ABSTRACTS

AUSTRALASIAN WADER STUDIES GROUP CONFERENCE, GRIFFITH UNIVERSITY, BRISBANE, AUSTRALIA 1-2 JULY 2000

Compiled by

Jim Wilson
13/27 Giles St., Kingston 2604 ACT AUSTRALIA

Following the success and interest shown in the two previous AWSG conferences held in 1996 and 1999, the committee decided to organise a third wader conference in conjunction with the Southern Hemisphere Ornithological Congress (SHOC) at Griffith University, Brisbane. The timing and location were chosen to take advantage of the presence of the larger audience at SHOC and presence of potential speakers from other continents. The theme of the conference was 'Long distance migrations in the Flyway'.

THE MIGRATION STRATEGIES OF THE GREAT KNOT *CALIDRIS TENUIROSTRIS*

Mark Barter

21 Chivalry Avenue, Glen Waverley, 3150 Vic AUSTRALIA
Email: markbarter@optusnet.com.au

The Great Knot is an excellent example of a long-distance migrant which uses a limited number of staging sites on its annual round trip between breeding grounds in the mountain tundra of the Russian Far East and non-breeding areas in northern Australia. The paper describes, and speculate on, the migration strategy of the species by drawing on recent information gained about preparation for, and timing of, departures from north-western Australia, staging patterns through the Yellow Sea region (on northward migration) and the Sea of Othotsk (on southward migration), and breeding behaviour.

THE YELLOW SEA – WHAT FUTURE FOR MIGRATORY SHOREBIRDS?

Mark Barter

21 Chivalry Avenue, Glen Waverley, 3150 Vic AUSTRALIA
Email: markbarter@optusnet.com.au

Surveys conducted during the last decade have shown that the vast intertidal flats of the Yellow Sea play host to millions of migratory shorebirds, many of which spend the non-breeding season in Australasia. However, the Yellow Sea ecosystem is under serious environmental threat. The presence of 10% of the world's human population in the basins that drain into the Sea is leading to significant habitat loss and degradation, serious pollution problems and unsustainable use of natural resources. The presentation will summarise the importance of the Yellow Sea for migratory shorebirds and discuss initiatives being planned to ensure that shorebirds will be able to migrate successfully through one of the most densely populated regions of the world.

A PRELIMINARY REPORT ON THE WADERS OF THE TOP END OF THE NORTHERN TERRITORY

Ray Chato

Parks and Wildlife Commission NT, PO Box 496, Palmerston 830 NT AUSTRALIA
Email: ray.chatto@ pwcnt.nt.gov.au

The coast and coastal wetlands of the Top End of the Northern Territory are very remote and difficult to access, and little has been documented of much of this area's fauna. Over the past ten years, I have conducted extensive aerial and ground surveys of this area, concentrating mainly on waterbirds, seabirds, shorebirds, coastal raptors and marine turtles. This presentation deals with some very preliminary analysis of the shorebird data (over 13000 species or species group records) from these surveys, and aims to provide an introduction into the distribution and status of these birds around the NT coast and coastal wetlands.

DISTRIBUTION AND SITE SELECTION IN EASTERN CURLEW AT FEEDING GROUNDS IN MORETON BAY

P.G. Finn[1], P.V. Driscoll[2] & C. P. Catterall[1]

[1]Environmental Sciences, Griffith University, Nathan 4111, Qld AUSTRALIA
[2]Queensland Wader Study Group, Fahey Road, Mount Glorious 4520 Qld AUSTRALIA

Low tide surveys of Eastern Curlew were conducted to assess habitat use on feeding grounds, where 51 skilled volunteers counted at 160 sites during summer 1998-99 and winter 1999. Sites typically comprised sections of tidal flat from high water to low water, or a sandbank or banks, spanned a distance of c.115 km of coast, and varied in size (0.5-310 ha), substrate, topography, and other features. These results provide the most comprehensive count of Eastern Curlew on their feeding grounds ever completed.

There was a strong correspondence (high and significant correlation) between counts on different days within a month and different months within a season, across all sites. Winter count numbers totalled about 25% of summer counts, and the pattern of variation in numbers across sites was generally similar to that seen in summer. The within-season constancy of curlew numbers across sites suggests that short surveys can give reliable results, and may occur for several reasons, including the possibility that curlew are faithful to particular sites. We also tested the correspondence between the summer low tide counts at feeding flats and summer counts at high tide roosts (data collected by QWSG over a seven-year period). There was a high correlation, especially when the data from both flats and roosts were grouped into nine larger areas, based on grouping roost sites within a five kilometre area and associating adjacent feeding sites. Factors that may underlie the differences in curlew numbers among sites will be discussed.

FEEDING ECOLOGY OF HUDSONIAN GODWIT (*LIMOSA HAEMASTICA*) ON AN ATLANTIC MUDFLAT SYSTEM IN BUENOS AIRES PROVINCE, ARGENTINA

Elena Noema Ieno
Email: ieno@mdp.edu.ar

This work describes aspects of the feeding ecology of the Hudsonian Godwit (*Limosa haemastica*) on an Atlantic mudflat system in Samborombon Bay, Buenos Aires province, Argentina. I examined diet, prey size selection and intake rates of a long-distance migrant. Godwits fed successfully on a nereid polychaete, *Laeonereis acuta*, and selected the largest worms. The length of the worms closely correlated with the length of their jaws, but I failed to locate worm jaws in the faeces of the godwits. Thus, I could not validate my field estimates of worm length. Alternative prey included the fiddler crab *Uca uruguayensis*, comprising a mere 0.6 % of the diet in terms of numbers, but was more important in terms of biomass. On the basis of my field observations, I estimated that intake rates averaged 0.21 mg AFDW/s. However, this may have been an underestimate. On the basis of published allometric relationships, I estimate the mean metabolic rate (MMR) at 273 kj per day. In combination with my estimates of feeding time and digestive efficiency, this leads to an intake rate of 0.29 AFDW/s. While I cannot decide which estimate of intake rate is closer to the truth, my conclusion that the Godwits positively selected the largest worms is reinforced.

GEOGRAPHIC ORIGIN OF THE RED KNOTS WINTERING IN AUSTRALIA

Ken Kraaijeveld[1], Clive Minton, & Rosalind Jessop

[1] c/o Dept. of Zoology, University of Melbourne, Parkville 3052 Vic AUSTRALIA
Email: k.kraaijeveld@pgrad.unimelb.edu.au

Almost the entire population of Red Knot (*Calidris canutus*) utilising the East Asian-Australasian flyway is thought to spend the non-breeding season in Australasia. On the basis of band-records and flag sightings, several authors have suggested the birds found in Australia to be comprised of two separate populations: one in north-western Australia and one in south-eastern Australia, the latter of which is linked to that wintering in New Zealand. However, recent sightings in Victoria of birds flagged in the north-west have cast doubt on this matter. To determine whether the two populations can be distinguished on the basis of their biometrics, we analysed data from Victoria collected by the VWSG during the past 23 years and from north-west Australia collected by the AWSG over the past 18 years. The data were also compared to a recently published survey of museum specimens from the breeding grounds, using the POSCON software, in order to trace the breeding grounds of these populations.

A REVIEW OF OVERSEAS RECOVERIES AND FLAG SIGHTINGS OF AUSTRALIAN-BANDED WADERS

Clive Minton[1], Ros Jessop[2], Belinda Dettman[3] and Barry Baker[3]

[1]165 Dalgetty Road, Beaumaris, 3193 Vic AUSTRALIA
Email: mintons@ozemail.co.au
[2] Phillip Island Nature Park, PO Box 97, Cowes 3972 Vic AUSTRALIA
Email: rosj@penguins.org.au
[3] ABBBS, GPO Box 241, Canberra 2601 ACT AUSTRALIA

Sufficient data has now accrued from 25 years of banding and 10 years of colour leg flagging of waders in Australia for the initial analyses of migration patterns of a number of species to be meaningful. These show that China is a key area used by almost all species of waders on their northward migration but rather less so on the southward migration. A detailed comparison of recovery rates and flag sighting rates is also presented. Flagging has increased the rate of data generation markedly and it is strongly recommended that all waders captured in the flyway continue to be flagged.

VISIBLE DEPARTURES OF WADERS ON NORTHWARD MIGRATION FROM NW AUSTRALIA

Clive Minton[1], Rosalind Jessop[2], Peter Collins[2], Jon Fallaw[3], Becky Hayward[3], Janet Sparrow[3] and Chris Hassell[3]

[1]165 Dalgetty Road, Beaumaris 3192 Vic AUSTRALIA
Email: mintons@ozemail.co.au
[2] Phillip Island Nature park, PO Box 97, Cowes 3972 Vic AUSTRALIA
Email: rosj@penguins.org.au
[3]Broome Bird Observatory, Broome 8321 WA AUSTRALIA

Daily observations of departures of waders on northward migration have been carried out in March/April at Roebuck Bay, Broome, since 1990. This analysis describes the departure process, with most birds leaving between 1600 and 1800, just prior to darkness. Flight direction was generally north-north-west. Most birds migrated in single species flocks with an average flock size of under 100, though flocks of up to 2,000 were occasionally seen. The period of departure of each species was similar each year, with some species leaving over a narrow time-span and others over a more prolonged period. Eastern Curlew, Greater Sand Plover and Great Knot were the first species to leave, commencing in the first week of March and mostly departing before the end of the month. There was a marked correlation between local weather conditions and the intensity of migratory departures. Birds preferred to leave when tail winds occurred in the 600 – 2,500 m levels: there was almost always an adverse sea breeze at ground level. Unsettled weather conditions could halt migration for several days. Tidal conditions appeared to have only a minor influence on departures.

SILVER GULL PREDATION AT BANDED STILT COLONIES

Clive Minton[1], Ros Jessop[2] and Peter Collins[2]

[1]165 Dalgetty Road, Beaumaris 3192 Vic AUSTRALIA
Email: mintons@ozemail.co.au
[2] Phillip Island Nature park, PO Box 97, Cowes 3972 Vic AUSTRALIA

Email: rosj@penguins.org.au

Observations of the Banded Stilt colony at Lake Eyre North in April 2000 have confirmed that massive predation of eggs and chicks by Silver Gulls, first noted at the Lake Torrens colony in 1989, is still occurring. In contrast, such predation has not been recorded at Banded Stilt breeding colonies in Western Australia. It is recommended that gull control be introduced at future Banded Stilt breeding colonies in South Australia in order to prevent a major decline in the population.

MIGRATION ROUTES AND MIGRATION STRATEGY OF BAR-TAILED GODWITS *LIMOSA LAPPONICA* AND RED KNOTS *CALIDRIS CANUTUS* WHICH SPEND THE NON-BREEDING SEASON IN NEW ZEALAND

Adrian Reigan

231 Forest Hill Rd., Waiatarua, AK 8. NEW ZEALAND
Email: riegan@xtra.co.nz

About 40 species of Arctic breeding waders have occurred in New Zealand. Of those some 19 species can be considered regular visitors, but mostly in small numbers. Only two species, Bar-tailed Godwit (102,000) and Red Knot (59,000) occur in globally significant numbers. Between 1979 and 1999 the New Zealand Wader Study Group banded 1599 Bar-tailed Godwits and 5793 Red Knots. In addition, since 1992 593 Bar-tailed Godwits and 1193 Red Knots had a single white leg-flag fitted to the tibia. Recoveries and flag sightings show that the two species have different breeding areas and different migration strategies. Both are long hop migrants, covering many thousands of kilometres in one flight. On northward migration, Bar-tailed Godwits follow an easterly route through Korea and Japan to breeding grounds in Alaska. Red Knots stage in regions around the Gulf of Carpentaria and migrate slightly more westerly. Recent evidence suggests that their breeding grounds are in eastern Siberia. Less is known about the southward migration. Bar-tailed Godwits may fly direct from Alaska to New Zealand. Counts and banding data and flag sightings show that Red Knots stage in eastern Australia.

AGE-RELATED VARIATION IN FORAGING ECOLOGY OF GREAT KNOTS AND RED KNOTS IN ROEBUCK BAY, NORTH-WESTERN AUSTRALIA

Danny I. Rogers

340 Ninks Rd., St Andrews North 3103 Vic AUSTRALIA
Email: drogers@melbpc.org.au

Age-related variation in foraging success was investigated in Red Knots and Great Knots in Roebuck Bay, tropical north-western Australia. Both are long-distance migrants specialised to eat bivalves. In both species, foraging of young birds differed from that of adults. Recently arrived juveniles (about four months old) fed in different places to adults, and took different prey. When a few months older, immatures fed in mixed flocks with adults. Their foraging behaviour was generally similar to that of

adults, but their food intake rates were lower, apparently because they were less adept at finding buried bivalves. Implications for the delayed maturity of Red Knots and Great Knots are discussed.

THE MACRO ENVIRONMENT FOR WADERS MIGRATING LONG DISTANCES TO THE SOUTHERN CONTINENTS: AN ATTEMPT TO EXPLAIN WHY THEY DO IT

Jim Wilson

13/27 Giles St. Kingston 2604 ACT AUSTRALIA
Email: j.wilson@dynamite.com.au

This paper attempts to explain why waders migrate to the southern continents through a study of the differing ecological conditions they face. It is shown that macro distributions can partly be explained by the varying position of the January 0°C isotherm around the world and by the distribution of areas with large tidal amplitude. At least three species, Sanderlings *Calidris alba*, Grey Phalaropes *Phalaropus fulicarius* and Red-necked Phalaropes *Phalaropus lobatus* show a strong correlation with coastal upwellings. In Australia, Africa and in South America there are several long distance migrants that have adapted to the savannah grasslands mainly lying south of the equator. A comparison of Golden Plovers *Pluvialis apricaria*, *P. fulva*, and *P. dominica* show that the Eurasian Golden Plover is a short distance migrant to agricultural lands in Europe or North Africa, the Pacific Golden Plover is mainly coastal and often occurs on oceanic islands, and the American Golden Plover migrates to the Pampas grasslands of South America. It is suggested the Golden Plovers have selected their non-breeding season habitat to what is available in differing parts of the world and this has determined their migrations. Examples are given where lack of suitable non-breeding habitat and the distance between last staging areas and the breeding grounds may have affected the distribution of high Arctic breeding waders.

THE NORTHWARD MIGRATION STRATEGIES OF BAR-TAILED GODWITS *LIMOSA LAPPONICA* WHICH SPEND THE NON-BREEDING SEASON IN AUSTRALIA

Jim Wilson[1] and Clive Minton[2]

[1]13/27 Giles St., Kingston 2604 ACT AUSTRALIA
Email: j.wilson@dynamite.com.au

[2]165 Dalgetty Rd., Beaumaris 3192 Vic AUSTRALIA
Email: mintons@ozemail.co.au

This paper is based on data from 5,000 Bar-tailed Godwits caught in NW Australia and 700 caught in Victoria (SE Australia) between January and April. Biometrics, banding recoveries and flag sightings show that there is little movement between the two areas, and that the populations belong to different races. Victorian birds follow a more easterly migration route through Asia. They possibly breed in Alaska. North-west Australian birds breed in eastern Siberia. Departure weights and timing between the two regions are compared. Birds from NW Australia can reach the known staging

areas near Shanghai (5,500 kms), or beyond, in one flight. Birds from Victoria are putting on proportionally more weight, but theoretically still cannot reach known staging areas in Korea and Japan (8,000 kms) in one flight without considerable wind assistance. We also present data on departure and arrival dates that suggests that there is an unaccounted for gap in the migration. It suggests that there may be an undiscovered intermediate staging site in North Australia or Irian Jaya. A comparison between Australian and African birds suggest that the former have far greater flight ranges for the same relative body weights.

WADER SURVEYS IN SOUTH AUSTRALIA IN 2000

Jim Wilson

13/27 Giles St., Kingston 2604 ACT AUSTRALIA
Email: j.wilson@dynamite.com.au

In January and February 2000, the Australasian Wader Studies Group and the South Australian Ornithologists Association counted waders on the Coorong, Gulf St Vincent, Spencer Gulf and West Eyre Peninsula. The purposes of this census was to update wader population estimates for parts of South Australia, gather information to advise the Department of Environment on possible Ramsar sites, check to see if large declines reported in wader populations in South Australia were real, and to set up a count network in South Australia. There were indeed very large declines in populations of many species in parts of the study area, although in some cases this could be attributed to waders moving inland after good rains. It seems, however, that Curlew Sandpipers have declined by over 50% in large parts of southern Australia. New important sites were found in the Ceduna area, making it one of the top ten sites in Australia, in terms of numbers of important species.

SEX-SPECIFIC INTERTIDAL HABITAT USE IN THE BAR-TAILED GODWIT *LIMOSA LAPPONICA* WINTERING IN EASTERN AUSTRALIA

Yuri Zharikov and Greg A. Skilleter

Department of Zoology and Entomology, University of Queensland, St Lucia 4072 Qld AUSTRALIA

We studied low tide distribution of Bar-tailed Godwits *Limosa lapponica* at an important wader staging site – Moreton Bay, SE Queensland – during two periods: mid-wintering (December-January) and the pre-migratory period (early-mid March). We found a high degree of segregation between sexes with males being predominant in seagrass (65%) while females were more common on sandy flats (83%) in both seasons. In general seagrass plots supported twice as many birds (10.5 ha^{-1}) as did sandy flats (5.3 ha^{-1}) probably due to their greater density of potential benthic prey. It is puzzling now why the females – a physically superior phenotype – use an apparently inferior habitat (sand) so extensively.