

MIGRATORY SHOREBIRDS OF THE EAST ASIAN - AUSTRALASIAN FLYWAY:

Population Estimates and Internationally Important Sites

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*In all that endless blue of space,
Where latitude and longitude are words,
not numbered lines.
How do they know,
the way to go.
Between a home and a home;
Returning and returning.*

*What guides them, directs them,
Along the skyroads and across the oceans.
Who guards them, looks over them,
Amongst the cloudways and the thunder.
How do they know,
the way to go.
Between a home and a home;
Returning and returning.*

J. Bamford

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We relied on shorebird count data that have accumulated over some decades through the efforts of Wetlands International and its Asian Waterfowl Census, the Australasian Wader Studies Group and its shorebird population monitoring programme, and the work of individuals who counted birds and reported their findings. It is only through the foresight of such organisations and the relentless and largely unpaid efforts of individuals that this mass of data was available to us. Inevitably there will be data that we missed during the course of the project, and all we can do is apologise and encourage people to publish their observations whenever they can, thus making them more available for the future.

Having massaged count data into population estimates, we then relied upon feedback from people with much greater knowledge than us concerning the shorebirds of their region. Many people responded to our requests for comments and some even dug into records and found additional data for us. Our thanks to Bob Gill (Alaska), Yuri Gerasimov (Russia), Maki Koyama, Tobai Sadayosi, Minoru Kashiwagi (Japan), Nial Moores (South Korea), Mark Barter (South Korea and China), Lew Young (Hong Kong), Weiting Liu (Taiwan), Phil Round (Cambodia), Taej Mundkur, David Li (Malaysia), Andrew Crossland (Indonesia) and Phil Straw, Chris Hassell, Ray Chatto, Roger Jaensch, Jim Wilson, Peter Driscoll and Clive Minton (Australia). Additional thanks to Bob Gill, Mark Barter and Roger Jaensch, who provided valuable comments upon early versions of this report.

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Summary

Migratory shorebirds present a particular conservation challenge because their patterns of movement take them across international boundaries, in some cases almost spanning the globe. They utilise different sites in different countries at different times of the year, and conservation of these species therefore requires the management of the suite of sites that are important to them. To identify important sites requires count data and population estimates to put those count data into perspective.

The need for this information in the East Asian - Australasian region was identified in the Asia-Pacific Migratory Shorebird Action Plan, and Wetlands International undertook to implement this component of the Plan through this review. This review therefore aimed to:

- Develop population estimates for shorebirds in the East Asian - Australasian (EAA) Flyway;
- Identify sites of international importance for migratory shorebirds in the EAA Flyway.

This review is the first time that the identification of sites of international importance for migratory shorebirds across the EAA Flyway has been conducted.

Shorebirds and the EAA Flyway

'Flyway' is the term used to describe a geographic region that supports a group of populations of migratory waterbirds throughout their annual cycle. Up to nine flyways are recognised worldwide, each reflecting a grouping of populations that use similar migratory routes. The EAA Flyway extends from the Russian Far East and Alaska in the north to Australia and New Zealand in the south, and incorporates eastern Asia and parts of south Asia. There are 23 countries within this region.

Fifty-four species of migratory shorebirds utilise the EAA Flyway, with a number of other species present as vagrants.

Population estimates

The past decade of the "Asia – Pacific Migratory Waterbird Conservation Strategy" and its linked "Action Plan for Migratory Shorebirds in the East Asian – Australasian Flyway" has provided considerable stimulation and support for the collection of new data on shorebird numbers. This review provides the first opportunity to draw this information together from across the flyway, e.g., Yellow Sea (Barter 2003), northern Australia (Driscoll 1996) and expanded coverage by the Asian Waterbird Census (Li and Mundkur 2004).

The size of shorebird populations in the EAA Flyway were calculated based on a review of count data. Over 100 000 count records were included in the review, with the main sources of data being the Asian Waterfowl Census, and population monitoring programmes in Australia and Japan. Data were collated into regions within each country, and for species with adequate data, the highest non-breeding period count of each species in each region was used as the basis for a regional estimate. Non-breeding period data were used because it was assumed that there would be minimal movement of birds between regions and similar numbers of birds would be present in each region each non-breeding period. Regional estimates were pooled for each country, with adjustments made to derive country estimates. Adjustments were made on the basis of the estimated proportion of habitat included in surveys and with advice from ornithologists experienced in each country. Country estimates were then pooled to produce population estimates for the EAA Flyway.

Estimates were presented for 34 of the 54 shorebird species included in the review. Data were inadequate for the remaining 20 species, but population ranges were provided. These were species that are cryptic or disperse across freshwater wetlands and are therefore difficult to count. Population estimates for migratory shorebirds in the EAA Flyway ranged from 1 000 (Spotted Greenshank) to 2.88 million (Oriental Pratincole), with a minimum total for all species of approximately 8 million.

Comparison with previous estimates

Many population estimates were similar to previously calculated values or fell within previously proposed population ranges, but for a number of species this review produced substantially changed estimates. The review concluded that many populations were present in larger numbers than could previously be substantiated. For example; Whimbrel (100 000 compared with 55 000), Eurasian Curlew (40 000 compared with 35 000) and Grey-tailed Tattler (60 000 compared with 40 000). Such increased population estimates are probably due to more comprehensive count data. A few species are believed to be less abundant than previously thought. These include the Red-necked Stint (325 000 compared with 471 000) and Curlew Sandpiper (180 000 compared with 250 000). To some extent, these lower estimates have come about because of improved information, but there is also concern that species such as the Curlew Sandpiper are declining in population size.

Two shorebird species in the EAA Flyway, the Spoon-billed Sandpiper and Spotted Greenshank, are listed as Endangered by the IUCN (2006). Previous population estimates for these species were <3 000 and 1 000 respectively, and the review found no evidence for larger numbers than these. Two further species, the Asian Dowitcher and Black-tailed Godwit, are listed as Near Threatened (IUCN 2006).

There is a shortage of count information on cryptic shorebirds and those that utilise freshwater inland wetlands. This has greatly limited the ability to derive population estimates for these populations.

Internationally Important Sites

The identification of important sites was based upon Criterion 6 of the Ramsar Convention, which states that “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 criterion also allows for the recognition of internationally important sites based upon the movement of significant numbers of birds through a site during migration (staging criterion). In this review the staging criterion adopted was 0.25% of a population.

Three-hundred and ninety-seven (397) internationally important sites were identified, with the largest numbers of sites in Australia (118), China (51) and Japan (89). Sites of international importance were identified in the non-breeding and migration periods, as shorebirds are generally dispersed when breeding. Major sites or regions where sites were concentrated were: Moroshechnaya Estuary (Russia), Daur-sky Nature Reserve (Russia), Yellow Sea area (South Korea, North Korea, China), southern Honshu (Japan), Manila Bay (Philippines), Gulf of Thailand (Thailand), west coast of Malaya (Malaysia), south-eastern Sumatra (Indonesia), Roebuck Bay/80 Mile Beach (Australia), south-eastern Gulf of Carpentaria (Australia), Moreton Bay/Great Sandy Strait (Australia), southern Victoria to Eyre Peninsula/Spencer Gulf (Australia) and North Island (New Zealand).

Usage of sites by shorebirds varied. In the north of the Flyway, sites were important on migration and very high proportions of some populations passed through particular areas. For example, possibly all Whimbrels in the EAA Flyway utilise Moroshechnaya Estuary on southward migration, a high proportion of Temminck’s Stint use Daur-sky Nature Reserve, while an estimated 90% of the Flyway’s Lesser Sand Plovers utilise the Yellow Sea area on northward migra-

tion. The Yellow Sea area has previously been identified as a key staging area within the EAA Flyway, being especially important for species that fly non-stop between eastern Asia and northern Australia. The Roebuck Bay/Eighty Mile Beach region of north-western Australia is also a key staging area, but in addition supports large numbers of birds throughout the year. Conservation of such key areas is essential to maintain the migration of many shorebird populations in the Flyway.

Sites important in the non-breeding period were widespread, reflecting differences in the non-breeding period distribution of shorebird populations. The majority of identified important sites in the non-breeding period were in Australia, but for some species important non-breeding period sites were confined to specific regions within south-eastern Asia. While the majority of migratory shorebirds in the Flyway used a limited number of sites in coastal eastern Asia between breeding grounds in the north and non-breeding period sites in the south, there were also species that used inland Asia and a suite of species that spent the non-breeding period in south-eastern and across to southern Asia.

The available data contributing to this document are limited in several ways, leading to incomplete identification of important sites in the Flyway. This is particularly the case where:

- A species is cryptic, non-flocking or in habitats difficult to count, such as inland freshwater sites, etc (includes 20 species in this Flyway).
- In regions where there are few surveys or reliable count data, including inland Asia and Australia.
- During migration periods for many species, as shorebird surveys concentrate on the non-breeding period.
- The boundary of a site is difficult to define – in many cases the boundary of a management unit was used to define the site boundary.

Conclusions

These updated population estimates and lists of important sites in each country of the Flyway enable some interpretation to identify the key areas in which to focus protection and wise use of habitat for migratory shorebirds. This knowledge can thus provide a basis for directing coordinated international conservation actions and efforts within each country. Key implications for conservation to come from this review are:

- The list of internationally important sites identified will assist the development of a

Network of Internationally Important Sites in the Flyway. The Network provides a basis for implementing internationally coordinated conservation efforts to conserve the wetlands that migrating birds need to survive. Staging sites form a large component of these internationally important sites. Whilst shorebirds may use staging sites more intermittently than breeding or non-breeding sites, the staging sites are extremely important for successful migration. A large number of staging sites are in Asia where impacts and threats are highest and often require more urgent conservation effort.

- Areas and countries with least information are often areas where shorebird field skills and general education and awareness are also needed.
- Data limitations indicate where more information is needed, including for species, habitats, regions and periods that are poorly surveyed.
- The boundaries of sites are often poorly-defined in available information. For site conservation, improved recognition of site boundaries is essential.

Whilst this document will help to determine priorities for shorebird conservation in the East Asian – Australasian Flyway, the available data to identify important sites in the Flyway are still incomplete and require ongoing updating and review.

