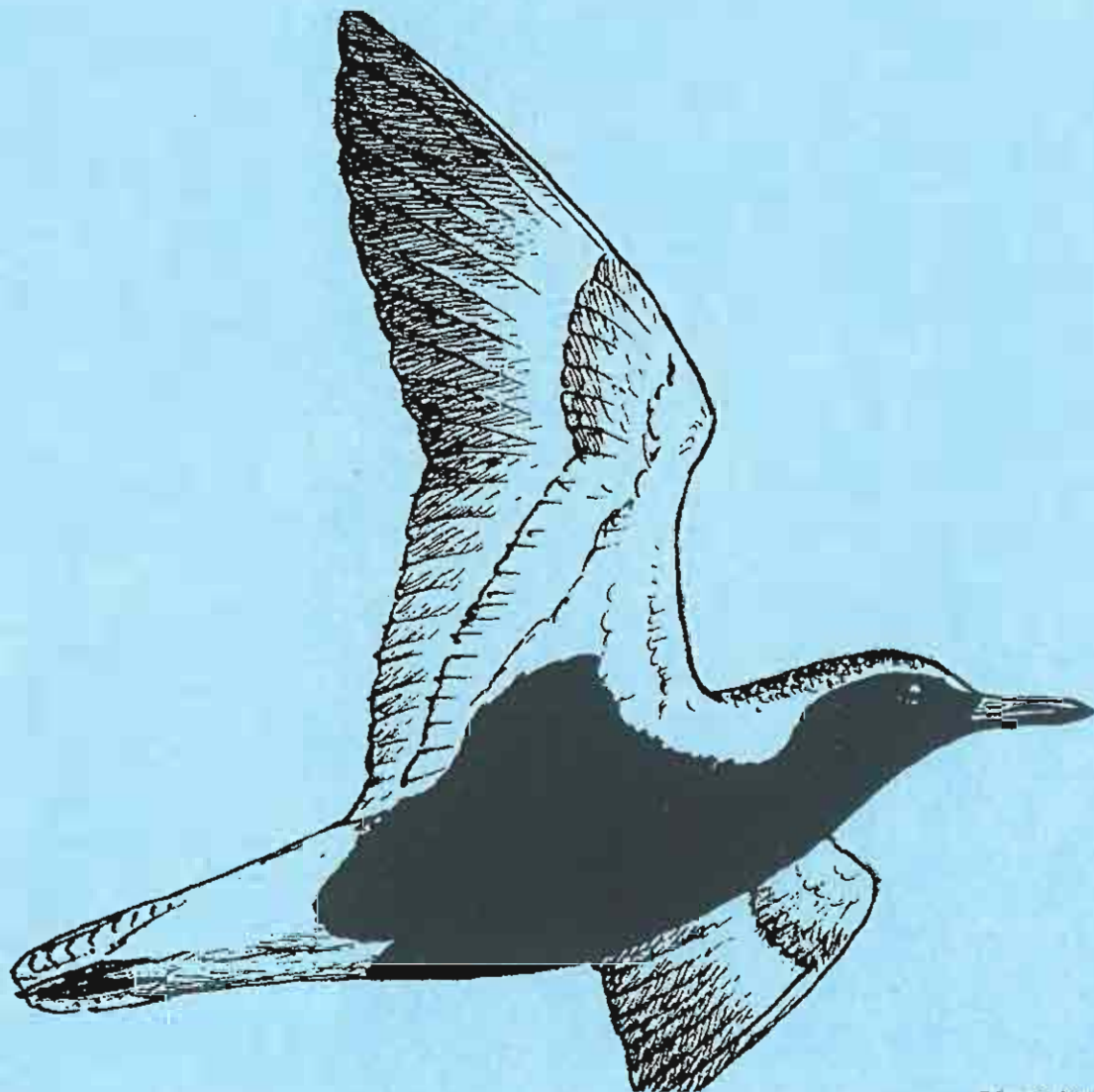


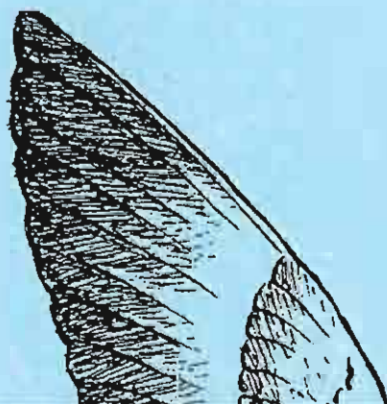
VWSG BULLETIN

JOURNAL OF THE VICTORIAN WADER STUDY GROUP

Number 29
September 2006



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VICTORIAN WADER STUDY GROUP INC.

MISSION STATEMENT

The principal aim of the Victorian Wader Study Group is to gather, through extensive planned fieldwork programs, comprehensive data on waders and terns throughout Victoria on a long-term basis.

This scientifically collected information is intended to form a factual base for conservation considerations, to be a source of information for education of a wider audience, to be a means of generating interest of the general community in environmental and conservation issues, and to be a major contribution to Australian, Flyway and Worldwide knowledge of waders and terns.

FORMATION/BACKGROUND

The wader banding fieldwork, which led to the formation of the Victorian Wader Study Group, commenced in December 1975. The Group was formally named in late 1978 and was subsequently incorporated in 1986.

VICTORIAN WADER STUDY GROUP INC. OFFICE BEARERS

Chairman
Dr. Clive Minton
165 Dalgetty Road
Beaumaris, Vic. 3193
Tel. 03 9589 4901
Fax. 03 9589 4901
mintonso@ozemail.com.au

Editor/Deputy Chairman
Dr. Rosalind Jessop
RMB 4009, Cowes. 3922.
Tel/fax 03 5952 1857
moonbird@waterfront.net.au

Treasurer/Secretary
Rosemary Davidson
14 Young Street
Ashburton, Vic. 3147
Tel. (h) 03 9885 8231
Yanakie 03 5687 1322
rosied@ozemail.com.au

Assistant Editors
Dr. Doris Graham
14 Falconer Street
North Fitzroy, Vic. 3068.
Tel/fax. 03 9482 2112
grahamdm@melbpc.org.au

Equipment Officer
Paul Buchhorn,
PO Box 32
Balnarring, Vic. 3926.
Tel. (h) 03 5983 5537
buchhorn@peninsula.hotkey.net.au

Conservation Officer
Dr. Doris Graham
14 Falconer Street
North Fitzroy, Vic. 3068.
Tel/fax. 03 9482 2112
grahamdm@melbpc.org.au

Pete Collins,
PO Box 1313, Broome. 6725.
Tel/fax 08 9193 5600
bbo@birdsaustralia.com.au

Committee for 2005/06

The above officers and

Malcolm Brown, Maureen Christie, Julie Deleyev, Ken Gosbell, Birgita Hansen, Graeme Rowe, Susan Taylor, Inka Veltheim.

Public Officer: Dr. Clive Minton

Subscriptions for 2006/07 (payable in advance on 1st July 2006)

Full Member \$20.00

Student \$10.00

This bulletin is usually published on the date of the Annual General Meeting and contains reports and cumulative records of fieldwork of the Victorian Wader Study Group with articles, field notes and other material.

Contributions are welcome. Please consult the editor or assistant editors on questions of format.

Views and opinions expressed in "VWSG Bulletin" are those of the author(s) and not necessarily those of the VWSG.

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VWSG WEB SITE www.vicnet.net.au/~vwsg

Summary of VWSG Activities August 2005 to August 2006

Clive Minton

INTRODUCTION

Each year the Victorian Wader Study Group prepares an annual Bulletin for the benefit of its members and for those who help the Group in a wide variety of ways. The Bulletin gives considerable detail on our wader and tern catching and banding and flagging activities and the results which derive from these in terms of information on migratory movements, breeding success, return patterns and longevity. The Bulletin also contains some small articles analysing the Group's data, but most analyses are now published in other scientific journals and are just listed in this Bulletin. This Bulletin contains a financial report for the year to 30 June 2006. It also gives us the opportunity to formally thank all those who have helped the Group during the year, both financially and otherwise.

For the benefit of those who do not have time to delve into the detailed parts of the Bulletin, a summary of the main highlights of the past twelve months is given below.

BANDING

The main activity of the Group, and the foundation for most of the scientific data and conservation-related information which it generates, is a sustained long-term banding program at the main wader habitats along the Victorian coast and in the southeast of South Australia. A series of tables at the beginning of the Bulletin gives details of the catch in the last calendar year and summarises catches back to the commencement of banding in late 1975.

2005 was a most successful year with 8,213 waders, of 18 species, being caught. This is some two thousand more than in the previous year and around a thousand more than the long-term average annual catch total of 7,384. There were 1,893 recaptures of previously banded birds included in this total and this represents 23% of the total catch, slightly above the long-term average of 20% retraps. The total number of birds now caught by the Group is 199,369, comprising 159,575 newly banded and 39,794 recaptures.

Red-necked Stints, as always, were the most frequently caught species (5,950), but excellent totals of a range of other species were also captured – Sanderling (400), Sharp-tailed Sandpiper (384), Red Knot (383), Curlew Sandpiper (340), Bar-tailed Godwit (322), and Ruddy Turnstone (113). The Group has achieved good totals on most of these species in recent years. The Sharp-tailed Sandpiper total was slightly down on that of the previous year (459) even though birds were very plentiful as a result of another good breeding season. It was good that the Curlew Sandpiper total was a considerable increase on the 65 achieved in calendar year 2004. 2006 also started off well with a catch of 393 Curlew Sandpipers at Stockyard Point on 6 January – our biggest catch of this species for at least 10 years. The minimum target levels for Pied and Sooty Oystercatchers (150 and 50 respectively) were again achieved with 156 Pied and 58 Sooties in 2005. The 2006 season for these species has also gone well with 184 Pied and 51 Sooty Oystercatchers caught up to mid-August.

The size of catches made by the VWSG is extremely variable, with many being less than a hundred and the average usually being between 100 and 150 birds per catch. Two notably large catches were made in 2005, however, with 1,043 caught at Yallock Creek on 10 December and 1,409 at Barralliar Island, Western Port, on 6 January. Both of these catches were mainly Red-necked Stint. A large catch of higher 'quality' was 205 Red Knot and 64 Bar-tailed Godwit at Swan Island, Queenscliff, on 22 October. This was followed by another 130 Red Knot there on 7 November. In contrast to the above successes, no catch was made this year at Anderson's Inlet, one of our key Red-necked Stint monitoring areas where our annual catch normally is around 1,000 birds. This year the Red-necked Stints chose to roost

either on the tops of dense mangroves or on a sandy off-shore island to which a visit could not be made during the time they were using it.

Fieldwork in the southeast of South Australia continued to be very successful with the locally-based team (sometimes only two people!) led by Maureen Christie making some most valuable catches (mainly in the winter). There were also successful visits by the main VWSG team from Victoria, including two closely-spaced visits in early March (674 birds caught) and mid-April 2006 (559 birds caught). But the highlight of the last year was 334 Banded Stilt chicks which were banded and flagged from the small scale nesting attempt in The Coorong in January/February 2006. Altogether 10,109 waders have been caught now in the southeast of South Australia between November 1993 (when the first visit was made) and the end of April 2006.

AVIAN INFLUENZA

The VWSG was regularly accompanied into the field during the last year by veterinary officers of the Department of Primary Industries and the World Health Organisation. They collected cloacal swabs, and some blood samples, from approximately 1,000 of the waders which we caught. These samples have subsequently been tested for the presence of avian-borne diseases, particularly Avian Influenza. So far all the test results have been negative, including for the particularly virulent strain of influenza (H5N1) which has affected some humans in Asia and other parts of the world.

RECOVERIES

Traditionally information on the migratory movements of our waders comes from the finding of our birds by other people throughout the flyway. They read the individual number inscribed on the metal band and report it to the Australian Bird and Bat Banding Office in Canberra. Only a very small (0.1 to 1.0%, depending on species) proportion of the birds we band is ever recovered.

The highlight of recoveries in the past year was a long-delayed report of a Bar-tailed Godwit which came down in the Solomon Islands, presumably on its direct flight of 11,000 kms across the Pacific from southwest Alaska to northern Australia. An Eastern Curlew found in April 2006 on the breeding grounds of south-eastern Siberia was also a most valuable recovery. We receive very few reports of any species from the breeding grounds because so few people live there. There were also recoveries of Sanderling and Red-necked Stint in Russia, but these were on migration. Other overseas recoveries of waders banded in Victoria and South Australia were in Japan, mainland China, Taiwan and New Zealand.

The oldest bird reported during the year was a Pied Oystercatcher which had been banded 16 years previously. Three Eastern Curlew were recaptured almost 16 years after they had been banded.

FLAG SIGHTINGS

Currently, most of the migration information we obtain each year comes from sightings of birds which we have colour-flagged (orange in Victoria, and yellow over orange in South Australia). Although sightings of these birds cannot be related to individuals the much greater volume of information deriving from flagged birds more than offsets the slight loss of information about the specific banding date and banding location of a bird. The volume of flag sightings reported has grown rapidly over the years since this process of colour marking birds was introduced in late 1990. It has been especially rapid in the past year, as awareness of flagging has spread and re-sighting efforts have increased, with 2,599 sightings reported of waders flagged in Victoria and South Australia compared with 1,374 the previous year. 60% of the total sightings were of Red Knot and Bar-tailed Godwit which had moved to New Zealand, demonstrating the close link between the populations of these two

species in south-eastern Australia and New Zealand. There were also 159 sightings in Korea, showing how important this area is as a stopover location for birds on migration to/from their northern breeding grounds. We are likely to experience a significant negative impact on our wader populations from the recent completion of the huge estuary reclamation project at Saemangeum in south Korea.

Another highlight of the year's flag sighting reports was a record 111 Bar-tailed Godwit sightings on the shores of southwest Alaska where the birds congregate in August/September prior to their non-stop 11,000 km crossing of the western Pacific.

There have now been 7,583 sightings of waders flagged in Victoria and 643 sightings of waders flagged in South Australia. Red-Knot (2,785) and Bar-tailed Godwit (1,770) lead the list of species because of the intense flag-searching activity in New Zealand to where many of these birds move. Altogether sightings have now been reported of 26 wader species. Some flagged even in small numbers have still given spectacular results. Only three Black-tailed Godwits, for example, had been flagged until mid-2006 and yet there have been four sightings reported overseas and five elsewhere in Australia. Even more amazing, however, is that there have now been 83 sightings (almost all in New Zealand) of Bar-tailed Godwits from the eight juvenile birds flagged in South Australia on 23 November 2004! The flagging program overall has been an extraordinarily successful component of the wader study program in Australia and the use of flags has now spread to a total of 20 locations throughout the East Asian/Australasian Flyway.

COUNTING

Many VWSG members take part in the long-term summer and winter program of population counts which takes place at selected sites in Victoria and elsewhere around Australia. For several years now, VWSG members have also formed the core of the team (organised by Ken Gosbell) which counts the waders in the extremely important wader habitat of The Coorong in South Australia each summer. The population data which these counts generate is fundamental to understanding the long-term changes which are taking place in populations in the flyway. In conjunction with the breeding success data generated (see below) it is now possible to differentiate between short-term fluctuations in population, associated with, for example, variations in breeding productivity, from longer-term population trends, which for example may be caused by habitat loss.

A repeat survey, by helicopter, of the number of breeding pairs of Pied Oystercatchers in Corner Inlet was undertaken in late October 2005. This confirmed that this area is the most important in Australia for nesting of Pied Oystercatchers (446 pairs). It also showed that their breeding distribution, and presumably their breeding success, is governed by the distribution of foxes. Most nesting pairs are concentrated on fox-free islands, with some very small islands having several pairs and other much larger fox-inhabited islands having very few. A full report on this survey is included elsewhere in this Bulletin.

Another separate article concerns the huge flock of Banded Stilts which assembled at Lake Corangamite, near Colac, in Western Victoria in the winter of 2006. A helicopter survey on 10 August found an estimated 112,000 birds. This is the largest concentration ever reported in Victoria and represents the whole of the South Australian/Victorian population. There is even some speculation that these birds might breed there, although they have never previously bred anywhere in Victoria.

BREEDING SUCCESS

The Arctic breeding season of June/July 2005 appears to have been an exceptionally good one for most of the wader populations which spend the non-breeding season in Victoria. Overall it is rated as the second best (after the 1991 season) in the 28 years which the VWSG has been monitoring this via the proportion of juveniles in banding catches.

A separate article in this bulletin gives full details of results obtained in the 2005/2006 season in Victoria. Bar-tailed Godwit (the Alaskan-breeding subspecies *baueri*) and Sanderling had exceptionally good breeding success while Red Knot, Ruddy Turnstone, Sharp-tailed Sandpiper and Curlew Sandpiper were classed as very good. It is amazing that this should be the third consecutive really good breeding season for Sharp-tailed Sandpiper after more than a decade of relatively poor breeding performance. It was also a second successive good year for Curlew Sandpiper – again providing a much needed potential boost to depressed populations following a run of generally poor breeding success. In contrast, Red-necked Stints had a second successive poor breeding season.

Two analyses of our data have already been published showing that breeding productivity benefits from relatively higher June, and especially July, temperatures on the Arctic breeding grounds. The date of snowmelt on the tundra also affects the breeding success of some species. Hugh Boyd, a world expert on Arctic breeding conditions for wildfowl, is currently leading our investigations of other climatological factors which may affect the breeding success of waders. Hopefully we may, in due course, be able to work out why Red-necked Stints' breeding performances have differed so markedly in the last two years from those of other species.

TERNS

The VWSG studies of local breeding Crested, Caspian, Fairy and Little Terns continued during the past year, though the last two species did not breed and the Caspian Terns also suffered a reduction in breeding pairs. The Crested Tern breeding population was close to 5,000 pairs and although this was a slight reduction on the previous year it is still nearly ten times the breeding population on the central Victorian and South Gippsland coast 20 years ago. As usual the Crested Terns at the large colonies at The Nobbies, on the west end of Phillip Island, and at Mud Islands, in Port Phillip Bay, had extremely successful breeding outcomes with around 90% of eggs eventually becoming fledged juveniles. In contrast adverse weather conditions seemed to have got the better of all the terns nesting in Corner Inlet except for part of the Caspian Tern colony.

Yet again there were no cannon-netting opportunities in the Gippsland Lakes to catch Common Terns and Little Terns. This study, which commenced in 1989, has been almost at a standstill in recent years because of the reduced numbers of these species spending the austral summer there.

ANALYSES AND PUBLICATIONS

A huge amount of effort goes into analysing data and preparing it for publication. Unfortunately only a few people within the Group have the necessary time and expertise for this task. So the rate of progress is always slower than hoped.

Nevertheless a wide range of analyses progressed significantly during the year and a range of publications ensued. These covered everything from quarterly articles in *VicBabbler*, the newsletter of the Victorian group of Birds Australia, to a number of papers in the Australasian Wader Studies Group bulletin, *The Stilt*, through to three major papers on the Curlew Sandpiper which are due to appear shortly in a special International Wader Studies Group monograph on this species.

The foundation for many of these analyses and publications is the information recorded on the Field Data Sheets. Many Group members help in the task of inputting this information to the computerised banding database but more help is **urgently** needed. Heather Gibbs provides considerable raw material also by maintaining the leg flag database (with DEH, Canberra, financial support) and extracting material required by analysers. But we still have to rely on a number of people who are not in the VWSG, or at least who are not actively involved in the field in generating data, to carry out some of the analyses and preparation of scientific papers. If you have any abilities in any of these areas and even modest amounts of time available please contact Clive Minton (analyses) or Ken Gosbell (data input).

Work is still proceeding in preparing a comprehensive list of all publications which have used VWSG data. It is intended to publish this list in a future VWSG Bulletin.

EQUIPMENT

Few people probably realise how much work goes on behind the scenes in making and maintaining all the equipment the VWSG uses in the field. Paul Buckhorn provides the engineering expertise and carries out most of the work on the hardware (cannons, projectiles, cartridges). Rod McFarlane puts in a huge effort in helping to prepare equipment in the trailer needed for each fieldwork session and in helping sort out, clean and dry everything afterwards. Graeme Rowe assisted with maintaining the cables.

Many people have been involved in net making and net maintenance. Moira Longden seems prepared to endlessly keep washing grotty (with oystercatcher poos!) and wet bird bags. Doris Graham and Malcolm Brown with the assistance of Roz Jessop, Graeme and Margaret Rowe, Pete Collins, Vivien Holyoake and others were heavily involved in the manufacture of the Darvic leg flags which we now use on every wader we catch. And many many other people contribute in a variety of ways to try and ensure that we can operate in the field to the maximum efficiency.

FINANCES

The last financial year was very similar to previous ones in that we spent far more than we "earned". This was because of continuing high expenditure on equipment (maintenance and new items) and on operating consumables (leg flags, fuses, batteries, etc). It is only because of the generous grants and donations (see later) that the Group is able to survive financially. We hope that this generous assistance will continue in the future. Fortunately the Group has now built up a modest financial reserve which will help cope with fluctuating expenditure patterns.

MEMBERSHIP, COMMITTEE AND COMMUNICATION

The Group's membership remains relatively constant. There is still an ongoing dearth of new young people, especially males. If any member can encourage new persons to join the Group this will be greatly appreciated.

In the past fieldwork teams usually averaged around 15-20 people. Nowadays they are in the range of 10-15 people. We can generally cope at the lower level because of the increased expertise of most Group members. But we still need larger teams when big catches are possible. A really excellent feature of our membership is their preparedness to help with fieldwork which is arranged at short notice, often when a special opportunity for a needed catch is seen. Quite regularly a team of at least 10 people has been assembled with only a day or two of notice. This flexibility considerably aids our efficiency and is partly due to the ever-aging content of the VWSG membership! The "Mid-week Geriatric Cannon-netting Team" enables us to make catches when tides, weather conditions, and birds' behaviour are most suitable for catching. Such opportunities don't always occur conveniently on weekends!

The VWSG Officers and Committee do not meet formally – in fact the last committee meeting was way back in 1980! But relevant committee members are consulted on many matters by email or face to face communication opportunities during fieldwork. Committee members are also kept informed of significant issues and events by email and regularly input their views as a result of such communications. Anyone wishing to become a committee member is encouraged to put their hand up. Everyone in the Group is greatly thanked for their contribution during the last year.

Roz Jessop maintained the flow of information through our email network and Roger Standon kept the VWSG web page updated. It can be viewed at www.vicnet.net.au/~vwsq

ACKNOWLEDGEMENTS

Huge thanks are due to a great number of people and organisations who have assisted the Group in a wide variety of ways in the past year.

a) Without the permission of land owners we would not be able to access and operate at most of our catching sites. We particularly thank private, corporate and government department land owners at places such as Yallock Creek, Swan Island, Swan Bay, Roussac Point (Corner Inlet), Werribee Sewage Farm (the Western Treatment Plant of Melbourne Water) and Barry Beach. Parks Victoria are also greatly thanked for permission to catch on land which they own/manage such as Mud Islands, Nooramunga National Park and other parts of Corner Inlet, Stockyard Point, Observation Point (Rhyll), French Island, The Nobbies (Phillip Island Nature Parks) and Flinders Ocean Beach.

b) Our extremely important South Australian operations would also not be possible without the extreme kindness, including provision of accommodation, of Iain and Sandy Stewart and Paul Feast.

c) For our banding at Mud Islands and Corner Inlet we are also completely dependant on boat transport to offshore islands which has been provided over many years by Parks Victoria.

d) Financial donations and grants, sometimes for specific applications, have kindly been provided by the Victorian Department of Sustainability and Environment, the Coast Action/Coastcare program, the South Australian Department of Environment and Heritage, Parks Victoria, and various VWSG members.

e) Various authorities are thanked for providing the necessary banding permits and state banding approvals. The Australian Bird and Bat Banding Scheme in Canberra provide the national banding permits to key members of the Group, and the Victorian Department of Sustainability and Environment and the South Australian Department of Environment and Heritage kindly provide the necessary state authorisations.

f) The Federal Department of Environment and Heritage continued to financially support, via the AWSG, our wader work during the past year with funds to pay for Heather Gibbs to operate the national/flyway leg flag database. They also greatly assisted, with funds for analytical and typing support for the analysis of data, for the preparation of papers, and for the huge email communication load associated with these activities.

Wader Banding Totals – VWSG 2005

Species	New	Retrap	Total
Black-tailed Godwit	1	-	1
Bar-tailed Godwit	219	103	322
Whimbrel	4	-	4
Eastern Curlew	18	10	28
Ruddy Turnstone	76	37	113
Great Knot	3	3	6
Red Knot	244	139	383
Sanderling	283	117	400
Red-necked Stint	4642	1308	5950
Sharp-tailed Sandpiper	332	52	384
Curlew Sandpiper	266	74	340
Pied Oystercatcher	125	31	156
Sooty Oystercatcher	43	15	58
Pacific Golden Plover	16	-	16
Grey Plover	9	-	9
Red-capped Plover	19	2	21
Double-banded Plover	17	2	19
Masked Lapwing	3	-	3
18 Species	6320	1893	8213

Table prepared by Helen Vaughan & Clive Minton



Masked Lapwing defending nest (Photo R. Jessop)

VWSG Wader Catches 1975 to 31 December 2005

Species	New	Retrap	Total
Latham's Snipe	347	14	361
Black-tailed Godwit	4	-	4
Bar-tailed Godwit	3494	453	3947
Short-billed Dowitcher	1	0	1
Whimbrel	28	0	28
Eastern Curlew	814	72	886
Marsh Sandpiper	2	-	2
Common Greenshank	498	60	558
Terek Sandpiper	33	1	34
Grey-tailed Tattler	38	3	41
Ruddy Turnstone	2651	915	3566
Great Knot	616	82	698
Red Knot	4346	672	5018
Sanderling	3096	1156	4252
Little Stint	7	-	7
Red-necked Stint	102447	28612	131059
Long-toed Stint	1	-	1
Pectoral Sandpiper	2	-	2
Sharp-tailed Sandpiper	8231	393	8624
Curlew Sandpiper	24171	4706	28877
Cox's Sandpiper	1	-	1
Broad-billed Sandpiper	5	-	5
Pied Oystercatcher	2255	1186	3441
Sooty Oystercatcher	747	206	953
Black-winged Stilt	38	-	38
Banded Stilt	152	-	152
Red-necked Avocet	368	5	373
Pacific Golden Plover	252	24	276
Grey Plover	155	23	178
Red-capped Plover	656	183	839
Double-banded Plover	3577	995	4572
Lesser Sand Plover	115	11	126
Greater Sand Plover	31	3	34
Black-fronted Plover	57	4	61
Hooded Plover	28	1	29
Red-kneed Dotterel	136	11	147
Masked Lapwing	175	3	178
37 Species	159575	39794	199369

Table prepared by Helen Vaughan & Clive Minton

VWSG Annual Wader Catch Totals

Calendar Year	New	Retrap	Total
1975	9	-	9
1976	616	4	620
1977	482	12	494
1978	1296	42	1338
1979	7436	486	7922
1980	6121	1206	7327
1981	4561	869	5430
1982	3774	796	4570
1983	2875	628	3503
1984	4272	1045	5317
1985	4073	1051	5124
1986	7144	2057	9201
1987	5350	1559	6909
1988	8019	2697	10716
1989	5437	1584	7021
1990	4094	1950	6044
1991	3224	850	4074
1992	4652	861	5513
1993	8831	2588	11419
1994	4839	1753	6592
1995	2708	625	3333
1996	5263	1035	6298
1997	4366	1050	5416
1998	8083	1408	9491
1999	6515	1591	8106
2000	10350	2594	12944
2001	4839	1320	6159
2002	10421	2162	12583
2003	8495	2854	11349
2004	5110	1224	6334
2005	6320	1893	8213
Totals to end 2005	159575	39794	199369

Average annual total for '79-05 = 7384

Table prepared by Helen Vaughan & Clive Minton



WWSG Catch Record - Waders

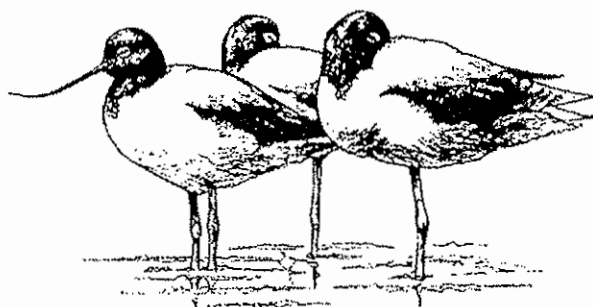
Calendar Year	Jan to June	July to Dec.	Total
1975	-	-	9
1976	-	-	620
1977	-	-	494
1978	-	-	1338
1979	4289	3633	7922
1980	4127	3200	7327
1981	2113	3317	5430
1982	2394	2176	4570
1983	2882	621	3503
1984	2654	2663	5317
1985	3972	1152	5124
1986	5000	4201	9201
1987	3135	3774	6909
1988	5235	5481	10716
1989	3854	3167	7021
1990	1661	4383	6044
1991	2376	1698	4074
1992	3357	2156	5513
1993	5287	6132	11419
1994	2789	3803	6592
1995	1521	1812	3333
1996	1802	4496	6298
1997	1913	3503	5416
1998	5568	3923	9491
1999	4142	3964	8106
2000	5987	6957	12944
2001	3851	2308	6159
2002	8174	4409	12583
2003	3033	8316	11349
2004	1288	5046	6334
2005	5003	3210	8213
Total	97407	99501	199369

Table prepared by Helen Vaughan & Clive Minton

Location of Waders Caught in Victoria and South Australia

	To Dec 2004	2005	Total
Victoria			
Werribee	57991	847	58838
Western Port/ Flinders	49033	4038	53071
Queenscliff/ Swan Bay	28876	796	29672
Anderson Inlet (Inverloch)	22228		22228
Corner Inlet	21008	1520	22528
Sandy Point/ Shallow Inlet	1587	187	1774
Laverton	956	-	956
Mud Islands	753	-	753
Killarney Beach	426	-	426
Geelong (Point Henry/ Belmont Common)	257	-	257
Bendigo SF	143	-	143
Seaford Swamp	98	-	98
Braeside/ Croyden	79	-	79
Gippsland Lakes	40	-	40
Toowong	10	-	10
South Australia			
Canunda/ Carpenter Rocks/ Brown Bay/ Beachport	7761	825	8586
Total	191246	8213	199459

Table prepared by Helen Vaughan & Clive Minton



Numbers of waders processed by the VWSG each month to December 2005.

Processing includes measuring wing length, bill length and/or total head length (as appropriate) and weight; also recording full details of primary feather moult (if any). Additional wing moult has been gathered on some birds that were not fully processed. The table is used to plan fieldwork, with the object of obtaining useable data (preferably on at least 50 birds of each age group) for each month of the year for all the main wader species.

	J	F	M	A	M	A	J	J	J	A	S	O	N	D	TOTAL
Latham's Snipe	51	44	0	0	0	0	0	0	0	0	106	99	35	61	396
Short-billed Dowitcher	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Black-tailed Godwit	1	0	0	0	0	0	1	0	0	0	0	1	1	0	4
Bar-tailed Godwit	521	373	685	99	24	548	127	548	191	77	254	276	405	3580	
Whimbrel	3	0	16	0	0	1	0	0	0	1	4	3	0	28	
Eastern Curlew	16	148	19	0	22	18	13	175	124	180	100	176	60	890	
Common Greenshank	42	135	122	0	0	0	0	0	0	23	0	0	2	558	
Marsh Sandpiper	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Terek Sandpiper	13	2	1	1	2	0	1	1	1	0	1	1	12	35	
Grey-tailed Tattler	31	0	1	3	0	4	0	0	0	0	0	0	1	41	
Ruddy Turnstone	359	429	663	533	1	23	77	38	75	134	597	517	3446		
Great Knot	192	54	26	0	0	29	21	6	16	110	74	130	658		
Red Knot	780	159	302	201	2	396	469	128	85	965	532	284	4303		
Sanderling	318	567	1644	211	0	0	1	5	0	265	414	441	3866		
Little Stint	1	1	0	0	0	0	0	0	0	0	0	1	4	7	
Red-necked Stint	2643	1504	6270	2348	543	749	1032	685	882	1937	3457	3381	25431		
Long-toed Stint	0	0	0	0	0	0	0	0	0	1	0	0	0	1	
Pectoral Sandpiper	0	2	0	0	0	0	0	0	0	0	0	0	0	2	
Sharp-tailed Sandpiper	1762	786	223	2	0	0	0	16	519	507	531	2248	6594		
Curlew Sandpiper	1172	1298	1677	230	223	128	266	476	261	1109	906	1280	9026		
Broad-billed Sandpiper	1	2	0	0	0	0	0	0	0	0	0	0	0	2	5

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Numbers of waders processed by the VWSG each month to December 2005 continued.

	J	F	M	A	M	J	J	A	S	O	N	D	TOTAL
Pied Oystercatcher	112	196	297	470	611	726	472	255	146	38	15	50	3388
Sooty Oystercatcher	6	70	81	94	200	305	154	55	0	1	0	0	966
Black-winged Stilt	1	9	0	0	0	0	1	12	0	4	2	9	38
Banded Stilt	0	0	0	0	0	0	0	0	0	0	0	151	151
Red-necked Avocet	39	0	0	0	0	0	3	67	76	46	47	89	367
Pacific Golden Plover	40	27	48	1	0	0	0	0	0	28	62	65	271
Grey Plover	14	14	4	6	0	9	0	0	2	87	42	1	179
Red-capped Plover	41	85	61	114	206	110	77	25	12	22	24	11	788
Double-banded Plover	0	2	188	274	757	952	1053	932	1	0	0	0	4159
Lesser Sand Plover	54	5	13	7	3	2	2	0	0	1	15	12	114
Greater Sand Plover	21	3	6	0	0	1	1	0	0	0	1	0	33
Black-fronted Dotterel	0	7	1	0	11	16	7	9	2	0	4	8	65
Hooded Plover	0	0	1	0	0	15	0	0	0	0	0	0	16
Red-kneed Dotterel	0	10	0	20	0	44	11	17	12	8	23	1	146
Masked Lapwing	5	6	85	11	4	13	3	1	1	5	21	18	173
Cox's Sandpiper	0	0	0	0	0	0	0	0	0	0	1	0	1
TOTAL	8239	5938	12434	4625	2609	4091	3791	2994	2449	5774	7442	9343	69729

Table prepared by Helen Vaughan & Clive Minton

Numbers of Waders Leg Flagged in Victoria (orange)

Species	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total
Latham's Snipe	0	0	0	0	40	0	110	56	70	0	2	0	0	0	0	0	0	278
Black-tailed Godwit	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	4
Bar-tailed Godwit	0	1	157	6	64	0	43	173	16	84	388	324	196	80	208	256	223	2219
Whimbrel	0	0	0	0	16	0	0	0	0	2	0	2	0	1	0	0	4	25
Eastern Curlew	0	0	8	0	73	88	87	4	37	35	91	27	18	18	38	0	20	544
Marsh Sandpiper	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
Common Greenshank	0	0	21	21	51	0	1	109	131	19	0	0	0	1	41	24	0	419
Terek Sandpiper	0	0	2	2	2	2	0	0	0	0	0	1	0	1	0	0	0	10
Grey-tailed Tattler	0	0	0	0	0	0	0	3	1	0	0	0	0	1	0	0	0	5
*Ruddy Turnstone	0	99	188	37	35	1	194	129	194	372	75	54	34	22	20	154	1	1609
Great Knot	0	0	2	0	4	0	3	36	31	21	21	53	38	78	3	20	3	313
Red Knot	0	0	302	26	88	1	52	59	295	289	175	334	377	681	54	176	246	3155
*Sanderling	0	0	163	0	191	1	47	328	148	342	51	118	36	37	26	140	64	1692
Little Stint	0	0	0	1	0	0	0	0	0	0	1	0	1	0	2	0	0	5
Red-necked Stint	0	799	1259	2516	2282	1661	1394	3065	1434	3224	4215	6038	2570	5792	5839	3489	4502	50069
Pectoral Sandpiper	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Sharp-tailed Sandpiper	0	4	250	111	71	21	69	145	155	474	212	105	18	670	1068	421	299	4093
Curlew Sandpiper	146	462	367	1255	808	839	469	753	270	633	770	1162	417	373	517	51	164	9456
Cox's Sandpiper	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Broad-billed Sandpiper	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	3
Black-winged Stilt	0	0	0	0	0	0	0	0	0	0	0	0	3	2	1	14	0	20
Banded Stilt	0	0	0	0	0	0	0	0	0	0	0	151	0	0	0	1	0	152
Red-necked Avocet	0	0	0	0	5	0	0	0	27	0	0	46	0	6	0	56	0	140
Pacific Golden Plover	0	10	10	1	0	0	0	6	0	10	13	0	14	0	0	0	0	64
Grey Plover	0	0	0	1	0	0	6	0	22	0	0	21	0	24	1	2	9	86
Red-capped Plover	0	0	0	0	0	19	0	0	29	3	10	2	2	12	4	6	10	97
Double-banded Plover	0	0	0	0	0	8	0	0	0	40	24	98	3	90	19	46	18	346
Lesser Sand Plover	0	0	0	14	6	8	9	13	0	4	1	0	0	0	0	0	0	55
Greater Sand Plover	0	0	0	0	3	6	0	0	0	2	4	0	1	0	0	0	0	16
Black-fronted Dotterel	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
Red-kneed Dotterel	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	3
Masked Lapwing	0	0	0	0	0	0	1	0	4	0	0	2	5	4	1	12	1	30
32 Species	146	1375	2729	3992	3739	2656	2475	4881	2867	5554	6053	8538	3735	7895	7844	4870	5565	74914

*Includes Ruddy Turnstone and Sanderling flagged with orange (only) in the south east of South Australia between 1993 and 1998. Table prepared by Helen Vaughan & Clive Minton.

Numbers of Waders Leg Flagged by VWSG in South Australia (orange/yellow)

Species	1999	2000	2001	2002	2003	2004	2005	Total
Latham's Snipe	0	0	4	0	0	0	0	4
Grey-tailed Tattler	0	1	0	0	0	0	0	1
Bar-tailed Godwit	0	0	0	3	0	8	0	11
Ruddy Turnstone	234	226	73	193	76	141	74	1017
Red Knot	0	0	0	0	0	1	0	1
Sanderling	63	420	2	315	328	76	220	1424
Red-necked Stint	126	383	22	319	163	93	174	1280
Sharp-tailed Sandpiper	0	2	0	27	7	73	27	136
Curlew Sandpiper	24	11	0	190	13	2	103	343
Pacific Golden Plover	0	2	0	0	1	0	16	19
Red-capped Plover	0	0	1	7	5	0	7	20
Double-banded Plover	0	0	4	5	1	0	0	10
Black-fronted Plover	0	0	0	3	0	0	0	3
Hooded Plover	0	0	0	0	1	0	0	1
Masked Lapwing	0	0	0	0	4	2	2	8
Total	447	1045	106	1062	599	396	623	4278

Table prepared by Helen Vaughan & Clive Minton

VWSG FIELDWORK PROGRAM		January to December 2006	
DATE	PLACE AND OBJECTIVES	HIGH TIDE	
Fri 6 – Mon 9 Jan 2	Stockyard Point, Yallock Creek, Reef Island & Barraliar Island (in this order) - Small waders, Red Knot, Ruddy Turnstone, Pacific Golden Plover	06.30 to 08.25	2.90 to 2.63
Thur 12 Jan	Barry Beach - Small waders	09.39	2.30
Thurs 26 Jan	Werribee - Small waders	10.47	0.82
Sat 4 – Wed 8 Feb	Corner Inlet - (stay in Manns Beach Hut) All migratory & resident species	05.21 to 07.51	2.49 to 2.47
Sat 18 – Sun 19 Feb	Queenscliff - Bar-tailed Godwit, Red Knot, Greenshank & Small waders (Tide times in Swan Bay)	06.15 18.33 06.43	1.37 1.30 1.37
Thur 2 – Wed 8 March	South Australia Sanderling & Ruddy Turnstone	14.19 to 16.13	0.8 to 0.8
Sun 19 March	Sandy Point - Sanderling	16.15	1.42
Sat 25 – Sun 26 March	Barry Beach (Stay at Yanakie) Bar-tailed Godwit & small waders	07.22 08.04	2.4 2.39
Fri 31 March	Rhyll - Bar-tailed Godwit	14.38	2.88
Wed 5 April	Flinders - Ruddy Turnstone	17.29	1.46
Thurs 13 – Tue 18 April (Easter)	South Australia Sanderling & Ruddy Turnstone	12.21 to 14.24	1.0 to 1.1
Late April	Various locations – Barry Beach, Flinders, Sandy Pt, Lake Victoria etc. Opportunities to catch late departing Ruddy Turnstone, Red-necked Stint, Sanderling if opportunities arise	various	
Sat 29 April	Stockyard Point - Pied Oystercatchers	14.21	3.01
Sat 13 May	Rhyll - Pied Oystercatcher	13.20	2.65
Sat 27 May to Sun 28 May	Roussac Point and Charles Hall Road Pied and Sooty Oystercatchers	12.14 13.21	2.45 2.54
Mon 12 June (Public Holiday)	Fairhaven, French Island Pied Oystercatcher	13.34	2.82
Wed 12 July to Sun 16 July	Barry Beach, Lyons Downs, Toora, Camel Rocks, Yanakie Pied and Sooty Oystercatchers	12.47 to 16.11	2.26 to 2.55
Sat 26 August	Rhyll - Over wintering Bar-tailed Godwit	14.58	2.64
Sat 2 September	AGM at Clive and Pat Minton's house 10am Equipment maintenance 4pm AGM 6pm BBQ 7pm Talks and slides		
Sat 9 September	Stockyard Point - Pied Oystercatchers	13.51	2.71
Sun 8 October	Queenscliff - Early arriving Red Knot and Bar-tailed Godwit	12.16	1.32
Fri 27 October to Sun 29 October	Queenscliff Bar-tailed Godwit, Red Knot, Greenshank & Small waders (Tide times in Swan Bay)	14.42 to 04.24	1.26 to 1.44
Wed 1 November	Mud Islands Crested Terns, scanning and catching breeding adults		
NWA Wader Expedition 4 to 25 November with many VWSG people therefore not available			
Visit to Inverloch for Red-necked Stints will be arranged if they roost in an accessible location			
Sat 9 December	Rhyll - Bar-tailed Godwit	16.33	2.44
Wed 13 December	Flinders - Ruddy Turnstone	06.29	1.33
Thurs 14 December	Yallock Creek - Sharp-tailed Sandpipers	07.53	2.51
Sat 16 December	Mud Islands - Crested Tern chicks		
Thurs 21 December	Corner Inlet - Crested and Caspian Tern chicks		
Fri 22 December	The Nobbies - Crested Tern chicks - MEET 6am	Low tide at	07.49
Sat 23 December	Sandy Point - Sanderling	14.28	1.18
Fri 29 December to Sun 31 December	Werribee Red-necked Stint, Curlew Sandpiper, Sharp-tailed Sandpiper (NB These dates are slightly later than previous years – better tides and weekend dates preferred by many people)	09.49 to 11.09	0.87 to 0.86

Recoveries of Waders Banded in Victoria

Clive Minton, Roz Jessop, Peter Collins and Robyn Price

The VWSG has banded between 5,000 and 12,000 waders almost every year since 1979. This means that there continues to be large numbers of birds in circulation in the East Asian/Australasian Flyway carrying VWSG bands. A small proportion of these are recovered each year (and a much larger proportion of sightings of flagged birds occur – see separate report). Most recoveries reach the VWSG via a Recovery Report Form from the Australian Bird and Bat Banding Office in Canberra. Others, particularly individually colour marked birds such as Pied Oystercatchers, come to us directly but are subsequently processed into the central Banding Recovery Database by ABBBS.

Detailed below are those recoveries which have reached us during the past year. Species are presented in taxonomic order.

Bar-tailed Godwit

Band	Age	Date Banded	Location Banded	Date Recaptured	Location Recaptured	KM Moved
071-84152	3+	04/11/1989	Manns Beach Corner Inlet	09 10/1997 (presume died)	Sikaiana Is. (Stewart Is) Solomon Is	3727 NE

We have known about this banded Bar-tailed Godwit being found in the Solomon Islands for some time. Attempts were made to obtain more specific information on the circumstances of the recovery but this has not proved possible. It has therefore now been formally processed into the recoveries database even though the specific recovery date is not known.

This recovery fits nicely into the now well-known migration of Bar-tailed Godwits which breed in Alaska directly across the Pacific in an 11,000 km non-stop flight to north-eastern Australia (and New Zealand). This individual was clearly unable to complete the journey, maybe because it met adverse weather or wind conditions, and was forced to land in the Solomon Islands. There have been one or two other flag sightings and recoveries of Australian and New Zealand marked Bar-tailed Godwits in the same area of the Pacific.

Eastern Curlew

Band	Age	Date Banded	Location Banded	Date Recaptured	Location Recaptured	KM Moved
091-06295	3+	07/10/1989	The Gurdies, Western Port	07/09/2005 17/10/2003 22/02/1999	Yallock Creek, Western Port	18 N (15y 11m)
091-06297	3+	07/10/1989	The Gurdies, Western Port	07/09/2005	Yallock Creek, Western Port	18 N (15y 11m)
091-23268	3+	21/10/1989	The Gurdies, Western Port	07/09/2005	Yallock Creek, Western Port	18 N (15y 10m)
091-41459	3+	05/03/2001	Manns Beach, Corner Inlet	22/04/2006 (dead, tangled in fishing gear)	Eao, Birobidzhan, Russia (48° 43' N, 133° 1' E)	9811 N

The recovery in Russia illustrates how early (22nd April) Eastern Curlew may reach their breeding grounds in south-eastern Siberia. This is the eleventh overseas recovery of an Australian banded Eastern Curlew.

Large waders from several species around the world have been found to occasionally live for more than 20 years (the record is a British Pied Oystercatcher which survived for 35 years). It was particularly pleasing to catch three Eastern Curlew together almost 16 years after they had originally been banded. As they were marked as adults this means that they would have been a minimum of 19 years old when recaptured.

Red Knot

Band	Age	Date Banded	Location Banded	Date Recaptured	Location Recovered	KM Moved
052-22594	1	25/06/2001	Manns Beach Corner Inlet	22/10/2005	Miranda, Firth of Thames, New Zealand	2495 E
052-23939	1	31/12/2003	Yallock Creek, Western Port	22/10/2005	Miranda, Firth of Thames, New Zealand	2619 E
052-24052	1	02/04/2002	Barry Beach Corner Inlet	22/10/2005	Miranda, Firth of Thames, New Zealand	2534 E
052-24241	2	13/07/2002	Barry Beach Corner Inlet	22/10/2005	Miranda, Firth of Thames, New Zealand	2534 E
052-24291	1	25/07/2002	Manns Beach Corner Inlet	22/10/2005	Miranda, Firth of Thames, New Zealand	2495 E
C54408 NZ	3+	20/10/1996	Miranda, Firth of Thames, New Zealand	07/11/2005	Swan Is, Queenscliff	2686 W
052-23963	2	17/06/2004	Manns Beach Corner Inlet	02/02/2006	Manawatu Estuary, N.I. New Zealand	2429 E

A nice clutch of movements of Red Knot into New Zealand with five of the records deriving from an excellent cannon-net catch of Red Knot at Miranda on 22nd October 2005. As with most Red Knot which subsequently move to New Zealand they had all been banded as immatures, four in their first year. It is now well established that immature (particularly first year) birds from the New Zealand population tend to spend their first year in Australia before crossing over to New Zealand at the beginning of their second year. It was nice to be able to return the compliment by catching a New Zealand-banded Red Knot at Swan Island, Queenscliff, on 7th November. This was an adult bird still on migration back to its non-breeding area.

Sanderling

Band	Age	Date Banded	Location Banded	Date Recaptured	Location Recovered	KM Moved
041-98275	2+	07/04/1998	Sandy Point Shallow Inlet	24/05/05 (shot for museum)	Chayvo, Nth Sakhalin Is, Russia (52°25'40" N, 143°15'52" E)	10150 N

Recoveries in Russia are quite rare for all species of waders so it was useful to have this report of a northward migrating Sanderling on Sakhalin Island in late May. It was presumably heading for a breeding area on the very far north coast of Siberia.

Red-necked Stint

Band	Age	Date Banded	Location Banded	Date Recaptured	Location Recovered	KM Moved
033-73348	2+	08/12/1990	Inverloch	07/06/1991	Tanguu of Tianjin City, China	9093 N
036-16387	2+	19/02/2005	Yallock Creek, Western Port	24/05/2005 (shot for museum)	Chayvo Bay, Nth Sakhakin Is, Russia (52°25 40 N, 143°15 52 E)	10,078 N
036-04228	2+	31/12/2003	Yallock Creek, Western Port	25/05/2005 (shot for museum)	Chayvo Bay, Nth Sakhakin Is, Russia (52°25 40 N, 143°15 52 E)	10,078 N
036-15353	1	28/12/2004	Werribee SF	06/08/2005	Roebuck Bay, WA	3099 NW
035-37981	1	13/10/1999	Mandorah Marsh, Sandfire, WA	02/01/2005 10/12/2005	Yallock Creek, Western Port	3024 SE
036-03918	U	29/12/2003	Werribee SF	04/03/2006	Nene Valley, SA	350 W
035-79232	2+	27/12/2000	Werribee SF	04/03/2006	Nene Valley, SA	350 W

This is a nice miscellany of recoveries for the Red-necked Stint. As with the Sanderling above, the two in Russia were probably heading for northeast Siberian breeding grounds. Two other recoveries illustrate the role of northwest Australia as a stopover location for migrants on their way to southeast Australia. Both the movements into South Australia are probably birds which have changed their non-breeding location as 4th March is too early for them to have started their northward migration.

Curlew Sandpiper

Band	Age	Date Banded	Location Banded	Date Recaptured	Location Recaptured	KM Moved
041-58231	2+	18/11/1989	Swan Is, Queenscliff	12/05/1991	Tanguu of Tianjin City, China	9012 N
NV83564 Hong Kong	2+	27/04/2002	Mai Po Marshes, Hong Kong	06/01/2006	Stockyard Point, Western Port	7520 SE
042-32237	2+	13/10/2002	Swan Is, Queenscliff	10/05/2006	Chongming Dongtan, Shanghai, China	8095 N

The Chinese coast is used as a stopover location, particularly on northward migration by almost every Curlew Sandpiper which spends the non-breeding season in Australia. It was nice to be able to catch a bird banded there, in Hong Kong in April 2002. The recapture of a VWSG banded bird at Chongming Dao in the Yangtse Estuary this May was also pleasing. This location is now a major wader banding and flagging site with 3,000 or 4,000 waders caught on both the northward (late March to mid May) and southward (late July to early October) migrations each year. As we go to press (25th August) we have just heard that this same bird has now been seen in Carnarvon, in the very far northwest of Australia. It was recognised because of its unique colour flag combination – orange from Victoria and white over black from its visit to Chongming Dao! It is amazing how far west within Australia this bird is (more than 3,000 km) given that it is almost certainly on its way back to its usual non-breeding location at Swan Island, Queenscliff.

Sooty Oystercatcher

There were 63 sightings of Sooty Oystercatchers during the period from July 2005 to June 2006. Ten sightings were from King Island in Tasmania. It will be interesting to see if they stay there during the breeding season. The bird seen at Woolshed Bight is now 26+ years old and was banded at Queenscliff. It has been at Phillip Island for 20 years.

Number of sightings of colour banded or flagged Sooty Oystercatchers for the year July 2005 to June 2006.

Location sighted	State	Total number birds sighted	Total number unidentified
Cape Portland	Victoria	1	
Flinders	Victoria	28	1
Flinders Near Jetty	Victoria	1	
Flinders Nth Of Pier	Victoria	2	
Goose Island	Tasmania	3	
Jonny Souey Cove, Wilson's Prom	Victoria	1	
Kanowna Island, Wilson's Prom	Victoria	2	
King Island Little Porky	Tasmania	1	
King Island, Burgess Bay	Tasmania	1	
King Island, Naracoopa	Tasmania	3	1
King Island, Whalebone	Tasmania	2	2
Kitty Miller Bay	Victoria	2	
Norman Bay, Wilson's Prom	Victoria	2	
Port Fairy	Victoria	1	
Port Fairy, Mills Reef	Victoria	8	
Port Fairy, Town	Victoria	1	1
Venus Bay	Victoria	1	
Werribee Woodbridge	Victoria	1	
Wilson's Prom	Victoria	1	
Woolshed Bight Phillip Island	Victoria	1	
Total		63	5

Pied Oystercatcher

Band	Age	Date Banded	Location Banded	Date Recovered	Location Recovered	KM Moved
101-03681	2	17/10/1993	The Gurdies Western Port	00/00/1995	Goolwa Beach, SA	675 NW
101-22064	3	13/09/2003	Stockyard Pt, Western Port	28/07/2005	Ten Mile Beach, Bundjalong NP, NSW	1239 NE
101-21086	3	02/03/2002	Swan Is, Queenscliff	16/08/2005 (found dead)	Boatswain Is, Mud Islands Port Phillip Bay	8 E
101-07364	3+	09/04/2001	Long Island, Western Port	31/08/2005 (found dead)	Warrnambool	286 W
100-96796	2+	01/07/1989	Werribee SF	18/09/2005	Bherwerre Beach, near Sussex Inlet, NSW	645 NE (16y 2m)
101-16017	3	19/04/200	Long Island, Western Port	19/02/2006 (found dead)	Barralliar Is., Western Port	11 E

Pied Oystercatchers move around quite widely when they leave the autumn/winter flocks in Corner Inlet, Western Port and Port Phillip Bay. The above recoveries indicate the limits of the range of movements, with one on the northern New South Wales coast (1239 km NE) and another at the mouth of The Coorong in South Australia (675 km NW). In addition to the recovered birds mentioned above, there was 190 additional sightings of colour banded and flagged birds. There were 46 sightings from Port Fairy and 20 from King Island, Tasmania.

**Sightings of colour banded or flagged Pied Oystercatchers
for the year July 2005 to June 2006.**

Location Sighted	State	Total number birds sighted	Total number unidentified
Barralliar Island	Victoria	24	
Broadwater	NSW	1	
Corio Bay, Geelong	Victoria	1	
Evans Head	NSW	1	
King Island Currie Golf	Tasmania	1	
King Island Elephant River	Tasmania	1	1
King Island Half Moon Bay	Tasmania	1	
King Island Porky Beach	Tasmania	1	
King Island Stricklands	Tasmania	1	
King Island, 5km north of Currie	Tasmania	3	1
King Island, Burgess Bay	Tasmania	1	1
King Island, Sea Elephant	Tasmania	2	1
King Island, Whale Bone	Tasmania	5	3
King Island, SW Coast	Tasmania	4	1
Kitty Miller	Victoria	1	
Little River Mouth	Victoria	1	
Main Beach Fly Cove	Victoria	1	
Mud Islands	Victoria	4	
Phillip Island Thorny Beach	Victoria	2	
Point Nepean	Victoria	2	1
Port Fairy	Victoria	19	
Port Fairy, Aircraft Land	Victoria	2	
Port Fairy, East Beach	Victoria	11	7
Port Fairy, Golf Club	Victoria	2	
Port Fairy, Mills Reef	Victoria	11	1
Port Fairy, Town	Victoria	1	1
Rhyll	Victoria	17	
Rhyll Observation Point	Victoria	11	6
Rhyll Yacht Club	Victoria	7	2
South Arm	South Australia	1	
Stockyard Point	Victoria	34	1
Wallagoot Lake	NSW	1	
Warrnambool	Victoria	1	
Werribee	Victoria	2	
Werribee Beacon Point	Victoria	7	1
Werribee North Spit	Victoria	2	
Werribee Sewerage Farm	Victoria	1	1
Wingan Inlet	Victoria	2	
Total		190	29

Double-banded Plover

Band	Age	Date Banded	Location Banded	Date Recovered	Location Resighted	KM Moved
042-36494	2+	19/04/2003	Stockyard Point, Western Port	15/10/2005 (found dead)	Otago, New Zealand	2145 E

The centre of the South Island in New Zealand is a well established breeding area of Double-banded Plovers which come to Victoria for the winter.

Recoveries of Waders Banded in South Australia

Clive Minton, Roz Jessop, Peter Collins, Maureen Christie,
Iain Stewart and Robyn Price

Although the volume of wader banding in South Australia is significantly less than that in Victoria, each year it produces some excellent recoveries (and flag sightings). This is particularly so for the principal study species, Ruddy Turnstone and Sanderling.

Ruddy Turnstone

Band	Age	Date Banded	Location Banded	Date Resighted	Location Resighted	KM Moved
052-03777	1	11/12/2000	Brown Bay	06/05/2006	Shen-Kang, Changhua County, Taiwan	7237 N
052-38808	1	22/11/2004	Brown Bay	14/05/2006	Hualian R. mouth, Taiwan	7177 N

Taiwan seems to be a popular location for Ruddy Turnstones to stop at on migration, particularly on northward migration. Two reports within eight days of each other in early May 2006 are particularly welcome.

Red-necked Stint

Band	Age	Date Banded	Location Banded	Date Recovered	Location Recovered	KM Moved
035-99862	2+	19/03/2002	Danger Point, Port MacDonnell	18/03/2005 (found dead)	Danger Point, Port MacDonnell	0
035-99657	1	18/03/2002	Pelican Point, Carpenter Rocks	30/03/2005 (found injured but released alive)	Cape Banks Lighthouse, Carpenter Rocks	2 N
035-38566	3+	23/10/2001	80 Mile Beach, WA	04/03/2006 (recaptured)	Nene Valley	2788 SE

The recapture of a bird originally banded in north-west Australia is yet another indication of how extensively that area is used as a stopover on southward migration for birds on their way to non-breeding areas in south-eastern Australia. The banding date of 23rd October was rather late for an adult bird to still be on migration.

Sanderling

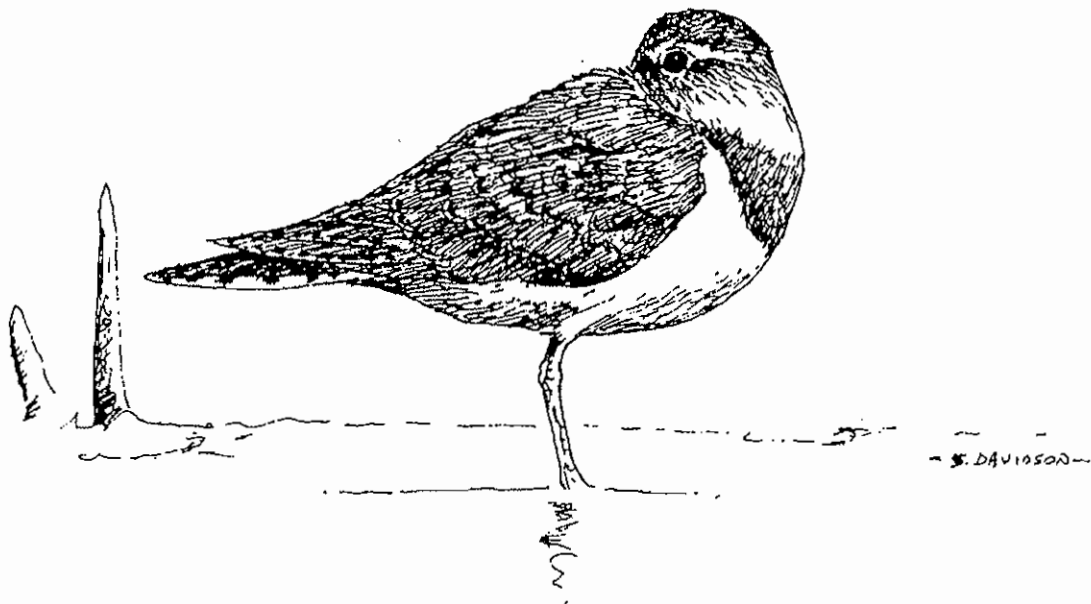
Band	Age	Date Banded	Location Banded	Date Recaptured	Location Recaptured	KM Moved
042-44835	1	15/03/2005	Brown Bay	01/08/2005	Seashore of Kurima-Machiya, Tsu, Mie Pref, Japan	8105 N
041-82712	2+	28/11/1993	Canunda NP	03/03/2006	Stoney Point, Port MacDonnell	72 SE (12y 3m)

Japan seems to be extensively used by Sanderling as a stopover on northward migration and, especially, on southward migration. There are now several recoveries of Sanderling banded in South Australia (and Victoria) and a great many flag sightings. The bird captured at Port MacDonnell more than 12 years after it was originally banded is our oldest record so far for this species.

Double-banded Plover

Band	Age	Date Banded	Location Banded	Date Resighted	Location Resighted	KM Moved
C66449	2+	01/11/2004	Tasman R., SI, New Zealand	05/04/2005 11/05/2005	Cape Banks Lighthouse, Carpenter Rocks	2569 W

This record derives from the sighting of an individually colour-banded Double-banded Plover from New Zealand. It had been banded originally as a breeding adult in the centre of the South Island, which is the area from which most birds coming to Australia for the winter originate.



Sightings of Waders Leg Flagged in Victoria

Report Number 13

Clive Minton, Roz Jessop, Peter Collins and Heather Gibbs

This year we have introduced changes to the manner in which we report on sightings of waders that have been leg-flagged in Victoria and subsequently seen elsewhere. This is because the volume of sightings has now increased – fantastically – to a level where it is not practical to publish full details of every flag sighting which has been reported during the past twelve months. This change has the disadvantage that we are not now able to acknowledge in print every person who has seen and reported a flagged bird. However we will continue to publish in full the sightings for species where we still have comparatively little data or where the flag sightings are particularly noteworthy.

This report presents a comprehensive summary of all flag sightings reported during the past year (Table 1), and also gives the cumulative number of flag sightings for each species, by country of sighting (Table 2), sightings within Australia by species/state (Table 3) and table 4 shows how the number of flag sightings occurring each year has steadily grown since flagging commenced in late 1990. It also shows how the pattern of flag sightings has varied between countries.

It is now possible to make quantitative comparisons because of the growth in the number of flag sightings in the database. Some comments on the summary tables are given below. These comments are followed by more detailed lists of flag sightings for certain species.

Table 1. During the last 12 months, 2225 sightings overseas of waders flagged in Victoria have been reported. This is a massive increase from the 1196 reported in the previous year. This growth is partly the result of the steadily increasing awareness of flagged birds, and the means of reporting them, throughout the flyway. It is also greatly helped by the huge effort of professionals and volunteers in New Zealand, associated with their own colour marking studies of Bar-tailed Godwit, Red Knot and Ruddy Turnstone. Thus 60% of the total sightings came from New Zealand and all but three of the 1339 individuals involved were Red Knot (890) and Bar-tailed Godwit (446).

Sightings within Australia have also increased greatly (374) but, in contrast, these involved 15 different species, with Red-necked Stint (178) being the most numerous. A big upsurge took place in sightings in Korea (159) as a result of intensive studies carried out there in April/May, mostly by members of the Australasian Wader Studies Group. There is also an enthusiastic band of wader photographers in Korea who publish their photographs of flagged birds on a web site. 128 sightings of Bar-tailed Godwit and 12 of Great Knot from Victoria clearly indicate that Victorian populations of these species are likely to be particularly negatively affected by the completion of the massive Saemangeum reclamation project.

A record number of Victorian-flagged Bar-tailed Godwit (111) was seen in Alaska in August/September 2005. These birds concentrate on the shores prior to their trans-western Pacific non-stop flight of 11,000 km to Australia (and New Zealand). The high number seen was because of a large team of ornithologists in the field over an extended period.

There was a welcome further increase in flag sightings from mainland China, with 63 sightings of Red-necked Stints being especially noteworthy. Indonesia reported 47 Victorian-flagged birds – 28 Red-necked Stints and 19 Curlew Sandpipers – as a result of the dedicated efforts of a local wader specialist. Previously it was thought that most waders flew directly from Asia to northern Australia on their southward migration, but it is now clear that at least some of the smaller waders make a migratory stopover on the way.

There was a resumption of flag sightings reported from Japan (30) with eight different species being sighted and Sanderling (10) again topping the list. The first sighting of any flagged wader in East Timor, a Red-necked Stint, was also reported during the year.

As far as species breakdown is concerned, numbers were dominated by Red Knot (982), Bar-tailed Godwit (737) and Red-necked Stint (332). The number of Great Knot sightings (26) is particularly high given the relatively small number of this species flagged each year. Overall 15 species flagged in Victoria had flag sightings reported in the past year.

Table 2. The pattern of flag sightings accumulated over the years is not dissimilar to that outlined above. New Zealand (3448 – 45%) still dominates, with Australia (2039 – 27%) second in the overall total of 7583 sightings, of 26 species, so far reported. Many geographic locations had dominant species such as New Zealand (Red Knot and Bar-tailed Godwit), Hong Kong/Taiwan/Indonesia (Red-necked Stint/Curlew Sandpiper), Korea (Bar-tailed Godwit), Japan (Sanderling), and Russia (Red-necked Stint). Alaska, USA (Bar-tailed Godwit, 294) and Mongolia (Red-necked Stint, 25) had only one species of flagged bird reported.

Overall three species of waders have now had more than 1000 flag sightings reported, Red Knot, Bar-tailed Godwit and Red-necked Stint, and three species have between 100 and 1000, Curlew Sandpiper, Sanderling and Great Knot.

Table 3. Victorian-flagged birds have been seen in all states except the ACT. Western Australia (461), Queensland (410) and New South Wales (292) form the bulk of the 2039 sightings within Australia. This pattern of sightings is the result of many of the waders who spend the non-breeding season in Victoria making stopovers in these northern and eastern states, particularly during their southward migration. The large number of sightings in South Australia (472) is partly because of the skilled wader enthusiasts who live in the south-east of the state. It also reflects quite a lot of change of non-breeding area/winter area, as well as short movements which occur in south-eastern Australia prior to the main migration.

Red-necked Stint (783) and Curlew Sandpiper (345) comprise more than half the flag sightings within Australia. This is partly because they have been flagged in larger numbers than other species 50,069 and 9456 respectively and also because they make more stops on their migrations. The high figures for Sanderling (472), Red Knot (314) and Bar-tailed Godwit (153) are because these species are relatively mobile between different locations in their non-breeding areas, that is, they are not particularly site faithful.

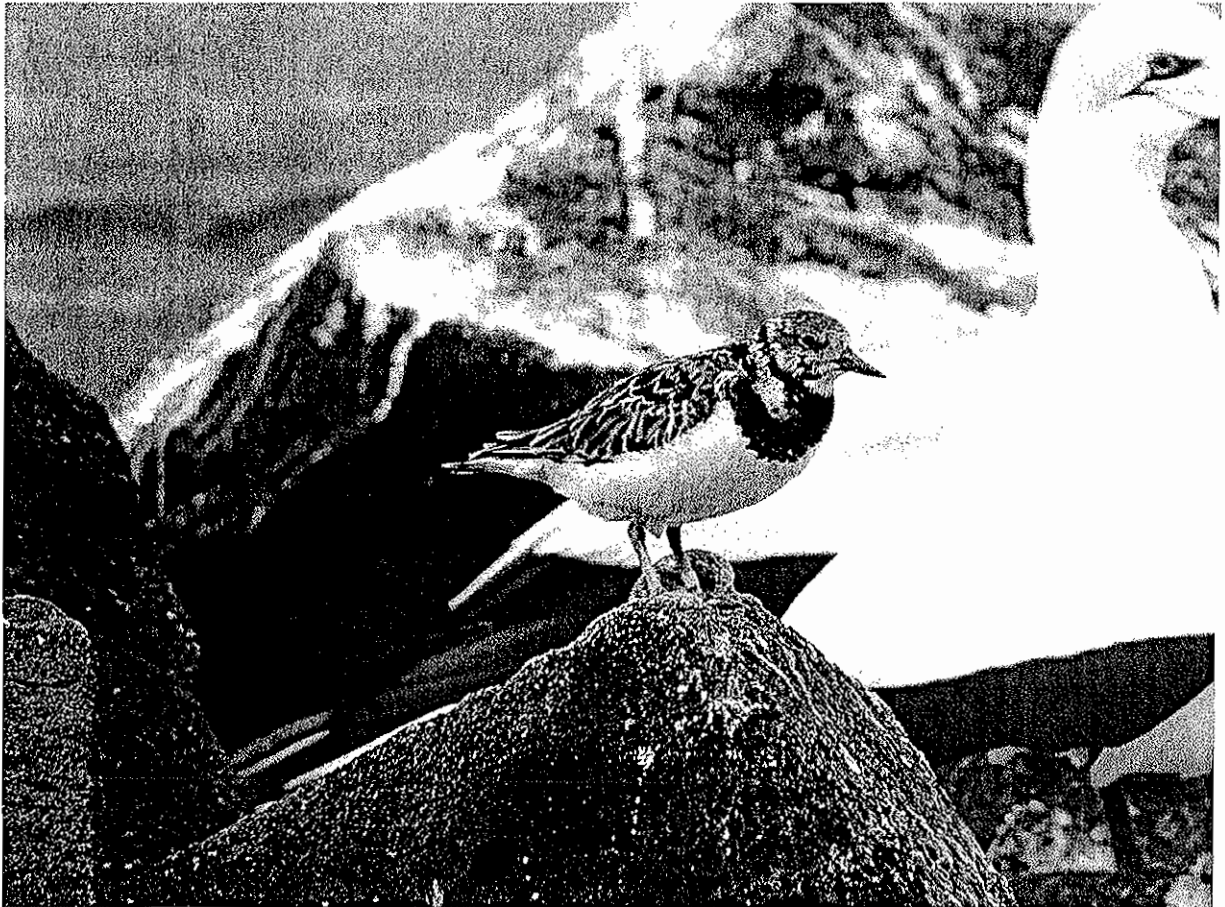
Most Eastern Curlew sightings (43) relate to birds at stopover sites down the east coast of Australia, particularly on southward migration. It is also interesting that a comparatively sedentary species like the Red-necked Avocet should have produced 13 sightings away from the original flagging location, including four in NSW, from 140 birds flagged.

Table 4. There has been a strong growth in the number of flag sightings over the years, both overseas and within Australia. The 1777 sightings in calendar year 2005 was nearly double the figure for the previous year, and 977 sightings to the end of July 2006 suggests that this year is also going to be very productive.

The pattern in different countries has varied quite markedly. The number of sightings reported in Hong Kong has been consistent over many years. The same is true of Taiwan, although there was a big upsurge, to 52, in 2005. Reports from Japan have tailed off in recent years, though this may be partly because some past sightings may not have yet been sent on to us.

After dropping a few years ago, the number of sightings in Korea has now increased dramatically because of the keen photographic group there and the special wader counting expeditions in April/ May this year. Also the increase in sightings of Bar-tailed Godwit in

Alaska (USA) which only started in 1999, continued strongly in 2005. Sightings from mainland China has also markedly increased in the last two years.



Orange flagged Ruddy Turnstone at Popes Eye (Photo Heather Gibbs)

Table 1. Sightings of Victorian-flagged birds reported by country between August 2005 and July 2006

Species	New Zealand	Australia	Korea	USA	China (mainland)	Indonesia	Hong Kong (China)	Japan	Taiwan (China)	Russia	East Timor	Total
Red Knot	890	82	3		4			1	2			982
Bar-tailed Godwit	446	23	128	111	21			8				737
Red-necked Stint		178	4		63	28	22	7	14	5	1	322
Curlew Sandpiper		45			6	19	12		5			87
Great Knot		9	12		3			1	1			26
Sanderling		5	1				1	10				17
Sharp-tailed Sandpiper		14	2									16
Eastern Curlew		5	8					1		1		15
Ruddy Turnstone	3	2							3			8
Black-tailed Godwit		2	1						1			4
Red-necked Avocet		4										4
Grey-tailed Tattler		2						1				3
Grey Plover		1						1				2
Whimbrel		1										1
Lesser Sand Plover		1										1
Total	1339	374	159	111	97	47	35	30	26	6	1	2225

Table 2: Total number of sightings outside Victoria, by species / country, of Victorian-flagged waders to 31 July 2006

Species	New Zealand	Australia	Hong Kong (China)	USA	China (mainland)	Korea	Japan	Taiwan (China)
Red Knot	2420	314	4		17	5	5	18
Bar-tailed Godwit	980	153		294	87	200	56	
Red-necked Stint	30	783	214		136	13	50	101
Curlew Sandpiper		345	376		17		1	44
Sanderling		172	13		5	4	109	4
Great Knot		77	4		8	20	2	6
Sharp-tailed Sandpiper		53	2		5	9		11
Eastern Curlew		43			4	12	16	3
Ruddy Turnstone	11	33	1		1	5	4	18
Greater Sand Plover		14	9					1
Grey Plover		2			1	1	19	
Lesser Sand Plover		15	1					
Red-necked Avocet		13						
Black-tailed Godwit		5			1	2		1
Double-banded Plover	7	1						
Terek Sandpiper		1	1		1	3		
Grey-tailed Tattler		5					1	
Common Greenshank		1						1
Broad-billed Sandpiper		1						1
Banded Stilt		2						
Latham's Snipe		1						
Whimbrel		1						
Pectoral Sandpiper		1						
Pied Oystercatcher		1						
Pacific Golden Plover		1						
Red-capped Plover		1						
Total	3448	2039	625	294	283	274	263	209

<i>Table 2</i> <i>continued</i> Species	Indonesia	Russia	Mongolia	Malaysia	Vietnam	Brunei	East Timor	Thailand	Total All Countries
Red Knot		2							2785
Bar-tailed Godwit									1770
Red-necked Stint	45	35	25	4	2	1	1	1	1441
Curlew Sandpiper	22	2		1	1				809
Sanderling	1	2							310
Great Knot									117
Sharp-tailed Sandpiper	1								81
Eastern Curlew		1							79
Ruddy Turnstone									73
Greater Sand Plover					1				25
Grey Plover									23
Lesser Sand Plover									16
Red-necked Avocet									13
Black-tailed Godwit									9
Double-banded Plover									8
Terek Sandpiper									6
Grey-tailed Tattler									6
Common Greenshank									2
Broad-billed Sandpiper									2
Banded Stilt									2
Latham's Snipe									1
Whimbrel									1
Pectoral Sandpiper									1
Pied Oystercatcher									1
Pacific Golden Plover									1
Red-capped Plover									1
Total	69	42	25	5	4	1	1	1	7583

Table 3: Total number of sightings within Australia of Victorian-flagged waders away from the flagging location to 31 July 2006.

Species	SA	WA	QLD	NSW	Vic	TAS	NT	Total (Aust)
Red-necked Stint	215	193	47	76	161	77	14	783
Curlew Sandpiper	61	153	31	60	15	25		345
Red Knot	60	55	111	69	1	7	11	314
Sanderling	99	18	4	11	32	4	4	172
Bar-tailed Godwit		22	92	35	3	1		153
Great Knot	7	5	53	2		1	9	77
Sharp-tailed Sandpiper	9	6	10	11	13		4	53
Eastern Curlew	2		28	11		2		43
Ruddy Turnstone	17	6		4		4	2	33
Lesser Sand Plover			14	1				15
Greater Sand Plover			13	1				14
Red-necked Avocet				4	9			13
Black-tailed Godwit		2		3				5
Grey-tailed Tattler			5					5
Banded Stilt	2							2
Grey Plover		1			1			2
Latham's Snipe					1			1
Whimbrel			1					1
Common Greenshank				1				1
Terek Sandpiper			1					1
Pectoral Sandpiper				1				1
Broad-billed Sandpiper					1			1
Pied Oystercatcher				1				1
Pacific Golden Plover				1				1
Red-capped Plover					1			1
Double-banded Plover					1			1
Total	472	461	410	292	239	121	44	2039

Table 4:

Total number of sightings of Victorian-flagged waders each year to 31/7/06

Year	New Zealand	Australia	Hong Kong (China)	USA	China (mainland)	Korea	Japan	Taiwan (China)	Indonesia	Russia	Mongolia	Malaysia	Vietnam	Brunei	East Timor	Thailand	Total
1990	1		4														5
1991	10	18	1				2										31
1992	25	39	2				10	1	1					1			79
1993	18	88	53				8	2	1							1	171
1994	14	76	26				7	1		2			1				127
1995	13	37	7				13	3		1		1	1				76
1996	23	39	10				26	1		11			1				111
1997	23	52	28		2	4	34	8	2	1							154
1998	41	135	96		1	7	32			1							313
1999	70	128	55	14	3	8	36	12		8	1						335
2000	95	150	50	1	2	13	24	18	1	5	16	1	1				377
2001	173	187	55	18	7	10	31	19		1	1						502
2002	342	194	43	22	32	18	17	21		2							691
2003	572	206	50	74	4	4	8	26		1		1					946
2004	378	228	61	53	107	21	10	36	6	3	7	1					911
2005	1091	281	53	112	88	38	5	52	51	5		1					1777
2006	559	181	31		37	151		9	7	1					1		977
Total	3448	2039	625	294	283	274	263	209	69	42	25	5	4	1	1	1	7583

Flag Sighting Reports on Selected Species

Black-tailed Godwit

Australian

18/03/2006	1	Stockton Sandspit, Hunter Estuary, near Newcastle, NSW	Alan Morris	837 NE
19/03/2006	1	Kooragang Dykes, Kooragang Island, near Newcastle, NSW	Alan Morris	837 NE

Overseas

13/05/2005	1	Ganghwa Island, Gyeonggi Province, Korea	Park Gun-Seok	8618 N
16/04/2006	1	Lun-Wei, Changhua County, Taiwan, Taiwan (China)	Chie-Jen Ko	7371 NW

This species has been extremely productive in terms of the number of flag sightings which have resulted from the number of birds flagged. Until a fourth Black-tailed Godwit was marked in 2005, only three had been flagged in Victoria over the years. The above sightings now increase the number seen overseas to four and the number seen elsewhere in Australia to five. It looks as if one bird relocated to north-western Australia and another to the Hunter Estuary, near Newcastle, in NSW. Taiwan/ mainland China/ north Korea are used for migratory stopovers.

Whimbrel

Australian

11/02/2006	1	Pine Rivers, Moreton Bay, QLD	Floss Wainwright and Ken Cowell	1409 NE
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This is the first sighting of a Whimbrel flagged in Victoria. Only 25 have been flagged up to the end of 2005. The early date of this sighting in Queensland suggests that this bird had changed its non-breeding area because birds do not normally leave Victoria on northward migration until the end of March/ early April.

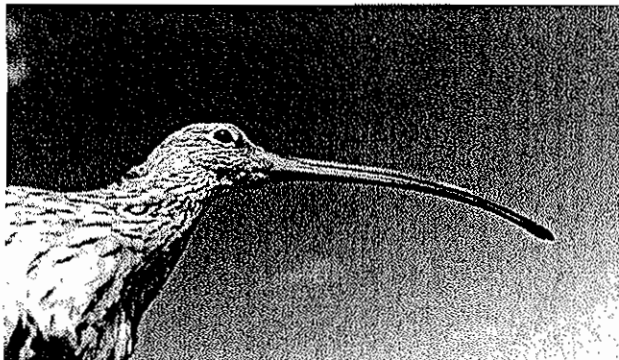
Eastern Curlew

Australian

13/08/2005	2	Great Sandy Mathieson Homestead, QLD	John Knight	1591 NE
14/08/2005	1	Great Sandy Mathieson Homestead, QLD	John Knight and Paul Hollin	1591 NE
20/08/2005	1	Kooragang Dykes, Kooragang Island, near Newcastle, NSW	Liz Crawford, Steven Cox, Chris Herbert and Ann Lindsey	837 NE
21/09/2005	1	Comerong Island, Shoalhaven Heads, NSW	Margaret Hamon	621 NE

Overseas

6/06/2006	1	Arhara settlement, Amur Region, Russia	Alexey Antonov	9834 N
11/07/1995	1	Awase, Okinawa City, Okinawa, Japan	(unknown)	7371 N
21/03/2006	1	Sundoo-ri, near Ganghwa (Kanghwa), Inchon, Korea	Park Gun-Suk	8617 N
25/03/2006	1	Gung-ri, Hongsung, Korea	Kim Hyun-tae	8509 N
31/03/2006	1	Hongsung, Korea	Phil Battley, Nial Moores and John Geale	8342 N
1/04/2006	1	Gyehwado, Korea	Nial Moores	8423 N
1/04/2006	1	Southwest site 1, 8 km southwest of Gyehwado, Korea	Nial Moores, Phil Battley, John Geale	8419 N
3/04/2006	1	Janggu Bay, Seocheon, Korea	Nial Moores	8453 N
3/04/2006	1	Janggu Bay, Korea	Phil Battley, Nial Moores	8453 N
13/04/2006	1	Shellfishery Harbour, Korea	Danny Rogers, John Geale, Kevin White, Kelly White	8446 N



Eastern Curlew (Photo by Marg Renni)

This year's sightings are more numerous than in past years. This is probably because of the intense fieldwork efforts in Korea during the northward migration season in 2006. It is not clear how many individual birds were involved. The 21st March was an early date for a bird to be as far north as Korea, but Eastern Curlew is the first species to depart from Victoria each year, in early March. Their breeding grounds are relatively further south than most of the other northern hemisphere birds which visit us and so the breeding season starts early. It was particularly valuable to receive a flag sighting this year from the breeding grounds in the Amur River region in south-eastern Siberia. The sightings in Queensland and northern NSW are almost certainly birds on their return southward migration to Victoria.

Grey-tailed Tattler

Australian

4/10/1997	1	Toorbul, near Bribie Island, QLD	Trevor Ford	1435 NE
25/08/2005	1	Toorbul, near Bribie Island, QLD	Dez Wells	1435 NE

Overseas

29/08/1997	1	Nanko Bird Sanctuary, Suminoe, Osaka, Japan	Toshikazu Oonishi	8137 N
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It was amazing to get a flag sighting overseas and two within Australia from only five Grey-tailed Tattler ever flagged in Victoria. There have been three previous sightings from Queensland but the one above from Japan 1997, which has just reported to us, was the first from overseas.

Great Knot

Australian

19/02/2005	1	Baird Bay (West Eyre Peninsula), SA	John Wright	1106 NW
28/08/2005	1	Great Sandy Mathieson Homestead, QLD	John Knight	1591 NE
17/09/2005	1	Toorbul, near Bribie Island, QLD	Dez Wells	1435 NE
23/09/2005	1	Great Sandy Mathieson Homestead, QLD	John Knight, Peter Royally, Bill and Avis Gould	1591 NE
24/09/2005	1	mouth of the Ross River, near Townsville, QLD	Jo Wieneke	2091 N
14/10/2005	1	Boonooroo, near Maryborough, QLD	Chris Barnes	1560 NE
29/11/2005	1	Stilt Viewing, Roebuck Bay, Broome, WA	Kejia Zhang Chongming East End Nature Reserve for Wetlands and Birds	3131 NW
9/12/2005	1	Price Saltworks, Upper Yorke Peninsula, SA	Chris Thomas	750 NW
14/12/2005	1	80 Mile Beach, WA	Adrian Boyle	3095 NW

Overseas

28/04/2005	1	Fujimae Tidal Flat, Nagoya, Aichi, Japan	Maayoshi Yamakawa	8262 N
27/04/2005	1	Okku, Mangyeong, Saemangeum, Korea	Onishi Toshikazu	8423 N
3/04/2006	1	Saemangeum, Korea	Nial Moores	8423 N
23/04/2006	2	Shellfishery Harbour, Korea	Danny Rogers, Simon Cohen	8446 N
24/04/2006	1	Shellfishery Harbour, Korea	Danny Rogers, Ken Gosbell	8446 N
24/04/2006	1	Shellfishery Harbour, Korea	Rob Schuckard	8446 N
2/05/2006	3	Simpo, Korea	Ken Gosbell	8426 N
16/05/2006	2	sandbank off airport, Korea	Adrian Boyle, Nial Moores, David Melville, Ju Yun-gi	8437 N
18/05/2006	1	Simpo, Korea	Adrian Boyle	8426 N
21/04/2006	1	Yalu Jiang Site 15, China (mainland)	Zhang Guangming	8924 N
23/04/2006	2	Yalu Jiang Site 2, China (mainland)	Sun Dong Yu, Zhang Zhi Yong, Gillian Vaughan and Keith Woodley	8915 N
10/04/2006	1	HanBou (Hanpou), ChangHwa County, Taiwan (China)	Chung-Yu Chiang	7363 NW

This is the best ever collection of flag sightings to be reported in one year. This is partly because intensive fieldwork in Korea produced twelve sightings, but this would not be the explanation for the jump to nine within Australia. The report in Japan was only the second

from that country. Only 313 Great Knot have been flagged over the years, but these have already produced 117 flag sightings.

Red-necked Avocet

Australian

20/08/2005	1	Kooragang Dykes, Kooragang Island, near Newcastle, NSW	Liz Crawford, Steven Cox, Chris Herbert and Ann Lindsey	837 NE
15/01/2006	2	Tatura Sewage Lagoons, near Shepparton, Vic	Don Roberts	148 N

The sighting in the Hunter Estuary, near Newcastle, is the fourth movement of a Red-necked Avocet from Victoria to NSW. There are now nine flag sightings away from the marking locations within Victoria. 140 Red-necked Avocet have been flagged over the years.

Grey Plover

Australian

13/11/2005	1	80 Mile Beach, WA	Adrian Boyle	3095 NW
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Overseas

15/08/1998	1	Yatsu Tidal Flat, Narashino-Shi, Chiba, Tokyo Bay, Japan	Chiba Wbsj	8209 N
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Japan seems to be greatly favoured as a stopover location for Grey Plover. The one listed above is the 19th Victorian-flagged Grey Plover reported in that country. The sighting at Eighty Mile Beach is the first in north-western Australia and the late date suggests it may have changed its non-breeding location rather than being a returning migrant on southward migration.

Red-necked Stint

Overseas

7/05/2006	1	Tasitolu, near Tasitolu village, Dili, East Timor	Colin Trainor	3812 NW
26/05/2005	1	Aniva Bay, S Sakhalin Island, Russian Far East, Russia	Falk Huettmann	9413 N
28/06/2005	1	lagoon near Anadyr Airport, Chukotka, Russia	John O'Sullivan, Christopher Zockler and Rob Schuckard	11771 N
26/07/2005	1	Chaivo Bay, Northern Sakhalin I., Russia	Andrej Y. Blokhin & Ivan M. Tiunov	10058 N
26/07/2005	2	Mallen Lagoon, Chukotka, Russia	Thomas Noah and Rob Schuckard	11434 N

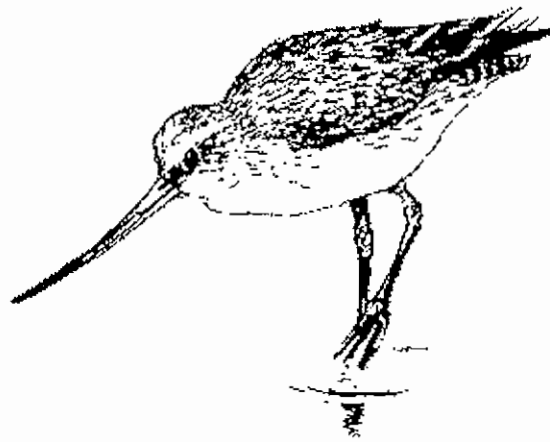
The above records are only a small selection of the 322 Red-necked Stint flag sightings reported during the past year. The sighting in East Timor of a bird on northward migration in early May is our first sighting of any Victorian-flagged wader in that country. The sightings in Russia all indicate passage to/from breeding areas in the far north-east of Siberia (the Chukotsk Peninsula). The bird seen on the 28th June near Anadyr was not actually breeding, but was probably not far from its breeding grounds.

Flagged birds from elsewhere seen in Victoria

Each year quite a number of birds flagged elsewhere are seen in Victoria. Most frequently these have been banded in South Australia (by VWSG) and in north-west Australia (by AWSG).

During the last year the most exciting flag sighting within Victoria was a Sharp-tailed Sandpiper marked at Chongming Dao, near Shanghai, in China. It was seen by Danny Rogers at Werribee Sewage Farm on 18/10/05. Three Curlew Sandpiper and three Red-

necked Stint originally flagged in north-west Australia were also seen in Victoria during the year. A total of 40 South Australian-flagged birds were seen in Victoria - 21 Sanderling, 16 Red-necked Stint and 3 Curlew Sandpiper. These latter figures particularly emphasize the mobility of Sanderling around the coasts of south-eastern Australia.



Sightings in 2005-06 of Waders leg-flagged in South Australia

REPORT NUMBER 6

Clive Minton, Roz Jessop, Peter Collins, Maureen Christie,
Iain Stewart and Heather Gibbs

This South Australian leg flag report follows a similar format to the Victorian one with comprehensive tables of summary data but with the detailed flag sightings only published for selected species.

Table 1. There were 164 sightings reported of South Australian-flagged waders away from their flagging area during the last year, 87 of these were overseas and 77 within Australia. Although Sanderling and Ruddy Turnstone are the main study species in South Australia, flag sightings this year are dominated by Bar-tailed Godwit. These are mainly further sightings in New Zealand (49 out of 51 reports) deriving from the eight juvenile birds caught in late November 2004. The sighting in South Korea is the first outside Australasia for a South Australian-flagged Bar-tailed Godwit. It was particularly pleasing to receive 20 overseas sightings of Sanderling, with the 10 in Russia being exceptional. Japan also had six Sanderling sightings and the total of 12 South Australian-flagged waders in that country put it second only to New Zealand as the country from which South Australian-flagged birds are most frequently reported.

Table 2. The number of sightings of South Australian-flagged birds since the orange/yellow dual flag combination was introduced in April 1999 has now risen to 643. Rather more than half these (372) have been from within Australia, with a further 97 from New Zealand – 82 Bar-tailed Godwit and 15 Ruddy Turnstone. Japan is third on the list with a total of 80 flag sightings, mainly because of the large number of Sanderling reported there (67).

Flagged Sanderling are very visible because of their habit of running around on open shores and being quite approachable. Thus nearly half (314) of the total flag sightings relate to this species. The many sightings within Australia reflect the considerable mobility of Sanderling around the coasts, particularly in south-east Australia. Although the number of Ruddy Turnstone flagged (1017) is not all that many less than the number of Sanderling (1424), the number of flag sightings which have resulted (74) is considerably fewer. Ruddy Turnstone are nothing like so mobile and furthermore their legs are often difficult to see when they are foraging in seaweed on the shore.

Altogether, South Australian waders have now been seen in nine different countries.

Table 3. As already mentioned, Sanderling (215) dominate the 372 sightings of South Australian-flagged birds away from the flagging areas. Many of these (150) are sightings within Victoria but it is notable that 22 were in Western Australia. Sanderling seem to use a wide range of routes on their migrations each year. Curlew Sandpiper (33), Red-necked Stint (21) and Ruddy Turnstone (18) also use Western Australia for migratory stopovers, particularly on southward migration in August/October. Some birds which have their non-breeding areas in Tasmania also stop over in South Australia on migration.

Table 4. There has been a steady growth in the number of sightings over the years of waders leg-flagged in South Australia, followed by a sudden jump in 2004 and a further marked increase (to 163) in 2005. This latter figure is particularly affected by the huge number of sightings of Bar-tailed Godwit in New Zealand. But with 57 total flag sightings so far reported in 2006 it looks possible that in the future the number of sightings may continue to be more than 100 each year.

Table 1. Sightings of SA-flagged waders by country and species August 2005 to July 2006.

Species	Australia	New Zealand	Japan	Russia	Taiwan (China)	China (mainland)	Hong Kong (China)	Korea	Total
Bar-tailed Godwit	1	49						1	51
Sanderling	22		6	10	1	3			42
Red-necked Stint	30		2		2	1	1		36
Curlew Sandpiper	18						2		20
Ruddy Turnstone	6	2	4		3				15
Total	77	51	12	10	6	4	3	1	164

Table 2. Total numbers of sightings of SA-flagged waders by country and species

Species	Australia	New Zealand	Japan	Hong Kong (China)	Taiwan (China)	Russia	Korea	China (mainland)	Indonesia	Thailand	Total
Sanderling	215		67	6	4	12	7	3			314
Red-necked Stint	76		4	4	5	3	2	3	2		99
Bar-tailed Godwit	2	82					1				85
Ruddy Turnstone	32	15	9	6	11		1				74
Curlew Sandpiper	46			16	3				1	1	67
Sharp-tailed Sandpiper	1				3						4
Total	372	97	80	32	26	15	11	6	3	1	643

Table 3. Sightings within Australia of SA flagged waders away from the flagging location to 31 July 2006.

Species	NSW	NT	QLD	SA	TAS	VIC	WA	Total (Aust)
Bar-tailed Godwit					1		1	2
Ruddy Turnstone		6		4	1	3	18	32
Sanderling	7	4	1	31		150	22	215
Red-necked Stint				10	2	43	21	76
Sharp-tailed Sandpiper						1		1
Curlew Sandpiper				4		9	33	46
Total	7	10	1	49	4	206	95	372

Table 4. Total number of sightings of SA - flagged waders by country each year to 31 July 2006.

Year	Australia	New Zealand	Japan	Hong Kong (China)	Taiwan (China)	Russia	Korea	China (mainland)	Indonesia	Thailand	Total
1995	3										3
1996	6										6
1998	38										38
1999	8		15		1	2	2				28
2000	20	1	21		2	1	1				46
2001	26	5	17	1	1	1	2				53
2002	57		3		2		1	1			64
2003	45	4	4	7	3	1	2				66
2004	80	6	14	7	8		1	1	2		119
2005	59	59	6	15	7	10	1	4	1	1	163
2006	30	22		2	2		1				57
Total	372	97	80	32	26	15	11	6	3	1	643

Flag Sighting Reports on Selected Species

Bar-tailed Godwit

Australian

29/11/2005	1	Stilt Viewing, Roebuck Bay, Broome, WA	Kejia Zhang, Pete Collins	2811 NW
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Overseas

*NZ = New Zealand

15/04/2006	1	Daemoi, Janghang, Sochon (just NW of 36 2, 126 44), Korea	Kim Hyun-tae and Lee Shon-joo	8000 N
8/02/2005	1	Awarua Bay, Southland, NZ (south island)	PFB, SJM	2512 SE
28/03/2005	2	Maketu Bay of Plenty, North Island, NZ (north island)	T. Barnard, Elaine Ward	3178 E
6/04/2005	1	Avon-Heathcote Estuary, Christchurch, NZ (south island)	Sheila Petch	2806 SE
27/05/2005	2	Avon-Heathcote Estuary, Christchurch, NZ (south island)	Rob Schuckard	2806 SE
28/05/2005	2	Avon-Heathcote Estuary, Christchurch, NZ (south island)	Rob Schuckard	2806 SE
11/07/2005	1	Nelson Haven, NZ (south island)	Peter Field	2859 E
28/07/2005	1	Nelson Haven, NZ (south island)	Peter Field	2859 E
29/07/2005	1	Avon-Heathcote Estuary, Christchurch, NZ (south island)	Sheila Petch	2806 SE
5/08/2005	1	Nelson Haven, NZ (south island)	Peter Field	2859 E
10/08/2005	2	Tauranga Harbour, NZ (north island)	Phil Battley and Eila Lawton	3157 E
20/08/2005	1	Avon-Heathcote Estuary, Christchurch, NZ (south island)	Jan Walker and Sheila Petch	2806 SE
22/08/2005	1	Nelson Haven, NZ (south island)	Peter Field	2859 E
7/09/2005	1	Nelson Haven, Nelson, NZ (south island)	David and Julia Melville	2859 E
8/09/2005	2	Nelson Haven, Nelson, NZ (south island)	David and Julia Melville, Peter Field	2859 E
9/09/2005	1	Nelson Haven, Nelson, NZ (south island)	David and Julia Melville, Peter Field	2859 E
16/09/2005	1	Avon-Heathcote Estuary, Christchurch, NZ (south island)	Jan Walker, Sheila Petch and Filipe Moniz	2806 SE
17/09/2005	1	Avon-Heathcote Estuary, Christchurch, NZ (south island)	Jan Walker, Sheila Petch and Filipe Moniz	2806 SE
23/09/2005	1	Avon-Heathcote Estuary, Christchurch, NZ (south island)	Jan Walker, Sheila Petch and Filipe Moniz	2806 SE
5/10/2005	1	Farewell Spit, Gobi, near Nelson, NZ (south island)	Rob Schuckard	2819 E
11/10/2005	1	Brooklands Lagoon, Canterbury, NZ (south island)	Jan Walker	2804 SE
18/11/2005	1	Avon-Heathcote Estuary, Christchurch, NZ (south island)	Andrew Thomas	2806 SE
18/12/2005	1	Maketu Bay of Plenty, NZ (north island)	T. Barnard	3178 E
2/01/2006	1	Avon-Heathcote Estuary, Christchurch, NZ (south island)	Sheila Petch	2806 SE
3/01/2006	2	Avon-Heathcote Estuary, Christchurch, NZ (south island)	Sheila Petch	2806 SE
3/01/2006	1	Ashley River Estuary, Christchurch, NZ (south island)	Sheila Petch et al.	2801 SE
4/01/2006	1	Ashley River Estuary, Christchurch, NZ (south island)	Jan Walker	2801 SE
5/01/2006	1	Ashley River Estuary, Christchurch, NZ (south island)	Jan Walker	2801 SE
4/02/2006	1	Little Waihi, Bay of Plenty, NZ (north island)	T. Barnard	3182 E
26/02/2006	2	Avon-Heathcote Estuary, Christchurch, NZ (south island)	Rob Schuckard and David Melville	2806 SE
27/02/2006	2	Avon-Heathcote Estuary, Christchurch, NZ (south island)	Rob Schuckard and David Melville	2806 SE
6/03/2006	1	Avon-Heathcote Estuary, Christchurch, NZ (south island)	David Melville	2806 SE
18/03/2006	1	Motueka Sandspit, near Nelson, NZ (south island)	David Melville	2836 E
20/03/2006	1	Motueka Sandspit, near Nelson, NZ (south island)	Rob Schuckard	2836 E
30/03/2006	1	Motueka Sandspit, near Nelson, NZ (south island)	David Melville	2836 E
31/03/2006	1	Motueka Sandspit, near Nelson, NZ (south island)	Rob Schuckard	2836 E
3/04/2006	1	Motueka Sandspit, near Nelson, NZ (south island)	David Melville	2836 E
16/04/2006	1	Motueka Sandspit, near Nelson, NZ (south island)	David Melville	2836 E
30/05/2006	1	Avon-Heathcote Estuary, Christchurch, NZ (south island)	Jan Walker and Sheila Petch	2806 SE
30/05/2006	1	Motueka Sandspit, near Nelson, NZ (south island)	Pauline Samways	2836 E
18/06/2006	1	Motueka Sandspit, near Nelson, NZ (south island)	David Melville	2836 E
11/07/2006	1	Porangahau Estuary, Hawkes Bay, NZ (north island)	Brent Stephenson	3150 E

The incredible story continues! (see 2005 VWSG Bulletin, page 74, "From Little Things ."). After the 33 sightings in New Zealand reported to the end of June 2005, there have now been a further 49 there. These have all derived from just eight juvenile birds flagged in South Australia on the 23rd November 2004! It is no longer possible to make a judgement on which records in New Zealand refer to a particular individual but it is clear that several birds are involved and that they have all probably been seen many times, often at several different locations.

In contrast, one of the eight was seen at Broome in north-western Australia on the 29th November 2005. What it was doing up there at that time, given that it is supposed to be part of the eastern Australian/ New Zealand population, sub species *baueri*, is not clear.

The sighting in Korea on 15th April 2006 almost certainly relates to one of the three Bar-tailed Godwit originally flagged in South Australia on the 21st October 2002. One of these birds has regularly been seen in the intervening period at the southern end of South Island, New Zealand. It now appears to have made its first northward migration. It will be interesting to see how many of these other distinctively flagged Bar-tailed Godwit (the O/Y combination seems to show up better in the field than any other) eventually are also seen in Asia or Alaska on migration.

Sanderling *Australian*

20/08/2005	1	Lee Point, Darwin, NT	Arthur and Sheryl Keales	2996 N
6/10/2005	18	Bridgewater Lakes, Vic	Robert Farnes and Adam Rigg	127 E
23/02/2006	2	Killarney Beach, Port Fairy, VIC	Barbara Garrett	206 E
6/05/2006	1	Rye, Vic	Grainne Maguire	424 E

Overseas

24/05/2005	1	Chaivo Bay, Northern Sakhalin I., Russia	Andrej Y. Blokhin & Ivan M. Tiunov	10062 N
25/05/2005	1	Chaivo Bay, Northern Sakhalin I., Russia	Andrej Y. Blokhin & Ivan M. Tiunov	10062 N
16/08/2005	1	Chaivo Bay, Northern Sakhalin I., Russia	Andrej Y. Blokhin & Ivan M. Tiunov	10052 N
17/08/2005	3	Chaivo Bay, Northern Sakhalin I., Russia	Andrej Y. Blokhin & Ivan M. Tiunov	10057 N
17/08/2005	3	Chaivo Bay, Northern Sakhalin I., Russia	Andrej Y. Blokhin & Ivan M. Tiunov	10069 N
28/08/2005	1	Chaivo Bay, Northern Sakhalin I., Russia	Andrej Y. Blokhin & Ivan M. Tiunov	10052 N
14/09/2003	1	Osaka-north port, Osaka-shi, Osaka, Japan	Nanko-Group96	8092 N
7/08/2004	1	Shigama Beach, Misawa, Aomori, Japan	Junichi Ebina	8765 N
1/09/2005	2	Arechi, Taiyo-mura, Ibaraki, Japan	Hiroyuki Akita	8241 N
2/09/2005	1	Ichinomiya River Estuary, Chosei, Chiba, Japan	Masamichi ITO	8161 N
11/09/2005	1	Ichinomiya River Estuary, Chosei, Chiba, Japan	Toshiki Bando	8181 N
3/09/2005	1	Estuary of Mingjiang River, Fuzhou, Fujian Province, China (mainland)	Zhang Xuliang (Vivian) Fujian Birdwatching Society	7430 N
10/09/2005	2	Estuary of Mingjiang River, Fuzhou, Fujian Province, China (mainland)	Zhang Xuliang (Vivian) Fujian Birdwatching Society	7430 N
7/09/2005	1	Yung-Hsing, ChangHua County, Taiwan (China)	Chia-Yang Tsai	7190 N

It was a good year for overseas sightings of Sanderling, with ten records from Sakhalin Island in Russia being especially noteworthy. These refer to one bird on northward migration and at least three on southward migration. The three sightings in mainland China were the first ever for this species of birds flagged in South Australia. As usual most of the sightings in Japan (six) were birds on southward migration.

Flagged birds from elsewhere seen in South Australia

The highlight was a Sharp-tailed Sandpiper flagged at Chongming Dao, near Shanghai, China, seen twice (by Terry Dennis) at Goolwa in January 2006. Also notable were a series

of sightings of Victorian-flagged Red Knot at Lake George between the 21st May and the 12th June, with a maximum of 14 (in a flock of 140) noted at any one time. It is clear that a core part of the Victorian one year old Red Knot population, which stays here during its first austral winter, had translocated to South Australia. One of these was captured and had originally been banded at Swan Island, Queenscliff. Altogether there were 84 Victorian-flagged waders seen in South Australia during the past year, from a wide variety of species – 39 Red-necked Stint, 30 Red Knot, six Curlew Sandpipers, four Sanderling, two Ruddy Turnstone, two Sharp-tailed Sandpiper and even a Great Knot.



Engraved flag making, Doris Graham and Graeme Rowe (Photo R. Jessop)

Tern Recovery Report 2005/06

Clive Minton, Roz Jessop, Peter Collins and Robyn Price

Recoveries of banded terns continue to accrue each year. Most of these are Crested Terns banded as chicks at The Nobbies, Mud Islands or Corner Inlet colonies. A trickle of recoveries of Caspian Terns also comes in but these days information on their movements mostly derives from sightings of birds orange flagged as chicks at either Mud Islands or in Corner Inlet. Although very little banding of Common Terns and Little Terns is carried out (see separate Tern Report), we still continue to receive recoveries of birds banded in earlier years.

Detailed below are all recoveries reported in the last year.

Caspian Tern

Band	Age	Date Banded	Location Banded	Date Recovered	Location Recovered	KM Moved
091-4461	Nestling	09/01/2005	Manns Beach, Corner Inlet	27/06/2005 (found dead)	Pine Dam, Lake Samsonvale, Qld	1388 NE
091-44598	Nestling	21/12/2004	Manns Beach, Corner Inlet	07/06/2006 (found sick/injured)	Hervey Bay, Qld	1592 N

These recoveries in south-eastern Queensland are in the main area to which Caspian Terns from Victoria migrate during the winter. Most recoveries are from the coast but one was at a lake a little inland.

Crested Tern

The recovery data has been sorted into separate tables depending on the banding location and also on whether the birds were found alive or recovered dead.

Recoveries of Crested Terns banded as chicks at Mud Islands, Port Phillip Bay.

Band	Date Banded	Date Resighted	Location Resighted	Km Moved
073-42296	12/12/2004	19/02/2006	Hollands Landing, near Sale	237 E
071-51347	21/12/1986	05/04/2006 (recaptured)	At sea off Tasman Pen., Tas.	599 SE (19y 3m)
073-32970	18/12/2005	06/04/2006	Halibut Oil Platform, Victoria	311 E
073-43107	20/12/2005	28/05/2006	Mystery Bay, S of Narooma, NSW (found sick/injured, bird then died)	506 NE

Recoveries of Crested Terns banded as chicks at Mud Islands, Port Phillip Bay - found dead, or with injuries leading to death

Band	Date Banded	Date Recovered	Location Recovered	KM Moved
072-65487	17/12/1995	20/12/2000	Off Manns Beach	187 E
072-65451	17/12/1995	28/06/2001	Brighton Beach	44 NE
071-97595	16/12/1989	24/01/2002	Flynn Beach, Phillip Island	42 SE (12y 1m)
073-08619	13/12/2001	10/02/2002	Breamlea Beach, Victoria	31 W
072-36155	18/12/1993	22/08/2005	Cleeland Bight, Phillip Island	60 SE (11y 8m)
073-13429	23/12/2002	16/10/2005	Western Cove, Kangaroo Is, SA	734 W
073-39969	01/12/2004	22/10/2005	Main Beach, SW Rocks, NSW	1121 NE
072-47460	18/12/1994	06/11/2005	Newhaven Yacht Club, Phillip Island	58 SE (10y 10m)
073-05179	06/12/2000	30/11/2005	Edwards Pt Beach, St Leonards, Victoria	8 NW
073-05737	16/12/2000	06/12/2005	Mud Is, Port Phillip Bay	0
073-20465	26/11/2003	27/12/2005	Newhaven Jetty, Victoria	59 SE
073-32652	20/12/2005	01/02/2006	Woolamai Surf Beach, Phillip Island	58 SE
072-92364	17/11/1999	13/02/2006	Woolamai Surf Beach, Phillip Island	60 SE
073-32627	18/12/2005	30/03/2006	Queenscliff Beach	8 W
071-97650	16/12/1989	26/03/2006	Surfies Point	52 SE (16y 3m)
073-32196	06/12/2005	15/04/2006	Woolshed Bight, Phillip Island	41 SE
073-39388	01/12/2004	17/05/2006	Cape Woolamai, Phillip Island	62 SE
073-42642	08/11/2005	06/06/2006	Evans Head Beach, NSW	1299 NE

Recoveries of Crested Terns banded as chicks at The Nobbies, Phillip Island - found dead, or with injuries leading to death, except where specified

Band	Date Banded	Date Recovered	Location Recovered	KM Moved
073-07543	04/01/2001	12/05/2001	Woolamai Safety Beach, Phillip Island	20 E
073-27229	18/12/2003	15/09/2005	Wattle Point, Bairnsdale	228 E
073-16856	17/12/2001	02/10/2005	Nelson, Mouth of Glenelg River	361 W
073-40193	03/12/2004	04/12/2005	Foochow Beach, Flinders Is, Tasmania	284 SE
073-43632	20/12/2005	30/01/2006	Warrnambool	230 W
072-91435	03/12/1999	21/02/2006	Point Grant, Phillip Island	0 (6y 2m)
073-45127	20/12/2005	22/02/2006	Geelong	77 NW
073-43102	20/12/2005	11/03/2006	Near Queens Head, Pt Macquarie, NSW	1073 NE
073-41922	20/12/2005	13/03/2006 (injured, alive in captivity)	Fenninghams Is, Anna Bay, NSW	897 NE
073-43107	20/12/2005	10/04/2006 (injured, released alive)	Tathra, NSW	473 NE
073-06682	19/12/2000	11/04/2006 (injured, released alive)	Tathra, NSW	473 NE
073-43380	20/12/2005	11/04/2006	Ocean Grange, Gippsland Lakes	239 E
073-45291	20/12/2005	28/06/2006	Aslings Beach, Eden, NSW	449 E
073-28735	10/01/2004	04/07/2006	Vincentia Beach, NSW	625 NE

Recoveries of Crested Terns banded as chicks at The Nobbies, Phillip Island

Band	Date Banded	Date Resighted	Location Resighted	KM Moved
073-06267	19/12/2000	19/05/2001 (found sick & left there)	N side Double Island Point, QLD	1589 NE
073-28954	03/12/2004	02/08/2005 (caught in fishing gear, released alive)	Hervey Bay, QLD	1641 NE
073-40258	03/12/2004	15/02/2006	Hollands Landing near Sale	210 E
073-40683	20/12/2004	16/02/2006	Hollands Landing near Sale	210 E

Recoveries of Crested Terns banded as chicks off Manns Beach, Corner Inlet and later found dead

Band	Date Banded	Date Recovered	Location Recovered	KM Moved
073-42483	09/01/2005	11/10/2005	Mystery Bay, NSW	392 NE
073-42507	09/01/2005	20/02/2006	North Shore, Noosa, QLD	1497 NE

Recoveries of Crested Terns banded elsewhere

Band	Age	Date Banded	Location Banded	Date Recovered	Location Recovered	KM Moved
072-82123	3+	01/02/2003	Spermwhale Head/ Ocean Grange area	05/11/2005 (found dead)	Clonmel Island	122 NW

The pattern of recoveries from all three banding locations is similar. Local recoveries, within 100 km of the banding location, mostly occur very soon after chicks fledge as these naive young birds learn to feed themselves (which they are not very good at) and learn about the hazards of life (such as fishing line). Recoveries of birds which have matured to adults are also usually fairly close to their natal area.

Recoveries in autumn and winter are mainly of birds moving towards, or on, their wintering grounds in northern New South Wales and the very southeast of Queensland. The longest movement was to Hervey Bay (1641 km NE). Some of these movements, even of juveniles, can be quite rapid. For example one banded as a chick at The Nobbies colony on 20th December 2005 was already 1073 km away on the northern New South Wales coast by 11th March 2006. Another banded on the same day was recovered in the same area on 13th March.

In contrast a small number of birds moved westwards, the most rapid of which was found in Warrnambool, 230 km west of where it was banded at The Nobbies, only a month after banding (which probably means within two weeks of actually fledging). A couple of older birds were found rather further west, one at the mouth of the Glenelg River near Nelson and another on Kangaroo Island in South Australia. This latter bird is our furthest westward recovery so far (734 km W).

Crested Terns can live to a considerable age, compensating for the many which die in their first year. The tables show the ages of the oldest birds reported in the last year. The oldest was over 19 years old, and there was another which was over 16 years old.

Little Tern

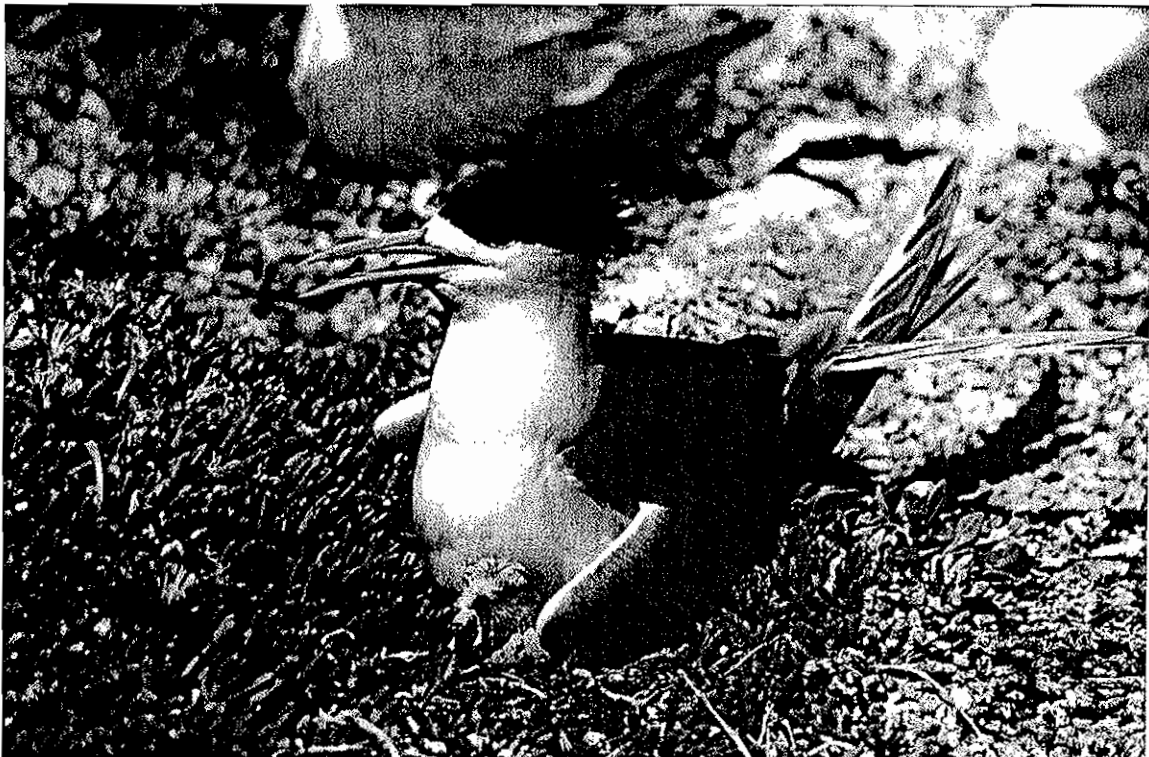
Band	Age	Date Banded	Location Banded	Date Seen	Location Seen	KM Moved
042-00419	2+	25/01/1999	The Cut, Mitchell R., Lakes NP, Victoria	05/01/2005	Tathra, NSW	236 NE
042-15419	2+	01/12/1999	Rigby Island, Lakes Entrance	28/12/2005	Lake Tyers, Victoria	11 E

The first bird in the above table had changed its breeding location from Victoria to New South Wales. The other was still breeding close to the original banding location six years later.

Common Tern

Band	Age	Date Banded	Location Banded	Date Seen	Location Seen	KM Moved
051-19790	2+	26/01/1997	Albifrons Is Ocean Grange Lakes NP, Victoria	06/02/2004	Loch Sport, Victoria	19 SW

This recovery is of a bird which had returned to the same area seven years after it was originally banded. Presumably it had migrated back to its central Siberian breeding grounds in each of the intervening years.



Crested Tern with chick at The Nobbies (Photo R. Jessop)

Tern Breeding and Banding Report 2005/06

Clive Minton, Roz Jessop, Peter Collins and Susan Taylor

Tern breeding success in the 2005/06 breeding season was variable. Caspian Tern numbers were down significantly, Crested Tern numbers were down but still extremely high, and as far as we know Fairy and Little Terns didn't nest at all! More detailed information on each species is given below.

Caspian Tern

Location	Breeding pairs	Chicks banded
Mud Islands	20	17
Corner Inlet	43	31
Totals	63	48

The number of breeding pairs at the Mud Islands colony increased slightly from the previous year (from 15 to 20 pairs) and breeding success was much better than usual (17 chicks banded). The Caspian Terns there are very susceptible to predation by the huge numbers of breeding Silver Gulls. Fortunately in recent years the Caspian Terns seem to have got better at defending their eggs against marauding gulls.

It was an unusually early breeding season for the Caspian Terns at Mud Islands. Megan Underwood, who visits the island regularly because of her Ph.D. studies on White-faced Storm Petrels, reported that some birds were already on eggs on the 20th September. There were 15 pairs of Caspian Terns with eggs by the 7th October and four pairs had already hatched chicks by the 17th October. Normally Caspian Terns do not start laying until early October, with the first chicks hatching in late October or early November.

The colony on the west end of Clonmel Island in the Nooramunga National Park, Corner Inlet, continued the fluctuating pattern of recent years. The number of breeding pairs, 43, was down on the normal range of 50 to 90 pairs, but they had reasonable breeding success, with 31 chicks banded. The breeding season was shorter than usual, with few re-nesting attempts. Also the Crested Terns did not nest adjacent to them this year.

Crested Tern

Location	Breeding Pairs	Chicks banded	Banded adults retrapped at nest	Sightings of colour banded adults*
Mud Islands	1850	1644	176	508 (1961)
The Nobbies	2800	2579	41	29 (275)
Corner Inlet	300	11	--	--
Totals	4950	4234	217	537 (2236)

After the previous year's record breeding population, 5420 breeding pairs, there was a downturn in the 05/06 season to 4950 breeding pairs. However, this is still second highest total ever for the central Victorian/ South Gippsland coast.

The Mud Islands colony was still large, 1850 pairs, but this is a marked reduction from the exceptional level of 2460 pairs the previous year. They had excellent breeding success with 1644 chicks being banded. Since almost all of these probably fledged successfully, the conversion rate of eggs to fledged young was around 90% (allowing for the fact that there were still some unhatched eggs at the time of the last visit on 18th December).

Crested Terns also had an exceptionally early breeding season at Mud Islands. The first three pairs were sitting on their egg on the 7th October. The colony had grown to 250 nesting pairs by the 17th October. There were already 69 Crested Tern chicks available for banding on the 8th November. In most years the first Crested Terns do not lay until late October, with most laying in the first half of November.

The Nobbies colony, on the west end of Phillip Island, increased slightly from the previous year – 2800 pairs, from 2600 pairs. Breeding success was again very high with 2579 chicks being banded. Taking into account a few unhatched eggs at the last visit on 17th January, being offset by a few chicks which died before fledging, this gives a breeding success rate of 92%. This is exceptional for a colonial nesting sea bird. Crested Terns in Victoria are such excellent defenders of their nest and their chicks against Silver Gull predation that it seems that the only real threats to breeding success are storm tides, wind blown sand or catastrophic failure of the food supply. Fortunately the Nobbies colony and the Mud Islands colony (now) are both safe from tide/ weather effects.

In contrast, the Crested Tern colony in Corner Inlet has always been extremely vulnerable. Only when the terns have occasionally nested on rather higher sand dunes have they been free from losses by flooding in storm tides or by burying of the nests with wind blown sand. This year most had already failed in their breeding attempt by the time of our first visit on the 21st December. On that date there were flocks of adult birds present at various locations but no nesting colony was found. We subsequently learned that a colony, possibly of as many as 300 pairs, had tried to nest on the eastern end of Box Bank. When we visited that area on the 12th January however there were only about 30 recently fledged and unfledged chicks present. It appears that storm tides in December wiped out most of the colony. Crested Terns do not normally re-lay after losing their single egg clutch. This is in contrast to Caspian Terns which lay up to three eggs and will normally have at least one repeat attempt after failure.

Studies aimed at determining the range of ages at which Crested Terns breed for the first time were continued at Mud Islands and The Nobbies. This year, however, only 217 banded breeding adults were retrapped at the nest, mostly at Mud Islands. Searches for breeding birds carrying coloured metal bands were continued, with an excellent total of 537 seen. These coloured bands indicate the year of hatching of the bird. Whilst we have now ceased coloured metal banding the yearly cohorts of chicks at Mud Island, we will need at least another two years of observations before this study is complete. To date it looks as if the greatest number of Crested Terns pair and breed for the first time at age four, but quite a number do so at ages three and five, and very occasional birds at ages two and six.

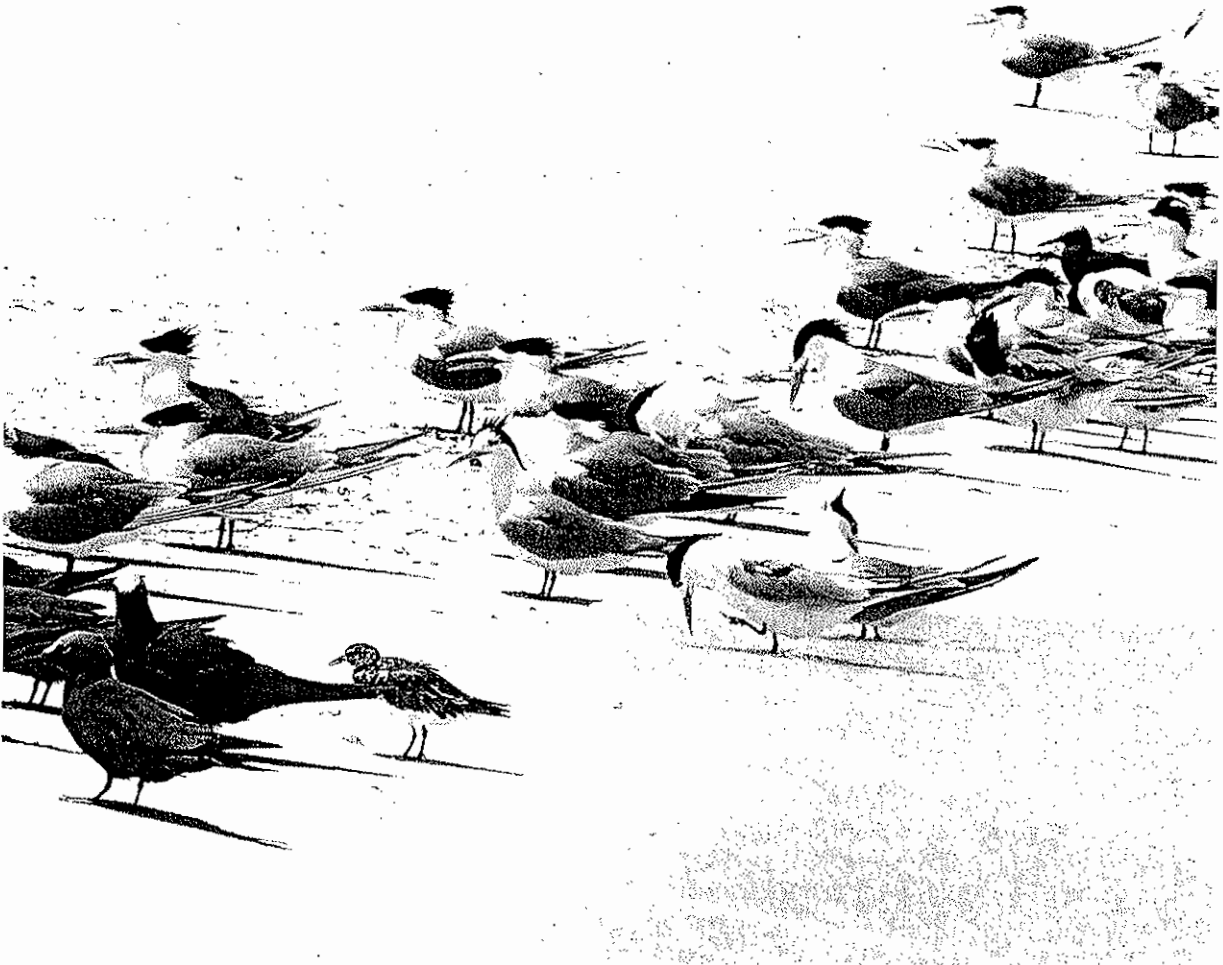
Fairy / Little Tern

Searches of Corner Inlet at various times in December/ early February failed to find any nesting colony of Fairy Terns (or any Little Terns) this year. Up to 50 Fairy Terns were seen at times in the area. It is quite probable that at least some of these made a nesting attempt earlier in the season but were washed out by storm tides in December. It is not clear why they did not re-nest this year as they have done previous years.

Other Tern Banding

In spite of several searches, no reasonable opportunity for catching Common Terns and Little Terns in the Gippsland Lakes was found. Between 1989 and around 2000 there used to be up to 2000 Common Terns and more than 1000 Little Terns present in the Lakes between January and March each year. Several hundred birds were usually caught in one or two visits. Since then the populations of terns seem to have reduced quite markedly and also a number of potential roosting sites on sandy spits and beaches have disappeared or become too small for extensive use. Part of the cause may be the much larger numbers of Crested Terns present there but other causes may be associated with possible changes in water level and food supply. Our tern studies there have therefore greatly reduced over the last six years.

Small numbers of Fairy Terns (17), Caspian Terns (4) and Crested Terns (20) have been caught as by-catch to wader cannon netting during the year.



*Crested and Lesser Crested Terns and Noddies at Michelmas Cay
(Photo Digger Jackson and Lauren Beasley)*

Tern Flag Sighting Report 2005/06

Clive Minton, Roz Jessop, Peter Collins and Heather Gibbs

Sightings of colour leg-flagged terns continue to be reported each year (39 between August 2005 and July 2006), but at a much lower rate than in previous years on all species except Caspian Terns. This is because of the lack of catching of Common Terns and Little Terns in the Gippsland Lakes (see Tern Breeding and Banding Report, page 41). Only Caspian Terns, where orange flagging of chicks did not commence until 1999, are now still producing good annual numbers of flag sightings (24 in the last year).

Altogether 1047 colour marked terns have been seen away from their original banding location. Common Terns (598) accounted for nearly 60% of these (Table 1). Most of these were along the east coast of Australia and relate to birds on northward or southward migration from/to Victoria from their breeding areas in central Siberia. There have also been three sightings of Victorian-flagged Common Terns in Japan and one in the Philippines.

Table 1. Total number of sightings of Victorian - flagged terns to 31 July 2006

Species	Australia	NSW	QLD	Vic	SA	Tas	Japan	Philippines	Taiwan (China)	Total
Common Tern	297	216	64	17			3	1		598
Caspian Tern	126	12	90	22	1	1				252
Little Tern	49	37	12				6		1	105
Crested Tern	45	9	4	18	11	3				90
Fairy Tern	1	1								2
Total	518	275	170	57	12	4	9	1	1	1047

Little Terns have produced fewer flag sightings (105) because of the lesser numbers marked. Again most of these are birds on passage along the east coast of Australia. However there have been six sightings of Victorian-flagged Little Terns on their breeding grounds in Japan and another in Taiwan.

The flagging of Caspian Tern chicks, on different legs to differentiate between birds from the Mud Islands and Corner Inlet colonies, has been extremely productive. The 252 flag sightings have enormously increased the information on the migration of Caspian Terns within Australia, with most Victorian birds spending the austral winter on the northern New South Wales coast and in south-east Queensland (up as far as Fraser Island). The occasional Caspian Tern has also wandered westward into South Australia and southward into Tasmania.

The sightings of colour marked Crested Terns have been a by-product of the colour metal banding program on chicks of that species to help determine (by re-sightings at the nest) the age of first breeding. There have been 90 sightings however at more distant locations including a surprising number (11) into South Australia and three into Tasmania. They also move up to the northern New South Wales coast and into south-east Queensland in the austral winter but, in contrast to the Caspian Tern, the greater proportion remain south of the border.

As already mentioned, the peak in numbers of flag sightings (103 in 2001) reported annually occurred some years ago when the maximum number of flagged Common Terns and Little Terns were in circulation (Table 2). It is only the good numbers of flagged Caspian Tern sightings in recent years which have kept the numbers of tern flag sightings reported annually from dropping much lower. There hasn't been a flag sighting in Japan, or indeed anywhere overseas, since 2002. This is because it is only the migratory Common and Little Terns which visit there.

Table 2. Number of sightings of Victorian-flagged terns each year to 31 July 2006

Year	NSW	QLD	SA	Tas	Vic	Australia	Japan	Philippines	Taiwan (China)	Total
1991					1	1				1
1994	9				1	10				10
1995	5				4	9				9
1996	3				1	4				4
1997	19	2				21	1			22
1998	16				6	22				22
1999	19	6	2		1	28	1			29
2000	66	17		1		84	3	1	1	89
2001	45	40		2	15	102	1			103
2002	17	39			2	58	3			61
2003	40	27	7		9	83				83
2004	13	14	2	1		30				30
2005	18	24			7	49				49
2006	5	1	1		10	17				17
Total	275	170	12	4	57	518	9	1	1	529

Sightings of terns flagged in Victoria

Caspian Tern

Banded at Mud Islands, Port Phillip Bay

17/11/2004	1	St. Helens, TAS	Dr WC Wakefield (Bill)	452 SE
23/10/2005	1	Toorbul, 1km north of high tide roost, QLD	Dez Wells and Jezzies Wells	1471 NE
23/10/2005	1	Toorbul, near Bribie Island, QLD	Dez Wells and Jezzies Wells	1472 NE
20/03/2006	1	Victoria Lagoon, Gippsland Lakes, Victoria	Faye Bedford	236 E
19/06/2006	1	Goolwa Barrage, near Goolwa, SA	Neil Cheshire	611 NW

Banded at Clonmel Island, Corner Inlet

7/05/2005	1	Kooragang Dykes, Kooragang Island, near Newcastle, NSW	Liz Crawford and Chris Herbert Hunter Bird Observers Club	784 NE
24/08/2005	1	Toorbul, near Bribie Island, QLD	Jill Denning	1420 NE
25/08/2005	1	Buckley's Hole Sandspit, Bribie Island, QLD	Dez Wells and Greg Nye	1417 NE
27/08/2005	1	Toorbul, near Bribie Island, QLD	Jill Denning	1420 NE
17/09/2005	1	Toorbul, near Bribie Island, QLD	Dez Wells	1420 NE
17/09/2005	1	Toorbul Sandfly Bay roost, QLD	Dez Wells	1421 NE
4/10/2005	1	Great Sandy Mathieson Homestead, QLD	John Knight	1587 NE
8/10/2005	1	Great Sandy Mathieson Homestead, QLD	John Knight	1587 NE

9/10/2005	1	Kakadu Beach, Bribie Island, QLD	Michael Strong	1420 NE
1/11/2005	1	Great Sandy Mathieson Homestead, QLD	John Knight	1587 NE
5/11/2005	1	Great Sandy Mathieson Homestead, QLD	John Knight	1587 NE
18/12/2005	1	Buckley's Hole Sandspit, Bribie Island, QLD	Dez Wells	1417 NE
11/02/2006	1	Shoalhaven River mouth, Shoalhaven Heads, NSW	Rex Worrell	550 NE
19/03/2006	1	Kooragang Dykes, Kooragang Island, near Newcastle, NSW	Alan Morris	784 NE
21/03/2006	1	Victoria Lagoon, Gippsland Lakes, Victoria	Faye Bedford	89 NE
29/03/2006	1	Victoria Lagoon, Gippsland Lakes, Victoria	Faye Bedford	89 NE
2/04/2006	1	Kedron Brook Wetlands, QLD	Dez Wells	1382 NE
30/04/2006	1	Shoalhaven Heads, NSW	Jacqueline Devereaux	550 NE

Banded at Mud Islands or Clonmel Island (not known)

17/02/2006	1	Sale (Holland's landing), Victoria	Klaus and Margit Hein	181 E
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The pattern of sightings was similar to that of recent years. Birds from both the Mud Islands and Corner Inlet colonies mainly seem to move to south-east Queensland for the period from about March to September. Whilst adults return to Victoria to breed after that, one year old (and possibly two year old) birds may remain in these areas right through their first austral summer. Migration to these areas takes them along the East Gippsland coast of Victoria and along the full length of the New South Wales coast. The movements of birds flagged at Mud Islands to Goolwa in South Australia and St. Helens in Tasmania are unusual.

Crested Tern banded at Mud Islands

14/12/2005	1	Breamlea, between Torquay and Barwon Heads, Victoria	John Peter	31 W
14/12/2005	2	Breamlea, between Torquay and Barwon Heads, Victoria	John Peter	31 W
14/12/2005	1	Breamlea, between Torquay and Barwon Heads, Victoria	John Peter	31 W
17/02/2006	2	Sale (Holland's landing), Victoria	Klaus and Margit Hein	203 E
23/03/2006	1	Warrnambool, Victoria	Klaus and Margit Hein	198 W
23/03/2006	1	Warrnambool, Victoria	Klaus and Margit Hein	198 W
18/04/2006	1	Cape Bridgewater, Victoria	Jeff Campbell	293 W
23/06/2006	1	Kirk's Point, Western Treatment Plant, Werribee, Victoria	Doug Blood and Denis O'Connor	31 NW

These records all emanate from birds colour metal banded as chicks at the Mud Islands breeding colony. Not many Crested Terns from the Mud Islands or the Nobbies colonies go any further west than Warrnambool, so the one at Cape Bridgewater was unusual.

Common Tern

Banded in Gippsland Lakes

2/01/2006	1	Flat Rock Beach, North of Ballina, NSW	Peter Marsh	1152 NE
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This sighting in northern New South Wales in early January suggests this bird may not have been going to return to the Gippsland Lakes that season. It may be an indication that some of the population is now remaining further north because the Gippsland Lakes are not such a suitable habitat as previously.

Little Tern

Banded in Gippsland Lakes

28/08/2005	1	Great Sandy Mathieson Homestead, QLD	John Knight	1487 N
13/01/2006	1	Mylestom/Sawtell beach, NSW	Klaus and Margit Hein	977 NE

The sighting at the end of August in south-east Queensland seems rather early for a returning migrant from the Japanese breeding grounds. It could just possibly be a bird from the Victorian breeding population which had not yet returned from its wintering area. The sighting of a bird in January in northern New South Wales is another indication that birds which formerly inhabited the Gippsland Lakes in the austral summer are now remaining further north.



The Nobbies, Phillip Island, white areas on low slopes and the top of the island in the centre of the photograph are breeding Crested Terns, Seal Rocks in the background (Photo R. Jessop)

South Australian Team Report – July 2005-June 2006

Maureen Christie

The South Australian team is now officially Friends of Shorebirds SE, a volunteer group under the umbrella of the SA Department of Environment and Heritage (DEH) Friends network. This structure has several advantages, including being able to apply for grants in our own right and being covered for public liability. It has meant little change in day to day organization of activities, with members moving seamlessly between tasks done under the auspices of the VWSG, AWSG and local SA birding groups, as well as projects that have originated from within the membership. Jeff Campbell is President, and I am Secretary.

This report does not include catches made by the VWSG in the south-east during 2005/06 – see reports elsewhere in this bulletin.

This year has been particularly busy.

COUNTING

Counting is an important task undertaken by our group. Perhaps first and foremost is the twice-yearly population monitoring of the coast under the auspices of the AWSG. There is also the AWSG annual count of The Coorong and Coastal Lakes. The Coastal Lakes are also counted during winter.

Discovery Bay is counted once a year – from Bridgewater Lakes to the Glenelg River mouth.

This year we added a special project – counting Lake Hawdon South once a month. This has involved not only counting waders, but also mapping the water's edge at each visit. An interesting picture is emerging of how this ephemeral wetland is used by waders.

BANDING AND FLAGGING

This year an important milestone was reached, with over 1000 birds being banded by the SA group since 2000 (Table 1). This represents 10% of the total banded by the VWSG in SA. Although catches are small, once again we are helping fill gaps in the data set. This is particularly true for turnstone - catches of 16 and 22 become more significant when it is realised that only 1 turnstone had been banded in May before this (Table 2).

Very few Red Knot are seen in the lower South East. So a flock of 300 over-wintering at Lake George aroused considerable interest. Especially as many had Victorian flags. A determined effort resulted in a catch of 12, all were juveniles, and the one re-trap was banded as on 22/10/05 at Queenscliff.

The banding of 334 Banded Stilt chicks in The Coorong was a highlight of the year. An AWSG report prepared by myself and Ken Gosbell on this breeding event is available from Ken Gosbell ken@gosbell.id.au. With a large congregation of Banded Stilt reported at Lake Corangamite in late August 2006 our group is anxiously awaiting news of SA flags.

A flag making team has been established under Jeff's leadership and we hope to eventually be responsible for making all our own flags. Meanwhile, Malcolm Brown continues to help by cutting blanks, and supplying anything that we can't manage for ourselves.

RUDDY TURNSTONE AND ENGRAVED FLAGS

This project commenced on 22 November 2004. 318 engraved flags were added this year, giving a total of 521 for SA. Unfortunately the lettering on the first 200 flags used is fading badly, often making readings difficult, if not impossible. The second batch had very shallow engraving and many of these are illegible. The engraving on later flags has been both deeper and wider and is proving much easier to read in the field.

Until this winter, observations were made monthly across the study area, stretching from Piccaninnie Ponds in the east to Nora Creina in the west. This winter observations were scaled back because of the demands of other field work. But the number of flags read is accumulating. Sightings from outside the study area have been disappointing, with only two reported. Interestingly, both of these were on northward migration. C2 was seen at Mai Po Marshes, Hong Kong, on 10/05/05 and C1 was seen in Taiwan on 14/5/06. Both were banded in the same catch on the 22nd November, 2004, the first day that we used engraved flags.

This winter there have been unusually high numbers of turnstone overwintering, a reflection of the good breeding season last year. The largest single flock observed was 120, but flocks of 50 to 60 were not uncommon. This year is the first time that turnstone have been seen using the coastal lakes during winter. Several had engraved flags, two of which we were able to read. They were feeding together in a shallow pool on Lake Eliza on 25/07/06. One was banded as a juvenile at Nene Valley, 04/03/06, the other D7 a two year old banded as a juvenile at Piccaninnie Ponds on 22/11/04.

LITTLE TERN

Little Tern have nested at the Glenelg estuary, Victoria, over the last few years. In several instances, after failed nesting attempts, they have ventured further west into SA. One nest with two eggs was found in the estuary in early December, but all deserted the area by the end of December. Then on Tuesday 10th January, during a routine turnstone observation survey, five Little Tern were observed at Danger Point. One pair had established a nest which contained two eggs. Over the next eight weeks our Group, with support from local residents and Birds SE members, maintained a twice-daily 'nest observation' vigil. During that time there were three Little Tern nests, each with two eggs. Two clutches hatched, producing four chicks. The third clutch was destroyed by a vehicle. No chicks survived longer than a week. Twelve Little Terns were the most birds observed at any one time, with two juveniles still being fed and one non-breeding bird included in this number. It is not known where the juveniles originated.

Plans are being formulated – with assistance from Roz Jessop – so that we are better prepared if Little Tern nest within our region next season.

BANDED STILT

In July 2005 a flock estimated at 100,000 Banded Stilt was observed in The Coorong. In late December 2005, a 'mating frenzy' was observed, and early in January chicks were seen. We banded the first chicks on 20th January 2006 and over the next three weeks an additional 330 were banded. Although there are several folklore references to earlier Banded Stilt breeding events in The Coorong, this is the first documented. Red-necked Avocet also successfully bred in The Coorong for the first time. Members played an important role in the field work associated with both finding the breeding colonies, and banding the chicks.

LAKE BONNEY / BUCKS WETLAND

The DEH is proceeding with a plan to return Lake Bonney water to Bucks Lake. This will result in the formation of an extensive wetland between Lake Bonney and Bucks Lake and put up to one metre of water into Bucks. This approximates historical depths, and should control the encroachment of dry-land species within Bucks Lake and its environs. Wader use of this wetland is not well documented, and it is hoped that at least a summer and winter count can be carried out in the coming year.

BUSH STONE-CURLEW

In July 2005, Dan Harley, Threatened Species Officer with the DEH, commenced a colour-banding program for Bush Stone-curlews in the South East of South Australia. We are responsible for the banding.

During the past 12 months, 10 curlews have been banded, six adults and four juveniles. Some valuable data has already resulted from the banding of juveniles. One bird disappeared from its natal site within four months of hatching and was subsequently located almost 10 km away, having moved from Bordertown to Mundulla Common. Its sibling was still roosting with its parents after it had reached six months of age. The other two chicks that were banded were both predated at 3-6 months of age.

PUBLIC RELATIONS WORKS

The group has provided input into various forums, "No Species Loss – A Biodiversity Strategy for South Australia" and WWF "Shorebirds Conservation Project". Comment was made on Primary Industries and Resources SA Discussion Paper on the Management of Recreational Fishing Competitions in SA, the Glenelg Hopkins CMA Draft Glenelg River Estuary Management Plan and the pre-draft Management Plan for the Carpenter Rocks Conservation Park and Bucks Lake Game Reserve. We have a representative on the Recreational Vehicles Working Group and on the Grant District Council Environment Committee.

During September/ October/ November a Waders Festival was organised by the Tourism Authority. The programme ranged from tag-along tours of The Coorong and Bool Lagoon, to exhibitions at several galleries, to walks organised by our group.

CONCLUSION

The South Australian Team has had a very successful year. Modelled on the successful VWSG working bee cum social gathering cum formal meeting formula, our formal meetings have been well attended.

Thankyou to the members of the group who have worked hard to produce these results. Thankyou too, to the members of both the Regional and District Offices of the Department of Environment and Heritage who have provided encouragement and practical help.

Table 1. South Australian team catches 1 December 2000 to 31 July 2006.

DATE	PLACE	Sanderling	Ruddy Turnstone	Red-necked Stint	Curlew Sandpiper	Sharp-tailed Sandpiper	Banded Stilt	Other	TOTALS
23/08/2005	Pelican Point		6	12	4			4	26
27/08/2005	Pelican Point			3					3
06/09/2005	Port MacDonnell		6	2					8
04/10/2005	Blackfollows Caves								*
18/10/2005	Port MacDonnell			34	1	28		1	64
03/01/2006	Blackfollows Caves								*
20/01/2006	Coorong						**4		4
23/01/2006	Coorong						**64		64
24/01/2006	Coorong						**77		77
25/01/2006	Coorong						**6		6
26/01/2006	Danger Point							**2	2
28/01/2006	Coorong						**29		29
29/01/2006	Coorong						**5		5
05/02/2006	Coorong						**45		45
11/02/2006	Coorong						**104		104
18/04/2006	Gerloff Bay		1						*
25/04/2006	Blackfollows Caves								1
02/05/2006	Port MacDonnell		16	3				4	24
30/05/2006	Nene Valley							1	24
11/06/2006	Lake George		22					3	22
12/06/2006	Lake George							1	3
05/07/2006	Lake George							12	13
06/07/2006	Lake George								*
08/07/2006	Port MacDonnell								*
	Sub-totals		51	54	5	28	334	28	500
	Total at 30/6/2005	26	238	273	12	73		32	654
	TOTAL AT 30/07/2006	26	289	327	17	101	334	60	1154

*net set, no catch made.

** chicks/runners'

Table 2. South Australian Team Catches - Month caught, 1 December 2000 to 31 July 2006

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	TOTALS
Ruddy Turnstone			1	110	38	16	46	37	39	1	1		289
Red Knot				1		12							13
Sanderling		17	2	2				5					26
Red-necked Stint		34	34	39	4	20	49	62	18	43	1	23	327
Sharp-tailed Sandpiper										101			101
Curlew Sandpiper						2	7	5		3			17
Pied Oystercatcher				1							2	8	11
Sooty Oystercatcher				3									3
Banded Stilt	185	149											334
Red-capped Plover		4	1	4				5		1		1	16
Double-banded Plover			4	1		4							9
Black-fronted Dotterel			3										3
Hooded Plover												3	3
Little Tern	2												2
TOTALS	187	204	45	161	42	54	102	114	57	149	4	35	1154

Conservation Report 2005/06

Doris Graham

During this year, there were a variety of projects to which I made submissions on behalf of the VWWSG. All were to highlight the continuing need for habitats of waders, terns and other shorebirds to be protected.

Port of Melbourne Corporation (POMC) Channel Deepening Project

The first round of community submissions relating to this project, see 2005 Bulletin, were assessed as providing evidence that this project could likely cause irreparable damage to the life of the Bay. This resulted in the Minister for Planning requiring further environmental evidence to be gathered and presented in a Supplementary Environmental Effects Statement (SEES). This requires a substantial amount of extra scientific work to be undertaken within the Bay by POMC.

An eight-week trial dredging in the south and north sections of the shipping channels and at the entrance of the Bay was completed, with the one planned for the west channel being deferred. This dredging caused unexpected damage by rock falls in the entrance and produced a silt plume.

Especially if the silt is toxic, it could seriously interfere with the fish/ food supply available to sight - finding and plunge feeding birds such as Crested and Caspian Terns, Little Penguins, and Australasian Gannets, thereby prejudicing their breeding success. Also of great importance is the possibility of toxic silt damaging or destroying the seagrass system of Swan Bay. This would settle on the seagrass and all life-cycles/ ecological systems that depend on healthy seagrass would be adversely affected, including invertebrate production required by the waders in their feeding areas in Swan Bay.

Actions:

(a) *Mud Islands monitoring*: A project to assess the effects of this dredging, particularly in the southern channel which is very near to Mud Islands, on birds feeding/ roosting on Mud Islands was set up in cooperation with Birds Australia, and several regular AWSG counters.

The first aim was to assess at monthly intervals the numbers, species and activities of birds using the bay shoreline and the lagoon which is almost enclosed by the arms of the two islands.

As a pilot Birgita Hansen and I with help from Megan Underwood joined the boat being used by the Friends of Mud Islands on their routine visit, 21st August 2005.

Unfortunately our task was not as easy as it sounded and our first attempt was our last! The day we tried was marred by very cold, gale force winds, producing an exceptionally high tide, and we walked through ankle to knee-high water almost all day, there was thus very little sand/ beach exposed for roosting birds. For this reason we saw few waders and terns. Also the tide was just turning after about three hours the boat was due to leave and a severe storm was approaching.

In the lagoon we saw 18 Greenshank, 14 Red Knot which flew, 1 Curlew Sandpiper, 1 Ruddy Turnstone, 1 Bar-tailed Godwit, 3 pairs of Pied Oystercatchers and a single bird, also 12 Royal Spoonbills with about 5 nesting at 2 sites, 5 Egrets, 23 Cormorants at a distance, 350 Pelicans in a colony deep in the saltbush, undisturbed by wind, many Silver Gulls nesting but with many nests disturbed/ eggs broken near water, one egg contained an embryo at approximately 5 days of incubation, tens of thousands of Straw-necked Ibis and hundreds of White Ibis nesting on the saltbush. As the tide receded we found approximately 14 Red Knot, probably those from the lagoon, 100 Crested Tern and several two- and three- year Pacific Gulls on the spit growing into the Bay. Despite the weather it was a marvellous day getting to know the topography of these

fascinating islands — of which there are now two only, since one of the exits from the lagoon has sanded over.

In summary, the main problems encountered were:

- (i) Logistics and cost of obtaining boat transport,
- (ii) Because of movement of birds, in order to obtain an accurate count, at least 4 persons within radio contact and appropriately positioned were needed,
- (iii) Counters should be in place from at least three hours either side of high tide.
- (iv) At least two attempts should be made over the whole tidal cycle

For these reasons the project was discontinued.

(b) *Survey of Sport, Tourism and Recreation*. This was being carried out by a Social and Market Research Company "Environmetrics", in mid June 2006, to obtain extra information required by the SEES. Its object was to ascertain how such groups used the Bay.

We replied that the VWSG does not fit well in any of these categories, as is a research organization of volunteers, affiliated with the AWSG, a Special Interest Group of Birds Australia (BA). We did however reiterate our views, as above, of the potential affects the Channel Deepening Project on the life cycles and food supply for seabirds and waders as above.

We are following the progress of the SEES in cooperation with Birds Australia and if thought necessary will contribute further when this is opened for public comment.

Werribee Regional Park, Draft Management Plan. January 2005

This park was/is to occupy a narrow stretch of land donated to the State of Victoria for this purpose. It extends, on the southern side of the Werribee River from the Geelong Freeway to its mouth at the Bay at South Werribee, and within the long-ago established Ramsar site. Of particular concern was that a walk/cycle path/trail stretching the length of the park and accessed by several bridges is planned. We raised concerns that the bridges removed a natural barrier, i.e. the River, against humans, dogs and cats accessing the Werribee Treatment Farm (WTF). This whole area would be exposed to illegal entry and potential vandalism. Also the river at its mouth is very dangerous for swimmers with extremely fast, strong currents at the changes of the tides, yet the beach on the point on the Farm side is very tempting as a public picnic and swimming area. Of most concern to us is that hundreds/thousands of gulls, terns of several species, pelicans, cormorants and many waders, including Pied Oystercatchers, roost here at all stages of the tides. Immature Pacific Gull, Crested Tern and Silver Gull also frequent this "safe", undisturbed roost with and without their parents. Disturbance would almost certainly cause abandonment of the roost.

Furthermore, although the beach looks like sand it is shell grit overlaid with guano.

Currently this whole area is out of bounds to people unless holding a permit, given mostly bird watchers and then only by foot via tracks from the Freeway. We supported the recommendations of the Bird Observers Club of Australia (BOCA) that there should be no public access to the area abounding the bird roosting area for general recreation so that it can be managed as a conservation area to attract Orange-bellied Parrot, waders and seabirds.

Draft Management Plans prepared by Parks Victoria for Victoria's Marine National Parks and Marine Sanctuaries.

Marine National Parks (MNP) and Marine Sanctuaries (MS) extend seaward from the high tide mark. Submissions were made when appropriate to comment on wader/shorebird concerns were being dealt with. Since these areas are being protected largely for their underwater characteristics I emphasised that healthy oceans will keep healthy beaches which will keep healthy waders.

Twelve Apostles Marine National Park (TAMNP) January 2006.

The New Atlas of Australian Birds, 2003, records 93 species of birds seen in 44 surveys of the narrow coastal strip within this MNP, i.e. between Muttonbird Island and Pebble Beach. Sporadic sightings of Sanderling and Common Sandpiper were the only migratory waders reported, while Black-winged Stilt, Black-fronted Dotterel, Masked Lapwing and Hooded Plover were reported more often.

Further comments were mainly confined to the Hooded Plover. Members of the local branch of BOCA who know this strip of beach very well reported that there has been one pair living and nesting successfully in the vicinity of Clifton Beach for many years, with the nearest pair 15 km west.

It seemed ironic and maybe tragic that one of the proposals in the Plan is that "increased public access to Clifton Beach be made available". On account of the vulnerability of the Hooded Plover we stated, "*it would be irresponsible of Parks Victoria to carry this out unless strict inviolable measures are undertaken to protect these birds.*" We then described their life cycle, indicated some of the major threats to the survival of the species, and detailed one of their own reviews by Mike Weston who studied these birds for his PhD, viz; "*Managing the Hooded Plover in Victoria. A review of existing information. Parks Victoria Technical Series, Number 4, November 2003.* Due to its vulnerability it was recommended that this pair of birds be protected at all costs.

Arches Marine Sanctuary, January 2006

No comments needed in relation to waders, but due to the fragility of the under-sea area thought it important to emphasize the importance of setting up of monitoring programs to detect damage to the fragile ecosystems enthroned in this sanctuary.

Marengo Reefs Marine Sanctuary, June 2006.

Comments to this document were brief as this small Marine Sanctuary is not reported to be routinely used by waders. However when rocks are exposed, terns roost there regularly. We therefore expressed concern that the surrounding ocean and the reefs be protected as much as possible from pollution, marine pests, and vandalism for their own unique sakes as well as for the birds use. Pollution and damage to the underwater structures can occur, particularly during diving and landings and moorings of boats. We made the point that unless rangers have sufficient power to report/prosecute offenders even these protective measures will not save the beauty of these under-water structures/gardens.

Summary: While I enjoy increasing my knowledge of the areas and the problems our waders face in the light of human development and "progress", I would very much appreciate assistance in preparing these submissions. If you or you know someone who knows a specific area of our coastline I would be very pleased to be able to contact them so that I can discuss the projects proposed.

I thank those several people who have already assisted me, particularly Roz Jessop, Clive Minton, Graeme Hamilton, Mike Weston, Peter Menkhorst, Peter Walcott and Sue Longmore and the Swan Bay Integrated Management Committee.

Banded Stilts at Lake Corangamite

Clive Minton and David Hollands

In early August 2006 exceptionally large numbers of Banded Stilts were reported in the northern part of Lake Corangamite, near Colac, western Victoria. Various estimates put the population in the 100,000s, possibly as many as half a million! As this is close to the estimated population of Banded Stilts for the whole of South Australia and Victoria it seemed worthy of detailed investigation.

Rob Ganly, from Geelong, kindly visited the site at our request on the 4th August. He advised that birds were difficult to count as they were out in the centre of the north end of this very large lake (30 km by up to 10 km) and were never coming within 2 km of the main shoreline. The water level of the lake was so low that it would have been impossible to have waded out there because of the mud, and also because of unexploded ordinance remaining from its use as a practice bombing range during the last war!

It was clear that the only way it would be possible to obtain a reasonably accurate estimate of numbers, and photographs to assist this process, was from the air. A local helicopter owner kindly offered to fly us over Lake Corangamite on the 10th August. We found the flock quite easily, in the middle of the north end of the lake, about 3 or 4 km down from the northern extremity. Before we concentrated on counting and photographing this we also searched the rest of the northern half of the lake but saw no other birds at all, except - Silver Gulls.

When we first recognized the flock of Banded Stilts we were at about 700 feet, directly over them. Some birds flew but they landed again almost immediately. We circled the Banded Stilt flock several times at various heights to gauge the size of the flock. They took virtually no notice of us, with only some birds at the nearest edge of the flock occasionally flying, and quickly landing again. Due to the dense mass of birds numbers were difficult to estimate.

The birds were standing in shallow water, with some patches of wet mud above the surface. Initially the birds had been at rest extending over several hundred meters and in a band up to 200 meters wide. But they gradually amassed into a dense, almost circular pack. This made counting extremely difficult. We tried to divide the flock up into estimated sections of 1,000 or 5000, or 10,000 or even 20,000 birds. Most estimates suggested there were at least 100,000 present but perhaps only to an accuracy of + or -20,000 (more likely plus than minus).

On our return we examined our photographs and selected those which covered the whole flock, taken from almost overhead. These pictures showed the standing birds, evenly spaced out, quite clearly. Sample sections were taken from these photos, enlarged and then printed out so that the number of birds could be counted individually. The best indication derived from these gave a population estimate of 112,000.

The previous largest concentration of Banded Stilts ever reported in Victoria was 62,000 and, apart from that, there have been no other counts of more than 20,000. Systematic counts of the Western District lakes by Richard Alcorn over a ten-year period in the 1980/90 s were previously published in the Australasian Wader Studies Group publication, *The Stilt*. They showed that July to October was the time of year when Banded Stilts most frequently occurred in large numbers in that area. The official estimate for the eastern Australian Banded Stilt population, which lives in South Australia/Victoria, is around 100,000.

More recently, in late 2005, a huge concentration of Banded Stilts was reported in The Coorong, in South Australia. There was a variety of initial estimates of numbers but the systematic count by Ken Gosbell and Maureen Christie (and team) in late January 2006 found 91,000 Banded Stilts. At least 1000 pairs actually nested this being the first time ever

found 91,000 Banded Stilts. At least 1000 pairs actually nested this being the first time ever for The Coorong. 364 part-grown chicks were caught, banded and leg-flagged (orange over yellow) by Maureen and her teams.

When we flew over Lake Corangamite on 10th August 2006 it was apparently at a record low level, some 5 meters below the norm. There were low, flat islands, shining white with dried salt, in a number of places. Some of the islands had already grown vegetation and were providing ideal nesting sites for several hundred pairs of Silver Gulls. These islands looked potentially suitable for Banded Stilts to nest on - similar to those which Clive had seen being used for breeding colonies in large salt lakes in South Australia and at Lake Ballard in Western Australia. Silver Gulls could prove a considerable deterrent to Banded Stilts wanting to breed at Lake Corangamite. If they did try to breed, experience at Lake Eyre and Lake Torrens suggests they would be heavily predated by the gulls.

Banded Stilts have never been recorded breeding in Victoria, but it appears that the exceptional circumstances at Lake Corangamite make this now a possibility. The extremely low water level appears to have increased the salt concentration to a level where brine shrimps are prolific. The exceptionally low water has led to the exposure of flat mud and sand-topped islands which are not normally present in this lake. Since this population of Banded Stilts is not known to have had a major breeding event since Lake Eyre in 2000, the level of frustration in the population may be reaching breaking point. An indication of this comes from the fact that a small part of the population nested in The Coorong in December 2005/January 2006.

It seems desirable to keep a close eye on the Lake Corangamite birds to see if there is any attempt at nesting there. The Department of Sustainability and Environment in Colac and the Lake Corangamite Catchment Management Authority are both prepared to assist with this. If breeding does commence there, then urgent action will need to be considered in relation to protecting the Banded Stilt eggs/ chicks from predation by Silver Gulls. At Lake Eyre in 2000 the first two nesting attempts (colonies of 20,000 pairs) were totally wiped out by Silver Gull predation. Only the strong, positive action by the South Australian Department of Environment and Heritage, which culled the several thousand gulls which started to nest on the same island where the Banded Stilts had their third nesting attempt, saved the situation. It allowed the Banded Stilts to breed successfully. It would be wonderful if there was a successful nesting attempt by Banded Stilts in Victoria.

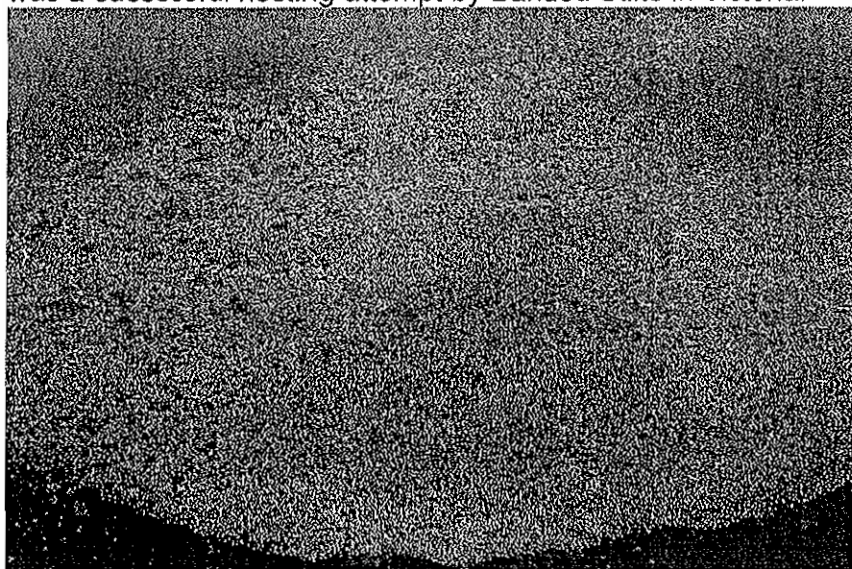


Photo of Banded Stilts at Lake Corangamite (Clive Minton)

Red-necked Stint

I hold it
in the cradle of my hand
a featherweight
of barely thirty grams
a softness
that belies the body's strength
swift it has come from frozen northern climes
borne back by instinct to Australian shores.

The bird which I hold close
I hold with awe
for it has soared
beyond the realms of men
flown over half of Asia on its quest
to follow nature's blueprint for its kind
and mate and nest on Tundra's arctic soil.

Now it is here again
to summer feed.
The tiny body
wasted from its toil
will be replenished by a mudflat feast.
For fifteen summers now it's sojourned here
and fifteen times Siberia has drawn it back.

When Autumn comes, will it still heed the call?

Sally Symonds

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Arctic breeding success in 2005, based on juvenile ratios in waders in Australia in the austral summer 2005/2006

Clive Minton, Rosalind Jessop, Peter Collins, and Chris Hassell

INTRODUCTION

A principal objective of the Victorian Wader Study Group and Australasian Wader Studies Group catching and banding programs, in south-east Australia and north-west Australia respectively, is to catch a sufficient sample of each of the main wader species each austral summer to enable an annual index of breeding success to be determined. This index is based on the percentage of juvenile/first year birds in catches.

This monitoring program started in southeast Australia in 1978/79, though initially on a limited range of species, and has been undertaken in north-west Australia since 1998/99 (8 years), though with some data from earlier years.

Australia is well placed to undertake a breeding success monitoring role on migratory waders from the Northern Hemisphere because it is the terminus of migration for most species, with populations of both adult and juvenile birds relatively static in the period from November to mid March. By standardising sampling techniques as much as possible potential biases in the results from year to year are minimised, with the result that both annual and longer term variations in breeding success are more likely to be detectable and meaningful.

The "percent juvenile" results for each year since 1999 have been published in the Arctic Birds Newsletter (e.g. see Minton *et al.* 2005a) and more recently in The Stilt (e.g. see Minton *et al.* 2005b). A comprehensive paper on the percentage juvenile monitoring in southeast Australia covering right back to 1978/79 has now also been published (Minton *et al.* 2005c). Attempts to correlate the findings with Arctic breeding conditions such as temperatures, date of snow melt and predation levels have also been made (Soloviev *et al.* in press, Boyd *et al.* 2005), but only limited correlations have so far been found.

This paper adds to the pool of information by detailing the percentage juvenile monitoring results for the 2005/06 austral summer in both southeast and northwest Australia. These are an indication of the breeding success of the different wader populations in the Arctic summer of 2005.

METHODS

As usual fieldwork was programmed to try and obtain a number of samples of each species at their principal locations in each study area. As far as possible the timing of such catches is similar at each location each year. However in north-west Australia the main monitoring effort in the 2005/06 non-breeding season was brought forward, mainly for climate and logistical reasons, to November/early December from the late January/ early March period employed during the two previous years.

Only waders caught by cannon netting are included in the data presented. Last year some supplementary information on birds caught by mist netting was included but there were insufficient mist netting samples this year.

The tables of results are presented in a similar form to previous years except that in the detailed catch information for the 2005/06 season in south-east Australia the long term *median* percentage juvenile figure is used as the yardstick for assessing breeding success. The average is however still used for judging the north-west Australia data because at present there is an insufficiently long data set for the median to be employed. Also incorporated into the tables is the overall assessment of breeding success for each species, these categorisations being arrived at in a similar manner to those presented in Minton *et al.*

2005c. Average percentage juvenile figures, for the last eight years, are also still used in Tables 3 and 4.

RESULTS

The Victorian Wader Study Group spent 27 days in the field in the mid November to 20th March monitoring period and made 32 cannon net catches which contributed to the south-east Australia data. In north-western Australia 23 days were spent in the field, with 20 cannon net catches – all except three of these being in a concentrated period between 13th November and 2nd December. All this fieldwork is undertaken by volunteers, usually with a team of 10-20 people involved on each day. The main effort in north-west Australia was carried out by the AWSG November/ December 2005 Expedition.

The detailed results for the 2005/06 monitoring are presented in Table 1 (southeast Australia) and Table 2 (northwest Australia). Tables 3 and 4 show the 2005/06 results in comparison with the previous seven years. Data in Tables 1 and 2 is only included for species where 29 or more birds were caught.

Satisfactory catch totals were obtained for all of the seven species for which annual monitoring is attempted in south-east Australia. A much better sample of Curlew Sandpipers was obtained than in other recent years, principally due to one excellent catch of 393 birds, when fortuitously some 2500 Red-necked Stints walked to behind the nets leaving only the Curlew Sandpipers in the catching area. The Red Knot sample was also better than usual because of a particularly good catch of 232 at the main Red Knot location, in Corner Inlet. Unusually, three significant catches of Bar-tailed Godwits were made, again giving a larger than normal sample for this species.

Sampling in north-west Australia was more typical of other years with the usual species dominating catches. However a greater than normal sample of Red Knots was obtained. As usual Curlew Sandpipers were difficult to accumulate because, at their current reduced population level, they are dispersed thinly throughout flocks of other waders. It took 13 samples to accumulate a total of only 95 birds.

DISCUSSION

South-east Australia

Overall the 2005 Arctic breeding season for wader populations which spend the non-breeding season in south-east Australia appears to have been the best since 1991 and the second best in the 28 years over which these populations have been monitored.

Bar-tailed Godwits and Sanderling had exceptional breeding success and in Curlew Sandpiper, Red Knot, Ruddy Turnstone and Sharp-tailed Sandpiper the breeding outcome was very good. Only Red-necked Stint fared poorly.

These results raise a number of interesting questions, in particular:

- a) What factors caused such a widespread and unusually successful breeding season across a broad range of species and covering such a wide span of breeding locations (Taimyr to Alaska)?
- b) What caused the Red-necked Stint to have such a poor breeding season? Its breeding range and its breeding habitat overlap those of several other species which had a successful breeding season.

This was the second consecutive poor breeding year for Red-necked Stint, with the 7.4% juveniles being even lower than the 10% of the previous year. Whilst a "correction" to population levels may have been considered likely following four very good breeding performances in the previous six years (two at record levels) there is no obvious explanation

of the mechanism which caused such poor breeding success. A detailed examination of environmental factors, such as weather conditions and predation, will be made but it would be surprising if it proves possible to single out any of these which might have affected Red-necked Stints only.

A possible contributor could derive from the high breeding success in recent years. It is likely that the Red-necked Stint breeding populations in both 2004 and 2005 contained a greater proportion of young birds than normal. Young birds in most species tend to be less successful in their initial breeding attempts than older, more experienced, birds. However one would not expect an effect as large as found here. Red-necked Stints breed for the first time at age 2. It is interesting to note from Table 3 that there was a marked reduction in breeding success two years after the exceptionally high breeding success of 1998. However this was not apparent two years after the other high breeding success year in 2001. Again poor breeding success in 2004 was two years after low breeding productivity in 2002, but the 2005 low breeding output did follow two years after good recruitment in 2003. These conflicting results appear to indicate that it is unlikely that a higher than normal level of inexperienced young birds in the breeding population was the prime cause of the very low breeding success in 2005, though it may have been a contributing factor.

The very good breeding season experienced by Curlew Sandpipers in 2005 followed good breeding success in the previous year also. This is particularly welcome as it may herald the beginning of a population turnaround for this species which has declined markedly over the last 20 years.

Amazingly, Sharp-tailed Sandpipers had a third consecutive good breeding year. The figures for 2005/06 were not quite as high as in the two exceptional years preceding but were well above the long term median and average. This run of good breeding success has noticeably and markedly increased Sharp-tailed Sandpiper populations from the low level they had reached after a long period of decline. The most recent result has consolidated the improvement.

Perhaps the biggest winner of all in 2005/06 was the Bar-tailed Godwit, even though the actual figure (39.8%) was only slightly above that of the previous year. All the indications from observations in the field suggest that juvenile Bar-tailed Godwits were far more numerous and widespread in the 2005/06 non-breeding season than in any other year in recent times. Data from the breeding areas of these birds in Alaska (Brian McCaffery pers. comm.) also indicated that 2005 was an exceptionally good breeding season for the Bar-tailed Godwit populations breeding in the north and west of Alaska. It is particularly interesting that the ratio between his 2005 figure and the average of other recent years was the same (c. 3x) as a similar ratio in south-east Australia, though in absolute terms the percentage of juveniles in Australia was higher. The latter is at least partly caused by the fact that some juveniles which will ultimately join the New Zealand Bar-tailed Godwit populations spend their first non-breeding season in Australia.

This "New Zealand effect" is most pronounced in the Red Knot, where very few first year birds travel as far as New Zealand. This greatly increases the amplitude of the percentage juvenile figures recorded each year for Red Knot in south-east Australia. Nevertheless the 73.3% juveniles recorded this year would still be classed as a very good breeding outcome for the Red Knot, which probably mainly come from Chukotka in the far northeast of Siberia.

Sanderling was the other species which had an exceptionally good breeding season in 2005. The full extent of the breeding grounds of the Sanderling population which comes to south-east Australia is not known and therefore linking this outcome to particular factors will be difficult. The only breeding season recovery of a south-east Australian banded Sanderling was in the New Siberian Islands so it is interesting that the Red Knot population from there, which mainly spend the non-breeding season in north-west Australia, also experienced an exceptionally good breeding season in 2005. At the main location in Victoria the size of the

flock (600-800) in the non-breeding season was almost double the normal level for a period because of the huge numbers of juveniles present. However this species moves quite widely between different locations on the coast in the non-breeding season and this high concentration later dispersed.

North-west Australia

The overall outcome of the 2005 breeding season for wader populations which spend the non-breeding season in north-west Australia was above average, but not quite so good as in south-east Australia.

There are some interesting similarities and contrasts. Curlew Sandpiper and Red Knot both had exceptionally good breeding seasons, not dissimilar to the very good performance of both these species in south-east Australia. This is in spite of the fact that two different subspecies of Red Knot are concerned, with the predominantly *piersmai* north-west Australian population probably breeding mainly in the New Siberian Islands. The breeding location of Curlew Sandpipers from north-west Australia is not known but probably overlaps significantly with that of birds from south-east Australia (mainly northern Yakutia); it could even be in the New Siberian Islands which would account for its high breeding success in 2005.

The figure of 56.8% juveniles for Red Knot in north-west Australia is exceptional as there is no "NZ effect" in that region. More probably the high figure is partly an artefact of sampling relatively early in the non-breeding season when there is a greater tendency for some juvenile birds to occur in separate flocks before they later become more integrated into the population as a whole.

Red-necked Stints in north-west Australia had a noticeably better breeding performance than those from south-east Australia. Recoveries and flag sightings on or near the breeding grounds indicate that there is probably significant overlap in breeding areas between these populations. This makes the marked difference in apparent breeding performance in 2005 rather surprising, although in some previous years there has also been a lack of correlation (Tables 3 & 4).

The Bar-tailed Godwits which spend the non-breeding season in north-west Australia (*menzbieri*) breed in northern Yakutia. They only had an average breeding season in 2005, much less good than the Bar-tailed Godwits from Alaska (*baueri*) which go to southeast Australia (and New Zealand).

The Greater Sand Plover was the exception in 2005/06 with a very poor breeding outcome – the lowest recorded in these studies. This species breeds further south than the other species monitored and could well have experienced unusually adverse weather conditions at a critical stage of its breeding cycle and over a widespread part of its breeding range.

FUTURE WORK

As always it will be fascinating to see what the 2006 breeding season brings in the way of success for the wader populations which visit Australia from the northern hemisphere. One could perhaps expect that the excellent breeding success of 2005 for wader populations which go to south-east Australia will be followed by an unusually poor breeding year in 2006. This is what happened in 1992 after the previous exceptional breeding year of 1991. But in 1992 there was a major additional factor involved – the lowering of temperatures across Arctic regions all around the world due to the effects of the cloud and dust which emanated from the Mount Pinutubo volcanic eruption in the Philippines (Ganter & Boyd 2000).

A key question is whether the recent much needed good breeding successes by Sharp-tailed Sandpipers and Curlew Sandpipers and Alaskan Bar-tailed Godwits can be consolidated by further good breeding years? Also of great interest is at what time will the recent low breeding success of Red-necked Stint return to more normal levels?

The intensive VWSG monitoring program will be resumed in mid November and sustained until mid March 2007. The north-west Australia situation will again mainly be monitored via a special wader expedition, which in 2006 will take place from November 4th to November 25th.

ACKNOWLEDGEMENTS

The dedication and efforts of the teams who put so much time into the fieldwork activities in order to obtain comprehensive data is very greatly appreciated. Quite often such teams are assembled at short notice in order to take advantage of a perceived sampling opportunity. Land owners and licensing authorities are also thanked for facilitating access and approving banding and catching activities. Ken Rogers is again thanked for calculating the standard errors.

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Table 1. Percentage of juvenile/first year waders in cannon-net catches in south-east Australia in 2005/2006.

Species	No. of catches		Total caught	Juv./1st year		S.E. (% pts)	Long term median % juvenile (years)	Assessment of 2005 breeding success
	Large (>50)	Small (<50)		(#)	(%)			
Red-necked Stint <i>Calidris ruficollis</i>	12	8	4034	299	7.4	0.41	14.0 (28)	Poor
Curlew Sandpiper <i>C. ferruginea</i>	1	11	558	149	26.7	1.87	10.0 (27)	Very good
Bar-tailed Godwit <i>Limosa lapponica</i>	3	0	274	109	39.8	2.96	14.3 (17)	Exceptionally good
Red Knot <i>C. canutus</i>	1	3	273	200	73.3	2.68	41.8 (15)	Very good
Ruddy Turnstone <i>Arenaria interpres</i>	1	6	223	63	28.3	3.01	9.9 (16)	Very good
Sanderling <i>C. alba</i>	2	6	185	115	62.2	3.57	12.6 (15)	Exceptionally good
Sharp-tailed Sandpiper <i>C. acuminata</i>	1	4	155	40	26.7	3.51	10.7 (25)	Very good
Great Knot <i>C. tenuirostris</i>	-	1	29	5	17.2	7.01	-	(Good)

All birds cannon-netted in period 15 Nov to 28 Feb except for Red-necked Stint, Ruddy Turnstone, and Sanderling, for which catches up to 20 Mar are included.

Table 2. Percentage of juvenile/first year waders in cannon-net catches in North-west Australia in 2005/2006.

Species	No. of catches		Total caught	Juv./1st year		S.E. (% pts)	Assessment of 2005 breeding success
	Large (>50)	Small (<50)		(#)	(%)		
Great Knot <i>Calidris tenuirostris</i>	6	7	673	82	12.2	1.46	Average
Bar-tailed Godwit <i>Limosa lapponica</i>	3	11	479	52	10.9	1.42	Average
Red-necked Stint <i>C. ruficollis</i>	3	4	478	97	20.3	1.84	Average
Red Knot <i>C. canutus</i>	0	7	139	79	56.8	4.20	Exceptionally good
Curlew Sandpiper <i>C. ferruginea</i>	0	13	95	35	36.8	4.95	Exceptionally good
Ruddy Turnstone <i>Arenaria interpres</i>	0	5	38	8	21.0	6.05	Good
Sanderling <i>C. alba</i>	0	2	29	4	13.8	6.40	-

Non-Arctic northern migrants

Greater Sand Plover <i>Charadrius leschenaultii</i>	3	5	433	41	9.5	1.41	Very poor
Terek Sandpiper <i>Xenus cinereus</i>	2	7	273	36	13.2	2.05	Average
Grey-tailed Tattler <i>Heteroscelus brevipes</i>	1	10	242	37	15.3	2.31	Average
Common Greenshank <i>Tringa nebularia</i>	0	4	41	4	9.8	4.64	-
Whimbrel <i>Numenius phaeopus</i>	0	1	30	0	0	-	-

All birds cannon netted in period 1 November to mid-March (actually all in period 13 November 2005 to 19 February 2006).

Table 3. Percentage of first year birds in wader catches in south-east Australia 1998/1999 to 2005/2006.

Species	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	Average
Ruddy Turnstone - <i>Arenaria interpres</i>	6.2	29	10	9.3	17	6.7	12	28	14.8
Red-necked Stint - <i>Calidris ruficollis</i>	32	23	13	35	13	23	10	7.4	19.5
Curlew Sandpiper - <i>C. ferruginea</i>	4.1	20	6.8	27	15	15	22	27	17.2
Sharp-tailed Sandpiper - <i>C. acuminata</i>	11	10	16	7.9	20	39	42	27	21.6
Sanderling - <i>C. alba</i>	10	13	2.9	10	43	2.7	16	62	20.0
Red Knot - <i>C. canutus</i>	(2.8)	38	52	69	(92)	(86)	29	73	52.2
Bar-tailed Godwit - <i>Limosa lapponica</i>	41	19	3.6	1.4	16	2.3	38	40	20.1

All birds cannon-netted between mid November and third week in March (except Sharp-tailed Sandpiper and Curlew Sandpiper to end February only). Averages (for last eight years) exclude figures in brackets (small samples).

Table 4. Percentage of first year birds in wader catches in North-west Australia 1998/1999 to 2005/2006.

Species	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	Average
Red-necked Stint - <i>Calidris ruficollis</i>	26	46	15	17	41	10	13	20	23.5
Curlew Sandpiper - <i>C. ferruginea</i>	9.3	22	11	19	15	7.4	21	37	17.8
Great Knot - <i>C. tenuirostris</i>	2.4	4.8	18	5.2	17	16	3.2	12	9.9
Red Knot - <i>C. canutus</i>	3.3	14	9.6	5.4	32	3.2	(12)	57	17.7
Bar-tailed Godwit - <i>Limosa lapponica</i>	2.0	10	4.8	15	13	9.0	6.7	11	9.0

Non-Arctic northern migrants

Greater Sand Plover - <i>Charadrius leschenaultii</i>	25	33	22	13	32	24	21	9.5	22.5
Terek Sandpiper - <i>Xenus cinereus</i>	12	(0)	8.5	12	11	19	14	13	12.9
Grey-tailed Tattler - <i>Heteroscelus brevipes</i>	26	(44)	17	17	9.0	14	11	15	15.6
Little Curlew - <i>Numenius minutus</i>	57	33	-	36	30	-	(40)	-	39.0

All birds cannon-netted in the period 1 Nov to mid-Mar. Averages (for last eight years) exclude figures in brackets (small samples).

“The Night the Net was Rolled” OR “Clive’s first mini-Tsunami”

Doris Graham

February 28th / March 1st 2005.

The on-shore wind was blowing a late afternoon gale, splashing huge waves over Mushroom Reef and sending spray almost to the shore of Flinders Ocean Beach. There, we were fighting its strength to set a big net above the last two tide lines to catch Ruddy Turnstone from the 35 that Penny Johns had reported roosting there on her previous two very early morning reccies.

Nearly chilled to our bones we migrated to Penny’s home for a very pleasant evening with the usual mixture of good food, good company and light hearted and deep conversations. With the morning high tide expected about seven we were due back on the beach at 5.30am, so most retired early.

Slept well, despite sounds of a roaringly strong wind, ocean breakers and several heavy showers of rain. All out of beds quickly as alarms rang throughout the house, then breakfasted, coffee-ed or tea-ed as desired all hastened to the beach.

From Clive’s car the first group to arrive were not visible as I walked swiftly to the top of the cliff, nor could I see people in place with the electrics as expected — so hurried down the sandy ramp to the beach with 50 questions jostling for top place in my head.

What has happened??? Why is the tide already nearly up to the cliffs? What are those people doing near the net-site? Again, what has happened? By now everyone was rushing to join them, only to be amazed/horrified/hysterical with laughter, when it became obvious that the net had been flooded, but this was no usual flooding! “WOW!”---and “OH my goodness!”---and “just what HAS happened?” and other exclamations were heard on all sides. In front of us was a huge 1m-diameter ball with a rough and spiky surface very like the net, rolling back and forth in half a meter of ocean!! How could this be?

Everything was under water and the whole of the equipment was wrapped into a tangled ball being tossed about on the sand, washed over by the waves still driven by the gale, with areas of the net floating back and forth like giant fins, attached to a live, brown creature struggling to be free and very nearly succeeding.

The four cannons with projectiles still in place had come completely out of their sandy homes. “O.K. but what happened to the Galah-wire connections? Are they still connected to the chocolate blocks on the main cable?” Yes all the electrical connections had held!

In fact our net-creature would have been free except for being held by the main electrics cable still on its reel, connected by the chocolate blocks in the “drop line” to the galah-wires thence via the cannons to the cartridges inside. Also probably helping a bit to prevent its escape to the depths was the jiggler that was twisted in, round and through the net-creature thereby disallowing straggling pieces, such as the pegs from escaping. Both the electrics and the jiggler reels had been pulled along the beach from their original place among the bushes under the cliff some 200 m away. “Thank xxx” muttered someone.

But what of the jump ropes. They had not held!! The pegs of three had come out of the sand and with ropes attached been incorporated into the net-creature. The other two had broken, leaving pegs and rope pieces in the sand. The position of these two pegs showed us where we had set the net some metres up and along the beach ---the markers having long since been recycled into beach detritus!!

It was the electric cable and the jiggler that kept the whole as a tightly woven package -- the net, the jump ropes, the cannons, the projectiles and the pegs all firmly rolled among the streamers of wide and narrow kelp, and every other species and sub-species of kelp, seaweed and shells that you could imagine!! All were covered, embedded into the net spaces by the waves, sand which rolled it across the beach. By now we could enjoy this unique and unforgettable sight --- but no-one had a camera!!!!!!

As the waves continued to wash in and out, it seemed that the tide would never recede as it was still about calf-high.

Several other people had joined the overnight team by now and were greeted by Clive saying, "The forecast was for a decreasing wind and a fine morning, instead there has been a mini-tsunami." -- little did the forecasters know how wrong they were this time. However as usual undeterred by such unforeseen events Clive instructed us to extract the cannons, separate them from the projectiles, and take them to the safety of the trailer, move the net to the base of the cliffs then, "---hurry up everyone we must be quick to set the other net further along the beach"!!!

A good sample catch of turnstone was made and then back to our net-creature and to the inestimably difficult task of untangling each component from each other and from the thick and thin strands and foot-pads of kelp/seaweed/algae by now totally intertwined/enmeshed in its structure. This took 11 of us nearly 2 hours, and we did not cut one electric cable, one section of the jiggler string or one square of the net-- enough said--what an experience?

Finally, the wind had abated and no rain fell during this excruciatingly, exasperatingly slow job—there's always a silver lining!

Spot the funny gull at King Island (Photo M & N. Burgess)



*The article below is reprinted from the AWSG journal Stilt
with permission of the editor (Stilt 49: 41-43, 2006)*

**A Census of the breeding population of
Pied Oystercatchers *Haematopus longirostris* in Corner Inlet, Victoria.**

¹Susan Taylor and ²Clive Minton

¹Department of Sustainability & Environment, 310 Commercial Road, Yarram, Vic. 3971, Australia; susan.taylor@dse.vic.gov.au. ²165 Dalgety Road, Beaumaris, Vic. 3193, Australia

A survey of breeding Pied Oystercatchers in Corner Inlet in south-east Victoria indicated that numbers may have increased slightly since the previously less comprehensive census in 1996. The 446 pairs represent 15% of the estimated Australian breeding population. There was a strong preference for breeding on fox-free islands. An additional 286 Pied and 160 Sooty Oystercatchers were counted in non-breeding flocks during the survey.

INTRODUCTION

Corner Inlet is an extensive coastal embayment in South Gippsland, Victoria. Nearly all of its shores and waters are included in Nooramunga Marine and Coastal Park (MCP) to the east and Corner Inlet Marine and Coastal Park (MCP) to the west. In 1996, an aerial survey of Nooramunga MCP provided the first comprehensive results on the distribution of Pied Oystercatchers in eastern sector of the Inlet (Minton 1997). This survey confirmed the impression from previous counts, undertaken in those areas of the park accessible by boat and ground-based counters, of the importance in both Victoria and Australia of Corner Inlet as a breeding area for Pied Oystercatchers. This work also established the effectiveness of a helicopter for conducting a comprehensive survey of the Inlet where access to many areas by either boat or across land is difficult and time-consuming. Another significant finding was the importance of the area for non-breeding Pied Oystercatchers during the breeding season.

Other counts of Oystercatchers undertaken in the Inlet have not differentiated between breeding and non-breeding birds. The exception to this is a three-year study conducted between 2000 and 2003 by the Victorian Wader Study Group (VWSG), on the breeding effort by Pied Oystercatchers on two of the barrier islands in Nooramunga MCP, that included a count of breeding pairs (Collins et. al. 2003).

The current survey was undertaken in response to recommendations of the report on the 1996 survey to undertake a count of the entire Corner Inlet area and to continue monitoring Pied Oystercatchers during the breeding season to document any trends in the population.

METHOD OF AERIAL SURVEY

The survey was conducted by helicopter along the shores of all the islands and mainland coastline of Nooramunga MCP on the 30 October 1995 and of Corner Inlet MCP on the 31 October 1995. Weather conditions on both days were fine, dry and calm, resulting in excellent visibility. As in 1996, on both days flights took place at high tide to ensure breeding pairs were on their territories and close to nest sites during the survey.

Both the numbers and locations of birds were marked on a large-scale map. Most non-flocking Pied Oystercatchers were in obvious breeding pairs, standing in close proximity. In some instances one member could be seen either sitting on, or just leaving a nest. Two individuals standing only a short distance apart were counted as a pair. Single birds on suitable breeding habitat and appearing to maintain territory were also considered as part of a pair (and two birds were recorded although the second was unseen).

RESULTS

The survey results for Nooramunga MCP and Corner Inlet MCP are shown in Tables 1 and 2.

Breeding pairs

The total number of breeding pairs of Pied Oystercatcher counted was 446, with 402 (90%) sighted in Nooramunga MCP. Of these 402 pairs, 352 (88%) were located on the numerous islands within the park with the largest concentration of 115 pairs (26%) on Sunday Island. The remaining 50 pairs (12%) were located on the mainland coast. Forty-four pairs (10% of the total) were sighted in Corner Inlet MCP, with 30 of these pairs (68%) located along the mainland coast and only 14 pairs (28%) found on islands. This marked difference in distribution between the eastern and western sectors of Corner Inlet reflects the greater occurrence of sandy spits and beaches and muddy inlets lined by saltmarsh, used as nesting sites by Pied Oystercatchers, on the islands and the mainland coast of Nooramunga MCP. In contrast, much of the mainland coastline and islands of Corner Inlet MCP are either rocky or cliffed or dominated to a greater extent by mangrove shrubland.

Throughout the inlet, pairs were distributed along virtually all areas of sandy shoreline and saltmarsh-lined, muddy inlets observed during the survey. The exception to this was the low number counted on Snake Island and Little Snake Island. Snake Island is the largest island in Corner Inlet. This poor usage by Pied Oystercatchers in what appears to be suitable nesting habitats is likely to have been influenced by the presence of foxes, which infest both of these islands. This conclusion is supported by the high numbers of Oystercatchers (115 pairs) seen on Sunday Island, the only island in the inlet considered free of foxes and other introduced predators such as cats. High numbers of breeding pairs were also recorded on barrier islands such as Box Banks and Clonmel, where in recent years foxes are suspected to be only present sporadically.

The number of breeding pairs is significantly higher than the 250 counted in Nooramunga MCP in the 1996 survey (Minton 1997). Comparison of location counts shows that, in general, counts along the mainland coast were similar while counts on islands were higher. The exception to this was both Snake and Little Snake Islands where numbers were similar (i.e. very low) in both surveys.

Flocks

A total of 286 non-breeding Pied Oystercatchers and 160 Sooty Oystercatchers were counted during the survey. Most Pied Oystercatcher were counted in Nooramunga MCP (83% of total) while the opposite occurred with Sooty Oystercatcher with 61% counted in Corner Inlet MCP. Count totals for both species were similar to that of the 1996 count (Minton 1997). The range of flock sizes and pattern of distribution around Nooramunga MCP were also consistent with those observed in the 1996 survey.

DISCUSSION

The results of this survey further confirm the importance of Corner Inlet as both a breeding and non-breeding area for Pied Oystercatchers in Australia. Minton (1997) estimated the national breeding population at 3,000 pairs. Based on this figure, in the last breeding season Corner Inlet provided habitat for nearly 15% of this total. The overall number of Pied Oystercatchers (1,624) also represents 16% of the total Australian population as estimated by Watkins (1993) at 10,000 birds.

The count of breeding Pied Oystercatchers is a significant increase over previous surveys. Minton (1997) considered that data from ground counts of selected locations prior to the 1996 aerial survey indicated that figure of 250 pairs was a slight underestimate of the annual population. It appears therefore that an increase in the population has occurred over the last decade but to a lesser extent than the results necessarily indicate. A continued monitoring

program is required to confirm the long-term, sustained numbers of breeding pairs in the Inlet.

The results of this survey may reflect the complexities of implementing successful programs to control introduced predators in an area like Corner Inlet. Following the 1996 survey, Parks Victoria, the managing agency for both Nooramunga and Corner Inlet MCP, has periodically undertaken fox control works on a number of barrier islands. The increased breeding activity recorded by this survey on several of these islands may, in part, result from successful suppression of predation. This conclusion is given some support by a comparison of counts of breeding pairs of Pied Oystercatchers on Dream Island and Box Bank in 1996, prior to the start of fox control works, and again in 2002 and this study (see Table 3). The number of breeding pairs appears to be trending upwards, concurrent with the undertaking of works.

Table 3. Comparison of numbers of breeding pairs of Pied Oystercatchers counted on Dream Island and Box Bank, Nooramunga MCP between 1996 and 2005.

Year of survey	1996 (Minton 1997)	2002/3 (Collins et al., 2003)	2005
Location			
	No. breeding pairs	No. breeding pairs	No. breeding pairs
Dream Island	-	16	26
Box Bank	30	54	49

These islands are small and are surrounded by deep water channels that are presumed difficult for foxes to cross successfully. In contrast, Snake and Little Snake Islands are relatively large and, at very low tides, are separated from the mainland, and each other, by shallow channels. The lack of any observable increase in breeding activity highlights the difficulties associated with achieving eradication of foxes on larger islands, especially those more accessible to recolonisation.

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Table 1. Results of the Pied and Sooty Oystercatcher aerial survey. Nooramunga MCP, Corner Inlet (October 2005). Bracketed numbers are the sub-totals counted on the islands named.

Location		Pied Oystercatcher breeding pairs	Pied Oystercatcher (non-breeding birds)	Sooty Oystercatcher (non-breeding birds)
Toora Beach-Port Welshpool		13	7	4
Port Welshpool-Port Albert	Coast Islands	23 28 Snaggy (12) One Tree (6) Inland of One Tree (2) Sheep (1) Scrubby and offshore (7)	28 25	0 0
Port Albert-Manns Beach	Coast Islands	(Inc. Hunter Island) 5 8 Horn (2) Dog (4) Mangrove Root (1) One Tree (1)	20 48 Dog (48)	1 17 Dog (17)
Manns Beach-McLoughlins Beach	Coast Islands	7 30 Margaret (8) East Scrubby (15) Little (7)	5 0	0 8 Little (8)
End of Ninety-Mile Beach		2	0	0
Dream Island		26	0	0
Box Bank		49	0	0
Clonmel Island		52	75	4
Rescue Island		6	0	0
Old Man Clumps		8	0	0
Shag Island		9	0	1
Snake Island Inc. Clonmel Banks		20	30	12
Little Snake Island		1	0	0
Sunday Island		115	0	0
Total		402	238	62

Table 2. Results of the Pied and Sooty Oystercatcher aerial survey. Corner Inlet MCP, Corner Inlet (October 2005). Bracketed numbers are the sub-totals counted on the islands named.

Location		Pied Oystercatcher breeding pairs	Pied Oystercatcher (non-breeding birds)	Sooty Oystercatcher (non-breeding birds)
Toora-Port Franklin		2	0	0
Port Franklin-Foster Beach		7	11	6
Foster Beach-Roussac Beach	Coast Islands	2 2	0 0	17 4
Roussac Beach-Duck Point		4	0	4
Duck Point-Millers Landing	Coast Islands	2 7 Long Island (7)	1 0	19 0
Millers Landing-Chainman's Swamp	Coast Islands	11 5 Low Island (4) Bennison (1)	36 0	34 0
Chainman's Swamp-Entrance Point		2	0	18
Total		44	48	98
Combined total		446	286	160

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Wader Ageing Series. Methods and terminology

D. I. Rogers^{1,2}, K.G. Rogers², & C.D.T. Minton³

¹*Charles Sturt University; drogers@melbpc.org.au. ²Ninks Road, St Andrews, Vic 3761, Australia. ³165 Dalgetty Rd, Beaumaris, Vic. 3193, Australia*

INTRODUCTION

Wader banding studies have been a substantial part of the wader scene in Australia for the last twenty-five years and more. The value of these studies is greatly enhanced when all birds are aged accurately. A substantial body of knowledge has been built up for many species on the progression of moults and plumages and their relationship to the ages of birds. This knowledge has not been described particularly fully in the literature. Marchant & Higgins (1993) and Higgins & Davies (1996) provide valuable summaries of the plumage succession and moult strategies of all Australasian wader species, but these books are not easily taken into the field and are now out of date for some species. Prater *et al.* (1977) describe wader ageing in the northern hemisphere but no accessible guide to ageing waders in the hand is available for Australia or the East Asian–Australasian Flyway. The paper on Red-necked Stints in this issue of *Stilt* (Bamford *et al.* 2005) is the first of a Wader Ageing Series that we hope can be developed into the comprehensive guide that the Flyway needs.

This paper describes the general approach used to age waders in Australia, the terminology and conventions to be used in the wader ageing series, and outlines the basic structure of the ageing series papers. The paper does not go into finer details (e.g. colours of bare parts) that are helpful in ageing of a small number of species.

THE WADER YEAR

Waders that breed in the Holarctic (northern Asia and the far north of North America) are subject to strict seasonal patterns. Adults breed during a very short period in the northern hemisphere summer (usually June and July) and migrate south from mid- July through to October, with the adults usually migrating before the juveniles. They spend the boreal winter (i.e. the austral summer) on non-breeding grounds where they carry out most of their moult and pre-migratory fattening. They then migrate north, usually starting in March or April. Some species exhibit 'delayed maturity'. In this, young birds make their first northward migration at the end of their second year (when about 20-22 months old), having foregone their first opportunity at about nine months. A few species do not carry out their first northwards migration until their third or fourth year.

This paper refers generally to shorebird species that breed in the northern hemisphere and migrate to Australia. By convention in Australia, the first of August is taken as the birthday for all migratory waders, even though in practice the young of the year will have often have fledged a few weeks before this date. Similar principles of moult and ageing are also helpful in ageing southern hemisphere breeders, although the seasons are reversed. In south-eastern Australia and New Zealand, wader researchers have yet not established a southern "birthday" for studying southern species with reasonably predictable annual cycles (e.g. Pied Oystercatcher, Wrybill, and Double-banded Plover). We suggest that 1 January would be an appropriate date to use for these species. Note, however, that this simplification cannot be applied easily to shorebird species in which the time of breeding varies enormously from region to region (e.g. Black-winged Stilt, Red-capped Plover) and from year to year (e.g. Banded Stilt, Red-kneed Dotterel).

AGE CODES

A huge variety of different age codes are used by different researchers and banding schemes around the world. In part the variety of age codes is driven by the differing annual cycles that birds go through in different regions. Historical accident has also played a large role in the development of different codes. In this ageing series, we use the age codes required by the Australasian Bird and Bat Banding Schemes (ABBBS). At present more shorebirds are banded in Australia than anywhere else in the flyway, and the ABBBS age codes are reasonably easily understood.

Age can only be measured relative to a starting point or birthday. By convention in Australia, the first of August is taken as the birthday for all migratory waders and the first of January can be taken as the birthday for many resident wader species (see above). Given a birthday, the age codes following can be applied to all birds.

Age Code J - a bird in its first year, still in the juvenile plumage in which it fledged;
Age Code 1 - a bird in its first year that has replaced some or all of its juvenile plumage;
Age Code 2 - a bird in its second year;
Age Code 3 - a bird in its third year;
and so on.

Note that these age codes are not equivalent to 'human' age nomenclature. Trainee banders are sometimes confused by this point and hence make the mistake of assuming that (e.g.) age code 1 applies to a one year old bird. This would be incorrect; if a bird has passed its first 'human' birthday, the correct age code is 2.

The age codes can be extended by adding a '+' symbol; this signifies 'or older'. So, an Age 3+ bird is in its third year or older. "Age 3+" does NOT mean that the bird is more than three years old. Use of higher age codes is usually impossible in the field. In theory recaptures can be aged with more precision; e.g. the age code for a bird banded as a 3+ and recaptured eleven years later is 14+. However, it is best to leave this kind of age assignment to the analyst. In the field, and when entering the data, it is important to record the age assigned in the field on the basis of plumage or moult characters.

The age code "1+" – i.e. a bird in its first year or older – needs to be used carefully. A bird may be aged as 1+ if the bander is unable to age it (a circumstance most likely to occur in very large catches where it is necessary to "ring and fling"). The age code 1+ is also appropriate for a bird that looks like an adult if the age at which the species in question loses its last subadult characters is unknown. On Australian banding sheets these two meanings of "1+" can be distinguished by using the "How aged" column, with the code "U" (for unknown) indicating that the age of the bird could not be assessed.

Age codes can be inconvenient in text and birds are often referred to as first-year birds (for age codes J and 1), second-year birds (for age code 2), and adults (for age code 2+ or 3+, i.e. birds which have passed through all the identifiable young bird stages). The age at which birds can be referred to as adults is species specific.

Referring to birds with 'human' age nomenclature should be avoided, at least in the literature. It is potentially confusing. The temptation is to consider that age code 1 applies to a one year old bird; this would be incorrect as, having passed its first 'human' birthday, the correct age code is 2.

MOULT PROGRESSION

Waders, like all birds, have to replace their plumage at regular intervals and most species replace their body plumage twice, and their flight feathers once, in the course of a year. Events such as moult are highly synchronous within migratory species. This is because such waders have a tightly scheduled annual cycle, driven by the need to be on the far northern breeding grounds in peak condition during the few weeks when conditions there will be

suitable for nesting. Migration has to be carried out on a tight schedule in order to be at the breeding grounds at the right times, and this in turn constrains the time available for vital non-breeding activities. Adult migratory waders only have a few months, from their arrival in Australia to their departure, to recover from the demands of the southward migration, replace their flight feathers and then lay down fat reserves in preparation for the northward migration. Migratory waders can generally be aged to a high degree of accuracy through an understanding of age-related plumage characteristics and the timing of moult, especially the timing and pattern of primary replacement.

Plumage succession and moult strategies of migratory waders are summarised below. Plumages are described in normal print, moults in italics. In boldface we use names of moults and plumages often used in Australia. While these terms will be familiar to most readers, they are rather imprecise and in some cases not strictly accurate. Accordingly, we also give the formal plumage and moult names (in parentheses) according to the moult and plumage nomenclatural scheme of Humphrey and Parkes (1959), with the modifications suggested by Howell *et al.* (2003). This nomenclatural scheme is unambiguous, is thoroughly explained in the literature, and it enables moult workers to apply a terminology that is consistent across species.

Adults

Post-breeding moult (*Definitive prebasic moult*). A moult of all body and flight feathers. Body feathers usually start to moult while staging on southwards migration, or soon after arrival at the non-breeding destination; flight feather moult typically starts after arrival at the non-breeding destination and is more prolonged, with birds moulting primaries through much of the austral summer. In a few species post-breeding moult can begin while still on the breeding grounds.

Adult non-breeding (Definitive basic). Non-breeding body plumage is held for most of the non-breeding period – varies from species to species, but usually dull grey or brown above, pale below.

Pre-breeding moult (*Definitive prealternate moult*). A partial moult, involving most or all body feathers, but not the flight feathers. Usually occurs just before beginning northwards migration; may be completed while staging on migration.

Adult breeding (Definitive alternate). Held during nesting attempts on the breeding grounds; usually more brightly coloured than non-breeding plumages. There are a few species in which breeding and non-breeding plumages look similar (e.g. *Gallinago snipes*) but even in these species, the body plumage is replaced twice each year.

For the sake of completeness we also provide definitions of another moult and plumage, which only occurs in a few species and is not of direct ageing relevance:

Pre-supplemental (*Definitive pre-supplemental moult*). A partial moult of some body feathers. Only known from staging areas while on northwards migration; involves replacement of recently grown definitive alternate feathers. Only described in three wader species so far: Ruff (Jukema and Piersma 2000), Bar-tailed Godwit (Piersma & Jukema 1993) and Great Knot (Battley *et al.* in press).

Supplemental (Definitive supplemental). A third plumage, held on the breeding grounds and more brightly coloured than alternate plumage. So far only known from Ruff, Bar-tailed Godwit and Great Knot, but this plumage may have been overlooked in a few other species.

Young birds (in order of increasing age)

Juvenile (Juvenal). The plumage in which young waders fledge. Body feathers are slightly smaller than in subsequent plumages, and as all grow at the same time, they are uniform in wear, giving juveniles a characteristically neat appearance when fresh. In many wader species the patterning of juvenile plumage is similar to adult breeding on the upperparts, and to adult non-breeding on the underparts. Juvenile plumage in most species also has some distinctive attributes not seen in other plumages, but there is much variation between species. It fades with wear, becoming superficially similar to the first non-breeding plumage.

Post-juvenile moult (*Pre-formative moult*). *Body moult usually occurs on the non-breeding grounds, about September to November, but may begin earlier while staging on the first southwards migration. Post-juvenile moult involves replacement of body feathers in all species, and in some, there is also some replacement of flight feathers. Primary moult strategy is very important in ageing. It varies from species to species. Some species, especially those that breed when in their first year, moult all primaries, some moult a varying number of outer primaries, some moult a varying number of inner primaries, and some do not moult primaries at all. In species with delayed maturity, moult strategies are especially varied, and often one wing will be at a somewhat different moult stage to the other.*

First non-breeding (Formative). Similar to adult non-breeding and held through the first austral summer. In many species, it can be separated from adult non-breeding because juvenile flight-feathers and some juvenile inner median coverts are retained. The pattern of these inner coverts differs from that of adults in many species, with juvenile coverts often having white or buff tips, with or without dark subterminal bands.

First pre-breeding (*Pre-alternate 1*). *A variable partial moult of body feathers only, occurring at about the same time as adult pre-breeding moult or, especially in species with delayed maturity, a month or two afterwards. The resultant plumage is held until about August of the second year. Although it is common practice to call this a "pre-breeding" moult, in many species this moult is not followed by a breeding attempt.*

First breeding plumage (**Alternate 1**). Very variable. In some species, especially those that first breed when a year old, it is similar to, or indistinguishable from, adult breeding. In many others, especially those with delayed maturity, this plumage is superficially similar to adult non-breeding plumage, though often with broader dark centres to upperparts feathers, or with traces of more brightly coloured breeding plumage. Although it is common practice to call this a "breeding" plumage, in many species this plumage is held by birds that are not attempting to breed.

Second year moult (*Pre-basic 2*). *A complete moult of body and flight feathers, occurring when just over a year old, taking place at the same time of year or slightly earlier than adult prebasic moult. In most species, the resultant plumage is effectively indistinguishable from that of older birds i.e. the bird has become adult.*

RECORDING PRIMARY MOULT

The method for recording primary moult is summarised below. With experience primary moult can be recorded quickly and systematically with a bird in the hand.

All waders have ten functional primaries. It is conventional to call the innermost feather (adjacent to the secondaries) primary 1, and the outermost primary 10. The opposite convention, of numbering primaries from the outside in, can result in errors in the recording of moult score (Rogers & Rogers 1998). For correctness and consistency with other workers in the East-Asia Pacific flyway, it is best to stick to the practice of recording primary moult from the inside, working outwards. Primaries are either fully grown or growing. The (Australian) conventions for describing these feather conditions are given below and illustrated in Figure 1.

Growing feathers

These are at one of four growth stages, scored 1 to 4 (Marchant & Higgins 1993) as follows:

1. Feather missing (i.e. a gap in the feather tract) or in pin (i.e. the waxy sheath surrounding the feather vane is unbroken).
2. Some of the feather vane is showing and the feather is less than one-third of its expected full grown length.
3. The feather is between one-third and two-thirds of its expected full grown length.
4. The feather is more than two-thirds of its expected full grown length and still growing (growing feathers still have blood in the shaft, and a trace of waxy sheath at the base).

Fully grown feathers

In most birds in active primary moult, there will usually only be two ages of fully grown primary, new inner primaries which are scored as "5" and old outer primaries which are scored as "O". In some cases, particularly with young birds, other feather "generations" may also be distinguishable (see Rogers 1990). The relative age of these different generations is an important clue to bird ageing. The codes used in Australian wader studies are summarised below. Further notes are then given on particular restrictions applied to ensure the data collected are unambiguous:

- 5 – New. New primaries of waders are dark (black in most species), with smooth black edges.
- O – Old. Old primaries fade to a browner colour (especially on those regions near the tip that are exposed to direct sunlight when the wing is folded), and show abrasion at the edges and tips.
- V – Very worn. In Australia it is conventional to only apply this term to primaries from juvenal birds which were not replaced in their first year. They are typically faded to brown, with feather vane much degraded and brittle, particularly at the tip which often has no feather vane, with just a the shaft (or a remaining fragment of the shaft) projecting.
- R – "Replacement". Used to describe feathers with slight wear in birds at the start of their second year. These are feathers that have replaced the original juvenile primaries. They are clearly newer than the very worn retained juvenile primaries found in some young shorebirds at the same time of year, and distinctly less fresh than the newly grown feathers developing as part of the early stages of pre-basic ("post-breeding") primary moults of adults and second-year birds.
- 6 – Very new primaries, obviously a newer generation than other primaries in the same wing that are scored as "5".

Wear of flight feathers is a gradual process and in some individuals' primaries deteriorate faster than in others. Such variations can lead to incorrect ageing if they result in feathers of the same generation being given different codes in different individuals. To avoid potential problems of this kind, Australian wader banders have adopted several additional conventions for classifying primary wear:

1. In adults, primaries are treated as making the transition from new (5) to old (O) on the breeding grounds. Accordingly, primaries of adults that have recently returned from the breeding grounds are always classified as "O", even if they do not show very strong wear.
2. Primaries (usually outer primaries) attained during the first austral summer or autumn in a post-juvenile moult are initially classified as "5". The "birthday" for these primaries is treated as 1 August; after this date, these primaries are classified as "R". This prevents analysts confusing them with the newly grown primaries of recently returned adults or second-year birds.
3. Juvenile primaries, which are fresh on arrival in Australia, are recorded as "5" until the end of November. They are treated as making the transition to old "O" on 1 December. This arbitrary date has been selected to avoid any potential confusion

- between the very different looking wings of juveniles (yet to begin moult) with: (a) wings of adults that have just completed primary moult (this can happen in a few individuals as early as the end of December); (b) primaries of first-year birds that have started primary moult (in a few species this can begin as early as December).
4. Worn juvenile primaries are classified as "V" if they are over a year old. The birthday on which they are regarded as making the transition from "O" to "V" occurs on 1 August. Using this convention prevents confusion with the old "O" primaries of returning adults.
 5. The codes "R" and "V" are not usually used after 31 October, because by November it can be difficult to distinguish primaries of second-year birds from the primaries of moulting adults. However, the codes "R" and "V" can be used in rare cases after 31 October when the bander is very confident about the age of the feather.

MOULT FORMULA

In the field, where large numbers of birds often have to be processed quickly, it is conventional to summarise these data with a primary moult formula, in which the primary moult is recorded from inside to outside, and the number of adjacent primaries at the same stage of growth is given as a superscript; the superscripts should add up to 10. Examples of the application of this shorthand are presented in Table 1. Further details on the recording of moult can be found in Marchant & Higgins (1993), and Ginn and Melville (1983).

WADER SEXING

Many species of wader have sexual differences in the breeding plumages, so sexing may be possible on birds before departure on northward migration or on birds newly-returned from breeding (with some retained breeding plumage) or. However, in only a few species are the plumage differences large enough to allow accurate sex allocation for all individuals.

Sex should only be assigned on a field sheet, or entered in the data, if sexing was based on plumage characters. In most species there is sexual size dimorphism (i.e. the sexes differ in size), so it may be possible to determine the sex from measurements. However sexing of this kind should be done by the analyst, as it is complicated by size variation between individuals, and often size overlap between the sexes. In several species, the size difference is sufficiently large to allow sex to be confidently assigned to individual birds. For these species the measurement most useful for sexing should be taken whenever possible. If possible, a second measurement should be recorded; this allows better sexing criteria to be developed (see, for example, Rogers 1995a, 1995b).

In most species there are no differences in the non-breeding plumage of males and females. Sex can, if desired, be determined genetically from blood or feather samples, but these techniques are expensive, need special training and licences, and are generally not an option for most banding teams.

CONCLUSION

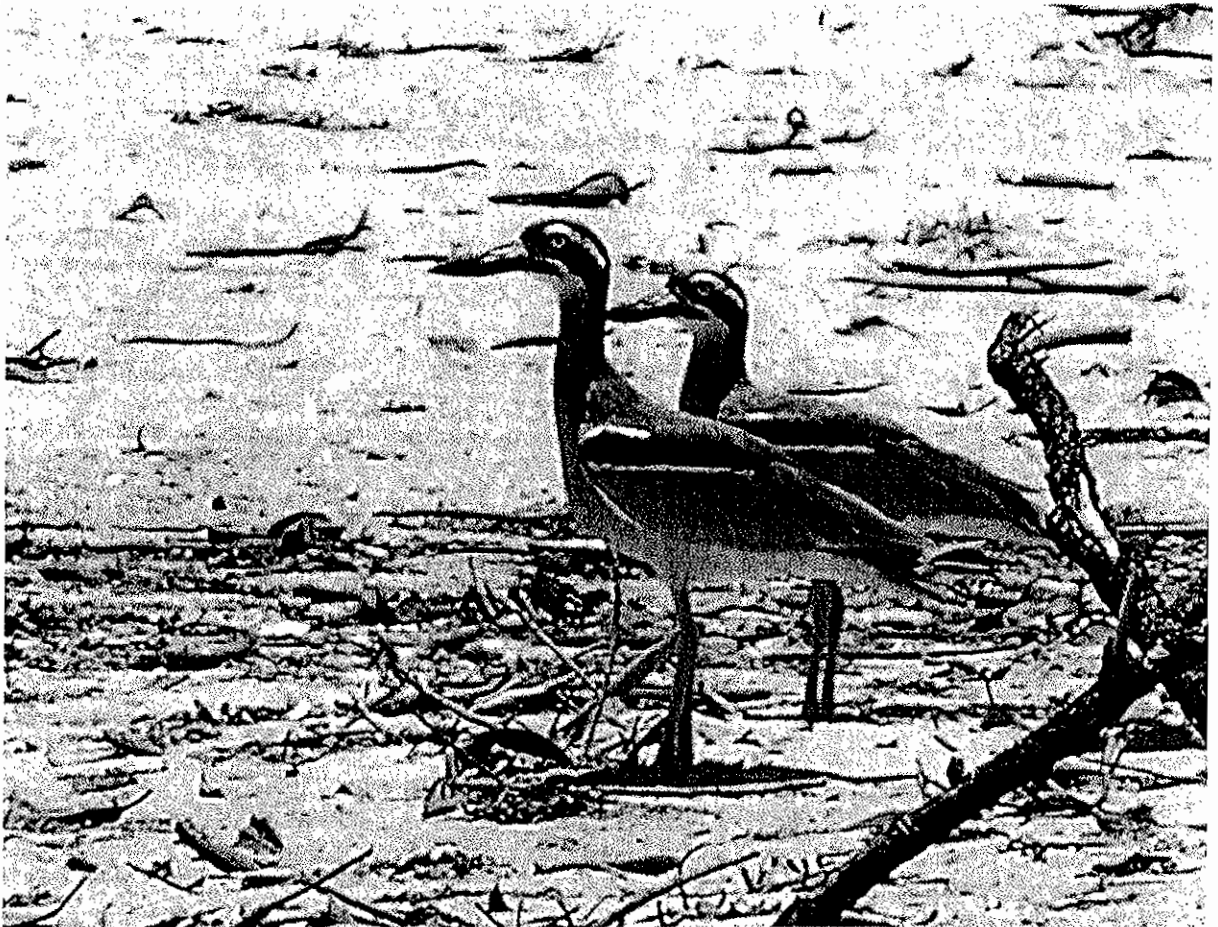
The basic format of papers in this series (see Bamford *et al.* 2005 in this issue) is as follows:

1. A free-format detailed account of plumages and moults (and any other helpful ageing characters) in the identifiable age classes for the species. This will cover both flight feather and contour feather moults, and can have figures and tables where appropriate. Sexing characters should also be described, if known.
2. A one-page table, which summarises the key ageing features by time of year and age of the bird. This page, if photocopied (and laminated) would be suitable for use by banders in the field.

We would like to encourage other authors to contribute articles for this series. Ideally the moult and ageing terminology outlined in this paper should be followed, so that the series will be as standardised as possible. We also encourage authors to provide representative photographs of important plumages and moult stages.

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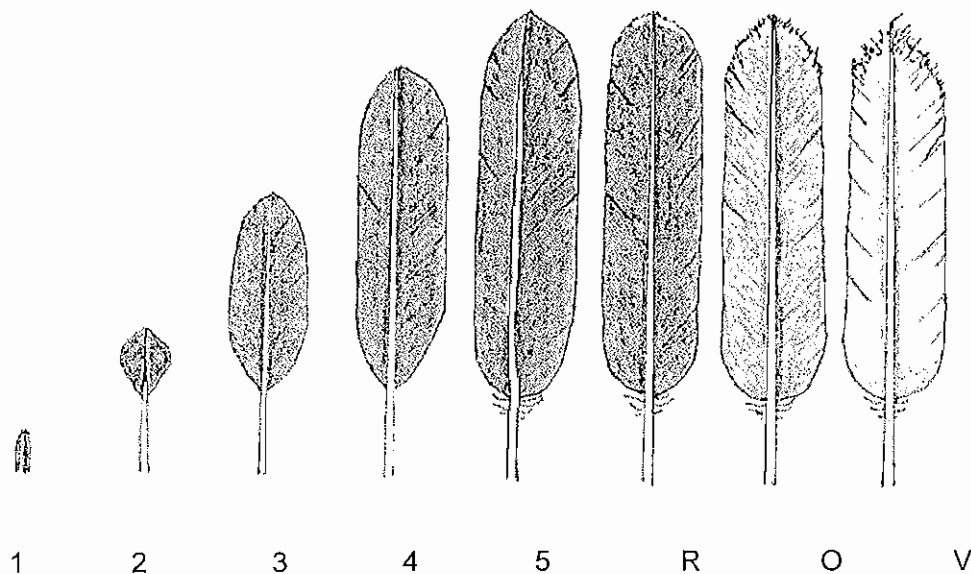


Beach Stone-Curlew (Photo Digger Jackson and Lauren Beasley)

Table 1. Examples of primary moult formulae

Primary feather score										Primary moult formula	Examples found in real-life Red-necked Stints
p1	p2	p3	p4	p5	p6	p7	p8	p9	p10		
O	O	O	O	O	O	O	O	O	O	O^{10}	Newly arrived adult, Sept, yet to begin primary moult.
5	5	4	2	O	O	O	O	O	O	$5^2 4^1 2^1 O^6$	Adult, early Oct., starting primary moult.
5	5	5	5	5	5	5	5	4	1	$5^8 4^1 1^1$	Adult, Jan., in late stages of primary moult
5	5	5	5	5	5	5	5	5	5	5^{10}	Adult, Mar., with completed primary moult
O	O	O	O	O	O	O	O	4	1	$O^8 4^1 1^1$	First year, Feb., carrying out partial moult of outer primaries.
O	O	O	O	O	O	O	O	5	5	$O^8 5^2$	Same first year bird, May, after partial moult of outer primaries
V	V	V	V	V	V	V	V	R	R	$V^8 R^2$	Same bird, after 1 st Aug. "birthday" and thus now classified as Age 2.
5	5	5	3	1	V	V	V	R	R	$5^3 3^1 1^1 V^3 R^2$	Same bird, Sept, in early stages of second prebasic primary moult.

Figure 1. Stages of feather growth and feather wear.



Below is a table summarising the plumage succession of Red-necked Stint using the criteria above. The whole article on Red-necked Stint may be found in Stilt 48, 28-33, 2005. Email copies with colour photos can be obtained from kenrogers@hotkey.net.au

Table 1. Summary of plumage succession and ageing features in Red-necked Stints in the hand. The appropriate ABBBS ageing codes are given in boldface in each cell.

Period	First Year (Ages J and 1)	Second Year (Age 2)	Third Year and Older (Adults)
Aug.-Sep.	<p>Age J On S migration or non-breeding areas: – Retain all juvenile primaries – Typical 1° moult: 5¹⁰ – Inner wing coverts (i.e. inner median and greater secondary coverts) have rufous-cinnamon or buff tips and outer edges – Body plumage: juvenile</p>	<p>Age 2 In non-breeding areas: – Outer primaries either all retained from juvenile plumage and therefore very worn, or with fresher (R) outermost primaries previously attained in partial moult – Typical 1° moult: V¹⁰, V⁶R⁴, 5²3¹V⁴R³. – Body plumage: Non-breeding, some with remnants of very limited breeding plumage (<25%)</p>	<p>Age 3+ On S migration or non-breeding areas: – Primaries all old, or starting complete primary moult – Typical 1° moult: O¹⁰, 5¹3¹2¹O⁷ – No buff-tipped wing coverts – Body plumage: Moulting from breeding to non-breeding</p>
Oct.-Dec.	<p>Age 1 In non-breeding areas: – Juvenile primaries starting to show slight wear – No active 1° moult. Primaries classified as 5¹⁰ before Dec, as O¹⁰ after Dec. 1. – Still have some "buff-tipped" inner wing coverts – Body plumage: worn juvenile moulting to non-breeding</p>	<p>Age 2 In non-breeding areas: – Not reliably distinguishable from adult non-breeding (age 2+) after end of October. Most can be picked out in Oct. on 1° moult, with very worn retained juvenile outer 1°s or fresher retained feathers from partial moult of outer 1°s. – Typical 1° moult: 5²3¹V⁴R³, 5⁶4¹R³, 5²3¹V⁶</p>	<p>Age 2+ (3+ until end of October) In non-breeding areas: – Carrying out or just about to begin a complete 1° moult – Typical 1° moult: 5²3¹2¹O⁸, 5⁶4¹O³, O¹⁰ – No buff-tipped wing coverts – Body plumage: non-breeding</p>
Jan.-Apr.	<p>Age 1 In non-breeding areas: – Retain juvenile flight feathers, now more worn than new primaries of adults; some start to replace a few outermost primaries. – Typical 1° moult: O¹⁰, O⁸4¹O¹ – Still have some "buff-tipped" inner wing coverts – Body plumage: non-breeding</p>	<p>See Third Year and Older</p>	<p>Age 2+ In non-breeding areas or starting N migration (departures start late Mar. in s. Aust to mid Apr. in NWA): – Completing or just finished primary moult – Typical 1° moult: 5⁸4¹1¹, 5¹⁰ – Body plumage: moulting from non-breeding to breeding</p>
May-July	<p>Age 1 In non-breeding areas: – Typical 1° moult: O¹⁰, O⁷5³ – Still retain at least 1 "buff-tipped" inner wing covert – Body plumage: Non-breeding, or with traces of incomplete breeding plumage (especially on face and neck)</p>	<p>See Third Year and Older</p>	<p>Age 2+ Completing N migration or breeding: – No active primary moult, 1°s fresh – Typical 1° moult: 5¹⁰ – Body plumage: Full breeding</p>

Double-banded Plover *Charadrius bicinctis*

Graham Beal

I began writing these short articles for the Bulletin to help members familiarize themselves with a particular species and highlight waders that they may encounter in Victoria. I have so far concentrated on the migratory waders that make the incredible flight to and from Siberia every year. This year I thought that I would write about the only wader to migrate to our shores on a journey of over 2000kms across the Tasman, the delightful Double-banded Plover or Banded Dotterel as it is known in its homeland.

It is estimated that over 5000 arrive on our shores from February to April and depart to their breeding grounds in July-August, although over stayers have been recorded in every month of the year. Birds that winter in Australia are exclusively from breeding populations in the central region of South Island. It is common in Tasmania, Victoria, South Australia & New South Wales with stragglers recorded as far north as Cairns, Qld. and coastal W.A. It has also been observed in Fiji, Lord Howe and Norfolk Islands. Found normally coastally on beaches, mudflats, salt marsh etc. it can also be seen sometimes inland on bare or ploughed paddocks, salt lakes and sewerage farms such as at Kaniva and Tatura. Around Melbourne it can be seen regularly in quite large numbers on Western Port at Yallock Creek and my favourite location, Stockyard Point also at Point Wilson on Port Phillip Bay.

An intensive banding study was undertaken by the VWSG in collaboration with New Zealander Ray Pierce from 1979 until 1987 with birds individually colour banded (Clive's report, Minton 1987). N.Z. birds continue to be colour banded so precise notes should be taken of any colour band sightings. On August 11th 2002 a bird retrapped on Western Port was found to be at least 19.7 years old, the oldest ever caught in Victoria the previously oldest recorded being 15 years old. Birds caught here are now banded on the upper left leg and have an orange flag for Victoria placed on the upper right leg. Banding on the upper leg avoids wear on the shingle, stony and gravelly river beds of their NZ breeding sites where the bird lays 3 brown or dark grey eggs with dark blotches.

In non breeding plumage it is described as having a white forehead edged black or brown. The crown, nape, hind neck, sides of neck mantle scapulars and wing coverts brown having arrow buff fringes. Chin and throat are white, upper breast band is dark grey-brown with an indistinct brown lower breast bar. The belly flanks and under tail are white. The bill is typically plover like being short slender and black. Legs are dull olive green. Juveniles are similar to this except markings are less distinct with a variable buff wash about head and breast with narrow white fringes to feathers of upperparts. Breeding plumage which can be seen sometimes when adults arrive or depart is like non-breeding plumage but with prominent bands across the chest.

In the hand they can be sexed, the males have dark grey lores, females grey brown, the males white forehead is separated from the brown crown by a dark grey band, which is absent in females. The males' upper breast band feathers are dark grey and black, lower; chestnut fringed white. Females' upper breast band feathers are dark brown fringed white; lower orange chestnut fringed white.

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Recoveries of waders from Werribee Sewage Farm

Clive Minton, Colin Gibbs and Heather Gibbs

The Melbourne Water Western Treatment Plant (Werribee Sewage Farm) was the first, and initially sole, location where wader banding took place in Victoria. Mist netting was started there in December 1975 and continued over the next two and a half years until cannon netting was introduced in late 1978. The Victorian Wader Study Group was formally constituted at this time. Since then, catching and banding activities of the VWSG have spread more widely in order to sample birds at other locations and a wider variety of species.

Werribee Sewage Farm is still the location at which the greatest numbers of waders have been banded in Victoria. Up to the end of 2005, 58,838 (29%) of our total catch of 199,459 waders have been caught there. Most of these are the smaller waders – Red-necked Stint, Curlew Sandpiper, and Sharp-tailed Sandpiper – and this location continues to be still the most important in Victoria for our studies of these species. However, over the years 24 different wader species have been banded by the VWSG at Werribee, including more than 100 individuals of the following species: Double-banded Plover (770), Red-capped Plover (491), Pied Oystercatcher (423), Red-necked Avocet (228), Red Knot (197), Banded Stilt (151), and Pacific Golden Plover (148). The most unusual species banded there have been Little Stint (3), Long-toed Stint (1), Pectoral Sandpiper (1) and Broad-billed Sandpiper (1).

There has been a gradual growth in the number of reports we have received of waders banded at Werribee SF and later found elsewhere. There have also been a number of birds banded elsewhere which we have recaptured at Werribee. Details of these are plotted on the attached maps.

The 110 recoveries of birds banded at Werribee stretch from the South Island of New Zealand (Double-banded Plover) to north-western Siberia (Curlew Sandpiper). The latter was, until recently, the longest distance movement of any bird banded in Australia (13,059 kms). It was recovered in interesting circumstances. A Russian ornithologist, Pavel Tomkovich, was studying waders on the breeding grounds in late June in the northwest Taimyr Peninsula when he noticed a banded adult male Curlew Sandpiper on the Arctic tundra. This species is renowned for its territorial aggressiveness and so he set up a stuffed decoy Curlew Sandpiper in front of his small spring-powered net. The banded bird immediately attacked the decoy and was captured!

Curlew Sandpipers have produced more recoveries (51) than any other species banded at Werribee SF. There have been four recoveries on, or close to, the Siberian breeding grounds, one on migration further south in Siberia and many (19) recoveries on the Asian mainland coast where birds stopover on northward and southward migrations. One was even recaptured, at the end of August, on southward migration in southeast India. This is the furthest west of any location where a wader banded in Australia has been recovered. There have also been four recoveries in Indonesia.

Red-necked Stints have been banded in much larger numbers (38,078) than Curlew Sandpipers (9,013) but have given fewer recoveries (37), partly because of their small size and the smaller band they carry. Whilst some recoveries emanate from birds recaptured by ornithologists elsewhere, others are derived from birds found dead, sometimes by members of the general public, and it is these where bird/band-size have an influence on recovery rate.

Red-necked Stints seem to follow a similar migration route to Curlew Sandpipers through Asia to breeding grounds in northern Siberia. There has been one recovery of a Werribee-banded Red-necked Stint near the western end of the Red-necked Stint breeding range in Siberia. There are also two recoveries in the southern parts of Siberia of birds on migration and others (7) along the Asian coast from the northern Yellow Sea in China right down to Vietnam. There has also been one recovery in Indonesia. Within Australia, many Red-

necked Stints (and Curlew Sandpipers) use northwest Australia as a gateway, especially on southward migration. There is also quite significant movement of birds dispersing into South Australia and passing through Werribee on their way to/from non-breeding areas in Tasmania.

Fewer Sharp-tailed Sandpipers have been banded (3,686). These have provided one recovery near the breeding grounds in northern Siberia and also recoveries in China (3) and Taiwan when on migration. Pacific Golden Plovers, banded in smaller numbers, have so far not lead to any recoveries outside Australia, just one in Queensland.

Banding of Double-banded Plovers at Werribee SF was the first to show that those coming to Australia in winter did so from breeding grounds in the centre of South Island, New Zealand. Much more extensive data developed by the VWSG in the 1980 s showed that it was the Double-banded Plovers from this area only which came to Australia, with those breeding on lower ground around the coast of South Island and those breeding in North Island remaining in New Zealand throughout the winter.

Pied Oystercatchers from Werribee SF have shown extensive movements along the coasts of south-eastern Australia, as far west as the Murray River mouth, as far east as southern New South Wales, and as far south as northern Tasmania.

There have been 53 recaptures at Werribee of waders banded elsewhere. Most of the birds from the Northern Hemisphere were Curlew Sandpipers. Four were banded in Asia (including one from Singapore). There was also one from western central Siberia, on southward migration. There is also a Red-necked Stint banded in Japan. Birds from around Australia include Red-necked Stints from Perth (2), northwest Australia (3), the New South Wales coast (2) and southern Tasmania (4). These illustrate the wide range of migration routes used by this species within Australia.

A similar picture for Curlew Sandpipers within Australia is apparent. Five birds from various stopover locations in north-western Australia were subsequently recaptured at Werribee. Others came from NSW (1), SA (1) and Tasmania (4). Fifteen Red-necked Stints and three Curlew Sandpipers from eastern Victoria also moved to Werribee. A Pied Oystercatcher also came from there.

Another major source of birds recaptured at Werribee Sewage Farm was South Island, New Zealand, from which five Double-banded Plovers came. Finally a Sharp-tailed Sandpiper from New South Wales was caught after it moved to Werribee.

During the last 15 years, there have been over 7,500 sightings of waders leg- flagged in Victoria. Inevitably a proportion of these will have come from birds marked at Werribee SF. But because a single flagging code is used for all locations within Victoria, it is not possible to identify which have emanated from waders flagged at Werribee. These flag sightings would have greatly augmented the migration patterns illustrated by the recoveries shown on these two maps.

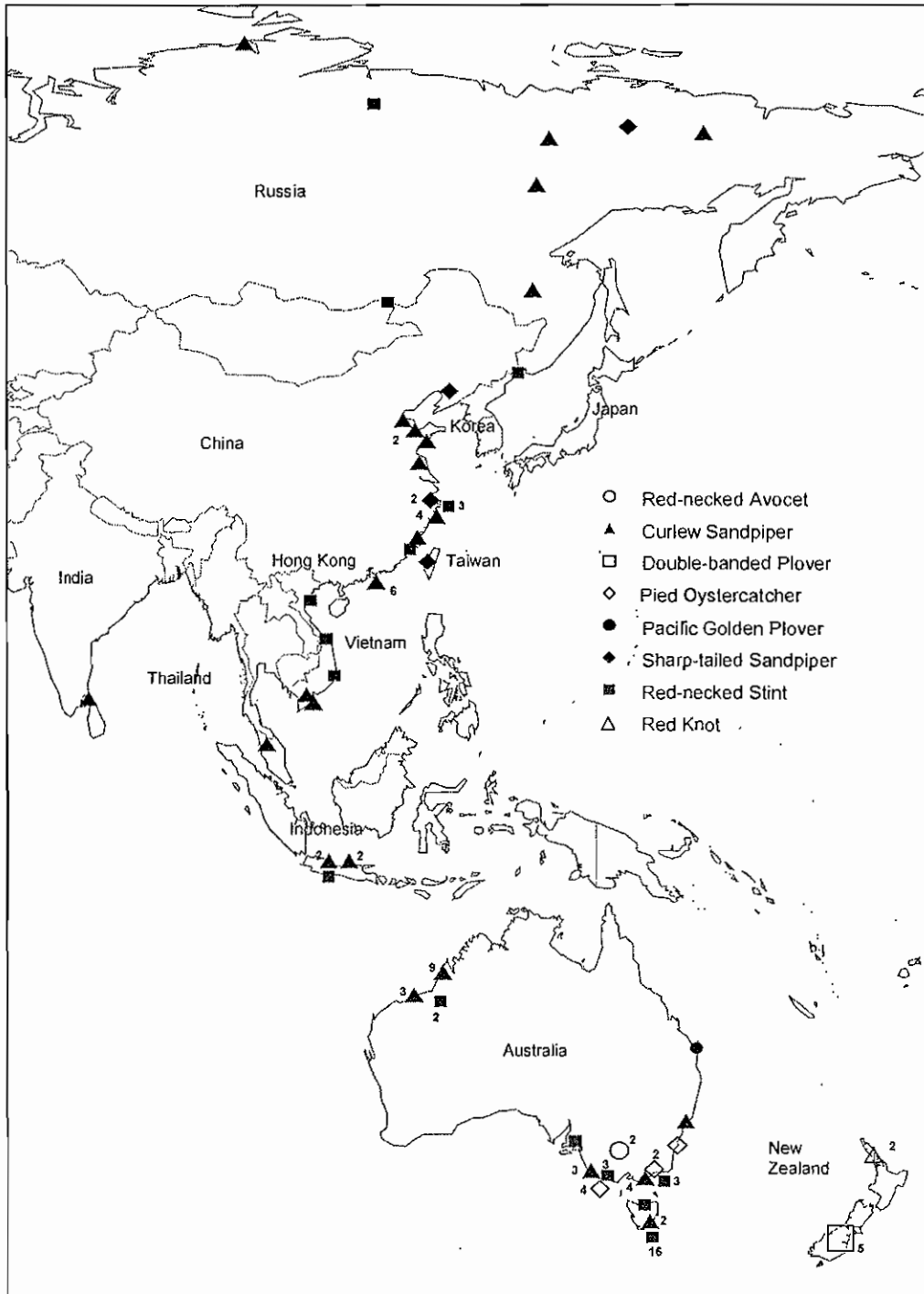
Werribee Sewage Farm will continue to be one of the principal wader banding locations for the VWSG. It is the main place at which catches are made each summer in order to estimate the breeding success of the three small waders in the preceding Arctic summer (by measuring the proportion of juvenile birds in the catch samples). Inevitably, more recoveries and flag sightings will continue to accrue from birds newly banded and flagged, making migration routes and stopover sites even clearer.

Enormous thanks are due to Melbourne Water for allowing access to Victorian Wader Study Group members to carry out wader studies at Werribee SF over the last 32 years. Melbourne Water is also thanked for dedicating certain lagoons, which are excess to operational requirements, as wader conservation areas. Manipulation of water levels to

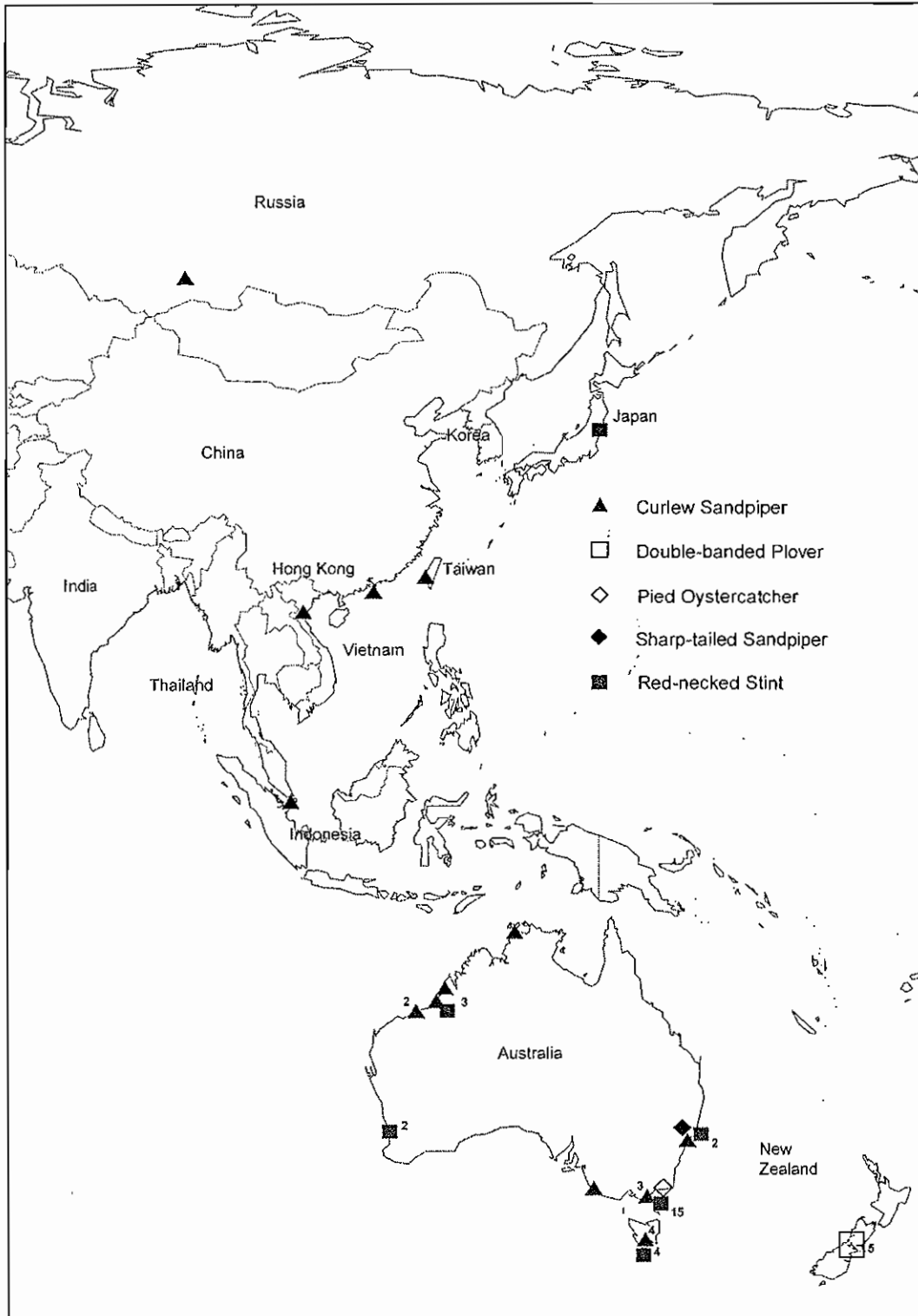
provide the optimum habitat for feeding waders – and occasionally for those who want to catch and band them! – has been of great benefit.

It is nice to be able to demonstrate to Melbourne Water and others the wide range of breeding areas in Siberia from which birds come, and the countries in Asia through which they migrate, to benefit from the rich feeding habitats available within the Werribee Sewage Farm and on the adjacent shorelines.

Recovery locations of waders banded at the Western Treatment Plant, Werribee.



Origins of banded waders subsequently recaptured at the Western Treatment Plant, Werribee.



The Saemangeum shorebird monitoring program: Counting the cost of reclamation in south Korea and beyond

**Nial Moores, Birds Korea
Danny Rogers, AWSG**

Following the review by Barter (2002), the vast Saemangeum estuarine system on the west coast of South Korea has become widely accepted as the single most important known site for migratory shorebirds in the Yellow Sea, itself a core area on the East Asian-Australasian Flyway, with e.g. single day counts of over 150 000 shorebirds during northward migration and a count of 123,745 Great Knot on southward migration (August, 2004). At least 18 species of shorebird have been regularly supported by the site in internationally important concentrations, as well as 9 or more other waterbird species.

After 15 years of on-off construction, bulldozers closed the last remaining gaps in the 33-km long Saemangeum seawall on April 21st, 2006, finally damming 40 100 ha of tidal-flats and shallows - with no clear end-use for any land created. Although the estuarine system had already suffered significant ecological change (with a gradual reduction in tidal exchange and shifts in patterns of sedimentation apparently leading to a decline in some shorebird species), this year saw a drastic reduction in tidal range, from a near-natural 7 m at peak in March to less than 1 m by late April, with tidal exchange now controlled by two sluice gates totalling 540 m in length. Forecast models reveal that 90% of the tidal-flat will be either dried out or permanently flooded within the next year, and construction of inner dykes is expected to start in 2008. Impacts are already enormous: the livelihoods of an estimated 25 000 local people have been affected; the region's most important shorebird site has been significantly degraded; and a report by a government institute suggests that this single reclamation could even cause a region-wide rise in sea level, leading to a loss of a further 5% of the Yellow Sea's tidal-flats.

Despite the system's outstanding international importance (recognized by South Korea's government, which allowed a small part of Saemangeum to be designated as a Shorebird Network Site), few organized shorebird counts have been conducted there in recent years, and very little government data has been made publicly available. In addition, apparently no program was in place to monitor the impacts of this reclamation project on shorebirds - beyond single-day waterbird counts being conducted monthly under the auspices of the development agencies. With the promise of "environmentally-friendly reclamation," the same proponents claim (e.g. on the website of the Ministry of Agriculture and Forestry) that the reclamation will create new bird habitat and that Saemangeum's shorebirds will simply move to the adjacent Gomso Bay and Geum Estuary.

Recognising the need to monitor and publicise the impacts of what is probably the largest single ongoing coastal reclamation project in the world, the domestic conservation organization Birds Korea has partnered with the Australasian Wader Studies Group to conduct the Saemangeum Shorebird Monitoring Program (SSMP): intensive shorebird surveying in the Saemangeum system, and at the adjacent Gomso Bay and Geum Estuary, through April and May 2006 (with similar survey effort planned for 2007 and 2008).

Over 30 volunteers (spread throughout the period) counted shorebirds from land and from boat, starting at the beginning of April and concentrating survey effort over the spring tide cycles in Mid-April, late April and again in Mid-May, with reduced effort through towards the end of the month. Although a percentage of early-migrating species (e.g. Kentish Plover, Eurasian and Far Eastern Curlew) and very late-migrating species (e.g. Red Knot) might have been missed, the counts are considered to have recorded the vast majority of individuals of most species using the area on northward migration. This assumption is based on the steady rise in number of shorebirds throughout April into May, coupled with a peak in

number of the most numerically dominant species, followed by a rapid fall off in numbers of almost all species, especially between 20 and 25 May.

Although data are still being processed, the SSMP has re-confirmed the extreme international importance of the area for shorebirds, especially perhaps as an optimal staging site (rather than one with a very high turnover rate). Within the Saemangeum system, 71,709 (15-17 April), 149,325 (27-29 April) and 176,955 (13-16 May) individual shorebirds were counted, with 45,371 (17 April), 51,568 (26 April) and 66,627 (15-17 May) shorebirds also counted at the Geum Estuary. Gomso Bay to the south was comparatively very poor for shorebirds, with the highest count in the period being only 767, on 17 May.

The three most abundant shorebird species recorded in the combined Saemangeum/ Geum area were Great Knot, with 116, 126 in Mid-May (approximately 30% of the world population, without any consideration of turnover), followed by Dunlin (82,718, also in Mid-May), and Bar-tailed Godwit (15,876 in Mid-April), while 34 Spoon-billed Sandpiper and 14 Nordmann's Greenshank were recorded within the Saemangeum area in Mid-May, along with 70 Nordmann's Greenshank at the Geum Estuary. Other threatened species recorded by the SSMP included Black-faced Spoonbill (maximum of 12), Chinese Egret and Saunders's Gull (minimum of 44). In addition, about 300 leg-flagged and 50 individually colour-banded shorebirds were noted, with observations of birds banded in South Korea, New Zealand, Australia, China, Japan and Alaska.

The rapid seawall construction and closure led to a sudden reduction in tidal exchange, and a mass die-off of shellfish from c 25 April. This provided many Great Knot and Dunlin with a temporary, abundant and easily accessible food source, and perhaps as a result, although there was a shift in distribution there was no unambiguous evidence either of birds moving to alternative areas, or of birds starving. Most of these shellfish beds were completely exhausted by late May, however, when birds' abdominal profiles also suggested that Great Knot remaining within the Saemangeum system appeared less well-fed than those at the Geum Estuary. It can be confidently predicted that unless there were to be a rapid return of more natural tidal conditions, the Saemangeum system will no longer be able to support large concentrations of shorebirds.

With the massive degradation, and probable loss, of Saemangeum, the adjacent Geum Estuary now becomes South Korea's most important remaining shorebird site. This site too, however, is threatened with imminent reclamation, to be conducted in two phases, one infilling the natural coast, the other converting offshore tidal-flats into an industrial estate.

In order to raise awareness of the impacts of reclamation on shorebirds the SSMP data for 2006 has already been made widely available, in both Korean and English, on websites (such as those run by Birds Korea at <http://www.birdskorea.org>) and in published accounts, with a fuller report underway. In addition, an international workshop is planned in Seoul for September 2006, and counts will be repeated in spring 2007 and 2008 – the year in which South Korea hosts the next Ramsar Convention conference. We continue to welcome further volunteer participation from experienced counters, as well as financial support. We suggest that readers wishing to express their concern about the situation write to the South Korean embassy or consulate in the country where they live; background information for preparation of such letters is provided on <http://www.birdskorea.org/> and <http://www.tasweb.com.au/awsq/> and <http://www.birdsaustralia.com.au/articles/saemangeum.html>.

The SSMP will not only be of local or national value. While it will clearly reveal local changes in shorebird use, the data will also mesh into monitoring programs already being conducted by shorebird specialists in Australasia, perhaps providing one of the first examples of tracing the impact of large-scale reclamation at the population level.

Banding Database – the important collection of YOUR data

A plea for help

Ken Gosbell

Most members will have been part of a team in the field that have banded waders and collected biometric and other data and recorded this on a catch sheet. What, you may ask, happens to these pages of hand written data? To enable it to be interpreted and used by analysts the data needs to be transferred into an electronic database. This database needs to be accurate and secure to ensure the data can be relied upon for scientific analysis. In addition, we have a responsibility to advise the Australian Banding Office in Canberra of where their bands have been used in terms of species, location etc.

Many will be aware of the ongoing development of a Data Entry Module for the electronic entry of banding data to replace the outmoded and frustrating AveTech module which was developed by the Banding Office several decades ago. Heather Gibbs has been instrumental in developing a data entry module based on Microsoft Access. This has undergone extensive trials both in Victoria and in NWA and we believe it is now capable of accepting live data. The software is very user friendly and has useful instructions for the data in putter. The program can run on most home computers or laptops; it would be useful to have Microsoft Access installed but not absolutely necessary.

What next? Unfortunately the data from catch sheets has not been input since March 2003 in Victoria or 2004 in NWA as we awaited the development of this module. However the need is now URGENT to deal with this backlog and input data electronically. We now need a team of volunteers who will be trained in the process of entering data from catch sheets to the data entry module. If you have a home computer and would be willing to spend some time entering some of this backlog of data your help is urgently needed. Please see me at the annual meeting or contact me by email or phone if you think you could help. I emphasise that you do not need to be a database expert but should be willing to learn the simple process of entering data from the catch sheets to a similar table on the computer. It is proposed to run a training program for those people who have volunteered.

As a group we spend a lot of time catching and banding waders; we owe it to these birds to have the data properly recorded and in a form that can be utilised for their study and ultimate conservation. Please consider your availability to help in this task.

Ken Gosbell
ken@gosbell.id.au

(03) 9729 5524

Publications and Presentations using VWSG data

Compiled by Roz Jessop

NEWSLETTERS

- "The Tattler", Newsletter for the East Asian-Australasian Flyway. Copies can be downloaded from the AWSG web page <http://www.tasweb.com.au/awsg/>
Clive Minton & Heather Gibbs – Keep reporting ALL of your leg flag sightings No. 44.
Clive Minton – Flag sightings report from the flyway No. 45.
Clive Minton – Arctic breeding success as seen in Australia No. 46
Clive Minton – New Zealand colour banded waders on the move No. 46
Clive Minton & Heather Gibbs – you can help improve colour flagging results No. 47
Clive Minton – Arctic breeding success in 2005 based on Australian studies No. 47
- "VicBabbler", quarterly newsletter of the Birds Australia - Victoria Regional Group of Birds Australia. Clive wrote articles for each issue.

ABSTRACTS OF ORAL PRESENTATIONS AT CONFERENCES/WORKSHOPS

Waterbirds 2005, a special meeting of the Waterbird Society, Tainan, Taiwan 2005

Status and conservation of shorebirds in the East Asian - Australasian Flyway

Rosalind Jessop, Clive Minton and Peter Collins,

Information on the status and conservation of shorebirds migrating to Australia is obtained from two main sources, banding and counting.

Banding of waders commenced in the Perth area of Western Australia in 1959 but the scale of wader banding throughout Australia has been greatest since the 1970s following the introduction of cannon netting by Clive Minton. The initial focus was on migratory movements. The introduction of leg flagging since 1990 has greatly enhanced the rate of generation of information. Biometrics especially weight changes associated with migration, and moult patterns have also been extensively studied. More recently the emphasis has moved to demographics – measurements of reproduction rates by the proportion of first year birds in catches and survival rates from capture/recapture data. The latter is now being furthered by the use of engraved leg flags which enable individuals to be identified in the field.

Co-ordinated counts of waders in Australia were commenced by the Australasian Wader Studies Group in 1981 and biannual counts at 20 locations have been continued ever since. New techniques are now being tested at five key sites with the aim of increasing the accuracy of counts so that they can better quantify changes in population level.

Australasian Wader Studies Group Conference, New Zealand, December 2005

The wonders of wader migration
Clive Minton

One hour public lecture on Australian waders to open the conference.

***Site fidelity in the non-breeding season of the
Pied Oystercatcher in Victoria, Australia.***

Rosalind Jessop and Peter Collins

The Pied Oystercatcher population of Australia is only about 10,000 individuals with 1,500 in Victoria. The Victorian Wader Study Group has been conducting a study of Pied Oystercatchers in Victoria since early 1979. Oystercatchers have been banded at various localities in Port Phillip Bay, Western Port and the Corner Inlet complex. During the 24 year period up to July 2003, 2127 Pied Oystercatchers were banded and 1160 re-traps made. Of these 2077 were colour marked with unique colour combinations (since 1989). About 4000 sightings of colour marked birds have been reported.

These data have been analysed to investigate the site fidelity of over wintering oystercatchers, timing of movements between wintering locations and breeding areas, and distances moved.

Movements of Pied Oystercatchers were much more extensive, and variable, than previously envisaged. Birds moved between different non-breeding flocks during the same year, usually within the same embayment e.g. Western Port. Some birds moved from non-breeding flocks to breeding grounds along the coast as far west as the mouth of the Murray River (South Australia) a distance of over 1,800 km and as far north as Botany Bay and Newcastle (New South Wales) a distance of about 1,800 km before returning the following winter. Movements were recorded to the Bass Strait islands and to the northern and western coasts of Tasmania.

Differential migration of Australasian waders

Silke Nebel and Clive Minton

Most shorebirds are long-distance migrants that breed in the Arctic and spend the non-breeding season at temperate or tropical latitudes. Intra-specific differences in choice of non-breeding site regarding age or sex are common among migratory birds, but in shorebirds using the East-Asian Australasian Flyway, information remains scarce. Sex-biased differential migration has, however, important implications for conservation management, as the disproportionate loss of members of one sex will significantly reduce effective population size. Because habitat loss in the non-breeding range is a major threat to shorebirds, differential migrants need to be identified and managed accordingly. Here, we provide an overview of what has been published to date on this topic and present new results based on biometric data collected by the Victorian and the Australasian Wader studies Groups.

OTHER PAPERS

Bamford M, Talbot J, Rogers DJ, Minton CDT & Rogers KG. 2005. Wader ageing series No. 1. Red-necked Stint. *Stilt* 48: 28-33.

Boyd H, Minton C & Rogers K. 2005. Has the timing of snowmelt in eastern Siberia affected the numbers of juvenile waders wintering in south-east Australia? *Stilt* 48: 2-9.

Minton C, Jessop R, Collins P, Christie M, Stewart I, Ewing A & Gibbs H. 2005. Sightings in 2004-05 of waders leg-flagged in South Australia – Report Number 4. *Stilt* 48: 50-54.

Minton C, Jessop R, Collins P, Ewing, A. & Gibbs, H. 2005. Sightings of waders' leg flagged in Victoria: Report Number 12. *Stilt* 48: 42-50.

Minton C, Jessop R, Collins P & Gosbell K. 2005. *Monitoring shorebird breeding productivity by the percentage of first year birds in populations in S.E. Australian non-breeding areas*. Pp 73-86 in Straw (Ed) Status and Conservation of Shorebirds in the East Asian-Australasian Flyway; Proceedings of the Australasian Shorebirds Conference 13-15 December 2003, Canberra Australia. Wetlands International Global Series, 18, International Wader studies 17. Sydney, Australia.

Minton C, Jessop R, Collins P & Hassell C. 2006. Arctic breeding success in 2005, based on juvenile ratios in waders in Australia in the 2005/06 Austral Summer. *Stilt* 49: 32-35.

Minton C, Jessop R, Collins P & Wilson J. 2006. The migratory movements of Curlew Sandpipers *Calidris ferruginea* which visit Australia. International Wader Studies Group Special Publication 19: 171-183. (PDF available from C. Minton)

Minton C, Rogers, K, Jessop R, Graham D & Lowther A. J. 2006. Biometrics and moult of the Curlew Sandpiper *Calidris ferruginea* in Australia. International Wader Studies Group Special Publication 19: 195-204. (PDF available from C. Minton)

Minton C & Taylor, S. 2006. A census of the breeding population of Pied Oystercatchers *Haematopus longirostris* in Corner Inlet, Victoria. *Stilt* 49: 41-43.

Minton C, Wilson J, Jessop R & Collins P & 2006. Site faithfulness and migratory movements of Curlew Sandpipers *Calidris ferruginea* within Australia. International Wader Studies Group Special Publication 19: 184-194. (PDF available from C. Minton).

Reigen A, Minton C, Jessop R, & Collins P. 2005. *Movements of Red Knot between Australia and New Zealand*. Pp 175-182 in Straw (Ed) Status and Conservation of Shorebirds in the East Asian-Australasian Flyway; Proceedings of the Australasian Shorebirds Conference 13-15 December 2003, Canberra Australia. Wetlands International Global Series, 18, International Wader studies 17. Sydney, Australia.

Rogers D, Rogers KG & Minton CDT. 2005. Wader ageing series. Methods and terminology. *Stilt* 48: 22-27.

Skewes, J. 2005. Report on population monitoring counts, 2004. *Stilt* 48: 54.

Whitelaw A, Whitelaw J & Weston M. 2005. Delayed dispersion of a juvenile Hooded Plover from its natal territory. *Stilt* 48: 10-12.

Tortoise Head is a prominent headland on the south west corner of French Island in Western Port, Victoria. At high tide, mainly during summer, many migratory waders (shorebirds) roost there together with other seabirds. Observing and counting them several times a year is voluntarily carried out by members of the Bird Observers Club of Australia as part of a long standing survey in and around Western Port. I have been involved in many of these surveys on French Island and hence the inspiration to write this short poem.

SHOREBIRDS AT TORTIOSE HEAD

Our footsteps trod the rocky shore
 Along the western side,
Where sand-bars on the mangrove fringe
 Resist the turning tide.

Heading roughly south that day to
 The edge of Tortoise Had;
A winding, almost unmarked track
 Few others seem to tread.

We scratched a way through cobwebbed
 scrub
 Into a sou' west breeze;
 Through swamps and flooded
 undergrowth
We'd sink and squelch and squeeze.

We were keen to beat the high tide
 Ere waders come to rest,
And shelter on the leeward side
 Where watching is the best.

Grey choppy seas beyond the Head,
 Tho' sheltered side was calm;
Some birds already roosting on
 The rock-strewn outer arm.

Turnstone, stints and sev'ral plovers
 Among brown rocks did blend,
As a flock of nervous curlews
 Grouped mainly at the end.

Some gulls and terns took to the air
 Before settling again;
Cormorants and oystercatchers
 Replete in their domain.

Crouching in a stiffening wind
 Observing them at large,
Aware our presence in their patch
 A pleasure without charge.

We started to retrace our steps
 Beside the ebbing tide,
And leave the birds their right of space
 All time has qualified.

Glancing back o'er a vista rare
 As rising clouds embrace
The solitude of Tortoise Head,
 Shorebirds and wind to grace.

John Daniel Prytherch, 26th February
2005.

VWSG financial report

Rosemary Davidson and Clive Minton

Details of the Victorian Wader Study Group's income and expenditure during the past year and the cash balance at the 30th June 2006 are shown in the attached table. As in other recent years "operating" expenditure (\$9399.53) exceeded operating income (\$6604.61) (the sum of the first two subtotals in each column). Again this is mainly because of expenditure on equipment – both ongoing consumables, repairs and maintenance and replacement items, and new equipment.

The overall financial position of the VWSG however remains satisfactory because of generous donations by members (\$674) and extremely valuable grants for equipment and consumables from Department of Sustainability and Environment (\$4500) and the South Australian Government (\$700). The \$1000 contribution from World Health Organization/Department of Primary Industries for assisting them with the collection of cloacal swabs for Avian Influenza virus testing was also a great help.

Most of the projects which the VWSG was undertaking with grants from Coast Action / Coastcare and the Australian Government Environment Fund have now been completed, thereby greatly clarifying the real cash position of the VWSG. Only about \$6000 is now committed to be spent under such contracts, meaning that the net VWSG cash reserves are around \$18,000.

Acknowledgements of financial and other assistance provided to the Group during the year are mentioned in the introduction to this Bulletin.

Victorian Wader Study Group Inc.
ABN 12 724 794 488

Income & Expenditure Statement for the year ended 30 June 2006

INCOME		EXPENDITURE	
Subscriptions	\$2,411.30	Printing Bulletin	\$1,727.00
Bank Interest	\$1,594.31	Postage, stationary, p/copying, phone calls	\$523.85
 		Bank & Government charges	\$89.10
Sale of Bulletin	\$5.00	Incorporation fee	\$36.70
Surplus from AGM food	\$233.00	Boat hire- Barralliar Is.	\$30.00
Proceeds from talk by D Veitch	\$371.00	Mann's Beach rental	\$100.00
 		Hall hire & Dinner (D Veitch)	\$232.50
Donations: C.Allen, M.Anderson, B.Clifford, T.Gale, P.Hermans, T.Ireton, J.Limb, M. Macmillan, I.Marks & E.Miller, B.Moss, H Phillipson, J. Skewes, J. Stoney.	\$624.00	Miscell. expenses-flowers etc.	\$113.79
D. Macmillan Memorial Don.	\$50.00	Payment for Oystercatcher sexing	\$637.50
Sub-total	\$5,288.61	Sub-total	\$3490.44
 		Equipment	
Equipment		New radio and batteries	\$470.00
Net sale to New Jersey F&W	\$1,316.00	Firing boxes and batteries	\$309.00
Sub-total	\$1316.00	Trailer expenses & other repairs	\$516.18
 		Colour bands & engraved flags	\$1307.00
Grants & Contracts		Cannon repairs	\$367.61
S Aust Government		Feather sampling equipment	\$62.25
Grant to SA Branch VWSG	\$700.00	Glue, webbing, tape, sealant etc.	\$455.65
<i>PINP</i> Cannon net usage	\$425.00	Net making materials	\$1,646.00
WHO Influenza Centre		New balances	\$528.00
Assistance with cloacal swabs	\$500.00	Decoys	-\$247.00
Dept. Primary Industries: help with Avian Influenza monitoring	\$500.00	Sub-total	\$5,909.09
<i>DSE</i> :grants for equipment etc. for CI Projects	\$4,500.00	Project Expenses	
Coast Action/Coast Care		PINP:	
CI Pied Oystercatcher Survey	\$5,940.00	Payment to P Collins for expertise	\$300.00
Sub-total	\$12,565.00	Aust. Govt. Enviro Fund:	
 		Return of unspent monies:	
TOTAL INCOME	\$19,169.61	<i>Shallow Inlet Project</i>	\$1,254.00
 		<i>Discovery Bay Project</i>	\$2,360.40
Cash Balance 1/07/2005		Audit fee for above	\$385.00
Petty Cash	\$29.60	Spartina Eradication Project	
Westpac Account	\$512.42	Andersen's Inlet	\$28,000.00
Macquarie Account	\$53,139.51	<i>Coast Action/Coast Care</i>	
Total	\$53,681.53	Helicopter hire for CI OYC counts	\$5082.00
Unpresented cheque	\$26.00	Payment for labour & reports for above	\$1964.69
NET TOTAL	\$53,655.53	Sub-total	\$39,346.09
 		TOTAL EXPENSES	\$48,745.62
 		Cash Balance 30/06/2006	
 		Petty Cash	\$58.91
 		Westpac Account	\$988.20
 		Macquarie Account	\$25,360.30
 		Total	\$26,407.40
 		Unpresented cheques	\$363.20
 			\$1964.69
 		NET TOTAL	\$24,079.52

WWSG Membership

Bev & Geoff Abbott
Charles & Jocelyn Allen
Terri Allen
Mark Anderson
Peter Anton
Allen Archbold
Robyn & Steve Atkinson
Mark & Terry Barter
Graham & Jenny Beal
Lauren Beasley & Digger Jackson
Rob & Gail Berry
Janine Bossel
Suzanne & John Brandenberger
Malcolm & Judy Brown
Paul & Anna Buchhorn
Margaret Cameron
Jeff & Sarah Campbell
Smathie Chong
Maureen Christie
Alan Clarke & Marj Reni
Breton Clifford
Peter Collins
Elizabeth & Cecilia Cook
Mike Connor
Dave Cropley
Mark Cullen
Rosemary Davidson
Michael Dawkins
John Dawson
Ren & Norma de Garis
Julie Deleyev
Xenia Dennett
Jill Dening
Lee Duclos
Andrew Dunn
John Eckert
Dianne Emslie
Alice Ewing
Jon Fallaw & Becky Hayward
Maureen & Robin Fitzgerald
Tim Gale & Lisa Collins
Dave Gerard
Colin Gibbs
Heather Gibbs
Peter & Melanie Gibbs
Dave Gillison
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Andrew & Kath Gosden
Kathryn Goyen
Patrick-Jean Guay
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Tania Ireton
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Barbara Khalifa
Irma Kluger
Ken & Femie Kraaijeveld
Joy Knight
Leona Knight
Tessa & Angus Lamin
Brett Lane
Rowena Langston
Janet Limb
Rodney Long
Moira Longden
Sue & Andy Longmore
Andrew & Sam Lowther
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Meg Macmillan
Bernie McCarrick
Geoff & Joan McDonald
Rod McFarlane & Helen Vaughan
Pat McWhirter
Ila Marks & Eric Miller
Brian Martin
Krystii Melaine
Tove Melgaard
David Melville
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Barbara Moss & Peter Mitchell
Stewart Monckton
Melanie Mumford
Brenda Murlis
Priscilla Park
Petina Pert
Hugo Phillipps
Heather & David Phillipson
Mike Preston
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Jim, Jenny, April & Shane Reside
Roger & Annabel Richards
Bruce Ridgeway
Ken, Annie & Danny Rogers
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Neville & Nancy Roussac
Graeme & Margaret Rowe
Liz Sarrailhe
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Andrew Silcocks

Charles Silveira
Howard Simco
Holly Sitters
Jenny Skewes
Charles Smith
Roger Standen
Will & Angela Steele
Iain, Sandy, Sally, Anna & James Stewart
John Stoney
Bob Swindley
Sally Symonds
Naoko Takeuchi
Susan Taylor
Deryn Thomas
Pavel Tomkovich
Leon Trembath
Lyn Turner
Stephanie & Lindsay Tyler
Megan Underwood
John Vaitkunas
Paul Van Loon
Inka Veltheim
Keith Ward
Andrew Wells
Mike Weston
Jim & Anthea Whitelaw
Jean & David Wilbraham
Ross Williamson
Prue Wright

Bulletins also sent to

Australian Bird & Bat Banding Scheme
Birds Australia
Bird Observers Club of Australia
Broome Bird Observatory
CSIRO Library, ACT
Dept. of Defence, Swan Is. Queenscliff
Dept. of Primary Industries
Eyre Bird Observatory
French Is. Head Ranger FINP
Highland Ringing Group, Scotland
Hong Kong- Geoff Carey
Japan- Kiyoo Ozaki Bird Mig. Res. Cent.
Korea- Jin Young Park
Melbourne Water (Werribee Sew. Farm)
National Library- ACT
NRE Geelong
NSW Wader Study Group
NWA WSG- Chris Hassell
NZWSG- Adrian Riegan
Queensland Wader Study Group
Phillip Island Nature Parks
Parks Victoria, Foster
Parks Victoria, Queenscliff
Parks Victoria, Wonthaggi
Senckenbergische Bibliothek
Taiwan Dr W H Fang
Victoria Museum
Victorian Ornithological Research Gp
Victorian State Library
Wash Wader Ringing Group
And landowners on whose property the group operates in Victoria

Journal of the Victorian Wader Study Group
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