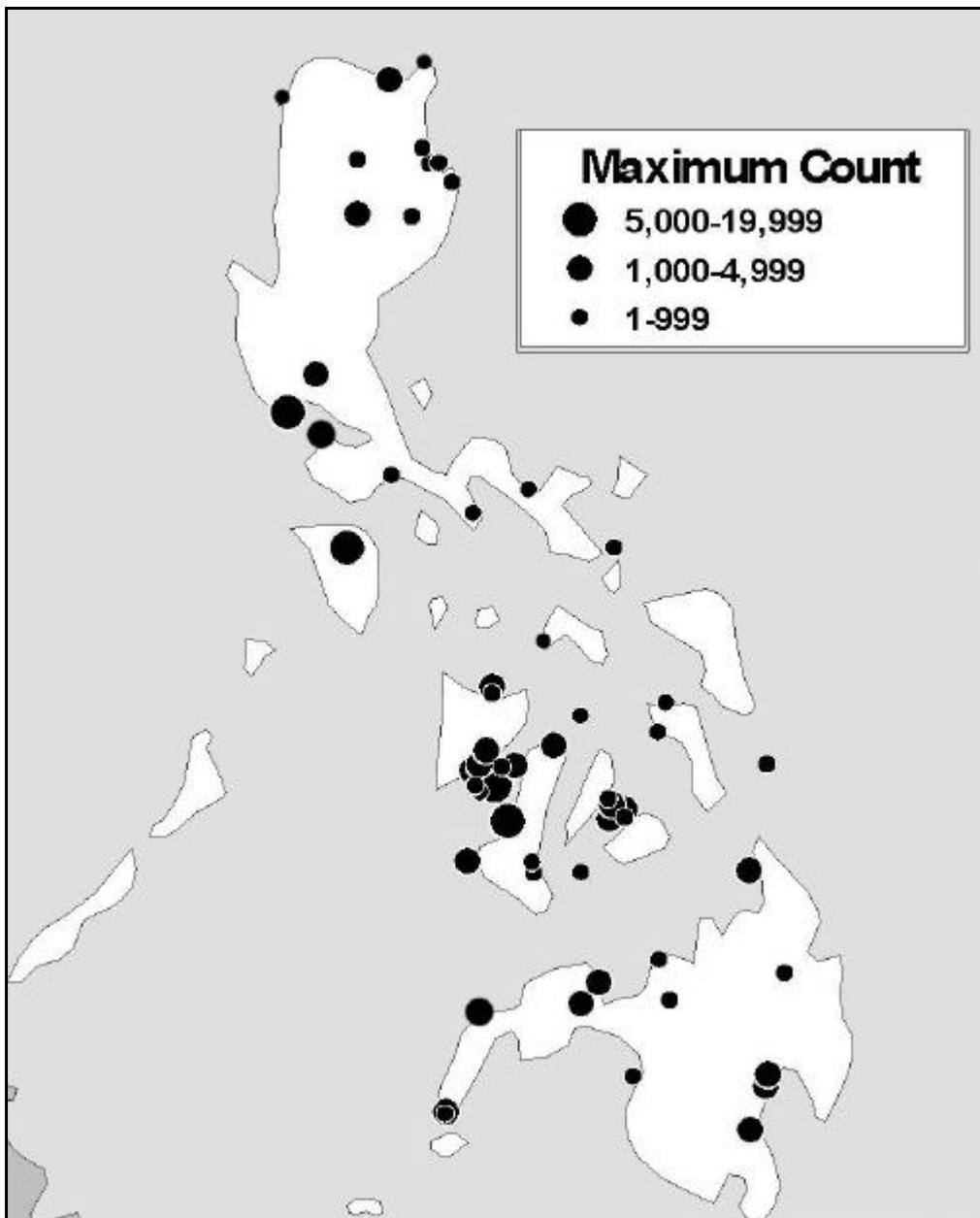
T¹ – Globally threatened species as identified by BirdLife International (2001): EN – Endangered; VU – Vulnerable; nt – Near Threatened.

3.3.8 The Philippines

Count information was received for all five years, 1997–2001, and a total of 65 sites were counted at least once (Figure 27 and Table 30). Total numbers of waterbirds counted were 18,773 (29 sites), 33,948 (32 sites), 46,931 (35 sites), 62,593 (46 sites) and 73,180 (40 sites) in 1997, 1998, 1999, 2000 and 2001 respectively. Three of the four Ramsar Sites in the Philippines, namely Agusan Marsh Wildlife Sanctuary, Naujan Lake National Park (also a site on the East Asian Anatidae Site Network) and Olango Island Wildlife Sanctuary (also a site on the East Asian–Australasian Shorebird Site Network) were counted at least once. Olango Island Wildlife Sanctuary was counted each year. Nine Important Bird Areas as identified by Mallari *et al.* (2001) were covered, including the above-mentioned three Ramsar sites. Four sites recorded more than 10,000 waterbirds: Puerto, Rivas, Balanga, Bataan (13,920 in 2001); Bago, Villodolid (12,178 in 2001); Naujan Lake (12,000 in 2000) and Himamaylam, Kabankalan & Ileig Wetlands (10,616 in 2001).

Figure 27: AWC site coverage and numerical distribution of waterbirds in the Philippines, 1997–2001

A dot represents the maximum number of waterbirds counted at a site during the AWC



Totals of 86 species of waterbirds and three species of wetland-dependent raptors were recorded (Table 31). The most abundant species were Tufted Duck (16,922 in 2000) and Kentish Plover (7,699 in 2001). Two globally threatened species were recorded: the Vulnerable Chinese Egret (812 in 1997) and Philippine Duck (1,004 in 1998). The Near Threatened Far Eastern Curlew and Asian Dowitcher were also recorded.

Information on the uses of and threats to the wetlands was not available.

The census was coordinated by the Protected Areas and Wildlife Bureau, The Philippines.

Table 30: AWC site coverage and waterbird and species totals in the Philippines, 1997–2001

Site Name ¹	1997		1998		1999		2000		2001	
	Birds	Species	Birds	Species	Birds	Species	Birds	Species	Birds	Species
Luzon										
Appas Tabuk			104	1						
Belen Calabanga Wetland Area			243	8						
Brgy. Candating, Arayat			1,303	8	784	13	668	4		
Buguey Lagoon [I]	1,028	6	984	11	1,628	10	3,485	10	2,082	12
Burayokan Balong Tabuk			76	4						
Candaba Swamp [I]	1,186	7	360	3					1,537	10
Coastal Area, Bacoor Cavite			21	2	1,246	11	2,299	8		
Diaguan Reef-Flat									40	5
Dipudo Island Reef-Flat									578	16
Honeymoon Island Reef-Flat									283	11
Ilaguen River									102	10
Maconacon Reef-Flat									222	15
Magat Dam							4,941	2	4,134	5
Naro Island			47	5						
Naujan Lake [R] [A] [I]							12,000	1		
Novelita Salt Fishpond			677	8	157	5	893	15	2,563	13
Pagbilao Bay [I]					248	6	435	11	559	9
Palanana Point Reef-Flat									307	14
Palau Island, Sta. Ana	86	4	30	9	60	9	96	7	124	9
Paoay Lake National Park			194	5					38	3
Prieto-Diaz Sorsogon Wetland			255	8	279	15	360	6	473	6
Puerto. Rivas, Balanga, Bataan, Manila Bay [I]	465	3	7,040	10	11,659	12	10,829	16	13,920	11
Ragay Gulf [I]			114	13	66	12	128	15	163	5
San Luis Marshland	605	5								
Mindanao										
Agusan Marsh Wildlife Sanctuary [R][I]	378	11			959	17				
Alubijid Wetland	12	4			254	12	311	11	818	21
Bonifacio Wetland	124	9			245	10	487	10	1,807	40
Crispin Betita Fishpond	106	6					277	15		
Davao River Mouth	1,339	13								
Kumalauit Coastal Mudflats	19	2					152	11		
Lake Mainit					2,717	9				
Lapaz, Carmen	3,035	11			3,626	15	2,756	15	2,749	14
Mampang Tugbungan Area	589	12	141	5			258	5	277	10
Maputi, Banaybanay					1,719	15	1,516	15	1,294	15
Murcielagos Islands	1,519	18	1,579	13						
Opol Wetland Area	21	3			169	8	126	7	52	4
Porfirio, Roman, Ferdie Santos Fishpond	82	4					178	12	103	7
Sa-Az River Mouth, San Ramon Seacoast	76	5	96	2	33	5	62	2	56	5
Sinacaban Mangrove	36	4			300	10	617	11	1,808	25
Taguicon-Balasinon, Malalag Bay	566	17	1,219	19	1,443	14	1,455	16	3,956	28
Talon-Talon Wetland	302	9	56	4	1,335	12	306	7	311	7
Visayas										
Bago, Villodolid			5,452	33	2,584	24	2,600	23	12,178	22
Bantayan Island Wildness Area	154	16	301	18	433	15	426	16		
Brgy. Baras Campoyong Mudflat	903	20	364	16	620	18	251	16		
Calituban & Tahong Island [I]	1,652	18	1,188	29	184	18	488	14		
Carigara Bay Wetlands	264	14	218	9			266	13		
Cordova Wetland							1,961	21	475	13
Dulangan-Cudian, Ivisan			666	15	549	12	263	9		
Guimaras							166	14	237	6
Himamaylam, Kabnkalan & Ileig Wetland			5,916	37	4,046	35	2,577	44	10,616	31
Magellan Bay Wetland							426	17	387	13

Site Name ¹	1997		1998		1999		2000		2001	
	Birds	Species								
Mahaba Island	701	14	485	23	321	22	199	13		
Mandurriao, Leganes					1,278	21	261	19	853	14
Nazaret, Tanag Cansilayan, M. Chavez, Igang			121	5						
North Bais Bay							167	11		
Olango Island [R] [S] [I]	653	23	1,614	27	1,703	31	1,259	28	1,595	27
Ormoc Intertidal Flat	678	21	816	17	678	16	768	17		
Panglao Island	302	20			127	13	187	10		
Roxas City, Cudian, Ivisan									2,252	23
Sagay Marine Reserve Area	1,899	28	714	23	1,799	32	1,527	26	581	10
Sampunong Bolo Sanctuary					1,290	21	849	15	219	7
San Jose, Hamtic, Sibalom, San Romogio					1,385	12	601	12	505	10
Sipalay Hinoba-An Wetland			1,577	15	1,009	11	775	5	805	7
Tanjay Wetlands							540	21		
Tiwi, Laste, Lanas							1,407	31	2,132	12

Note:

Site Name¹: [R] – Ramsar Site; [A] – site of the East Asian Anatidae Site Network; [S] – Site of the East Asian–Australasian Shorebird Site Network; [I] – Important Bird Area as identified by Mallari *et al.* (2001). Refer to Section 1.4 for more information.

Table 31: Waterbird species counts reported to the AWC from the Philippines, 1997–2001

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001	
Little Grebe	<i>Tachybaptus ruficollis</i>					13	25	7
Grey Heron	<i>Ardea cinerea</i>		13	46	70	115	417	
Great-billed Heron	<i>Ardea sumatrana</i>						26	
Purple Heron	<i>Ardea purpurea</i>		168	14	300	242	59	
Great White Egret	<i>Ardea alba</i>		679	156	732	790	867	
Intermediate Egret	<i>Egretta intermedia</i>		1,000	857	1,020	1,357	1,614	
Little Egret	<i>Egretta garzetta</i>		1,682	1,906	2,744	2,082	3,737	
Chinese Egret	<i>Egretta eulophotes</i>	VU	812	234	280	610	531	
Eastern Reef Heron	<i>Egretta sacra</i>		11	20	55	62	56	
Cattle Egret	<i>Bubulcus ibis</i>		195	2,944	2,490	2,630	1,097	
unidentified egrets	<i>Egretta/Bubulcus</i> spp.			8,783			8,025	
Chinese Pond-Heron	<i>Ardeola bacchus</i>		42		87	141	78	
unidentified pond-herons	<i>Ardeola</i> spp.				16			
Green-backed Heron	<i>Butorides striatus</i>		21	91	242	107	152	
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>				8		1	
Rufous Night-Heron	<i>Nycticorax caledonicus</i>		5			6	12	
Yellow Bittern	<i>Ixobrychus sinensis</i>		11	18	8	3	4	
Schrenck's Bittern	<i>Ixobrychus eurhythmus</i>		22		7		2	
Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>		31	3	20	5	23	
Black Bittern	<i>Ixobrychus flavicollis</i>		7		10	13		
Eurasian Bittern	<i>Botaurus stellaris</i>						5	
unidentified <i>Ardeidae</i>	<i>Ardeidae</i> spp.		350		1,527	471	2,799	
Wandering Whistling Duck	<i>Dendrocygna arcuata</i>		125	155	541	775	24	
Mallard	<i>Anas platyrhynchos</i>			8		71	378	
Spot-billed Duck	<i>Anas poecilorhyncha</i>				1,535			
Philippine Duck	<i>Anas luzonica</i>	VU		1,004	870	446	353	
Northern Pintail	<i>Anas acuta</i>			6				
Northern Shoveler	<i>Anas clypeata</i>			44	12	48		
Common Pochard	<i>Aythya ferina</i>			26				
Tufted Duck	<i>Aythya fuligula</i>					16,922	3,904	
unidentified Ducks	<i>Anatidae</i> spp.		2	624	1,000	58	5,433	
Buff-banded Rail	<i>Gallirallus philippensis</i>		6	11		1	17	
Barred Rail	<i>Gallirallus torquatus</i>			9	13	9	17	
Red-legged Crake	<i>Rallina fasciata</i>		2		11			
Slaty-legged Crake	<i>Rallina eurizinoides</i>			2	7			
White-browed Rail	<i>Porzana cinerea</i>						10	
Baillon's Crake	<i>Porzana pusilla</i>						9	
Ruddy-breasted Crake	<i>Porzana fusca</i>		21		10		5	
White-breasted Waterhen	<i>Amauromis phoenicurus</i>						3	
Watercock	<i>Gallix rex cinerea</i>			3		7		
Common Moorhen	<i>Gallinula chloropus</i>			4	7	20	32	
Purple Swamphen	<i>Porphyrio porphyrio</i>		2	57	2			
Common Coot	<i>Fulica atra</i>			8				

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
unidentified rails	Rallidae spp.		21		17	1	12
Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>						2
Greater Painted-Snipe	<i>Rostratula benghalensis</i>		13	4		1	51
Black-winged Stilt	<i>Himantopus himantopus</i>		537	48	245	299	117
Pacific Golden Plover	<i>Pluvialis fulva</i>		73	306	337	979	584
Grey Plover	<i>Pluvialis squatarola</i>		159	534	399	734	472
Great Ringed Plover	<i>Charadrius hiaticula</i>						10
Little Ringed Plover	<i>Charadrius dubius</i>		30	125	117	1,307	677
Kentish Plover	<i>Charadrius alexandrinus</i>		2,273	1,967	1,941	3,352	7,699
Lesser Sandplover	<i>Charadrius mongolus</i>		1,328	578	951	1,146	3,124
Greater Sandplover	<i>Charadrius leschenaultii</i>		95	157	84	141	347
Oriental Plover	<i>Charadrius veredus</i>						2
unidentified <i>Charadrius</i> plovers	<i>Charadrius</i> spp.		23	13	11	225	
Black-tailed Godwit	<i>Limosa limosa</i>		87	90	73	552	92
Bar-tailed Godwit	<i>Limosa lapponica</i>		109	111	216	100	99
Little Curlew	<i>Numenius minutus</i>		448	57	419	395	45
Whimbrel	<i>Numenius phaeopus</i>		300	153	665	910	503
Eurasian Curlew	<i>Numenius arquata</i>		59	158	8	62	160
Far Eastern Curlew	<i>Numenius madagascariensis</i>	nt		20	14	3	67
unidentified curlews	<i>Numenius</i> spp.		35				2
Common Redshank	<i>Tringa totanus</i>		639	464	858	669	681
Marsh Sandpiper	<i>Tringa stagnatilis</i>		82	22	157	127	121
Common Greenshank	<i>Tringa nebularia</i>		396	224	591	552	2,629
Green Sandpiper	<i>Tringa ochropus</i>		15	195	346	81	119
Wood Sandpiper	<i>Tringa glareola</i>			174		38	148
unidentified <i>Tringa</i> sandpipers	<i>Tringa</i> spp.		8	1	81	42	49
Terek Sandpiper	<i>Xenus cinereus</i>		212	154	448	595	538
Common Sandpiper	<i>Actitis hypoleucos</i>		294	396	909	1,114	1,863
Grey-tailed Tattler	<i>Heteroscelus brevipes</i>		170	139	54	233	320
Ruddy Turnstone	<i>Arenaria interpres</i>		205	268	133	178	295
Common Snipe	<i>Gallinago gallinago</i>		10	11	14	7	1
Asian Dowitcher	<i>Limnodromus semipalmatus</i>	nt	39	47	34	55	89
Red Knot	<i>Calidris canutus</i>		8	220	4	4	117
Great Knot	<i>Calidris tenuirostris</i>		158	140	650	579	460
Sanderling	<i>Calidris alba</i>		44	27		115	53
Red-necked Stint	<i>Calidris ruficollis</i>		649	531	466	1,232	372
Little Stint	<i>Calidris minuta</i>			11			
Temminck's Stint	<i>Calidris temminckii</i>		7		350	128	252
Long-toed Stint	<i>Calidris subminuta</i>			66	5	10	
Curlew Sandpiper	<i>Calidris ferruginea</i>		51	79	332	483	415
unidentified <i>Calidris</i> sandpipers	<i>Calidris</i> spp.		97	131	752	62	824
Broad-billed Sandpiper	<i>Limicola falcinellus</i>						154
unidentified shorebirds	<i>Charadrii</i> spp.		73	4,125	4,007	1,404	3,561
Herring Gull	<i>Larus argentatus</i>		61	41		89	76
Black-headed Gull	<i>Larus ridibundus</i>		90	88	716	1,621	1,009
unidentified gulls	<i>Larus</i> spp.		256	579	51	119	68
Whiskered Tern	<i>Chlidonias hybridus</i>		20	342	966	1,432	1,485
White-winged Black Tern	<i>Chlidonias leucopterus</i>			20	951	2	
Gull-billed Tern	<i>Sterna nilotica</i>		254		71	71	490
Caspian Tern	<i>Sterna caspia</i>				202	224	25
Common Tern	<i>Sterna hirundo</i>		1,478	1,217	1,753	4,347	1,536
Black-naped Tern	<i>Sterna sumatrana</i>		458	390	6	82	466
Little Tern	<i>Sterna albifrons</i>		622	402	576	889	1,381
Greater Crested Tern	<i>Sterna bergii</i>		150	188	70	91	
unidentified <i>Sterna</i> terns	<i>Sterna</i> spp.		352	297	67	78	
unidentified terns	Sternae spp.		1,078	1,605	12,177	8,615	9,823
Total Waterbirds			18,773	33,948	46,931	62,593	73,180
Osprey	<i>Pandion haliaetus</i>			21	2		6
Brahminy Kite	<i>Haliastur indus</i>		7	1		6	5
White-bellied Sea Eagle	<i>Haliaeetus leucogaster</i>			1			

Note:

T¹ – Globally threatened species as identified by BirdLife International (2001): VU – Vulnerable; nt – Near Threatened.

3.3.9 Singapore

Count data were received for all five years, 1997–2001, and a total of 14 sites were counted at least once (Figure 28 and Table 32). Total numbers of waterbirds counted were 4,902 (10 sites), 4,804 (6 sites), 6,858 (11 sites), 3,960 (10 sites) and 5,568 (10 sites) in 1997, 1998, 1999, 2000 and 2001 respectively. The site with the highest waterbird count was Mandai Mudflat (3,244 in 1999). All counts for Sungei Buloh Wetland Reserve (highest count of 852 birds in 1999), the only site on the East Asian–Australasian Shorebird Site Network in Singapore, were conducted at low tide. Shorebird count data received from Sungei Buloh at high tide during the AWC count period were not included to avoid doubling the total waterbird count for Singapore.

Totals of 57 species of waterbirds and three species of wetland-dependent raptors were counted (Table 33). The most abundant species were Pacific Golden Plover (2,424 in 1999) and Lesser Sandplover (1,000 in 1997). The only globally Vulnerable species recorded was Chinese Egret (1 bird counted in 2000 and 2 birds in 2001). Beach Thick-knee and Malaysian Plover were the only Near Threatened species recorded.

Land reclamation for development was the major threat to the wetlands and waterbirds.

The counts were coordinated by the Nature Society (Singapore).

Figure 28: AWC site coverage and numerical distribution of waterbirds in Singapore, 1997–2001

A dot represents the maximum number of waterbirds counted at a site during the AWC.

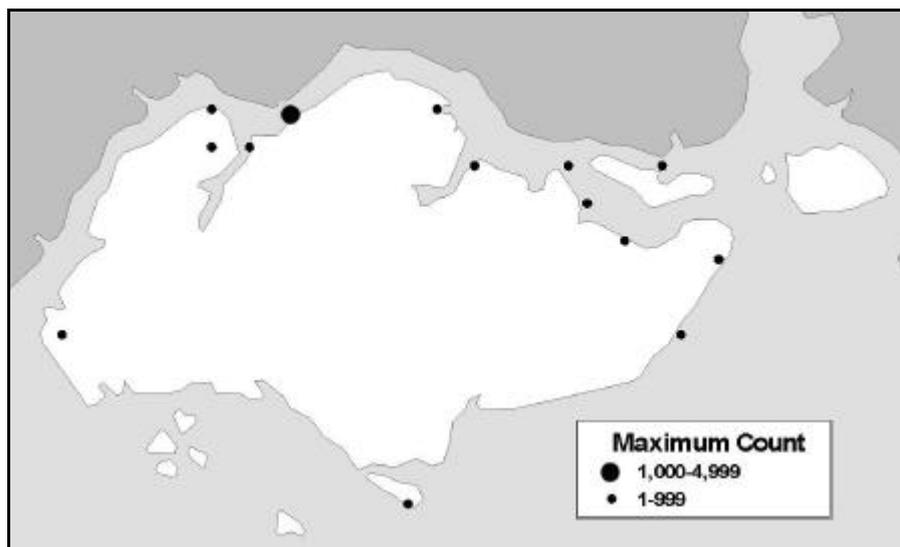


Table 32: AWC site coverage and waterbird and species totals in Singapore, 1997–2001

Site Name ¹	1997		1998		1999		2000		2001	
	Birds	Species								
Changi Central	248	9								
Changi South (Tanah Merah)					685	13	244	14	927	21
Khatib Bongsu	425	12	234	12	82	14	70	10	110	12
Kranji Bund									313	11
Kranji Dam (Reservoir)	204	11			103	6	11	4	165	14
Mandai Mudflat	1,954	15	2,728	20	3,244	23	2,092	19	2,429	23
Pasir Ras Mangroves and Mudflats	16	4			70	9	34	8	63	11
Pulau Ubin	48	11	45	10	153	11	56	12	299	15
Punggol	644	13	914	14	618	15				
Southern Islands					123	12				
Sungei Buloh Wetland Reserve [S]	655	18			852	20	268	11	697	22
Sungei Seletar Reservoir	491	10	742	13	742	13	548	10	411	11
Sungei Serangoon Estuary	217	13	141	17	186	19	253	16	165	20
Tuas Swamp							399	11		

Note:

Site Name¹: [S] – Site on the East Asian–Australasian Shorebird Site Network; refer to Section 1.4.5 for further information.

Table 33: Waterbird species counts reported to the AWC from Singapore, 1997–2001

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Little Grebe	<i>Tachybaptus ruficollis</i>		9	12	8	5	1
Little Cormorant	<i>Phalacrocorax niger</i>						1
Unidentified cormorants	<i>Phalacrocorax</i> spp.						1
Grey Heron	<i>Ardea cinerea</i>		58	68	81	78	128
Great-billed Heron	<i>Ardea sumatrana</i>				12		
Purple Heron	<i>Ardea purpurea</i>		31	3	101	134	108
Great White Egret	<i>Ardea alba</i>		12	21	66	14	29
Intermediate Egret	<i>Egretta intermedia</i>		9	1	6	3	1
Little Egret	<i>Egretta garzetta</i>		119	103	135	58	133
Chinese Egret	<i>Egretta eulophotes</i>	VU				1	2
Eastern Reef Heron	<i>Egretta sacra</i>		17	10	16	8	
Cattle Egret	<i>Bubulcus ibis</i>		15		120	50	408
Chinese Pond-Heron	<i>Ardeola bacchus</i>						2
Green-backed Heron	<i>Butorides striatus</i>		30	47	88	32	66
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>			6	3		3
Yellow Bittern	<i>Ixobrychus sinensis</i>		13	5	4	6	22
Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>		1			1	4
Lesser Whistling Duck	<i>Dendrocygna javanica</i>			2	1		5
Slaty-breasted Rail	<i>Gallirallus striatus</i>		1				1
White-browed Rail	<i>Porzana cinerea</i>			3	1		4
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>		26	13	22	9	77
Watercock	<i>Gallicrex cinerea</i>		2				
Common Moorhen	<i>Gallinula chloropus</i>		14	5	1	1	11
Greater Painted-Snipe	<i>Rostratula benghalensis</i>						2
Beach Thick-knee	<i>Burhinus gigantea</i>	nt			1		
Red-wattled Lapwing	<i>Vanellus indicus</i>					2	
Pacific Golden Plover	<i>Pluvialis fulva</i>		1,195	1,428	2,424	1,217	1,306
Grey Plover	<i>Pluvialis squatarola</i>		1		33	9	
Little Ringed Plover	<i>Charadrius dubius</i>		35	18	28	9	156
Kentish Plover	<i>Charadrius alexandrinus</i>		1		6		2
Malaysian Plover	<i>Charadrius peronii</i>	nt			8		
Lesser Sandplover	<i>Charadrius mongolus</i>		1,000	591	811	715	617
Greater Sandplover	<i>Charadrius leschenaultii</i>				61		25
Black-tailed Godwit	<i>Limosa limosa</i>			1	2		1
Bar-tailed Godwit	<i>Limosa lapponica</i>		1		1		
Whimbrel	<i>Numenius phaeopus</i>		329	149	321	71	112
Eurasian Curlew	<i>Numenius arquata</i>		3		1	1	
Common Redshank	<i>Tringa totanus</i>		333	778	898	292	205
Marsh Sandpiper	<i>Tringa stagnatilis</i>		722	901	480	391	682
Common Greenshank	<i>Tringa nebularia</i>		664	299	439	137	290
Wood Sandpiper	<i>Tringa glareola</i>		1		5	1	26
Terek Sandpiper	<i>Xenus cinereus</i>			14	55	17	10
Common Sandpiper	<i>Actitis hypoleucos</i>		131	105	189	128	202
Grey-tailed Tattler	<i>Heteroscelus brevipes</i>				2		
Ruddy Turnstone	<i>Arenaria interpres</i>				1	5	5
Pintail Snipe	<i>Gallinago stenura</i>						5
Common Snipe	<i>Gallinago gallinago</i>						17
Great Knot	<i>Calidris tenuirostris</i>				2		
Sanderling	<i>Calidris alba</i>				78	12	2
Red-necked Stint	<i>Calidris ruficollis</i>				81	6	400
Long-toed Stint	<i>Calidris subminuta</i>			2	2		40
Curlew Sandpiper	<i>Calidris ferruginea</i>		3	180	207	50	25
unidentified shorebirds	<i>Charadrii</i> spp.		110			400	140
White-winged Black Tern	<i>Chlidonia leucopterus</i>		8	3		7	13
Black-naped Tern	<i>Sterna sumatrana</i>		1				2
Bridled Tern	<i>Sterna anaethetus</i>					2	
Little Tern	<i>Sterna albifrons</i>		1	25	10	13	2
Greater Crested Tern	<i>Sterna bergii</i>		6	11	44	59	274
Lesser Crested Tern	<i>Sterna bengalensis</i>				3	6	
unidentified terns	<i>Sternae</i> spp.					10	
Total Waterbirds			4,902	4,804	6,858	3,960	5,568
Osprey	<i>Pandion haliaetus</i>					3	2
Brahminy Kite	<i>Haliastur indus</i>					9	4
White-bellied Sea Eagle	<i>Haliaeetus leucogaster</i>					3	5

Note:T¹ – Globally threatened species as identified by BirdLife International (2001); VU – Vulnerable; nt – Near Threatened.

3.3.10 Thailand

Counts were received in four years, 1997, 1998, 2000 and 2001. A total of 14 sites were counted at least once (Figure 29 and Table 34). Total numbers of waterbirds counted were 5,635 (3 sites), 218 (1 site), 80,393 (7 sites) and 9,478 (3 sites) respectively in 1997, 1998, 2000 and 2001. Three of Thailand's 10 Ramsar sites were counted at least once: Ko Libong, Non Bong Khai and Don Hoi Lot (part of the Inner Gulf of Thailand). Sites recording more than 20,000 waterbirds were the Inner Gulf of Thailand (30,836 in 2000) and Beung Boraphet (25,835 in 2000).

A total of 86 species of waterbirds were counted (see Table 35). The most abundant species were Lesser Whistling Duck (18,900 in 2000), Garganey (13,306 in 2000), Asian Openbill (12,000 in 2000) and Whiskered Tern (7,335 in 2000). Three globally Vulnerable species were recorded, Spot-billed Pelican (6 in 2000), Baer's Pochard (16 in 2000) and Spoon-billed Sandpiper (1 in 2000). Four Near Threatened species, Painted Stork (reintroduced), Black-headed Ibis, Ferruginous Duck and Malaysian Plover, were also recorded.

The counts were coordinated by the Bird Conservation Society and the Royal Forestry Department.

Figure 29: AWC site coverage and numerical distribution of waterbirds in Thailand, 1997–2001

A dot represents the maximum number of waterbirds counted at a site during the AWC.

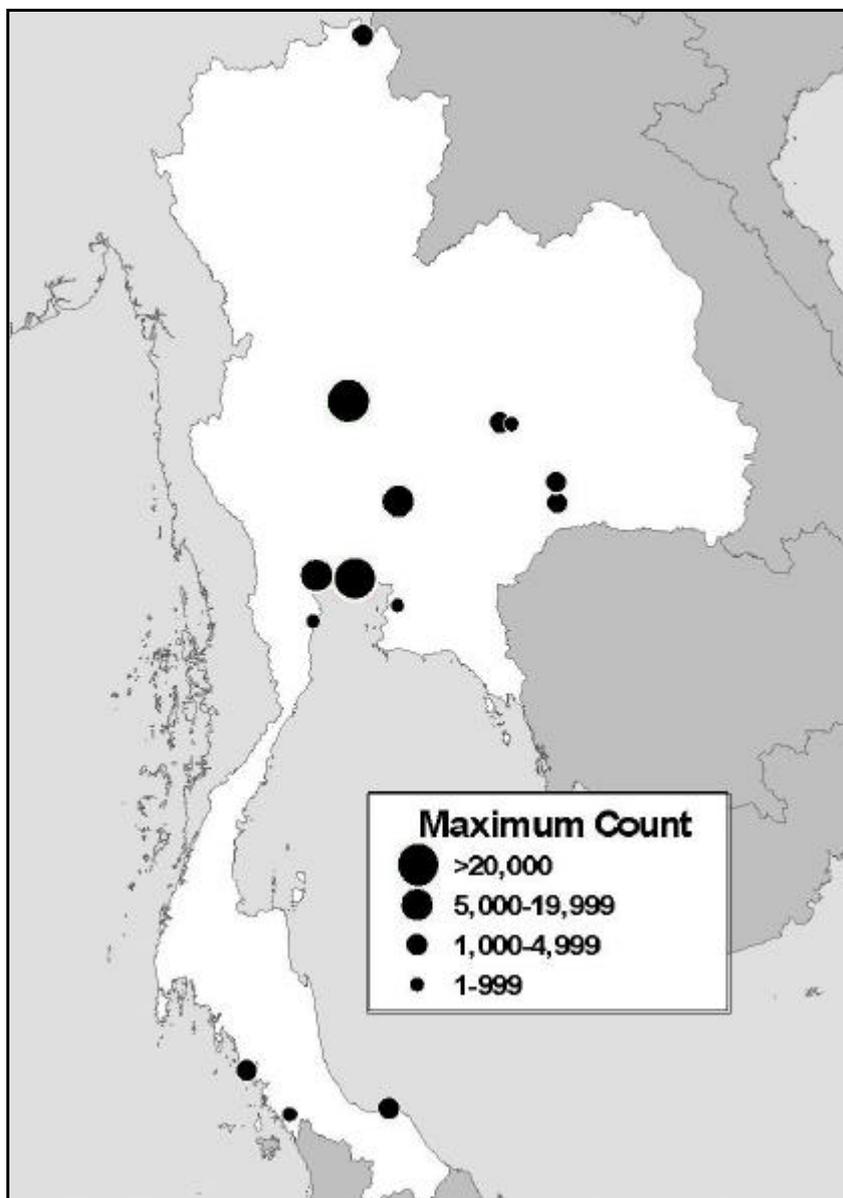


Table 34: AWC site coverage and waterbird and species totals in Thailand, 1997–2001

Site Name ¹	1997			1998			2000			2001		
	Birds	Species	C ²	Birds	Species	C ²	Birds	Species	C ²	Birds	Species	C ²
Sadet Bird Reserve Unit (Tha Sadet)							18,500	5	Y			
Inner Gulf of Thailand [R]							30,836	55	X			
Amphur Muang-Satun												
Nong Prak Paya	76	3	P									
Buriram												
Sanambin Non-Hunting Zone										3,174	33	
Huai Chorakhe Mak Non-Hunting Area										2,558	29	
Huai Talat Non-Hunting Area										3,746	30	
Chaiyaphum												
Ban Soke Mu Luang							151	9	Z			
Nong Waeng Non-Hunting Area							2,015	4	W			
Chiang Rai												
Nong Bong Khai [R]							2,869	30	X			
Chonburi												
Khao Khieo							87	5	Y			
Trang												
Koh Libong Island, Har Toop [R]	1,452	8	Y									
Nakhon Sawan												
Beung Boraphet							25,835	13	X			
Pattani												
Pattani Bay	4,107	32	P									
Phetchaburi												
Ban Tha				218	10	Z						

Notes:Site Name¹: [R] – Ramsar Site, refer to Section 1.4.2 for further information.C² – Site Coverage: P – partly covered; V – 25%; W – 25–50%; X – 50–75%; Y – 75–99%; Z – 100%.

Table 35: Waterbird species counts reported to the AWC from Thailand, 1997–2001

English Name	Scientific Name	T ¹	1997	1998	2000	2001
Little Grebe	<i>Tachybaptus ruficollis</i>				1,175	197
Great Crested Grebe	<i>Podiceps cristatus</i>				2	
Spot-billed Pelican	<i>Pelecanus philippensis</i>	VU			6	
Little Cormorant	<i>Phalacrocorax niger</i>			1	2,450	15
Grey Heron	<i>Ardea cinerea</i>		2		228	92
Purple Heron	<i>Ardea purpurea</i>				105	46
Great White Egret	<i>Ardea alba</i>		299	2	464	148
Intermediate Egret	<i>Egretta intermedia</i>		54		112	189
Little Egret	<i>Egretta garzetta</i>		610		3,122	285
Cattle Egret	<i>Bubulcus ibis</i>				140	862
unidentified egrets	<i>Egretta/Bubulcus</i> spp.				30	
Chinese Pond-Heron	<i>Ardeola bacchus</i>		177		1,540	318
unidentified pond-herons	<i>Ardeola</i> spp.				304	
Green-backed Heron	<i>Butorides striatus</i>		2		35	
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>				1,500	290
Schrenck's Bittern	<i>Ixobrychus eurhythmus</i>					2
Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>					3
Painted Stork	<i>Mycteria leucocephala</i>	nt			54	
Asian Openbill	<i>Anastomus oscitans</i>				12,000	
Black-headed Ibis	<i>Threskiornis melanocephalus</i>	nt			4	
Lesser Whistling Duck	<i>Dendrocygna javanica</i>				18,900	3,272
Common Shelduck	<i>Tadorna tadorna</i>				1	
Cotton Pygmy-Goose	<i>Nettapus coromandelianus</i>				1,500	408
Eurasian Wigeon	<i>Anas penelope</i>				16	
Common Teal	<i>Anas crecca</i>				44	
Spot-billed Duck	<i>Anas poecilorhyncha</i>				17	
Northern Pintail	<i>Anas acuta</i>				350	68
Garganey	<i>Anas querquedula</i>				13,306	236
Northern Shoveler	<i>Anas clypeata</i>				4	1
Common Pochard	<i>Aythya ferina</i>				2	
Baer's Pochard	<i>Aythya baeri</i>	VU			16	

English Name	Scientific Name	T ¹	1997	1998	2000	2001
Ferruginous Duck	<i>Aythya nyroca</i>	nt			16	
Tufted Duck	<i>Aythya fuligula</i>					3
Slaty-breasted Rail	<i>Gallirallus striatus</i>				4	
Water Rail	<i>Rallus aquaticus</i>				1	
White-browed Rail	<i>Porzana cinerea</i>					3
Ruddy-breasted Crake	<i>Porzana fusca</i>				1	1
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>		6		2	
Watercock	<i>Gallixrex cinerea</i>		1		1	
Common Moorhen	<i>Gallinula chloropus</i>		19		15	106
Purple Swamphen	<i>Porphyrio porphyrio</i>		55		399	1,252
Common Coot	<i>Fulica atra</i>				289	24
Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>				510	138
Bronze-winged Jacana	<i>Metopidius indicus</i>				81	55
Greater Painted-Snipe	<i>Rostratula benghalensis</i>					2
Black-winged Stilt	<i>Himantopus himantopus</i>		333		1,914	25
Pied Avocet	<i>Recurvirostra avosetta</i>				1	
Oriental Pratincole	<i>Glareola maldivarum</i>		5			
Red-wattled Lapwing	<i>Vanellus indicus</i>		2		24	
Pacific Golden Plover	<i>Pluvialis fulva</i>				575	99
Grey Plover	<i>Pluvialis squatarola</i>		314		206	
Little Ringed Plover	<i>Charadrius dubius</i>		153		94	223
Kentish Plover	<i>Charadrius alexandrinus</i>		21	30	788	16
Malaysian Plover	<i>Charadrius peronii</i>	nt		20		
Lesser Sandplover	<i>Charadrius mongolus</i>		53	100		
Greater Sandplover	<i>Charadrius leschenaultii</i>		3	10		
unidentified <i>Charadrius</i> plovers	<i>Charadrius</i> spp.		300		1,352	
Black-tailed Godwit	<i>Limosa limosa</i>		4		157	
Bar-tailed Godwit	<i>Limosa lapponica</i>				6	
Whimbrel	<i>Numenius phaeopus</i>		409		65	
Eurasian Curlew	<i>Numenius arquata</i>		154		219	
Spotted Redshank	<i>Tringa erythropus</i>				762	12
Common Redshank	<i>Tringa totanus</i>		354		81	132
Marsh Sandpiper	<i>Tringa stagnatilis</i>		165		1,383	142
Common Greenshank	<i>Tringa nebularia</i>		201		308	53
Wood Sandpiper	<i>Tringa glareola</i>		253		591	345
Terek Sandpiper	<i>Xenus cinereus</i>				5	
Common Sandpiper	<i>Actitis hypoleucos</i>		165	30	82	39
Ruddy Turnstone	<i>Arenaria interpres</i>		80		5	
Pintail Snipe	<i>Gallinago stenura</i>				6	154
Common Snipe	<i>Gallinago gallinago</i>				59	218
Red Knot	<i>Calidris canutus</i>		5		15	
Great Knot	<i>Calidris tenuirostris</i>				52	
Red-necked Stint	<i>Calidris ruficollis</i>		419		1,109	
Temminck's Stint	<i>Calidris temminckii</i>				25	4
Long-toed Stint	<i>Calidris subminuta</i>		391		648	
Curlew Sandpiper	<i>Calidris ferruginea</i>		1		717	
Spoon-billed Sandpiper	<i>Eurynorhynchus pygmaeus</i>	VU			1	
Broad-billed Sandpiper	<i>Limicola falcinellus</i>		427		92	
Ruff	<i>Philomachus pugnax</i>				2	
unidentified shorebirds	<i>Charadrii</i> spp.		100		30	
Brown-headed Gull	<i>Larus brunnicephalus</i>		77	20	2,431	
Whiskered Tern	<i>Chlidonias hybridus</i>				7,335	
White-winged Black Tern	<i>Chlidonias leucopterus</i>				11	
Gull-billed Tern	<i>Sterna nilotica</i>				54	
Caspian Tern	<i>Sterna caspia</i>				53	
Common Tern	<i>Sterna hirundo</i>		8	1	138	
Little Tern	<i>Sterna albifrons</i>		13	4	173	
Greater Crested Tern	<i>Sterna bergii</i>				76	
Lesser Crested Tern	<i>Sterna bengalensis</i>				2	
Total Waterbirds			5,635	218	80,393	9,478

Note:

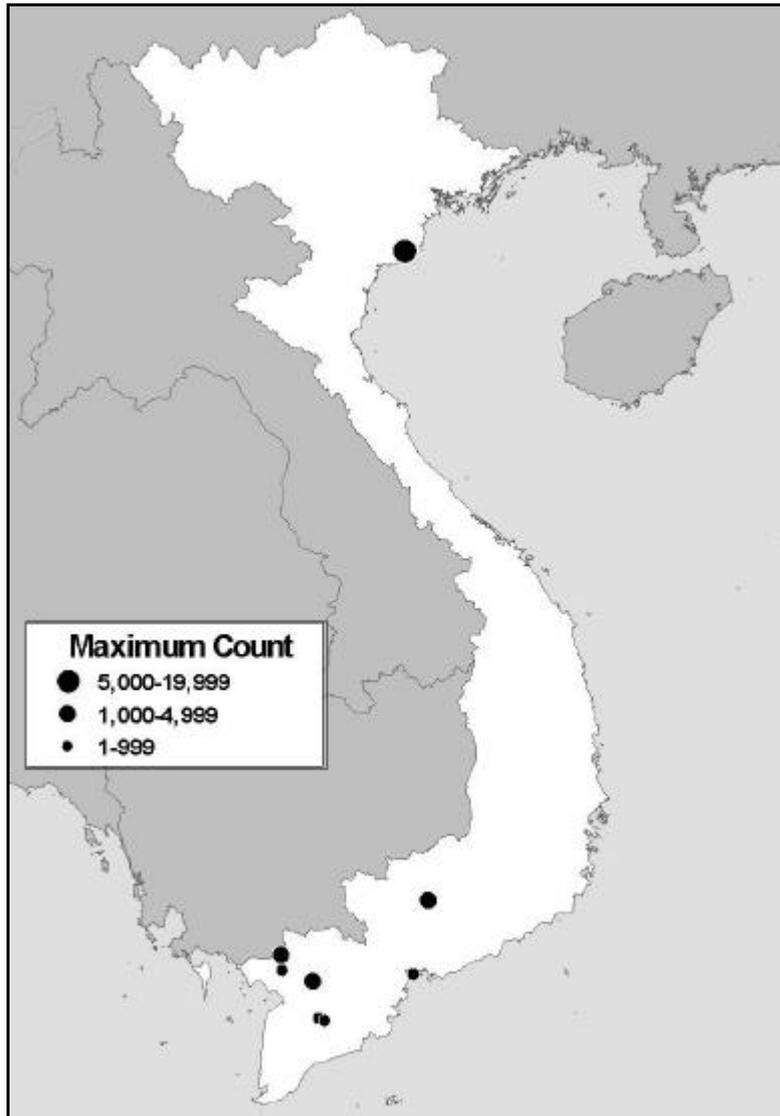
T¹ – Globally threatened species as identified by BirdLife International (2001): VU – Vulnerable; nt – Near Threatened.

3.3.11 Vietnam

Information was received for four years, 1998–2001. A total of eight sites were counted at least once (Figure 30 and Table 36). Total numbers of waterbirds counted were 5,547 (1 site), 12,851 (8 sites), 4,219 (2 sites) and 4,486 (2 sites) in 1998, 1999, 2000 and 2001 respectively. The only Ramsar site, Xuan Thuy, recorded the highest number of waterbirds and wetland-dependent raptors, with 5,550 counted in 1998. Three Important Bird Areas as identified by Tordoff (2002), including Xuan Thuy, were covered by the census.

Figure 30: AWC site coverage and numerical distribution of waterbirds in Vietnam, 1998–2001

A dot represents the maximum number of waterbirds counted at a site during the AWC.



Totals of 80 species of waterbirds and two species of wetland-dependent raptors were counted (Table 37). The most abundant species were Dunlin (2,100 in 1998) and Black-tailed Godwit (1,100 in 1998).

The highest count totals of four globally threatened species were as follows: the Endangered Black-faced Spoonbill (59 in 1998) and the Vulnerable Lesser Adjutant (14 in 200), Spoon-billed Sandpiper (7 in 1999) and Saunders' Gull (44 in 1998). Two Near Threatened species, Oriental Darter and Painted Stork, were also reported.

The major threat to waterbird populations in Vietnam was hunting, in the form of mist-netting, often using taped calls. This hunting technique is indiscriminate and particularly serious during migration periods. The second major threat was habitat loss, particularly conversion of wetlands and mangroves into agricultural and aquacultural land. Channelisation, drainage and urbanisation are also lessening the area of suitable habitat for numerous waterbird species. Another threat was over-fishing using extermination methods, which also destroys the aquatic ecosystem and has an impact on birds and other wildlife (Nguyen Duc Tu, pers. comm., April 2003).

The census was coordinated by BirdLife International-Vietnam.

Table 36: AWC site coverage and waterbird and species totals in Vietnam, 1998–2001

Site Name ¹	1998			1999			2000			2001			Threats ⁴
	Birds	Sp ²	C ³										
An Giang Province													
Army Forest Enterprise				561	10								
Tra Su Forest [I]				4,136	11								9FG
Can Cho Province													
Research Station of Can Cho University				28	12								9G
Lung Ngoc Hoang Nature Reserve				118	12								49FG
Thoi An Bird Sanctuary				3,244	6								9
Dong Nai Province													
Cat-Tien National Park				1,824	31		2,640	31		3,701	38		
Ho Chi Minh City													
Can Gio Coastal Protection Forest [I]				192	20	X							1
Nam Ha Province													
Xuan Thuy [R] [I]	5,550	42	Y	2,748	41	Y	1,579	29		785	25		I

Notes:

Site Name¹: [R] – Ramsar Site; [I] – Important Bird Area as identified by Tordoff (2002). Refer to Section 1.4 for further information.

Sp² – Species. C² – Site Coverage: V – 25%; W – 25–50%; X – 50–75%; Y – 75–99%; Z – 100%.

Threats³: 1 – None, 2 – Sedimentation, 3 – Excessive overgrowth of vegetation, 4 – Cutting/clearance of vegetation, 5 – Eutrophication, 6 – Agriculture along drying margins, 7 – Excessive cattle grazing, 8 – Domestic sewage, 9 – Solid waste, A – Industrial waste, B – Oil pollution, C – Pesticides, D – Fertilizers, E – Mining, F – Hunting/trapping/poaching of birds, G – Small-scale fishing, H – Large-scale fishing, I – Partial reclamation, J – Complete reclamation, K – Dam/barrage construction, L – Tourism/recreation.

Table 37: Waterbird species counts reported to the AWC from Vietnam, 1998–2001

English Name	Scientific Name	T ¹	1998	1999	2000	2001
Little Grebe	<i>Tachybaptus ruficollis</i>		4	39	20	17
Little Cormorant	<i>Phalacrocorax niger</i>			1	1	
unidentified cormorants	<i>Phalacrocorax</i> spp.			1,167		
Oriental Darter	<i>Anhinga melanogaster</i>	nt		108	1	2
Grey Heron	<i>Ardea cinerea</i>		2	36	54	60
Purple Heron	<i>Ardea purpurea</i>		2	32	20	72
Great White Egret	<i>Ardea alba</i>		32	92	63	75
Intermediate Egret	<i>Egretta intermedia</i>		2	145	79	194
Little Egret	<i>Egretta garzetta</i>		57	318	332	395
Cattle Egret	<i>Bubulcus ibis</i>			28	144	154
unidentified egrets	<i>Egretta/Bubulcus</i> spp.			3,000		
Indian Pond-Heron	<i>Ardeola grayii</i>			15		
Chinese Pond-Heron	<i>Ardeola bacchus</i>		5	689	564	730
Javan Pond-Heron	<i>Ardeola speciosa</i>			23		
Green-backed Heron	<i>Butorides striatus</i>		1	23	17	67
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>			9	144	231
Yellow Bittern	<i>Ixobrychus sinensis</i>			11	40	29
Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>			14	19	20
Black Bittern	<i>Ixobrychus flavicollis</i>			1	4	6
Eurasian Bittern	<i>Botaurus stellaris</i>		5	1	1	1
unidentified Ardeidae	Ardeidae spp.			3,270		
Painted Stork	<i>Mycteria leucocephala</i>	nt		7		
Black Stork	<i>Ciconia nigra</i>				1	1
Woolly-necked Stork	<i>Ciconia episcopus</i>			10	10	32
Lesser Adjutant	<i>Leptoptilos javanicus</i>	VU		6	7	14

English Name	Scientific Name	T ¹	1998	1999	2000	2001
Black-faced Spoonbill	<i>Platalea minor</i>	EN	59	31	42	47
Lesser Whistling Duck	<i>Dendrocygna javanica</i>			244	446	471
Greylag Goose	<i>Anser anser</i>		10	46		20
Cotton Pygmy -Goose	<i>Nettapus coromandelianus</i>			165	16	45
Eurasian Wigeon	<i>Anas penelope</i>		940	128		
Gadwall	<i>Anas strepera</i>			6	1	
Common Teal	<i>Anas crecca</i>		50	248	150	1
Spot-billed Duck	<i>Anas poecilorhyncha</i>		18	72	50	6
Northern Pintail	<i>Anas acuta</i>		65	300	300	1
Garganey	<i>Anas querquedula</i>			3		25
Northern Shoveler	<i>Anas clypeata</i>		250		700	28
Slaty-breasted Rail	<i>Gallirallus striatus</i>		2	4	25	5
Water Rail	<i>Rallus aquaticus</i>			1		
Ruddy-breasted Crake	<i>Porzana fusca</i>				1	1
White-breasted Waterhen	<i>Amauornis phoenicurus</i>		1	75	10	58
Watercock	<i>Gallicrex cinerea</i>			121		11
Common Moorhen	<i>Gallinula chloropus</i>		50	20	20	51
Purple Swamphen	<i>Porphyrio porphyrio</i>			192	144	120
Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>			10		1
Bronze-winged Jacana	<i>Metopidius indicus</i>			67	90	62
Greater Painted-Snipe	<i>Rostratula benghalensis</i>				1	
Black-winged Stilt	<i>Himantopus himantopus</i>			31		25
Grey-headed Lapwing	<i>Vanellus cinereus</i>			7		4
Red-wattled Lapwing	<i>Vanellus indicus</i>			6	31	29
Pacific Golden Plover	<i>Pluvialis fulva</i>			2		
Grey Plover	<i>Pluvialis squatarola</i>		250	86	1	
Little Ringed Plover	<i>Charadrius dubius</i>			13	165	124
Kentish Plover	<i>Charadrius alexandrinus</i>		80	148	10	
Greater Sandplover	<i>Charadrius leschenaultii</i>		50	36		
Black-tailed Godwit	<i>Limosa limosa</i>		1,100	6	9	228
Bar-tailed Godwit	<i>Limosa lapponica</i>		29		40	
Eurasian Curlew	<i>Numenius arquata</i>		112	42	10	1
Spotted Redshank	<i>Tringa erythropus</i>			2		17
Common Redshank	<i>Tringa totanus</i>		30	26	30	50
Marsh Sandpiper	<i>Tringa stagnatilis</i>		6	53	10	
Common Greenshank	<i>Tringa nebularia</i>		50	90	56	51
Green Sandpiper	<i>Tringa ochropus</i>			13	11	260
Wood Sandpiper	<i>Tringa glareola</i>			47	175	70
Terek Sandpiper	<i>Xenus cinereus</i>		1			
Common Sandpiper	<i>Actitis hypoleucos</i>		1	17	3	117
Red-necked Phalarope	<i>Phalaropus lobatus</i>					1
Common Snipe	<i>Gallinago gallinago</i>			21	117	130
Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>		1			
Sanderling	<i>Calidris alba</i>		3	14		
Red-necked Stint	<i>Calidris ruficollis</i>		80	2		
Temminck's Stint	<i>Calidris temminckii</i>		38			
Dunlin	<i>Calidris alpina</i>		2,100	1,190		305
Spoon-billed Sandpiper	<i>Eurynorhynchus pygmaeus</i>	VU		7		
Broad-billed Sandpiper	<i>Limicola falcinellus</i>			4		
unidentified shorebirds	Charadrii spp.			30		
Herring Gull	<i>Larus argentatus</i>		4	2		7
Slaty-backed Gull	<i>Larus schistisagus</i>				1	
Black-headed Gull	<i>Larus ridibundus</i>		8	93	30	13
Saunders' Gull	<i>Larus saundersi</i>	VU	44		3	
Whiskered Tern	<i>Chlidonias hybridus</i>					1
Gull-billed Tern	<i>Sterna nilotica</i>		4	8		
Caspian Tern	<i>Sterna caspia</i>		1	31		
Black-naped Tern	<i>Sterna sumatrana</i>			2		
Little Tern	<i>Sterna albifrons</i>			2		
unidentified terns	Sternae spp.			42		
Total Waterbirds			5,547	12,851	4,219	4,486
Osprey	<i>Pandion haliaetus</i>		1			
Eastern Marsh Harrier	<i>Circus spiliotus</i>		2			

Note:

T¹ – Globally threatened species as identified by BirdLife International (2001): EN – Endangered; VU – Vulnerable; nt – Near Threatened.

3.4 East Asia

3.4.1 Overview

A total of 390 sites in East Asia were counted at least once during 1997-2001 (Figure 31). Total numbers of waterbirds counted were 1,482,374 (114 sites), 1,040,989 (118 sites), 1,857,856 (180 sites), 2,060,482 (263 sites) and 1,676,827 (275 sites) during 1997, 1998, 1999, 2000 and 2001 respectively (Table 38).

Totals of 174 species of waterbirds and 11 species of wetland-dependent raptors were counted (Table 38). The highest count totals of the most numerous species (more than 50,000 birds) were Anatidae, Mallard (474,844 in 2000), Baikal Teal (231,482 in 1999), Spot-billed Duck (158,679 in 2000), Greater White-fronted Goose (144,917 in 1999), Greater Scaup (112,743 in 2000), Common Pochard (103,171 in 2000), Common Teal (90,990 in 1999), Tundra Swan (63,527 in 2001), Tufted Duck (56,032 in 2000), Eurasian Wigeon (50,305 in 1999) and one shorebird, Dunlin (90,549 in 2000).

The highest count totals for 22 globally threatened species (Table 38) were as follows: Critically Endangered Siberian Crane (3,010 in 2001); Endangered Oriental Stork (2,888 in 2001), Black-faced Spoonbill (679 in 2000 - the population estimate of which has been increased to a record 1,069 birds in 2003, since a coordinated annual census was conducted in December-January all known areas for over 12 years, Yu 2003), Swan Goose (36,366 in 2001), Scaly-sided Merganser (100 in 2000), Red-crowned Crane (1,466 in 2000) and Nordmann's Greenshank (1 in 2000); the Vulnerable Chinese Egret (7 in 1998), Lesser White-fronted Goose (20,000 in 1997), Baikal Teal (231,482 in 1999), Philippine Duck (2 in 2001), Baer's Pochard (31 in 1999), Black-necked Crane (5,109 in 2000 – nearly 85% of the global population estimate published by Wetlands International 2002b), Hooded Crane (9,102 in 1999 – nearly 96% of the global population estimate published by Wetlands International 2002b), White-naped Crane (5,768 in 1999), Spoon-billed Sandpiper (1 in 2001), Relict Gull (447 in 2000), Saunders' Gull (3,094 in 2000), Pallas's Sea Eagle, Steller's Sea Eagle (497 in 1999), Greater Spotted Eagle and Imperial Eagle.

A few records of the Conservation Dependent Dalmatian Pelican were also received. The Near Threatened species recorded were Ferruginous Duck, Far Eastern Curlew, Asian Dowitcher and White-tailed Sea Eagle.

Figure 31: AWC site coverage in the East Asian region, 1987-2001

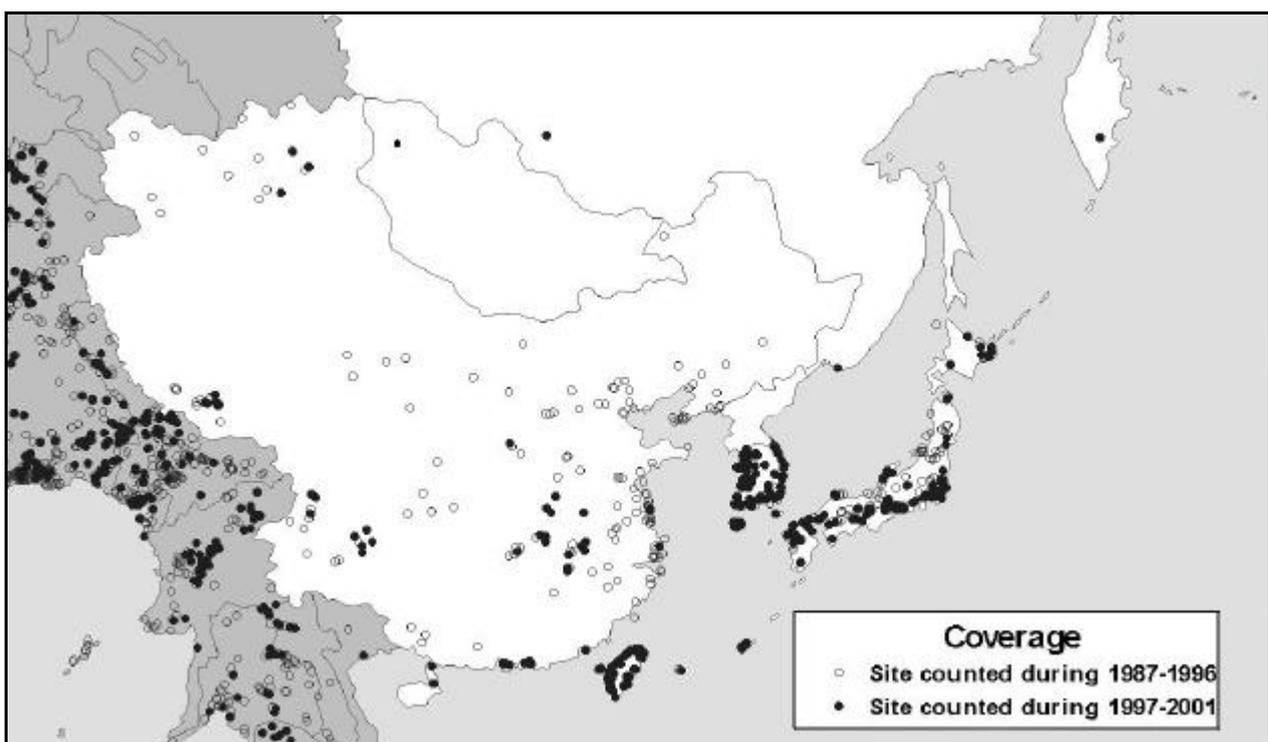


Table 38: Waterbird species counts reported to the AWC from East Asia, 1997–2001

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Red-throated Diver	<i>Gavia stellata</i>		1	1	17	42	82
Black-throated Diver	<i>Gavia arctica</i>		1		5	32	73
Pacific Diver	<i>Gavia pacifica</i>		3	1	16	20	45
Little Grebe	<i>Tachybaptus ruficollis</i>		2,567	1,604	4,710	2,529	2,046
Red-necked Grebe	<i>Podiceps grisegena</i>		310		2	1	54
Great Crested Grebe	<i>Podiceps cristatus</i>		2,896	2,303	2,707	2,144	2,853
Horned Grebe	<i>Podiceps auritus</i>		27	5	32	29	71
Black-necked Grebe	<i>Podiceps nigricollis</i>		1,575	903	441	1,518	2,303
unidentified grebes	Podicipedidae spp.			10		6	69
Dalmatian Pelican	<i>Pelecanus crispus</i>	cd	10	26	22	21	16
Great Cormorant	<i>Phalacrocorax carbo</i>		18,754	19,441	18,082	15,904	13,839
Japanese Cormorant	<i>Phalacrocorax capillatus</i>		23	94	637	598	783
Pelagic Cormorant	<i>Phalacrocorax pelagicus</i>		317		54	136	543
unidentified cormorants	<i>Phalacrocorax</i> spp.		378	155	5	563	7
Grey Heron	<i>Ardea cinerea</i>		8,040	4,251	15,080	6,592	6,055
Purple Heron	<i>Ardea purpurea</i>		3	10	16	32	18
Great White Egret	<i>Ardea alba</i>		3,487	3,239	5,317	3,998	3,496
Intermediate Egret	<i>Egretta intermedia</i>		314	462	717	390	309
Little Egret	<i>Egretta garzetta</i>		8,953	7,761	7,924	6,320	6,294
Chinese Egret	<i>Egretta eulophotes</i>	VU		7	5		
Eastern Reef Heron	<i>Egretta sacra</i>		8	11	16	26	25
Cattle Egret	<i>Bubulcus ibis</i>		1,157	1,402	1,503	1,220	884
unidentified egrets	<i>Egretta/Bubulcus</i> spp.		1	5		675	
Chinese Pond-Heron	<i>Ardeola bacchus</i>		288	217	171	218	285
Green-backed Heron	<i>Butorides striatus</i>		16	2	3	4	2
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>		1,638	1,788	3,507	1,696	1,457
Malayan Night-Heron	<i>Gorsachius melanolophus</i>						1
Yellow Bittern	<i>Ixobrychus sinensis</i>		13	53	18	15	19
Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>		6	8	21	9	6
Eurasian Bittern	<i>Botaurus stellaris</i>		3	4	6	9	7
unidentified Ardeidae	Ardeidae spp.					2	34
Black Stork	<i>Ciconia nigra</i>		32	9	65	14	12
Oriental Stork	<i>Ciconia boyciana</i>	EN	888	863	3,169	999	2,888
Sacred Ibis	<i>Threskiornis aethiopicus</i>		93	102	53	67	74
Eurasian Spoonbill	<i>Platalea leucorodia</i>		3,436	1,620	6,386	3,452	16,088
Black-faced Spoonbill	<i>Platalea minor</i>	EN	450	525	494	679	660
unidentified spoonbills	<i>Platalea</i> spp.						6
Greater Flamingo	<i>Phoenicopterus ruber</i>			1		1	
Swan Goose	<i>Anser cygnoides</i>	EN	3,843	5,004	24,097	5,438	36,366
Bean Goose	<i>Anser fabalis</i>		19,403	24,721	45,165	35,834	28,960
Greater White-fronted Goose	<i>Anser albifrons</i>		97,660	36,892	144,917	35,802	70,097
Lesser White-fronted Goose	<i>Anser erythropus</i>	VU	20,000	1	9,860	2	2
Greylag Goose	<i>Anser anser</i>		5	3	547	8	1,007
Bar-headed Goose	<i>Anser indicus</i>					450	
Snow Goose	<i>Anser caerulescens</i>		2		1	2	1
unidentified grey geese	<i>Anser</i> spp.		31,213		21,464	3,763	13,343
Brent Goose	<i>Branta bernicla</i>		19	141	15		393
Whooper Swan	<i>Cygnus cygnus</i>		7,374	7,181	5,274	5,075	5,592
Tundra Swan	<i>Cygnus columbianus</i>		10,750	1,485	16,262	1,749	63,527
Mute Swan	<i>Cygnus olor</i>		38	116	33	32	54
unidentified swans	<i>Cygnus</i> spp.			360	36	3,839	158
Ruddy Shelduck	<i>Tadorna ferruginea</i>		1,640	51	2,714	8,295	4,499
Common Shelduck	<i>Tadorna tadorna</i>		10,014	17,681	22,159	46,166	45,582
Mandarin Duck	<i>Aix galericulata</i>		16	8	2,200	1,623	1,785
Cotton Pygmy -Goose	<i>Nettion coromandelianus</i>		1	1			
Eurasian Wigeon	<i>Anas penelope</i>		27,559	23,542	50,305	29,955	34,456
American Wigeon	<i>Anas americana</i>		12	8	3	9	13
Falcated Teal	<i>Anas falcata</i>		2,690	3,567	3,083	2,610	2,810
Gadwall	<i>Anas strepera</i>		5,976	5,337	7,226	6,985	7,317
Baikal Teal	<i>Anas formosa</i>	VU	85,208	91,751	231,482	214,669	186,066
Common Teal	<i>Anas crecca</i>		55,608	55,005	90,990	74,443	53,807
Mallard	<i>Anas platyrhynchos</i>		246,451	237,008	388,287	474,844	312,553
Spot-billed Duck	<i>Anas poecilorhyncha</i>		37,802	30,040	116,876	158,679	102,939
Philippine Duck	<i>Anas luzonica</i>	VU					2
Northern Pintail	<i>Anas acuta</i>		36,247	38,598	45,635	47,059	38,098
Garganey	<i>Anas querquedula</i>		67	65	410	150	65
Northern Shoveler	<i>Anas clypeata</i>		8,617	12,566	17,343	12,747	12,394

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Red-crested Pochard	<i>Netta rufina</i>		21	1			
Canvasback	<i>Aythya valisineria</i>				22	1	1
Common Pochard	<i>Aythya ferina</i>		64,920	43,159	63,599	103,171	61,627
Baer's Pochard	<i>Aythya baeri</i>	VU	4	18	31	2	1
Ferruginous Duck	<i>Aythya nyroca</i>	nt			4		
Tufted Duck	<i>Aythya fuligula</i>		50,004	40,709	40,185	56,032	31,225
Greater Scaup	<i>Aythya marila</i>		45,325	68,025	47,572	112,743	38,632
Steller's Eider	<i>Polysticta stellerii</i>		20				
Harlequin Duck	<i>Histrionicus histrionicus</i>		60	2	535	10	37
Black Scoter	<i>Melanitta nigra</i>			57	29	545	225
White-winged Scoter	<i>Melanitta fusca</i>		43	17	73	156	1,682
Long-tailed Duck	<i>Clangula hyemalis</i>		7,000	45	90	111	444
Bufflehead	<i>Bucephala albeola</i>		1	1	1		
Common Goldeneye	<i>Bucephala clangula</i>		5,522	6,491	10,609	7,042	10,474
Smew	<i>Mergellus alleellus</i>		889	694	1,169	851	1,058
Red-breasted Merganser	<i>Mergus serrator</i>		467	300	1,054	975	2,111
Scaly-sided Merganser	<i>Mergus squamatus</i>	EN			1	100	31
Goosander	<i>Mergus merganser</i>		6,342	9,867	9,845	5,939	6,336
unidentified ducks	Anatidae spp.		388,937	74,558	86,312	35,274	167,440
Eurasian Crane	<i>Grus grus</i>		1,578	494	2,077	1,671	2,428
Black-necked Crane	<i>Grus nigricollis</i>	VU	473	1,889	486	5,109	1,705
Hooded Crane	<i>Grus monacha</i>	VU	791	814	9,102	8,905	615
Sandhill Crane	<i>Grus canadensis</i>			1	1	1	
Red-crowned Crane	<i>Grus japonensis</i>	EN	1,408	254	802	1,466	814
White-naped Crane	<i>Grus vipio</i>	VU	3,152	964	5,768	5,272	4,790
Siberian Crane	<i>Grus leucogeranus</i>	CR	2,425	974	2,793	1,916	3,010
Demoiselle Crane	<i>Grus virgo</i>					1	
unidentified cranes	Gruidae spp.				5		
Slaty-breasted Rail	<i>Gallirallus striatus</i>		12	7	10	6	5
Water Rail	<i>Rallus aquaticus</i>		3	6	8	2	4
Ruddy-breasted Crake	<i>Porzana fusca</i>		19	26	29	23	17
White-breasted Waterhen	<i>Amauornis phoenicurus</i>		68	113	161	91	89
Watercock	<i>Gallicrex cinerea</i>		1		1		
Common Moorhen	<i>Gallinula chloropus</i>		926	1,036	1,678	883	1,025
Purple Swamphen	<i>Porphyrio porphyrio</i>			3	9		
Common Coot	<i>Fulica atra</i>		5,412	6,858	4,977	4,058	3,703
Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>		8	11	39		
Greater Painted-Snipe	<i>Rostratula benghalensis</i>		22	34	90	31	42
Eurasian Oystercatcher	<i>Haematopus ostralegus</i>		1,179	2,720	4,030	611	2,648
Black-winged Stilt	<i>Himantopus himantopus</i>		299	680	1,950	1,126	1,025
Pied Avocet	<i>Recurvirostra avosetta</i>		1,623	2,344	9,369	2,311	5,688
Oriental Pratincole	<i>Glareola maldivarum</i>				2		1
Northern Lapwing	<i>Vanellus vanellus</i>		1,069	931	3,435	1,727	1,289
Grey-headed Lapwing	<i>Vanellus cinereus</i>		245	93	131	406	421
Pacific Golden Plover	<i>Pluvialis fulva</i>		4,055	1,907	7,932	12,362	7,741
Grey Plover	<i>Pluvialis squatarola</i>		2,862	4,840	4,949	10,243	6,815
Great Ringed Plover	<i>Charadrius hiaticula</i>		3	4	6	31	17
Long-billed Plover	<i>Charadrius placidus</i>		2	5	28	70	174
Little Ringed Plover	<i>Charadrius dubius</i>		1,383	2,075	1,581	1,686	1,288
Kentish Plover	<i>Charadrius alexandrinus</i>		14,375	27,146	37,970	44,510	24,337
Lesser Sandplover	<i>Charadrius mongolus</i>		142	327	572	1,193	1,076
Greater Sandplover	<i>Charadrius leschenaultii</i>		136	316	165	810	78
Black-tailed Godwit	<i>Limosa limosa</i>		226	145	298	498	253
Bar-tailed Godwit	<i>Limosa lapponica</i>		8	2	4	14	112
Little Curlew	<i>Numenius minutus</i>		1				
Whimbrel	<i>Numenius phaeopus</i>		40	13	193	124	81
Eurasian Curlew	<i>Numenius arquata</i>		2,231	4,443	2,471	4,377	4,532
Far Eastern Curlew	<i>Numenius madagascariensis</i>	nt	1	1	39	357	37
unidentified curlews	<i>Numenius</i> spp.		3				
Spotted Redshank	<i>Tringa erythropus</i>		690	758	843	956	550
Common Redshank	<i>Tringa totanus</i>		227	410	839	517	1,244
Marsh Sandpiper	<i>Tringa stagnatilis</i>		343	974	1,041	1,515	287
Common Greenshank	<i>Tringa nebularia</i>		1,129	757	1,819	1,273	2,043
Nordmann's Greenshank	<i>Tringa guttifer</i>	EN				1	
Lesser Yellowlegs	<i>Tringa flavipes</i>					2	6
Green Sandpiper	<i>Tringa ochropus</i>		43	46	87	227	99
Wood Sandpiper	<i>Tringa glareola</i>		399	660	1,094	913	708
Terek Sandpiper	<i>Xenus cinereus</i>		13	3	60	15	14
Common Sandpiper	<i>Actitis hypoleucos</i>		386	399	481	810	567

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Grey-tailed Tattler	<i>Heteroscelus brevipes</i>		5	29	14	89	179
Ruddy Turnstone	<i>Arenaria interpres</i>		113	3,430	1,286	1,464	1,066
Red-necked Phalarope	<i>Phalaropus lobatus</i>		12				
Eurasian Woodcock	<i>Scolopax rusticola</i>					1	1
Solitary Snipe	<i>Gallinago solitaria</i>						1
Latham's Snipe	<i>Gallinago hardwickii</i>					1	13
Pintail Snipe	<i>Gallinago stenura</i>		5	77	4		2
Swinhoe's Snipe	<i>Gallinago megala</i>			3	1		
Common Snipe	<i>Gallinago gallinago</i>		264	400	830	926	827
unidentified snipes	<i>Gallinago</i> spp.				2,000		
Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>		3	3	7	34	21
Asian Dowitcher	<i>Limnodromus semipalmatus</i>	nt					1
Red Knot	<i>Calidris canutus</i>		1	33		1	8
Great Knot	<i>Calidris tenuirostris</i>		55	2	44	44	96
Sanderling	<i>Calidris alba</i>		141	254	367	1,475	2,748
Red-necked Stint	<i>Calidris ruficollis</i>		1,182	723	4,940	2,959	2,245
Little Stint	<i>Calidris minuta</i>					8	5
Temminck's Stint	<i>Calidris temminckii</i>		147	72	60	41	46
Long-toed Stint	<i>Calidris subminuta</i>		289	337	576	442	607
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>			6	7	5	9
Rock Sandpiper	<i>Calidris ptilocnemis</i>						1
Dunlin	<i>Calidris alpina</i>		26,964	43,286	61,381	90,549	61,624
Curlew Sandpiper	<i>Calidris ferruginea</i>		285	3	34	30	39
Spoon-billed Sandpiper	<i>Eurynorhynchus pygmaeus</i>	VU					1
Broad-billed Sandpiper	<i>Limicola falcinellus</i>		1	1		9	10
Ruff	<i>Philomachus pugnax</i>		3	6	17	44	4
unidentified shorebirds	Charadrii spp.		17,302	165	144	234	5,796
Black-tailed Gull	<i>Larus crassirostris</i>		1,550	3,878	23,025	14,349	23,817
Mew Gull	<i>Larus canus</i>		1,665	478	1,529	14,882	13,954
Herring Gull	<i>Larus argentatus</i>		4,748	6,512	21,418	18,719	22,704
Heuglin's Gull	<i>Larus heuglini</i>					2	10
Yellow-legged Gull	<i>Larus cachinnans</i>				2	97	38
Thayer's Gull	<i>Larus thayeri</i>						1
Slaty-backed Gull	<i>Larus schistisagus</i>		1,768	291	3,186	3,330	2,442
Glaucous-winged Gull	<i>Larus glaucescens</i>		13	1	54	163	19
Glaucous Gull	<i>Larus hyperboreus</i>		250	42	58	37	144
Great Black-headed Gull	<i>Larus ichthyæetus</i>		3	1	9	3	
Brown-headed Gull	<i>Larus brunnicephalus</i>		1			1	1
Relict Gull	<i>Larus relictus</i>	VU				447	
Black-headed Gull	<i>Larus ridibundus</i>		30,821	29,367	36,920	34,657	45,337
Saunders' Gull	<i>Larus saundersi</i>	VU	1,354	3,034	1,697	3,094	1,435
Black-legged Kittiwake	<i>Rissa tridactyla</i>		620			57	2
Sabine's Gull	<i>Xema sabini</i>					3	
unidentified gulls	<i>Larus</i> spp.		6,028	151	2,674	8,352	3,764
Whiskered Tern	<i>Chlidonias hybridus</i>		1,997	784	1,533	2,286	796
White-winged Black Tern	<i>Chlidonias leucopterus</i>		1,795	16	27	70	471
Gull-billed Tern	<i>Sterna nilotica</i>		2		11	1	5
Caspian Tern	<i>Sterna caspia</i>		106	160	147	277	490
Common Tern	<i>Sterna hirundo</i>				11	4	
Little Tern	<i>Sterna albifrons</i>		10	2	95	32	57
Greater Crested Tern	<i>Sterna bergii</i>		2				
unidentified waterbird					5,607	200,000	
Total Waterbirds			1,482,374	1,040,989	1,857,859	2,060,482	1,676,827
Osprey	<i>Pandion haliaetus</i>		20	11	23	17	28
White-bellied Sea Eagle	<i>Haliaeetus leucogaster</i>		1	1			1
Pallas's Sea Eagle	<i>Haliaeetus leucoryphus</i>	VU	3				
White-tailed Sea Eagle	<i>Haliaeetus albicilla</i>	nt	2		129	109	22
Steller's Sea Eagle	<i>Haliaeetus pelagicus</i>	VU	2	57	497	207	2
Marsh Harrier	<i>Circus aeruginosus</i>		1	1	4		7
Eastern Marsh Harrier	<i>Circus spiliotus</i>		1		5		5
Hen Harrier	<i>Circus cyaneus</i>				11	31	29
Pied Harrier	<i>Circus melanoleucos</i>					2	2
unidentified harriers	<i>Circus</i> spp.				1		
Greater Spotted Eagle	<i>Aquila clanga</i>	VU	6	2			2
Imperial Eagle	<i>Aquila heliaca</i>	VU	14	6	3		6

Note:

T¹ – Globally threatened species as identified by BirdLife International (2001): CR – Critically Endangered; EN – Endangered; VU – Vulnerable; cd – Conservation Dependent; nt – Near Threatened.

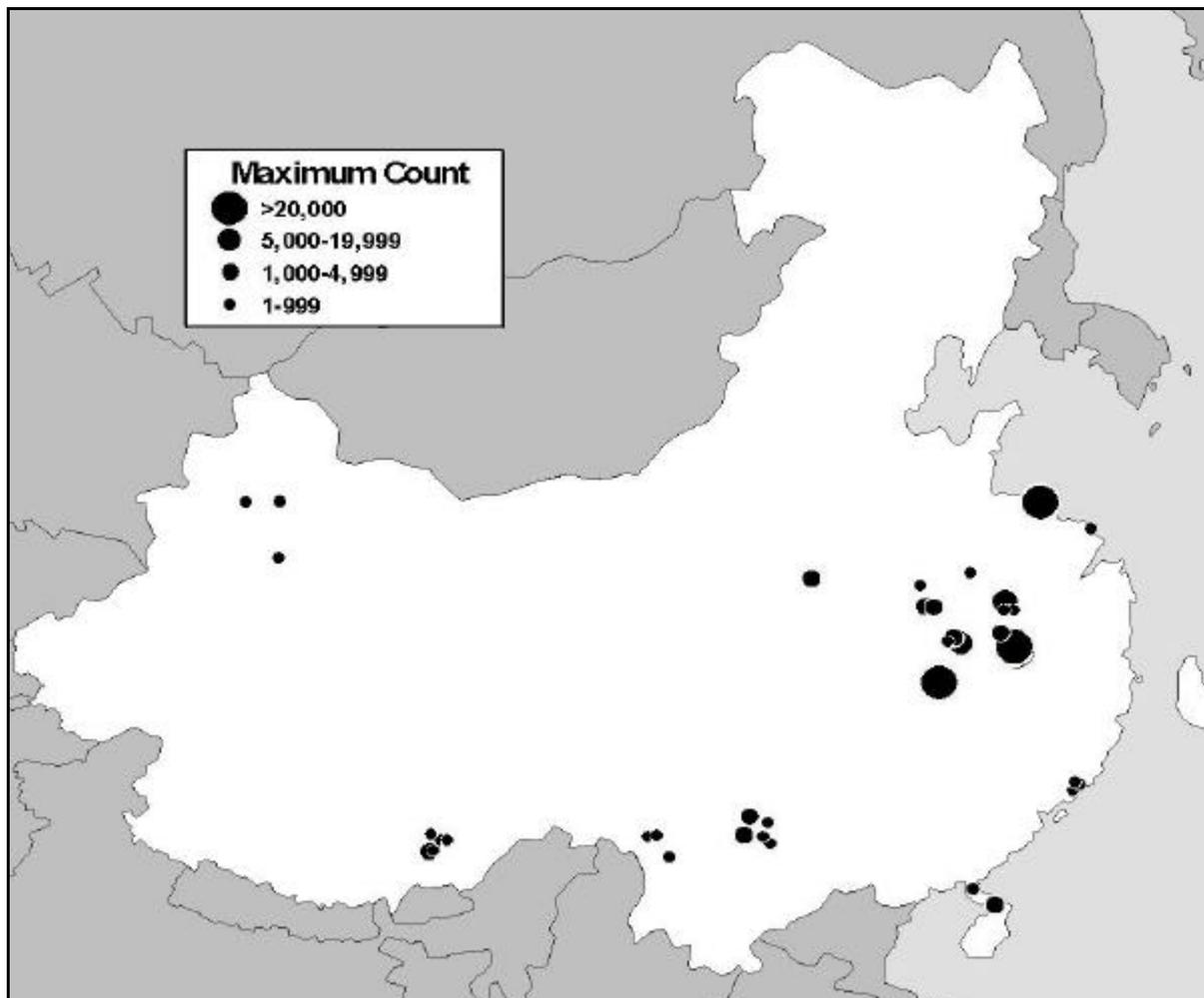
3.4.2 Mainland China

The information reported here was collected mainly from information published in the *China Crane Newsletter* (Wang *et al.* 1997a,b, 1998a,b, 1999a,b, 2000a,b, 2001a,b), the *China Wetlands Newsletter* (Wetlands International – China 2000, 2002) and Wu and Ji (2002) as only a few count sheets were received from the individual counters in mainland China. The data collected from the *China Crane Newsletter* related mainly to cranes, therefore numbers of other groups of birds reported at many sites in the report are very low.

Count data were received from 1997 to 2001. A total of 42 sites were covered at least once (Figure 32 and Table 39). Total numbers of waterbirds counted were 378,019 (12 sites), 40,093 (18 sites), 238,566 (17 sites), 249,742 (11 sites) and 364,272 (7 sites) respectively in 1997, 1998, 1999, 2000 and 2001. Five of China's 20 Ramsar sites, namely Dongzhaigang Nature Reserve, East Dongting Lake Nature Reserve, Yancheng Nature Reserve (also a site on the East Asian–Australasian Shorebird Site Network and North East Asian Crane Site Network), Poyang Lake Nature Reserve, which is part of Poyang Lake (also a site on the North East Asian Crane Site Network) and Chongming Island Nature Reserve (also a site on the East Asian–Australasian Shorebird Site Network) were covered at least once. In addition, Sheng Jin Hu and Caohai Reserve, both on the Northeast Asian Crane Site Network sites, were covered.

Poyang Lake was counted each year apart from 1998, however data are available only for Poyang Lake Nature Reserve, which is part of the main lake. Sites reporting the largest number of waterbirds were Poyang Lake (353,737 in 1997 and 353,419 in 2001) and Yancheng Nature Reserve (202,255 in 2000. A high count of 200,000 unidentified waterbirds was included in the report, Wang *et al.* 2000a; further effort is needed to learn more about which species these were) and East Dongting Lake (76,486 in 1999).

Figure 32: AWC site coverage and numerical distribution of waterbirds in mainland China, 1997–2001
A dot represents the maximum number of waterbirds counted at a site during the AWC.



A total of 70 species of waterbirds were counted (see Table 40). The most abundant species were Greater White-fronted Goose (86,503 in 1997), Tundra Swan (62,095 in 2001), Swan Goose (36,353 in 2001) and White Spoonbill (16,051 in 2001).

Thirteen globally threatened species were reported, including the Critically Endangered Siberian Crane, with a maximum count of 3,010 birds reported in 2001, of which 3,008 were from Poyang Lake. This significant count provided an update of the current population estimate of 3,000 individuals (Wetlands International 2002b) and other recent counts indicate the population size may be increasing. Endangered species recorded were Oriental Stork (3,158 in 1999), Black-faced Spoonbill (4 in 1997 and 2 in 2000), Swan Goose (36,353 in 2001), Scaly-sided Merganser (100 in 2000 and 18 in 2001) and Red-Crowned Crane (1,128 in 2000). The Vulnerable Lesser White-fronted Goose (20,000 in 1997), Baer's Pochard (27 in 1998), Black-necked Crane (5,109 in 2000), Hooded Crane (1,089 in 1999 – this significant count provided an update of the total population estimate of 1,000 given in Wetlands International 2002b), White-naped Crane (4,354 in 2001 – this large count provided an update of the total population estimate of 4,000 as stated in Wetlands International 2002b), Relict Gull (438 in 2000) and Saunders' Gull (612 in 2000) were also recorded.

Table 39: AWC site coverage and waterbird and species totals in mainland China, 1997–2001

Site Name ¹	1997			1998			1999			2000			2001		
	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	C ³
Anhui Province															
Anqingyanjiang Reserve													7,634	8	
Sheng Jin Hu [C]				379	4										
Tang Duo Hu Lake										472	4				
Guangdong Province															
Dahua River, Dahu Town				3	1		9	1							
Dongao Village				60	1										
Gilin Village, Taiping Town				1	1										
Gongping Reservoir										1	1				
Guizhou Province															
Caohai Reserve [C]	371	1		402	1		632	1		604	1		646	1	
Hainan Province															
Dongzhaigang Nature Reserve [R]	1,306	24													
Henan Province															
Nanwan Reservoir							1,261	12	X						
Shishankou Reservoir							1,445	13	Y						
Xuyahu Reservoir							235	10	Y						
Hubei Province															
Chen Hu Lake	7	1					601	3							
Dong Hu Lake							2,500	1							
Liang Zi Hu Lake							14,935	13	W						
Long Gan Hu Lake	135	2		120	1		1,655	3							
Hunan Province															
East Dongting Lake [R]	20,976	8					76,486	13							
Jiangsu Province															
Yancheng Nature Reserve[R][C][S]	1,020	1								202,255	9				
Jiangxi Province															
Poyang Lake (Include Poyang Lake Nature Reserve) [R] [C]	353,737	15		37,094	24	V	136,191	14		39,512	11		353,419	18	
Xin Jiang River in Yiyang County										100	1		18	1	
Shanghai City															
Chongming Island [R] [S]				145	1					127	2				
Shanxi Province															
He Yang County (Yellow River Flat)							1,680	24							
Xinjiang Autonomous Region															
Bosten Hu (Lake)							5	2	V						
Daquangou Reservoir							89	4	W						
Qingedahu							7	2	X						
Xizang Autonomous Region															
Banjiaolin Town				22	1										
Chundui Town				63	1										
Dongbugang Town				87	1										
GongKa Town				135	1										
Kaibu Town				34	1										
Kaze Town				48	1										

Site Name ¹	1997			1998			1999			2000			2001		
	Birds	Sp ²	C ³												
Lhasa Plain													900	1	
Qiangga Town				12	1										
Tangga Town				87	1										
Xizang Autonomous Region (include all the Black-Necked Crane sites)										4,277	1				
Yunnan Province															
Bitahai Lake	100	1													
Dashanbao	43	1					430	1		680	1		732	1	
Huize Daqiao Nature Serve	92	1		69	1		406	2		1,631	10		923	2	
Kong Jia Ying										83	1				
Lashihai Lake	78	1													
Napahai Reserve	160	1													
Wulianfeng Mountain Area (Zhao Tong Prefecture)				1,332	1										

Notes:

Site Name¹: [R] – Ramsar Site; [C] – North East Asian Crane Site Network; [S] – East Asian–Australasian Shorebird Site Network. Refer to Section 1.4 for further information.

Sp² – Species. C³ – Site Coverage: V – 25%; W – 25–50%; X – 50–75%; Y – 75–99%; Z – 100%.

Table 40: Waterbird species counts reported to the AWC from mainland China, 1997–2001

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Little Grebe	<i>Tachybaptus ruficollis</i>		23	6	2,125		
Great Cormorant	<i>Phalacrocorax carbo</i>				2,651		
Grey Heron	<i>Ardea cinerea</i>		3,200	12	9,083	12	853
Great White Egret	<i>Ardea alba</i>		102		821		
Intermediate Egret	<i>Egretta intermedia</i>				50		
Little Egret	<i>Egretta garzetta</i>		38		2		
Chinese Pond-Heron	<i>Ardeola bacchus</i>		27		1		
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>		4				
Eurasian Bittern	<i>Botaurus stellaris</i>			1			
Black Stork	<i>Ciconia nigra</i>		32	9	63	11	12
Oriental Stork	<i>Ciconia boyciana</i>	EN	885	860	3,158	987	2,883
Eurasian Spoonbill	<i>Platalea leucorodia</i>		3,423	1,600	6,362	3,425	16,051
Black-faced Spoonbill	<i>Platalea minor</i>	EN	4			2	
Swan Goose	<i>Anser cygnoides</i>	EN	3,840	4,935	21,550	5,422	36,353
Bean Goose	<i>Anser fabalis</i>				7,451	343	2,000
Greater White-fronted Goose	<i>Anser albifrons</i>		86,503	26,000	82,123	12,763	56,112
Lesser White-fronted Goose	<i>Anser erythropus</i>	VU	20,000		9,860		
Greylag Goose	<i>Anser anser</i>			2	547		1,004
Bar-headed Goose	<i>Anser indicus</i>					450	
unidentified grey geese	<i>Anser spp.</i>		27,160		21,464		13,343
Whooper Swan	<i>Cygnus cygnus</i>				508	14	
Tundra Swan	<i>Cygnus columbianus</i>		8,645	678	13,483		62,095
unidentified swans	<i>Cygnus spp.</i>			360	36	3,519	
Ruddy Shelduck	<i>Tadorna ferruginea</i>			26	56		
Common Shelduck	<i>Tadorna tadorna</i>					110	
Mandarin Duck	<i>Aix galericulata</i>				56		
Falcatad Teal	<i>Anas falcata</i>				32		
Gadwall	<i>Anas strepera</i>				50		
Common Teal	<i>Anas crecca</i>				162	86	
Mallard	<i>Anas platyrhynchos</i>				304	50	
Spot-billed Duck	<i>Anas poecilorhyncha</i>			27	535		
Northern Pintail	<i>Anas acuta</i>				20		
Baer's Pochard	<i>Aythya baeri</i>	VU			27		
Greater Scaup	<i>Aythya marila</i>				4		
Black Scoter	<i>Melanitta nigra</i>					10	
Common Goldeneye	<i>Bucephala clangula</i>				10		
Smew	<i>Mergellus albellus</i>			6	22		
Red-breasted Merganser	<i>Mergus serrator</i>				300		
Scaly-sided Merganser	<i>Mergus squamatus</i>	EN				100	18
Goosander	<i>Mergus merganser</i>			4			
unidentified ducks	Anatidae spp.		199,756		22,420	9,500	146,602

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Eurasian Crane	<i>Grus grus</i>		1,578	494	2,073	1,666	2,427
Black-necked Crane	<i>Grus nigricollis</i>	VU	473	1,889	486	5,109	1,705
Hooded Crane	<i>Grus monacha</i>	VU	766	689	1,089	259	433
Sandhill Crane	<i>Grus canadensis</i>			1			
Red-crowned Crane	<i>Grus japonensis</i>	EN	1,020		6	1,128	
White-naped Crane	<i>Grus vipio</i>	VU	2,972	964	2,663	1,791	4,354
Siberian Crane	<i>Grus leucogeranus</i>	CR	2,425	974	2,793	1,914	3,010
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>		2				
Purple Swamphen	<i>Porphyrio porphyrio</i>			3	9		
Common Coot	<i>Fulica atra</i>				905		
Pied Avocet	<i>Recurvirostra avosetta</i>			120	8,000		4,000
Northern Lapwing	<i>Vanellus vanellus</i>				1,900		
Pacific Golden Plover	<i>Pluvialis fulva</i>		10				
Kentish Plover	<i>Charadrius alexandrinus</i>		150				
Greater Sandplover	<i>Charadrius leschenaultii</i>		100				
Whimbrel	<i>Numenius phaeopus</i>		1				
Eurasian Curlew	<i>Numenius arquata</i>		8				
Spotted Redshank	<i>Tringa erythropus</i>			200			
Common Redshank	<i>Tringa totanus</i>		10	20			750
Marsh Sandpiper	<i>Tringa stagnatilis</i>		6				
Common Greenshank	<i>Tringa nebularia</i>		20				
Wood Sandpiper	<i>Tringa glareola</i>		5				
Terek Sandpiper	<i>Xenus cinereus</i>		10				
Common Sandpiper	<i>Actitis hypoleucos</i>		20				
Ruddy Turnstone	<i>Arenaria interpres</i>		1				
unidentified snipes	<i>Gallinago</i> spp.				2,000		
Curlew Sandpiper	<i>Calidris ferruginea</i>		250				
unidentified shorebirds	Charadrii spp.		12,350				5,793
Mew Gull	<i>Larus canus</i>				12		
Herring Gull	<i>Larus argentatus</i>			3	40		
Great Black-headed Gull	<i>Larus ichthyæetus</i>				9		
Relict Gull	<i>Larus relictus</i>	VU				438	
Black-headed Gull	<i>Larus ridibundus</i>			150	5,638	21	4,474
Saunders' Gull	<i>Larus saundersi</i>	VU		60		612	
unidentified gulls	<i>Larus</i> spp.		2,200				
unidentified waterbirds					5,607	200,000	
Total Waterbirds			378,019	40,093	238,561	249,742	364,272
Osprey	<i>Pandion haliaetus</i>		6				
unidentified harriers	<i>Circus</i> spp.				1		

Note:

T¹ – Globally threatened species as identified by BirdLife International (2001): CR – Critically Endangered; EN – Endangered; VU – Vulnerable.

3.4.3 Hong Kong

Consistent coverage of three sites in all five years provides a useful basis for monitoring of populations in Hong Kong (Figure 33 and Table 41). Total numbers of waterbirds counted were 67,989, 56,813, 51,671, 56,189 and 56,848 in 1997, 1998, 1999, 2000 and 2001 respectively. Deep Bay (Mai Po) Ramsar site holds more than 50,000 birds every year, with a highest count of 67,344 in 1997. The site is also a network site for shorebirds and Anatidae in the East Asian–Australasian Flyway.

Totals of 85 species of waterbirds and six species of wetland-dependent raptors were counted (Table 42). The most numerous species were Black-headed Gull (16,000 in 1997), Northern Pintail (8,086 in 2000), Great Cormorant (8,079 in 2000), Northern Shoveler (6,725 in 1999), Eurasian Wigeon (6,711 in 2001) and Common Teal (5,411 in 1999).

Seven globally threatened species were recorded; the highest count totals of two Endangered species, Oriental Stork (1 bird in 2000) and Black-faced Spoonbill (more than 100 every year, with a highest count of 178 birds in 2001). The highest count totals of five Vulnerable species recorded were: Baikal Teal (1 in 2001), Baer's Pochard (3 in 1999), Saunders' Gull (77 in 1997), Greater Spotted Eagle (6 in 1997) and Imperial

Eagle (14 in 1997). The Conservation Dependent Dalmatian Pelican and Near Threatened Ferruginous Duck and Far Eastern Curlew were also reported (Table 41).

Despite regular monitoring efforts, the lack of information on the uses of and threats to the sites prevents presentation of an analysis of bird numbers in relation to these factors.

The census was coordinated and organized by the Hong Kong Bird Watching Society.

Figure 33: AWC site coverage and numerical distribution of waterbirds in Hong Kong, 1997–2001

A dot represents the maximum number of waterbirds counted at a site during the AWC.

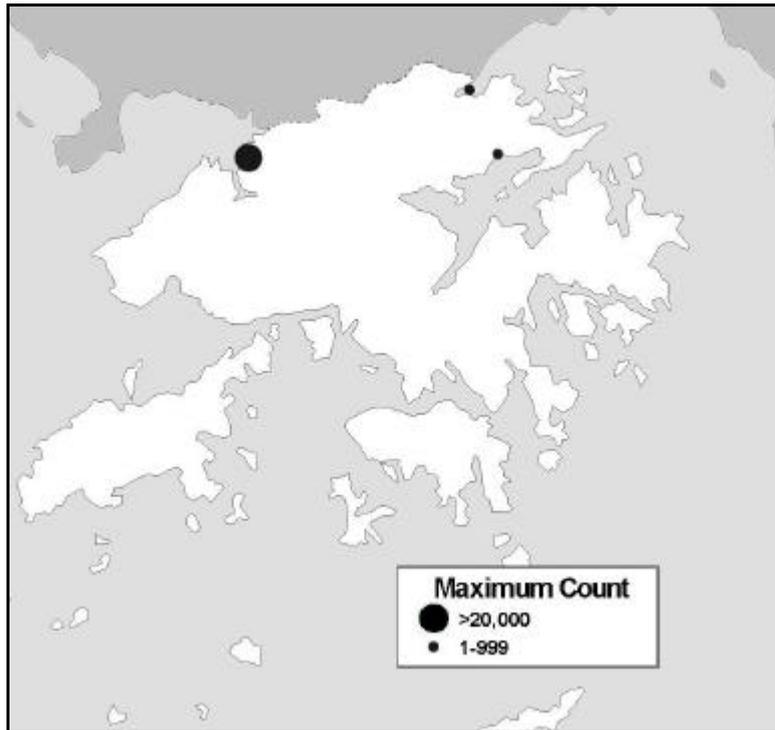


Table 41: AWC site coverage and waterbird and species totals in Hong Kong, 1997–2001

Site Name ¹	1997			1998			1999			2000			2001		
	Birds	Sp ²	C ³												
Deep Bay (Mai Po) [R][A][S]	67,344	72	Y	55,712	68	Y	50,769	61	Y	55,119	65	Y	55,498	64	Y
Yim Tso Ha/Starling Inlet	496	8	Y	905	17	Y	734	19	Y	772	15	Y	1,153	20	Y
Shuen Wan	183	15	Y	217	14	Y	181	11	Y	298	13	Y	220	16	Y

Notes:

Site Name¹: [R] – Ramsar Site; [A] – East Asian Anatidae Site Network; [S] – East Asian–Australasian Shorebird Site Network. Refer to Section 1.4 for further information.

Sp² – Species. C³ – Site Coverage: V – 25%; W – 25–50%; X – 50–75%; Y – 75–99%; Z – 100%.

Table 42: Waterbird species counts reported to the AWC from Hong Kong, 1997–2001

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Little Grebe	<i>Tachybaptus ruficollis</i>		119	49	145	145	126
Great Crested Grebe	<i>Podiceps cristatus</i>		179	49	309	413	30
Dalmatian Pelican	<i>Pelecanus crispus</i>	cd	10	24	22	21	16
Great Cormorant	<i>Phalacrocorax carbo</i>		5,984	6,033	5,369	8,079	7,629
Grey Heron	<i>Ardea cinerea</i>		1,417	1,118	881	1,266	1,024
Purple Heron	<i>Ardea purpurea</i>		2	1	1	1	
Great White Egret	<i>Ardea alba</i>		888	640	755	901	1,232

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Intermediate Egret	<i>Egretta intermedia</i>		16	6	21	25	25
Little Egret	<i>Egretta garzetta</i>		1,174	1,042	1,113	1,467	1,242
Cattle Egret	<i>Bubulcus ibis</i>		5	42	43	117	44
unidentified egrets	<i>Egretta/Bubulcus spp.</i>					600	
Chinese Pond-Heron	<i>Ardeola bacchus</i>		242	215	162	213	268
Green-backed Heron	<i>Butorides striatus</i>				2	3	1
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>		20	448	185	66	322
Eurasian Bittern	<i>Botaurus stellaris</i>		1				2
Black Stork	<i>Ciconia nigra</i>					1	
Oriental Stork	<i>Ciconia boyciana</i>	EN				1	
Eurasian Spoonbill	<i>Platalea leucorodia</i>			1	1	1	1
Black-faced Spoonbill	<i>Platalea minor</i>	EN	101	113	110	162	178
Greylag Goose	<i>Anser anser</i>		5				
Common Shelduck	<i>Tadorna tadorna</i>		2,972	1,291	1,230	1,320	279
Eurasian Wigeon	<i>Anas penelope</i>		2,533	1,798	2,338	1,658	6,711
Falcatel Teal	<i>Anas falcata</i>		39	48	3	14	
Gadwall	<i>Anas strepera</i>					26	
Baikal Teal	<i>Anas formosa</i>	VU					1
Common Teal	<i>Anas crecca</i>		5,207	3,519	5,411	4,100	2,557
Mallard	<i>Anas platyrhynchos</i>		14	1	6	2	15
Spot-billed Duck	<i>Anas poecilorhyncha</i>		146	100	61	20	34
Northern Pintail	<i>Anas acuta</i>		1,329	7,235	5,043	8,086	3,441
Garganey	<i>Anas querquedula</i>		25	30	11	16	17
Northern Shoveler	<i>Anas clypeata</i>		1,749	6,615	6,725	3,000	6,414
Common Pochard	<i>Aythya ferina</i>		14		4		1
Baer's Pochard	<i>Aythya baeri</i>	VU	1		3		
Ferruginous Duck	<i>Aythya nyroca</i>	nt			4		
Tufted Duck	<i>Aythya fuligula</i>		56	212	363	665	409
unidentified ducks	Anatidae spp.		19,409	2,650	200		3,700
Slaty-breasted Rail	<i>Gallirallus striatus</i>		3	2			
Water Rail	<i>Rallus aquaticus</i>		1				
Ruddy-breasted Crake	<i>Porzana fusca</i>		1				
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>		23	29	30	8	20
Watercock	<i>Gallicrex cinerea</i>		1				
Common Moorhen	<i>Gallinula chloropus</i>		64	108	79	80	76
Common Coot	<i>Fulica atra</i>		942	836	556	654	534
Black-winged Stilt	<i>Himantopus himantopus</i>		130	1	1		
Pied Avocet	<i>Recurvirostra avosetta</i>		1,609	1,639	850	1,758	1,438
Northern Lapwing	<i>Vanellus vanellus</i>		1				
Grey-headed Lapwing	<i>Vanellus cinereus</i>			1		1	1
Pacific Golden Plover	<i>Pluvialis fulva</i>		70	100	68	67	120
Grey Plover	<i>Pluvialis squatarola</i>		502	564	269	202	327
Great Ringed Plover	<i>Charadrius hiaticula</i>					1	1
Little Ringed Plover	<i>Charadrius dubius</i>		55	113	242	154	67
Kentish Plover	<i>Charadrius alexandrinus</i>		1,800	1,825	2,480	3,008	608
Lesser Sandplover	<i>Charadrius mongolus</i>		4	12	52	2	6
Greater Sandplover	<i>Charadrius leschenaultii</i>					1	
Black-tailed Godwit	<i>Limosa limosa</i>		130	125	235	454	224
Bar-tailed Godwit	<i>Limosa lapponica</i>		2		1		2
Whimbrel	<i>Numenius phaeopus</i>				1	1	1
Eurasian Curlew	<i>Numenius arquata</i>		432	603	413	600	426
Far Eastern Curlew	<i>Numenius madagascariensis</i>	nt					1
Spotted Redshank	<i>Tringa erythropus</i>		690	550	825	900	512
Common Redshank	<i>Tringa totanus</i>		8	135	145	152	91
Marsh Sandpiper	<i>Tringa stagnatilis</i>		194	750	420	1,110	13
Common Greenshank	<i>Tringa nebularia</i>		430	133	338	88	290
Green Sandpiper	<i>Tringa ochropus</i>		21	15	47	27	32
Wood Sandpiper	<i>Tringa glareola</i>		13	9	19	27	18
Common Sandpiper	<i>Actitis hypoleucos</i>		40	31	95	64	76
Pintail Snipe	<i>Gallinago stenura</i>		5	13	1		1
Common Snipe	<i>Gallinago gallinago</i>		9	16	11		3
Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>		1			1	
Red Knot	<i>Calidris canutus</i>		1	1			
Great Knot	<i>Calidris tenuirostris</i>		9	1			3
Red-necked Stint	<i>Calidris ruficollis</i>		35	49	7		3
Temminck's Stint	<i>Calidris temminckii</i>		64	47	40	8	12

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Long-toed Stint	<i>Calidris subminuta</i>		2	2		3	
Dunlin	<i>Calidris alpina</i>		680	3,050	2,351	2,980	2,500
Curlew Sandpiper	<i>Calidris ferruginea</i>			1			
Broad-billed Sandpiper	<i>Limicola falcinellus</i>			1		5	2
unidentified shorebirds	Charadrii spp.			150	100	5	
Black-tailed Gull	<i>Larus crassirostris</i>		3	1	4	3	
Mew Gull	<i>Larus canus</i>			2			
Herring Gull	<i>Larus argentatus</i>		277	218	69	285	188
Yellow-legged Gull	<i>Larus cachinnans</i>						1
Slaty-backed Gull	<i>Larus schistisagus</i>		1	7		5	
Glaucous-winged Gull	<i>Larus glaucescens</i>					1	
Great Black-headed Gull	<i>Larus ichthyæetus</i>		2	1		1	
Brown-headed Gull	<i>Larus brunnicephalus</i>					1	1
Black-headed Gull	<i>Larus ridibundus</i>		16,000	12,316	11,331	11,100	13,500
Saunders' Gull	<i>Larus saundersi</i>	VU	77	76	70	43	31
Total Waterbirds			67,989	56,813	51,671	56,189	56,848
Osprey	<i>Pandion haliaetus</i>		12	11	6		9
White-bellied Sea Eagle	<i>Haliaeetus leucogaster</i>		1	1			1
Marsh Harrier	<i>Circus aeruginosus</i>		1	1			
Eastern Marsh Harrier	<i>Circus spillotus</i>				5		5
Greater Spotted Eagle	<i>Aquila clanga</i>	VU	6	2			2
Imperial Eagle	<i>Aquila heliaca</i>	VU	14	6	2		6

Note:

T¹ – Globally threatened species as identified by BirdLife International (2001): EN – Endangered; VU – Vulnerable; cd – Conservation Dependent; nt – Near Threatened.

3.4.4 Taiwan

Count data were received in all five years. A total of 66 sites were covered at least once (Figure 34 and Table 43). The total numbers of waterbirds counted were 107,682 (38 sites), 127,195 (40 sites), 194,619 (52 sites), 178,941 (38 sites) and 102,110 (40 sites) in 1997, 1998, 1999, 2000 and 2001 respectively. Eleven sites held more than 10,000 birds, and, of these, two sites held more than 20,000 birds: Szu-Tsao (28,781 in 1999) and Ao-Ku (22,758 in 2001). A total of 19 Important Bird Areas, as identified by Liao *et al.* (2001), were covered by the census.

A total of 130 species of waterbirds were counted (Table 44). Species recording more than 20,000 birds were Dunlin (46,348 in 1999), Common Teal (40,617 in 2000) and Kentish Plover (34,424 in 1999).

The highest count totals for twelve globally threatened species (Table 44) were as follows: Endangered Oriental Stork (23 in 1998), Black-faced Spoonbill (more than 300 each year, the highest count being 464 in 2000 and over 50% of the global population estimate published by Wetlands International 2002b), Swan Goose (3 in 1997), Scaly-sided Merganser (1 in 1999) and Nordmann's Greenshank (1 in 2000). The Vulnerable species recorded including Chinese Egret (6 in 1998), Lesser White-fronted Goose (2 in 2000), Baikal Teal (84 in 1999), the vagrant Philippine Duck (2 in 2001), Baer's Pochard (2 in 1997 and 2000), Hooded Crane (1 in 1998) and Saunders' Gull (more than 400 each year, highest count of 618 in 1999). The Conservation Dependent Dalmatian Pelican and Near Threatened Far Eastern Curlew and Asian Dowitcher were also reported.

Sacred Ibis (102 in 1998), which escaped from the Zoo, seems to have now established a wild population in Taiwan. Single records of Greater Flamingo in 1998 and 2000 were also of escapees from the Zoo (Woei-Hong Fang, pers. comm., September 2001 and December 2003).

The major uses of and threats to wetlands were domestic sewage and tourism/recreation.

The census was conducted by the Wild Bird Federation Taiwan.

Figure 34: AWC site coverage and numerical distribution of waterbirds in Taiwan, 1997–2001
A dot represents the maximum number of waterbirds counted at a site during the AWC.

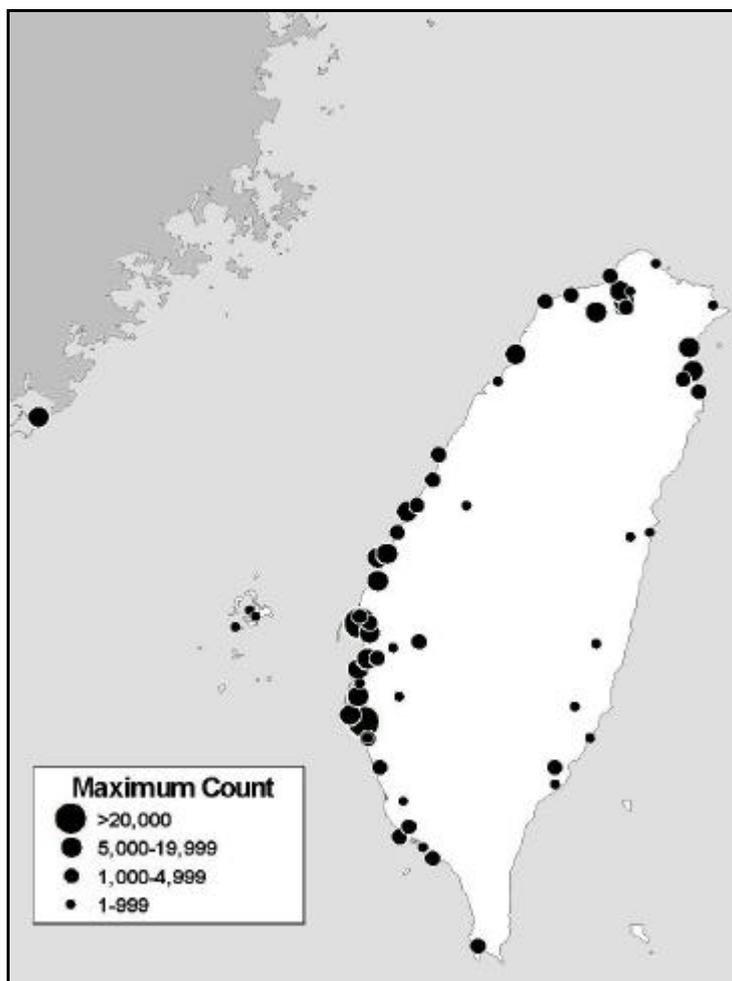


Table 43: AWC site coverage and waterbird and species totals in Taiwan, 1997–2001

Site Name ¹	1997			1998			1999			2000			2001		Threats ⁴
	Birds	Sp ²	C ³	Birds	Sp ²										
Changhua County															
Fang-Yuan							2,149	8	Z						
Han-Pao [I]	2,264	29		6,834	42	Z	4,579	41	Z	6,352	43		5,430	42	
Hsi-Kang (Ta Cheng) [I]							2,150	24	Z	5,890	18		3,225	21	
Lu-Kang							1,085	16	Z						
Ta-Li-Hsi							863	14							
Ta-Tu-Hsi	5,614	26	Z	13,033	37	Z	1,841	17	Y	9,029	24		1,320	4	8J
Chili County															
Ao-Ku [I]	10,732	39		18,184	47	Z	12,253	40	Z	19,675	58		22,758	58	6
Pa-Chang- Hsi							1,421	17	Z						
Pei Kang Hsi (Yun-Chia-Chiao)							1,397	17							
Pei-Hua							3,321	18							
Pu-Tai [I]	1,734	20		1,786	23	Z	8,013	34	Z	6,627	47		6,518	43	
Tung-Shih-Chiao (Pu Zhih Hsi)							7,514	41	Z						
Chinmen County															
Chin-Men (Kinmen) Island [I]	7,117	38		5,118	36	Z	8,174	49					3,355	35	
Hsinchu County															
Ku-Liao (Kang Nan)	3,606	35	Z	4,229	35		6,001	37	Z	8,986	44		1,359	33	8L
Hualien County															
Hsiu-Ku-Luan-Hsi							281	10	X				41	4	
Hwa-Lien-Chi [I]	327	8	Z				467	12		156	12		387	15	
Li-Yu-Tan	228	7	Z							251	13		138	10	

Site Name ¹	1997			1998			1999			2000			2001			Threats ⁴
	Birds	Sp ²	C ³													
Ilan County																
Chu-An [I]	4,301	37	Z	11,346	47	Z	7,583	49		16,408	49		6,947	48		
Lan-Yang-Hsi [I]	6,313	30	Z	5,945	42	Z	9,099	41	Z	11,200	47		4,949	38		
Li-Tse [I]	4,740	30	Z	6,634	41	Z	10,537	45		7,666	43		2,221	31		
Lo-Tung							1,227	16								
Wu-Wei-Hsi	1,096	21	Z	1,452	31	Z	1,588	37	Z	1,459	26		138	16		
Kaohsiung County																
Cheng-Ching-Hu										1	1		65	5		
Feng-Shan Reservoir [I]	598	9											1,450	9		
Kao-Ping-Hsi				366	15	Z	796	23	Z	1,305	8					A
Yung-An	1,289	11	Z	682	16		1,016	19		761	14		1,612	22		
Miaoli County																
Chung-Kang- Hsi	850	22														
Penghu County																
Cheng-Kung Reservoir	98	6	Z				62	9	Z	62	5		33	4		
Chin-Row	52	3	Z	114	4	Z	23	6					20	5		
Chung-Kuang	216	13	Z										65	8		
Sin-Jen Reservoir	684	25	Z	582	26	Z	240	20	Z	430	30		518	28		1
Pingtung County																
Lin-Pien-Hsi	253	20		238	14	Z	496	16		1,835	51		1,788	35		
Lung-Luan-Tan	1,262	24	Z	1,116	25	Z	2,786	37	Z	1,184	22		1,938	29		
Tung Kung				441	15	Z				406	24		486	19		
Taichung County																
Lung Ching (Ta Tu Hsi North) [I]							243	14	Z	2,463	30					
Ta-Chia Hsi (Kao Mei) [I]				505	15	Z	2,259	37	Z	1,188	15		1,789	31		
Tainan County																
Anping										3,798	30		1,167	26		
Chi-Ku [I]	3,349	25	Z				7,633	38	Z							
Chiang-Chun- Hsi							986	24	Z							
Hu-Lu-Pei [I]	759	13	Z	496	21	Z	949	18	Z							C
Pei-Men [I]	8,264	34	Z	5,089	27	Z	16,480	31	Z	905	24		2,141	31		
Szu-Tsao [I]	3,483	29	Z	4,501	33	Z	28,781	51	Z	13,918	52		3,206	31		
Tseng-Wen Hsi	11,512	40	Z	5,884	33	Z	7,077	38	Z	3,666	34		7,390	39		
Taipei County																
Chin-Shan	374	15	Z	402	11	Z	553	16	Z	160	10		82	10		
Chun-Cheng-Chiao	5,874	22	Z	1,659	11	Z	652	8	Z	4,771	11		99	6		8L
Chung-Kuo-Hai-Chuan (She-Tzu)	4,131	12	Z	1,648	17	Z	12,220	22		11,059	35		1,970	19		L
Err Chung				571	9	Z	5,723	12	Z	5,832	11					
Guandu (Kuan-Tu) Marsh [I]	5,833	36	Z	5,569	48	Z	3,142	34	Z	2,275	23		3,873	33		1
Hua-Chiang-Chiao	3,666	7	Z	3,837	11	Z	4,583	14	Z	11,720	28		10,036	12		8BL
Hua-Chun-Chiao	352	11	Z	1,250	13	Z	1,922	8	Z	1,722	11		494	9		289L
Kung-Liao	806	24	Z	460	25	Z	77	14	Z	300	25		118	14		3
Li-Nung (Li Non)				307	15	Z	151	17								8
Ta Han Hsi				5,273	10	Z										
Wa-Tsu-Wei [I]				1,179	8	Z										8
Taitung County																
Chih-Pen Farm [I]				137	15	Z	115	15	Z	147	13		109	8		
Chih-Shang (Ta Po Chi)				86	7	Z										
Ma-Wu-Ku-Chi	269	12	Z													G
Pei-Nan-Hsi	1,749	15	Y	136	9					62	10		162	9		
Tai-Ping-Hsi	762	23	Y				19	8								
Taoyuan County																
Kuan Ing				1,699	15	Z										
Ta-Yuan	1,693	21		2,303	21	Y	2,249	20	Z	2,959	27		1,209	23		
Yunlin County																
Cheng-Lung							367	16	Z				1,504	14		
Cho-Shui-Hsi S.	1,432	9		489	7		162	12	Z	12,313	19					A
Pao-Chung							252	6								
Shui-Lin							1,062	31								
Wu Tiao Kung				5,615	12	Z										

Notes:

Site Name¹: [I] – Important Bird Area as identified by Liao *et al.* (2001). Refer to Section 1.4.6 for further information.

Sp² – Species. C³ – Site Coverage: V – 25%; W – 25–50%; X – 50–75%; Y – 75–99%; Z – 100%.

Threats⁴: 1 – None, 2 – Sedimentation, 3 – Excessive overgrowth of vegetation, 4 – Cutting/clearance of vegetation, 5 – Eutrophication, 6 – Agriculture along drying margins, 7 – Excessive cattle grazing, 8 – Domestic sewage, 9 – Solid waste, A – Industrial waste, B – Oil pollution, C – Pesticides, D – Fertilizers, E – Mining, F – Hunting/trapping/poaching of birds, G – Small-scale fishing, H – Large-scale fishing, I – Partial reclamation, J – Complete reclamation, K – Dam/barrage construction, L – Tourism/recreation.

Table 44: Waterbird species counts reported to the AWC from Taiwan, 1997–2001

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Little Grebe	<i>Tachybaptus ruficollis</i>		462	357	544	363	527
Great Crested Grebe	<i>Podiceps cristatus</i>		135	8	83	4	11
Horned Grebe	<i>Podiceps auritus</i>						2
Black-necked Grebe	<i>Podiceps nigricollis</i>			1		1	
Dalmatian Pelican	<i>Pelecanus crispus</i>	cd		2			
Great Cormorant	<i>Phalacrocorax carbo</i>		2,820	3,700	3,924	2,317	2,780
Japanese Cormorant	<i>Phalacrocorax capillatus</i>				2		
Grey Heron	<i>Ardea cinerea</i>		2,327	2,119	3,375	3,467	2,883
Purple Heron	<i>Ardea purpurea</i>		1	9	15	30	18
Great White Egret	<i>Ardea alba</i>		2,252	2,112	3,144	2,212	1,796
Intermediate Egret	<i>Egretta intermedia</i>		277	451	633	361	281
Little Egret	<i>Egretta garzetta</i>		7,089	6,342	6,123	4,095	4,475
Chinese Egret	<i>Egretta eulophotes</i>	VU		6	4		
Eastern Reef Heron	<i>Egretta sacra</i>		7	4	1	1	6
Cattle Egret	<i>Bubulcus ibis</i>		1,152	1,360	1,416	1,100	835
Chinese Pond-Heron	<i>Ardeola bacchus</i>		19	2	8	5	16
Green-backed Heron	<i>Butorides striatus</i>		16	1		1	1
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>		1,547	1,292	3,090	1,520	1,031
Malayan Night-Heron	<i>Gorsachius melanolophus</i>						1
Yellow Bittern	<i>Ixobrychus sinensis</i>		13	53	18	15	19
Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>		6	8	21	9	6
Eurasian Bittern	<i>Botaurus stellaris</i>		2	3	5		1
Black Stork	<i>Ciconia nigra</i>				2	2	
Oriental Stork	<i>Ciconia boyciana</i>	EN	2	3			
Sacred Ibis	<i>Threskiornis aethiopicus</i>		93	102	53	67	74
Eurasian Spoonbill	<i>Platalea leucorodia</i>		3	1	1	5	2
Black-faced Spoonbill	<i>Platalea minor</i>	EN	310	376	351	464	441
Greater Flamingo	<i>Phoenicopterus ruber</i>			1		1	
Swan Goose	<i>Anser cygnoides</i>	EN	3		1	2	
Bean Goose	<i>Anser fabalis</i>		13	15	14	3	
Greater White-fronted Goose	<i>Anser albifrons</i>			1			4
Lesser White-fronted Goose	<i>Anser erythropus</i>	VU		1		2	
Greylag Goose	<i>Anser anser</i>			1		8	2
Tundra Swan	<i>Cygnus columbianus</i>			1			
Ruddy Shelduck	<i>Tadorna ferruginea</i>			1		2	
Common Shelduck	<i>Tadorna tadorna</i>		10	8		12	7
Mandarin Duck	<i>Aix galericulata</i>					11	3
Cotton Pygmy-Goose	<i>Nettapus coromandelianus</i>		1	1			
Eurasian Wigeon	<i>Anas penelope</i>		3,732	724	4,392	2,009	3,886
American Wigeon	<i>Anas americana</i>			2		1	
Falcated Teal	<i>Anas falcata</i>		273	15	163	7	54
Gadwall	<i>Anas strepera</i>		47	21	47	56	109
Baikal Teal	<i>Anas formosa</i>	VU		3	84	1	3
Common Teal	<i>Anas crecca</i>		27,679	26,938	35,602	40,617	20,629
Mallard	<i>Anas platyrhynchos</i>		72	129	167	413	87
Spot-billed Duck	<i>Anas poecilorhyncha</i>		1,566	1,064	1,359	1,155	760
Philippine Duck	<i>Anas luzonica</i>	VU					2
Northern Pintail	<i>Anas acuta</i>		1,103	836	3,525	3,791	1,642
Garganey	<i>Anas querquedula</i>		42	35	149	134	40
Northern Shoveler	<i>Anas clypeata</i>		1,942	1,945	4,731	5,621	1,801
Common Pochard	<i>Aythya ferina</i>		12	6	3	71	6
Baer's Pochard	<i>Aythya baeri</i>	VU	2			2	
Tufted Duck	<i>Aythya fuligula</i>		1,374	1,970	1,925	1,763	1,497
Greater Scaup	<i>Aythya marila</i>		18	7	18	44	14
Red-breasted Merganser	<i>Mergus serrator</i>			2			1
Scaly-sided Merganser	<i>Mergus squamatus</i>	EN			1		
Hooded Crane	<i>Grus monacha</i>	VU		1			
Slaty-breasted Rail	<i>Gallirallus striatus</i>		9	5	10	6	5
Water Rail	<i>Rallus aquaticus</i>			1			
Ruddy-breasted Crake	<i>Porzana fusca</i>		18	26	26	23	16
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>		43	84	131	83	69
Watercock	<i>Gallicrex cinerea</i>				1		
Common Moorhen	<i>Gallinula chloropus</i>		802	859	1,509	745	867
Common Coot	<i>Fulica atra</i>		278	187	250	120	157
Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>		8	11	39		
Greater Painted-Snipe	<i>Rostratula benghalensis</i>		22	34	88	22	38

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Eurasian Oystercatcher	<i>Haematopus ostralegus</i>		2		38	1	40
Black-winged Stilt	<i>Himantopus himantopus</i>		169	679	1,949	806	800
Pied Avocet	<i>Recurvirostra avosetta</i>		14	585	519	553	248
Oriental Pratincole	<i>Glareola maldivarum</i>				2		
Northern Lapwing	<i>Vanellus vanellus</i>		801	447	1,039	677	320
Grey-headed Lapwing	<i>Vanellus cinereus</i>			2	1	4	
Pacific Golden Plover	<i>Pluvialis fulva</i>		3,975	1,804	7,864	10,480	4,964
Grey Plover	<i>Pluvialis squatarola</i>		1,186	1,880	1,743	2,575	1,039
Great Ringed Plover	<i>Charadrius hiaticula</i>			1		3	
Long-billed Plover	<i>Charadrius placidus</i>			3	2		
Little Ringed Plover	<i>Charadrius dubius</i>		1,324	1,944	1,333	1,181	913
Kentish Plover	<i>Charadrius alexandrinus</i>		11,685	24,625	34,424	33,629	16,328
Lesser Sandplover	<i>Charadrius mongolus</i>		135	301	495	281	79
Greater Sandplover	<i>Charadrius leschenaultii</i>		36	316	165	716	11
Black-tailed Godwit	<i>Limosa limosa</i>		96	20	63	42	28
Bar-tailed Godwit	<i>Limosa lapponica</i>		6	2	3	4	68
Little Curlew	<i>Numenius minutus</i>		1				
Whimbrel	<i>Numenius phaeopus</i>		36	13	191	10	9
Eurasian Curlew	<i>Numenius arquata</i>		1,250	1,623	340	1,433	1,378
Far Eastern Curlew	<i>Numenius madagascariensis</i>	nt		1	8	3	2
Spotted Redshank	<i>Tringa erythropus</i>			8	18	49	35
Common Redshank	<i>Tringa totanus</i>		209	253	692	278	308
Marsh Sandpiper	<i>Tringa stagnatilis</i>		143	224	621	357	248
Common Greenshank	<i>Tringa nebularia</i>		677	616	1,449	1,003	1,481
Nordmann's Greenshank	<i>Tringa guttifer</i>	EN				1	
Lesser Yellowlegs	<i>Tringa flavipes</i>						3
Green Sandpiper	<i>Tringa ochropus</i>		18	24	31	111	25
Wood Sandpiper	<i>Tringa glareola</i>		379	651	1,075	815	599
Terek Sandpiper	<i>Xenus cinereus</i>		3	3	9	6	2
Common Sandpiper	<i>Actitis hypoleucos</i>		269	321	268	439	142
Grey-tailed Tattler	<i>Heteroscelus brevipes</i>		5	29	6	17	11
Ruddy Turnstone	<i>Arenaria interpres</i>		112	3,430	1,286	1,081	659
Red-necked Phalarope	<i>Phalaropus lobatus</i>		12				
Pintail Snipe	<i>Gallinago stenura</i>			64	3		
Swinhoe's Snipe	<i>Gallinago megala</i>			3	1		
Common Snipe	<i>Gallinago gallinago</i>		182	350	735	639	411
Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>		1	3	7	9	3
Asian Dowitcher	<i>Limnodromus semipalmatus</i>	nt					1
Red Knot	<i>Calidris canutus</i>			3		1	6
Great Knot	<i>Calidris tenuirostris</i>		46	1	44	44	89
Sanderling	<i>Calidris alba</i>		23	42	94	166	55
Red-necked Stint	<i>Calidris ruficollis</i>		1,147	669	4,563	2,024	1,351
Temminck's Stint	<i>Calidris temminckii</i>		83	25	20	15	14
Long-toed Stint	<i>Calidris subminuta</i>		287	335	576	283	322
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>			6	7	5	9
Dunlin	<i>Calidris alpina</i>		16,771	24,613	46,348	36,391	14,153
Curlew Sandpiper	<i>Calidris ferruginea</i>		35	2	34	30	2
Broad-billed Sandpiper	<i>Limicola falcinellus</i>		1			3	
Ruff	<i>Philomachus pugnax</i>		3	6	17	30	1
Black-tailed Gull	<i>Larus crassirostris</i>			9	10	61	817
Mew Gull	<i>Larus canus</i>			1	2	1	
Herring Gull	<i>Larus argentatus</i>		24	22	98	118	68
Slaty-backed Gull	<i>Larus schistisagus</i>		6		18	2	1
Great Black-headed Gull	<i>Larus ichthyaetus</i>					2	
Brown-headed Gull	<i>Larus brunnicephalus</i>		1				
Black-headed Gull	<i>Larus ridibundus</i>		4,557	6,596	6,929	6,666	5,824
Saunders' Gull	<i>Larus saundersi</i>	VU	468	431	618	467	532
Whiskered Tern	<i>Chlidonias hybridus</i>		1,987	784	1,524	2,281	783
White-winged Black Tern	<i>Chlidonias leucopterus</i>		1,795	16	27	70	471
Gull-billed Tern	<i>Sterna nilotica</i>		2		11	1	5
Caspian Tern	<i>Sterna caspia</i>		106	160	147	277	490
Common Tern	<i>Sterna hirundo</i>				11	4	
Little Tern	<i>Sterna albifrons</i>		10	2	93	32	57
Greater Crested Tern	<i>Sterna bergii</i>		2				
Total Waterbirds			107,682	127,195	194,619	178,941	102,110

Note:

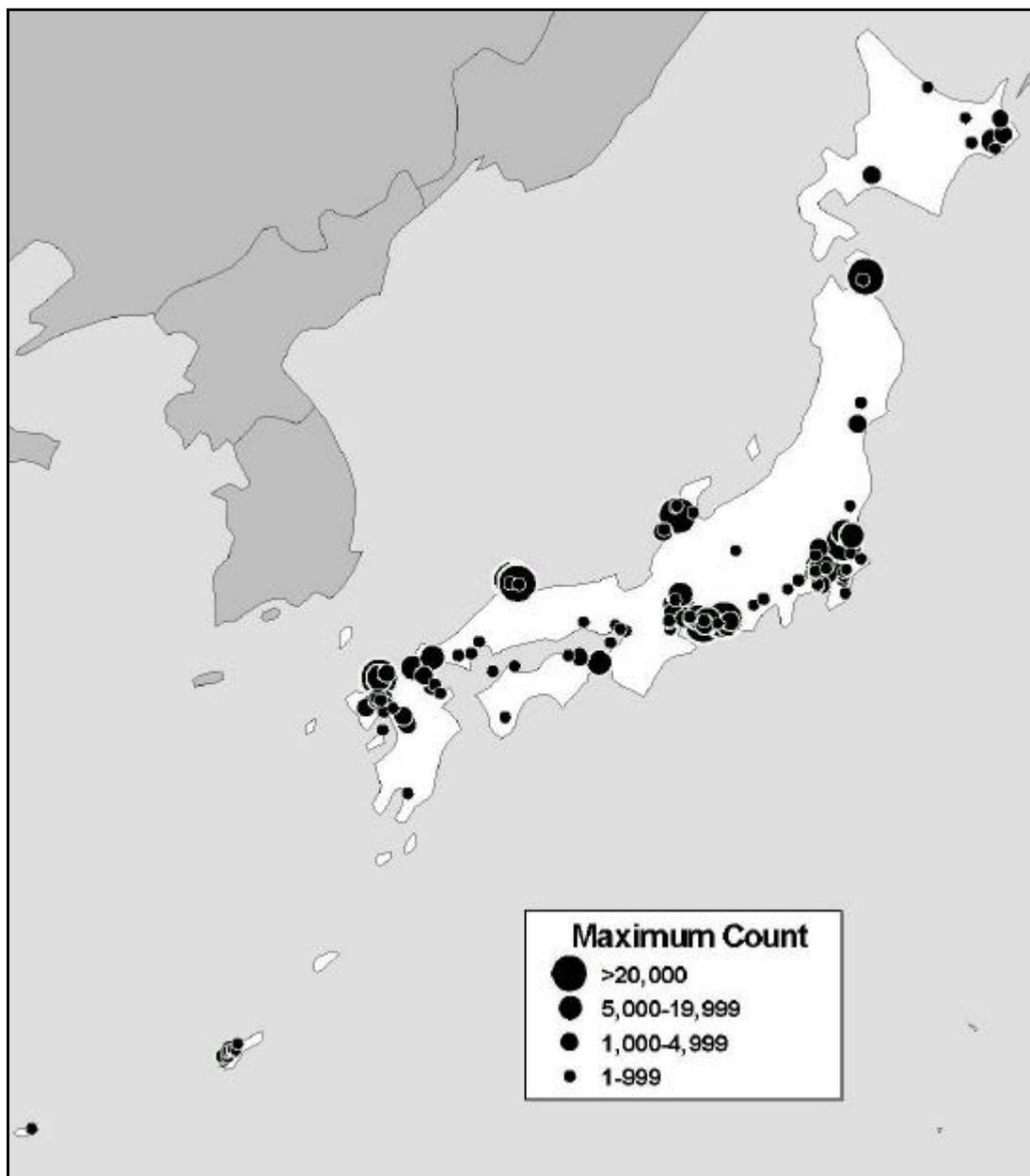
T¹ – Globally threatened species as identified by BirdLife International (2001): EN – Endangered; VU – Vulnerable; cd – Conservation Dependent; nt – Near Threatened.

3.4.5 Japan

Count information was received for all five years (1997–2001) with a total of 134 sites being covered at least once (Figure 35 and Table 45). Total numbers of waterbirds counted were 366,411 (37 sites), 370,844 (41 sites), 323,189 (37 sites), 417,679 (109 sites) and 271,586 (112 sites) in 1997, 1998, 1999, 2000 and 2001 respectively. Eight of Japan's 13 Ramsar sites, namely Fujimae Tidal Flat, Katano-Kamoike (also a site for the East Asian Anatidae Site Network), Yatsu Tidal Flat (also a site for the East Asian–Australasian Shorebird Site Network), Akkeshi Lake (also a site for the East Asian Anatidae Site Network and North East Asian Crane Site Network), Kiritappu Marsh (also a site for the North East Asian Crane Site Network), Kushiro Marsh (also a site for the East Asian Anatidae Site Network and North East Asian Crane Site Network), Utonai Lake (also a site for the East Asian Anatidae Site Network) and Manko (also a site for the East Asian–Australasian Shorebird Site Network) were covered at least once. In addition to the above-mentioned sites for the East Asian–Australasian Waterbird Site Network, other sites included in site networks that were covered were Kabukuri Pond (for Anatidae), Kashima Shingomori (for shorebirds), Tokyo Port Bird Park (for shorebirds), Yashiro (for cranes) and Yoshino River Estuary (for shorebirds).

Figure 35: AWC site coverage and numerical distribution of waterbirds in Japan, 1997–2001

A dot represents the maximum number of waterbirds counted at a site during the AWC.



Nine of the sites counted held more than 20,000 waterbirds: Nakaumi (81,596 in 1997), Sanbanse (72,344 in 2000), Kasumiga Ura (66,762 in 1998), Shiji Lake (48,694 in 2000), Hamana Lake (39,945 in 1997), Kahokugata (32,805 in 1997), Shiokawa Tideland (26,300 in 1999), East region of Hakata Bay (25,436 in 1999) and Ogawara Lake (23,742 in 1998).

Totals of 127 species of waterbirds and five species of wetland-dependent raptors were counted (see Table 46). The most abundant species were Greater Scaup (104,294 in 2000), Common Pochard (60,595 in 1997), Mallard (56,526 in 1997), Tufted Duck (48,480 in 2000), Dunlin (39,214 in 2000) and Eurasian Wigeon (23,161 in 1999).

The highest count totals for twelve globally threatened species counted (Table 45) were as follows: a solitary record of the Critically Endangered Siberian Crane in 2000; the Endangered Black-faced Spoonbill (30 in 2000), Swan Goose (1 in 1998) and Red-crowned Crane (414 in 1999); the Vulnerable Chinese Egret (1 in 1999 and in 2000 each), Lesser White-fronted Goose (2 in 2001), Baikal Teal (2,964 in 2000), Hooded Crane (8,532 in 2000; this significant count provided an update of the total population estimate of 8,500 in Japan and Korea given in Wetlands International 2002b), White-naped Crane (3,094 in 2000 – about 97% of the population estimate given in Wetlands International 2002b), Spoon-billed Sandpiper (1 in 2001), Saunders' Gull (353 in 2001) and Steller's Sea Eagle (494 in 1999). Two Near Threatened species recorded included Far Eastern Curlew and White-tailed Sea Eagle.

The major uses of and threats to the wetlands reported were fishing and tourism/recreational activities.

The census was coordinated by individuals.

Table 45: AWC site coverage and waterbird and species totals in Japan, 1997–2001

Site Name ¹	1997			1998			1999			2000			2001			Threats ⁴
	Birds	Sp ²	C ³													
Aichi Prefecture																
Fujimae Tidal Flat [R]	12,994	29		13,059	31		9,281	30	Y	7,442	25	Z	3,412	11		29GL
Ikawazu										948	8		918	9		
Issiki Salt Farm	87	5		64	2		25	6	X	28	5	W				JG
Jinno Shinden										23	5		48	3		
Kiso River	4,450	23		7,301	17		3,723	21		4,733	17	Y	4,648	24		
Mouth of the Toyokawa	8,307	29	Y	2,670	21		3,305	24	Y	3,313	27	Y				58FIKL
Mouth of Yahagi Furukawa	5,631	18	W	3,584	17	W	2,922	14	W	1,898	15	W				G
Shio-Kawa Higata										3,278	14		4,323	14		
Shiokawa Tideland	9,612	36	Y	9,075	38	X	26,300	37	Y	10,070	38	Y				58DFGIL
Tatsuta-Mura										78	8		104	8		
Uno Pond	1,539	12		2,731	14		2,237	14	W				1,990	11		
Yahagi-Gawa Kakou										263	10		413	12		
Aomori Prefecture																
Ogawara Lake	1,123	7		23,742	19	Z	20,371	4	Z	8,994	18	Z	2,821	16		
Takase-Gawa Kakou													8	2		
Chiba Prefecture																
Banzu										3,124	10		1,030	5		
Futtsu										9	3					
Hori-Kawa, Magame-Gawa													134	1		
Ichinomiya-Gawa Kakou										141	7		168	5		
Ikisu, Omigawa										78	1					
Kido-Gawa, Kuriyama-Gawa													181	3		
Magame-Gawa, Sakuda-Gawa													191	3		
Nabaki-Gawa, Hori-Kawa													58	1		
Sakuda-Gawa, Kido-Gawa													116	4		
Sanbanse				50,840	21	X				72,344	19	Y	2,644	9		
Sone Shinden										35	5					
Yatsu Tidal Mudflat										2,424	13		1,954	14		
Ehime Prefecture																
Daimyoujin-Gawa, Takasu Kaigan, Shin-Kawa													81	6		
Kamo-Gawa Kakou										294	8		361	10		
Shigenobu-Gawa Kakou										374	10		398	14		
Fukuoka Prefecture																
East Region of Ariake Sea	2,490	19		2,017	7		3,812	26	Y	2,963	27	Y	3,411	23		1
East Region of Hakata Bay	19,955	44		10,891	46		25,436	44	Y	24,582	47	Y	24,867	44		J

Site Name ¹	1997			1998			1999			2000			2001			Threats ²
	Birds	Sp ^c	C ^s													
Imazu	5,547	35		5,351	28		3,789	29	Y	3,714	34	Y	3,590	41		1
Sone-Higata (Tideland)	12,918	44	Y	10,476	45	Y	5,066	48	Y	15,876	47	Y	18,930	55		9G
Wajiro Higata										2,765	11		4,300	16		
Gifu Prefecture																
Nagara River	10,272	14		10,899	20		12,136	19	V	7,075	13	V				8JK
Hirosima Prefecture																
Yahata-Gawa Kakou										4	3		25	6		
Hokkaido Prefecture																
Akkeshi Lake [R] [A] [C]	5,311	13	W	4,094	14	Z	1,799	11	Y				1,656	15		H
Kiritappu Marsh [R] [C]	242	6	Z	113	6	Z	69	3	Y	226	8		253	8		GL
Komuke Lake										2	1		4	1		
Kushiro Marsh [R] [A] [C]	412	7	V	390	10	Z	411	1	V				423	3		KL
Kussharo Lake	716	5	V	572	6		755	5	X	631	6	V	508	6		GL
Lake Furen	726	15	Z	844	10	Z	1,890	16	Y	3,933	20	X	2,148	12		257DFHL
Notsuke Bay	2,174	13	Z	3,129	10	Z	4,438	16	Y				1,137	8		HL
Utonai Lake [R] [A]										1,613	14	Z				25
Hyogo Prefecture																
Hamakoushien										73	4		284	2		
Nakajima Futou													2	1		
Ibaragi Prefecture																
Hasaki Shinkou										360	6		214	7		
Hazaki-Chou Yatabe													49	5		
Hinuma	3,629	18	Z	5,682	27	Z	8,276	33	Z	2,817	27	Z	5,003	25		89GHL
Kamisu-Chou Takahama										9	2		17	3		
Kasumigaura Nangan Sakuragawa-Mura										106	11		255	7		
Kasumiga Ura	39,912	41	Z	66,762	37	Z	34,441	39	Z	38,853	46	Z	39,419	48		589GHL
Kitaura	11,402	34	Z	10,010	33	Z	10,814	37	Z	7,155	35	Z	7,701	31		89GH
Sugao Marshes	2,684	17	Z	1,449	16	Z	817	15	Z	1,414	15	Z	3,364	12		28GHL
Ishikawa Prefecture																
Chiri-Hama										8	1		3	1		
Kahokugata (Kawakitagata)	32,805	16		16,616	37		23,198	31	Y				18,148	25		5
Katano-Kamoike [R][A]	4,181	15	Z	2,921	16	Z	3,918	19	Z	4,762	17	Z	2,002	14		1
Komaiko Kaigan										15	2		41	3		
Ouchi-Gata													11	4		
Kagoshima Prefecture																
Fukiagehama Kaigan										335	6		456	5		
Izumi							15,181	28	X	16,341	30	X				6JL
Kanagawa Prefecture																
Ebina-Shi Katsuse													15	2		
Sakawa-Gawa Chuuryuuiki										14	5		12	6		
Kouchi Prefecture																
Oogata-Machi										11	3		17	4		
Kumamoto Prefecture																
Arao Kaigan										265	4					
Kuma-Gawa Kakou										761	8		1,236	8		
Oono-Gawa, Suna-Gawa Kakou										2,138	5		1,892	4		
Shira-Kawa Kakou										1,218	5		1,275	5		
Kyoto Prefecture																
Oguraike Kantakuden										49	3		61	1		
Mie Prefecture																
Anou-Gawa Kakou, Shitomo-Gawa Kakou										523	5		596	6		
Atago-Gawa, Kushida-Gawa										505	5		504	6		
Kumozu-Gawa Kakou, Gonushi Kaigan													235	11		
Suzuka-Gawa Kakou, Suzuka-Hasen Kakou										1,126	9		100	3		
Toyotsuura, Machiyaura										54	3		406	4		
Miyagi Prefecture																
Gamo Tidal Flat (Gamou Lagoon)	195	15	Z	631	19	Z	1,082	23	Z							GL
Kabukurinuma (Kabukuri Pond) [A]	475	9	Z	737	7	Z										
Nagano Prefecture																
Nakagomichikuma-Gawa										44	7		21	6		
Nagasaki Prefecture																
Isahaya Bay										2	2					

Site Name ¹	1997			1998			1999			2000			2001			Threats ⁴
	Birds	Sp ^c	C ^s													
Okinawa Prefecture																
Awase Higata										1,230	17		1,801	19		
Gushi Higata										670	24		451	18		
Hiyagon Shicchi										623	17		694	19		
Kaichu Douro										182	7		122	10		
Kitanashiro Higata										226	10		78	10		
Komesu Kaigan										481	17		267	11		
Manko [R] [S]										712	20		908	21		
Mukue-Gawa										238	14		82	12		
Okukubi-Gawa Kakou										293	15		251	19		
Onaga										399	20		759	19		
Ooyama Taimo-Batake										150	9		355	10		
Sashiki Higata										123	9		76	7		
Shioya Higata										144	18		19	9		
Shiraho, Miyara-Wan													721	14		
Teruma Higata										876	17		482	19		
Yonaha-Wan													338	9		
Yone Sankaku-Ike										169	15		98	8		
Ooita Prefecture																
Morie-Wan										83	3		518	4		
Nakatsu Kaigan										2,274	9		2,144	6		
Takada, Matama Kaigan										264	3		176	3		
Usa Kaigan										2,548	5		1,543	7		
Osaka Prefecture																
Nanko Yacho-En (Nanko Bird Sanctuary)	366	11	Z	521	17	Z	64	7	Z	269	20	Z	170	12		
Osato-Gawa Kakou										71	4		43	4		
Yodogawa River	9,755	30		12,135	27		10,266	33		10,193	33		14,557	35		
Saga Prefecture																
Daijugarami										4,327	9		6,769	12		
Hayatsue-Gawa Kakou										340	3		513	2		
Kase-Gawa Kakou										1,496	5					
Kashima Shingomori [S]										1,327	5		1,015	5		
Rokkaku-Gawa Kakou										87	4		238	3		
Saitama Prefecture																
Azuma-Chou, Taisei-Chou										7	1		1	1		
Ookubo Noukouchi										3	2					
Shimane Prefecture																
Iinashi-Gawa Kakou										291	8		282	9		
Sada-Gawa										55	1		20	1		
Shinji Lake	27,148	35	Z	25,153	20	Z	21,375	18	Y	48,694	20	Y	26,480	21	35GHL	
Shimane & Tottori Prefecture																
Nakaumi	81,596	40	Z	26,956	14	Z	62,110	18	Y	59,689	17	X	32,620	15	35GH	
Shizuoka Prefecture																
Asahata Yuusuichi										144	6		97	6		
Fuji-Gawa Kakou										175	6		104	6		
Hamana Lake	39,945	35		30,024	35											
Okegaya Marsh	950	13		1,912	15											
Tenryu River Mouth	2,005	18		2,051	20											
Tochigi Prefecture																
Inba-Numa										71	6		68	5		
Tochigi-Ken Nanbu Suiden-Chitai													60	2		
Tokushima Prefecture																
Yoshino River Estuary [S]	2,578	15	Z	3,435	23		2,338	20	Y	3,972	19	Z	1,852	9	G	
Tokyo Prefecture																
Cyuo Kaihin Koen (Tokyo Central Seaside Park)				308	9		193	14	X	235	11	Y	187	10	1	
Jyonan Jima Koen (Tokyo Jyonan Island Park)				464	3		718	9	W	171	4	X	249	8	1	
Kasai Kaihinkouen										493	6		1,165	8		
Keihin Jima (Tokyo Keihin Island)				433	14		810	14	X	715	14	X	562	14	1	
Tama-Gawa Kakou										221	5		203	4		
Tama-Gawa Karyuuiki										53	4		51	4		
Tokyo Port Bird Park [S]				830	22		407	20	X	759	21	Y	1,354	23	1	
Toukyou-Kou Yatyouen Shuuen										2	2					
Tyuuou -Bouhatei Uchi-Sotogawa Umetatechi										20	4		314	5		

Site Name ¹	1997			1998			1999			2000			2001			Threats ⁴
	Birds	Sp ²	C ³													
Toyama Prefecture																
Toyama Shinkou										70	2					
Yamaguchi Prefecture																
Ajisu Tideland	2,263	32	Y							9,921	31	Y				IL
Iwaguni-Shi Ozu Hasuta										172	7		116	9		
Yashiro [C]	22	3	W	29	3	W	18	2	X	14	1	X	21	1		I

Notes:

Site Name¹: [R] – Ramsar Site; [A] – East Asian Anatidae Site Network; [C] – North East Asian Crane Site Network; [S] – East Asian–Australasian Shorebird Site Network. Refer to Section 1.4. for further information.

Sp² – Species; C³ – Site Coverage: V – 25%; W – 25–50%; X – 50–75%; Y – 75–99%; Z – 100%.

Threats⁴: 1 – None, 2 – Sedimentation, 3 – Excessive overgrowth of vegetation, 4 – Cutting/clearance of vegetation, 5 – Eutrophication, 6 – Agriculture along drying margins, 7 – Excessive cattle grazing, 8 – Domestic sewage, 9 – Solid waste, A – Industrial waste, B – Oil pollution, C – Pesticides, D – Fertilizers, E – Mining, F – Hunting/trapping/poaching of birds, G – Small-scale fishing, H – Large-scale fishing, I – Partial reclamation, J – Complete reclamation, K – Dam/barrage construction, L – Tourism/recreation.

Table 46: Waterbird species counts reported to the AWC from Japan, 1997–2001

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Red-throated Diver	<i>Gavia stellata</i>						1
Black-throated Diver	<i>Gavia arctica</i>		1				3
Little Grebe	<i>Tachybaptus ruficollis</i>		1,568	883	701	399	354
Red-necked Grebe	<i>Podiceps grisegena</i>		310				2
Great Crested Grebe	<i>Podiceps cristatus</i>		1,320	761	510	430	339
Horned Grebe	<i>Podiceps auritus</i>		24	4	8		3
Black-necked Grebe	<i>Podiceps nigricollis</i>		1,541	837	237	216	127
unidentified grebes	Podicipedidae spp.			10		6	69
Great Cormorant	<i>Phalacrocorax carbo</i>		8,207	9,532	5,869	3,801	2,361
Japanese Cormorant	<i>Phalacrocorax capillatus</i>		23	1			
unidentified cormorants	<i>Phalacrocorax</i> spp.		51	55	5	561	7
Grey Heron	<i>Ardea cinerea</i>		942	701	653	599	318
Great White Egret	<i>Ardea alba</i>		214	225	189	180	127
Intermediate Egret	<i>Egretta intermedia</i>		12	5	7	3	2
Little Egret	<i>Egretta garzetta</i>		623	316	433	305	319
Chinese Egret	<i>Egretta eulophotes</i>	VU		1	1		
Eastern Reef Heron	<i>Egretta sacra</i>		1		1	1	
Cattle Egret	<i>Bubulcus ibis</i>				44	3	5
unidentified egrets	<i>Egretta/Bubulcus</i> spp.		1	5			
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>		55	46	67	75	44
Eurasian Bittern	<i>Botaurus stellaris</i>						1
unidentified Ardeidae	Ardeidae spp.					2	34
Eurasian Spoonbill	<i>Platalea leucorodia</i>		2			7	2
Black-faced Spoonbill	<i>Platalea minor</i>	EN	18	19	19	30	19
unidentified spoonbills	<i>Platalea</i> spp.						6
Swan Goose	<i>Anser cygnoides</i>	EN		1			
Bean Goose	<i>Anser fabalis</i>		657	408	236	365	171
Greater White-fronted Goose	<i>Anser albifrons</i>		1,173	1,562	1,466	1,827	2,308
Lesser White-fronted Goose	<i>Anser erythropus</i>	VU					2
Brent Goose	<i>Branta bernicla</i>		19	26	3		
Whooper Swan	<i>Cygnus cygnus</i>		4,893	6,031	2,811	1,907	2,344
Tundra Swan	<i>Cygnus columbianus</i>		1,930	418	1,987	1,247	1,131
Mute Swan	<i>Cygnus olor</i>		36	34	33	32	54
unidentified swans	<i>Cygnus</i> spp.					2	158
Ruddy Shelduck	<i>Tadorna ferruginea</i>					1	1
Common Shelduck	<i>Tadorna tadorna</i>		663	330	470	328	586
Mandarin Duck	<i>Aix galericulata</i>		1	3	1		
Eurasian Wigeon	<i>Anas penelope</i>		18,549	18,026	23,161	19,089	16,648
American Wigeon	<i>Anas americana</i>		12	6	3	3	
Falcated Teal	<i>Anas falcata</i>		1,873	2,561	973	947	724
Gadwall	<i>Anas strepera</i>		3,806	3,158	2,511	3,048	2,431
Baikal Teal	<i>Anas formosa</i>	VU	57	98	890	2,964	363
Common Teal	<i>Anas crecca</i>		18,841	17,864	19,311	9,115	13,588
Mallard	<i>Anas platyrhynchos</i>		56,526	40,111	46,905	39,724	47,973
Spot-billed Duck	<i>Anas poecilorhyncha</i>		14,343	12,042	11,813	9,568	8,776
Northern Pintail	<i>Anas acuta</i>		19,756	13,685	14,572	10,379	7,151

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Garganey	<i>Anas querquedula</i>						4
Northern Shoveler	<i>Anas clypeata</i>		3,641	3,106	1,873	1,449	1,141
Red-crested Pochard	<i>Netta rufina</i>		21				
Canvasback	<i>Aythya valisineria</i>				21	1	1
Common Pochard	<i>Aythya ferina</i>		60,595	32,424	44,027	41,918	28,550
Baer's Pochard	<i>Aythya baeri</i>	VU	1	18	1		
Tufted Duck	<i>Aythya fuligula</i>		46,986	35,124	33,426	48,480	23,985
Greater Scaup	<i>Aythya marila</i>		45,171	67,974	44,001	104,294	28,876
Harlequin Duck	<i>Histrionicus histrionicus</i>		1		3		
Black Scoter	<i>Melanitta nigra</i>				1	494	
White-winged Scoter	<i>Melanitta fusca</i>		21	1	20	21	4
Long-tailed Duck	<i>Clangula hyemalis</i>			43		110	444
Bufflehead	<i>Bucephala albeola</i>		1	1	1		
Common Goldeneye	<i>Bucephala clangula</i>		2,472	3,064	4,746	2,211	2,367
Snew	<i>Mergellus albellus</i>		651	357	382	129	163
Red-breasted Merganser	<i>Mergus serrator</i>		305	150	318	434	293
Goosander	<i>Mergus merganser</i>		928	962	773	617	741
unidentified ducks	Anatidae spp.		22,522	69,508	26,310	20,337	5,760
Eurasian Crane	<i>Grus grus</i>				3	4	
Hooded Crane	<i>Grus monacha</i>	VU	20	26	7,921	8,532	21
Sandhill Crane	<i>Grus canadensis</i>				1	1	
Red-crowned Crane	<i>Grus japonensis</i>	EN	294	254	414		405
White-naped Crane	<i>Grus vipio</i>	VU			2,536	3,094	
Siberian Crane	<i>Grus leucogeranus</i>	CR				1	
Demoiselle Crane	<i>Grus virgo</i>					1	
unidentified cranes	Gruidae spp.				5		
Water Rail	<i>Rallus aquaticus</i>		2	5	8	2	4
Ruddy-breasted Crake	<i>Porzana fusca</i>				3		1
Common Moorhen	<i>Gallinula chloropus</i>		60	63	88	55	71
Common Coot	<i>Fulica atra</i>		1,904	2,253	1,207	977	1,386
Greater Painted-Snipe	<i>Rostratula benghalensis</i>					8	4
Eurasian Oystercatcher	<i>Haematopus ostralegus</i>		8	20	8	78	92
Black-winged Stilt	<i>Himantopus himantopus</i>					320	225
Pied Avocet	<i>Recurvirostra avosetta</i>						2
Oriental Pratincole	<i>Glareola maldivarum</i>						1
Northern Lapwing	<i>Vanellus vanellus</i>		255	479	358	858	871
Grey-headed Lapwing	<i>Vanellus cinereus</i>		245	90	130	401	420
Pacific Golden Plover	<i>Pluvialis fulva</i>				3	1,815	2,652
Grey Plover	<i>Pluvialis squatarola</i>		163	694	581	2,786	3,691
Great Ringed Plover	<i>Charadrius hiaticula</i>		3	3	6	27	16
Long-billed Plover	<i>Charadrius placidus</i>		2	2	18	53	162
Little Ringed Plover	<i>Charadrius dubius</i>		4	18	2	331	287
Kentish Plover	<i>Charadrius alexandrinus</i>		737	653	728	7,225	6,349
Lesser Sandplover	<i>Charadrius mongolus</i>		3	14	10	908	986
Greater Sandplover	<i>Charadrius leschenaultii</i>					93	67
Black-tailed Godwit	<i>Limosa limosa</i>					2	1
Bar-tailed Godwit	<i>Limosa lapponica</i>					9	11
Whimbrel	<i>Numenius phaeopus</i>		3			71	68
Eurasian Curlew	<i>Numenius arquata</i>		144	133	129	619	597
Far Eastern Curlew	<i>Numenius madagascariensis</i>	nt				17	3
unidentified curlews	<i>Numenius</i> spp.		3				
Spotted Redshank	<i>Tringa erythropus</i>					6	3
Common Redshank	<i>Tringa totanus</i>			2	2	87	95
Marsh Sandpiper	<i>Tringa stagnatilis</i>					48	26
Common Greenshank	<i>Tringa nebularia</i>		2	8	2	177	270
Lesser Yellowlegs	<i>Tringa flavipes</i>					2	3
Green Sandpiper	<i>Tringa ochropus</i>		4	5	1	60	35
Wood Sandpiper	<i>Tringa glareola</i>		2			69	69
Terek Sandpiper	<i>Xenus cinereus</i>				1	8	12
Common Sandpiper	<i>Actitis hypoleucos</i>		57	46	46	242	287
Grey-tailed Tattler	<i>Heteroscelus brevipes</i>					72	168
Ruddy Turnstone	<i>Arenaria interpres</i>					383	390
Eurasian Woodcock	<i>Scolopax rusticola</i>					1	1
Latham's Snipe	<i>Gallinago hardwickii</i>					1	13
Pintail Snipe	<i>Gallinago stenura</i>						1
Common Snipe	<i>Gallinago gallinago</i>		73	34	84	281	409
Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>		1			24	18

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Red Knot	<i>Calidris canutus</i>			29			2
Sanderling	<i>Calidris alba</i>		106	152	140	1,267	1,726
Red-necked Stint	<i>Calidris ruficollis</i>			5	3	181	424
Little Stint	<i>Calidris minuta</i>					8	5
Temminck's Stint	<i>Calidris temminckii</i>					18	20
Long-toed Stint	<i>Calidris subminuta</i>					156	285
Rock Sandpiper	<i>Calidris ptilocnemis</i>					1	
Dunlin	<i>Calidris alpina</i>		7,343	12,133	6,591	39,214	38,320
Curlew Sandpiper	<i>Calidris ferruginea</i>						37
Spoon-billed Sandpiper	<i>Eurynorhynchus pygmaeus</i>	VU					1
Broad-billed Sandpiper	<i>Limicola falcinellus</i>					1	
Ruff	<i>Philomachus pugnax</i>					14	3
unidentified shorebirds	Charadrii spp.		191	15	44	4	3
Black-tailed Gull	<i>Larus crassirostris</i>		351	414	517	540	307
Mew Gull	<i>Larus canus</i>		341	286	620	332	176
Herring Gull	<i>Larus argentatus</i>		355	1,426	926	2,986	700
Thayer's Gull	<i>Larus thayeri</i>					1	
Slaty-backed Gull	<i>Larus schistisagus</i>		1,219	242	160	84	198
Glaucous-winged Gull	<i>Larus glaucescens</i>		3	1		2	7
Glaucous Gull	<i>Larus hyperboreus</i>		194	42	2	2	48
Black-headed Gull	<i>Larus ridibundus</i>		8,505	8,316	6,005	7,720	4,117
Saunders' Gull	<i>Larus saundersi</i>	VU	242	330	296	322	353
Black-legged Kittiwake	<i>Rissa tridactyla</i>						2
unidentified gulls	<i>Larus</i> spp.		2,198	151	1,791	7,409	3,764
Whiskered Tern	<i>Chlidonias hybridus</i>		10		9	5	13
Total Waterbirds			366,411	370,844	323,189	417,679	271,586
Osprey	<i>Pandion haliaetus</i>		1		2		
White-tailed Sea Eagle	<i>Haliaeetus albicilla</i>	nt	2		104	91	
Steller's Sea Eagle	<i>Haliaeetus pelagicus</i>	VU	2	57	494	205	
Marsh Harrier	<i>Circus aeruginosus</i>				2		
Eastern Marsh Harrier	<i>Circus spilintus</i>		1				

Note:

T¹ – Globally threatened species as identified by BirdLife International (2001): CR – Critically Endangered; EN – Endangered; VU – Vulnerable; nt – Near Threatened.

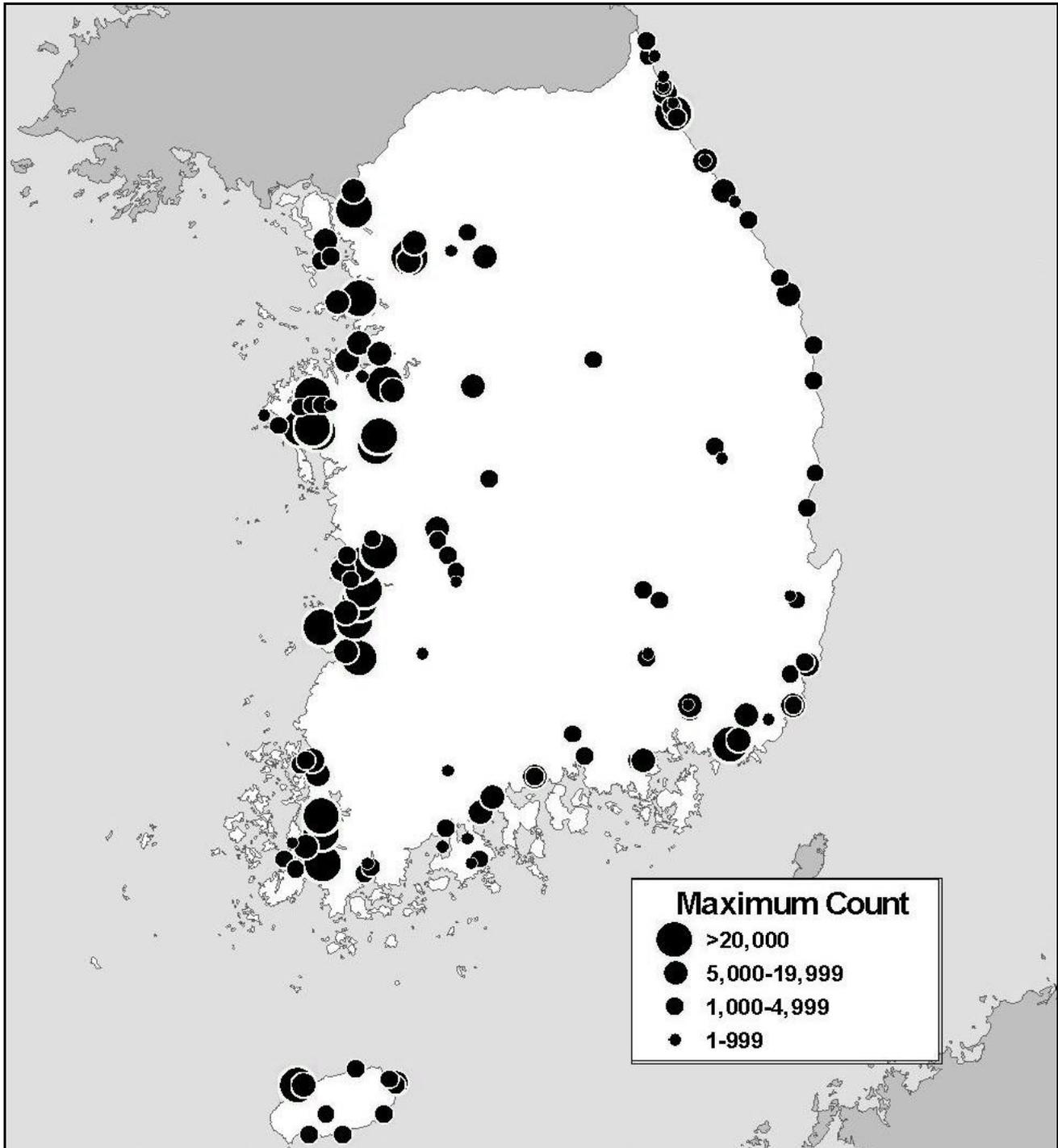
3.4.6 Republic of Korea

Comprehensive national coverage was achieved and data were received for all five years, 1997–2001. Data of 1999–2001 were taken from published reports by Ministry of Environment, Republic of Korea (1999 and 2001) and Ministry of Environment and National Institute of Environment Research, Republic of Korea (2000). A total of 141 sites were covered at least once (Figure 36 and Table 47). Total numbers of waterbirds counted were 551,999 (22 sites), 442,401 (15 sites), 1,044,877 (69 sites), 1,153,839 (100 sites) and 875,570 (112 sites) in 1997, 1998, 1999, 2000 and 2001 respectively. Twenty-three of the sites counted held more than 20,000 birds; of these, six sites held more than 100,000 birds: Gocheonam Reservoir (204,658 in 1999), Cheonsu Bay (192,885 in 1997), Dongrim Reservoir (156,243 in 2001), Siwha Reservoir (131,942 in 2000), Youngsan Reservoir (129,616 in 2000) and Asan Bay (121,261 in 1997). Upo Marsh (Woopo Wetland), one of the two Ramsar sites in the Republic of Korea, was counted regularly as were all four sites designated on the East Asian–Australasian Waterbird Site Networks (Table 47).

Totals of 112 species of waterbirds and seven species of wetland-dependent raptors were counted (Table 48). Twelve species each recorded more than 20,000 individuals: Mallard (434,472 in 2000), Baikal Teal (230,508 in 1999), Spot-billed Duck (147,936 in 2000), Greater White-fronted Goose (61,328 in 1999), Common Pochard (61,182 in 2000), Common Shelduck (44,710 in 2001), Bean Goose (37,464 in 1999), Common Teal (30,504 in 1999), Northern Pintail (25,864 in 2001), Black-tailed Gull (22,693 in 2001), Herring Gull (21,748 in 2001) and Eurasian Wigeon (20,414 in 1999).

Figure 36: AWC site coverage and numerical distribution of waterbirds in the Republic of Korea, 1997–2001

A dot represents the maximum number of waterbirds counted at a site during the AWC.



The highest count totals for fourteen globally threatened species were as follows: a solitary record of the Critically Endangered Siberian Crane in 2001; the Endangered Oriental Stork (11 each in 1999 and 2000), Black-faced Spoonbill (22 in 2001), Swan Goose (2,546 in 1999), Scaly-sided Merganser (13 in 2001), Red-crowned Crane (409 in 2001); the Vulnerable Baikal Teal (230,508 in 1999), Baer's Pochard (1 in 2001), Hooded Crane (161 in 2001), White-naped Crane (569 in 1999), Relict Gull (9 in 2000), Saunders' Gull (2,137 in 1998), Steller's Sea Eagle (2 each in 2000 and 2001) and the Imperial Eagle (1 in 1999). Near threatened species recorded were Far Eastern Curlew and White-tailed Sea Eagle.

The major use of and threat to the wetlands as reported by the counters was fishing, while reclamation of tidal land was another major threat. Although no information was received from 1998 onwards through the census, the threat of reclamation remains a major concern for the conservation of important sites in Korea, especially with the construction of the Saemungeum reclamation project (Moore and Moore 2003), which affects the Mankyung and Tongjin Estuaries (currently being debated in the national court) and proposed reclamation in Nakdong Estuary.

The census was coordinated by The Korean Association of Wildlife Conservation (1997–1998) and the National Institute of Environmental Research (1999–2001).

Table 47: AWC site coverage and waterbird and species totals in the Republic of Korea, 1997–2001

Site Name ¹	1997			1998			1999		2000		2001		Threats ²
	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	Birds	Sp ²	Birds	Sp ²	
Busan													
Hoidong Reservoir							775	8					
Nakdong Estuary	7,811	27	Y	17,521	28	Y	21,127	36	21,061	43	30,261	44	
Lower Nakdong River											14,223	37	
Chungbuk													
Baekgok Reservoir									9,218	4	849	4	
Chopyung Reservoir									89	3	1	1	
Chungju Reservoir							1,337	15	2,249	18	1,392	17	
Chungnam													
Bongseon Reservoir									3,203	8	4,236	10	
Bunam Reservoir							30,497	32	23,057	43	17,068	36	
Cheonsu Bay [A]	192,885	31	Y	92,267	30	Y							
Daea Reservoir											1,127	4	
Daechung Reservoir							2,860	13	5,710	25	2,468	12	
Daeho Lake	26,800	25	Y	46,958	21	Y	20,484	26	19,848	29	2,164	18	
Dongsang Reservoir											1	1	
Gangsu Reservoir									47	5	1,278	15	
Ganwol Reservoir							67,761	37	75,701	40	40,605	44	
Geum River (Kum River) Estuary							43,135	26	25,312	26	22,657	18	
Geum River (Kum River) Reservoir	75,753	30	Y	52,838	24	Y	55,467	20			49,379	19	
Geunheungmyun Coast, Taeangun									465	9	652	15	
Gyungcheon Reservoir							1,221	4	1,196	5	1,692	11	
Jamhong Reservoir									3,094	14	2,517	9	
Janghang Reservoir									2,856	11	1,827	18	
Nammyun Coast, Taeangun									741	9	2,534	14	
Pungjeon Reservoir									1,279	11	926	12	
Sapkyo Lake									21,206	21	1,982	11	
Sekmun Reclaimed Area									16,916	22	869	10	
Seongam Reservoir									5	2	356	6	
Tapjeong Reservoir									8,340	15	10,096	20	
Wangam Reservoir							2,244	19	1,358	6			
Yedang Reservoir							18,907	18	26,965	18	5,339	18	
Yubu Island									6,809	14	13,606	12	
Gangwon													
Ahyajin Port	756	10	Y										H
Bong Po	1,878	15	Y										H
Bukhan River							209	5	2,205	14	1,255	16	
Cheolwon Basin [C]	4,521	9	Y				42,865	21	4,934	18	1,668	17	
Cheongcho Lake (Lagoon)	557	16	Z				1,312	21	1,954	20	1,632	23	L
East Seashore And Port				4,960	31	Y							
Gangneung Coast									525	8			
Gangneung-Jumunjin Sea Coast									13,249	14	5,703	27	
Gangneung-Sokcho Coast							717	12					
Gangseong-Daejin Sea Coast	1,690	13	Z						443	23			H
Gansong-Myungpa Coast											1,082	20	
Geojin Port	392	5	Y										H
Gonghyunjin	160	8	Z										H
Gyungpo Lagoon	1,624	4	Z				2,418	27	2,557	22	831	3	L
Hwajinpo Lake	1,419	10	Z				323	14	220	11			L
Jumunjin-Yangyang Sea Coast									892	7	7,815	25	

Site Name ¹	1997			1998			1999		2000		2001		Threats ²
	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	Birds	Sp ²	Birds	Sp ²	
Samcheok-Gangneung Coast											2,419	24	
Sokcho-Gangseong Sea Coast									2,275	17	6,708	33	
Sokcho-Tongil Observatory Coast							861	15					
Songji Lake							1,675	7					
Yangyang-Sokcho Sea Coast									1,017	20	2,867	24	
Youngrang Lake							286	8	22	2	6	3	
Gyeongbuk													
Andong Reservoir							718	11			1,011	14	
Bomun Reservoir											776	5	
Deokdong Reservoir											1,800	7	
Geumho River (Taegu)							2,788	19	2,214	20	3,253	21	
Hwawon Flood Plain							3,256	21	3,863	22	2,025	18	
Imha Reservoir							492	14			492	14	
Upper Nakdong River							11,193	28	9,137	30			
Pohang-Uljin Coast							2,483	24					
Pohang-Yeongdeok Sea Coast									757	17	1,614	17	
Pyunghae-Uljin Sea Coast									1,230	17	4,344	31	
Uljin-Gangneung Coast							6,350	31					
Uljin-Wondeok Sea Coast									3,746	25	1,719	29	
Wondeok-Samcheok Sea Coast									1,920	14	810	26	
Yeongdeok-Pyunghae Sea Coast									32	7	1,362	21	
Gyeonggi													
Asan Bay	121,261	25	Y	29,523	19	Y	56,355	27	3,540	12	3,157	18	
Asan Lake (Reservoir)									14,300	15	3,265	11	
Daebu Island									14,705	11	849	4	
Han River (Haengju Bridge-Paland Dam)	13,279	18	Y	24,790	22	Y	24,960	24	16,552	21	6,896	17	G
Han River Estuary [C]	20,386	18	Y	15,279	12	Y	25,120	13	10,205	15	4,760	12	
Imjin River Estuary							18,729	14	6,066	7	329	4	
Jungrang Stream							2,580	10	2,996	11	5,335	13	
Namhan River							110	4	1,065	18	5,689	24	
Namyang Bay	6,264	13	Y				4,426	8	3,252	14	1,081	17	
Namyang Reservoir							1,717	6	7,100	10	7,833	13	
Paldang Dam							243	4	940	13	101	5	
Siwha Reservoir							85,962	24	131,942	31	120,116	33	
Tan Stream							6,475	15	3,791	13	3,684	14	
Gyeongnam													
Busan-Guryongpo Coast							3,995	23	5,913	26			
Busan-Ulsan Coast											2,764	26	
Danghang Bay									5,919	18			
Donghaemyun, Goseonggun							6,221	23			5,631	26	
Dongpan Reservoir											5,738	15	
Galsa Bay				4,894	28	Y							
Hoiya Reservoir											2,808	13	
Jinyang Reservoir							2,378	14	482	12	1,768	20	
Junam Reservoirs	9,429	24	Y	11,108	23	Y	5,476	19	4,110	21	2,361	16	
Mokpo Marsh											525	11	
Oryundae Reservoir											682	9	
Sacheon Bay							3,344	22	2,619	19	2,337	18	
Sajipo Marsh											453	9	
Sangnam Reservoir											431	6	
Upo Marsh [R]	1,817	15	Y				2,722	15	3,972	20	2,869	12	
Incheon													
Gangwha Island: South Coast Mudflats							6,947	14	9,168	10	300	8	
Youngjong Island: Unbukdong									2,202	11	1,260	10	
Youngjong Island: Unnamdong									2,773	15	969	11	
Jeju													
Aewol-Gangjeong Coast							32,106	34					
Hadori	3,140	23					4,378	26	1,386	32	3,495	32	
Hamduck-Pyoseon Coast							4,524	23	2,357	29			
Jeju City-Daejeong Sea Coast									7,860	44	8,946	44	
Jeju Island				3,734	30	Y							
Seoguipo-Anduck Sea Coast									3,291	20			
Seongsan-Namwon Sea Coast									1,215	20	1,890	23	
Seongsanpo Lake	2,712	20					2,922	30	5,089	36	3,121	32	

Site Name ¹	1997			1998			1999		2000		2001		Threats ⁴
	Birds	Sp ²	C ³	Birds	Sp ²	C ³	Birds	Sp ²	Birds	Sp ²	Birds	Sp ²	
Seoquipo-Deajeong Coast											4,013	20	
Sinchon-Jongdal Coast											2,886	38	
Jeonbuk													
Cheongho Reservoir							2,737	11	25,628	12	167	5	
Dongjin (Tongjin) River Estuary [S]				16,461	16	Y	13,538	18	85,424	15	9,425	19	
Dongrim Reservoir							14,712	10	127,920	12	156,243	12	
Gomso Bay							6,769	20	11,308	24	2,332	7	
Joryu Reservoir							3,815	14	13,572	8	1,251	8	
Mangyung River Estuary				22,144	12	Y	13,051	18	56,861	22	89,401	18	
Mankyung and Tongjin Estuary	57,466	26	Y										
Okgu Reservoir							319	4	3,677	11	51	5	
Okjeong Reservoir							327	5					
Jeonnam													
Boseong and Deukryang Bay							2,070	20	4,489	21	4,162	17	
Dangduri Reclaimed Area									348	10	753	10	
Dunjeon Reservoir									550	9	1,627	6	
Gaecho Reservoir									784	7	347	9	
Gangjin Bay									1,921	20	2,438	13	
Geumho Reservoir							64,665	20	3,253	19	10,248	24	
Gocheonam Reservoir							204,658	25	14,523	22	8,108	20	
Gunnae Reclaimed Area							609	27	1,418	13	1,504	19	
Gwangyang and Galsa Bay							3,098	19	9,804	34	12,677	34	
Haechang Bay									1,493	12			
Haejemyun, Muangun									4,151	20	2,112	15	
Hyungyungmyun and Haejemyun, Muangun							2,283	24					
Hyungyungmyun, Muangun									7,632	20	12,680	24	
Jeomam Reservoir									364	12	106	8	
Juam Reservoir							134	3					
Mandeok Reclaimed Area									463	14	657	4	
Muan Reservoir							3,599	26	3,791	18	6,080	28	
Podumyun Reclaimed Area									105	9	631	12	
Sanae Reclaimed Reservoir									909	12	2,176	12	
Suncheon Bay				16,405	18	Y	5,192	15	7,513	25	6,478	20	
Yeuja Bay									18,596	23	15,724	28	
Youngsan Reservoir (Estuary)				83,519	6	Y	53,691	24	129,616	12	4,949	19	
Yungam Reservoir							4,210	12	13,065	22	8,869	19	
Ulsan													
Ulsan Bay											3,697	32	
Ulsan-Guryongpo Coast											11,119	15	

Notes:

Site Name¹: [R] – Ramsar Site; [A] – East Asian Anatidae Site Network; [C] – North East Asian Crane Site Network; [S] – East Asian–Australasian Shorebird Site Network. Refer to Section 1.4 for further information.

Sp² – Species. C³ – Site Coverage: V – 25%; W – 25–50%; X – 50–75%; Y – 75–99%; Z – 100%.

Threats⁴: 1 – None, 2 – Sedimentation, 3 – Excessive overgrowth of vegetation, 4 – Cutting/clearance of vegetation, 5 – Eutrophication, 6 – Agriculture along drying margins, 7 – Excessive cattle grazing, 8 – Domestic sewage, 9 – Solid waste, A – Industrial waste, B – Oil pollution, C – Pesticides, D – Fertilizers, E – Mining, F – Hunting/trapping/poaching of birds, G – Small-scale fishing, H – Large-scale fishing, I – Partial reclamation, J – Complete reclamation, K – Dam/barrage construction, L – Tourism/recreation.

Table 48: Waterbird species counts reported to the AWC from the Republic of Korea, 1997–2001

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Red-throated Diver	<i>Gavia stellata</i>		1	1	17	41	82
Black-throated Diver	<i>Gavia arctica</i>				5	29	68
Pacific Diver	<i>Gavia pacifica</i>		3	1	16	20	45
Little Grebe	<i>Tachybaptus ruficollis</i>		395	309	1,195	1,622	1,039
Red-necked Grebe	<i>Podiceps grisegena</i>				2	1	52
Great Crested Grebe	<i>Podiceps cristatus</i>		1,262	1,485	1,805	1,297	2,473
Horned Grebe	<i>Podiceps auritus</i>		3	1	24	29	66
Black-necked Grebe	<i>Podiceps nigricollis</i>		34	65	204	1,301	2,176
Great Cormorant	<i>Phalacrocorax carbo</i>		1,343	176	269	1,707	1,069
Japanese Cormorant	<i>Phalacrocorax capillatus</i>			93	635	598	783
Pelagic Cormorant	<i>Phalacrocorax pelagicus</i>		317		36	136	543

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
unidentified cormorants	<i>Phalacrocorax</i> spp.		327	100		2	
Grey Heron	<i>Ardea cinerea</i>		154	301	1,088	1,248	977
Purple Heron	<i>Ardea purpurea</i>						1
Great White Egret	<i>Ardea alba</i>		31	262	408	705	341
Intermediate Egret	<i>Egretta intermedia</i>		9		6	1	1
Little Egret	<i>Egretta garzetta</i>		29	61	253	453	258
Eastern Reef Heron	<i>Egretta sacra</i>			7	14	24	19
unidentified egrets	<i>Egretta/Bubulcus</i> spp.					75	
Chinese Pond-Heron	<i>Ardeola bacchus</i>						1
Green-backed Heron	<i>Butorides striatus</i>			1	1		
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>		12	2	165	35	60
Eurasian Bittern	<i>Botaurus stellaris</i>				1	9	3
Oriental Stork	<i>Ciconia boyciana</i>	EN	1		11	11	5
Eurasian Spoonbill	<i>Platalea leucorodia</i>		8	18	22	14	32
Black-faced Spoonbill	<i>Platalea minor</i>	EN	17	17	14	21	22
Swan Goose	<i>Anser cygnoides</i>	EN		68	2,546	14	13
Bean Goose	<i>Anser fabalis</i>		18,733	24,298	37,464	35,123	26,789
Greater White-fronted Goose	<i>Anser albifrons</i>		9,984	9,329	61,328	21,212	11,673
Greylag Goose	<i>Anser anser</i>						1
Snow Goose	<i>Anser caerulescens</i>				1	2	1
unidentified grey geese	<i>Anser</i> spp.		4,053			3,763	
Brent Goose	<i>Branta bernicla</i>			115	12		393
Whooper Swan	<i>Cygnus cygnus</i>		2,481	1,150	1,955	2,757	3,248
Tundra Swan	<i>Cygnus columbianus</i>		175	388	792	502	301
Mute Swan	<i>Cygnus olor</i>		2	82			
unidentified swans	<i>Cygnus</i> spp.					318	
Ruddy Shelduck	<i>Tadorna ferruginea</i>		1,640	24	2,658	8,292	4,498
Common Shelduck	<i>Tadorna tadorna</i>		6,369	16,052	20,459	44,396	44,710
Mandarin Duck	<i>Aix galericulata</i>		15	5	2,143	1,612	1,782
Eurasian Wigeon	<i>Anas penelope</i>		2,745	2,994	20,414	7,199	7,211
American Wigeon	<i>Anas americana</i>					5	13
Falcated Teal	<i>Anas falcata</i>		505	943	1,912	1,642	2,032
Gadwall	<i>Anas strepera</i>		2,123	2,158	4,618	3,855	4,777
Baikal Teal	<i>Anas formosa</i>	VU	85,151	91,650	230,508	211,704	185,699
Common Teal	<i>Anas crecca</i>		3,881	6,684	30,504	20,525	17,033
Mallard	<i>Anas platyrhynchos</i>		189,679	196,137	340,579	434,472	264,118
Spot-billed Duck	<i>Anas poecilorhyncha</i>		21,747	16,807	103,108	147,936	93,369
Northern Pintail	<i>Anas acuta</i>		14,059	16,842	22,475	24,803	25,864
Garganey	<i>Anas querquedula</i>				250		4
Northern Shoveler	<i>Anas clypeata</i>		1,285	900	4,014	2,677	3,038
Red-crested Pochard	<i>Netta rufina</i>			1			
Canvasback	<i>Aythya valisineria</i>				1		
Common Pochard	<i>Aythya ferina</i>		4,299	10,729	19,565	61,182	33,070
Baer's Pochard	<i>Aythya baeri</i>	VU					1
Tufted Duck	<i>Aythya fuligula</i>		1,588	3,403	4,471	5,124	5,334
Greater Scaup	<i>Aythya marila</i>		136	44	3,549	8,405	9,742
Harlequin Duck	<i>Histrionicus histrionicus</i>		39	2	25	10	37
Black Scoter	<i>Melanitta nigra</i>			57	28	41	225
White-winged Scoter	<i>Melanitta fusca</i>		22	16	5	135	1,678
Long-tailed Duck	<i>Clangula hyemalis</i>				1	1	
Common Goldeneye	<i>Bucephala clangula</i>		550	427	2,353	1,465	2,107
Smew	<i>Mergellus albellus</i>		238	330	765	722	895
Red-breasted Merganser	<i>Mergus serrator</i>		150	148	436	541	1,817
Scaly-sided Merganser	<i>Mergus squamatus</i>	EN					13
Goosander	<i>Mergus merganser</i>		5,412	8,891	9,041	5,176	5,514
unidentified ducks	Anatidae spp.		147,250	2,400	37,374	5,437	11,378
Eurasian Crane	<i>Grus grus</i>				1	1	1
Hooded Crane	<i>Grus monacha</i>	VU	5	98	92	114	161
Red-crowned Crane	<i>Grus japonensis</i>	EN	94		382	338	409
White-naped Crane	<i>Grus vipio</i>	VU	180		569	387	436
Siberian Crane	<i>Grus leucogeranus</i>	CR				1	
Common Moorhen	<i>Gallinula chloropus</i>			6	2	3	11
Common Coot	<i>Fulica atra</i>		2,288	3,582	2,059	2,307	1,626
Greater Painted-Snipe	<i>Rostratula benghalensis</i>				2	1	
Eurasian Oystercatcher	<i>Haematopus ostralegus</i>		1,169	2,700	3,984	532	2,516

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Northern Lapwing	<i>Vanellus vanellus</i>		12	5	138	192	98
Pacific Golden Plover	<i>Pluvialis fulva</i>						5
Grey Plover	<i>Pluvialis squatarola</i>		1,011	1,702	2,356	4,680	1,758
Long-billed Plover	<i>Charadrius placidus</i>				8	17	12
Little Ringed Plover	<i>Charadrius dubius</i>				4	20	21
Kentish Plover	<i>Charadrius alexandrinus</i>		3	43	338	648	1,052
Lesser Sandplover	<i>Charadrius mongolus</i>				15	2	5
Bar-tailed Godwit	<i>Limosa lapponica</i>					1	31
Whimbrel	<i>Numenius phaeopus</i>				1	42	3
Eurasian Curlew	<i>Numenius arquata</i>		397	2,084	1,589	1,725	2,131
Far Eastern Curlew	<i>Numenius madagascariensis</i>	nt	1		31	337	31
Spotted Redshank	<i>Tringa erythropus</i>					1	
Common Greenshank	<i>Tringa nebularia</i>				30	5	2
Green Sandpiper	<i>Tringa ochropus</i>			2	8	29	7
Wood Sandpiper	<i>Tringa glareola</i>					2	22
Terek Sandpiper	<i>Xenus cinereus</i>				50	1	
Common Sandpiper	<i>Actitis hypoleucos</i>			1	72	65	62
Grey-tailed Tattler	<i>Heteroscelus brevipes</i>				8		
Ruddy Turnstone	<i>Arenaria interpres</i>						17
Solitary Snipe	<i>Gallinago solitaria</i>						1
Common Snipe	<i>Gallinago gallinago</i>					6	4
Great Knot	<i>Calidris tenuirostris</i>						4
Sanderling	<i>Calidris alba</i>		12	60	133	42	967
Red-necked Stint	<i>Calidris ruficollis</i>				367	754	467
Dunlin	<i>Calidris alpina</i>		2,170	3,490	6,091	11,964	6,651
Broad-billed Sandpiper	<i>Limicola falcinellus</i>						8
unidentified shorebirds	Charadrii spp.		4,761			225	
Black-tailed Gull	<i>Larus crassirostris</i>		1,196	3,454	22,494	13,745	22,693
Mew Gull	<i>Larus canus</i>		1,324	189	855	14,549	13,778
Herring Gull	<i>Larus argentatus</i>		4,072	4,843	20,285	15,330	21,748
Heuglin's Gull	<i>Larus heuglini</i>					2	10
Yellow-legged Gull	<i>Larus cachinnans</i>				2	97	37
Slaty-backed Gull	<i>Larus schistisagus</i>		462	42	2,943	3,239	2,243
Glaucous-winged Gull	<i>Larus glaucescens</i>				54	160	12
Glaucous Gull	<i>Larus hyperboreus</i>		6		21	35	96
Great Black-headed Gull	<i>Larus ichthyæetus</i>		1				
Relict Gull	<i>Larus relictus</i>	VU				9	
Black-headed Gull	<i>Larus ridibundus</i>		1,759	1,989	7,017	9,150	17,422
Saunders' Gull	<i>Larus saundersi</i>	VU	567	2,137	713	1,650	519
Black-legged Kittiwake	<i>Rissa tridactyla</i>		620				57
Sabine's Gull	<i>Xema sabini</i>						3
unidentified gulls	<i>Larus</i> spp.		1,630		616	943	
Little Tern	<i>Sterna albifrons</i>				2		
Total Waterbirds			551,999	442,401	1,044,877	1,153,839	875,570
Osprey	<i>Pandion haliaetus</i>		1		15	17	19
White-tailed Sea Eagle	<i>Haliaeetus albicilla</i>	nt			22	16	22
Steller's Sea Eagle	<i>Haliaeetus pelagicus</i>	VU				2	2
Marsh Harrier	<i>Circus aeruginosus</i>				2		7
Hen Harrier	<i>Circus cyaneus</i>				11	29	29
Pied Harrier	<i>Circus melanoleucos</i>					2	2
Imperial Eagle	<i>Aquila heliaca</i>	VU			1		

Note:

T¹ – Globally threatened species as identified by BirdLife International (2001): CR – Critically Endangered; EN – Endangered; VU – Vulnerable; nt – Near Threatened.

3.4.7 Mongolia

Most wetlands are frozen in Mongolia during the January census and few waterbirds are recorded. The following account includes represents the first information from Mongolia to be included in the AWC. Count data were taken from Batbayar (2003) and from the author himself.

A survey was carried out at Khar Us Nuur National Park (a Ramsar site) on 19-20 January 2000 (Figure 37 and Table 49). At the time of the survey, the rivers and lakes were mostly frozen over; birds were present only on ice-free patches of water. A total of 993 waterbirds of three Anatid species were recorded: Whooper Swan - 397, Common Goldeneye – 466 and Goosander – 130 (see Table 50). In addition, two wetland-dependent raptor species were recorded including the Near Threatened White-tailed Sea Eagle.

Major threats to the site are sedimentation, cutting/clearance of vegetation, cattle grazing, fertilizers, large-scale fishing, partial reclamation and dam/barrage construction.

Figure 37: Location of AWC count site of Khar Us Nuur National Park in Mongolia in 2000

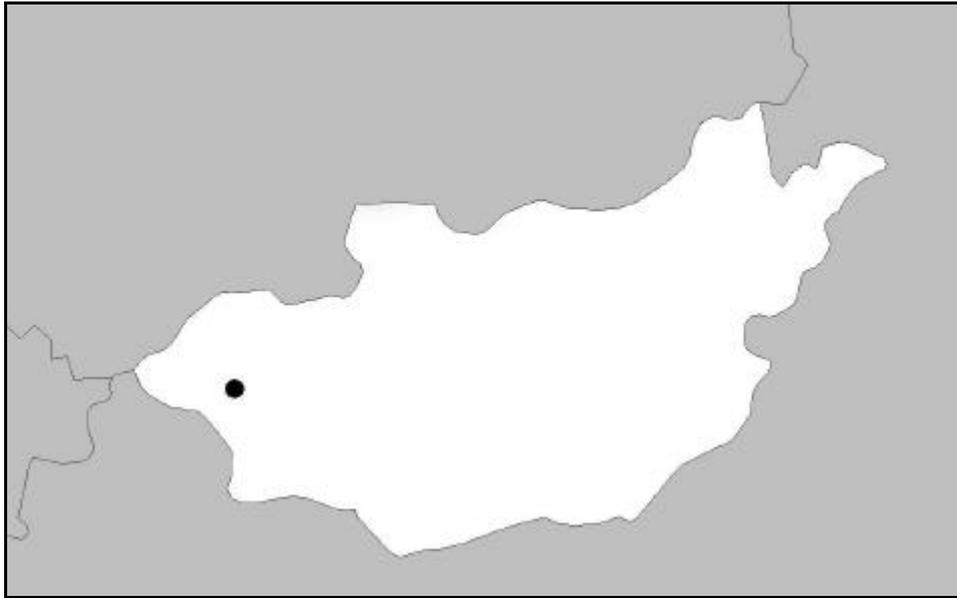


Table 49: AWC site coverage and waterbird and species totals in Mongolia in 2000

Site Name ¹	2000	
	Birds	Species
Khovd Province		
Khar Us Nuur National Park [R]	997	5

Note:

Site Name¹: [R] – Ramsar Site; refer to Section 1.4.2 for further information.

Table 50: Waterbird species counts reported to the AWC from Mongolia in 2000

English Name	Scientific Name	T ¹	2000
Whooper Swan	<i>Cygnus cygnus</i>		397
Common Goldeneye	<i>Bucephala clangula</i>		466
Goosander	<i>Mergus merganser</i>		130
Total Waterbirds			993
White-tailed Sea Eagle	<i>Haliaeetus albicilla</i>	nt	2
Hen Harrier	<i>Circus cyaneus</i>		2

Note:

T¹ – Globally threatened species as identified by BirdLife International (2001); nt – Near Threatened.

3.4.8 Eastern Russia (Asian Part)

The data were contributed by individual counters. Count data were received in all five years, 1997–2001, and a total of three sites were covered at least once (Figure 38 and Table 51). Total numbers of waterbirds counted were 10,274 (2 sites), 3,643 (1 site), 4,934 (2 sites), 3,099 (1 site) and 6,441 (1 site) in 1997, 1998, 1999, 2000 and 2001 respectively.

Totals of 16 species of waterbirds and three species of wetland-dependent raptors were counted (see Table 52). Long-tailed Duck (7,000 in 1997) and Common Goldeneye (6,000 in 2001) were the most numerous species. Three individuals each of two globally Vulnerable species, Pallas’s Sea Eagle and Steller’s Sea Eagle, were recorded. One Near Threatened species, White-tailed Sea Eagle was also recorded.

Information on uses of and threats to sites was not available.

Figure 38: AWC site coverage and numerical distribution of waterbirds in eastern Russia, 1997–2001
A dot represents the maximum number of waterbirds counted at a site during the AWC.

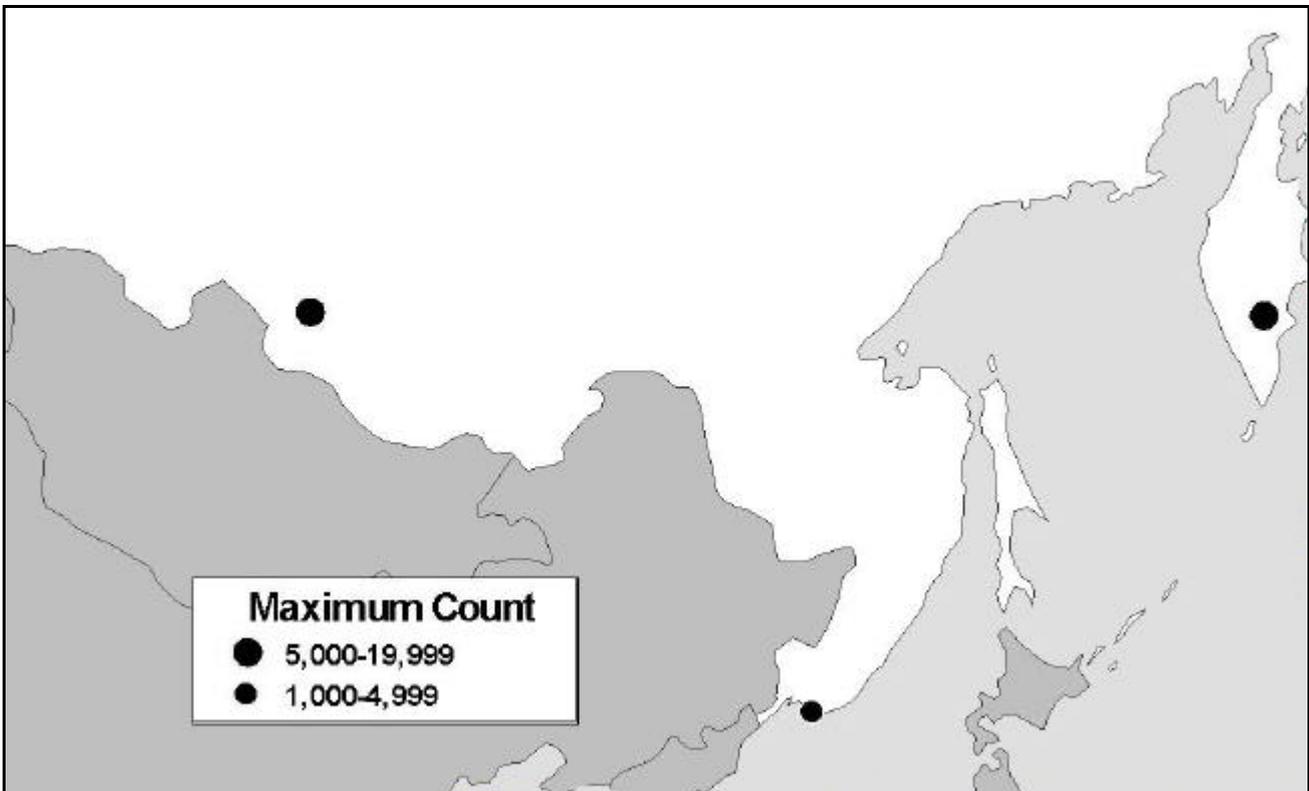


Table 51: AWC site coverage and waterbird and species totals in eastern Russia, 1997–2001

Site Name	1997			1998			1999			2000			2001		
	Birds	Sp ¹	C ²												
<i>Kamchatskaya Oblast</i>															
Kamchatka – Petropavlovsk – Kamchatsky	7,617	11													
<i>Primorye Territory</i>															
Sea Coast of the South Primorye							1,109	13							
<i>Irkutskaya Oblast</i>															
Upper Stream of Angara River in Irkutsk	2,660	2	W	3,643	5	W	3,831	3	W	3,099	3	W	6,441	3	Y

Notes:
Sp¹ – Species; C² – Site Coverage: V – 25%; W – 25–50%; X – 50–75%; Y – 75–99%; Z – 100%.

Table 52: Waterbird species counts reported to the AWC from eastern Russia, 1997–2001

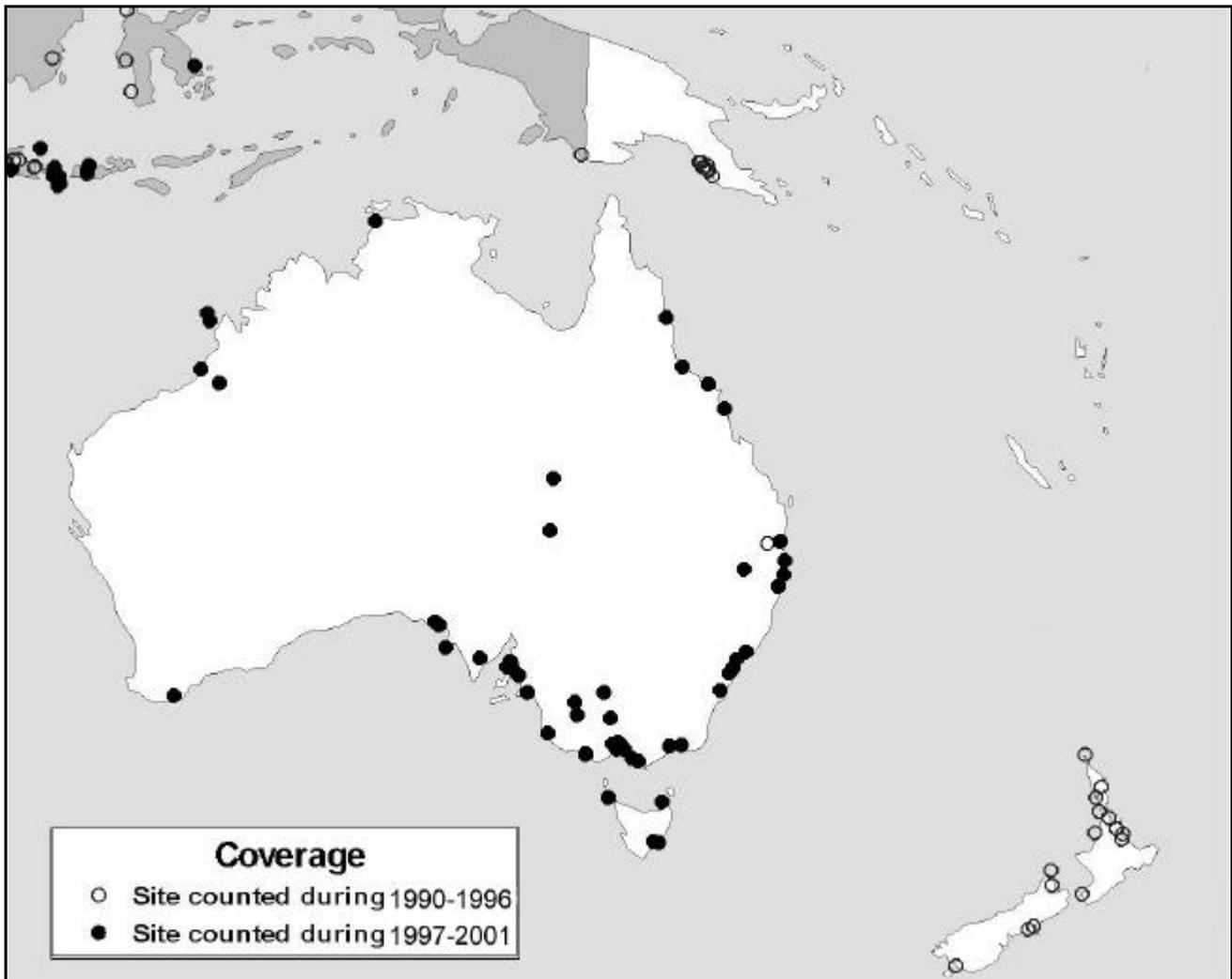
English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Great Cormorant	<i>Phalacrocorax carbo</i>		400				
Pelagic Cormorant	<i>Phalacrocorax pelagicus</i>				18		
Mallard	<i>Anas platyrhynchos</i>		160	630	326	183	360
Steller's Eider	<i>Polysticta stellerii</i>		20				
Harlequin Duck	<i>Histrionicus histrionicus</i>		20		507		
White-winged Scoter	<i>Melanitta fusca</i>				48		
Long-tailed Duck	<i>Clangula hyemalis</i>		7,000	2	89		
Common Goldeneye	<i>Bucephala clangula</i>		2,500	3,000	3,500	2,900	6,000
Smew	<i>Mergellus albellus</i>			1			
Red-breasted Merganser	<i>Mergus serrator</i>		12				
Goosander	<i>Mergus merganser</i>		2	10	31	16	81
unidentified ducks	Anatidae spp.				8		
Mew Gull	<i>Larus canus</i>				40		
Herring Gull	<i>Larus argentatus</i>		20				
Slaty-backed Gull	<i>Larus schistisagus</i>		80		65		
Glaucous-winged Gull	<i>Larus glaucescens</i>		10				
Glaucous Gull	<i>Larus hyperboreus</i>		50		35		
unidentified gulls	<i>Larus</i> spp.				267		
Total Waterbirds			10,274	3,643	4,934	3,099	6,441
Pallas's Sea Eagle	<i>Haliaeetus leucoryphus</i>	VU	3				
White-tailed Sea Eagle	<i>Haliaeetus albicilla</i>	nt			3		
Steller's Sea Eagle	<i>Haliaeetus pelagicus</i>	VU			3		

Note:T¹ – Globally threatened species as identified by BirdLife International (2001): VU – Vulnerable; nt – Near Threatened.

3.5 Australasia

For the Australasian region information was received only from Australia, with no counts received from New Zealand and Papua New Guinea during this period (Figure 39). Waterbird count data are being collected regularly in New Zealand and efforts are underway to include these counts in future reports. Concern for counters' safety has prevented participants in Papua New Guinea from undertaking counts over the last few years, but efforts are being made to establish links with local bird watchers and tourists in order to collect information.

Figure 39: AWC site coverage in Australasia, 1990-2001



3.5.1 Australia

The census in Australia focuses on shorebirds, and a total of 55 sites were counted at least once during 1997-2001 (Figure 40 and Table 53). Data were compiled from Harris (1997, 1999, 2000), Reid and Jaensch (1999), Skewes (2002), Wilson (2000a, 2000b, 2001a, 2001b) and Wilson and Hassell (1998). Total numbers of waterbirds counted were 175,391 (23 sites), 197,206 (26 sites), 286,604 (27 sites), 344,111 (28 sites) and 329,332 (29 sites) for 1997, 1998, 1999, 2000 and 2001 respectively. Fourteen sites each recorded more than 20,000 waterbirds, namely Moreton Bay, Coongie Lakes System, Gulf St Vincent, Penrice Saltfield, Price Saltfield, Spencer Gulf, The Coorong, Western Eyre Peninsula, Bellarine Peninsula, Port Phillip Bay, Corner

Inlet, Western District Lakes, 80 Mile Beach and Broome. A total of 10 Ramsar sites were counted at least once, namely the Hunter Estuary, Moreton Bay, Coongie Lakes System, The Coorong, Kerang, Port Phillip Bay, Corner Inlet, Western District Lakes, Western Port Bay and 80 Mile Beach. Seven of these sites each had counts of more than 20,000 waterbirds. Six of the 11 sites in Australia on the East Asian–Australasian Shorebird Site Network were covered during this period (Table 53).

A total of 82 species of waterbirds were counted (Table 54). The most abundant species were Red-necked Stint (124,538 in 2001), Banded Stilt (70,165 in 2001), Bar-tailed Godwit (48,876 in 1999), Sharp-tailed Sandpiper (34,800 in 2000), Curlew Sandpiper (26,896 in 2000), Grey Teal (26,490 in 1999), Great Knot (24,296 in 1997), Pink-eared Duck (18,820 in 1999) and Red Knot (15,089 in 2000).

Five Near Threatened species, Bush Thick-knee, Beach Thick-knee (Australasian endemic), Hooded Plover (Australian endemic), Far Eastern Curlew and Asian Dowitcher, were also recorded.

The census was organized by the Australian Wader Studies Group.

Figure 40: AWC site coverage and numerical distribution of waterbirds in Australia, 1997–2001

A dot represents the maximum number of waterbirds counted at a site during the AWC.

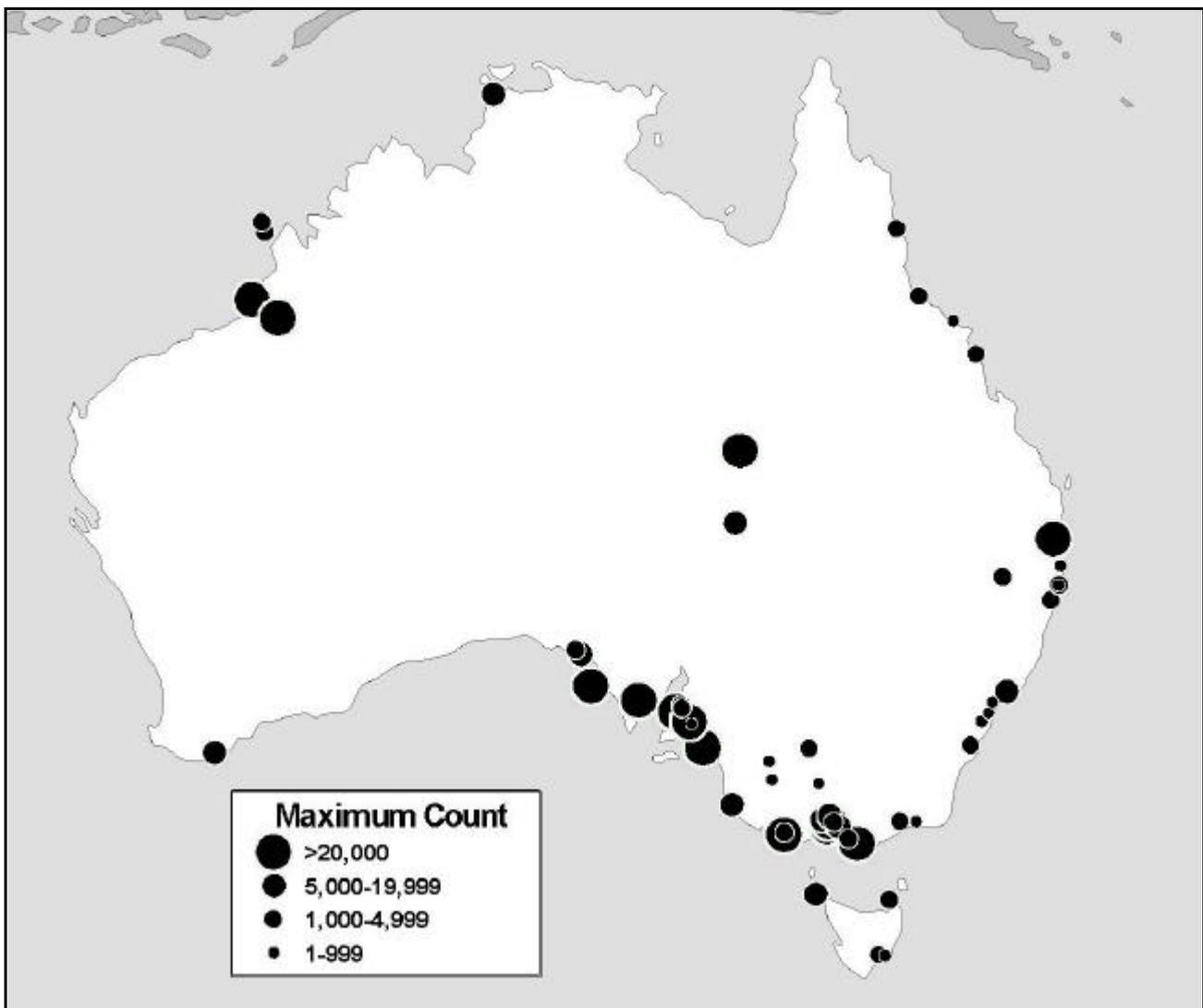


Table 53: AWC site coverage and waterbird and species totals in Australia, 1997–2001

Site Name ¹	1997		1998		1999		2000		2001	
	Birds	Species								
New South Wales										
Botany Bay	980	9	983	9	967	11				
Brisbane Water							100	6		
Clarence Estuary	1,779	19			1,489	17	124	5		
Hunter Estuary [R] [S]	5,664	16			3,200	14			3,249	19
Parramatta Estuary	503	6	542	11			406	8		
Richmond Estuary	1,252	22	1,242	19	1,012	21				
Shoalhaven Estuary	578	6	493	11	1,250	11				
Tuggerah Lake	148	10	898	13	473	13	524	12		
Tweed Estuary			981	16	286	7	502	14	483	13
Northern Territory										
Darwin	6,086	10								
Queensland										
Bowen							563	20	436	15
Cairns			911	20			1,537	21		
Gladstone			2,141	15	541	13				
Mackay							2,210	15		
Moreton Bay [R] [S]			17,805	29	27,038	25	16,559	26	25,281	26
Townsville			1,337	18	85	8			4,068	13
South Australia										
Cliton Conservation Park									4,941	11
Coongie Lakes System [R]					64,891	45				
Embarka Swamp					7,078	44				
Eyre Island							5,453	19		
Greenfields									294	12
Gulf St Vincent							41,754	30		
Penrice Saltfields									31,184	20
Price Saltfields									22,684	20
Sandy Point									1,617	14
SE Coast of South Australia	5,278	14	1,415	11	5,552	15	3,222	16	3,636	20
Spencer Gulf							38,199	25		
St. Peter Island							3,468	16		
The Coorong [R] [S]							69,249	22	48,425	18
Western Eyre Peninsula							31,853	27		
Tasmania										
Cape Portland	914	14	1514	15	1,262	17	1,143	18	1,843	18
East Derwent (Pittwater)	3,208	14	3,589	13	3,606	16	3,922	16	3,192	12
Marion Bay	502	6	160	6	858	9	458	8	669	7
Tasmania – NW Coast	14,909	21	11,035	22	11,576	23	3,364	12	3,996	19
Victoria										
Altona	4,212	12	4,674	11	4,846	10			5,641	10
Anderson Inlet									4,383	15
Bellarine Peninsula	11,002	24	19,090	23	22,701	25	22,169	24	21,564	27
Bendigo & North Vic									756	8
East Gippsland Coast									817	16
Eastern Port Phillip	486	13	298	7	840	9	3,358	13	596	10
Gippsland Lakes & Coast									2,886	17
Horsham Area									55	2
Kerang/Swan Hill [R]									3,578	13
Northwest Lakes									489	8
Port Phillip Bay [R] [S]									38,709	29
Shallow Inlet (Corner Inlet)[R] [S]	28,754	24	27,034	21	30,561	20	38,045	18	37,441	17
Torquay to Vic Border									3,396	24
Werribee	16,307	22	16,016	21	17,419	21	14,440	22	14,827	19
Western District Lakes [R]									27,031	12
Western Port Bay [R] [S]	10,712	16	14,011	16	13,670	17			9,683	16
Western Australia										
80 Mile Beach [R]	38,236	19	37,221	24	32,796	18	25,623	22		
Albany	6,680	21	9,775	18	1,773	15	1,300	16	1,308	15
Broome	16,404	20	18,453	22	29,868	21	14,522	18		
Lacepeda Island			3,285	21						
Swan River	797	10	2,303	11	966	12	44	5	174	8

Note: Site Name¹: [R] – Ramsar Site; [S] – East Asian–Australasian Shorebird Site Network. Refer to Section 1.4 for more information.

Table 54: Waterbird species counts reported to the AWC from Australia, 1997–2001

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Hoary-headed Grebe	<i>Poliiocephalus poliocephalus</i>				578		
Great Crested Grebe	<i>Podiceps cristatus</i>				3		
Australian Pelican	<i>Pelecanus conspicillatus</i>				1,567		
Little Black Cormorant	<i>Phalacrocorax sulcirostris</i>				57		
Great Cormorant	<i>Phalacrocorax carbo</i>				57		
Pied Cormorant	<i>Phalacrocorax varius</i>				266		
Australian Darter	<i>Anhinga novaehollandiae</i>				44		
White-necked Heron	<i>Ardea pacifica</i>				27		
Great White Egret	<i>Ardea alba</i>				17		
White-faced Heron	<i>Egretta novaehollandiae</i>				30		
Little Egret	<i>Egretta garzetta</i>				5		
Australian White Ibis	<i>Threskiornis molucca</i>				2		
Straw-necked Ibis	<i>Threskiornis spinicollis</i>				106		
Glossy Ibis	<i>Plegadis falcinellus</i>				136		
Royal Spoonbill	<i>Platalea regia</i>				204		
Yellow-billed Spoonbill	<i>Platylis flavipes</i>				141		
Unidentified spoonbills	<i>Platalea spp.</i>				102		
Plumed Whistling Duck	<i>Dendrocygna eytoni</i>				25		
Black Swan	<i>Cygnus atratus</i>				3,132		
Freckled Duck	<i>Stictonetta naevosa</i>				37		
Australian Shelduck	<i>Tadorna tadornoides</i>				151		
Pink-eared Duck	<i>Malacorhynchos membranaceus</i>				18,820		
Grey Teal	<i>Anas gracilis</i>				26,490		
Pacific Black Duck	<i>Anas superciliosa</i>				120		
Australasian Shoveler	<i>Anas rhynchos</i>				42		
Maned Duck	<i>Chenonetta jubata</i>				978		
Hardhead	<i>Aythya australis</i>				3,375		
Blue-billed Duck	<i>Oxyura australis</i>				65		
Musk Duck	<i>Biziura lobata</i>				7		
Black-tailed Native Hen	<i>Gallinula ventralis</i>				699		
Purple Swampphen	<i>Porphyrio porphyrio</i>				1		
Common Coot	<i>Fulica atra</i>				2,711		
Australian Pied Oystercatcher	<i>Haematopus longirostris</i>		3,624	3,202	4,224	5,725	3,546
Sooty Oystercatcher	<i>Haematopus fuliginosus</i>		753	507	759	1,598	777
Black-winged Stilt	<i>Himantopus himantopus</i>		1,330	2,889	3,161	2,764	7,111
Banded Stilt	<i>Cladorhynchus leucocephalus</i>		237	4,671	1,333	31,408	70,165
Red-necked Avocet	<i>Recurvirostra novaehollandiae</i>		539	1,779	3,593	212	1,647
Bush Thick-knee	<i>Burhinus grallarius</i>	nt				15	
Beach Thick-knee	<i>Burhinus gigantea</i>	nt	2	4		9	2
Australian Pratincole	<i>Stiltia isabella</i>				12		3
Oriental Pratincole	<i>Glareola maldivarum</i>			1		600	
Banded Lapwing	<i>Vanellus tricolor</i>		67	10	24	864	79
Masked Lapwing	<i>Vanellus miles</i>		2,019	1,693	3,112	2,497	6,601
Pacific Golden Plover	<i>Pluvialis fulva</i>		1,261	883	4,638	843	1,845
Grey Plover	<i>Pluvialis squatarola</i>		620	998	940	4,748	753
Red-capped Plover	<i>Charadrius ruficapillus</i>		1,325	2,186	1,515	7,050	6,064
Double-banded Plover	<i>Charadrius bicinctus</i>		183	8	23	11	105
Lesser Sandplover	<i>Charadrius mongolus</i>		322	762	743	1,961	589
Greater Sandplover	<i>Charadrius leschenaultii</i>		4,034	4,026	6,393	5,674	518
Oriental Plover	<i>Charadrius veredus</i>				2	4,677	
Black-fronted Dotterel	<i>Elseyornis melanops</i>		63	52	36	86	144
Red-kneed Dotterel	<i>Erythrogonys cinctus</i>			5	497	127	114
Hooded Plover	<i>Charadrius rubricollis</i>	nt	56	81	86	120	250
unidentified <i>Charadrius</i> plovers	<i>Charadrius spp.</i>						1,688
Black-tailed Godwit	<i>Limosa limosa</i>		1,880	1,973	4,982	1,710	538
Bar-tailed Godwit	<i>Limosa lapponica</i>		28,295	33,929	48,876	33,768	23,521
Little Curlew	<i>Numenius minutus</i>			175		38	
Whimbrel	<i>Numenius phaeopus</i>		360	1,102	1,278	1,170	723
Far Eastern Curlew	<i>Numenius madagascariensis</i>	nt	3,570	7,129	7,150	3,868	6,854
Common Redshank	<i>Tringa totanus</i>					1	
Marsh Sandpiper	<i>Tringa stagnatilis</i>		553	561	519	448	768
Common Greenshank	<i>Tringa nebularia</i>		1,495	2,355	2,813	5,050	3,312
Wood Sandpiper	<i>Tringa glareola</i>		3	1	4	40	13
unidentified <i>Tringa</i> sandpipers	<i>Tringa spp.</i>				5		
Terek Sandpiper	<i>Xenus cinereus</i>		1,201	768	1,727	1,275	87
Common Sandpiper	<i>Actitis hypoleucos</i>		17	20	9	30	30

English Name	Scientific Name	T ¹	1997	1998	1999	2000	2001
Grey-tailed Tattler	<i>Heteroscelus brevipes</i>		1,612	2,649	4,382	2,779	976
Wandering Tattler	<i>Heteroscelus incanus</i>					1	
Ruddy Turnstone	<i>Arenaria interpres</i>		3,518	4,779	4,709	3,573	2,889
Latham's Snipe	<i>Gallinago hardwickii</i>		143	227	123	299	278
Asian Dowitcher	<i>Limnodromus semipalmatus</i>	nt	12	6	4	11	
Red Knot	<i>Calidris canutus</i>		5,420	6,469	2,758	15,089	3,959
Great Knot	<i>Calidris tenuirostris</i>		24,296	23,122	18,668	13,796	5,344
Sanderling	<i>Calidris alba</i>		354	315	1,062	1,865	1,378
Red-necked Stint	<i>Calidris ruficollis</i>		54,854	47,363	59,746	123,819	124,538
Long-toed Stint	<i>Calidris subminuta</i>					4	
Pectoral Sandpiper	<i>Calidris melanotos</i>		4	11	6	10	2
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>		7,284	9,777	8,106	34,800	17,902
Curlew Sandpiper	<i>Calidris ferruginea</i>		14,388	19,159	16,549	26,896	23,698
unidentified <i>Calidris</i> sandpipers	<i>Calidris</i> spp.					200	
Broad-billed Sandpiper	<i>Limicola falcinellus</i>		7	2	15	81	
Ruff	<i>Philomachus pugnax</i>			2		1	
unidentified shorebirds	Charadrii spp.		9,690	11,550	8,345	2,500	10,521
Silver Gull	<i>Larus novaehollandiae</i>				1,468		
Whiskered Tern	<i>Chlidonias hybridus</i>				2,129		
Gull-billed Tern	<i>Sterna nilotica</i>				66		
Caspian Tern	<i>Sterna caspia</i>				24		
Total Waterbirds			175,391	197,206	286,604	344,111	329,332

Note:

T¹ – Globally threatened species as identified by BirdLife International (2001): nt – Near Threatened.

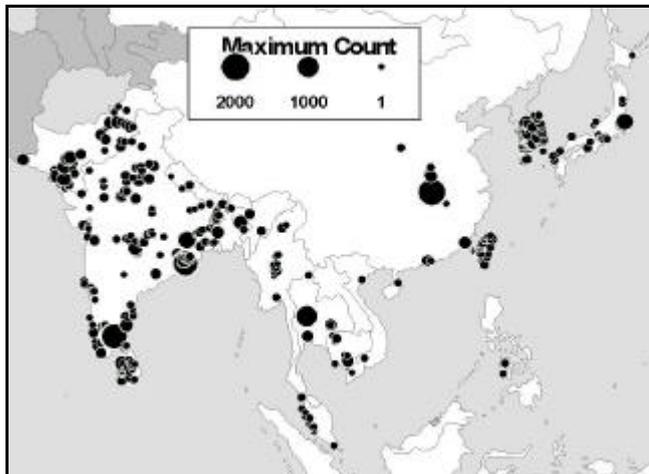
3.6 Distribution of selected species

Distribution maps of species covered by the AWC were first presented for the 1987-1991 period (Perennou *et al.* 1994). This section provides a selection of 110 species, including 24 globally threatened and nine Lower Risk species for which relatively significant data are available. The maps show the highest count of the species recorded during 1997–2001 at all locations for which coordinates are provided, the one exception being that of Australia, for which only shorebird data are mapped. A more realistic overview of the distribution of the species is obtained when these maps are compared against site coverage during 1997–2001 (Figure 3).

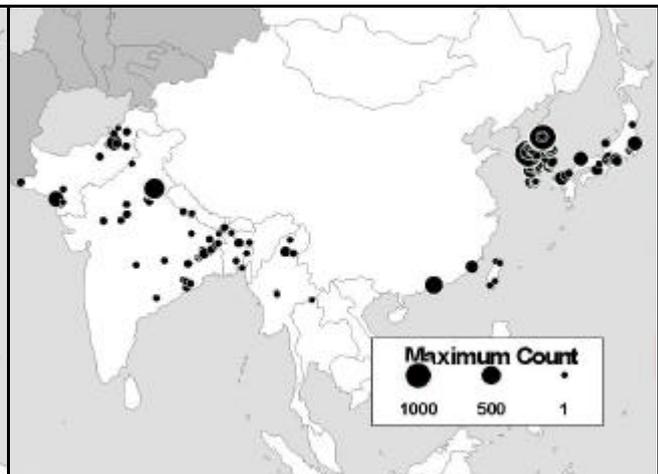
Due to the lack of site coverage in some countries, a comprehensive species distribution cannot be shown on the maps. AWC countries providing data during 1997-2001 are shown in white; countries not providing data are shown in light grey; and the remaining countries are shown in dark grey, with marine areas also in light grey. Dot sizes are proportional to the maximum species counts between 1997-2001.

3.6.1 Grebes

Little Grebe *Tachybaptus ruficollis*

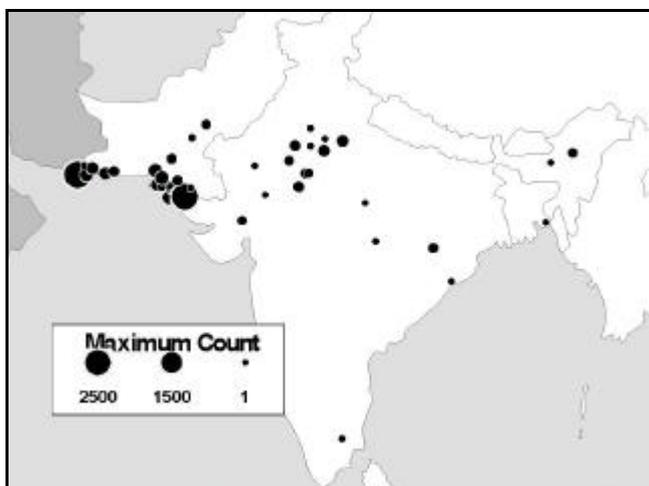


Great Crested Grebe *Podiceps cristatus*

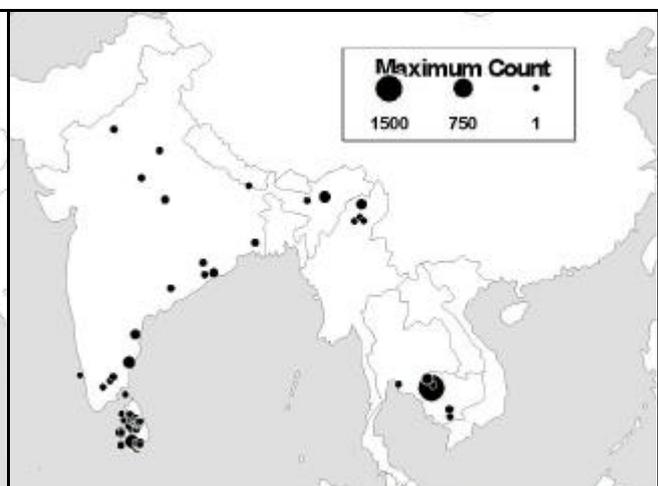


3.6.2 Pelicans

Great White Pelican *Pelecanus onocrotalus*

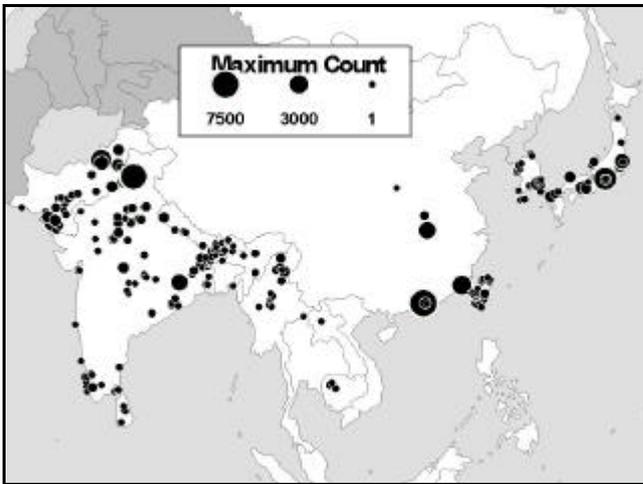


Spot-billed Pelican *Pelecanus philippensis* [VU]

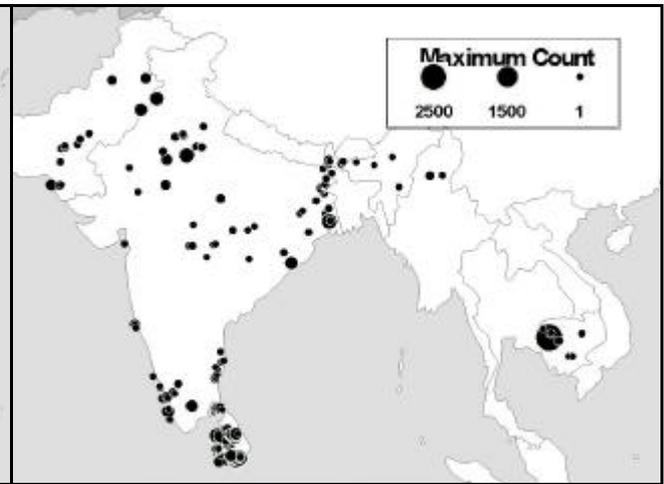


3.6.3 Cormorants & darters

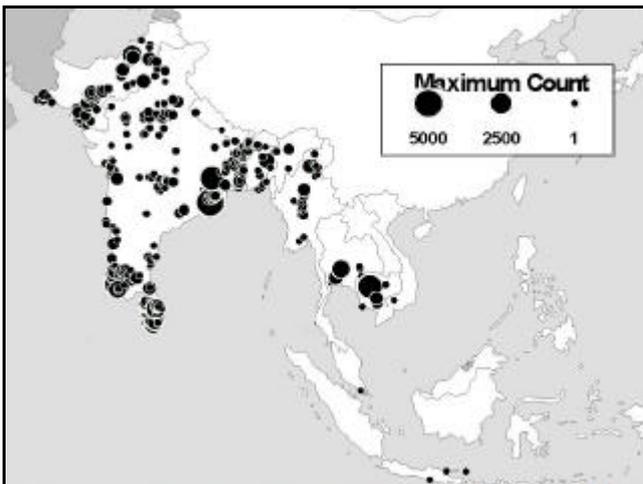
Great Cormorant *Phalacrocorax carbo*



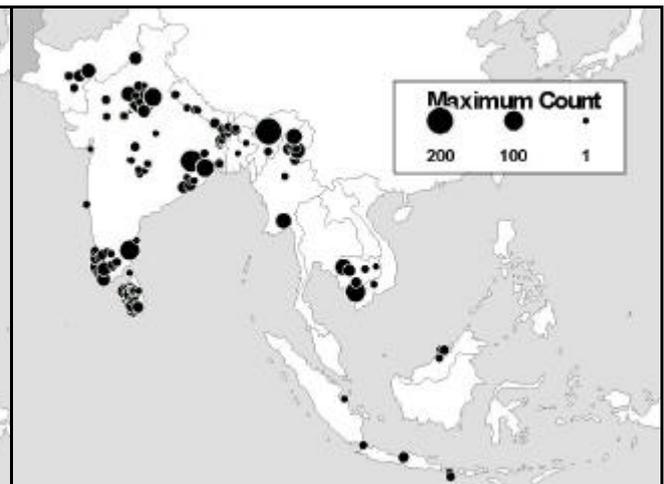
Indian Cormorant *Phalacrocorax fuscicollis*



Little Cormorant *Phalacrocorax niger*

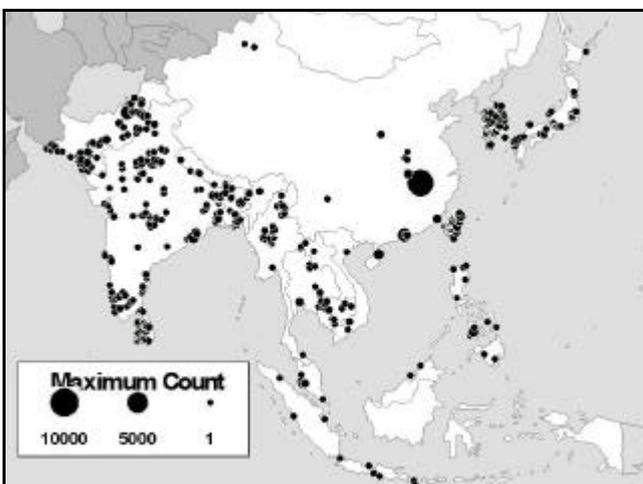


Oriental Darter *Anhinga melanogaster* [nt]

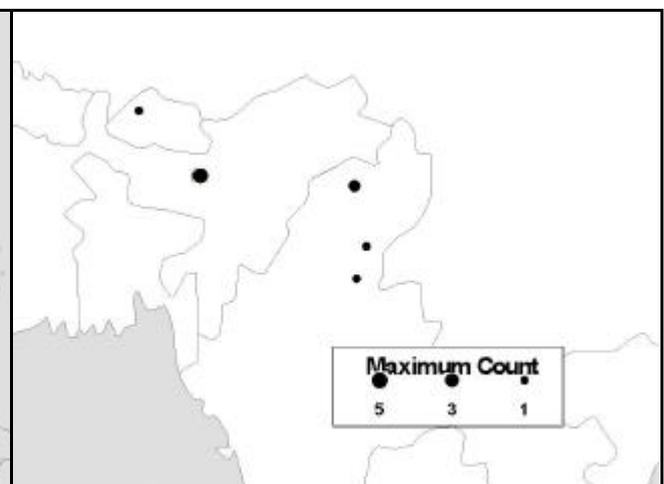


3.6.4 Herons, egrets & bitterns

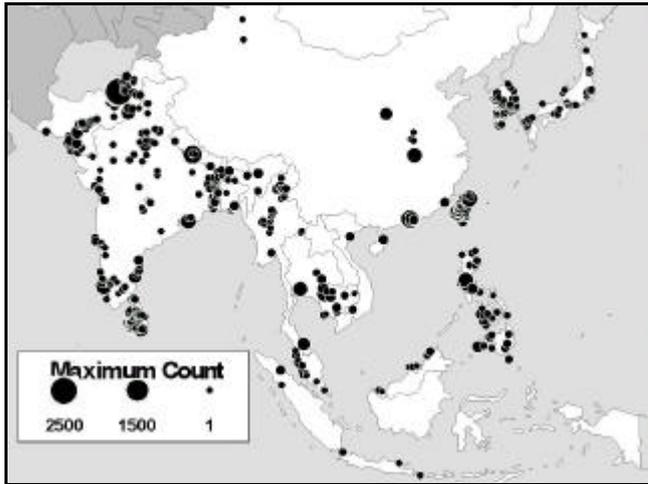
Grey Heron *Ardea cinerea*



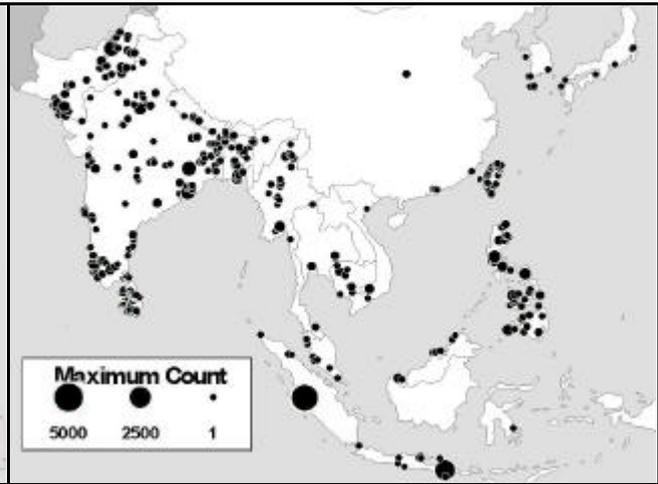
White-bellied Heron *Ardea insignis* [EN]



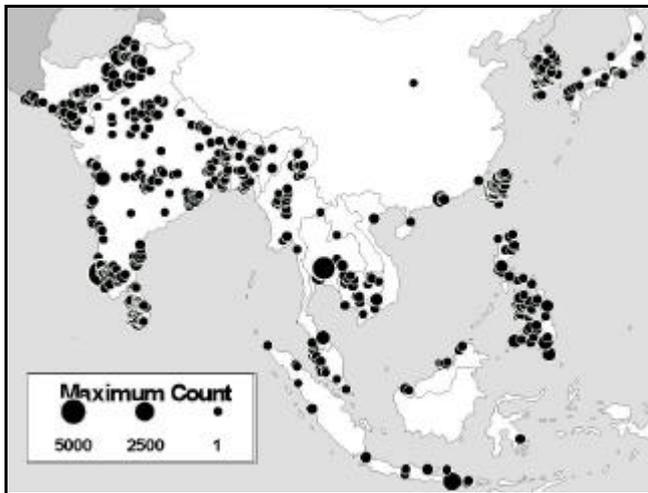
Great White Egret *Ardea alba*



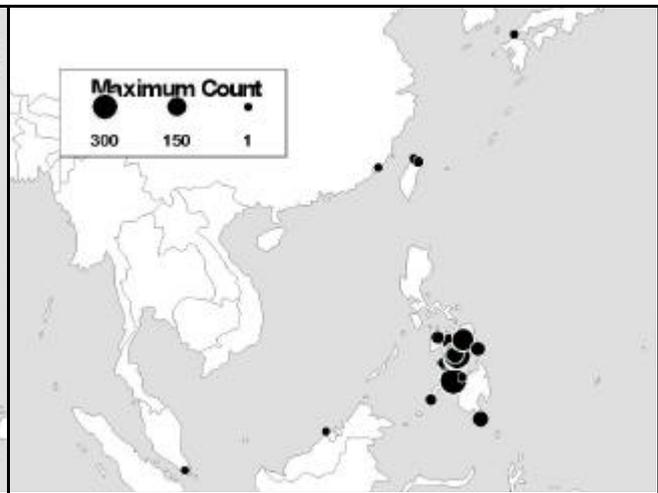
Intermediate Egret *Egretta intermedia*



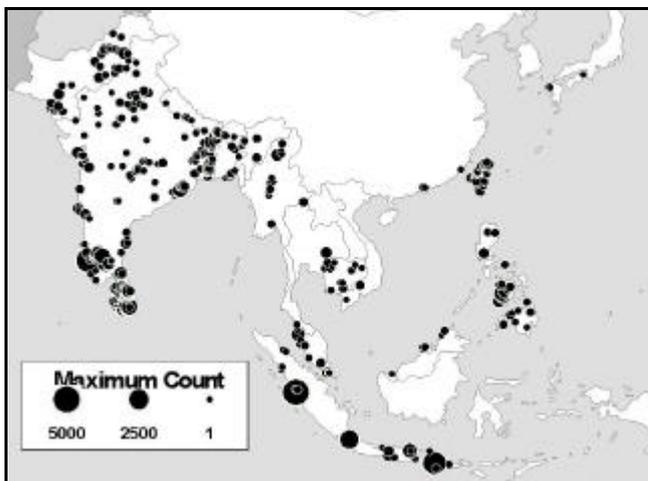
Little Egret *Egretta garzetta*



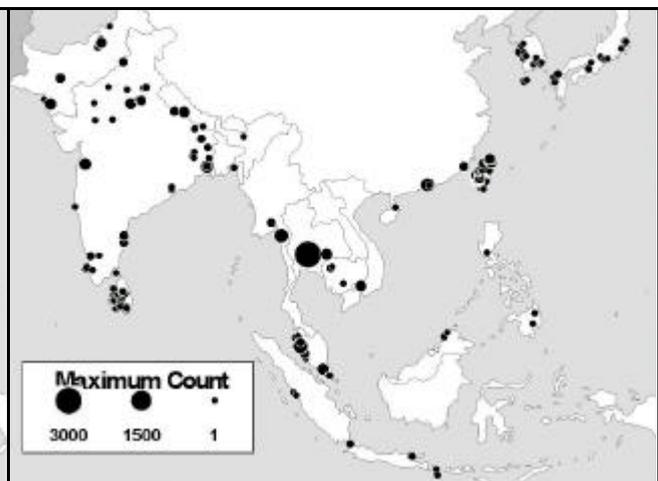
Chinese Egret *Egretta eulophotes* [VU]



Cattle Egret *Bubulcus ibis*

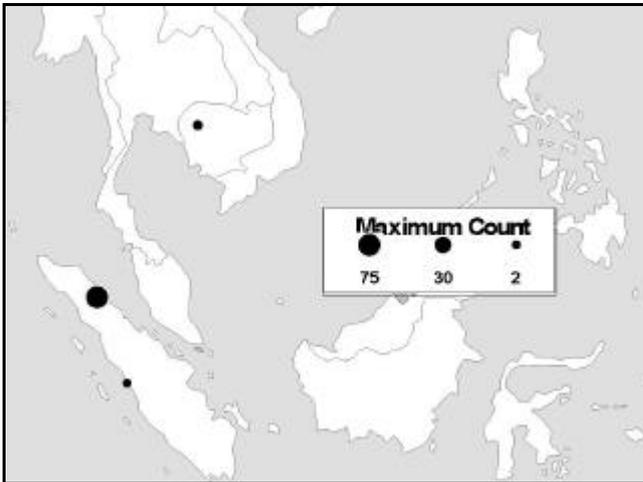


Black-crowned Night-Heron *Nycticorax nycticorax*

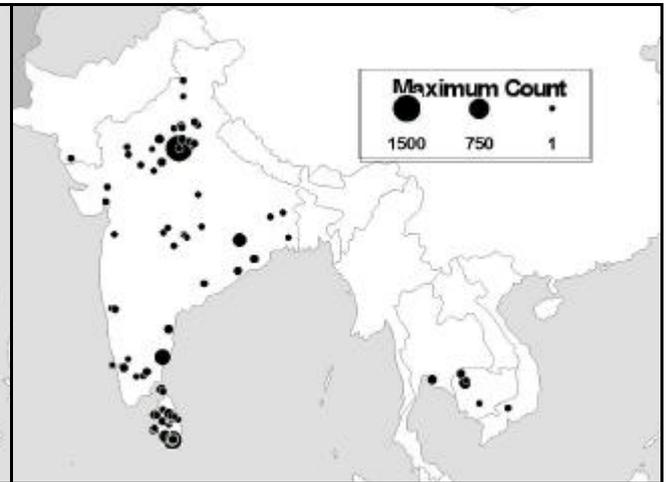


3.6.5 Storks

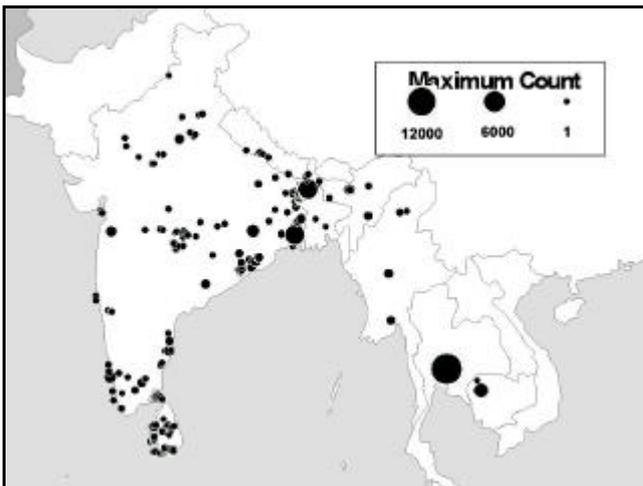
Milky Stork *Mycteria cinerea* [VU]



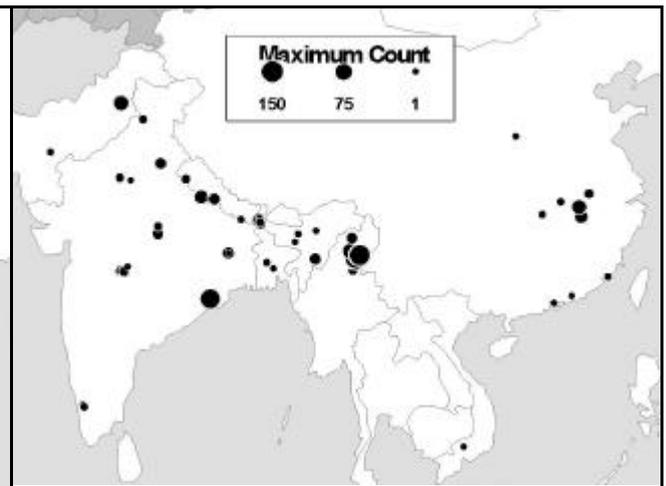
Painted Stork *Mycteria leucocephala* [nt]



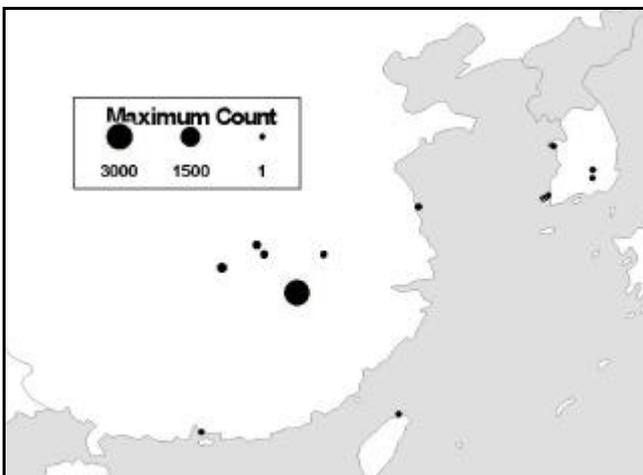
Asian Openbill *Anastomus oscitans*



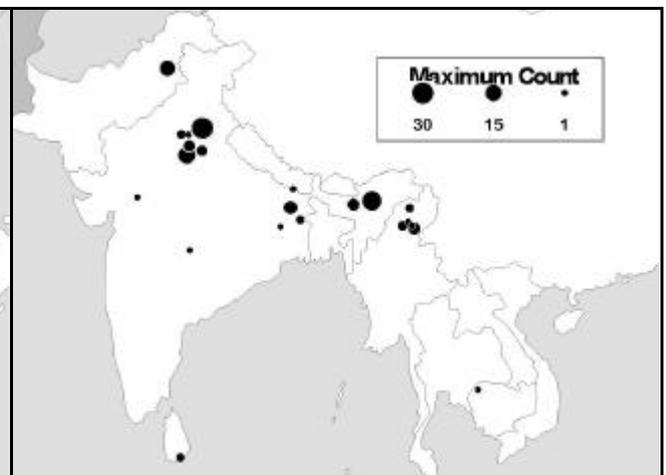
Black Stork *Ciconia nigra*



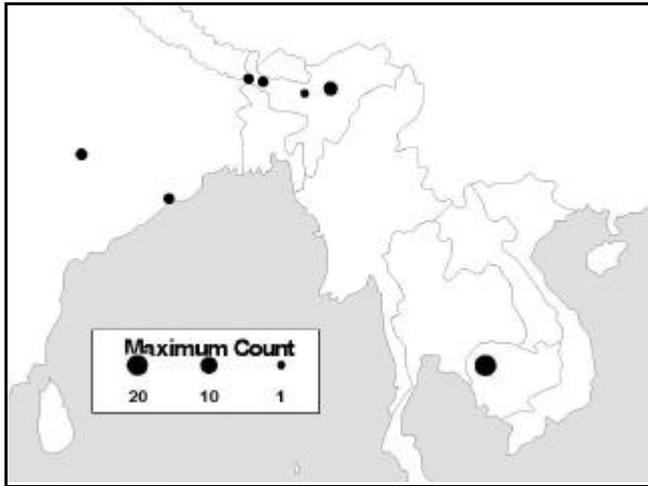
Oriental Stork *Ciconia boyciana* [EN]



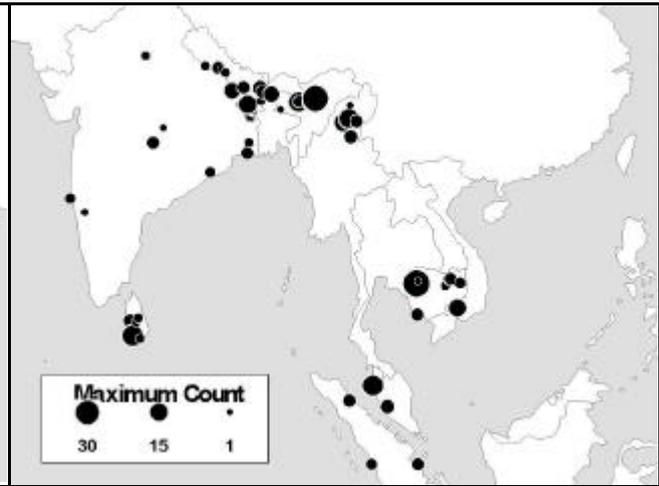
Black-necked Stork *Ephippiorhynchus asiaticus* [nt]



Greater Adjutant *Leptoptilos dubius* [EN]

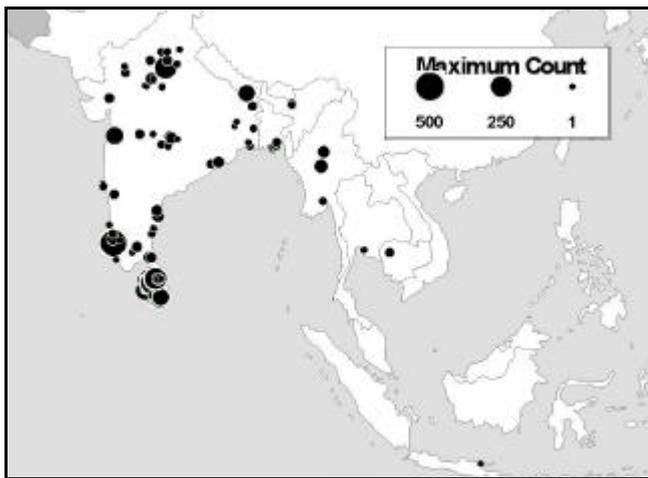


Lesser Adjutant *Leptoptilos javanicus* [VU]

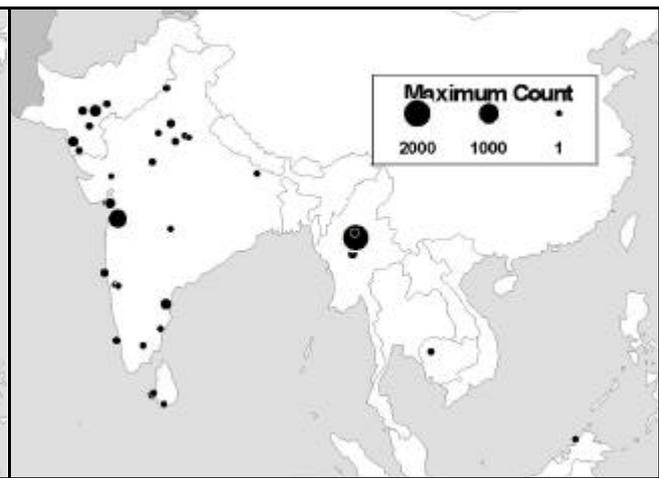


3.6.6 Ibises & spoonbills

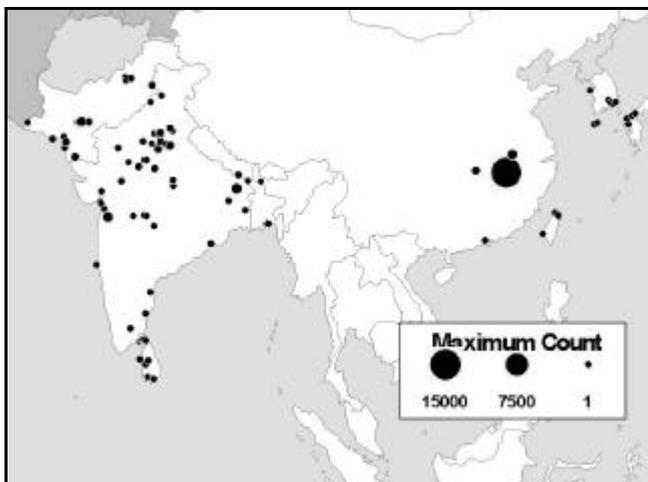
Black-headed Ibis *Threskiornis melanocephalus* [nt]



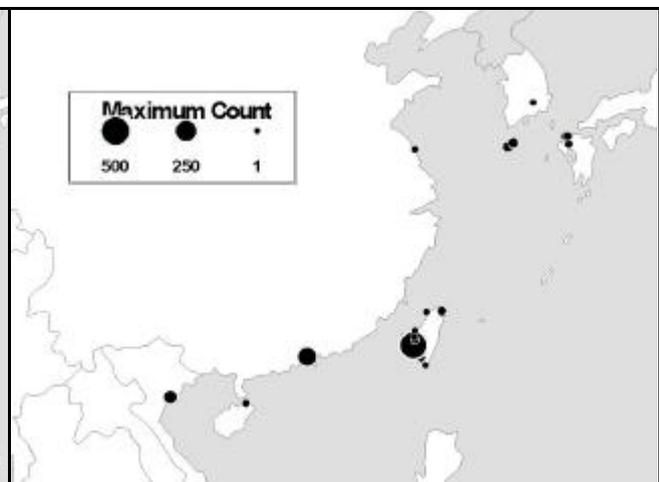
Glossy Ibis *Plegadis falcinellus*



Eurasian Spoonbill *Platalea leucorodia*



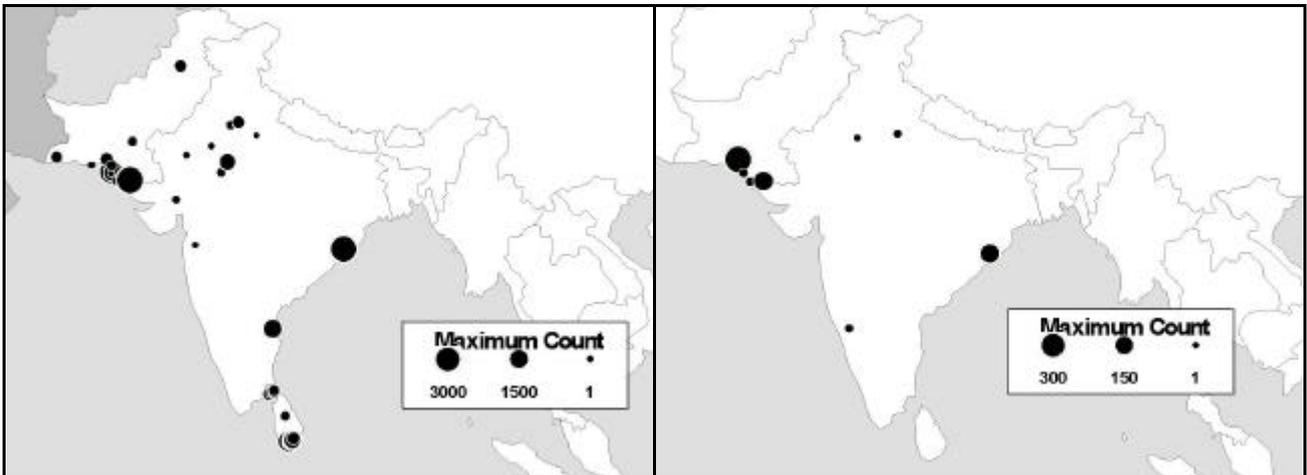
Black-faced Spoonbill *Platalea minor* [EN]



3.6.7 Flamingos

Greater Flamingo *Phoenicopterus ruber*

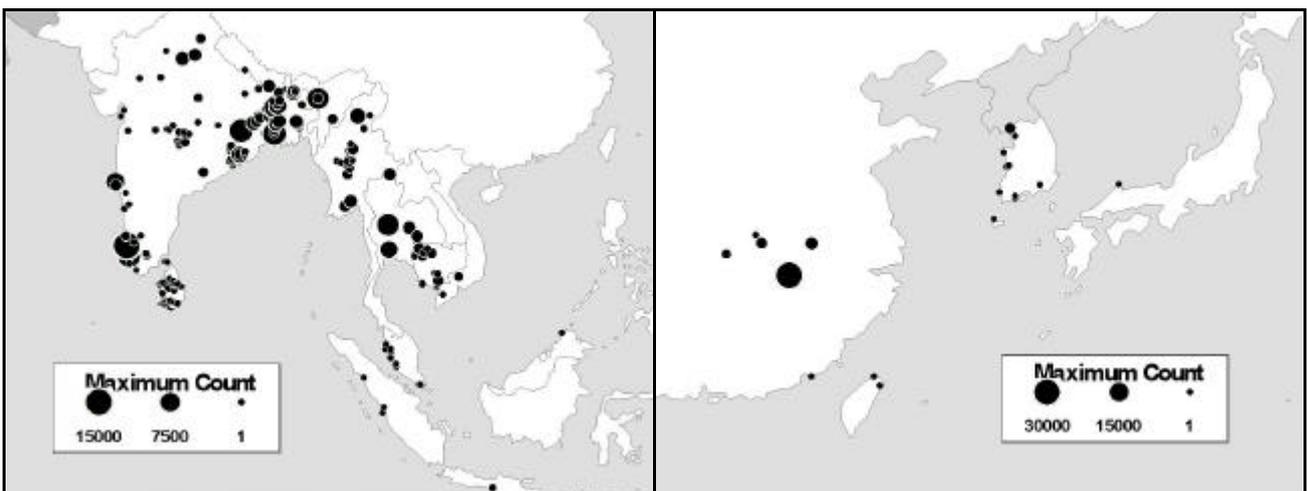
Lesser Flamingo *Phoeniconaias minor* [nt]



3.6.8 Swans, geese & ducks

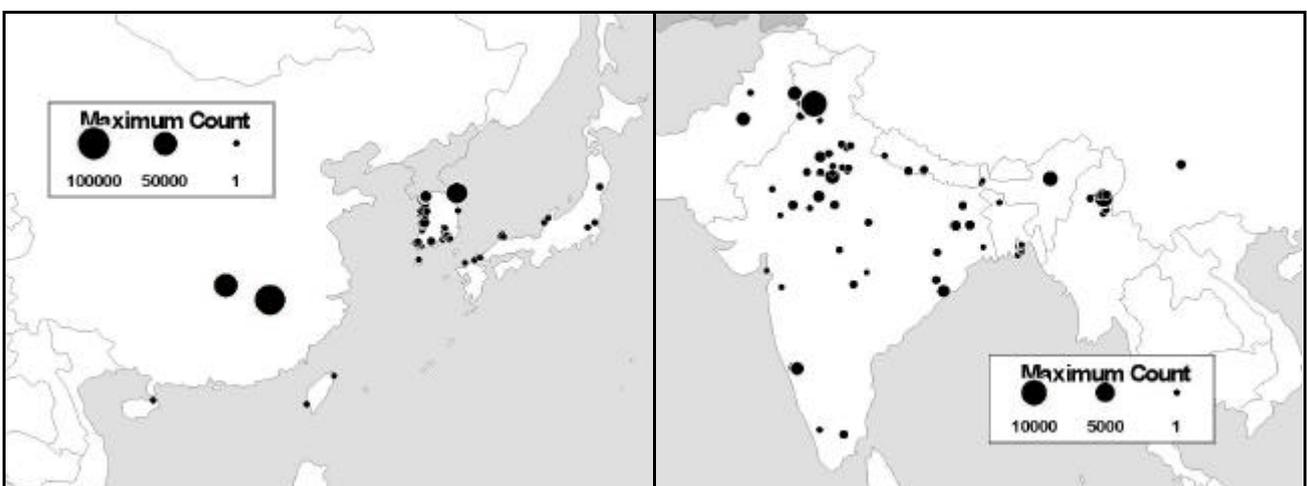
Lesser Whistling Duck *Dendrocygna javanica*

Swan Goose *Anser cygnoides* [EN]

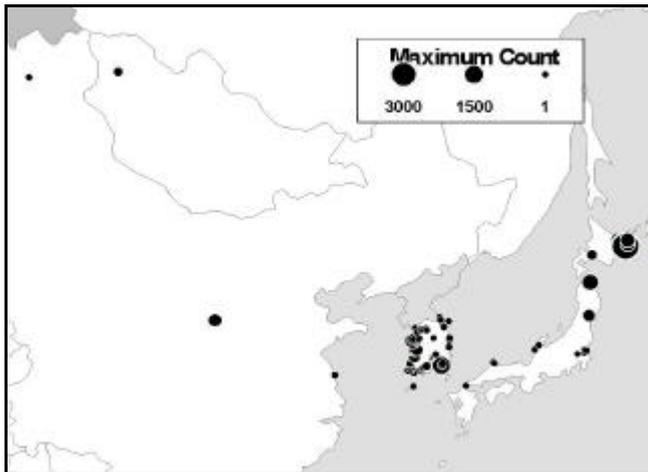


Greater White-fronted Goose *Anser albifrons*

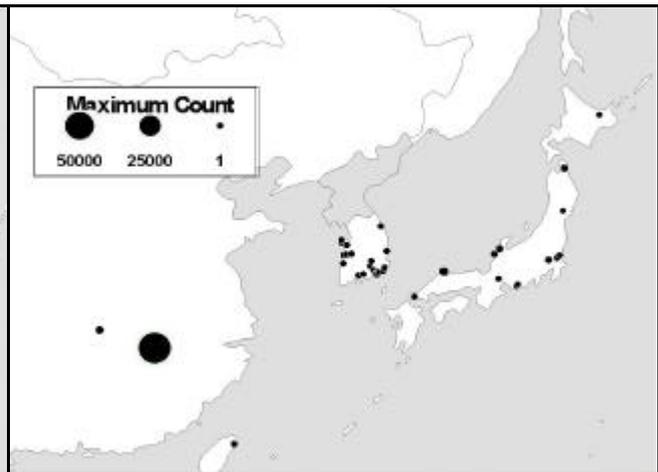
Bar-headed Goose *Anser indicus*



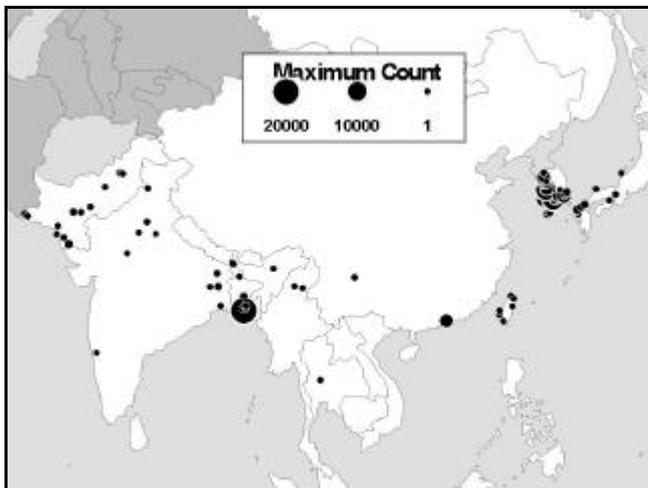
Whooper Swan *Cygnus cygnus*



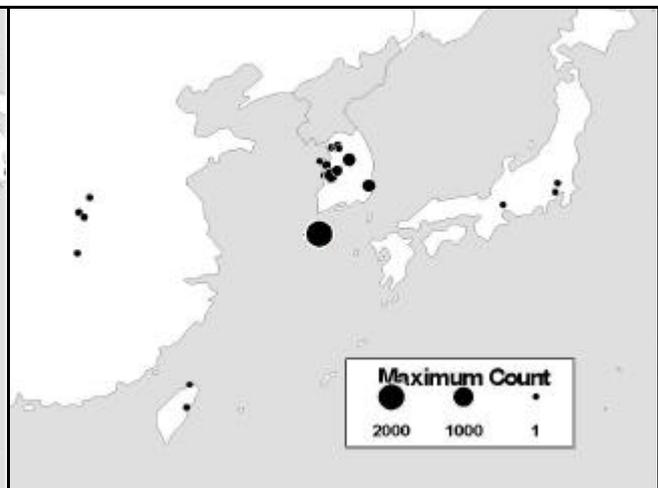
Tundra Swan *Cygnus columbianus*



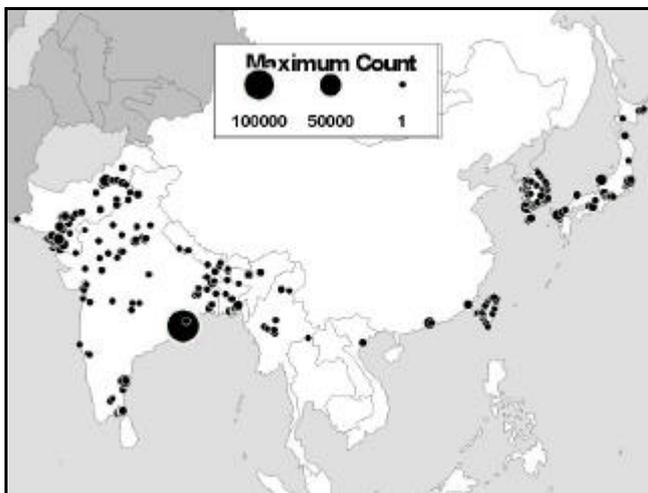
Common Shelduck *Tadorna tadorna*



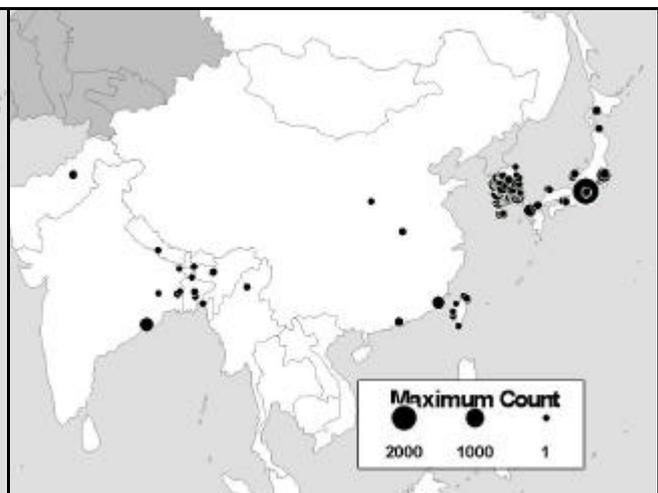
Mandarin Duck *Aix galericulata*



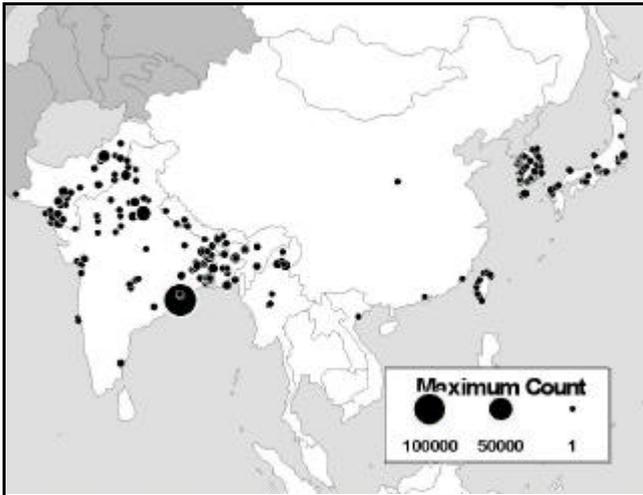
Eurasian Wigeon *Anas penelope*



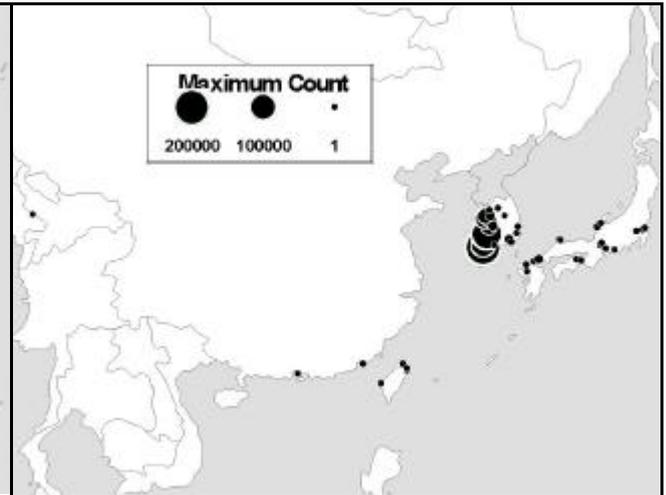
Falcatid Duck *Anas falcata* [Ic]



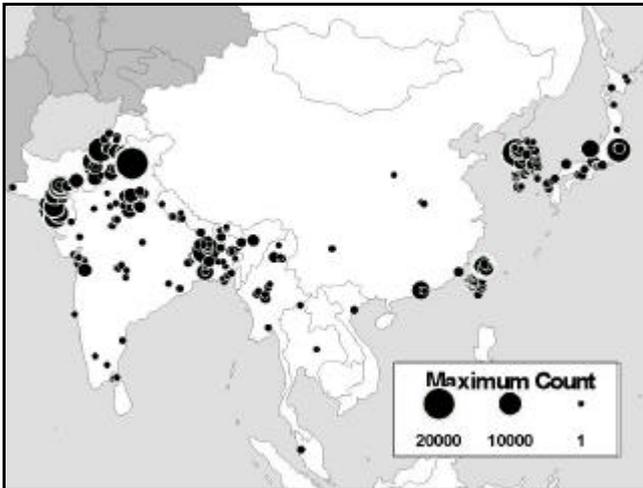
Gadwall *Anas strepera*



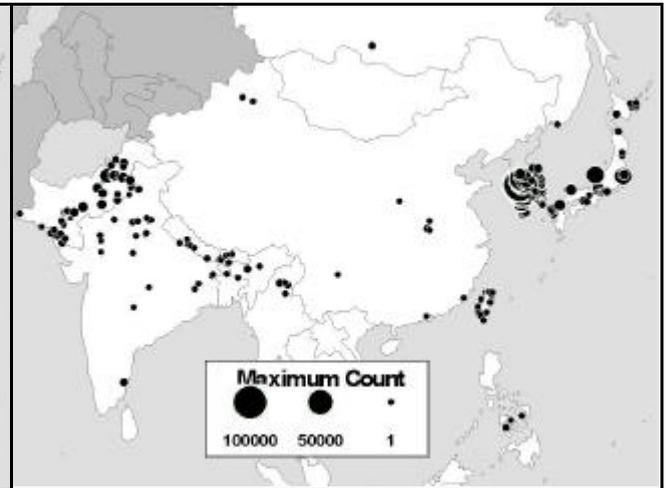
Baikal Teal *Anas formosa* [VU]



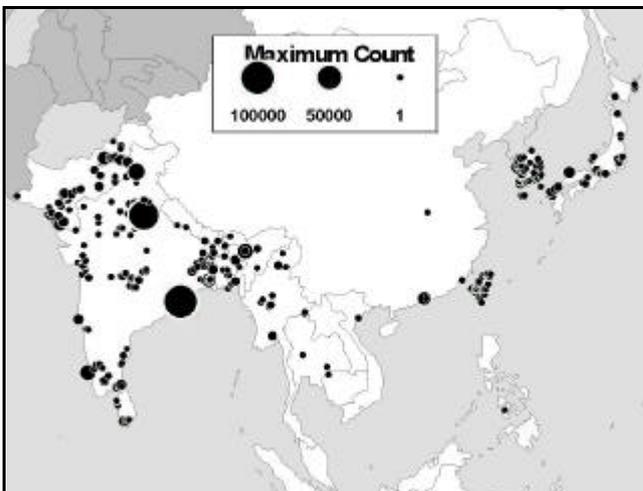
Common Teal *Anas crecca*



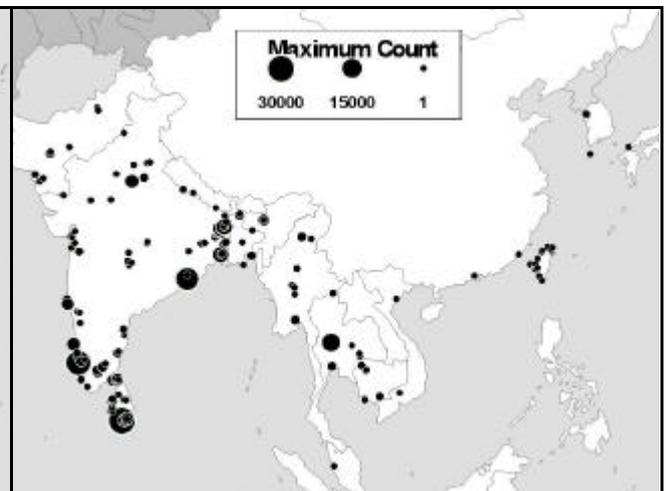
Mallard *Anas platyrhynchos*



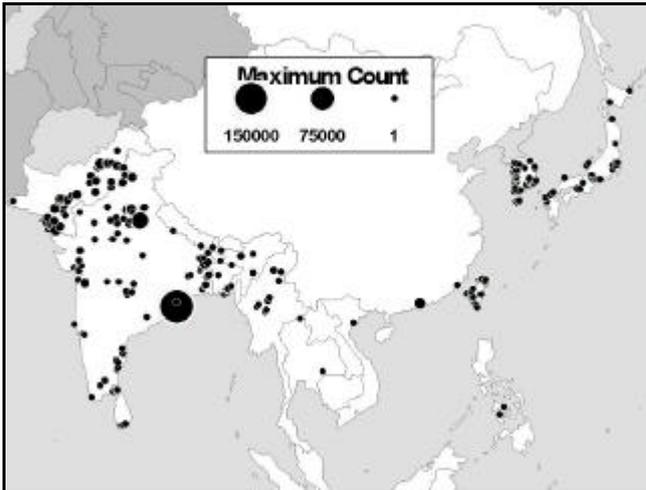
Northern Pintail *Anas acuta*



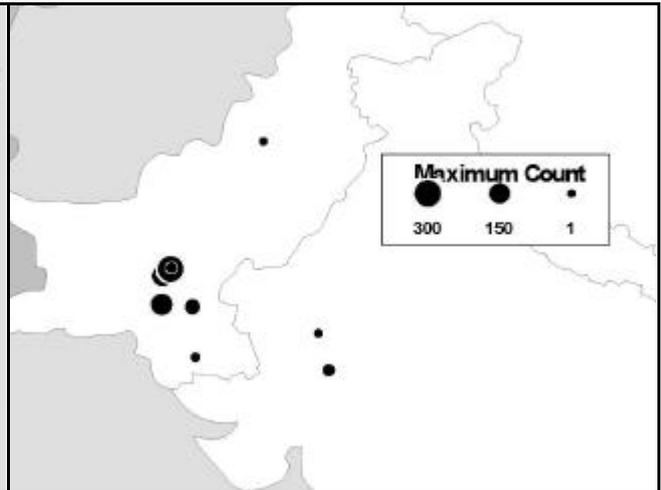
Garganey *Anas querquedula*



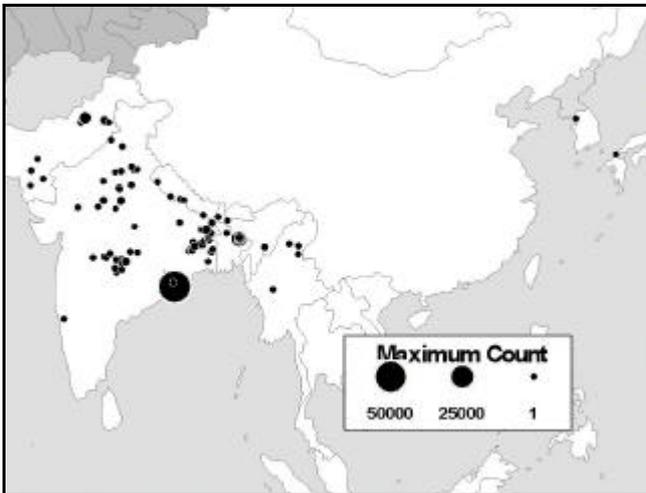
Northern Shoveler *Anas clypeata*



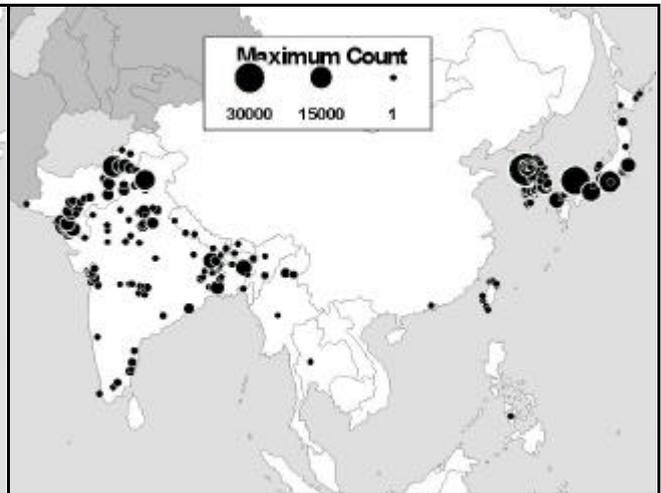
Marbled Teal *Marmaronetta angustirostris* [VU]



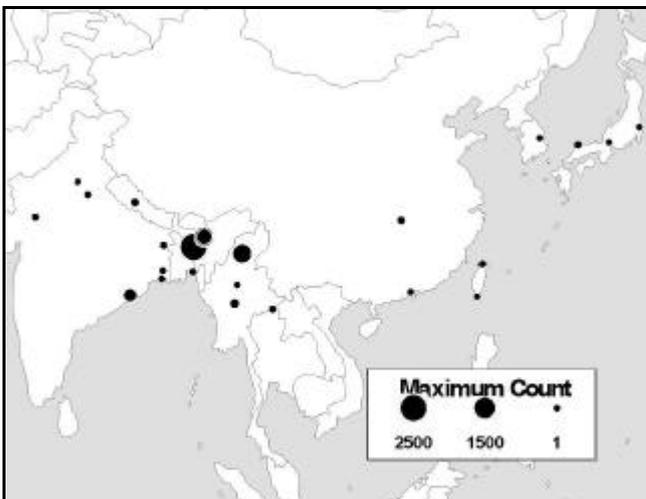
Red-crested Pochard *Netta rufina*



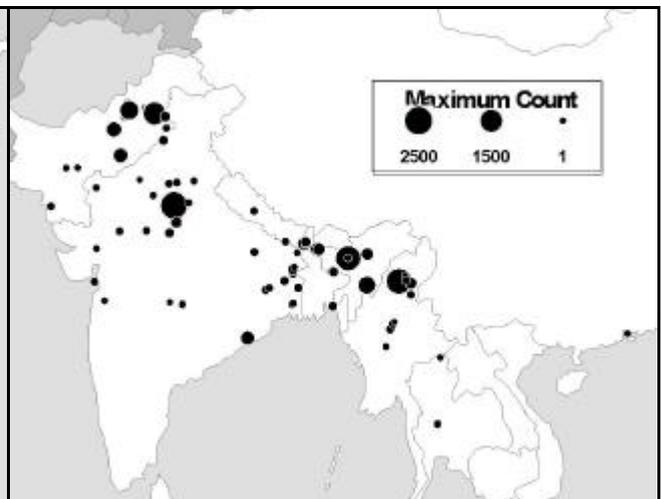
Common Pochard *Aythya ferina*



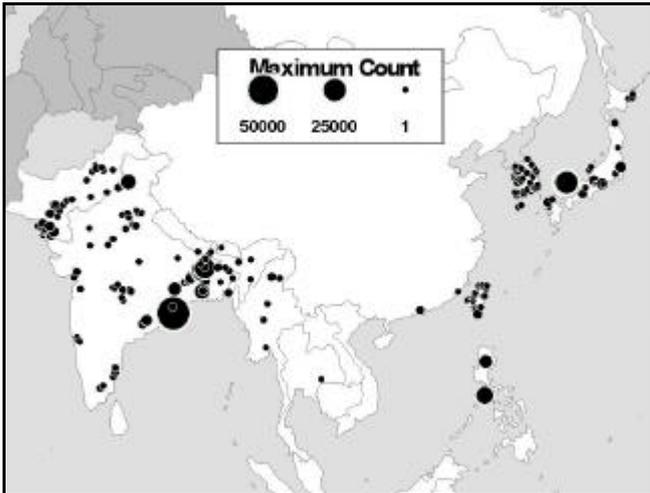
Baer's Pochard *Aythya baeri* [VU]



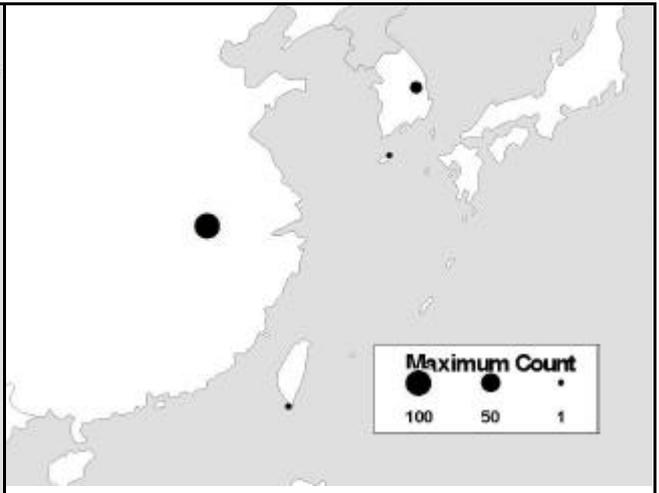
Ferruginous Duck *Aythya nyroca* [nt]



Tufted Duck *Aythya fuligula*

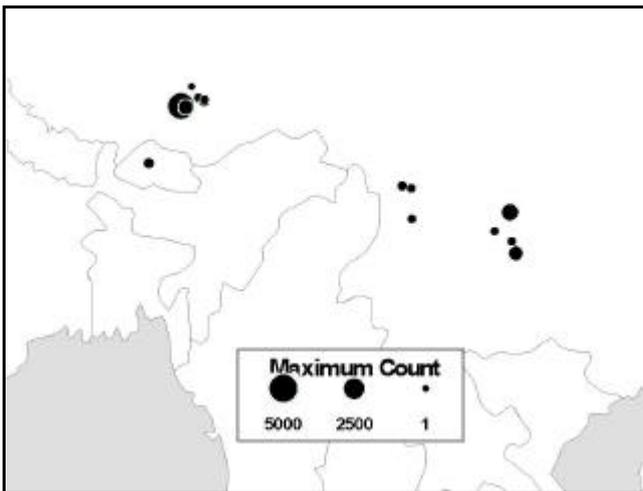


Scaly-sided Merganser *Mergus squamatus* [EN]

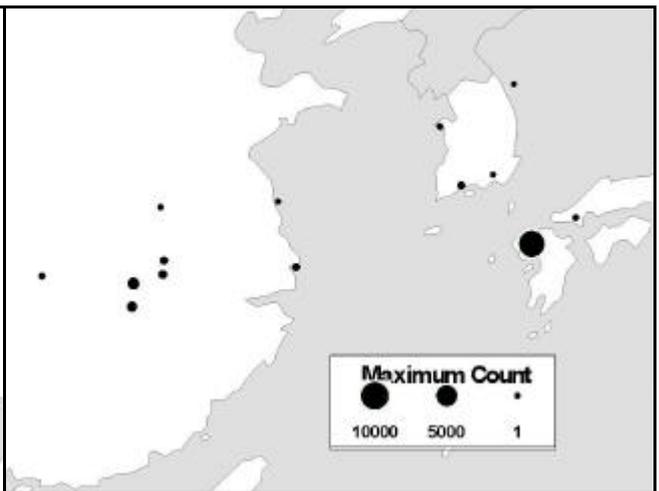


3.6.9 Cranes

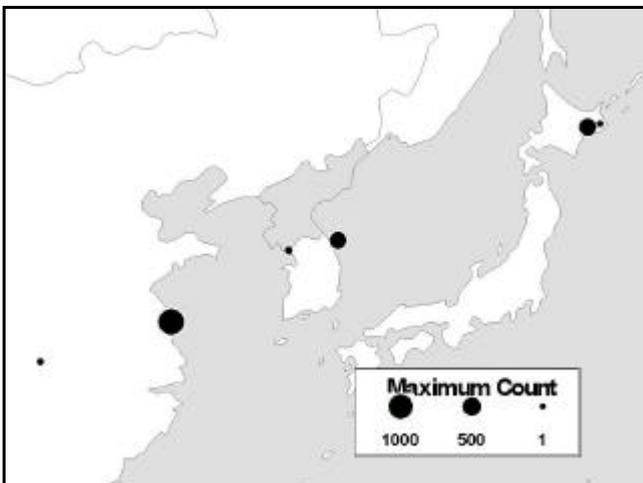
Black-necked Crane *Grus nigricollis* [VU]



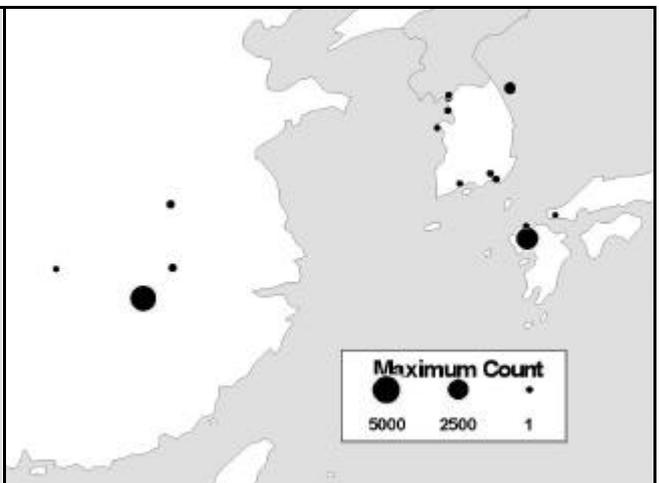
Hooded Crane *Grus monacha* [VU]



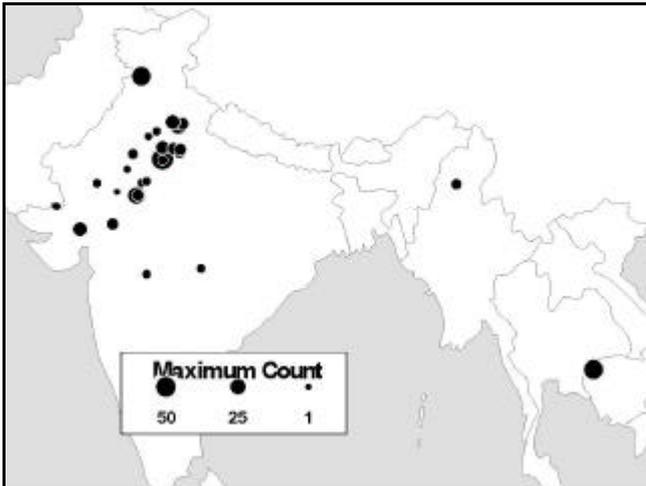
Red-crowned Crane *Grus japonensis* [EN]



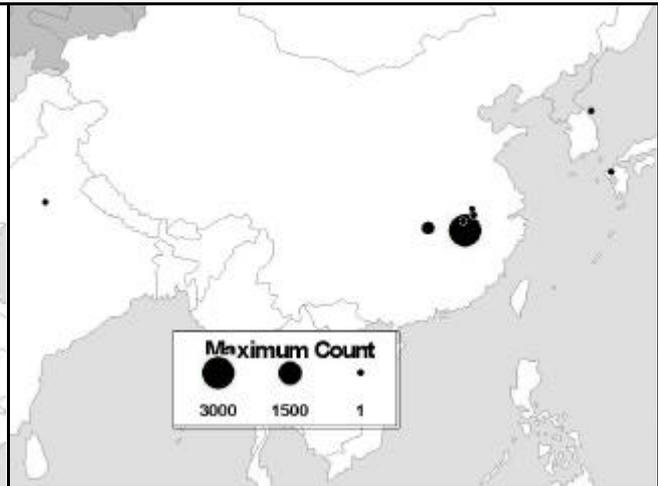
White-naped Crane *Grus vipio* [VU]



Sarus Crane *Grus antigone* [VU]

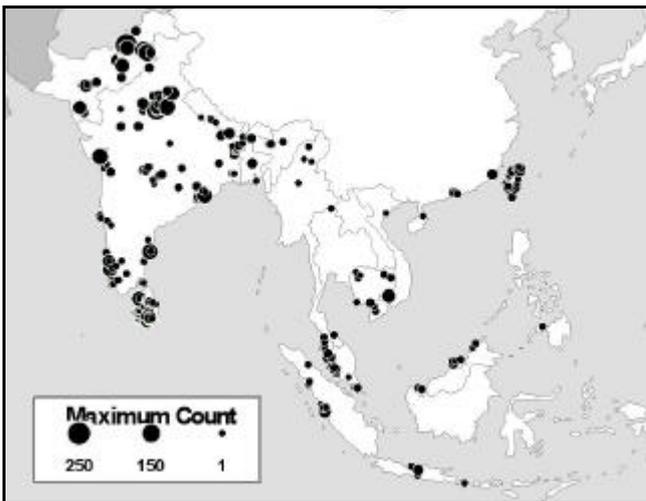


Siberian Crane *Grus leucogeranus* [CR]

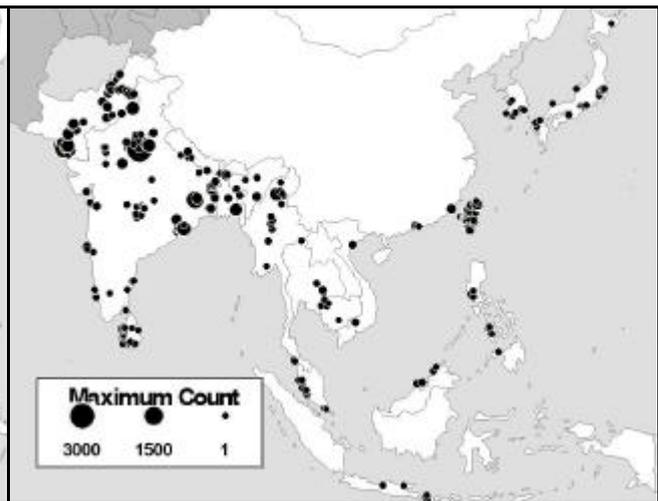


3.6.10 Rails, gallinules & coots

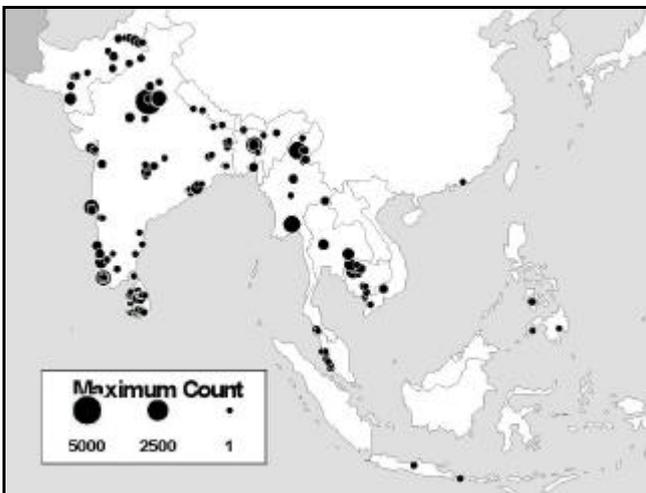
White-breasted Waterhen *Amauornis phoenicurus*



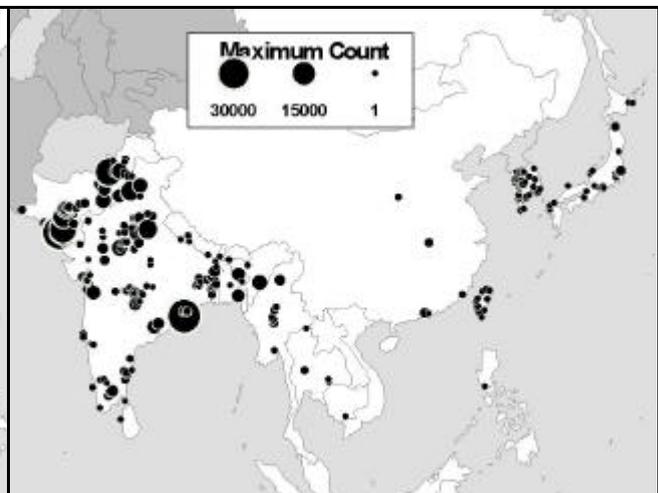
Common Moorhen *Gallinula chloropus*



Purple Swamphen *Porphyrio porphyrio*

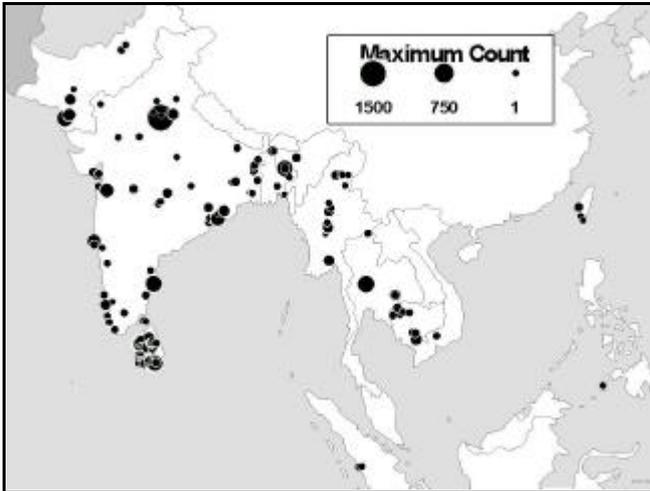


Common Coot *Fulica atra*

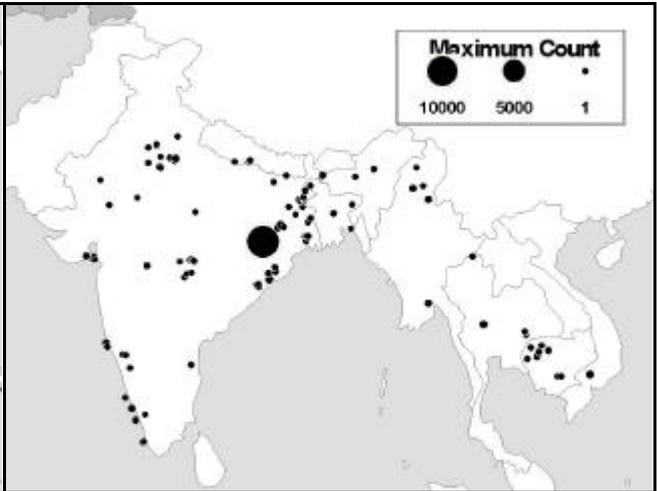


3.6.11 Jacanas

Pheasant-tailed Jacana *Hydrophasianus chirurgus*

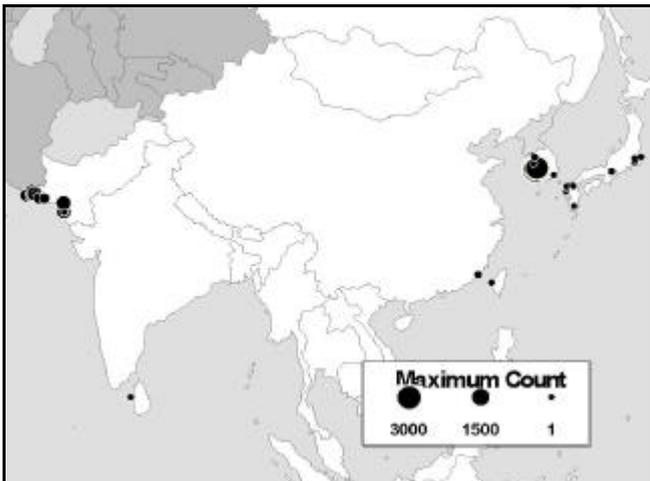


Bronze-winged Jacana *Metopidius indicus*

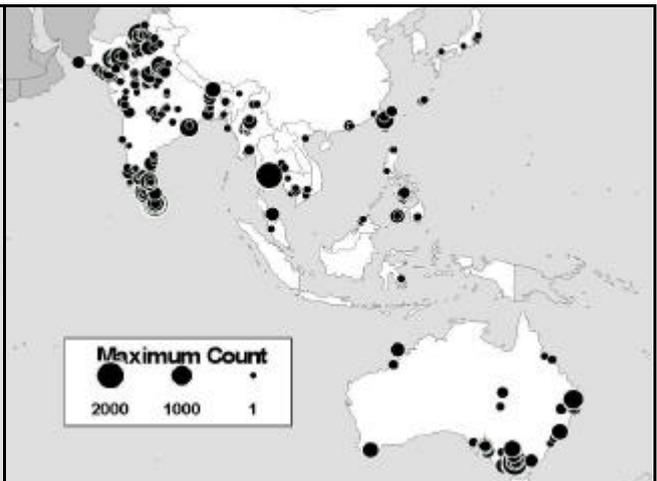


3.6.12 Shorebirds

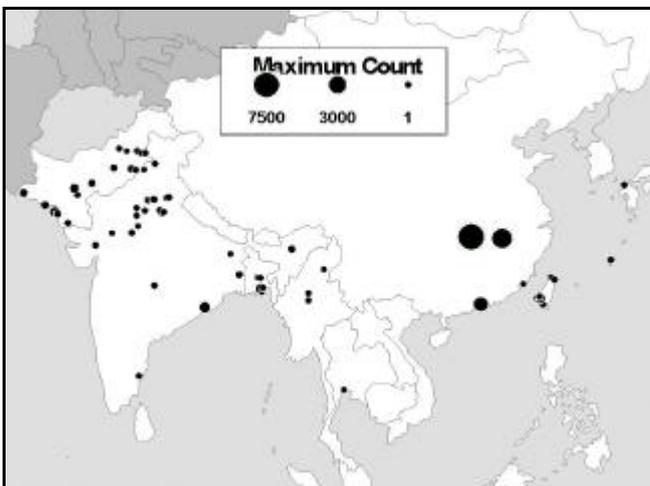
Eurasian Oystercatcher *Haematopus ostralegus*



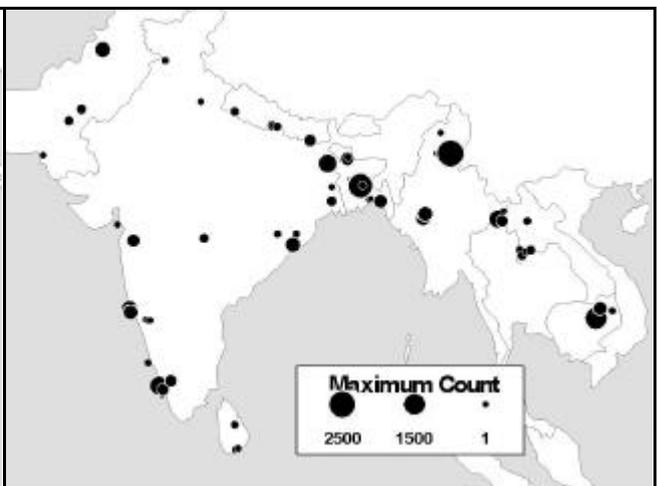
Black-winged Stilt *Himantopus himantopus*



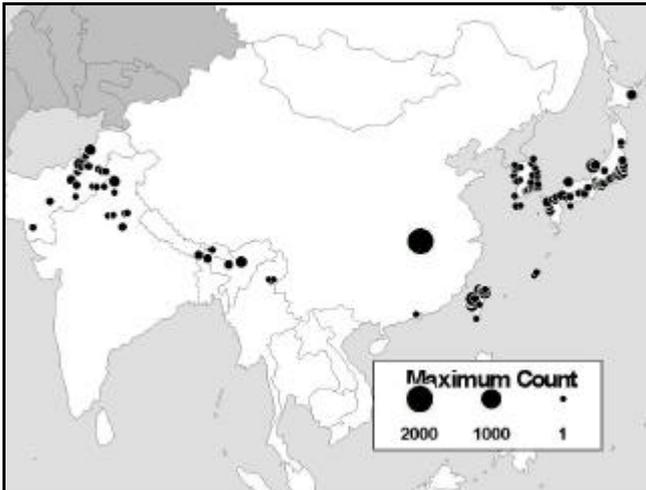
Pied Avocet *Recurvirostra avosetta*



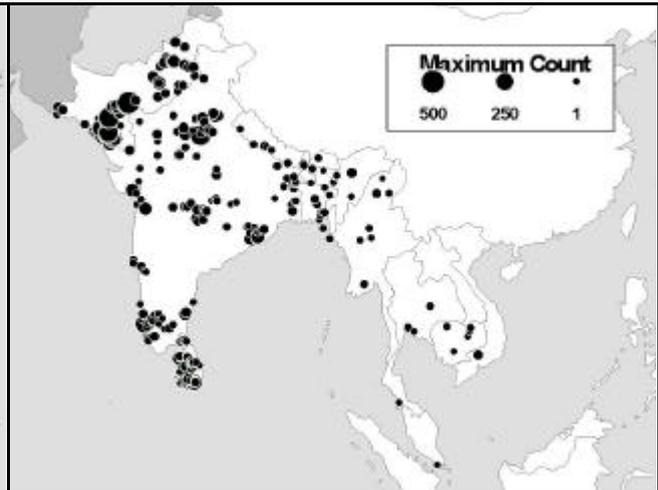
Small Pratincole *Glareola lactea*



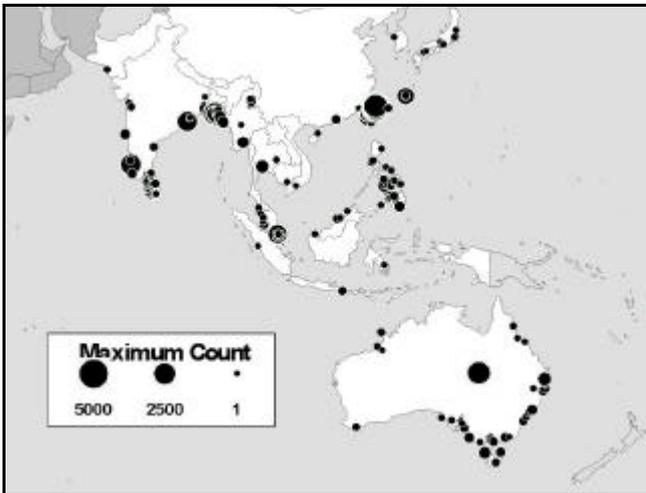
Northern Lapwing *Vanellus vanellus*



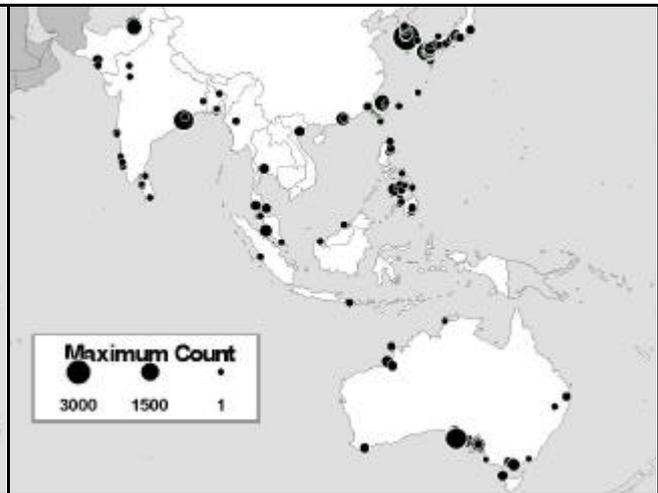
Red-wattled Lapwing *Vanellus indicus*



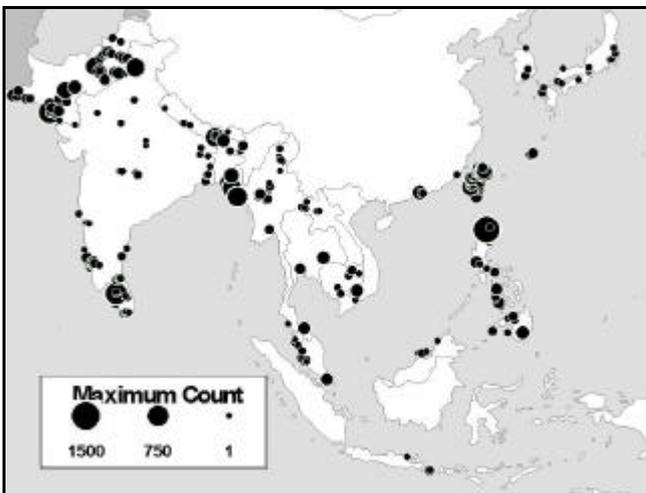
Pacific Golden Plover *Pluvialis fulva*



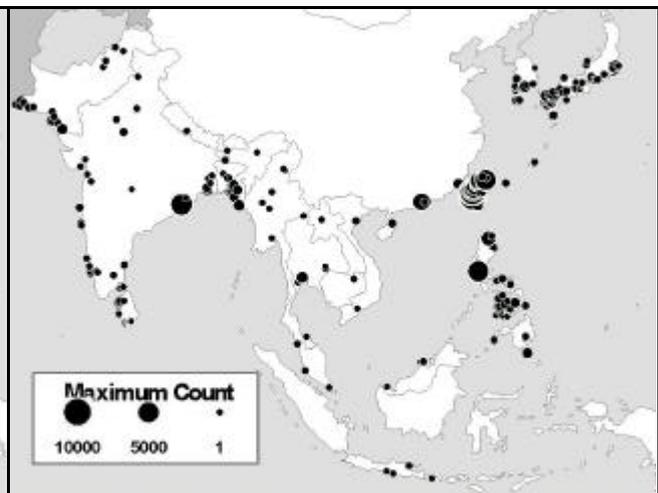
Grey Plover *Pluvialis squatarola*



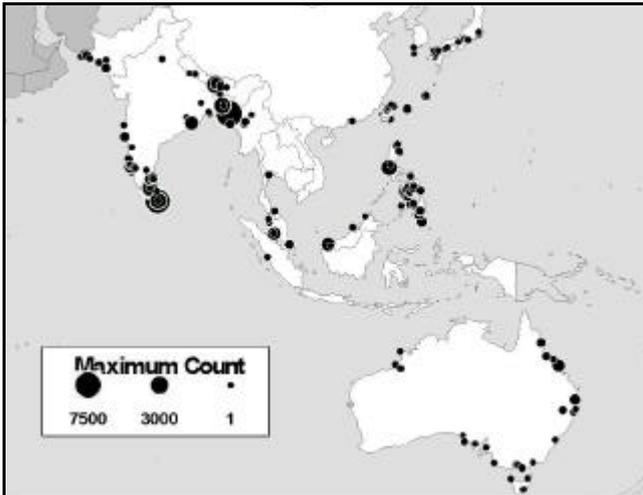
Little Ringed Plover *Charadrius dubius*



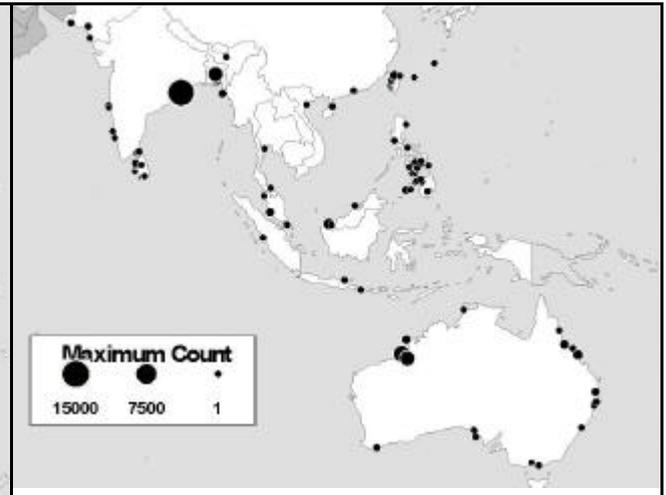
Kentish Plover *Charadrius alexandrinus*



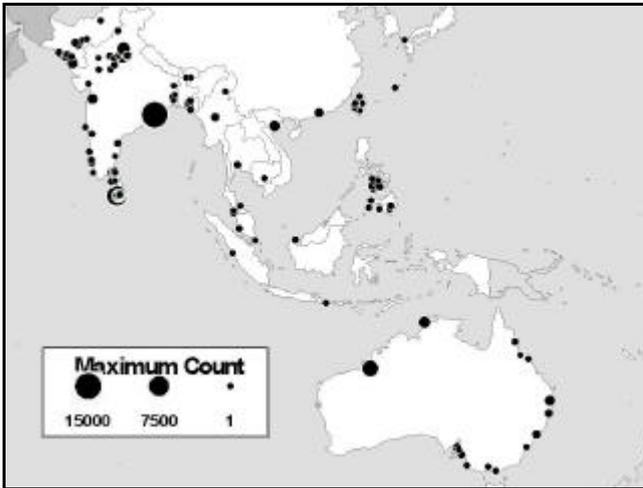
Lesser Sandplover *Charadrius mongolus*



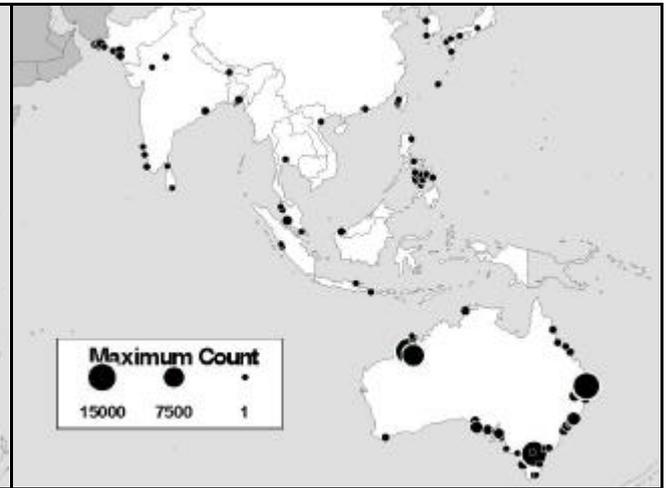
Greater Sandplover *Charadrius leschenaultii*



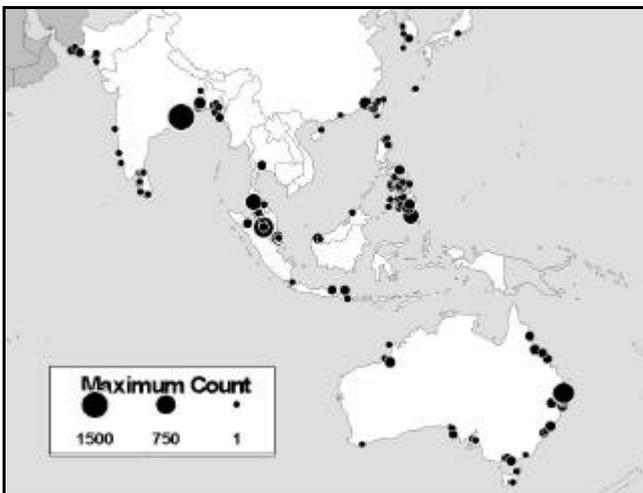
Black-tailed Godwit *Limosa limosa*



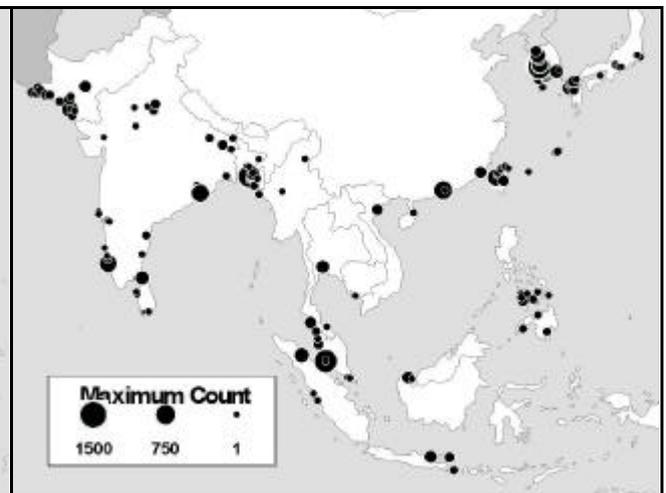
Bar-tailed Godwit *Limosa lapponica*



Whimbrel *Numenius phaeopus*

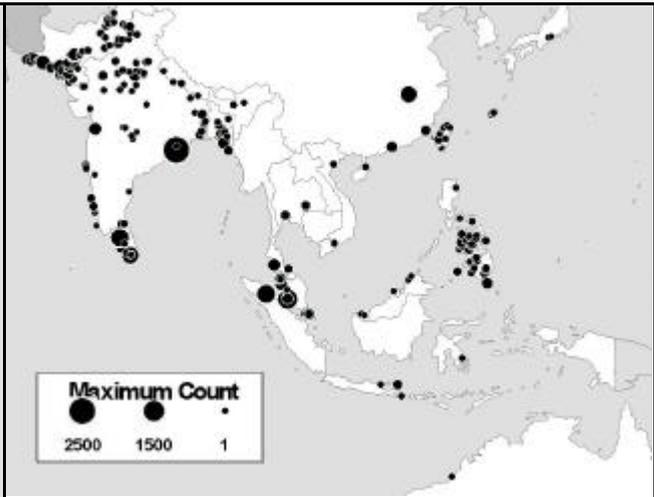
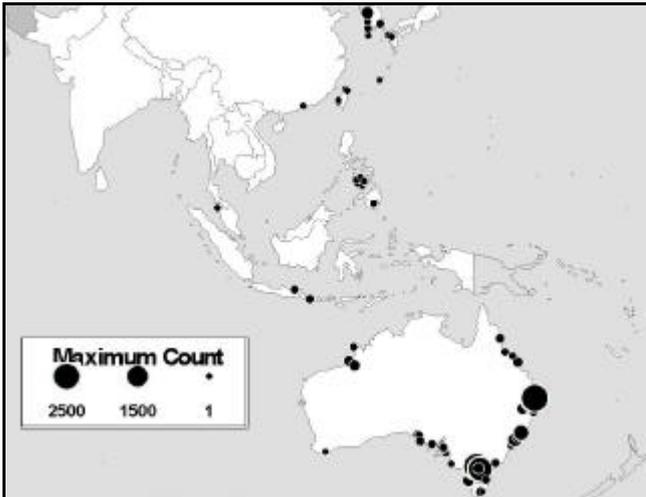


Eurasian Curlew *Numenius arquata*



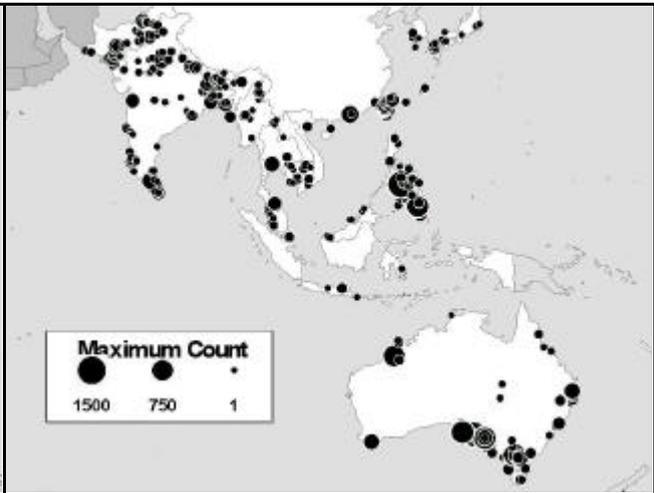
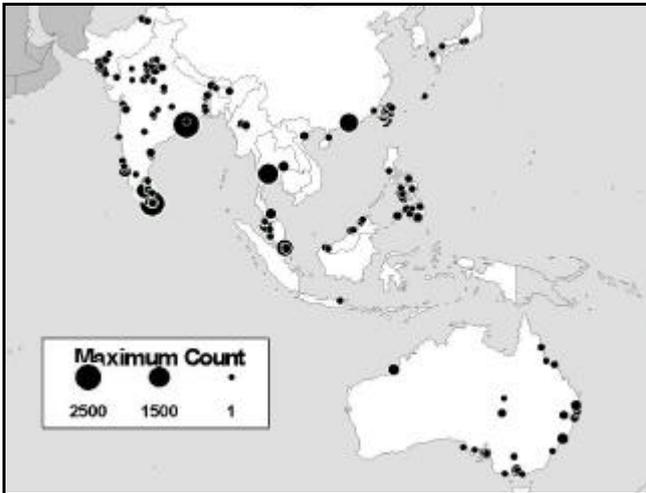
Far Eastern Curlew *Numenius madagascariensis* [nt]

Common Redshank *Tringa totanus*



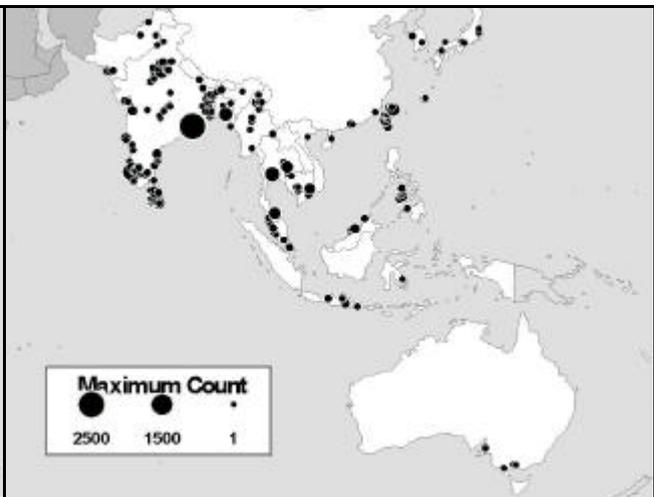
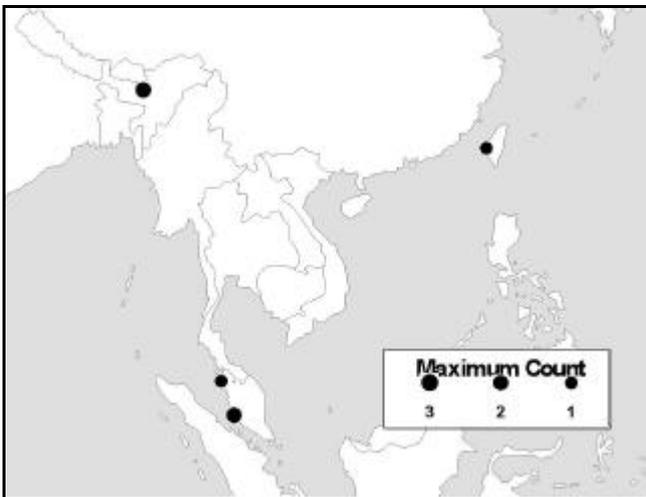
Marsh Sandpiper *Tringa stagnatilis*

Common Greenshank *Tringa nebularia*

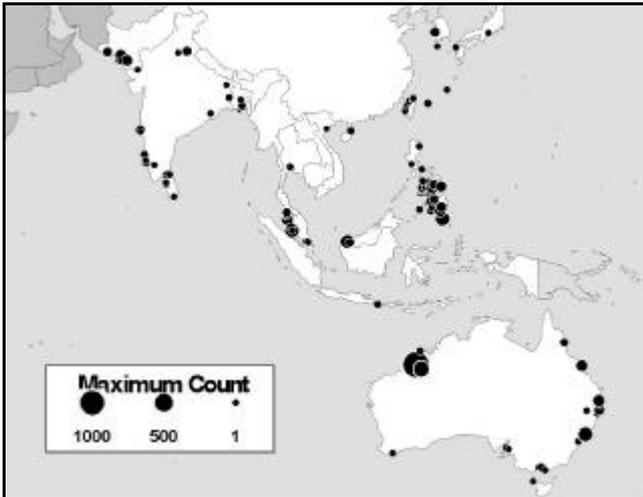


Nordmann's Greenshank *Tringa guttifer* [EN]

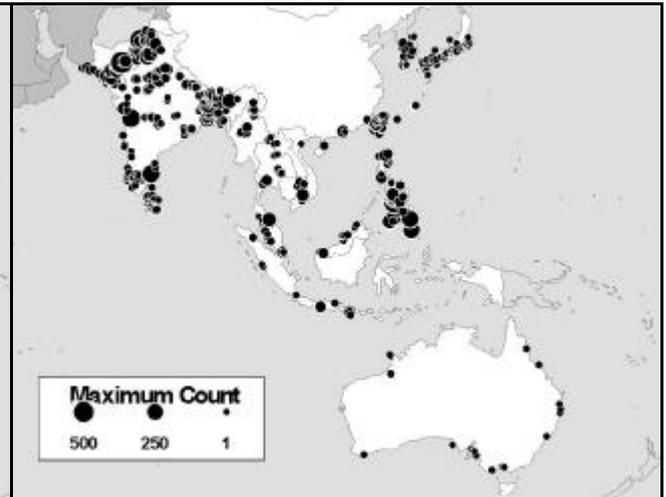
Wood Sandpiper *Tringa glareola*



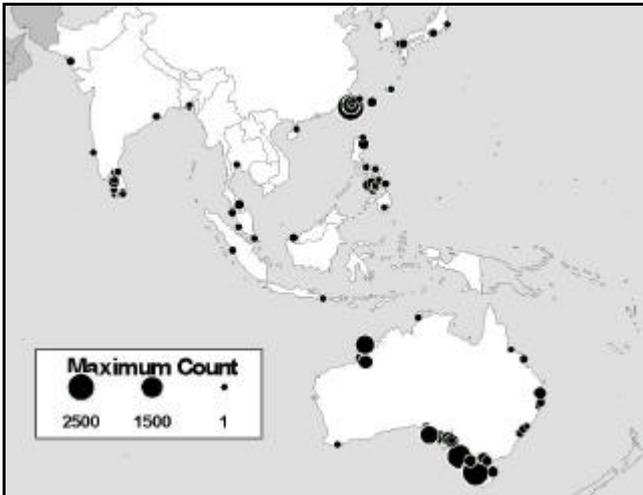
Terek Sandpiper *Xenus cinereus*



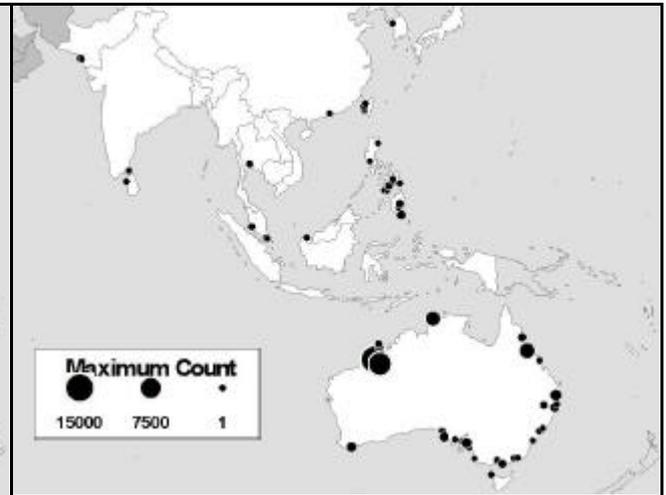
Common Sandpiper *Actitis hypoleucos*



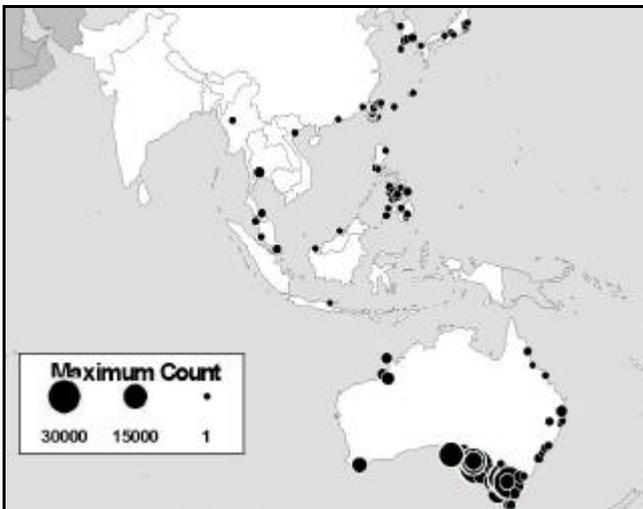
Ruddy Turnstone *Arenaria interpres*



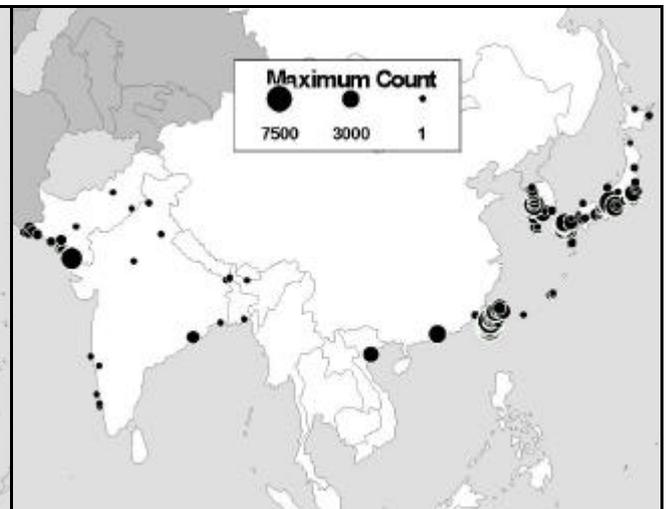
Great Knot *Calidris tenuirostris*



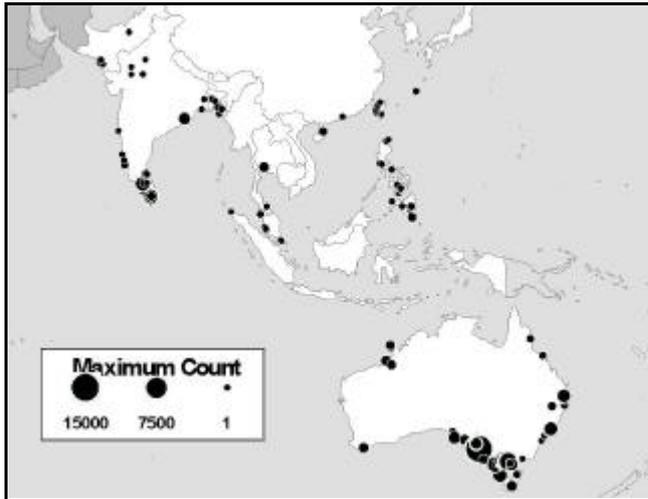
Red-necked Stint *Calidris ruficollis*



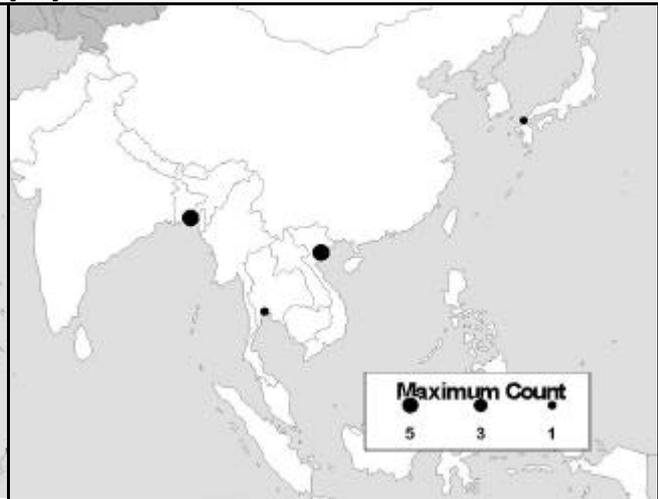
Dunlin *Calidris alpina*



Curlew Sandpiper *Calidris ferruginea*

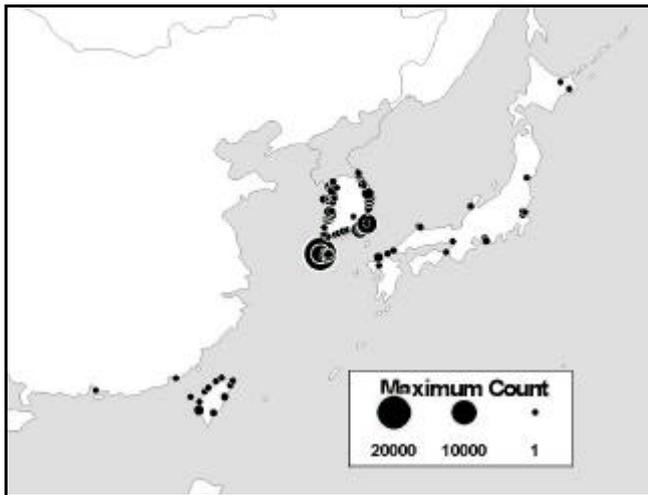


Spoon-billed Sandpiper *Eurynorhynchus pygmaeus* [VU]

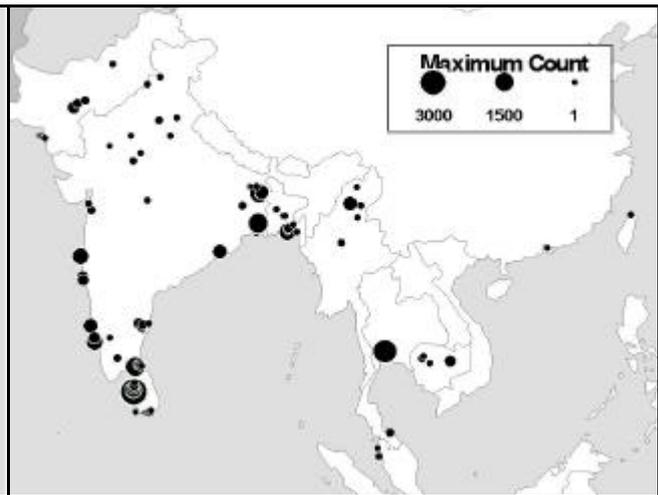


3.6.13 Gulls, terns & skimmers

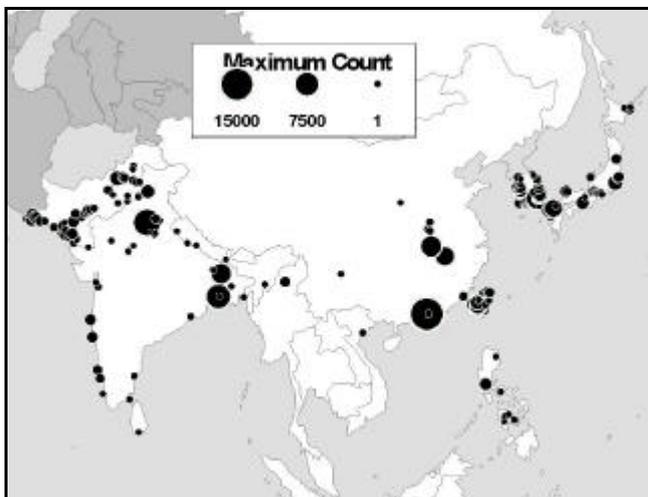
Black-tailed Gull *Larus crassirostris*



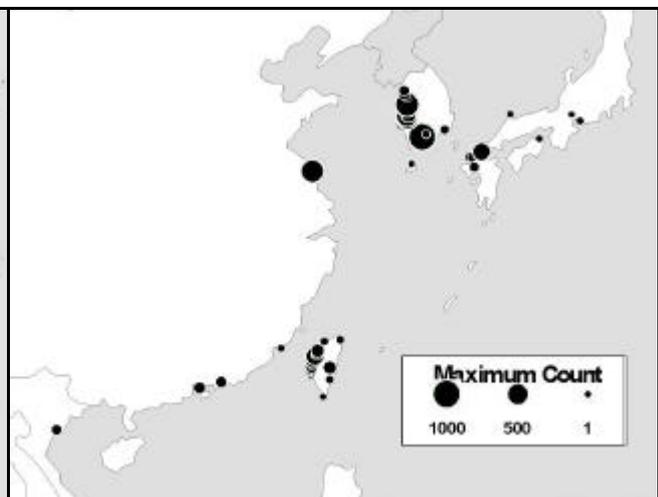
Brown-headed Gull *Larus brunnicephalus*



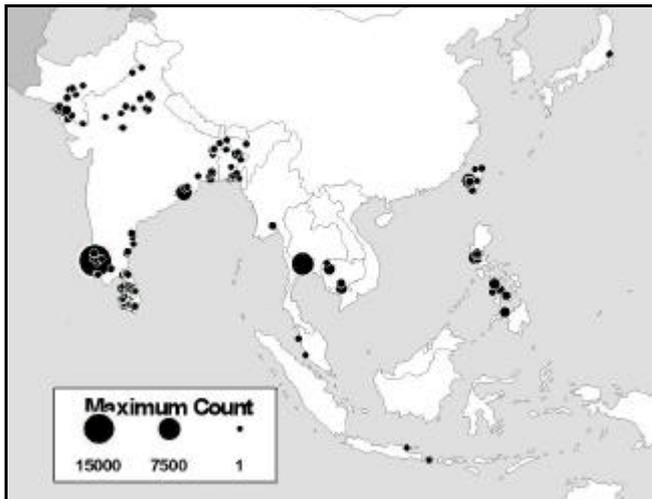
Black-headed Gull *Larus ridibundus*



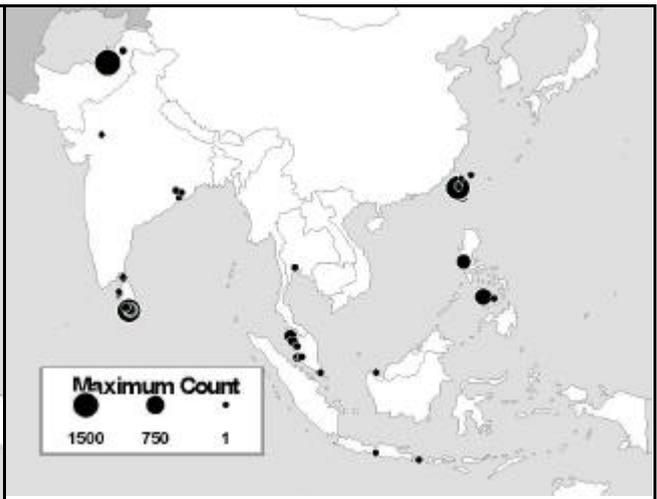
Saunders' Gull *Larus saundersi* [VU]



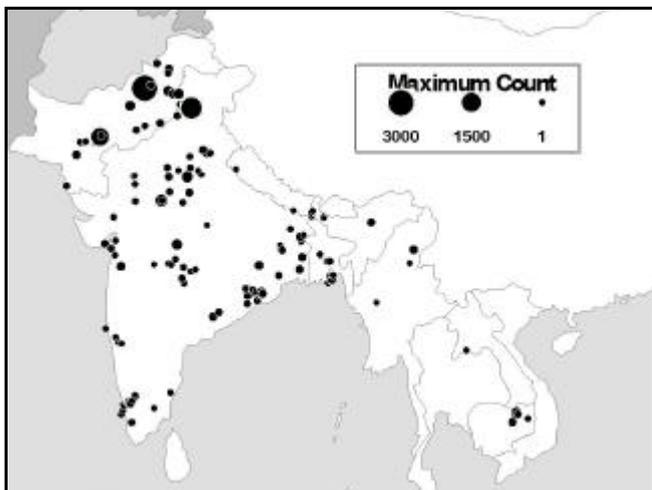
Whiskered Tern *Chlidonias hybridus*



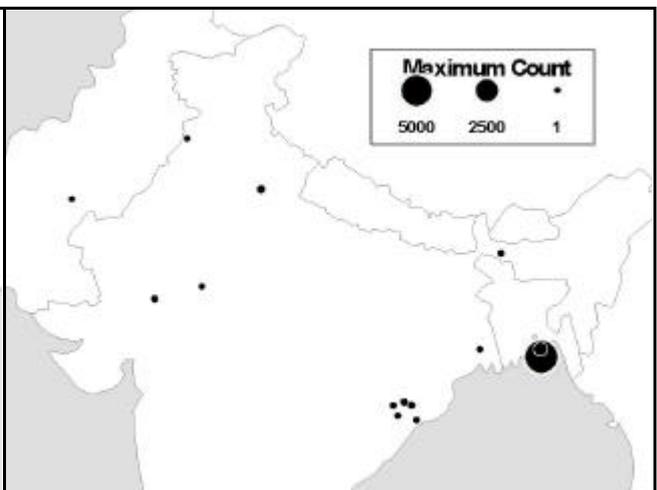
White-winged Black Tern *Chlidonias leucopterus*



River Tern *Sterna aurantia*

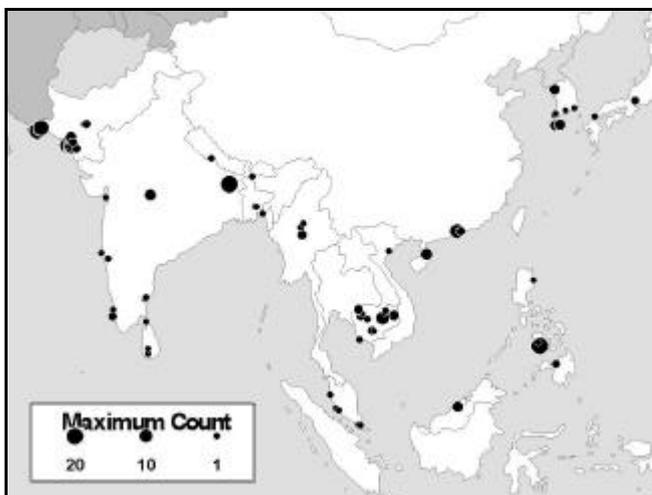


Indian Skimmer *Rynchops albicollis* [VU]

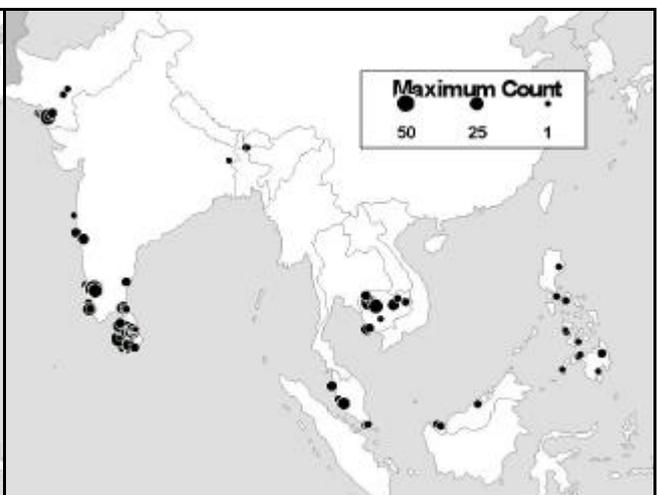


3.6.14 Wetland-dependent raptors

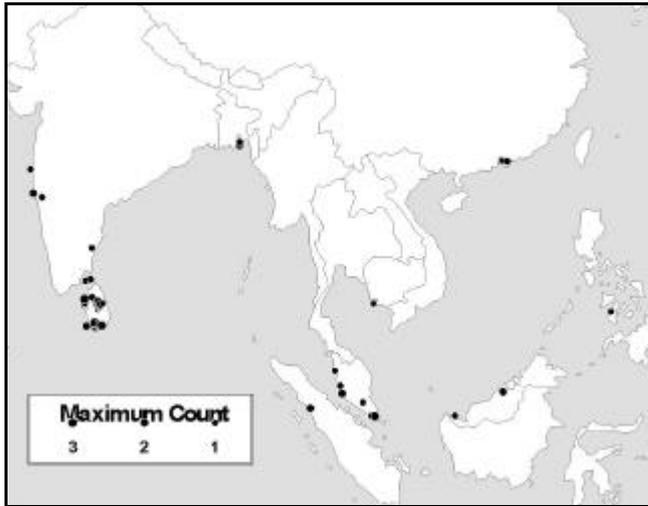
Osprey *Pandion haliaetus*



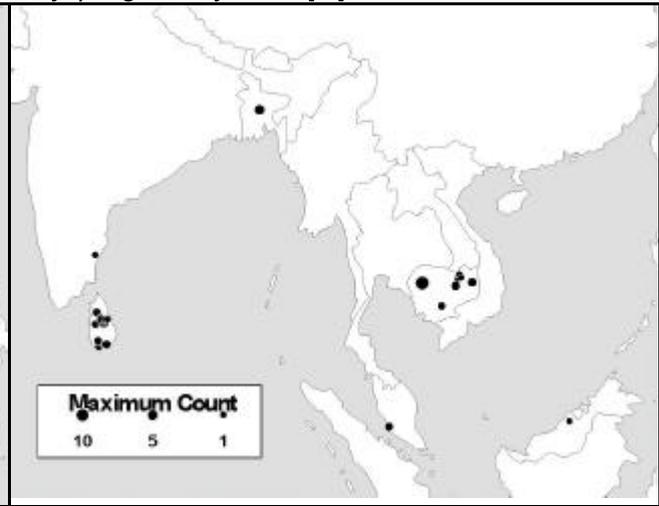
Brahminy Kite *Haliastur indus*



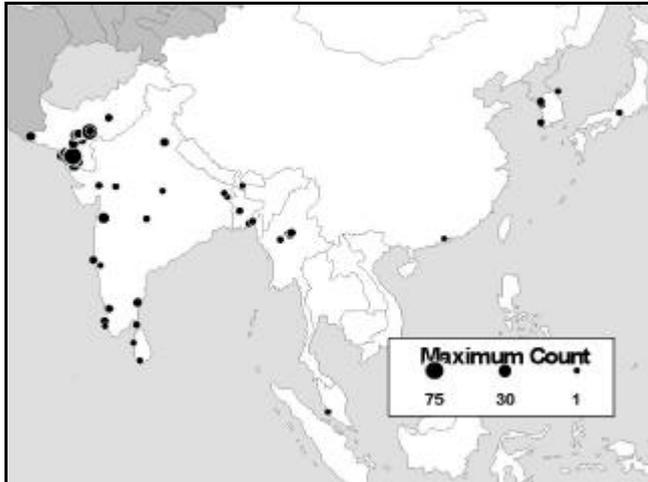
White-bellied Sea Eagle *Haliaeetus leucogaster*



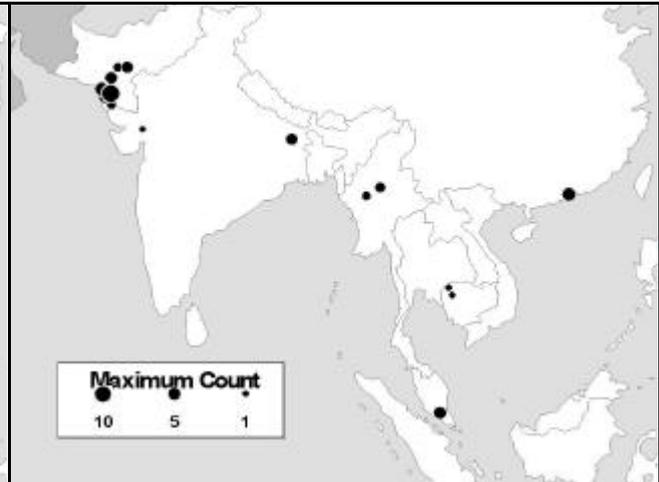
Grey-headed Fishing Eagle
Ichthyophaga ichthyaetus [nt]



Marsh Harrier *Circus aeruginosus*



Greater Spotted Eagle *Aquila clanga* [VU]



4. Future directions

The Asian Waterbird Census has proven to be a valuable regional programme to monitor waterbirds and wetlands on an annual basis. It has involved building networks of volunteers interested in waterbirds and has been a powerful mechanism to raise awareness of the need to conserve wetlands and waterbirds. The results presented in this report illustrate that there is a strong basis to be positive about the increasing contribution that the AWC can make to waterbird and wetland conservation.

The AWC strongly supports and contributes to a range of local, national, regional and global waterbird and wetland management and conservation activities as outlined in Section 1.4. Examples of the ongoing contribution that the AWC is making regionally, and globally through its links to the International Waterbird Census, include:

- Ramsar Convention, through the identification of wetlands of international importance for waterbirds and their monitoring, responding specifically to the *Ramsar Strategy Plan 2003-2008* and resolution 6.4 (refer to Appendix II);
- Convention of Migratory Species (CMS), through the monitoring of the conservation status of migratory waterbirds (listed in Appendices I and II of the Convention, and non-listed species) and their habitats;
- Convention on Biological Diversity's (CBD) goal in conservation and sustainable use of biodiversity;
- Support to implementation of the *Asia-Pacific Migratory Waterbird Conservation Strategy: 2001-2005*, through monitoring of wetlands, identification of wetlands of international importance for designation under the Site Networks, awareness raising, networking, training, etc;
- Wetlands International's *Waterbird Population Estimates* (WPE) programme, responding specifically to the Ramsar resolution 8.34 (Appendix III);
- BirdLife International's *Important Bird Area* (IBA) programme, through the monitoring of Important Bird Areas and contributing to identification of new important areas; and
- IUCN/BirdLife's *Globally Threatened Bird Update* (GTB) programme, through the monitoring of the status of globally threatened and non-threatened species.

In addition, at the local and national level, the data collected by the AWC supports:

- species and site conservation and research programmes and campaigns to raise awareness of the importance of wetlands in many countries; and
- development of national wetland and waterbird conservation action plans and strategies.

The success of the AWC hinges on timely implementation of its annual cycle of data collection and reporting and includes:

- proper coordination and regular communication between coordinators and participants at regional, national and site level to encourage adequate preparation and active participation in the census;
- comprehensive and systematic coverage of sites and collection of accurate information on wetlands and waterbirds in January;
- rapid and accurate reporting of results by participants to coordinators;
- data collation, processing, and publication of results by national coordinators;
- dissemination of reports to participants and key target audiences at the national and regional levels; and
- submission of national census data/databases by National Coordinators on an annual basis to Wetlands International for collation into AWC international databases, production of AWC regional reviews and analysis, and their dissemination to key target audiences.

The development and maintenance of a long-term programme such as the AWC requires ongoing attention to build on the strengths and address any weaknesses in the programme. In October 2003, Wetlands International held the first formal meeting of AWC Coordinators, in Malaysia, in order to identify the challenges and opportunities for the future development of the AWC. Eighteen National/Sub-national Coordinators and their representatives actively participated in the meeting.

AWC Strategy 2004-2006

One of the major outcomes of the 2003 AWC Coordinators meeting, was the recognition of the need for a document to guide the future course of the census. As a result, a *Strategy for the Development of the Asian*

Waterbird Census: 2004-2006, was finalised after the meeting and endorsed by all the AWC Coordinators in December 2003. The Strategy is available on the AWC website <http://www.wetlands.org/IWC/awc/awcmain.html>.

The Strategy focuses on seven objectives and a diverse range of actions that will need to be implemented at the local, national and international levels. It is recognised that funds to undertake some of these are needed. The objectives and actions are outlined below (in no particular order of priority):

Obj. 1: To enhance geographic and site coverage of the AWC.

- Encourage and stimulate participation of all countries in the region in the census;
- Prepare an updated list of priority wetlands of national and international importance to be covered each year by the AWC; and
- Conduct an evaluation in each country to identify sites that hold globally threatened species and ensure that they are adequately monitored.

Obj. 2: To improve the quality of AWC data to achieve the aim of monitoring of waterbird populations.

- Ensure counts are undertaken in January during the suggested period so as to minimize interference by double counts;
- Ensure sites in the priority list of internationally/nationally important sites and other important sites are covered each year and ensure at least one experienced and reliable counter is leading the count at each site;
- Prepare boundary maps for each site included in the priority list of important wetlands to be covered by the AWC, and make these available to all participants;
- Establish effective mechanisms for national coordination, including dissemination and collection of all standardised data forms in a timely manner after the census and to undertake a quality check of the content of information;
- Promote use of standardised AWC count and site form, database programmes and structures in all countries and at the international level to ensure timely and rapid transmission of data;
- Produce and disseminate of results of the annual census in the form of annual national reports to a national audience with covering letter from the AWC International Coordinator;
- Submit national census data or databases by National Coordinators on an annual basis to Wetlands International for collation into AWC international databases, production of AWC regional reviews and analysis;
- Provide support to volunteers in data collection, including provision of participation guidelines and support logistics, identification guides and equipment; and
- Strengthen waterbird specialist groups in the Asia-Pacific through increasing awareness about groups, identifying potential members, and mechanisms of improving data quality.

Obj. 3: To enhance communication amongst AWC Coordinators and the Networks.

- Develop a communication strategy to enhance communication within the network and the outside world;
- Strengthen co-ordination amongst coordinators, review and plan activities through regular communication and through the organisation of regular meetings;
- Review effectiveness of current national co-ordination methods to enhance the national networks (such as through regular communication and production and dissemination of annual AWC national report and annual newsletter for counters); and
- Encourage use of existing national/regional publications to disseminate information of AWC.

Obj. 4: To develop training, communication and public awareness programmes for the AWC.

- Identify training needs as a basis for the development of a training programme to improve knowledge and skills to coordinate the AWC volunteer network and undertake the census. Identify resources and skills in the region which could help with this;
- Conduct training activities for volunteers in countries to enhance counting and identification capacity and skills;
- Develop an awareness programme for the public to improve their knowledge about the value of the census and the importance of conservation of wetlands and their biodiversity, particularly waterbirds; and
- Regularly update the AWC website and produce the biannual regional newsletters to enhance the communication and public awareness.

Obj. 5: To develop a fundraising strategy for the AWC and seek funding opportunities to support its development.

- Develop and implement a fundraising strategy, based on a review of the critical funding requirements for maintenance and development of AWC; and
- Identify funding opportunities and resources for fundraising for priority actions based on the fundraising strategy at the regional/national/local level to strengthen national networks to implement the AWC.

Obj. 6: To support improved decision making on waterbird and wetland conservation at international and national levels through enhanced use of AWC data.

- Produce a triennial AWC international report for distribution to key government agencies, international conventions, development and funding agencies etc. to promote waterbird and wetland conservation and as feedback to the AWC volunteers;
- Encourage national coordinators to report proactively on the status of waterbirds and wetlands in the country to national conservation and development agencies, national Ramsar committees and other data users to ensure that priorities and needs for waterbirds can be given priority within national development plans and site development projects that may impact on wetlands of importance for waterbirds;
- Report on the status of waterbirds and wetlands in the Asia-Pacific region to the Ramsar Convention, Convention on Migratory Species, Convention on Biological Diversity and international initiatives/organisations including the Asia-Pacific Migratory Waterbird Conservation Committee, BirdLife International, Wetlands International; and
- Ensure timely provision of AWC data and related information to the development and review of estimates of waterbird populations to feed into updates of the Waterbird Population Estimates and reviews of Globally Threatened Birds.

Obj. 7: To develop a coordination mechanism for the AWC.

- Plan to establish a regular mechanism to oversee the development of the AWC; and
- Establish a task force to design strategic ways to build capacity of governments and NGOs to implement the AWC in each country through identification of resources and mechanisms.

The Strategy is to guide all AWC participants, National/Sub-national Coordinators, the International Coordinator and Wetlands International to help them work together as a team to ensure the further development and success of the AWC over the next three years.

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Appendices

Appendix I: List of AWC Coordinators, 1997–2001

Country/Region	Name	Organization
International	Dr. Taej Mundkur (1997–1998)	Wetlands International
	Mr. Koji Taji (1998–2000)	Wetlands International
	Mr. David Li Zuo Wei (2001 onwards)	Wetlands International
Australia	Mr. Ken Harris (1997–2000)	Australasian Wader Studies Group
	Mr. Jim Wilson (2001)	Australasian Wader Studies Group
Bangladesh	Mr. Anisuzzaman Khan (1997–1998)	IUCN-Bangladesh
Brunei Darussalam	Mr. Victor Stanger (1997–1998)	
Cambodia	Mr. Frederic Goes (1998–2001)	Wildlife Conservation Society – Cambodia
Mainland China	Mr. Liu Guoqi	Wetland Monitoring Center, State Forest Administration, China
Hong Kong	Mr. Geoff Carey	Hong Kong Bird Watching Society
Taiwan	Dr. Woei-horng Fang	Wild Bird Federation Taiwan
India	Dr. Asad Rahmani (National Coordinator)	Bombay Natural History Society
	Dr. P.O. Nameer (Kerala)	Department of Wildlife Sciences, College of Forestry, Kerala Agricultural University
	Dr. U.N. Dev (Orissa)	Bihang Institute for Ornithology & Mass Eco-Development (BIOME)
	Mr. Gurmeet Singh (Punjab)	Wildlife Department Punjab
	Prof. P.C. Bhattacharaya (Assam)	Animal Ecology & Wildlife Biology Laboratory, Department of Zoology, Gauhati University
	Dr. Anwaruddin Chowdhury (Assam)	
	Lt. Col. Shakti Baneerjee (West Bengal)	WWF – India, Eastern Region
	Dr. Rajiv Kalsi (Haryana)	Department of Zoology, M.L.N. College
	Mr. Aasheesh Pittie (Andhra Pradesh)	
	Mr. Siraj A. Taher (Andhra Pradesh)	Birdwatchers' Society of Andhra Pradesh
	Mr. S. Sridhar (Karnataka)	Institute for Natural Resources Conservation, Education, Research & Training (INCERT)
	Dr. Rishad Pravez (Gujarat)	Department of Zoology, University School of Science, Gujarat University
	Dr. S. Subramanya (Karnataka)	University of Agricultural Sciences GKVK
	Mr. M. Raghuraman (Tamil Nadu)	Madras Naturalists Society
	Mr. Ramesh Lackedkar (Maharashtra)	The Vidharbha Natural History Society
	Mr. Rakesh Vyas (Rajasthan)	
	Mr. Heinz Lainer (Goa)	
Indonesia	Mr. Yus Rusila Noor	Wetlands International – Indonesia Office
Japan	Prof. Akira Uritani	National Institute of Advanced Industrial Science and Technology
Republic of Korea	Prof. Pyong-Oh Won (1997–1998)	
	Dr. Jin-Han Kim (1999–2001)	National Institute of Environmental Research
Malaysia	Ms. Siti Hawa Yatim	Department of Wildlife & National Parks
	Ms. Glenda Noramly (1999–2000)	Malaysian Nature Society
	Mr. Yeap Chin Aik (2001)	Malaysian Nature Society
Myanmar	U Saw Han	Forestry Department
	U Thet Lwin	Forestry Department
Nepal	Mr. Rajendra N. Suwal	Lumbini Crane Conservation Centre
New Zealand	Dr. Paul Sagar	Ornithological Society of New Zealand
Pakistan	Dr. Abdul Aleem Chaudhry	Wildlife & Parks, Punjab
	Dr. Mohammad Farooq Ahmed	Zoological Survey Department
	Director	Wildlife Conservation Department, Sindh

Country/Region	Name	Organization
Philippines	Mr. Carlo Custodio	Protected Areas and Wildlife Bureau
	Ms. Marlynn M. Mendoza	Protected Areas and Wildlife Bureau
Singapore	Mr. Lim Kim Keang	Nature Society (Singapore)
Sri Lanka	Mr. Thilo W. Hoffmann (1997-1998)	Ceylon Bird Club
	Mr. Deepal Warakagoda (1998-2001)	Ceylon Bird Club
Thailand	Dr. Philip Round	Bird Conservation Society of Thailand
	Ms. Bubphar Amget	Royal Forest Department, Thailand
Vietnam	Mr. Jonathan C. Eames	BirdLife International – Vietnam Programme

Download the latest list and contact details of AWC Coordinators from the AWC website at <http://www.wetlands.org/IWC/awc/awccoords.html>

Appendix II: Ramsar resolution VI.4 on adoption of population estimates for operation of the specific criteria based on waterfowl

Adopted at: 6th Meeting of the Conference of the Contracting Parties of the Conference of the Contracting Parties, Brisbane, Australia, 19-27 March 1996

Source: http://ramsar.org/key_res_vi.4.htm

1. REAFFIRMING the particular ecological values of waterfowl in the identification of internationally important wetlands, as expressed by both the Convention and subsequent resolutions and recommendations of the Conference of the Parties;
2. RECOGNIZING the many Ramsar sites which are of importance to waterfowl, and the continuing need for reliable information to underpin the application of Criterion 3(c);
3. RECALLING Resolution 5.9 which, inter alia, called for the regular updating of international population estimates for waterfowl as the basis of the application of Criterion 3(c), and which further requested IWRB (now Wetlands International) to bring revised estimates to each future meeting of the Conference of the Parties;
4. AWARE of Technical Workshops coordinated by the Joint Nature Conservation Committee in the UK, the National Environmental Research Institute in Denmark, and Wetlands International to agree timetables for the revision of waterfowl population estimates in the Western Palearctic and East Atlantic Flyway, the conclusions of which were submitted to Technical Session E of the present meeting, and in particular aware of the need to avoid short-term changes in standard 1% thresholds given their value as "bench-marks", against which sites of possible international importance can be assessed;
5. CONSCIOUS of the need for close technical coordination between the Ramsar Convention and the Bonn Convention's Agreement on the Conservation of African-Eurasian Migratory Waterbirds, and also with other international treaties and agreements, to ensure consistency in the use of international waterfowl population estimates and 1% thresholds; and
6. NOTING Wetlands International's draft report summarizing revised population estimates and 1% thresholds prepared for the present meeting of the Conference of the Parties in response to Resolution 5.9;

The Conference of the Contracting Parties

7. URGES Wetlands International to continue to develop the International Waterfowl Census and to enhance its global coverage as an important basis for the application of Ramsar Criterion 3(c);
8. ENCOURAGES Wetlands International, using its network of Waterbird Specialist Groups, to work with the Ramsar Bureau, Contracting Parties, and other international treaties in order to review and keep up to date waterfowl population estimates and 1% thresholds, in particular giving priority to the assessment of the sizes of those populations for which no reliable population estimate or 1% threshold currently exists, and to report back the results of such activity to the 7th Meeting of the Conference of the Contracting Parties;
9. AGREES that unless waterfowl populations are poorly known or are known to be rapidly changing, 1% threshold levels should be revised not more frequently than every third ordinary meeting of the Conference of the Contracting Parties; and
10. CALLS ON Contracting Parties to use these estimates and thresholds, upon their publication, as a basis for designation of sites for the List of Wetlands of International Importance in the succeeding three triennia.

Appendix III: Ramsar resolution VIII. 38 on waterbird population estimates and the identification and designation of Wetlands of International Importance

Adopted at: 8th Meeting of the Conference of the Contracting Parties, Valencia, Spain, 18-26 November 2002

Source: http://www.ramsar.org/key_res_viii_38_e.htm

1. RECOGNIZING that the regular review and updating of estimates of waterbird population sizes is necessary to track the efficacy of measures for the conservation and wise use of waterbird populations, including the establishment of national and international networks of protected sites on migratory waterbird flyways, as called for in the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Resolution VII.11);
2. RECALLING Resolution 5.9, in which the Contracting Parties requested IWRB (now Wetlands International) to provide information on the sizes of waterbird populations as a basis for the application of the Convention's site-selection Criterion 3 (c) (now Criterion 6), and ALSO RECALLING Resolution VI.4, in which they outlined the desired timetable for such updates and requested Wetlands International to bring updated information to each future meeting of the Conference of the Parties;
3. REAFFIRMING the importance of data collected by Wetlands International through its International Waterbird Census for the assessment of wetlands against Criteria 2, 4, 5 and 6 of the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Resolution VII.11);
4. NOTING AGAIN the value of regular waterbird counts at wetlands as an effective means of monitoring aspects of the ecological character of particular sites, especially for the purposes of management planning, environmental impact assessment, and the evaluation of national or regional wetland policies;
5. AWARE of the wide international consultation undertaken by Wetlands International to collate data and information for the third edition of its publication *Waterbird Population Estimates*, prepared for this meeting of the Conference of the Contracting Parties, which brings together the most recent information on the population sizes of waterbirds, as envisaged by Resolution VI.4, and which identifies 1% population thresholds for 1,138 (50%) biogeographic populations of waterbirds, but also AWARE that, despite this, there remain 1,133 populations of waterbirds for which there is no reliable population estimate from which to establish a 1% threshold for the application of Ramsar Criterion 6;
6. WELCOMING BirdLife International's publications *Important Bird Areas and potential Ramsar Sites in Europe* and *Important Bird Areas and potential Ramsar Sites in Africa*, and RECOGNIZING the value of BirdLife International's Important Bird Area (IBA) programme in assisting Contracting Parties in their identification of potential Wetlands of International Importance;
7. NOTING the publication by BirdLife International in 2000 of the most recent assessment of the status of the world's birds in *Threatened Birds of the World*, which indicated that 158 species of waterbird were globally threatened and that for a further six species of waterbirds data were so deficient that it is not possible to assign conservation status, and RECOGNIZING that this publication provides information in support of the identification and designation of Ramsar sites under Criterion 2; and
8. RECOGNIZING the role of the international Specialist Groups of the Species Survival Commission of IUCN – The World Conservation Union as well as those of Wetlands International in collecting, analysing and interpreting waterbird population data;
9. AWARE of the need for monitoring information on alien, non-native and invasive waterbird populations and hybrid forms, as well as those waterbirds whose populations are rapidly increasing outside their native ranges, so as to inform management responses;
10. FURTHER AWARE of the development of the African/Eurasian Migratory Waterbird Flyways project by Wetlands International, which will enhance the coverage and quality of data underpinning future versions of *Waterbird Population Estimates* and will lead to identification of potential Ramsar sites, by identifying critically important wetlands along migratory waterbird flyways, as well as to an enhanced capacity to survey and monitor them; and
11. DESIRING to promote the application of a consistent global source of information on 1% thresholds for the application of Criterion 6 for designation of Wetlands of International Importance;

The Conference of the Contracting Parties

12. WELCOMES the publication of the third edition of *Waterbird Population Estimates* prepared for this meeting of the Conference of the Parties, and CONGRATULATES Wetlands International on the work undertaken to further develop this global and consistent source of data and information of importance for wetland and waterbird conservation and wise use, and for increasing the number of biogeographic populations for which population estimates and 1% thresholds are now available;
13. URGES all Contracting Parties to use appropriate 1% thresholds contained in the third edition of *Waterbird Population Estimates* as the official and consistent basis for their application of Criterion 6 of the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* for the designation of Ramsar sites during the 2003-2005 triennium;
14. ALSO URGES Contracting Parties to work together to identify and designate coherent flyway-scale networks of Ramsar sites for migratory waterbirds, in line with Action 12.2.2 of the Convention's Strategic Plan 2003-2008, including working cooperatively with the Convention on Migratory Species (CMS) and African–Eurasian Migratory Waterbird Agreement (AEWA) through the Joint Work Plan between the Ramsar Convention, CMS and AEWA;
15. FURTHER URGES Contracting Parties to select Ramsar sites for globally threatened waterbirds in implementation of Action 12.2.1 of the Convention's Strategic Plan 2003-2008, noting also the value of selecting Ramsar sites to support conservation strategies for nationally or regionally threatened waterbirds;
16. REQUESTS Wetlands International, with the assistance of the Ramsar Bureau, to make widely available, including in electronic formats, the 3rd edition of *Waterbird Population Estimates* to all Contracting Parties, non-Parties and other organizations involved in the identification and designation of Ramsar sites;
17. REQUESTS Wetlands International to continue to bring an updated edition of *Waterbird Population Estimates* to each future Conference of the Parties, having first undertaken international scientific consultation on its contents, so that the population estimates and 1% thresholds it contains may be used as the basis for the application of Criterion 6 in the succeeding triennium;
18. WELCOMES the intention of Wetlands International to enhance the scope and coverage of future editions of *Waterbird Population Estimates* so as to include all waterbird taxa listed in the glossary to the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance*;
19. ALSO WELCOMES the proposed establishment by Wetlands International of a Global Waterbird Monitoring Steering Committee as a means of focusing the future development of the International Waterbird Census, and in particular its contribution to the strategic development of the Ramsar List, and REQUESTS this Committee, once established, to identify ways and means of increasing the availability of data and information from the IWC to Contracting Parties and others in support of their identification and designation of Ramsar sites;
20. ENCOURAGES Contracting Parties and others with relevant data and information to assist Wetlands International and BirdLife International through the continued collection and supply of population data on waterbirds, including globally threatened species and those species identified by BirdLife International in *Threatened Birds of the World* as being data deficient;
21. ENCOURAGES the Species Survival Commission of IUCN and Wetlands International to facilitate the establishment of further Specialist Groups for waterbird taxa where no such expert networks currently exist, so as to assist in the collation and critical interpretation of waterbird population data of value for the application of Criterion 6;
22. ENCOURAGES BirdLife International to make available to Contracting Parties and others information from its Important Bird Area (IBA) programme, including its analyses of IBAs and potential Ramsar sites for Europe and Africa, and to consider the preparation of such analyses for other regions;
23. REQUESTS the support of the Global Environment Facility to assist eligible countries in the implementation of the African/Eurasian Migratory Waterbird Flyways project; and
24. URGES Contracting Parties to apply waterbird monitoring data, and analyses drawn from them, when appropriate, as a means of providing objective information for site management planning and the evaluation of national or regional wetland policies.

Appendix IV: 1994 IUCN Criteria for Red Listing of Threatened Species

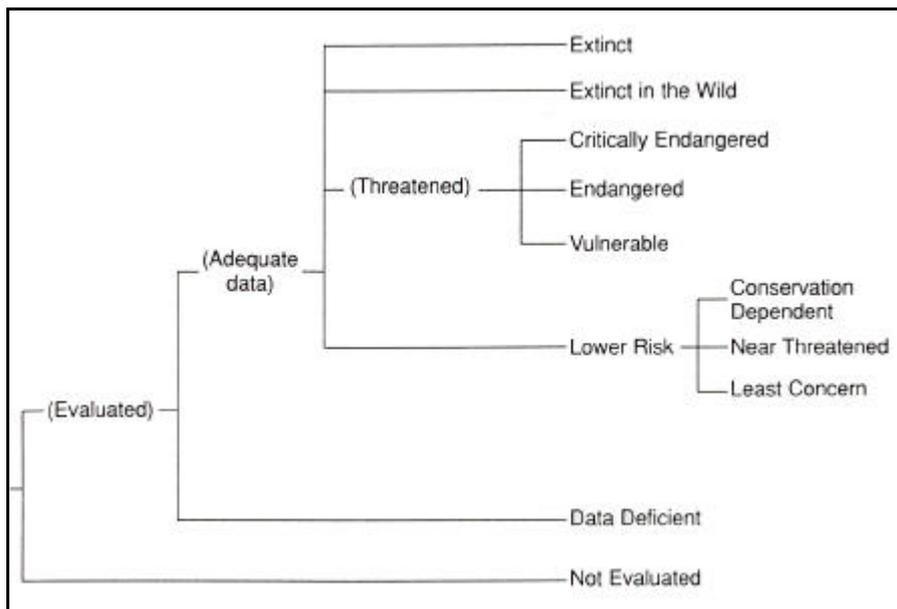
Background

The IUCN Criteria for Red Listing of Threatened Species provides the globally acceptable standard for the identification for classifying species at high risk of global extinction. The criteria were adopted by the IUCN Council in 1994 following extensive international consultation. The IUCN updated the Red List Categories in 2001, and the categories of Lower Risk and Conservation Dependent are no longer used (IUCN 2001). However, because the globally threatened bird species list had not been updated since the publication of the *Threatened Birds of Asia* (BirdLife International 2001), the IUCN (1994) categories are used in this AWC publication. Readers are advised to refer to the IUCN website to review the updated criteria.

Detailed information on the IUCN 1994 criteria is available on the IUCN webpage http://www.iucnredlist.org/info/categories_criteria1994.html# categories from which the following information is summarized for the benefit of readers.

IUCN 1994 Criteria

The dendrogram below shows the decision-making process by which a species's status is categorised, and also shows the relationship between the 10 possible options of IUCN's Red List categories following the 1994 criteria.



For each category there is a standard definition. For the three threatened categories (Critical, Endangered and Vulnerable) there are additional criteria used to determine the degree of threat for species (details of which are available on the IUCN website).

EXTINCT (EX) – A taxon is Extinct when there is no reasonable doubt that the last individual has died.

EXTINCT IN THE WILD (EW) – A taxon is Extinct in the wild when it is known only to survive in cultivation, in captivity or as a naturalised population (or populations) well outside the past range. A taxon is presumed extinct in the wild when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.

CRITICALLY ENDANGERED (CR) – A taxon is Critically Endangered when it is facing an extremely high risk of extinction in the wild in the immediate future, as defined by any of the criteria (A to E).

ENDANGERED (EN) – A taxon is Endangered when it is not Critically Endangered but is facing a very high risk of extinction in the wild in the near future, as defined by any of the criteria (A to E).

VULNERABLE (VU) – A taxon is Vulnerable when it is not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium-term future, as defined by any of the criteria (A to E).

LOWER RISK (LR) – A taxon is Lower Risk when it has been evaluated, but does not satisfy the criteria for any of the categories Critically Endangered, Endangered or Vulnerable. Taxa included in the Lower Risk category can be separated into three subcategories:

Conservation Dependent (cd). Taxa which are the focus of a continuing taxon-specific or habitat-specific conservation programme targeted towards the taxon in question, the cessation of which would result in the taxon qualifying for one of the threatened categories above within a period of five years.

Near Threatened (nt). Taxa which do not qualify for Conservation Dependent, but which are close to qualifying for Vulnerable.

Least Concern (lc). Taxa which do not qualify for Conservation Dependent or Near Threatened.

DATA DEFICIENT (DD) A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution is lacking. Data Deficient is therefore not a category of threat or Lower Risk. Listing of taxa in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate. It is important to make positive use of whatever data are available. In many cases great care should be exercised in choosing between DD and threatened status. If the range of a taxon is suspected to be relatively circumscribed, if a considerable period of time has elapsed since the last record of the taxon, threatened status may well be justified.

NOT EVALUATED (NE) A taxon is Not Evaluated when it has not yet been assessed against the criteria.

Mission:

To sustain and restore wetlands, their resources and biodiversity for future generations through research, information exchange and conservation activities, worldwide.

- The Asian Waterbird Census (AWC) conducted each year in January is a waterbird and wetland monitoring programme initiated in 1987 within the framework of the International Waterbird Census.
- Since its initiation, AWC has covered more than 5,700 sites in 25 countries, through the dedicated efforts of thousands of voluntary counters.
- This report summarises the results of the AWC in 1997, 1998, 1999, 2000 and 2001, and includes counts from 1,392 sites in 22 countries.
- A total of 61 Ramsar Sites, 32 Migratory Waterbird Network Sites in the East Asian-Australasian Flyway and 43 Important Bird Areas were covered.
- A total of 291 species of waterbirds and 15 species of wetland-dependent raptors were recorded during this period; and a maximum of over 4.5 million waterbirds were counted in 2001.
- Distribution maps are presented for 110 species, including 24 globally threatened species.

For further information please visit our website or contact our offices.

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