

Wader Study Group Workshop 26 September 2003

Are waders world-wide in decline? Reviewing the evidence

The 2003 WSG Conference commenced with a workshop on declining wader populations across the world. A wide-ranging programme of brief presentations had been organised and the abstracts of these appear below. Simon Delany set the scene by reviewing evidence of population trends on a global scale. This was followed by a series of talks covering each of the main wader flyways. Allan Baker then summarised recent developments in research on the genetic consequences of population bottlenecks and the presentations ended with a selection of case studies.

In the discussion session that followed, it was readily agreed by the whole conference that there is strong evidence that, across the world, there are an alarming number of wader populations in severe decline. It was also agreed that there is an urgent need for much more extensive monitoring and research and that it is vitally important to bring the situation to the attention of governments, state and voluntary conservation organisations as well as the public in general. David Stroud was therefore asked to draft a formal Statement setting out the workshop's conclusions (see below) that was unanimously endorsed by participants at the conclusion of the main conference on 28th September.



Waders are declining worldwide

CONCLUSIONS FROM THE 2003 INTERNATIONAL WADER STUDY GROUP¹
CONFERENCE, CÁDIZ, SPAIN

In 2002, world leaders expressed their desire to achieve “*a significant reduction in the current rate of loss of biological diversity*” by 2010. The previous year, the Heads of European Union Member States had expressed their intention “*that biodiversity decline should be halted ... by 2010.*” New information, presented to an international conference in Cádiz, Spain, indicates declines of a significant proportion of the world's waders (shorebirds), and suggests that, for these birds at least, it will be extremely challenging to achieve these targets without significant investments and highly focussed conservation activity by governments in all continents.

A conference of the International Wader Study Group (WSG) was held in Cádiz, Spain from 25–28 September 2003 and brought together 132 specialists from 20 countries to review the population and conservation status of waders (or shorebirds) around the world. The status of waders in all regions of the world was assessed using best available data and information. It drew on several major programmes that have compiled recent population data. In particular, a major WSG review of the status of waders in Africa and Western Eurasia has just been completed which has collated extensive new data across these areas.

The majority of populations of waders of known population trend are in decline all around the world² – a matter of international conservation concern. Of populations with known trends, 48% are declining, in contrast to just 16% which are increasing; thus three times as many populations are in decline as are increasing. The reasons for these declines are diverse and poorly understood.

¹ The International Wader Study Group is non-governmental organisation registered in the Netherlands and is a Specialist Group of Wetlands International and IUCN–The World Conservation Union's Species Survival Commission

² See Annex



Africa and Western Eurasia has three main flyways.

Comparisons between these show that knowledge is better for populations using the largely coastal East Atlantic Flyway than for other flyways in the region: it has been possible to assess trends for 44 (93%) of East Atlantic Flyway populations, but for only 25 (76%) of the Black Sea/Mediterranean populations and for just 18 (35%) of West Asian/East African wader populations. Overall, the East Atlantic Flyway appears in the healthiest state: only a little over one-third (37%) of populations are decreasing. This is in contrast to the Black Sea/Mediterranean Flyway where, of populations with known trends, 65% are declining, and the West Asian/East Africa Flyway which has 53% of known populations in decline. Island populations — specifically those on the Canary and Cape Verde Islands, St. Helena and Madagascar — have a particularly poor conservation status and include most of the region's globally threatened species.

Comparison with the population status of 32 populations in the 1990s indicates that more (8 populations) are in long-term decline than are in long-term increase (3 populations).

Some populations are known to be severely threatened and in decline, notably Slender-billed Curlew *Numenius tenuirostris* (in imminent danger of global extinction), the Canary Island race of Cream-coloured Courser *Cursorius cursor bannermani*, the Sociable Lapwing *Vanellus gregarius* (categorised by IUCN as Vulnerable), the two Canary Islands races of Stone Curlews *Burhinus oediconemus distinctus* and *B. o. insularum*, and the Baltic breeding population of Dunlin *Calidris alpina schinzii*. Extremely rapid population declines (>50% since the mid 1980s) have been recorded for four populations: two of Sociable Lapwing, the single population of Black-winged Pratincole *Glareola nordmanni* and the western European breeding population of Black-tailed Godwit *Limosa limosa limosa*.

None of Africa's globally threatened waders are increasing their small population sizes.

The Central and Southern Asian Flyway is the shortest of the world's flyways, lying entirely in the northern hemisphere. It is also the most poorly known with a high proportion of its wader populations being unknown in either size or population trend. Furthermore, nearly all existing estimates are over ten years old, meaning that contemporary knowledge of the waders in this part of the world is almost unknown. Nonetheless, best available information indicates that over three to four times as many wader populations are declining as are increasing. There is an urgent need both to assess recent data for this flyway as well as to improve processes of basic data gathering.

There are five globally threatened waders, the populations of four of which are in active decline whilst the current status of the remaining species is unknown. There are further six small populations of unknown status. At least one of these — Long-billed Plover *Charadrius placidus* — clearly qualifies for IUCN Red-listing.

There are enormous human population pressures in **East Asia and Australasia**, a region which contains over a third of the world's human population as well as some of the world's fastest growing economies. This has major direct consequences for the waders of this region: over 80% of wetlands in east and south-east Asia are classified as threatened, with over half under serious threat. Of inter-tidal

wetlands in South Korea, 43% have been destroyed by land-claim (with more underway), as also have 37% of inter-tidal wetlands on China's coastline.

Asia is also the region holding the highest number of wader populations, and the highest proportion for which we lack information on numbers and trends of populations. Asia and Oceania between them hold 32 Globally Threatened species, which is 58% of the entire world's Globally Threatened wader species.

Of the 12 globally threatened species on the East Asia – Australasian flyway, one is possibly extinct, six are in active decline and the status of the remaining five is unknown. None are recovering their status. The development of non-binding international mechanisms for conservation and monitoring is a welcome step forward, although there are huge challenges to secure the conservation of wetlands of global significance to waders so as to reverse the current negative trends in wader populations. This is especially so given the socio-economic pressures within the region.

The Central Pacific Flyway contains relatively few shorebird species (six species), but these are mostly small populations with poor conservation status. The region holds more Critically Threatened and Endangered waders than any other part of the world.

Whilst conservation actions have been taken for a few endemic species, the status of many other endemic and migratory species is poorly known. For endemic species, conservation status and knowledge is better for species occurring in New Zealand and Australia than in the central and south Pacific (*e.g.* for species such as the Tuamotu Sandpiper *Prosobonia cancellata*). Knowledge of migrant species is poor throughout the flyway.

Given the small population sizes and declines, there is an urgent need for greater conservation attention for endemic and especially migrant shorebirds in the central Pacific. Limited conservation "capacity" of many Pacific island states and other nation's overseas territories in the region is currently a significant constraint on reversing the unfavourable conservation status of many Pacific shorebirds.

In North America migrant waders use four main flyway systems (Pacific, Central, Mississippi and Atlantic). There are six endangered species: one is possibly extinct, and four of the five remaining tiny populations may still be in decline. Population trend analyses have indicated extensive declines in shorebird populations in many parts of the continent, especially in eastern Atlantic areas of the USA and Canada. These widespread declines, which include alarming examples such as the recent extremely rapid decline of the Red Knot *Calidris canutus rufa*, whose migration spans the Western Hemisphere, indicate that conservation concerns and actions around the world must be extended to include species that are not currently listed as "at risk". Whilst completion of the US and Canadian Shorebird Conservation Plans are welcome national initiatives which have the potential to address the major issues, it remains to be seen if they will be adequately funded by governments.

South America has six globally threatened wader species, one of which is possibly extinct and four of which are in active decline, whilst the status of the remaining species is unknown. None are recovering their status. There is an urgent need to update IUCN Red-listings for South America



to better reflect the current situation. South America holds a significant number of endemic species and one endemic family of waders, the Seed-snipes (Thinocoridae).

There is very poor knowledge of the population sizes and trends of South American waders, with this information lacking for over half of all populations. Information is significantly poorer for intra-continental (Neotropical) migrant waders than it is for inter-continental (Nearctic) migrants. There is no trend estimate for 67% of Neotropical populations, in contrast to Nearctic where 35% lack population trend information. However, where this knowledge exists, Nearctic waders have poorer status (55% are declining) than Neotropical waders (38% in decline).

There is a major lack of funding for basic survey and population monitoring. This is especially the case for Neotropical migrant and resident waders since international sources of funding are not readily available for monitoring, research and conservation.

The Conference concluded that:

1. Waders, with their range of specialised feeding and migration ecologies, are sensitive indicators of change in their environments. Knowledge of the status of wader populations can provide important information on the wider environment, including the effects of climate change, habitat loss and degradation of habitat quality.
2. The task of ensuring the favourable conservation status of waders is inseparable from that of ensuring the conservation and wise use of their wetland and other habitats. Regrettably however, the loss and degradation of wetlands and other habitats continues apace all around the world. This is the underlying cause of the poor conservation status of so many species.
3. Loss and degradation of habitat has many causes. It also has many consequences for waders including those of an ecological, reproductive and genetic nature.
4. The consequences of the intensification of agriculture remain major adverse factors affecting the status of waders not only in western Europe, with its long-established agricultural landscapes, but also in other regions such as eastern Europe and central Asia where natural steppe landscapes have now been replaced by arable and other agricultural forms of cultivation. In North and South America, loss of natural habitats to agriculture is also of significant concern.

The importance of staging sites for long-distance migrants

5. Long-distant migrant waders are highly dependent on the continued existence, in good condition, of a few key staging areas — essential “stepping stones” to more northerly breeding areas. The importance of maintaining the ecological character of these cannot be stressed too highly. What happens on staging areas such as the Wadden Sea in Europe, Delaware Bay in north America, the Yellow Sea in east Asia and the Banc d’Arguin in Africa, seems to control much of the rest of the annual cycle — and survival — of these waders.
6. Declining food resources and reduced suitability of staging sites have major implications for the survival and reproduction of these migrants. “Virtual habitat loss” can occur in these areas as a consequence of poor management such as that which arises from unsustainable ex-

ploitation of natural resources, disturbance and other local perturbations. This leads to damage to the ecological character of these wetlands with major consequences for their ability to continue to support shorebirds.

7. The conference heard of major conservation issues facing three coastal wetlands of critical importance to migratory waders.
 - ❑ The completion of the 33 km seawall at Saemangeum in South Korea will destroy 40,100 ha of tidal-flat and shallows — an estuarine system which on present knowledge is the most important shorebird site in the whole of the Yellow Sea, supporting internationally important numbers of at least 17 species of waders (including several globally threatened species). The Yellow Sea is itself by far the most important staging area on the East Asian Australasian Flyway, hosting at least 2 million waders of 36 species during northward migration. At least 25,000 people also depend economically on this wetland system, for fishing and shell-fishing.
 - ❑ Delaware Bay is a critically important spring staging area in eastern North America. Over-exploitation by humans of food resources used by waders may now be affecting the ability of waders using this site to reach their arctic breeding areas and to breed there successfully. This appears to be leading to drastic population declines in some of the species, especially Red Knots *Calidris canutus rufa*.
 - ❑ In the Dutch part of the international Wadden Sea, there is now compelling scientific evidence to indicate that unsustainably high levels of industrial shellfishing have led to redistribution of birds from the high quality feeding areas. Declines of the biogeographic populations of long-distance migrant waders heavily dependant on the Wadden Sea have occurred and are continuing.

The status of short-distance, intra-continental waders

8. Short-distance intra-continental migrants have generally been afforded less attention than inter-continental migrants. In South America and Africa especially, there is a severe lack of information on intra-continental migrant waders. For migrant waders that move long-distances between rich and poor countries there are several international mechanisms that fund research and conservation initiatives. However, for those species that move solely between poorer countries, and even more so for non-migrants, there are few such funding opportunities. This constrains necessary conservation and monitoring activity.

The status of non-migrant waders

9. Whilst much conservation attention has, correctly, been focused on the needs of migratory species — the subject of several international legal instruments concerning their conservation — two-thirds of globally threatened wader species are sedentary. The status of these species is much more poorly known and they have a significantly worse conservation status than migrants. Evaluation of their current status suggests these species should receive urgent priority conservation attention, especially



in light of the absence of international structures to promote their conservation.

10. Many of the world's rarest and most threatened waders occur in islands (including about half of all globally threatened species). The conservation challenges faced by Independent Island Nations and self-governing Overseas Territories of other nations are many, and there is often limited human capacity to address these. There is an urgent need for international organisations and conventions to assist these islands to develop and seek resources for appropriate conservation programmes.

Monitoring and research

11. There is urgent need for more and better population monitoring. In the first instance and as a minimum, there is an urgent need to establish adequately funded national monitoring programmes. Given the consensus of world leaders to achieve a significant reduction in the current rate of loss of biological diversity by 2010, it is appropriate and indeed necessary that governments provide funding for national waterbird monitoring schemes, through which they will be able to establish whether their own target is being met. The International Waterbird Census co-ordinated by Wetlands International offers an effective framework within which such monitoring can be organised.
12. Monitoring might be most effectively undertaken through targeted enhancements focused on particular populations: especially those associated with certain geographic regions or habitats.
13. Population dynamic characteristics of waders, especially of larger species, are such that under certain circumstances, very rapid population "collapses" occur. Examples include the extinct Eskimo Curlew *Numenius borealis*, and the globally threatened Slender-billed Curlew *N. tenuirostris* and Sociable Lapwing *Vanellus gregarius*. For this reason, and on a precautionary basis, it is desirable that population monitoring systems at national and international levels are as responsive as possible. Formal alerting systems should accordingly be developed to warn of significant declines. Integrated monitoring should be developed to provide further "early-warning" systems.
14. In view of the extensive declines noted for many species of migratory waders, there is a vital and urgent need for the development of internationally co-ordinated research initiatives to uncover reasons behind the declines. Funding for such programmes should be a global priority, and practical action is urgently needed to ensure the conservation of affected species by the governments of range states.

Genetic consequences

15. Genetic studies indicate not only that small populations are especially vulnerable to the accumulation of harmful genetic mutation (genetic drift), but also that "effective population sizes" are significantly smaller than "census population sizes". That is, not all individuals in a population contribute to the gene pool. Owing to the low genetic variability (homozygosity) of waders, there should be particular concern as to the long-term genetic consequences of populations falling below 15,000 indi-

viduals. A total of 140 wader populations, comprising 28% of the global total, are smaller than this threshold. Special attention is needed for declining populations close to this threshold.

Further analyses to guide conservation actions

16. Interpretation of monitoring data and information is greatly aided by multiple information sources as well as by integrated population monitoring. Further, there is significant potential to develop surveillance schemes based on information derived from ringing (banding) schemes and other assessments of productivity – as is already undertaken for many goose and duck populations – linked to population size and trend monitoring. To this end, development of internationally co-ordinated programmes to routinely assess wader productivity and survival would aid more focussed and cost-effective conservation responses to information derived from count programmes.
17. The application of IUCN Red-list criteria at sub-species/population level should be encouraged by the WSG so as to formally highlight the conservation status of individual biogeographic populations. This information is especially valuable in the context of listings under the Convention on Migratory Species and other international instruments.
18. Further comparative analyses, using existing data and information, of the status of waders in different regions and flyways should be undertaken so as to highlight common patterns and processes in both declining and increasing populations. WSG should aim to produce focussed outputs on these matters for presentation to the "Waterbirds around the World" Global Flyways Conference (Edinburgh, April 2004) as well as to appropriate international conventions and governments.
19. WSG should continue to review the status of waders worldwide with the aim of continuing to provide technical advice to international conventions and others as to those (types of) populations that should receive major attention with respect to their conservation, monitoring and research.
20. There is an immediate need for the WSG to establish an internationally co-ordinated process to collate appropriate data for fourth edition of Wetlands International's *Waterbird Population Estimates* (to be submitted to the ninth Conference of the Contracting Parties to the Ramsar Convention in 2005).

Participants considered that the conclusions of this Conference are of major conservation concern and are determined to transmit them to intergovernmental organisations and treaties for their attention and action, including: the Ramsar Convention on Wetlands; the Convention on Migratory Species; the Agreement on the Conservation of African–Eurasian Migratory Waterbirds; the European Commission; the Migratory Waterbirds Committee with oversight of the Asia–Pacific Migratory Waterbird Conservation Strategy; the Western Hemisphere Convention; the Western Hemisphere Shorebird Research Network; the North American Bird Conservation Initiative; and the imminent Neotropical Ornithological Congress in Chile as well as other appropriate national and international bodies with responsibility for wader conservation, research and monitoring.



The Conference noted the target established in 2002 by world leaders at the World Summit on Sustainable Development, Johannesburg, of “*a significant reduction in the current rate of loss of biological diversity*” by 2010. It also noted the target set in 2001 by European Union Heads of State in Göteborg “*that biodiversity decline should be halted with the aim of reaching this objective by 2010.*” The declines reported from all over the world suggest that, for waders at least, it will be extremely challenging to achieve these targets.

World leaders noted in Johannesburg that achievement of this target “*will require the provision of new and additional financial and technical resources to developing countries*”.

We agree, and also note that at minimum, significantly greater investment is urgently needed by governments not only in developing countries, but also in developed nations. This is required to establish and maintain national monitoring schemes, as well as to understand the causes of population declines so that appropriate, targeted conservation responses may be made.

*International Wader Study Group
28 September 2003
Cádiz, Spain*

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Annex. Status of the world's waders. Data summarised from Wetlands International 2002. *Waterbird Population Estimates*. Third edition. Wageningen, The Netherlands. Figures include both migratory and sedentary species and populations.

Totals by Ramsar region ³	Total no. wader species	Total no. wader popns	No. Globally Threatened wader species ^{4,5}	No. Near Threatened wader species ⁵	No. popns. definitely or possibly extinct	No. popns. definitely or probably declining	No. popns. with or prob. stable nos.	No. popns. definitely or probably increasing	No. popns. with unknown trends
Africa	81	202	5	4	1	40	36	14	111
Europe	39	98	2	1	0	30	28	12	28
Asia	65	198	10	7	1	31	16	7	143
Oceania	41	79	11	6	4	11	7	7	50
Neotropics	56	109	15	5	1	25	22	4	57
North America	42	86	4	2	1	31	20	6	28
GLOBAL TOTALS	214	511	23	19	7	96	72	32	304
Specific Flyways^{6,7}									
Central and Southern Asia	59	71	6	1	0	7	3	4	57
West Asia/East Africa	44	51	2	1	0	9	9	0	33
Black Sea/Mediterranean	31	33	1	1	0	17	5	3	8
East Atlantic Flyway	29	47	0	0	0	16	19	9	3
Sub-Saharan Africa	7	10	0	0	0	1	0	2	7

³ Some species or populations may occur in more than one Ramsar region

⁴ Including extinct species

⁵ A conclusion from this Conference was that there was an urgent need to update formal IUCN Red-listings for Neotropical waders as a number of species are clearly of this status but are not currently categorised as such

⁶ Totals also included in Ramsar Regions

⁷ Comparable information is not yet available for the following flyways: Pacific North America, Central North America, Mississippi, Atlantic North America, Central Pacific, and East Asia/Australasia

