

# The Asian Waterbird Census: Development Strategy 2007–2015



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## 1. BACKGROUND

Migratory waterbirds are one of the most remarkable components of global biodiversity. Their long migrations and tendency to concentrate in large numbers at particular wetlands make them both visible and charismatic. Waterbirds 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, research biologists, tourists and associated enterprises. The presence of waterbirds also offers many opportunities for using wetlands sustainably, particularly through eco-tourism. This is particularly important for developing countries, since protecting waterbird habitats may impose an additional resource burden on them.

“ Waterbirds are one of the key attributes of the biodiversity of many 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). Bird counts can also provide vital evidence of the need to provide statutory protection for certain wetlands; 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”. Such long-term waterbird count data have been especially influential in the identification of Wetlands of International Importance (Ramsar sites), sites for designation under the East Asian – Australasian Flyway Site Network and the Important Bird Areas programme, and national protected areas.

Waterbirds are readily counted because many species congregate conspicuously during several stages of their annual cycle. No other group of birds has been so comprehensively and frequently surveyed. Within the framework of the global International Waterbird Census (IWC), there is a growing tradition in Asia of using long-term waterbird census data (from the Asian Waterbird Census – AWC) as a basis for estimating the sizes and trends of waterbird populations, parallel to similar developments elsewhere in the world. The IWC is one of the world's longest running and most extensive harmonised biodiversity monitoring programmes. The information obtained from the IWC has considerable conservation value at the local, national and international levels and a growing scientific impact.

## 1.1 The International Waterbird Census as a global programme



The Wetlands International Strategic Intent 2005–2014 (Wetlands International 2005 – [www.wetlands.org](http://www.wetlands.org)) defines four strategic global goals to realise its vision and mission.

**Global Goal 1:** Stakeholders and decision makers are well informed about the status and trends of wetlands, their biodiversity, economic values and priorities for action.

**Global Goal 2:** The values and services delivered by wetlands are recognised and integrated into sustainable development.

**Global Goal 3:** Conservation and wise use of wetlands is achieved through integrated water resource and coastal zone management.

**Global Goal 4:** Improved conservation status of wetland biodiversity is achieved through large-scale, transboundary initiatives for wetland-dependent species and critical habitats.

The IWC is a site-based counting scheme for monitoring waterbird numbers, organised by Wetlands International, which strongly contributes to the global goals, particularly goals 1 and 4. The census is coordinated as four regional programmes:

- The Asian Waterbird Census (AWC), which covers South, East and Southeast Asia (including eastern Russia) and Australasia and which is the subject of this strategy, is coordinated from the Wetlands International office in Kuala Lumpur, Malaysia (see e.g. Li and Mundkur 2004, 2007).
- 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; Solokha 2006).
- 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. Lopez-Lanus and Blanco 2005).



Country coverage of the Asian Waterbird Census

■ participating countries      ■ not currently participating countries



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The recommendations of the Strategic Plan of the IWC include:

- 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 organisations working towards the conservation of (migratory) waterbirds (e.g. BirdLife International: Global Species and Important Bird Areas (IBA) Programmes, hunting organisations);
- link the database with a Geographic Information System (GIS), to standardise geographical definition of sites; and
- extend the scope of application of the data, for example with research on climate change and avian influenza.

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 and application.

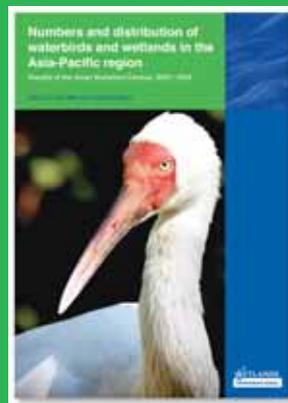
## 1.2 Background to the Asian Waterbird Census

The AWC is coordinated from Wetlands International's office in Kuala Lumpur, Malaysia. The census was initiated in 1987 in the Indian subcontinent, and has grown rapidly to cover South Asia, Southeast Asia, East Asia (including eastern Russia) and Australasia. Until 1993, the AWC included the region of South West Asia (which comprised the Arabian Peninsula, Iran and the Central Asian Republics). Responsibility for coordination of this region was transferred to the Wetlands International Netherlands office in 1994 to unify coordination of the IWC in all range states covered by the African Eurasian Waterbird Agreement (AEWA) and to enable improved use of IWC data to support the growing needs of the agreement.

Information generated by the AWC from 1987 to 1993 has been published in a series of annual reports (van der Ven 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 generate the first regional estimates of numbers and trends of waterbird populations, to summarise species distribution and to identify important wetlands; the results were published in a comprehensive report (Perennou et al. 1994). The data for the periods 1994–1996, 1997–2001 and 2002–2004 were compiled by Lopez and Mundkur (1997), Li and Mundkur (2004) and Li and Mundkur (2007) respectively.

A review of the implementation of the AWC was presented to the Global Flyways Conference in 2004 (Li and Mundkur 2006). In addition, national reports have been compiled by several of the participating countries.

To its credit, the AWC has been extremely successful in achieving its primary objectives (see section 1.3). As a result of their increased awareness, local people and governments are now setting about the conservation of important sites in most of the countries covered by the census. However, coverage and conservation efforts vary considerably, and the increasing pressure on wetlands and their biodiversity highlights the need to strengthen the programme to tackle emerging challenges; these include global climate change and its far-reaching impacts on changes in distribution, cover and type of wetlands as well as seasonal variations linked to probable changes in the carrying capacities of the wetlands used by the waterbirds for feeding, nesting and roosting.

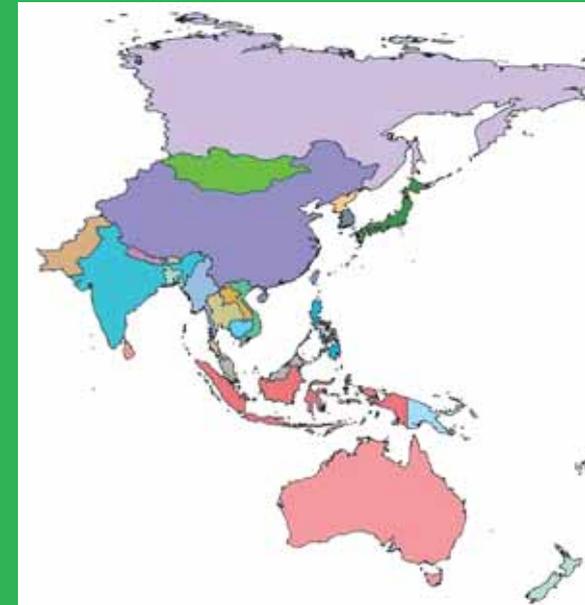


*The AWC 2002-2004 report*



*The AWC 1991-2001 report*

### *Country coverage of the Asian Waterbird Census*



In October 2003, the first meeting of the AWC national coordinators was held in Kuala Lumpur (Malaysia) and a Strategy for the Development of the Asian Waterbird Census: 2004–2006 (Wetlands International 2003) was developed as the major output of the meeting; it provided a clear direction for the development of the AWC. Progress on the implementation of this strategy was reviewed before the second AWC National Coordinators' Meeting, held in October 2006 in Manila (Philippines). Following this review, plans for a strategy to develop the AWC in 2007–2015 were discussed at the Manila meeting. The present strategy is an outcome of the deliberations in Manila and was agreed at the meeting by the national coordinators.



### 1.4.1 Convention on Wetlands (The Ramsar Convention)

[www.ramsar.org](http://www.ramsar.org)

The Convention on Wetlands (Ramsar, Iran, 1971) promotes the conservation of wetlands worldwide. The Convention has grown rapidly since its establishment in 1971 and, as at 1 August 2007, 155 countries were signatories. Contracting Parties are required "to recognise and conserve any internationally important wetlands", by designating them as Ramsar sites; on 1 August 2007 the Ramsar List of Wetlands of International Importance comprised 1,675 sites worldwide covering more than 150 million hectares. The majority of sites are designated based on their importance for waterbirds. Data for these designations in Asia are normally based on annual count 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.

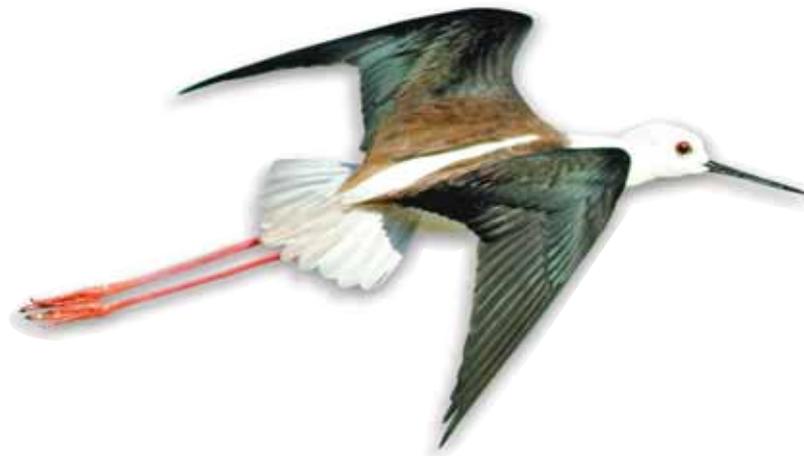
The updated information on waterbird populations and wetlands provided by the AWC offers support to the efforts of governments in the region to continue to identify wetlands that qualify for designation as Wetlands of International Importance. In addition, the data published in various AWC reports make a vital contribution to the understanding of the status of the wetlands and waterbird species through the assessment of population sizes and trends; these are regularly published by Wetlands International in the Waterbird Population Estimates series (see 1.4.3). The development of the AWC (as part of the IWC) and regular updating of the Waterbird Population Estimates was strongly encouraged and requested at the 6th and 8th meetings of the Contracting Parties to the Ramsar Convention (Res.VI.4: Adoption of population estimates for operation of the specific criteria based on waterfowl and Res.VIII.38: Waterbird population estimates and the identification and designation of Wetlands of International Importance).

### 1.4.2 Convention on Migratory Species (CMS, The Bonn Convention)

[www.cms.int](http://www.cms.int)

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 has grown rapidly since its establishment in 1983 and, as at 1 August 2007, 104 countries were signatories to it. The Convention requires the Contracting Parties to promote, cooperate with and support research relating to migratory species and 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 in promoting the conservation and management of migratory waterbirds and their habitats in the region. Information collected by the AWC contributes to the updating of the species currently listed in the CMS Appendices (inclusion of a species in either appendix constitutes the basis for taking action by the Convention), and to the identification of new species to be listed in the Appendices.



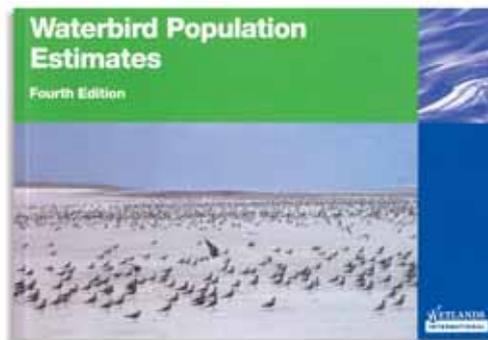
### 1.4.3 Waterbird Population Estimates Programme

[www.wetlands.org](http://www.wetlands.org)

Wetlands International collates information on the status of the populations of waterbirds around the world and regularly produces *Waterbird Population Estimates*, which is the authoritative reference for the identification of Wetlands of International Importance based on the Ramsar Convention's '1% criterion' and the species on the CMS Appendices (see 1.4.1 and 1.4.2).

The fourth edition of *Waterbird Population Estimates* was published in 2006 (Wetlands International 2006). It identifies 815 waterbird populations in Asia and notes the lack of population trends for 56% of these; for populations with trend information, 62% are decreasing or extinct, 27% are stable and only 10% are increasing. Waterbirds thus have a less favourable status in Asia than in any other continent. It calls for the 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 *Waterbird Population Estimates*.



### 1.4.4 East Asian – Australasian Flyway Partnership initiative

The East Asian – Australasian Flyway Partnership is an international cooperative initiative of governments, conventions and international organisations launched in late 2006. The East Asian – Australasian Flyway Partnership initiative focuses on 1) developing the Flyway Network of sites of international importance for the conservation of migratory waterbirds, building on the achievements of the existing flyway site networks; 2) enhancing communication, education and public awareness of the values of migratory waterbirds and their habitats; 3) enhancing flyway research and monitoring activities, building knowledge and promoting exchange of information on waterbirds and their habitats; 4) building the habitat and waterbird management capacity of natural resource managers, decision makers and local stakeholders; and 5) developing, especially for priority species and habitats, flyway-wide approaches to enhance the conservation status of migratory waterbirds. Achieving these objectives will require strong participation and support from governments, local non-government organizations, experts and interested individuals.

The Partnership has evolved as one of two flyway initiatives (the other being the Action Plan for the Central Asian Flyway) from the Asia-Pacific Migratory Waterbird Conservation Strategy (APMWCS). The APMWCS (Anonymous 1996; Asia-Pacific Migratory Waterbird Conservation Committee 2001) has served as an international cooperative conservation initiative for waterbirds and wetlands in the Asia-Pacific region and was supported by government agencies, the Ramsar Convention, CMS, non-government organisations and technical experts.

The strategy has been very successful in setting frameworks for conserving migratory waterbirds and their habitats through a range of activities such as the development and implementation of species action plans and site networks for Anatidae, cranes and shorebirds in the East Asian – Australasian flyway region (Mundkur 2006).

The AWC played a key role in supporting the development and implementation of the APMWCS, and will continue to support the implementation and development of the Flyway Partnership initiative.



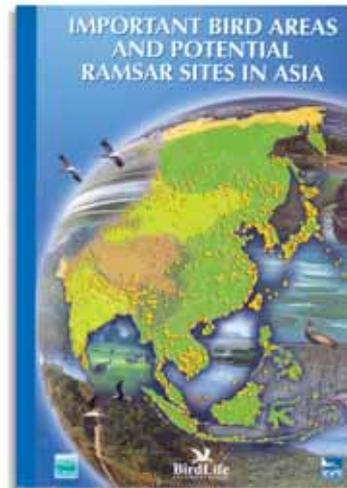
### 1.4.5 Central Asian Flyway Action Plan for the Conservation of Migratory Waterbirds and their Habitats

The Central Asian Flyway Action Plan for the Conservation of Migratory Waterbirds and their Habitats was finalised in 2005 (CMS 2006); it covers the conservation of species, conservation and management of habitats and management of human activities. It states that "Range States shall endeavour to be involved in regular monitoring programmes, such as the AWC and IWC in central Asian countries, complemented by surveys of important breeding grounds, staging and non-breeding (wintering) sites. The results of such surveys shall be published and disseminated widely. The results will also be sent to appropriate international organisations, to enable reviews of population status and trends."

### 1.4.6 Important Bird Areas Programme [www.birdlife.org](http://www.birdlife.org)

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.

A total of 2,293 IBAs have been identified in 28 countries and territories in the Asia region (BirdLife International 2004). Amongst these, 1,111 IBAs have been identified that contain areas that also qualify under the Ramsar Criteria as potential Ramsar sites (BirdLife International 2005a). A significant proportion of the wetland sites covered in the AWC meet IBA criteria A1 and/or A4, and the AWC counts are the primary source of data to support the identification of many of these sites as IBAs. BirdLife International recently developed an IBA Monitoring Framework (BirdLife International 2005b), which presents techniques that will be used by the BirdLife Partnership to monitor the status of IBAs worldwide. This is currently being adopted by the BirdLife Asia Partnership, and there is potential in the future to coordinate IBA monitoring with wetland monitoring that is conducted as part of the AWC.



### 1.4.7 Globally threatened waterbirds [www.birdlife.org](http://www.birdlife.org)

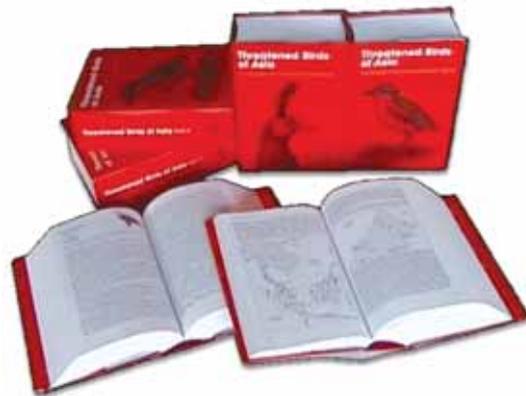
BirdLife International leads on the update of the status of the world's threatened birds. It is the official Red Listing Authority on birds and supplies this information for the IUCN (World Conservation Union) Red List of Threatened Species. It collates information from a global network of experts and from published and unpublished sources to assess each species's extinction risk using standard quantitative techniques.

Four main criteria used to identify threatened species are: (a) rapid population reduction, (b) small range and fragmented, declining or fluctuating population trend, 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 (IUCN 2001) as follows: Extinct (EX), Extinct in the Wild (EW), Critically Endangered (CR), Endangered (EN), Vulnerable (VU), and Near Threatened (NT). Other categories are Least Concern (LC), Data Deficient (DD) and Not Evaluated (NE).

The IWC 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, as documented in the publications *Threatened Birds of the World* (BirdLife International 2000), *Threatened Birds of Asia* (BirdLife International 2001) and in the *Data Zone* on the BirdLife International website. A Globally Threatened Bird Forum for Asia has been set up on the BirdLife International website (also on behalf of Wetlands International) to facilitate the annual update of the IUCN Red List. Asia supports more globally threatened waterbird species than does any other region of the world; these include a

large number of relatively widespread species (Crosby and Chan 2006), and the AWC data have been used extensively to document and update the Red List status of these threatened waterbirds.

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



#### 1.4.8 Global Avian Influenza Network for Surveillance [www.gains.org](http://www.gains.org)

The Global Avian Influenza Network for Surveillance (GAINS) is a global collaborative effort by an international consortium led by the Wildlife Conservation Society, to provide updated online information to a worldwide audience on the results of avian influenza surveillance (particularly the highly pathogenic

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H5N1 strain) in wild birds by studying bird numbers, distribution and migration. It aims to support improved early warning, disease intervention, technical information exchange and capacity building.

The IWC – and the AWC as part of it – is making summarised waterbird count data (site level) and distribution data (maps of sites with presence and flyway maps) available through the GAINS website. It is also working to build capacity for waterbird monitoring and surveillance and to undertake waterbird surveys in several countries.

#### 1.4.9 National wetland and waterbird conservation

The AWC provides baseline information on wetland and waterbird conservation activities in Asian countries. In most countries, information collected by the AWC on waterbird and wetland status has been used to develop national wetland and waterbird conservation policies and action plans. At the site level, the information has been used for site conservation and management plans. The importance of monitoring waterbirds and their habitats has been recognised by many countries, such as Japan, Republic of Korea and Hong Kong SAR (China), and standard waterbird monitoring programmes have been conducted regularly (annually, seasonally or monthly) with funding support from the national or local government and other sources.

The AWC also raises public awareness on wetland and waterbird conservation through the active participation of the public; this is particularly important for countries such as India, Bangladesh and Cambodia.





## 2. ASIAN WATERBIRD CENSUS – OVERVIEW OF CURRENT STATUS

### 2.1 Country and site coverage by the Asian Waterbird Census

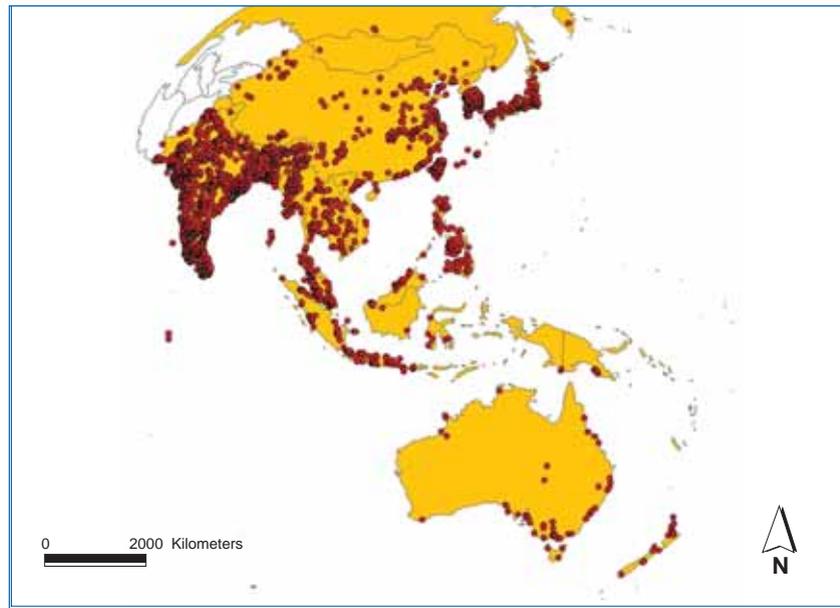
Since the establishment of the AWC in 1987 more than 6,000 sites in 27 countries have been covered at least once (Table 1). The peak totals of waterbirds reported by the AWC occurred in 1989–1994, when some 1,160–1,600 sites were counted each year. However, census results fell dramatically in 1997–1998 when information was submitted by national coordinators and participants for only 310–380 sites. Since then, following concerted efforts by national coordinators, participants and Wetlands International, the census has grown, and covered more than 1,000–1,300 sites in 2003–2004.

The number of sites covered varies from year to year as it is dependent primarily on the capacity of national networks of volunteers. Smaller countries and territories have tended to manage more consistent coverage of sites, while in large countries coverage has been more variable. Coverage of protected areas and sites designated under international conventions/initiatives has also varied. There is a need to prioritise sites to be covered by the AWC to ensure that the data are relevant at the national and international levels.

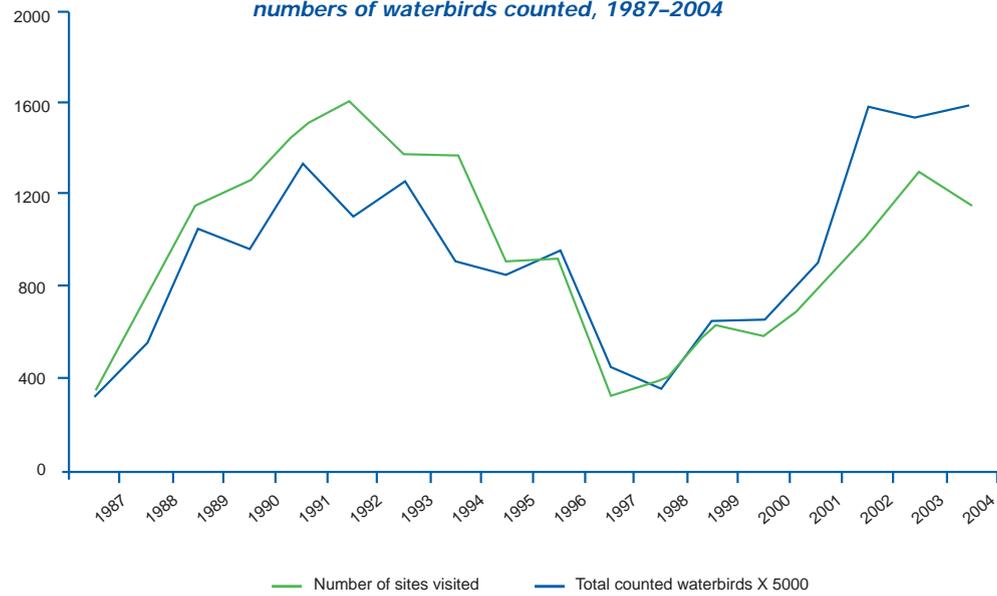
“ There is a need to prioritise sites to be covered by the AWC to ensure that the data are relevant at the national and international levels. ”



*Sites covered by the AWC, 1987-2004*



*Number of sites covered by the AWC and total numbers of waterbirds counted, 1987-2004*









### 3.3 Supporting the networks through capacity building and the provision of equipment

By its very nature, the AWC volunteer network has a variable capacity to implement the annual AWC to a very high standard. In relatively few countries are standards of bird identification and census high, and in most of the developing countries in Asia levels of technical capacity and access to the necessary survey equipment and bird guides are lacking. In some cases this has deterred participation and led to the submission of inaccurate count data and unreliable species' records.

Whilst there is increasing access to information on how to study and count waterbirds, especially through new publications and on the internet, the continued development of AWC participants' skills and the collection of high quality data both improve through the provision of training and equipment.

### 3.4 Funding basis

As the AWC is a long-term, volunteer-based regional programme, the lack of financial support (at all levels) has been a major limiting factor in the development of the census. At the international coordination level there has been shortage of funding for overall coordination (e.g. for staff time), publication and dissemination of reports, development and management of databases and a website, and organisation of coordinators' meetings. There has also been a shortage of funding for providing support in terms of training and equipment for

the national and local networks. The AWC has always been run on a very small budget and financing has been inconsistent, relying of a few donors who are interested in funding the programme.

In some developing countries, coordinators are unable to access funds to undertake adequate coordination and communication activities, and therefore have not been able to promote the census and publication of national reports.

Local bird groups often do not have funds to cover their field travel costs and the purchase/rental of equipment (binoculars and telescopes) and guide books, etc. for this voluntary activity, particularly in some of the developing countries. Similarly, staff in government agencies may not have access to equipment, or be allocated the time and support to participate actively in the census.

These four major factors have greatly affected the development of the AWC. The development of a long term strategy to address these issues should strengthen the functions and outputs of the census (Section 4).



## 4. OBJECTIVES AND PRIORITY ACTIONS TO DEVELOP THE ASIAN WATERBIRD CENSUS IN 2007–2015



The Asian Waterbird Census: Development Strategy 2007–2015 focuses on seven objectives and 28 priority actions at the international and national levels. Funds will have to be sought to undertake some of the actions.

### 4.1 Objectives

Objective 1:

To enhance geographic and site coverage of the AWC.

Objective 2:

To ensure the high quality of AWC data collected in order to monitor waterbird populations effectively and support the implementation of conservation actions.

Objective 3:

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

Objective 4:

To build the capacity of national networks to monitor waterbirds and wetlands.

Objective 5:

To enhance communication and public awareness of the AWC.

Objective 6:

To support improved decision making on waterbird and wetland conservation at national and international levels.

Objective 7:

To develop a coordination mechanism for effective operation and targeting of the AWC.

## 4.2 Priority actions

Objective	Action	Implementation
<b>Objective 1:</b> <b>To enhance geographic and site coverage of the AWC.</b>	<b>Action 1:</b> Establish contact with all countries in the Asia-Pacific region to ensure consistent participation in the annual census and regular sharing of information with the AWC.	<ol style="list-style-type: none"> <li>1. Encourage all countries to establish and maintain an effective national waterbird monitoring programme that can be linked to the AWC to create a “representative set of monitoring sites”. Stimulate action through communication, promote training and, where needed, offer support to strategic fundraising efforts. [WI and NC]</li> <li>2. Formalise data sharing arrangements with all countries to ensure that waterbird count data are submitted annually to the AWC regional database to support regional and international conservation efforts. [WI and NC]</li> <li>3. Nominate national coordinators for Bhutan, PDR Lao, the Maldives, DPR Korea, Papua New Guinea and Timor Leste and establish networks of participants. [WI]</li> </ol>
	<b>Action 2:</b> Strengthen national AWC coordination through the establishment of effective sub-national (state/provincial) AWC networks.	<ol style="list-style-type: none"> <li>4. Establish sub-national (state/provincial) AWC coordination networks where necessary to strengthen coordination with local networks. [NC]</li> <li>5. Strengthen communication with sub-national (state/provincial) AWC networks, including through the organisation of national AWC coordinator meetings. [NC and SNC]</li> </ol>
	<b>Action 3:</b> Review and prepare an updated list of priority wetland sites of national and international importance to be covered each year by the AWC.	<ol style="list-style-type: none"> <li>6. Prepare a comprehensive national priority AWC site coverage list for each country (including Ramsar sites, Waterbird Network sites in the East Asian and Central Asian Flyways, World Heritage sites, Man and Biosphere (MaB) sites and protected areas, ensuring representative regional wetland representation). [NC, SNC and WI]</li> <li>7. Endorse the BirdLife International publications on Important Bird Areas and Potential Ramsar Sites in Asia (BirdLife International 2005a) and internationally important sites as identified by the AWC 1997–2001 (Li and Mundkur 2004) and 2002–2004 reports (Li and Mundkur 2007) as a basis for identifying a list of priority AWC sites for annual coverage until a comprehensive priority AWC site coverage list is produced. [NC, SNC and WI]</li> <li>8. In addition, encourage national networks to consider a more comprehensive list of national and local importance for coverage by a wider network, which would be more useful for broader awareness raising and public participation efforts. [NC and SNC]</li> </ol>
<b>Objective 2:</b> <b>To ensure the high quality of AWC data collected in order to monitor waterbird populations effectively and support the implementation of conservation actions.</b>	<b>Action 4:</b> Review and prepare boundary maps for each site included in the priority list of important wetlands (Action 3) to be covered by the AWC, and make these available to all participants.	<ol style="list-style-type: none"> <li>9. Encourage the preparation of geo-referenced site boundary maps for all priority sites as identified for coverage by the census. [NC and SNC]</li> <li>10. Develop improved boundary maps for poorly defined sites to enable proper census activities:               <ul style="list-style-type: none"> <li>• divide large sites or complexes into sub-sites,</li> <li>• combine small count units into clearly defined wetland areas,</li> <li>• define boundaries of coastal wetlands by using natural landmarks, such as rivers. [NC and SNC]</li> </ul> </li> </ol>

Objective	Action	Implementation
		<p><b>11.</b> Regularly update site maps to ensure that up-to-date boundary maps are available for use. Encourage use of GIS-based mapping that allows for changes to be incorporated. [NC and SNC]</p>
	<p><b>Action 5:</b> Ensure that the annual AWC counts are undertaken in January during the suggested period.</p>	<p><b>12.</b> Continue using January as the priority census period. Data collected from December to February may still be acceptable from countries where AWC coverage is currently poor. [NC and SNC]</p> <p><b>13.</b> Encourage AWC participants to conduct the census counts within a short timeframe within the AWC period. [NC, SNC and WI]</p>
	<p><b>Action 6:</b> Undertake adequate planning and make arrangements to ensure annual coverage of all sites in the priority list (Action 3) and other important sites and ensure that at least one experienced and reliable counter leads the census at each site.</p>	<p><b>14.</b> Increase recognition nationally of the high value and need for consistent coverage of important sites for effective functioning of national and international waterbird and wetland monitoring programmes. [NC and SNC]</p> <p><b>15.</b> Undertake detailed planning to involve participants, especially in the developing countries, to ensure that all priority sites are covered and high data quality is achieved. [NC and SNC]</p> <p><b>16.</b> Expand participation of related agencies, institutions, bird organisations and groups in the AWC through the provision of proper training and advice. [NC]</p>
	<p><b>Action 7:</b> Ensure effective mechanisms for national (and sub-national) coordination, including collection of all standardised data forms in a timely manner after the census.</p>	<p><b>17.</b> Ensure that data are collected from participants and sub-national coordinators by the end of February. [NC]</p> <p><b>18.</b> Develop methods to remind about and encourage timely data submission. [NC and SNC]</p>
	<p><b>Action 8:</b> Ensure that coordinators undertake a quality check on the count information.</p>	<p><b>19.</b> Develop a thorough checking system to ensure that data-quality issues (including identification of duplicate counts, unusually high species counts, unusual records of species, site location and coordinates) can be addressed within the national programme. [NC, SNC and WI]</p> <p><b>20.</b> Review the validity and timeliness of data submitted to the database with Wetlands International. [NC]</p> <p><b>21.</b> Ensure that sub-national coordinators perform this primary function of reviewing the validity of data before submitting them to national coordinators. [NC and SNC]</p> <p><b>22.</b> Undertake regular meetings among experienced network members (post-counting) to evaluate the national implementation of AWC. [NC and SNC]</p> <p><b>23.</b> Ensure that an updated standardised list of waterbird names, as used in Waterbird Population Estimates, is made available for national coordinators to check against prior to data submission. [WI]</p>

Objective	Action	Implementation
	<p><b>Action 9:</b> Promote use of standardised AWC count and site forms and census techniques in all countries.</p>	<p><b>24.</b> With national coordinators, undertake a review of the regional AWC forms to ensure that the forms are updated, especially with regard to the taxonomic status of waterbird species. [WI and NC]</p> <p><b>25.</b> Send updated AWC count and site forms to national coordinators in November/December to enable preparations for the AWC. [WI]</p> <p><b>26.</b> For non-English speaking countries/territories, make forms available in national language(s). [NC and SNC]</p>
	<p><b>Action 10:</b> Promote the use of standardised AWC database programmes in all countries and at the international level to ensure timely and efficient transmission of data.</p>	<p><b>27.</b> Ensure efficient national data analysis and reporting as well as timely and rapid transmission of data through the use of a user-friendly AWC database system in all countries. [NC]</p> <p><b>28.</b> Provide/facilitate training for national (and sub-national) coordinators in the use of the AWC database system where required. [WI]</p> <p><b>29.</b> Develop a user-friendly online AWC data-entry system. [WI]</p>
	<p><b>Action 11:</b> Ensure that national coordinators submit national census data or databases to Wetlands International by the end of April each year.</p>	<p><b>30.</b> Improve data collection and reporting mechanisms to ensure that data are submitted to WI by 30 April each year. [NC and SNC]</p>
	<p><b>Action 12:</b> Support volunteers in data collection, including providing participation guidelines and support logistics, identification guides and equipment.</p>	<p><b>31.</b> Promote a manual on AWC standardised count methods for national and international application (see Implementation point 52). [NC, SNC and WI]</p> <p><b>32.</b> Support regular training and provision of materials for the AWC (also see Objective 4). [NC, SNC and WI]</p> <p><b>33.</b> Develop and secure funding resources from local and national sources (including for the purchase of field guides and equipment) to sustain the efforts of AWC volunteer and bird watching groups (also see Action 16). [NC, SNC and WI]</p>
	<p><b>Action 13:</b> Encourage countries to conduct additional surveys at other times of year (for example during the northward migration, summer period and southward migration) or undertake monthly counts and submit data to Wetlands International for inclusion in the AWC database.</p>	<p><b>34.</b> Promote undertaking of the census at other times of year or the making of monthly counts, especially where there is willingness to initiate and sustain this. [NC and WI]</p> <p><b>35.</b> Develop and distribute guidelines (protocols) for additional censuses to be undertaken by the individual countries according to local/national capacity. [WI]</p>

Objective	Action	Implementation
	<p><b>Action 14:</b> Strengthen IUCN/SSC/WI waterbird specialist groups in the Asia-Pacific region through increasing awareness about the groups, and identifying potential members and mechanisms to improve data quality.</p>	<p><b>36.</b> Raise awareness of the existence of waterbird specialist groups at the local/national level. [NC and WI]</p> <p><b>37.</b> Identify and involve interested individuals in taking the lead on study and action for single species/groups of waterbirds at the local/national level. [NC and WI]</p>
<p><b>Objective 3:</b> <b>To develop a fundraising strategy for the AWC and seek funding opportunities to support its development.</b></p>	<p><b>Action 15:</b> Develop a fundraising strategy based on a review of the critical funding requirements for the maintenance and development of the AWC.</p>	<p><b>38.</b> Communicate with international partners, particularly the Ramsar Secretariat, CMS Secretariat and BirdLife International, to engage their continued support for and partnership in the development of the AWC. [WI]</p> <p><b>39.</b> Communicate with AWC national coordinators and national coordination organisations to discuss ways and means to secure long-term funding for the AWC. [WI and NC]</p> <p><b>40.</b> In accordance with Implementation points 38 and 39, develop and draft a fundraising strategy for the AWC and communicate this to all its partners for further development. [WI and NC]</p> <p><b>41.</b> As part of the fundraising strategy, maintain and update a list of concept proposals that covers critical funding requirements for the development of the AWC for fundraising at national and international levels. [WI and NC]</p> <p><b>42.</b> Maintain and update a list of funding resources for national AWC activities. [NC]</p>
	<p><b>Action 16:</b> Raise funds for priority actions at the regional/national/local levels to strengthen national networks' capacities to implement the AWC.</p>	<p><b>43.</b> Incorporate core funding needs for the AWC into the fundraising planning of national host organisations. [NC]</p> <p><b>44.</b> Engage broad international support (such as through bilateral sources, regional environmental and flyway programmes) for waterbird conservation/monitoring needs. [WI and NC]</p> <p><b>45.</b> Develop collaborative funding proposals to support AWC development and the sustainability of census activities in developing countries. [WI and NC]</p> <p><b>46.</b> Build NGO–government relationships to secure long-term government funding for annual/regular counts with a focus on supporting national conservation efforts, such as nomination and monitoring of Ramsar sites, protected areas, Flyway Network sites and other important areas. [NC, SNC and WI]</p> <p><b>47.</b> Develop corporate and private sector sponsorship through promoting widespread interest in bird watching and counting, photography, e.g. through waterbird festivals. [NC, SNC and WI]</p>
<p><b>Objective 4:</b> <b>To build the capacity of national networks to monitor waterbirds and wetlands.</b></p>	<p><b>Action 17:</b> Develop a training programme to improve knowledge and skills to coordinate the AWC volunteer network.</p>	<p><b>48.</b> Continue to encourage national and local training courses/workshops and seek funding support for these activities. [NC and SNC]</p> <p><b>49.</b> Encourage international support and participation in national training activities. [WI and NC]</p> <p><b>50.</b> Support/promote national fundraising efforts and provide strategic support for training activities. [WI]</p>

Objective	Action	Implementation
		<p><b>51.</b> Develop training activities through regional initiatives such as flyway initiatives and large wetland projects. [WI and NC]</p> <p><b>52.</b> Translate and distribute Guidelines for participants in the IWC (Delany 2005a) and Guidelines for National Coordinators of the IWC (Delany 2005b). [NC, SNC and WI]</p>
	<p><b>Action 18:</b> Conduct national training activities for participants to enhance their capacity and skills in counting and identification.</p>	<p><b>53.</b> Conduct waterbird census training programmes, and, when possible, incorporate them within habitat and species conservation training programmes. [NC and SNC]</p>
<p><b>Objective 5:</b> <b>To enhance communication and public awareness of the AWC.</b></p>	<p><b>Action 19:</b> Undertake activities to strengthen coordination amongst coordinators; review and plan activities through regular communication and the organisation of regular meetings.</p>	<p><b>54.</b> Establish an e-forum/list server for discussion and information exchange. [WI]</p> <p><b>55.</b> Continue to organise an AWC National Coordinators' Meeting once every three years. Smaller-scale regional meetings with similar interests and issues may be held as opportunities arise. [WI]</p>
	<p><b>Action 20:</b> Review the effectiveness of current national and international coordination and communication methods to enhance the networks at all levels.</p>	<p><b>56.</b> Continue to improve mechanisms to strengthen and improve communication within the networks. [WI, NC and SNC]</p> <p><b>57.</b> Nominate a contact person to ensure timely communication if a national coordinator cannot be in regular contact. [NC]</p> <p><b>58.</b> Improve communication amongst national networks through email discussion groups, national reports and newsletters. [NC and SNC]</p>
	<p><b>Action 21:</b> Maintain an up-to-date AWC website and produce bi-annual regional newsletters to enhance communication and public awareness.</p>	<p><b>59.</b> Re-design and improve access to the AWC website. [WI]</p> <p><b>60.</b> Provide national biannual updates and input to the regional AWC website. [NC]</p>
	<p><b>Action 22:</b> Develop an awareness programme for government and conservation NGOs to improve their knowledge of the value of the census and the importance of conservation of wetlands and their biodiversity, particularly waterbirds.</p>	<p><b>61.</b> Ensure links between national websites and AWC information/newsletters (or other websites) to increase the profile of the AWC. [NC]</p> <p><b>62.</b> Promote AWC activities and outputs through newspaper articles (in national and English languages), newsletters, TV and other media. [NC, SNC and WI]</p> <p><b>63.</b> Incorporate information about the AWC and waterbird conservation issues into existing education programmes, project activities, World Wetlands Day and other events to extend its outreach, and through regional/national AWC reports. [NC, SNC and WI]</p> <p><b>64.</b> Develop translated versions of AWC information and documentation in countries where English is not widely used. [WI]</p> <p><b>65.</b> Provide regular articles, updates and press releases to national coordinators for their use. [WI]</p>

Objective	Action	Implementation
<p><b>Objective 6:</b>  <b>To support improved decision making on waterbird and wetland conservation at national and international levels.</b></p>	<p><b>Action 23:</b>            Provide an effective mechanism to respond to the priorities and needs of environmental conventions and regional organisations/initiatives in the Asia-Pacific region for monitoring the status of waterbirds and wetlands (for example, Ramsar Convention, CMS, CBD, East Asian – Australasian Flyway Partnership, Central Asian Flyway Action Plan, CAFF, ASEAN and SACEP).</p>	<p><b>66.</b> Strengthen the system for reporting AWC outputs, including conservation recommendations, to international data users to promote the value of the AWC. [WI and NC]</p> <p><b>67.</b> Integrate AWC reports into the information bases and decision-making processes of international conventions/initiatives. [WI and NC]</p> <p><b>68.</b> Undertake comprehensive planning and discussions with international partners (especially Ramsar, CMS, BirdLife International and Wildlife Conservation Society).</p> <p><b>69.</b> Develop ways and means to improve the usefulness of the AWC to international conventions (and secure funds for AWC support). [WI and NC]</p>
	<p><b>Action 24:</b>            National coordinators should report proactively on the status of waterbirds and wetlands in their countries to national conservation and development agencies, national Ramsar committees and other data users.</p>	<p><b>70.</b> Countries should produce national reports on an annual basis. Reports should be produced on CD-ROM or electronically on a website to increase access and publicity. If possible, country reports should also be produced in hard copy as a formal publication. [NC]</p> <p><b>71.</b> Distribute AWC results, analyses and conservation recommendations to government agencies and institutes. [NC and SNC]</p> <p><b>72.</b> Encourage the use of AWC data for:</p> <ul style="list-style-type: none"> <li>• national and local protected area nominations,</li> <li>• international designations (including Ramsar, World Heritage and Flyway Site Networks), IBA programmes, and other bird conservation network activities.</li> <li>• National Biodiversity Strategy and Action Plans (NBSAP) prepared by governments for the CBD; and</li> <li>• implementing resolutions of the Ramsar Convention, CMS and CBD and other regional commitments. [NC, SNC and WI]</li> </ul> <p><b>73.</b> Promote mechanisms to share data with national and local organisations to support waterbird and wetland conservation efforts. [NC and SNC]</p> <p><b>74.</b> Hold national workshops involving government, NGOs, academics, etc. to review/assess waterbird counts and data and their application to conservation. [NC and SNC]</p>
	<p><b>Action 25:</b>            Produce AWC regional reports and other publications to promote waterbird and wetland conservation initiatives and as feedback for AWC volunteers.</p>	<p><b>75.</b> Develop and update a web-based AWC regional reporting system together with the data-entry system (also see Implementation point 29). [WI]</p> <p><b>76.</b> Publish a list of sites of international importance that have been identified in the 20 years (1987–2006) that the AWC has been conducted. [WI and NC]</p> <p><b>77.</b> Make an analysis of the status and trends of waterbird populations in the 20 years (1987–2006) that the AWC has been conducted. [WI and NC]</p> <p><b>78.</b> Produce and update flyway atlases based on the results of the AWC and related information. [WI and NC]</p>

Objective	Action	Implementation
	<p><b>Action 26:</b> Ensure timely provision of AWC data and related information to the development and review of estimates of waterbird populations to feed into the Waterbird Population Estimates and Globally Threatened Birds updates.</p>	<p><b>79.</b> Generate and regularly review national waterbird population estimates. [NC, SNC and WI] <b>80.</b> Provide updated data to Waterbird Population Estimates updates and Globally Threatened Birds updates. [NC and WI]</p>
<p><b>Objective 7:</b> <b>To develop a coordination mechanism for effective operation and targeting of the AWC.</b></p>	<p><b>Action 27:</b> Establish a mechanism to review the development of the AWC.</p>	<p><b>81.</b> Use the triennial AWC National Coordinators' Meetings to review international-level directions and strategies. [WI and NC] <b>82.</b> Use the AWC list server and encourage regular national meetings to promote and stimulate the implementation of the AWC strategy. [NC and WI] <b>83.</b> Encourage countries to develop national implementation plans on a triennial basis. [NC]</p>
	<p><b>Action 28:</b> Review the implementation of the AWC strategy for 2007–2015.</p>	<p><b>84.</b> The AWC strategy for 2007–2015 will run for nine years and is to be reviewed triennially at the AWC National Coordinators' Meeting. [WI and NC]</p>

*Note: AWC – Asian Waterbird Census, ASEAN – Association of South East Asian Nations, CAFF – Conservation of Arctic Flora and Fauna, CBD – Convention on Biological Diversity, CMS – Convention on Migratory Species, NC – AWC national coordinator, Ramsar – Convention on Wetlands, SACEP – South Asian Cooperative Environmental Programme, SNC – AWC sub-national coordinator, SSC – Species Survival Commission, WI – Wetlands International.*

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ISBN: 978 90 5882 043 3

This publication should be cited as follows:

Wetlands International. 2007. *The Asian Waterbird Census: Development Strategy 2007–2015*. Wetlands International, Kuala Lumpur, Malaysia.

Published by Wetlands International [www.wetlands.org](http://www.wetlands.org)

Design by Muse Studio.

Printed by CG Print Sdn Bhd.

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Page 16: *Group photos for first and second AWC Coordinator's Meeting, Wetlands International.*

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## Mission:

To sustain and restore wetlands, their resources and biodiversity for future generations.

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

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- The Asian Waterbird Census (AWC), conducted each year in January, is a waterbird and wetland monitoring programme initiated in 1987 in the Asia-Pacific region within the framework of the International Waterbird Census.
- Since its establishment the census has covered more than 6,000 sites in 27 countries in the region at least once. The census is coordinated by Wetlands International and supported by one or more national coordination organisations in each country.
- The AWC plays a significant role in the conservation of waterbirds and their habitats at levels ranging from local to global by supporting:
  - the Ramsar Convention on Wetlands in identifying wetlands of international importance;
  - the Convention on Migratory Species by monitoring the status of migratory waterbirds and their habitats;
  - the Convention on Biological Diversity in its goal to conserve and use biodiversity sustainably;
  - the development and implementation of the East Asian – Australasian Flyway Partnership and Central Asian Flyway Action Plan;
  - BirdLife International's Important Bird Areas Programme;
  - IUCN Red List/BirdLife International's Global Species Programme;
  - Wetlands International's Waterbird Population Estimates Programme;
  - the Global Avian Influenza Network for Surveillance;
  - the development of national wetland and waterbird conservation Action Plans and Strategies; and
  - species and site conservation, research and awareness programmes in many countries.
- This strategy reviews the changing status of the AWC over the past twenty years. It also sets a clear direction for the future of the AWC and details actions to be taken over the next nine years to ensure the successful development and delivery of the census in order to conserve waterbirds and their habitats in the Asia-Pacific region.
- The strategy was discussed and agreed at the AWC Coordinators' Meeting held in Manila in October 2006.

The AWC is supported by a network of volunteers and coordinated by the following organisations in countries which work closely with Wetlands International.



Australasian Water Studies Group



Bangladesh Bird Club



Panaga Natural History Society, Brunei



Wildlife Conservation Society, Cambodia



Wetlands International, China Office



Hong Kong Bird Watching Society



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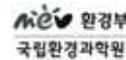
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