Australasian
Shorebird Conference 2007

Newcastle University
6-8 July 2007

"Migratory Shorebirds in a Threatened Flyway"

AWSG
Australasian Wader Studies Group

Program and Abstracts

Sixth Australasian Shorebird Conference 2007

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A message from the Chairman

I would like to express a warm welcome to all participants in the Australasian Shorebird Conference, 2007. This forms the Australasian Wader Studies Group (AWSG) conference which is held every two years. A particular welcome to our overseas visitors; we look forward to hearing something of your work in your country and how we in Australia can learn from this.

The AWSG, like wader groups worldwide, faces enormous challenges. A common theme expressed by shorebird experts is that the majority of shorebird populations are in decline globally; these declines are more common in Arctic breeding species. Over the last three years, international groups have increasingly expressed the need for countries to urgently review the conservation of both migrant and resident shorebirds and the ecosystems that support them. These are also affected by changes in global weather systems. The Asia - Pacific region is of special concern as it has the largest number of shorebird populations under threat or least understood and the highest human population density of any flyway. It is therefore encouraging to see that there are several presentations to be made on migration studies being carried out in the East Asian -Australasian Flyway and a discussion on the accompanying threats.

It has been recognised for some years that the Yellow Sea is a critical region for the two million migratory shorebirds in the East Asian-Australasian Flyway; it is the last major stopover and refuelling site between non-breeding areas and the northern breeding grounds. The number and quality of staging sites in the Yellow Sea are vital for birds' survival and breeding success. Sadly these important tidal flats are threatened by a number of human activities that reduce food supply, the most critical of which are extensive reclamations such as the Saemangeum project on the west coast of South Korea. Over the last 10 years the AWSG has assisted in gathering an enormous amount of knowledge of this region in terms of habitat, shorebird use and populations as well as documenting threats. One of the challenges facing the AWSG is to extend this knowledge in co-operation with governments and local groups. During the Conference I encourage you to discuss opportunities where we could make a difference. There will be several examples presented over these two days which I am sure will challenge us all.

We also face many challenges in Australia if we are to find solutions to habitat threats potentially impacting on our resident and migratory shorebirds. There is a great need for awareness raising within the community of the significant value of our wetlands and the biodiversity of life that they support. One of the fundamental tenets of our organisation is that it is only through gathering robust scientific knowledge that we can suggest effective conservation strategies. One of the current challenges in Australia is to provide reliable, scientifically defensible data on shorebird populations around the country. The AWSG has co-ordinated a Population Monitoring Program (PMP) in Australia over 25 years; this is a very valuable data set, being the only comprehensive data on shorebirds available to planners and government agencies. While it is essential that this program continue, the AWSG, in conjunction with Birds Australia, has developed a strategy to address future directions. Some of the exciting developments of this revitalised program will be discussed at the Conference.

The AWSG has recently published the 50th issue of Stilt, somewhat of a landmark issue reviewing its 25 years of existence. In this, the question is posed, 'What of the next 25 years?' I hope that the AWSG will have guided the accumulation of information to enable research on shorebirds throughout the flyway; research that will help ensure that the birds that make their incredible journeys will be on our beaches and wetlands for future generations to enjoy. I hope this Conference is one step in that process.

Ken Gosbell
Australasian Wader Studies Group

Foreword

This is the sixth Australasian Shorebird Conference (ASC) since its inception in Brisbane in 1996. However this conference has broken with tradition in that it is being held in mid winter and for only the second time is being held in isolation from any other related conference. In the past the ASC has been held in association with a Ramsar Convention (Brisbane 1996), the 2nd Southern Hemisphere Ornithological Congress (Brisbane 2000), and the Australasian Ornithological Congress (Canberra 2003 and New Zealand (Nelson) 2005). In June 1999 the ASC was held in winter, at Phillip Island, Victoria. The 'logic' in holding the ASC in the winter months is that this is the quiet time for shorebird researchers in Australasia. The down side of this is that our northern hemisphere colleagues, working in the breeding grounds of the majority of our migratory species, are at their busiest time and unable to join us. Fortunately, shorebird specialists in Flyway countries such as China, South Korea, Thailand and Japan were able to join us for this Conference.

This Conference, "Migratory Shorebirds in a Threatened Flyway", comes at an exciting time when technology is enabling us to track individual birds from Arctic breeding grounds to non-breeding grounds in Australia and New Zealand and back to the Arctic via their most important staging areas in the Yellow Sea. However a sobering thought is that the loss of shorebird habitat is occurring at an unprecedented rate, also aided by modern technology.

It is time to look at the successes and failures of shorebird habitat management throughout the Asia Pacific Region because a broken link in the migration path can spell the extinction of a species as surely as destroying its breeding grounds.

The increased cooperation between researchers in the Asia Pacific lends us some hope. Combined research projects and training programs in Alaska, Russia, China, South Korea and Indonesia over the past ten years and the recent establishment of a communication network across the Asia Pacific have done much to focus attention on problems faced by migratory shorebirds.

The establishment of Flyway partnerships between governments of countries in the East Asian-Australasian Flyway now focus more effectively on the protection of key staging areas of waterbirds, including shorebirds, across the region.

It is hoped by 2009, at the 7th ASC, we will have taken some major strides towards ensuring the long-term protection of sites essential for the survival of many of the shorebirds for generations to come.

Phil Straw
Conference organiser

About the Australasian Wader Studies Group

AWSG Mission

To ensure the future of waders and their habitats through research and conservation programs in Australia and to encourage and assist similar programs in the rest of the East Asian- Australasian Flyway.

OBJECTIVES

The AWSG was formed in 1981 as a special interest group of Birds Australia. Its objectives are:

To monitor wader populations through a program of counting and banding to collect data on changes on a local, national and international basis.

To study the migrations of waders through a program of counting, banding, colour flagging and collecting of biometric data.

To instigate and encourage other scientific studies of waders such as feeding and breeding studies.

To communicate the results of these studies to a wide audience through the biannual journal, ***Stilt*** and quarterly newsletter, ***Tattler***; other journals, the Internet, the media, conferences and lectures.

To formulate and promote policies for the conservation of waders and their habitat, and to make available information to local and national government departments and conservation bodies.

To encourage and promote the involvement of a large band of amateurs, as well as professionals, to achieve these objectives.

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Friday 6 July 2007

5:30 pm - 7:00 pm Tree House, University of Newcastle

REGISTRATION AND RECEPTION/ICE BREAKER

POSTER PAPERS

Coastal bird Inventory on King Island 2006/07
Sarah Lovibond, Eric J. Woehler and Elaine Stratford *page 38*

Port Botany Expansion Project; expansion of shorebird habitat as mitigation for industrial development
Phil Straw & Marika Calfas *page 39*

A decrease of over 40%? Changes in shorebird numbers during 20 years in Japan.
Hitoha E. Amano *page 41*

Saturday 7th July - Lecture Theatre G1-1, General Purpose Building

8.00 am Registration
9.00 am Welcome
9.05 am Opening Address

9.15 am ***Keynote Presentation:***

Technology, communications and knowledge: advancing understanding of the world's greatest migrant, the Bar-tailed Godwit.
Phil Battley, Robert E. Gill, Lee Tibbitts, Dan Mulcahy, Brett Gartrell and Nils Warnock *page 10*

10.15 - 10.45 am **Morning tea**

10.45 - 12.30 pm ***Session 1:***
Migration studies in the Asia Pacific Flyways

Movements based on recoveries and flag sightings, illustrating the key role of the Yellow Sea.
Clive Minton, Johannes Wahl, Roz Jessop, Chris Hassell, Pete Collins and Heather Gibbs *page 12*

Research on the migration and habitat selection of migratory shorebirds in northern Bohai Wan, China. *YANG Hong Yan* *page 13*

Long-term trends in shorebird numbers in eastern Australia
Silke Nebel, John Porter & Richard Kingsford *page 14*

The Red Knot conundrum
Clive Minton, Ken Kraaijevelt, Birgita Hansen, Roz Jessop, Heather Gibbs, Adrian Reigen & Chris Hassell *page 15*

12.30 - 1.30 pm **Lunch**

1.30 - 3.00 pm ***Session 2:***
Identifying threats to critical habitat

Land-claim activities along the Chinese coastline - *Mark Barter* *page 17*

The Saemangeum Shorebird Monitoring Program: Aiming to Reverse the Tide - *Nial Moores* *page 18*

Is Ramsar meaningless in Korea?: Korea's implementation of and compliance with the Ramsar Convention - *Rakhyun Kim* *page 19*

3.00 - 3.30 pm **Afternoon tea**

3.30 - 4.30 pm ***Session 3:***
Getting the handle on shorebird populations

Shorebirds in east China during the non-breeding period
Mark Barter *page 21*

Wader populations in Australia - where are they heading? A brief review and future monitoring needs - *Ken Gosbell & Rob Clemens* *page 22*

Past and current research on shorebirds in the Inner Gulf of Thailand
Siriya Sripanomyom *page 23*

4.30 pm **Preview of "Shorebirds 2020"**

6.30 for 7.00 pm start ***Conference Dinner***
'Aqua Cellar' at The Beach Hotel, cnr Frederick and Rigby Streets, Merewether.

Sunday 8 July - Lecture Theatre G1-1, General Purpose Building

09.00 am Registration

09.30 - 10.30 am ***Session 4:***
Managing shorebird sites

Hunter Estuary Shorebird Habitats - the trouble with mangroves -
Chris Herbert and Liz Crawford *page 25*

Optimising shorebird habitat by hydraulic manipulation -
Alice Howe, José Rodríguez and G MacFarlane *page 26*

Does rehabilitation improve wetland habitat for shorebirds?
- Jenny Spencer, Kingsford R.T. and Saintilan, N *page 27*

10.30 - 11.00 am Morning tea and book launch "Shorebirds in Australia"

11.00 - 12.30 pm Managing shorebird sites (continued)

Management at Yalu Jiang Wetland Nature Reserve,
China - *ZHANG Guangming* *page 28*

Selection of feeding aeas by waders at the Western Treatment Plant
(Werribee Sewage Farm), Victoria, Australia - *Danny Rogers* *page 29*

Managing and conserving wader roost habitat: local government,
the forgotten link - *Sandra Harding* *page 30*

Valuing coastal habitats: predicting wader high tide roosting habitat
occupancy - *Yuri Zharikov & David Milton* *page 31*

12.30 - 1.30 pm Lunch

1.30 - 3.10 pm
Session 5: Avian Diseases - recognising the culprits
Session 6: Community and government involvement

Carriage of avian influenza viruses by shorebirds in Australia
- Phil Hansbro, Simone Warner, Aeron Hurt & John Curran *page 33*

Engaging governments in the Flyway in shorebird conservation
- Jason Ferris *page 35*

Expanding the role of AWSG and other NGO's in the conservation of
migratory shorebirds in the Flyway - *Doug Watkins* *page 36*

3.10 - 3.40 pm Afternoon tea

Closing session

Keynote address

Technology, communication and knowledge: advancing understanding of the world's greatest migrant, the Bar-tailed Godwit

Phil Battley[1], Robert E. Gill[2], Lee Tibbitts[2], Dan Mulcahy[2], Brett Gartrell[3] and Nils Warnock[4].

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The migrations of birds have formed important components of human culture for millennia, but it is only from the 19th Century onwards that improved communication allowed biologists to start to piece together disparate knowledge about migratory species' annual cycles. For example, in New Zealand, the indigenous Maori had detailed knowledge about the seasonal occurrence of Kuaka, the Bar-tailed Godwit (*Limosa lapponica baueri*), on the non-breeding grounds, though they had no idea where the birds bred. Conversely, the Yup'ik in Alaska knew when to expect the annual appearance of Tevetevaaq on the breeding grounds but presumably had no knowledge of the birds for the rest of the year. In this address we explore the development of knowledge about the migrations of Bar-tailed Godwits. In many ways the road to understanding has been slow and uneven, affected by technology, scale, politics and the need to be in the right place at the right time. But the current quickness of communication, sophistication of technology and ease of long-distance travel mean that our ability to study migratory birds is greater now than ever before. We will discuss our attempts to gather direct information on flight time and migration routes in godwits, in particular by the use of satellite transmitters, and argue the case for the Bar-tailed Godwit being given the official title of "World's Greatest Migrant"!

Session 1 - Migration Studies in the Asia Pacific Flyways

Chair: Mark Barter

NOTES:

Movements based on recoveries and flag sightings, illustrating the key role of the Yellow Sea

Clive Minton, Johannes Wahl, Roz Jessop, Chris Hassell, Pete Collins and Heather Gibbs

An analysis of the recoveries and flag sightings of 26 species of migratory waders which visit Australia showed that the migration pattern of almost every species was different. However, almost all species used at least some part of the Chinese coast as a stopover location, particularly on northward migration. There was a tendency for birds with non-breeding areas in eastern Australia to use a more easterly route through Asia than birds from Western Australia. In some species the northward and southward migration routes were markedly different. The breeding grounds of waders which spend the non-breeding season in Australia cover a very wide range, from 98°E to 149°W. Some individual birds recovered had travelled over 13,000 km. from the banding location.

Research on the migration and habitat selection of migratory shorebirds in northern Bohai Bay, China

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Bohai Bay is in the western part of the Bo Sea in Northern China. Our main study site is located at Nanpu in Hebei Province (39 °02'N and 118°21'E), which is in the central northern part of Bohai Bay. The habitat includes wide intertidal mudflats and extensive salt works. Another part of the study site is an inland saltpan that is 8 km from the coast in Beipu (39°08'N and 118°15'E).

From January to December 2004, we visited the study area in Nanpu weekly during the migration periods, every two weeks in summer, and monthly in winter, and counted shorebirds on the mudflats and adjacent saltpans from a 6-km long seawall. We also conducted surveys during the low tide period during the northward migration peak in 2006.

Thirty-nine species, most of them migrants, were observed in study sites during the surveys, including nine species which were present in more than 1% of their estimated population in the East Asian-Australasian Flyway (EAAF) - Curlew Sandpiper, Red Knot, Red-necked Stint, Marsh Sandpiper, Eurasian Curlew, Grey Plover, Pied Avocet, Black-winged Stilt and Broad-billed Sandpiper.

In 2004, the shorebird numbers peaked in spring and the maximum number observed during a single survey was 10,410 birds on 22 May 2004. The most common species are Red-necked stint, Red Knot, Curlew Sandpiper, Grey Plover and Eurasian Curlew. The secondary peak in shorebird abundance occurred in September and the third peak was in winter. The species richness of shorebirds varied seasonally in 2004: from 37 species in spring to 3 species in winter.

During the peak of the 2006 northward migration, 11 shorebird species were present in the study area at more than 0.25% of their estimated population in the EAA Flyway. Of these species four preferred foraging in the inland saltpans and seven species preferred the mudflats.

Shorebirds with leg flags occurred at our study sites. These were banded in Australia, New Zealand, and Chongming Island, China. Among them, were Red Knots from north-western Australia, south-eastern Australia and New Zealand.

The Capital Steel Group from Beijing is moving to our study region (to reduce pollution for the Beijing Olympics), and also the Cao Fei Dian coal port is being built and the big Nan Pu oil field has recently been discovered. All of these will make this region one of the biggest steel, energy and petrochemical hubs in China. As a result, lots of wetlands in inland and coastal areas are disappearing. So, how to keep balance between using wetlands for industrial development and protecting biodiversity is a serious problem.

Long-term trends in shorebird numbers in eastern Australia

Silke Nebel, John Porter & Richard Kingsford

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Shorebirds worldwide have undergone dramatic population declines. Of the 237 populations with data, 52% are in decline, while only 8% are increasing. For 68% of shorebird populations in Australia no trend data are available. Here, we present temporal data on shorebird populations in eastern Australia. They were collected during annual aerial surveys (1983-2006) of waterbirds and wetlands in eastern Australia. The surveys are one of the largest and longest running wildlife monitoring projects worldwide, counting up to 50 waterbird species on about 2,000 wetlands along ten survey bands across eastern Australia. Numbers of shorebirds have declined significantly over the past 24 years. We identify ten wetlands in eastern Australia with high conservation value to shorebirds (>4,000 as maximum yearly count). We then examine how urbanization, changes in land use and water resource development have affected shorebird numbers by altering their wetland habitat. With shorebirds overwintering in Australia for about half the year, a major contributing factor to this striking decline in shorebird numbers is the degradation of rivers which reduce the frequency and extent with which wetlands are flooded. This contributes to shorebird mortality experienced on the Flyway from loss of habitat and hunting. Declining populations of shorebirds have implications for Australia's responsibilities under several international agreements to protect shorebird populations and their habitats.

The Red Knot conundrum

Clive Minton, Ken Kraaijevelt, Birgita Hansen, Roz Jessop, Heather Gibbs, Adrian Reigen, Chris Hassell

The Red Knot is the most intensively studied wader in the world yet new facts about its migrations are still being discovered and many mysteries still remain. Two subspecies occur in the East Asian-Australasian Flyway. *Rogersi* breed in Chukotka, in the far north-east of Siberia, and most are thought to spend the non-breeding season in eastern Australia and New Zealand. *Piersmai* breed in the New Siberian Islands, off the north coast of Siberia, with some also possibly nesting on the adjacent mainland in Yakutia. They are thought to spend the non-breeding season mainly in north-west Australia.

The slow accumulation of recoveries and the more recent much larger number of flag sightings have shown that the link between breeding origins and non-breeding locations is more complex. This is most strongly demonstrated by the now extensive data showing quite a marked link between Red Knot in north-west Australia and in New Zealand. *Rogersi* probably occur quite extensively in north-west Australia, at least at certain times of the year. And there is now growing evidence that some *piersmai* visit New Zealand. The movement patterns have added complexity with growing evidence that some immature birds from south-east Australia, and even New Zealand, may move northwards in winter to north-west Australia. In addition to the well established pattern of many young Red Knots spending their first (and sometimes also second) year in south-eastern Australia before crossing the Tasman to establish their regular non-breeding area in New Zealand it now appears that some immature birds in north-west Australia may behave similarly.

Biometrics of Red Knot caught in south-east and north-west Australia have been examined, including on birds sexed by DNA, but do not appear to assist in the elucidation of movement patterns nor in the determination of the non-breeding ranges of the two subspecies. This is probably the result of the quite small bill and wing length differences of the two subspecies and the fact that mixed populations occur in the sampling locations. Stable isotope and further DNA work are being considered to see if these can assist the resolution of this conundrum.

Session 2 - Identifying threats to critical habitat

Chair: Danny Rogers

NOTES:

Land-claim activities along the Chinese coastline

Mark Barter

21 Chivalry Avenue, Glen Waverley VIC 3150

Quite correctly, considerable international attention is being given to the tragic loss of the very large Saemangeum wetland on the west coast of South Korea. However, cumulatively larger areas are being claimed or adversely affected by pollution and human disturbance on the Chinese coast. The coastal provinces are amongst the most densely populated within China and have fast economic growth rates and, consequently, the coastal wetlands are suffering greatly. Changes in river flows, as a result of water extraction and damming, are greatly affecting sediment and nutrient inputs to coastal areas with a consequent effect on biological productivity. A recent study into the effect of the Three Gorges Dam on the Yangtze River showed that sediment flow had declined by 65% and that the coastline at the river mouth was now eroding. Similar changes to productivity and intertidal area will probably be occurring at other estuaries along the coastline. With land claim rates accelerating and accretion rates decreasing, intertidal areas can be predicted to decline rapidly during future years. During the last northern winter we conducted waterbird surveys along the coasts of Jiangsu and Zhejiang provinces and were able to map our tracks along the current sea wall on six year old satellite images. Often we found we were all at sea! The intertidal areas along these coasts are very important for shorebirds during the migration and the non-breeding periods, and we should also focus international attention on the amount of land-claim occurring in China.

The Saemangeum Shorebird Monitoring Program: aiming to Reverse the Tide

Nial Moores

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While only one of many reclamation projects ongoing in South Korea, the 40 100 ha Saemangeum reclamation is the largest known coastal reclamation project in the world, leading to the loss of the single most important known shorebird site within the Yellow Sea, itself a core area within the East Asian-Australasian Flyway. Despite the site's extreme international importance, and South Korea's accession to international conventions and international agreements (such as the Korea-Australia Migratory Bird Agreement) no adequate monitoring program was in place to monitor the Saemangeum reclamation's impacts on shorebirds (or other biota). In 2006, Birds Korea partnered with the Australasian Wader Studies Group (AWSG) to conduct the Saemangeum Shorebird Monitoring Program (SSMP), assessing habitat changes and conducting shorebird counts throughout northward migration 2006-2008 at Saemangeum and the two adjacent sites of Gomso Bay and the Geum Estuary. The SSMP has been able both to confirm the extreme international importance of Saemangeum (up to 2006 especially) and the Geum Estuary, while recording the rapid degradation of the Saemangeum system, including the mass die-off of some shellfish beds, following completion of the 33-km long seawall in April 2006. By April and May 2007, probably close to 95% of the tidal flats had either dried out or become permanently inundated, and almost all shell-beds had died, contributing to a 96% decline in Great Knot *Calidris tenuirostris* at Saemangeum between the two years. While monitoring impacts on shorebirds locally, the SSMP data are also being meshed into ongoing programs elsewhere, including the AWSG-led Monitoring of Yellow Sea Migrants in Australia, the Population Monitoring Program and related initiatives. This unique level of collaboration should enable significant changes in the population level of some shorebird species, such as Great Knot, to be detected not only locally, but also at the Flyway level. The SSMP fieldwork in South Korea has been supported by a large number of awareness-raising activities, data dissemination and publication, and has already played a significant role in challenging the proposed reclamation of the adjacent Geum Estuary. Birds Korea believes that the SSMP, especially when combined with other well-focused initiatives, has the potential to help reverse the tide of coastal reclamation in South Korea – and over time throughout much of the Flyway.

Is Ramsar meaningless in Korea?: Korea's implementation of and compliance with the Ramsar Convention

Rakhyun Kim

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Coastal wetlands in Korea, noted as being of international importance, are under constant threat from increasing demand for more developable land. The threats include direct physical alterations such as reclamation under the Public Waters Reclamation Act 1962 and the Public Waters Management Act 1961; and also impact from land-based activities and pollution sources. Against this backdrop, Korea acceded to the Ramsar Convention in 1997 followed up with a major legislative development in 1999: the enactment of the Wetlands Conservation Act 1999 and the Coastal Management Act 1999 and the amendment of the aforesaid "public waters" Acts to embrace environmental considerations. Yet these laws did not entirely stop the ongoing destruction and further plans lie ahead.

In the face of an ongoing destruction of coastal wetlands, the author asks "is Ramsar meaningless in Korea?" Understanding that the core problem lies in disparities between international and national laws, the dissertation explores the Ramsar Convention and the Korean legislative framework of both the pre- and post-Ramsar eras to give an account of what changes were made during these periods and how meaningful they were. More specifically, it attempts to: analyse how the Convention was translated and implemented domestically; test whether the Korean legislation is adequate to obey the Ramsar obligation of "wise use" of wetlands under the sustainable development framework; and propose some changes to improve the current national coastal wetlands conservation regime.

Session 3 - Getting a handle on shorebird populations

Chair: Doug Watkins, Wetlands International

NOTES:

Shorebirds in east China during the non-breeding period

Mark Barter

21 Chivalry Avenue, Glen Waverley VIC 3150

East China is well endowed with both coastal and inland wetlands capable of supporting large numbers of shorebirds during the non-breeding period. There are extensive intertidal areas along the coasts of the Yellow, East China and South China Seas, and very large wetlands along the Yangtze and Huai Rivers up to 1,500 km inland. Most of the region lies south of the average 1ºC January isotherm and is mild enough to provide suitable shorebird foraging habitat. During the last five northern winters we have been conducting waterbird surveys in the region and have collected much information on the distribution and abundance of shorebirds. The most commonly encountered shorebirds were Dunlin, Eurasian Curlew, Pied Avocet, Spotted Redshank and Grey Plover. Whilst the majority of shorebirds are located on the coast, the inland wetlands support large numbers of Dunlin and a variety of freshwater species such as Pied Avocet and Spotted Redshank. We were able to delineate the northernmost parts of the non-breeding ranges for some species normally migrating further south e.g. Lesser Sand Plover, Sanderling, Ruddy Turnstone, Marsh Sandpiper and Bar-tailed Godwit. Distribution maps for the main species will be presented and an attempt made to estimate the numbers of the species occurring in east China during the non-breeding season.

Wader Populations in Australia – where are they heading? A brief review and future monitoring needs.

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Throughout the world many wader populations appear to be declining. For populations with known trends, almost half have been reported to be decreasing. In the East Asian-Australasian Flyway, a disproportionate number of shorebird species have been classified as threatened, and the shorebirds using this flyway are under increasing threat from habitat destruction and loss. Although the East Asian-Australasian Flyway holds the highest number of wader populations of any flyway, unfortunately, there is limited information on current population or trends.

This presentation provides an overview of the Australasian Wader Studies Group's Population Monitoring Program (PMP) over the last 25 years at sites around Australia and reviews its ability to provide information on population trends in migratory waders that visit Australia. This is demonstrated by presenting a simple example of one kind of trend analysis that can be performed. Although the analyses presented are exploratory and limited to selected species found in southern Australia, the results highlight the declining population trend for Curlew Sandpiper *Charidris ferruginea* and suggest declining trends for several other species.

The likely causes of population declines in the East Asian-Australasian Flyway are not well understood. Such knowledge can only be gained through long term demographic monitoring programs. For Arctic breeding species the most appropriate and most feasible region in which to conduct such studies is the non-breeding grounds where many species spend several months in the same area. Australia and New Zealand have largely stable wader numbers during the middle of the non-breeding season and these countries have the skilled volunteers required for monitoring. This has made Australasia an ideal region in which to contribute information on shorebird population dynamics. In fact it is the only region in the flyway where this level of monitoring can be done.

Information on population levels and trends is now increasingly required by governments at all levels to ensure long-term conservation of shorebird populations and to minimise impacts on their habitats. The PMP currently provides the only comprehensive long term data set on shorebird numbers in Australia available to planners and government agencies.

The presentation explores the limitations of the PMP in its current form. It is proposed that future emphasis should be on collecting data sufficient to allow examination of all species whose population trends are wanted, to cover those species distributions sufficiently to determine if trends are widespread, and to ensure counts are conducted in such a way as to maximise a site's count continuity over time. Improvements in sampling, count methodology, and analysis techniques may all contribute to improved population trend data for more species in more regions with greater sensitivity to smaller changes. It is imperative that any future design changes to the PMP allow comparability with previous data while seeking to improve the existing program.

Finally some of the key strategies that have been formulated by the AWSG and Birds Australia to achieve these goals are outlined.

Past and current research on shorebirds in the Inner Gulf of Thailand

Siriya Sripanomyom

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The Inner Gulf of Thailand is the single most important shorebird habitat in the country and known as an important staging and wintering site for shorebirds in the East Asian-Australasian Flyway. Fifty-six shorebird species have been recorded, 49 species are winter visitors or passage migrants, while seven species breed locally. Two critically endangered species, Spoon-billed Sandpipers and Nordmann's Greenshank occur regularly. Studies of shorebirds in the inner gulf date back to 1918 but observer coverage of the gulf improved strikingly after 1999. Since 2000, Philip D Round and colleagues began banding and conducting larger-scale surveys. Since September 2005 all shorebirds banded in the inner gulf have been marked with leg-flags. In addition to year 2005, the area attracted more attention and involvement from the government. Survey program of wetland birds and their habitats along the inner gulf conducted by the Thai National Park, Wildlife and Plant Conservation Department, they also plan to use satellite telemetry on a small numbers of waterbirds and shorebirds during the autumn migratory season of 2007. Additionally, a small area at the west side of Tha Chin river mouth will be declared as a National Non-hunting Area this year where the important species, the highest richness and highest abundance of shorebirds occur. The Bird Conservation Society of Thailand just established a project called "The Inner Gulf of Thailand Conservation" in 2006 which contains a number of sub-projects for monitoring shorebird populations and raising awareness. More intensive studies including two of the first graduate projects on shorebirds focusing on both broad scale and fine scale characteristics of the inner gulf and its shorebird communities are on-going. One study is focusing on body condition and food availability in the Long-toed Stint. The other is working on the relationship between shorebird abundance and landscape characteristics, which is the speaker's area of research. Shorebirds were counted at 20 sites representing the whole inner gulf, and covering the southward migration, midwinter and northward migration seasons between October 2006 and April 2007. During this survey dependent double-observer approach was applied to counting techniques to estimate detection probability for more accurate abundance estimation. Preliminary data from these systematic and regular counts which covered more area of the inner gulf and a consistent counting period showed much higher numbers of many species than all data available or ever published recently. Finally, richness and abundance of shorebirds in 20 sites will be analyzed with surrounding landscape parameters to reveal a keystone structure, which could be used to define priority sites for conservation.

Session 4 - Managing shorebird sites

Chair: Phil Straw, Avifauna Research & Services

NOTES:

Hunter Estuary Shorebird Habitats – the trouble with mangroves

Chris Herbert and Liz Crawford

Hunter Bird Observers Club, Newcastle

The Hunter Estuary is in a state of ecological crisis. The diverse mosaic of vegetation communities that previously existed in the estuary is rapidly degrading into a mangrove monoculture with a consequent loss of biodiversity. Migratory shorebirds have suffered a dramatic decline in numbers from about 10,000 birds (20,000 anecdotally) to about 3,500 today. The smaller shorebirds have declined in numbers more severely than the larger shorebirds, some becoming locally extinct. Mangroves have suddenly proliferated since the 1970s and have expanded over sandy beaches and mudflats in the estuary, restricting, and in many cases precluding, roosting and foraging activities. While mangroves are the immediate problem, they are merely a symptom of human-induced alterations to the hydrology of the Hunter Estuary.

It is concluded that deepening the harbour entrance and harbour channels by dredging, has led to a considerable increase in the tidal range within the estuary. This is considered the main mechanism responsible for the rapid landwards incursion of mangroves into, and displacing, the saltmarsh community. This situation will be exacerbated by additional harbour and channel dredging for the construction of another coal export terminal that will allow the next generation of larger displacement coal ships to enter the Hunter Estuary. In order to restore the balance between mangrove and saltmarsh communities, it is proposed that existing floodgates be managed adaptively to manipulate tidal inundation. In addition, in areas where critical shorebird habitat is under threat of mangrove encroachment, flow-control structures should be constructed to manage tidal flow into the remaining uncontrolled tidal creeks, downstream of Hexham Bridge.

Optimising shorebird roost habitat by hydraulic manipulation

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In the coastal zone of New South Wales, Australia, as elsewhere along the East Asian-Australasian Flyway, migratory shorebird habitat is in decline due to a range of factors including modification and degradation, disturbance, and global warming. In the Hunter estuary, NSW, the availability of roost habitat has been identified as a critical factor affecting migratory shorebird utilisation. The two major diurnal roosts in the estuary, at Kooragang Dykes and Stockton Sandspit, have a combined area of 3.9 ha; whilst the major night roost, at Windeyers Reach, has only 1.3 ha. Auxiliary habitat at Area E provides the single largest high tide roost area in the estuary; however, the distance from this site to major feeding grounds in Fullerton Cove requires increased shorebird energy expenditure. In 1995, hydraulic manipulation was undertaken at Area E to improve habitat for fisheries and migratory shorebirds by reintroduction of tidal flows. Analysis of shorebird roost habitat availability indicates that, prior to hydraulic manipulation (1993), approximately 31.5 ha at Area E were used by shorebirds. By 2004, the majority of habitat redistribution occurred by expansion of mangrove into saltmarsh and shallow tidal pools. This reduced shorebird habitat by 17% (5.4 ha). Based on the estimated expansion of mangrove, it is predicted that available shorebird habitat will be reduced by a further 26% (8.3 ha), leading to an estimated total reduction in habitat to 57% (18.0 ha) of pre-intervention availability. This analysis indicates that high tide roost habitat in the estuary is extremely limited and under threat from rising sea levels, erosion, mangrove expansion and urban development. Due to the extremely small topographic relief in these wetlands, even relatively minor changes in hydraulic controls (particularly invert level and discharge capacity) can lead to rapid and dramatic changes to migratory shorebird roost habitat. Detailed baseline topographic survey and hydrodynamic modelling of alternative hydraulic control configurations, coupled with an understanding of the relationship between estuarine habitat distribution and flow characteristics, are required prior to removal of impediments to tidal flow in order to optimise shorebird roost habitat availability.

Does rehabilitation improve wetland habitat for shorebirds?

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Coastal wetlands are among the most threatened ecosystems in the world, largely due to draining, infilling, pollution and exploitation of their resources. Wetland managers now focus on rehabilitation and manipulation of habitat, often for waterbird species. The aim is to restore a wetland to some level resembling its natural state. Sometimes, the opportunity for habitat rehabilitation comes with removal of encroaching vegetation and sea walls, levees and culverts. In the Hunter River, New South Wales, culverts were removed in 1995 to improve tidal flushing in Ash Island, a wetland modified during the development of the port of Newcastle. The main aim was to rehabilitate habitat for shorebird and fish populations. Initial monitoring (1994-1997) indicated that the removal of culverts had not affected the total number of species, composition of waterbird community or numbers of waterbirds using the wetlands supplied by these creeks. By 2004-2006, total numbers of waterbirds and migratory shorebirds had increased since the 1994-1997 monitoring. Monitoring protocols remained the same. A maximum of 514 migratory shorebirds (10 species) were observed during low tide surveys of Ash Island in 1994-1997, while a maximum of 2,204 migratory shorebirds were recorded between 2004-2006, despite evidence of overall decline in the entire estuary. Numbers of migratory shorebirds were highly variable among years in both monitoring periods, reflecting regional changes in wetland availability, chance sightings of staging species, variations in breeding success in the northern hemisphere and loss of wetland habitat along the East Asian-Australasian flyway. There were also changes in the distribution of shorebird species between the two monitoring periods. Shorebirds tended to avoid freshwater wetlands and areas dominated by mangrove. Further rehabilitation work was carried out during 2005-06, with the removal of mangrove in three areas formerly used by shorebirds. As a result, more shorebirds used these areas in the spring/summer of 2006-2007.

Management at Yalu Jiang Wetland Nature Reserve, China

ZHANG Guangming

Environment Protection Bureau of Dandong City, Liaoning Province, China

In recent years considerable awareness and interest has been created in wetlands and their importance in China. Yalu Jiang was established as a national reserve by the government in 1997. The main objective was to protect birds and their natural habitats. Yalu Jiang is located in the north-east of China, close to the border of North Korea. The total area of reserve is 101,000 hectares. More than 40 species of shorebirds have been observed in the reserve. Up to 500,000 shorebirds and other waterbirds use the Yalu Jiang reserve as habitat for breeding and feeding. Yalu Jiang reserve is one of the most important wetlands with special ecological value in Asia.

The main structure in the reserve is the management station in Gushan, similar to the shorebird centre of Miranda in New Zealand. We spend many days conducting surveys of shorebirds. We also use the management station as an education centre. We have a lot of displays, brochures and other publications about shorebirds and their habitats. This year, we have established a multimedia system to show promotional pictures and films of shorebirds. Many students and local people have been to the centre. All of these are free to the visitors.

The other feature of the reserve is the artificial roosting habitat used by shorebirds. In order to make a secure roosting habitat for shorebirds, we created an island surrounded by water. The artificial roosting habitat of shorebirds in Erdaogou is very successful. There was a large number of shorebirds roosting on it when the mudflats were covered by water. The other benefit is that people can watch birds at close quarters. It is very useful for enhancing the interest in birds. More than 50,000 people, not only local people but also people from throughout China, have been to here to watch birds in the last year.

Selection of feeding areas by waders at the Western Treatment Plant (Werribee Sewage Farm), Victoria, Australia.

Danny Rogers

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The Western Treatment Plant (WTP; also known to the birding community as Werribee Sewage Farm), is a large wetland complex south-west of Melbourne. Much of it consists of settling ponds and other freshwater lagoons now used for conservation purposes. It also has about 15 km of coastline, with tidal flats that are generally narrow but have been enriched by many years of sewage discharge and are now used as feeding areas by as many as 20,000 migratory shorebirds. The sewage treatment process at the WTP is currently being changed, in large part to comply with requirements to lower nitrogen discharge into the sea, and there are concerns that this could influence the quality of intertidal feeding areas for shorebirds. As part of a program to assess how shorebirds may be affected by these changes, this study was commissioned by Melbourne Water to investigate shorebird movements and habitat within the WTP, and its relationship to the abundance of zoobenthos. Results are presented for Red-necked Stint, the commonest shorebird species at the WTP. We investigated movements with a combination of radio-telemetry and a series of "simultaneous counts" in which c. 7 teams of volunteers carried out hourly counts at sites allotted to them. These counts also allowed us to calculate "bird-feeding hours per site", the best index of feeding habitat quality we can achieve in the WTP in the absence of detailed information on local shorebird diets. Our data show that Red-necked Stints at the WTP do most of their feeding in intertidal habitats, though a few individuals specialise in feeding on inland ponds, and nearly all individuals roost on inland ponds when the tide is high. Use of intertidal flats by Red-necked Stints is dynamic, with some sites being used mostly on ebbing tides while others are used throughout a low tide cycle; in addition, usage of particular feeding sites can change considerably from month to month. A benthos sampling program has shown that prey abundance along the coast is patchy and that distribution of the hotspots changes over time. These fluctuations in benthos abundance coincide well with changes in numbers of Red-necked Stints at specific sites, indicating that there is a link between benthos abundance at the WTP and that of shorebirds.

Managing and conserving wader roost habitat: local government, the forgotten link

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Local authorities throughout the East Asian-Australasian Flyway have an important role in planning the urban footprint for their subject area. Often it is local authorities where decisions are first made about the future use of a parcel land. The environmental values of shorebirds are not widely recognised as part of this level of government's biodiversity. With development pressure, local authorities in Australia are looking to provide coastal rural land owners an option to sell or develop their land for more intensive land use and retire. High tide roost sites that are maintained under low intensity agricultural uses such as grazing become threatened by the modifications to the environment that occur under more intense human activity. Protection of shorebird roost sites can be achieved by ensuring that these sites are not zoned for residential development. However, for this to occur, local authorities need to incorporate the spatial extents of high tide roosts within their area into their planning process.

The Queensland Wader Study Group (QWSG) is involved in a project to map the extents of shorebird high tide roosts along 400 km of the Queensland coast from Tannum Sands, near Gladstone to Tin Can Bay in the southern Great Sandy Strait. Often these roost sites are under threat from encroaching residential development as more people want to live on the coastal fringe. The quiet coastal towns along the Queensland coast are favoured by people looking for lifestyle choices. However, the expansion of these once quiet towns through new residential subdivisions results in an array of problems associated with intense urban development. These include dramatically increased levels of recreational use of waterways and conversion of roost sites to residential development.

During the project, QWSG has mapped and counted 35,000 shorebirds at over 250 roost sites. Nesting habitats of resident species of shorebird have also been identified and mapped. Threats to the use of each roost site by shorebirds have been documented and included in the GIS layer that has been produced. This GIS layer will sit alongside other physical features for consideration by local authorities in their future allocation of land for development. This project has been facilitated by the Burnett Mary Regional Group for Natural Resource Management Inc (BMRG) and is for the Burnett Mary region. The project will enable each local authorities in the region to have a spatial description of the shorebird values in their local area. This will improve awareness of shorebirds, provide a practical tool for development planning and has been done at minimal cost.

Recognition of the important role of the local authorities in land use development has largely been ignored by wader groups in the Flyway. Roosting and feeding habitats in many countries are lost incrementally as a result of decisions made by local authorities. It is only by engaging with the decision-makers in these authorities and providing them with the tools to increase their awareness of the locations and extent of the critical shorebird habitats that many existing roost sites can be conserved.

Valuing coastal habitats: predicting wader high tide roosting habitat occupancy

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Human preference for coastal living and the resultant high density of urban development along the coasts of most countries have meant the loss of much of the available wader roosting habitats in many parts of the world. Habitats left are also being degraded and birds are regularly disturbed each day. In Australia, the strong internal migration to Queensland as people seek a "sea change" in lifestyle is causing increased urbanisation of coastal lands as towns expand along the coast. In many parts of the coast, this is leading to the loss of large wader roosts to housing as well as dramatically increased disturbance of remaining roosts.

Effective conservation and management of these coastal environments requires a thorough understanding of factors affecting wader distribution. This understanding can be improved through the use of spatially explicit distribution models of wader habitat use. Waders depend on two critical habitats: foraging (intertidal flats) and roosting (safe and open supratidal sites). We used published information on high-tide roost use by shorebirds to develop spatially explicit roost selection (probability of occurrence) and usage (mean abundance) models for 12 species of shorebirds spending the non-breeding season in Moreton Bay, southeast Queensland. Roost selection was most strongly affected by the proximity to a large foraging area, field of view (i.e. perceived safety of the roost) and to a lesser extent by composition of the surrounding landscape. Abundance was associated with a different, although overlapping set of factors. Abundance of the locally most common large wader species such as Bar-tailed godwit *Limosa lapponica*, Eastern curlew *Numenius madagascariensis* and Whimbrel *N. phaeopus* increased with the size of the nearest foraging area (the size of the nearest foraging population) and/or the size of the roost per se (its capacity to accommodate individuals). Our results suggest that the suite of wader species occurring in Moreton Bay can be accommodated by two generalised types of roosts: exposed ocean-front roosts typified by supratidal spits and sandbars and claypan/saltmarsh patches in the upper reaches of the tidal range surrounded by mangroves. The loss or regular disturbance of these types of roost habitats within close proximity of foraging habitats is likely to lead to changes in the regional distribution and abundance of birds as available roosts or foraging habitats reach their carrying capacity. Our models predict that roosting habitats are not yet limiting in Moreton Bay but declines in abundance of waders feeding on many intertidal flats suggest that availability of suitable foraging habitat may be limiting roost choices.

Session 5 - Avian diseases - recognising the culprits

Chair: Ken Gosbell, Chairman, AWSG

NOTES:

Carriage of avian influenza viruses by shorebirds in Australia

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Migratory shorebirds represent by far the largest numbers of migratory birds that enter and leave Australia annually. Many of these birds breed in Siberia and northern Asia and migrate through and stop in many Asian countries that have been affected by recent outbreaks of the avian influenza virus (bird flu) AH5N1. Avian influenza viruses have been detected in shorebirds and these birds therefore have the potential to transmit such viruses into Australia. Over the past 3 years we have collected cloacal and faecal samples from around 5,000 migratory shorebirds from Newcastle, Victoria and North Western Australia. We have tested these samples for bird flu viruses and determined the subtypes of viruses that we have detected. Here we will report on the prevalence and subtypes of avian influenza viruses in migratory shorebirds in Australia.

Session 6 - Community and government involvement

Chair: Ken Gosbell, Chairman, AWSG

NOTES:

The Partnership for the Conservation of Migratory Waterbirds and the Sustainable Use of their Habitats in the East Asian – Australasian Flyway

Jason Ferris, Cristina Davey and Vicki Cronan

Interim Flyway Partnership Secretariat, Migratory and Marine Biodiversity Section, Australian Government Department of the Environment and Water Resources, GPO Box 787, CANBERRA ACT 2601.

On 6 November 2006, the international efforts to conserve migratory waterbirds in the East Asian – Australasian Flyway moved into a new phase with the launch of the Partnership for the Conservation of Migratory Waterbirds and the Sustainable Use of their Habitats in the East Asian – Australasian Flyway in Bogor, Indonesia. The Partnership was negotiated over the preceding four years and is now the key international framework for conservation of migratory waterbirds and their habitats in the flyway.

The partnership represents an evolution of the previous decade of work conducted under the Asia-Pacific Migratory Waterbird Conservation Strategy and species-group Action Plans for migratory shorebirds, cranes, and Anatidae. The partnership builds on the successes of the strategy and action plans and strengthens the international mandate for the work by its strong links with the World Summit on Sustainable Development, the Ramsar Convention on Wetlands and other international agreements. The partnership provides for countries and international organisations to endorse the partnership and signal their commitment to conserving migratory waterbirds and their habitat.

There have also been a number of changes to the arrangements in the transition from the strategy to the partnership. One of the most significant is the combining of the three site networks established under the strategy into an East Asian - Australasian Flyway Site Network under the partnership. Flyway countries have been asked to agree to the transfer of their shorebird, crane and Anatidae network sites into the flyway site network. This development is expected to increase the focus on sustainable use of internationally important sites for migratory waterbirds, and provide for more effective delivery of projects which are not related to a particular species group, such as wetland management capacity building.

To date, 17 countries and organisations have endorsed the partnership - Australia, Indonesia, Japan, Myanmar, the Philippines, Republic of Korea, Russia, Singapore, the United States, the Ramsar Convention, the Convention on Migratory Species, the Australasian Wader Studies Group, the International Crane Foundation, Wetlands International, WWF, the IUCN and BirdLife International. Other countries and international organisations in the Flyway are being encouraged to join. Australia and the Republic of Korea will serve as the first Chair and Vice Chair of the Partnership for a term of two years and one year respectively. A secretariat is to be established to support the Partnership, with the Australian Government providing this role in the interim.

This presentation will provide an overview of the partnership and its implementation strategy.

Expanding the role of the AWSG and other NGO's in the conservation of migratory shorebirds in the Flyway

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In the past year there have been significant changes to the frameworks used by governments to plan and support actions for the conservation of migratory shorebirds and their habitats in Australia and the East Asian – Australasian Flyway. In Australia, the Commonwealth Government has finalised a "Wildlife Conservation Plan for Migratory Shorebirds" and at the Flyway level a new "Partnership for the Conservation of Migratory Waterbirds and the Sustainable Use of their Habitats in the East Asian – Australasian Flyway" has been launched.

The Wildlife Conservation Plan for Migratory Shorebirds details 31 actions while the Flyway Partnership identifies 13 outcome areas. This talk will briefly review these actions and outcome targets and discuss the interlinking elements of the two frameworks. The activities of AWSG will be matched against these frameworks to identify the contribution that is already being made and to identify where AWSG might target new or expanded work.

These two frameworks provide an important opportunity for AWSG and other environmental NGO's to work with Governments, and other stakeholders, for the conservation of shorebirds and their habitats. Lest make the most of these opportunities for migratory shorebirds.

POSTER PAPERS

NOTES:

Coastal bird inventory on King Island 2006/07

Sarah Lovibond[1], Eric J. Woehler[2] and Elaine Stratford[1]

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An inventory of resident and migratory shorebirds and small terns on King Island, Bass Strait, was conducted in the summer of 2006/07. Approximately 140km of the island's 160km coastline was surveyed to determine the distribution and estimate the abundance of breeding Hooded Plovers, Red-capped Plovers, Sooty Oystercatchers, Pied Oystercatchers and Fairy Terns. Migratory species were also recorded during coastal surveys. This study will report the first estimates of resident breeding populations for King Island. Distribution and abundance data will be used to identify the beaches that are most valuable to coastal birds. These data will be integrated with contemporary data on human coastal uses on King Island to infer which beaches could be prioritised for conservation efforts. Preliminary analyses of the data suggest that the island supports internationally significant breeding populations of several species and internationally significant numbers of at least one migratory species.

Port Botany Expansion Project; expansion of shorebird habitat as mitigation for industrial development

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Sydney Ports Corporation (Sydney Ports) operates NSW's largest container port at Port Botany, serving the trade needs of Sydney and the state of NSW.

Port Botany is located adjacent to a small estuary (Penrhyn Estuary) that is currently a locally significant feeding and roosting area for seven species of migratory shorebirds: Bar-tailed Godwit (*Limosa lapponica baueri*), Red-necked Stint (*Calidris ruficollis*), Double-banded Plover (*Charadrius bicinctus*), Curlew Sandpiper (*Calidris ferruginea*), Red Knot (*Calidris canutus*), Pacific Golden Plover (*Pluvialis fulva*) and Sharp-tailed Sandpiper (*Calidris acuminata*).

Penrhyn Estuary contains the last remaining suitable shorebird habitat on the northern side of Botany Bay, as developments over recent years have resulted in habitat loss elsewhere.

Penrhyn Estuary was formed in the 1970s as a result of the construction of the existing Port Botany. The estuarine ecosystem that has developed at Penrhyn Estuary includes saltmarsh, mangroves and intertidal flats.

Over recent years the suitability of Penrhyn Estuary as shorebird habitat has been under increasing pressure as a result of:

⇒ proliferation of mangroves onto intertidal flat habitats
⇒ contaminated surface and groundwater water inputs from urban and industrial activities in the upstream catchment
⇒ increased usage of the area by people and pets
⇒ disturbances from recreational vessels using the public boat ramp at the Estuary
⇒ erosion of the beach area which has made the beach slopes too steep for shorebird use.

These pressures are considered to be the cause of local declines of some species in the Estuary over the past five years.

- Bar-tailed Godwit – a gradual decline at Penrhyn Estuary in parallel with a general slow decline in the Bay
- Red-necked Stint – continued decline in Penrhyn Estuary whilst the numbers at Boat Harbour (just outside of the Bay) have remained relatively stable during this time.
- Curlew Sandpiper – this species has declined more than any other shorebird species in the Bay, including Penrhyn Estuary. This species has also declined throughout most of Australia as a result of a broad population level decline in the East Asian-Australasian Flyway.

Sydney Ports is committed to securing Penrhyn Estuary as shorebird habitat over the long term and providing public viewing, educational and research opportunities, whilst protecting the site from disturbance.

As part of Sydney Ports' project to expand Port Botany, Penrhyn Estuary will be enhanced to create a total of 27 hectares of secure estuarine habitat, with the following:

- prevention of access by recreational vessels, people, dogs and feral animals

- removal of mangroves which have reduced the area of feeding habitat
- creation of additional tidal flats will increase the area of feeding habitat more than four times
- construction of three islands to create secure roosting sites
- planting of additional saltmarsh vegetation
- provision of a boardwalk and viewing platform with bird hide and interpretative signage to enable viewing of the Estuary without disturbing shorebirds using the site and to prevent public access to tidal flats.

Sydney Ports is committed to the success of Penrhyn Estuary and is enthusiastic that the works will not only sustain the existing population of shorebirds but will increase the number of shorebirds and potentially shorebird species using the site.

Monitoring of shorebird usage of Penrhyn Estuary and reference sites in other parts of Botany Bay, and the Parramatta and Hunter River estuaries has commenced. Monitoring occurs on a weekly basis for seven months of the year when most migratory shorebirds are present and fortnightly at other times. Sydney Ports is committed to long term monitoring through to at least five years following commencement of operations on the expanded port land, which is likely to be until about 2017.

Details of the project can be found at www.sydneyports.com.au or by telephoning 1800 177 722 (toll free) or local call (02) 9206 4999.

A decrease of over 40%? Changes in shorebird numbers during 20 years in Japan

Hitoha E. Amano
WWF-Japan

A comparison of monitoring data from 1973-1985 and 2000-2003 shows estimated decreases in total numbers of shorebirds of at least 40% in the northwards migration (NM) and at least 50% in the southwards migration (SM) during the past 20 years. The records of Kentish Plover in both the NM and SM; Great Knot, Ruddy Turnstone, Eurasian Curlew, Spotted Redshank in the NM; and Dunlin in the SM confirmed significant decreases over the same period. On the other hand, records of Eurasian Oystercatcher and Black-winged Stilt in the NM and SM, and those of Greater Sand Plover, Grey Plover, and Sanderling in the SM show significant increases. In Japan, 40% of the former area of tidal flats has been lost in the past 50 years. Habitat degradation and land reclamation in Japan are likely to be among the reasons for the observed decreasing trends of many shorebirds. The most recent survey, conducted in 2006 by the Ministry of Environment at 84-105 sites, recorded 53 species (89,812 birds) in the NM, 57 species (35,044 birds) in the SM, and 40 species (50,148 birds) in the non-breeding season.

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