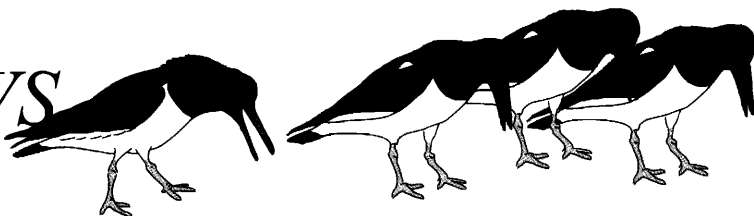


NOTES & NEWS



**CONSULTATION DRAFT OF
WSG'S ATLAS OF WADER
POPULATIONS IN AFRICA
AND WESTERN EURASIA
CIRCULATED**

The WSG's flyway atlas of wader populations in Africa and Eurasia has now reached consultation draft stage.

The *Atlas* has been compiled with financial support from the government of the Netherlands via Wetlands International to assist in the implementation of the African-Eurasian Waterbird Agreement. It aims to bring together a large amount of previously scattered data and information. The 190-page document has been produced as an initial consultation draft for wide distribution and comment during early 2000 and, following revision, the final version will be published later this year.

The consultation draft was circulated to the governments and others attending the first Meeting of the Parties of the African-Eurasian Waterbird Agreement at Cape Town in November last year where it received considerable favourable comment. About 200 copies have since been circulated to national coordinators of the International Waterbird Census within the region together with other experts on species or particular geographic areas.

The information contained in the flyway atlas will be of particular value in the national and international implementation of both the Bonn Convention's African-Eurasian Waterbird Agreement and the Ramsar Convention. In particular, the *Atlas* aims to identify, using the best available information, key sites for each wader population, the conservation and wise use of which need to be promoted in order to assure the long-term conservation status of these wader populations.

Species

The draft contains species accounts for 39 species of European and African wader occurring within the region, namely:

Oystercatcher
Haematopus ostralegus
Black-winged Stilt
Himantopus himantopus
Avocet *Recurvirostra avosetta*
Golden Plover *Pluvialis apricaria*
Pacific Golden Plover
Pluvialis fulva
Grey Plover *Pluvialis squatarola*
Common Ringed Plover
Charadrius hiaticula
Kittlitz's Plover
Charadrius pecuarius
Three-banded Plover
Charadrius tricollaris
Chestnut-banded Plover
Charadrius pallidus
Kentish Plover
Charadrius alexandrinus
White-fronted Plover
Charadrius marginatus
Lapwing *Vanellus vanellus*
African Wattled Plover
Vanellus senegallus
White-headed Lapwing
Vanellus albiceps
Blacksmith Lapwing
Vanellus armatus
Greater Black-winged Lapwing
Vanellus melanopterus
Lesser Black-winged Lapwing
Vanellus lugubris
Crowned Lapwing
Vanellus coronatus
Black-tailed Godwit *Limosa limosa*
Bar-tailed Godwit
Limosa lapponica
Whimbrel *Numenius phaeopus*
Slender-billed Curlew
Numenius tenuirostris
Curlew *Numenius arquata*
Spotted Redshank
Tringa erythropus
Redshank *Tringa totanus*
Greenshank *Tringa nebularia*
Turnstone *Arenaria interpres*
Knot *Calidris canutus*
Sanderling *Calidris alba*
Little Stint *Calidris minuta*
Temminck's Stint
Calidris temminckii

Purple Sandpiper

Calidris maritima

Dunlin *Calidris alpina*

Curlew Sandpiper

Calidris ferruginea

Broad-billed Sandpiper

Limicola falcinellus

Ruff *Philomachus pugnax*

Red-necked Phalarope

Phalaropus lobatus

Grey Phalarope

Phalaropus fulicaria

It is intended to produce a second volume summarising equivalent information for the remaining 49 wader species regularly occurring in the Africa and Western Eurasia. Work on this will commence later in 2000.

The species accounts focus on summarising current understanding of population limits, biogeographical populations and estimates of population sizes, together with lists of key sites. These latter are mapped on a standard distribution map of the region showing limits of the various biogeographic populations).

Population estimates

The *Atlas* presents the results of the re-evaluation of East Atlantic Flyway wader populations undertaken by the WSG since 1996 (*WSG Bulletin* 86: 18-25; 1998). The new estimates have been proposed for adoption in the third edition of *Waterbird Population Estimates* concurrently out for consultation by Wetlands International. It is hoped to publish the supporting data underlying these new estimates (each best national total for each population) in CD-ROM format later in 2000.

Publication timetable

In the light of comments from consultees, we will start to revise species texts in May and aim to publish by the end of 2000.

The consultation draft has been produced in monochrome. It is intended that the final, post-consultation volume will include maps and some other material in colour to improve its readability and use.



We would like to take this opportunity to thank all involved in the project for their help in ensuring that the Atlas will summarise our best collective knowledge of the waders included. We are convinced that the Atlas will be an outstanding production of major importance to guide conservation decisions related to these species and their habitats.

David Stroud, for the Editorial Team

ARCTIC BREEDING CONDITIONS – WEB-PAGE UPDATE

The WEB page of International Breeding Conditions Survey on Arctic Birds (URL:<http://www.soil.msu.ru/~soloviev/arctic/>) was updated earlier this year. Recent additions are extracts from the database with available information for 1999 (hot!) and 1995 seasons. It is supplemented by the already present 1998 data on breeding conditions and rodent abundance with a couple of maps characterizing certain patterns of Arctic weather in that summer season.

An update of 1999 maps with newly arriving reports on breeding conditions in the Arctic in this last season is planned on a weekly basis. Therefore the authors appreciate and anticipate support from those who are active in arctic bird, rodent and other studies in providing information - in particular from the Western Hemisphere and Scandinavia, that are poorly covered so far.

Please visit the website - your opinions about the site, the project and/or discovered problems will be very much appreciated. Mikhail Soloviev, e-mail: soloviev@soil.msu.ru and Pavel Tomkovich, e-mail: tomkovic@l.zoomus.bio.msu.ru

YELLOW SEA SHOREBIRDS – CAN YOU HELP?

A great deal of shorebird surveying and counting activity has occurred in the Yellow Sea region during the last 12 years, and particularly in the most recent five. Much data have been collected by Government personnel and the Wetlands Alliance along the South Korea coastline, Mark Barter and others have worked at a number of sites on the Chinese side between the Yangtze estuary and

the North Korean border and East China Normal University has also conducted major surveys.

These counts have shown that the Yellow Sea is an extremely important staging region for many shorebird species on both northward and southward migration. For some it appears to contain the only significant staging areas on northward migration between the non-breeding and breeding areas, eg. Great Knot, Bar-tailed Godwit.

Unfortunately, there has already been considerable reclamation of coastal wetlands in the three bordering countries China, North Korea and South Korea. Planned future reclamation will almost certainly severely limit the ability of many of the shorebirds in the East Asian Australasian Flyway to migrate successfully, with consequent serious effects on population numbers.

Mark Barter is planning to write a paper which will describe and discuss the importance of the Yellow Sea for migratory shorebirds and stress the need for appropriate coastal shorebird habitat conservation.

Mark would be very grateful for any leads or information that people can give him concerning published and unpublished shorebird counts in the Yellow Sea region (including Bo Hai) that will add to the data in the surveys mentioned in the first paragraph. If anybody knows of relevant Chinese or Korean literature Mark would appreciate advice of the citations. It would also be very useful to obtain hard information on the amount of coastal habitat loss in the three countries and what is planned for the future. Or leads on how to get this information. Plus anything else people think may help!

All assistance will be gratefully acknowledged in the paper. If you are able to help with this request please contact:

Mark Barter, Chair, Asia-Pacific Shorebird Working Group, 21 Chivalry Avenue, Glen Waverley VIC 3150, AUSTRALIA. Voice/Fax: +61-3-9803 3330. E-mail: markbarter@optusnet.com

THE UK DESIGNATES ITS 150TH RAMSAR SITE

On World Wetlands Day, 2nd February, the U.K. Government announced the designation of “**Northumbria Coast**” (1,108 hectares) as its 150th Ramsar site. Also named an EC Habitats Directive SPA and an SSSI, the site comprises several discrete sections of rocky foreshore between Spittal, in the north of Northumberland, and an area just south of Blackhall Rocks in County Durham. These stretches of coast support internationally important numbers of Purple Sandpiper *Calidris maritima* and Turnstone *Arenaria interpres* (1,739 individuals, 2.6 % of the East Atlantic Flyway population). The Ramsar site also includes an area of sandy beach which supports a nationally important breeding colony of little tern and parts of three artificial piers which form important roost sites for Purple Sandpiper. This counts as the 1,019th site to be designated under the Ramsar Convention.

SIERRA LEONE AND BENIN JOIN THE RAMSAR CONVENTION

Sierra Leone and Benin have become Ramsar's 118th & 119th Contracting Parties respectively, each designating their first Wetlands of International Importance.

Sierra Leone designated as its first Wetland of International Importance (the Convention's 1014th) the “Sierra Leone River Estuary”, a 295,000-hectare piece of coastline stretching from Cape Point on the Freetown Peninsula across to the Bunce Creek. The Estuary is dominated by mangrove systems, with lowland coastal plains to the north. As it enters the Atlantic Ocean, the estuary widens to about 11 km and deepens to form a natural harbor said to be the third largest in the world. 19% of Sierra Leone's total mangrove is included within the site. The site exceeds the 1% threshold for at least eight waterbird species, namely Ringed and Kentish Plovers, Sanderling, Curlew Sandpiper, Whimbrel, Greenshank and Redshank, and Western Reef Heron; breeding habitat is supported for



some of these. More than 20,000 individuals have been recorded for some waterbird species, and in 1995 more than 10,000 were recorded for 36 species.

Benin has designated two sites as its first Wetlands of International Importance. Basse Vallée du Couffo, Lagune Côtière, Chenal Aho, Lac Ahémé (47,500 hectares; 06°30'N 02°00'E) comprises Lac Ahémé, some 24km in a north-south direction, the Kouffo River as it enters the lake near Bopa in the north, and the marshy areas extending southward ca. 10km from the lake to the Atlantic Ocean. Its main ecosystems include mangroves, swamp, flooded grassland, and artificial formations resulting from the coconut palm industry. The second designated site is Basse Vallée de l'Ouémé, Lagune de Porto-Novo, Lac Nokoué (91,600 hectares; 06°39'N, 02°32'E) which covers the coastal area between Cotonou and the capital Porto Novo at the mouth of the Ouémé River. The ecosystems are varied comprising swamp forest (*Mitragyna inermis*, *Raphia hookeri*) and periodically inundated forest (*Berlinia grandiflora*, *Dalium guineense*); flooded prairies of *Paspalum vaginatum* and *Typha australis*, and floating vegetation dominated by water hyacinth (*Eichhornia crassipes*) and water lettuce (*Pistia stratiotes*), and mangrove plantations (*Rhizophora racemosa*). Some 78 species of fish have been identified, and 168 species of birds, as well as Sitatunga, several pythons, and terrestrial and marine tortoises. [Source: Ramsar web-site on <http://www.ramsar.org>]

REQUEST FOR INFORMATION

TACS Fondation (Groupe d'Action pour la Protection de la Nature) is working on waders in the Parc National de Hortobgy (Hongrie/Europe) on the following species: Ruff *Philomachus pugnax*, Wood Sandpiper *Tringa glareola*, Little Stint *Calidris minuta*, Dunlin *Calidris alpina*, Curlew Sandpiper *Calidris ferruginea*. I would like you to send us any publications in

French on these species. We are particularly interested in publications concerning their wintering grounds (Senegal, Mali, Mauritania etc.), because they are very difficult to obtain in Hungary. Thanks in advance.

Peter Palatitz (Vice-President),
TACS Fondation, 1074 Budapest
Csengery u. 11. Hungary.
Fax: (36)-1-461-8008.
E-mail: tacshun@elender.hu.

WESA 2000: THE SOMEWHAT ANNUAL WESTERN SANDPIPER RESEARCH NETWORK

A workshop will be held in Vancouver October 20 and 21, 2000. This informal get together will update participants on the diversity of projects associated with the network, including studies of breeding, migration, survival season, behavioral ecology, and physiological ecology, at locations ranging from Alaska to Panama. For more information, contact: Dov Lank at dlank@sfu.ca, or Department of Biological Sciences, Simon Fraser University, Burnaby BC V3H 3S6, Canada.

REQUEST FOR PAPERS

I am working on my Ph.D. on the breeding of waders in Bulgaria. I need any information and papers about the following species: *H. ostralegus*, *R. avosetta*, *H. himantopus*, *Ch. alexandrinus*, *Ch. dubius*, *T. totanus*, *T. ochropus*, *V. vanellus*, *S. rusticola*, *G. pratincola*, *G. nordmannii*. Such information is difficult to find in Bulgaria and I will be very thankful for your help.

Swetla Dalaktchieva (Ornithologist), Institute of Zoology, BAS, "Tzar Osvoboditel" 1 Sofia 1000, Bulgaria. Tel: +3592 9885115 Fax: +3592 882897. E-mail: dafina@bgnet.bg

WADER/SHOREBIRD QUIZ

We would appreciate help with two questions about wintering behaviour. We have studied Pacific

Golden-Plovers (*Pluvialis fulva*) for many years in Hawaii. The adaptation of these birds for coexistence with humans there is striking - far beyond what one sees occasionally with other Pacific species such as Ruddy Turnstones, Wandering Tattlers, and Bristle-thighed Curlews. Plovers defend feeding territories for the entire wintering season on lawns (cemeteries, golf courses, backyards, etc.) in close proximity to buildings, people, and traffic. At night, communal roosts are often on flat rooftops. My questions are: 1) Is there another species of shorebird anywhere in the world that has become this "urbanized"? 2) To what extent do Pacific Golden-Plovers show comparable behavior elsewhere on the winter range? Your observations, comments, and possible references to published work would be very welcome. Many thanks.

Oscar W. Johnson, Dept. of Biology,
Montana State University, Bozeman,
MT 59717, USA.

2ND SOUTHERN HEMISPHERE ORNITHOLOGICAL CONGRESS

The 2nd Southern Hemisphere Ornithological Congress, hosted by Birds Australia is the premier forum for bird enthusiasts in 2000. Participants will present and consider current and future issues in avian studies. It will take place on 27 June - 2 July, 2000 at Griffith University, Brisbane, Australia. For further information: shoc2000@convqld.org.au

REBECCA MOULD, Congress Secretariat, PO Box 4044, ST LUCIA SOUTH QLD 4067, AUSTRALIA. Telephone: +61.7.3870.8831. Facsimile: +61.7.3371.9514. Email: shoc2000@convqld.org.au.

Conventions Queensland Pty Ltd, PO Box 4044, ST LUCIA SOUTH QLD 4067, AUSTRALIA. Telephone: +61.7.3870.8831. Facsimile: +61.7.3371.9514. Email: jprent@convqld.org.au



AUSTRALIAN WADER STUDIES GROUP WADER CONFERENCE 2000

The AWSG will be hosting a one-day conference on Sunday 2 July 2000 in conjunction with the Southern Hemisphere Ornithological Congress (SHOC) and at the same venue. This will be followed by an AWSG conference dinner on Sunday. In addition to this there will be a two-hour session on waders within the SHOC programme, on the morning of Saturday 1 July; followed by a picnic and an excursion to Moreton Bay on the Saturday afternoon.

The theme on both days will be long distance migration between the hemispheres. Topics will include: the links between the non-breeding distributions of migratory waders around the world and the macro-environment; the migrations of Red Knots, Great Knots, Bar-tailed Godwits and Eastern Curlews; departures of waders from NW Australia; an overview of the role of the Yellow Sea in the East Asian Australasian Flyway; feeding ecology studies; a review of how waders physically prepare for a long distance migration; the conservation of long distance migrant waders in the East Asian Australasian Flyway.

SHOC organisers have granted access to the wader session only (on Saturday 1 July) for those who are registered for the AWSG conference on the Sunday. People wishing to attend any other sessions of SHOC, must register separately for SHOC. However, those registered to attend SHOC on 2 July **will have free access** to the Wader Conference. AWSG Conference fees include tea/coffee breaks and lunch on Sunday. There is an additional charge for the Conference dinner.

WINTERING AREA SHOREBIRDS PROGRAM IN THE CARIBBEAN AND LATIN AMERICA

Bird-enthusiasts coming from eight Caribbean islands (Puerto-Rico, the Dominican Republic, Jamaica, Sainte-Lucia, Guadeloupe, Martinique,

Dominic, Trinidad) and from Surinam, Brazil, Argentina, Canada and France, attended an international workshop held on 5-15 November 1999 in French Guiana under the name "Wintering Area Shorebirds Program". The aims were the development of (i) surveys of migrating shorebirds (the name under which the waders are known in the Americas) in the Caribbean region, (ii) studies of the birds requirements on their staging and wintering areas, and (iii) studies of the links between the Caribbean and both North and Latin Americas for migrating waders.

Some of the people attending, who are expected to give an impulse to such studies in their respective countries, had limited backgrounds in wader research, thus the workshop focused on field-work: identification (both in the field and in the hand), census (including air-borne census), catching (mist-net, clap-net, cannon-net) and ringing (including the making of plastic flags). Then a two-day indoor session allowed the presentation of the main ongoing large-scale survey programmes in North and Latin Americas, where there is no equivalent to the Eurasian and African mid-winter counts developed under the leadership of Wetlands International.

Everyone found it really great to gather in French Guiana, with tens of thousand waders at hand, a warm sunshine and refreshing light trade winds (and not too many mosquitoes). A good opportunity to develop contacts, the basis for an expected network of counters and ringers in a part of the world visited by hundreds of thousands migrating waders, not to forget the local breeding populations. As a first aftermath to the workshop, the US Fish and Wildlife Service agreed to prepare a Shorebirds Conservation Plan specific to the Caribbean region. Then the Canadian Wildlife Service dispatched batches of documentation. We left with the hope to meet again in early 2001; possibly somewhere in South

America, in order to follow migrant birds from their Caribbean stop-over to their winter destination.

The workshop has been organized jointly by Office National de la Chasse (ONC, French ministry of environment) and GEPOG, the ornithological birdwatching society for French Guiana, with the assistance of the Canadian Wildlife Service and the French ringing centre. It was funded by ONC, the French ministry of environment (MATE) and the European Union (FEDER).

Contact : Eric Hansen, ONC,
5 square des Kikiwis,
97310 Kourou, France. E-mail:
hansen.eric@wanadoo.fr
(contributed by Pierre Yésou)

CURLEW SANDPIPER PUBLICATION

Progress Report

After the Curlew Sandpiper Workshop in Cape Town in August 1998 it was decided there was enough material and enthusiasm to produce a monograph on the species, for the International Wader Study Group's occasional publication series, *International Wader Studies*. We already have enough material to make an interesting and valuable publication, having received about 25 manuscripts, with several more in the pipeline. Coverage of the former USSR, Australia, and China, has been being particularly good. Pavel Tomkovich and I have gone through the submitted and promised papers in conjunction with a map. There are several large gaps and we are looking for volunteers to cover these!

The major gaps are: the Middle East, the countries of southern Asia, and much of central, western and northern Africa. A major part of the task is to bring together the scattered literature and unpublished data on distributions, abundance and timing of migration in these regions. If you are able and interested in helping, please contact me. Is someone prepared to undertake a



review of the records of the Curlew Sandpiper as a vagrant in North and South America? This is excepting Alaska, where the species occasionally breeds, and for which we have a short paper. There is probably some pattern in the occurrence on this side of the Atlantic, in relation to breeding productivity. Phil Hockey has written a valuable review of Curlew Sandpipers on islands of the Indian Ocean, south to the subantarctic islands of this sector of the Southern Ocean. Is someone willing to undertake a similar exercise for the Atlantic Ocean (which doesn't have quite so many islands!)?

We would like to compile as complete as possible a collection of ring (band) recoveries demonstrating movements. If you know of anyone who has made a partial compilation of recoveries, or knows of recoveries published in obscure places, please contact me. There are several other gaps, for which we are approaching individual potential authors before issuing a general appeal for help, so look out for similar messages in the next few months. If anyone has biometric and/or count data - especially from areas where data may be sparse - and they are willing to allow it to be analysed for this review, please contact me.

If you have e-mailed me in connection with the Curlew Sandpiper book in the past couple of months, and not got a reply, please contact me again. Thank you for your assistance.

Professor Les Underhill, Director: Avian Demography Unit, Department of Statistical Sciences, University of Cape Town, Rondebosch 7701 South Africa. Phone +27 21 650 3227 Fax +27 21 650 3434.

FIRST CHINESE-BANDED BIRD IN AUSTRALIA

On the 21st of November the dedicated Broome Bird Observatory (AWSG) volunteers were cannon-netting in the heat of the 'build up' season in Roebuck Bay, Broome.

However once the net was fired any thoughts of heat and humidity were quickly stifled, as the net landed over 298 birds. It was all hands to the pump or the shorebird, in this case! Of the 298 birds caught, 163 were Great Knot and 31 of those were retraps, including birds of 11+, 10+, 8+ and 7+ (two birds) years of age. Although it is well known that migratory shorebirds live to these ages, and indeed longer, it is still a privilege to hold these phenomenal long distance migrants in one's hand. These excellent retraps were overshadowed when the BBO's Adrian Boyle discovered a band so worn that only part of the wording and numbers could be read. The band was removed and the bird re-banded, and the mystery band was attached to a string around my neck - it was too precious to go into a pocket! We were too busy to check the band carefully so satisfied ourselves with wild speculation until all the birds were safely back in the Bay.

On closer inspection we could make out the letters 'HINA' along one edge of the join, BC in a top 'corner' and the numbers 928 and 9097. The rest of the band was heavily worn. It gave the impression of being an extremely old band but I realised that the band was aluminium, not incoloy as we use in Australia. The word 'HINA' seemed to only be missing a 'C' to confirm an exciting overseas control. I sent the band to Clive Minton who contacted Mark Barter and Mark was able to give us details of the band's origin. The 'BC 928' was part of NBBC 1928, the Chinese National Bird Banding postal address. The '909' was the remains of F01-9097, the individual band number. The Great Knot had been banded by Mark on 7th April 1996 at Chongming Island near Shanghai, some 5500 kms north of Roebuck Bay and half way to the breeding grounds in the mountain tundra of northeast Siberia.

This is the first Chinese banded bird ever to be caught in Australia.

Chris Hassell, AWSG Northwest coordinator

ANNABIM 99 (Anna Plains Benthic Invertebrate and Bird Mapping 1999)

Among the wetland wonders of north-western Australia, the intertidal foreshore of Anna Plains Station, stands out as a key non-breeding area for Arctic-breeding shorebirds. Along the entire length of Eighty Mile Beach, about half a million roosting shorebirds have been counted in recent years (for example, 414,000 in October 1998). This figure includes such highlights as the world's largest non-breeding population of Great Knots. The great majority of these birds occur at the beach along Anna Plains Station, 25 to 75 km south of Cape Missiessy at the northern end of Eighty Mile Beach. Although it is widely recognised that most waders other than Little Curlew and Oriental Plover, use the intertidal foreshore as their feeding area, nobody has hitherto studied the feeding distribution and behaviour of shorebirds or their food resources along Eighty Mile Beach.

Knowledge of the waders' ecology on Eighty Mile Beach is essential if we are to conserve its natural values, make informed compromises between usage by the soaring human population in the Kimberley Region and usage by the fauna. In October 1999, the ANNABIM '99 expedition was mounted to initiate these ecological studies. The broad intention was to map the distribution of benthic (sub-surface-dwelling) animals of the intertidal flats, and the intertidal distribution of the waders that feed upon them. We were able to build upon logistical methods and techniques developed during previous work in Roebuck Bay - most notably ROEBIM '97. This was a benthos-mapping expedition held in June 1997, which gave us some experience of the bewildering variety of benthic animals in north-western Australia.

We had a team of 80 participants, with 35-50 present at any one time. Both on foot and by hovercraft, we sampled about 900 benthos stations



representing about 75 km² of intertidal mudflat. The stations were laid out in a grid with 200 m intersections at 7 intertidal 'blocks' along about 80 km of beach. The northernmost sector was 10 km north of the Anna Plains entry to the beach, the southernmost, 65 km to the south. At each sample station (located by GPS) we took three core samples and collected the animals and shingle retained by a 1 mm sieve, in addition to collecting a sediment sample, describing sediment characteristics (such as penetrability, depth of shell and oxygenated layers) and recording large surface-dwelling animals such as mudskippers which are easily missed by core sampling. Bird distribution was recorded in the same blocks on receding tides, with each benthos-sampling point representing the centre of a 200m grid-square. Bird-mapping was done a day before or after benthos samples were collected, to avoid data being influenced by disturbance from benthos-sampling teams. As bird distribution on the flats varies greatly with tide, the beach-to-sea transects were conducted at a time when the seawards end was reached at the slack-water period of low tide.

Benthos samples were sorted and processed at base camp. We identified and measured 18,600 individual invertebrates that represented about 114 taxa at taxonomic levels ranging from species (bivalves, gastropods, brachiopods and echinoderms) to families (polychaete worms, crustaceans and sea anemones) and phyla (Phoronida, Sipuncula, Echiura, Nemertini, Hemichordata). A reference collection was built up, and we expect the species count to rise considerably after invertebrate specialists have examined difficult groups and taken identifications further. The measurements taken of benthic animals will be used to calculate biomass.

The intertidal flats were about 3 km wide on spring tides and were muddier than anticipated; although

sandy substrates increased towards the south. Distribution of sediment types was patchy, a striking feature being soft eroding mudbanks in the mid-shore areas. We think that the topography/profiles of mudbanks, and the patterns of sediment-penetrability, could be continuously changing/dynamic. Mudbanks would be expected to build up in periods of relatively calm wind and wave conditions, and erode away during rough weather. Although diversity off Eighty Mile Beach was high (112 taxa identified in 900 samples) it did not rival that in Roebuck Bay (163 taxa in 550 samples). The discrepancy is probably explained by the higher diversity of habitats in Roebuck Bay, which also has mangroves, many intertidal creeks, and wave-protected areas of very soft mud. Some of the most abundant invertebrates of Roebuck Bay (including Chaetopteridae tubeworms, and several species of bivalves eaten by Red and Great Knots e.g. *Solemya*, *Anadara granosa*, *Cultellus*, *Tellina capsoides*, *T. piratica*, *Gari lessoni*, *Anomalocardia squamosa*) were absent from Eighty Mile Beach. Nevertheless, it would be wrong to conclude that the fauna of Eighty Mile Beach is 'just' an impoverished Roebuck Bay fauna. More than 40 taxa were found only at the Anna Plains foreshore, including several species of bivalve belonging to the family Tellinidae, the tiny tusk shell *Cadulus*, the locally abundant amphipod *Corophium*, and strikingly beautiful *Pectinaria* bristle worms.

Most of the invertebrates sampled showed distinctive patterns of distribution. They included animals restricted mainly to one block e.g. filter feeding worms of the family Capitellidae, common in the sandy and perhaps disturbed sediments at the sample station 65 km south, but rare elsewhere); animals restricted to the lower beaches just above the flats ('pipi' bivalves of the genus *Donax*); animals whose distributions are linked to those of other species (e.g. red polynoid worms, which appear symbiotic with brittle stars);

animals most abundant in the middle and upper regions of the intertidal flats e.g. predatory worms of the family Nephtyidae and animals most common on the lower regions of the flats only exposed on springy low tides (including bivalves such as *Siliqua* and *Tellina amboyensis*, which appear to be important prey for Great and Red Knots).

The 20 species of shorebirds mapped on the intertidal flats also showed identifiable distributional tendencies. As at Roebuck Bay, species which hunt large buried prey, such as the knots and Bar-tailed Godwits preferred to feed in flocks at the sea-edge, thus occurring in locally high densities of over 50 birds per hectare and being wholly absent from most grid-squares. Small pools associated with eroding mudbanks were productive and appeared to be a stronghold for Greenshanks, Grey-tailed Tattlers and Marsh Sandpipers. Greater Sand Plovers lived up to their name in preferring sandy substrates, while another crab-hunter, Terek Sandpiper, preferred to forage near mudbanks. The only Redshank seen was attracted to the churned up area of mud left by our end-of-expedition mudfight! Very few waders were found on the intertidal flats 10 km north of the beach access point, an area which also had depauperate benthic fauna. This doesn't mean that this area was without interest - some of the invertebrates found there, including spectacular reef tubeworms (Sabellariidae) were found nowhere else on Eighty Mile Beach.

A high-tide wader count revealed that, as on previous AWSG counts, the highest numbers of Great Knots roosted on the stretch of Eighty Mile Beach between 5 and 30 km south of the traditional beach access point. Early impressions are that this distribution may be closely linked to their feeding distribution at low tide: this is the area where most birds were mapped on the flats, and also the area where the several bivalve species (e.g. *Anodontia omissa*,



Siliqua sp., *Tellina amboyensis* and *T. cf. exotica*) were most abundant. Previous studies at Roebuck Bay have suggested these are among the most important prey of Great Knots. But could the abundance of Great Knots in this area be due to other factors? The challenge lying ahead is to analyse our dataset in detail for correlations between sediment type, benthos distribution and distribution of foraging birds. Only then can we establish which areas of the Eighty Mile intertidal flats are most crucial to shorebirds. Another challenge is to find how the benthic fauna changes with time. In this respect it is most pleasing that a team from Notre Dame College in Broome, have agreed to regularly monitor the benthos along selected transects. We wish them luck, and envy them their opportunity to work regularly in this spectacular part of the world.

Acknowledgments

Grant Pearson organised the logistics of ANNABIM '97; Theunis Piersma was the scientific coordinator, Marc Lavaleye supervised the all-important sorting and identification of benthos and Danny Rogers was responsible for the bird-mapping. It would take several pages to acknowledge all those who deserve thanks for their part in this very large and successful expedition. However credit should be given to a team of Landscape Expeditioners who not only provided the financial base for the expedition, but formed a dedicated crew of fieldworkers; the WA Lotteries for grants not only for this expedition, but for subsequent monitoring at Anna Plains; the WA department of CALM for use of staff and vehicles; Bob Hickey, Michelle Crean and Ron Watkins of Curtin University for GIS expertise and loan of a vehicle; Jamie Wallis of Wallis Drilling for the generous loan and skilful piloting of a superb hovercraft; John Stoat of Anna Plains Station for (among many other things) allowing us to use his homestead as a base; Western Australian Main Roads Department for a mobile laboratory and the exuberant, inexhaustible and

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MAI PO MARSHES – A PROFILE

The Mai Po Marshes are well known for the waders and waterbirds that visit the site during migration or over-winter there. The existence of these important marshes is all the more remarkable considering the small size of the former British colony and the high-density development that has gone on around the wetlands. Over 380 species of birds have been recorded from Mai Po Marshes Nature Reserve; about 80% of these are migrants which breed in northern China, Russia, Korea and Japan and which either visit the area for the northern winter or pass through on migration. Deep Bay supports large numbers of wintering waterfowl (over 68,000 in January 1996) and up to 10,000 shorebirds at any one time. Mai Po Marshes support over 1% of the world population of Black-faced Spoonbills *Platalea minor*, 24% of the Spotted Greenshank *Tringa guttifer*, and 4% of the world's Saunders Gull *Larus saundersii*. The mangroves at Inner Bay comprise one of the most extensive stands remaining along the coast of mainland China.

I visited the reserve, on my way to the IWSG Conference in France, to discuss management issues with Lew Young, Reserve Manager. The visit also coincided with the worst hurricane since 1983! The management at Mai Po is unique in that the majority of the wader habitat consists of fish ponds, which have been purchased for the reserve.

History

From the mid 1800s to the 1970s the Deep Bay mud flats, part of which now form the reserve, were used for oyster culture under licences issued to local villagers. Between 1941 and 1945 "gei wai" (shrimp ponds) were excavated from the original mangrove forests. Although this resulted in loss of tidal wetlands, it was evident that the area provided habitat for a wide variety of bird life. In 1964 the site was visited by Sir Peter Scott, then director of the Wildfowl Trust in the UK and founder of WWF International. Shortly after his visit Scott wrote to the Hong Kong Government recommending that a reserve be established in the Deep Bay area and suggesting that the area of biologically rich mudflats and mangroves swamps be set aside as a scientific and educational study area. He also suggested that it might be desirable to link it with a group of fish ponds in the Mai Po Marshes, thereby adding a substantial ornithological interest to the reserve.

In 1982/83 the Hong Kong Government approved in principle the establishment of the Mai Po Marshes Nature Reserve. WWF have managed the Nature Reserve ever since and appointed the first manager in 1984, followed by an educational officer and field staff in 1985. An education centre opened in 1986 and two of the "gei wai" were modified to provide habitat for waders. 1990 saw the opening of the Peter Scott Field Studies Centre and the start of Wetlands Reserve Management training courses for reserve staff in East Asia, particularly China. The Hong Kong Government made HK\$16 million available to WWF Hong Kong, enabling the remaining "gei wai" to be taken over in 1993. Mai Po was listed as a wetland of international importance under the Ramsar Convention in 1995, and was recognised as China's 7th Ramsar site in 1997 when the rule of Hong Kong was handed back to the People's Republic of China.



Threats

Despite encouraging developments over the years, Mai Po Nature Reserve and the Deep Bay marshes are not without threats. Deep Bay has shrunk in size from 4,000 ha in 1967 to 2,000 ha. In more recent times a sharp decline in invertebrate diversity on intertidal mudflats has occurred, due to pollution from the Shenzhen River. Mudflats are decreasing due to the encroachment of mangroves as silt loads from the river raise the height of the mudflats. Threats to the wetlands from large-scale developments around the nature reserve have been of major concern in recent years. However, skilful negotiations between WWF Hong Kong and some of the world's biggest developers have so far avoided some of the worst threats, and may result in the expansion of educational and interpretative facilities.

Visiting Mai Po

Mai Po is easy enough to visit, **provided you plan well ahead**. There are no legal rights of public access to the area. All visitors must obtain a valid Mai Po Entry Permit issued by the Director of the Agriculture and Fisheries Department, valid for periods up to 12 months. Applications for permits should be addressed to The Director, Agriculture and Fisheries Department, 14/F Canton Road Government Offices, 393 Canton Road, Kowloon, Hong Kong. You should enclose copies of the relevant pages of your passport and the AFD also requires you to send proof that you are a keen naturalist e.g. photocopies of membership cards of a birdwatching society, WWF etc. These permits are free and normally take about four weeks to be processed. You can ask AFD to send your permit directly to Mai Po for you to pick up on arrival. When you arrive you will be asked to become a member of WWF Hong Kong, which costs HK\$180.00 / year, or you can join by mail beforehand. If you want to go out through the Frontier Closed Area (FCA) Border Fence and onto the floating boardwalk and hide to observe the

birds on the Deep Bay mudflats, you have to apply for a separate 'FCA Permit' from the Police Headquarters. WWF Hong Kong can apply for this on your behalf if you send them HK\$100.00 together with a photocopy of the relevant pages from your passport, again allowing at least four weeks for processing. There is a limited amount of accommodation available at the Peter Scott Studies Centre for members of WWF Hong Kong, if booked well in advance. Cooked meals are available but these must also be booked in advance (no self-catering is permitted).

Wintering birds are best seen from the end of October to the end of February. For waders the best time is April and May, while numbers on the reverse migration (from mid July to mid October) are lower. From late April to October, the weather is hot and humid with frequent showers and thunderstorms, and afternoon temperatures often exceed 32°C. June to October is also the tropical cyclone season. November - December is usually a time of comfortable temperatures, breezes and sunshine.

Mai Po is well worth a visit, but book well in advance. For more information, including contact details of a local bird guide, contact the Mai Po Co-ordinator at WWF Hong Kong, Peter Scott Field Studies Centre, Mai Po Nature Reserve, Yuen Long, New Territories, Hong Kong. Tel: +852-2471 6303, Fax: +852-2482 0369, E-mail: maipo@wwf.org.hk

IMPORTANT WADER COUNTS IN PAKISTAN

A wader census was carried out between 5th and 10th December 1999 at Nighum Dweep (island) south of Hatia Island in the Ganges Delta, Bangladesh. A total of 34 species and over 96 000 individuals were counted at the above sites. Dominant species included Kentish Plover (12 460), Little Ringed Plover (23 320), Common Sandpiper (8 018), Terek Sandpiper (3 200), Large Sand Plover (5 022), Black-tailed Godwit (3 074), Little Stint (3 707), Redshank (1 409), Lesser Sand Plover (3 706) and

Marsh Sandpiper (2 303). A total of 278 Eurasian Curlew and 266 Whimbrel were also observed. Other significant shorebird species were Great knot and Bar-tailed Godwit. For more information contact:

Mohammad Sazedul Islam Email: msislam2000@yahoo.com

FLYWAY LINK

A meeting of NGOs from Friends of the Earth and IUCN conferences was held with the objective to build on opportunities and contacts developed during the Ramsar conferences. Groups from Australia, Japan, Korea and Save International (a California based group working to conserve Black-faced Spoonbill habitat and flyways in Taiwan and south-east Asia) agreed to set up an informal e-mail network. The objectives to aid information dissemination and a prompt question and answer mechanism on wetlands issues, in particular those issues that affect the East Asian-Australasian Flyway. Further details will appear as they become available.

FIRST KOREAN BAR-TAILED GODWIT

A Korean Bar-tailed Godwit was observed by Adrian Boyle at Broome Bird Observatory in early December 1999. This is the first Korean flagged bird seen in Australia and one of only four flagged in May 1998!

THREATS TO MAJOR ROOST SITE IN MORETON BAY

The Queensland Wader Study Group has been monitoring wader roost sites in Moreton Bay for almost ten years and over this time has seen the gradual decline in sites available for waders to roost at during high tide. Moreton Bay is an important wintering area for at least 43 species of waders, of a population of more than 50,000 wintering and staging waders, a significant percentage of the Flyway population. In Moreton Bay sites including Raby Bay, Dux Creek, Manly Boat Harbour, Mirapool, Dynah Island and Fishermen Island have either been lost of



are facing considerable threats. Moreton Bay, which was declared a Ramsar site in 1994, requires a management approach that will protect those wetland values that warranted its listing.

The coastal foreshore areas are in demand from all sections of the community and are subsequently subject to more immediate threats. Waders will use areas opportunistically and there needs to be as much flexibility in the sites available to waders as possible. The land used by waders comes under a variety of ownership and administrators, however all land owners and users of coastal foreshores need to use and manage these sites in a manner which takes into account these values. The Manly Boat Harbour roost site utilises reclaimed land behind bund walls. This area is the responsibility of the Port of Brisbane Corporation (PoBC). In this situation the Port needs to find a location to dump the dredge spoil from dredging the boat channels in the harbour. The Port while having a responsibility to enable lessees to maintain the channels also has a responsibility to protect the wetland

values of Moreton Bay.

Replacement of roost sites is not a preferred option given the expense and increased chance of further threats. An optimal mainland roost site needs to have at least a 150 metre deep water landward buffer of undeveloped, undisturbed ground. These may once have been saltmarsh or freshwater wetlands. Ideally roost sites should be totally protected from any disturbance, be greater than 30 metres in diameter and be of elevation close to the maximum high tide level. There are also other considerations when the site is an artificial site as in Manly Boat Harbour. The need to retain roost sites in heavily populated areas increases the challenge to manage the site so that the roosting waders can still be appreciated and monitored by people without creating undue disturbance.

A letter from the office of the Hon. Rod Welford MLA, Minister for Environment and Heritage and Minister for Natural Resources, dated 16 November 1999, has the following advice: "The EPA has advised the PoBC that

any works undertaken at the site must be conducted in a manner that causes minimal impact on the waders and ensures their continued use of the site.

The EPA has been working closely with representatives of the Queensland Wader Study Group to ensure that the proposed works have minimal impact on waders and that public assess and ongoing disturbance to the roost site are managed appropriately in the future. The PoBC has advised that public consultation regarding the preferred dredging option will be conducted with community groups in the near future."

How will the Port of Brisbane Corporation meet the challenge? If you want to write to the Port and the Queensland Government to encourage them to meet their obligations under the Ramsar Convention you can write to: Port of Brisbane Corporation, Locked Mail Bag 1818, Wynnum QLD 4178 AND/OR The Honourable Peter Beattie MLA, Premier of Queensland, PO Box 185, Brisbane Albert Street QLD 400.

from Qld Wader No. 30 by Sandra Harding

